

Attachment for 9.C

Substantial revisions were made in sections 550.3, 553.1, 554.1, 554.7, 556.2(g), 560.2, 560.3, 560.3(b), (d)(1), 560.4(a)(2), (c), 560.5(b), (d), (f), (h), 560.6(c)(3), (11), 560.7(j), 750-3, 750-3.3(a)(5), (6), 750-3.7(o) and 750-3.11(d)



6 NYCRR Parts 52, 190, 550-556, 560, and 750  
HIGH-VOLUME HYDRAULIC FRACTURING

REVISED JOB IMPACT STATEMENT

The New York State Department of Environmental Conservation (Department) proposes to revise 6 NYCRR Parts 52, 190, 550-556, 560 and 750. The regulations will apply statewide. The Department does not expect the proposed regulations to have a negative impact on jobs and employment opportunities in the state.

The proposed revised rules will amend the Department's existing regulations and will add new regulations to address the use of high-volume hydraulic fracturing (HVHF) as a method to facilitate production of natural gas from wells permitted by the Department. The Department is currently involved in a multi-year environmental review of HVHF. As a result of this process, the Department has identified a number of application requirements and mitigation measures that are expected to be uniformly applied to all HVHF wells to ensure such wells are drilled and operated properly. The proposed revised rules will supplement the Department's ability to monitor and enforce certain measures identified in the Department's revised draft Supplemental Generic Environmental Impact Statement (2011 rdSGEIS), and will, at the same time, update some of the Department's regulations to reflect technological advances and current industry practice.

Nature of Impact. The approval of permits to drill natural gas wells and produce from low-permeability reservoirs, such as the Marcellus and Utica Shales, utilizing horizontal drilling and HVHF will promote economic activity. The proposed revised rules, implemented in combination with the Final SGEIS, once issued, will have a positive impact on jobs and employment opportunities for such businesses as waste haulers, construction firms and providers of lodging, food and other services. Positive impacts will be created through direct employment, induced employment and indirect effects. This impact is expected to be concentrated in the

counties where the Marcellus and Utica Shales are more likely to be commercially producible. Lesser though still positive impacts may also be experienced in adjacent localities and statewide.

Categories and Numbers Affected. The proposed revised rules themselves will not negatively affect employment opportunities, and the activities guided by the proposed revised rules will create jobs. Approval to utilize HVHF will provide significant economic benefits to the State. Section 6.8 of the 2011 rdSGEIS provides a detailed discussion of the potential economic, population and income impacts that may accrue if the use of HVHF is approved. Based on industry estimates of potential drilling activity, and after applying certain assumptions about the amount of activity that could proceed under the 2011 rdSGEIS, the Department estimates that approval of HVHF could bring as many as 6,198 jobs assuming a low rate of development. This figure is an estimate of the total number of direct jobs associated with construction and operation of well pads at the lower end of potential activity.

Assuming an average rate of development, the number of direct jobs could reach 24,795 full time equivalents. The 2011 rdSGEIS also discusses the potential employee earnings associated with HVHF and the number of indirect jobs that could be created as a result of approval to use HVHF in the State. The 2011 rdSGEIS also contains a detailed discussion of the tax revenue which may result from production associated with HVHF. Section 6.8 of the 2011 rdSGEIS should be consulted for a more detailed summary of the potential economic benefits associated with HVHF, which was the focus of the Department's review under the State Environmental Quality Review Act (SEQRA).

Regions of Adverse Impact. There are no regions of the State expected to be negatively impacted from the proposed revised rules. Revisions to the Department's existing regulations for natural gas drilling are intended to modernize the regulations, to make the rules consistent with current Department and industry

practices. The proposed rules to address HVHF are intended to promulgate mitigation measures identified by the Department during the SEQRA process, which will apply statewide.

**Minimizing Adverse Impact.** The proposed revised rules are not expected to have an adverse impact on jobs and employment. The Department already regulates the drilling of natural gas wells and the proposed rules, while adding new regulatory requirements applicable to HVHF, will lead to new employment opportunities in some areas of the state and will have positive impacts on both income and employment levels. Having the rules in place will allow for a more consistent level of development, which will be the basis for longer-term employment. Having the rules in place will also allow those jobs that rely on other natural resources and the environment such as tourism and forestry to remain viable.

**Self-employment Opportunities.** Drilling a natural gas well where HVHF is planned requires extensive capital. Therefore, companies directly impacted by the proposed rules are not expected to involve many self-employment opportunities. However, there will be opportunities for self-employment for supporting industries like waste hauling, water hauling, cement mixing, construction, lodging, and food services. There may also be opportunities for self-employed consultants to advise well operators on how to comply with the proposed revised rules.



6 NYCRR Parts 52, 190, 550-556, 560, and 750  
HIGH-VOLUME HYDRAULIC FRACTURING

REVISED REGULATORY FLEXIBILITY ANALYSIS FOR  
SMALL BUSINESSES AND LOCAL GOVERNMENTS

The New York State Department of Environmental Conservation (Department) proposes to revise 6 NYCRR Parts 52, 190, 550-556, 560 and 750. The purpose of the proposed revised rulemaking is to amend the Department's oil and gas regulations to modernize existing regulations to reflect current Department and industry practice and to add new regulations to the Department's state lands, mineral resources, and water regulations to address the use of high-volume hydraulic fracturing (HVHF). The Department is currently involved in a multi-year environmental review of HVHF. As a result of this process, the Department has identified a number of application requirements and mitigation measures that are expected to be uniformly applied to all HVHF wells to ensure such wells are drilled and operated properly.

The proposed revised rules will supplement the Department's ability to monitor and enforce certain measures identified in the Department's revised draft Supplemental Generic Environmental Impact Statement (2011 rdSGEIS), and will update some of the Department's regulations to reflect technological advances and current industry practice. The Department's review of HVHF under the State Environmental Quality Review Act (SEQRA) has already been the subject of two public comment periods (2009 and 2011) and the Department will receive further public comments on these proposed revised rules.

Effect of rules. These proposed revised rules will not have substantial adverse effects on small businesses and local governments. The proposed revised rules will apply to any well operator who intends to utilize HVHF to produce natural gas from wells permitted by the Department. This will, for the most part, involve large national and international corporations. Approval of well drilling permits where HVHF is planned

will create opportunities for small businesses to engage in activities such as waste hauling, water hauling, basic construction services (e.g. land clearing and grading), as well as lodging, food and other personal services.

This revised proposal does not directly mandate the expenditure of funds by any sector of local government. Although the acceptance of wastewater will involve some costs, those costs are expected to be offset by the income generated by acceptance of the waste. In addition, one of the measures contained in the proposed rules will require well operators to conduct baseline water well testing. Results of water well testing may increase complaints to the county health department regardless of whether contamination is pre-existing or attributed to nearby HVHF wells. These costs are speculative and cannot be quantified. Approval of HVHF is also expected to impact local roads, leading to increased maintenance costs. To mitigate this impact the proposed revised rules require an applicant for HVHF to submit a transportation plan detailing proposed routes, estimated number of truck trips and local road conditions, and such plan will assist local government to respond to local infrastructure needs. Well operators will also be encouraged to engage local government early in the planning process by entering into road use agreements, so that both the regulated community and local governments can prepare for the potential impacts of HVHF. The 2011 rdSGEIS contains a detailed analysis of the socioeconomic impacts associated with approval to utilize HVHF.

Compliance requirements. The regulated community, which is the main focus of the proposed revised rules, are well operators who plan to utilize HVHF to facilitate production of natural gas wells. Well operators capable of acquiring sufficient mineral rights to enable them to apply for a Department permit to utilize HVHF are typically well funded national and international companies. The costs to the regulated community for the proposed revised regulations related to HVHF will not differ substantially from the potential costs that the regulated community should have expected from the mitigation measures and/or permit conditions that have been identified in the 2011 rdSGEIS.



Certain aspects of drilling a well, such as clearing the site to construct the well pad and securing enough water to use during fracturing operations will likely involve some small businesses. The proposed revised rules do not impose substantial costs on small business, with costs limited to paperwork requirements. To the extent that small businesses apply for a permit to drill a well utilizing HVHF, they are required to comply with the same permitting requirements as other regulated entities.

In situations where a small business controls the mineral rights in an area where HVHF may be used, and such small business enters into a joint operating agreement with the well operator or elects to participate in the operation through the Department's compulsory integration process, the proposed revised rules will increase the costs of participating in the operation. In such cases, the cost of complying with the proposed rules will still fall largely on the well operator since the well operator is required by the Environmental Conservation Law to control a requisite percentage of the mineral rights in the spacing unit before the well operator is allowed to apply for a permit to drill. The new application, reporting and operating requirements proposed to be added as new, revised Parts 560 and 750-3 are identified by the Department as necessary measures to ensure HVHF wells are drilled and operated properly and to ensure all wastes generated during well construction, hydraulic fracturing and production are handled appropriately.

Local governments are not required to take any affirmative action under the proposed revised rules. However, municipalities that operate publicly owned treatment works (POTW) may elect to accept wastewater from HVHF operations for disposal. POTWs must have a DEC-approved pretreatment or mini pretreatment program for accepting any HVHF wastewater and must notify DEC if they plan to receive wastewater prior to acceptance. POTWs are required to perform a headworks analysis to ensure they can handle the wastewater without upsetting their system or causing a problem in the receiving water. While there are costs associated with the headworks analysis and securing DEC approval of such, the costs may be offset by a disposal fee for allowing disposal of the HVHF wastewater at their facility. Small businesses that operate privately owned industrial treatment facilities are not required to take any affirmative action under the proposed revised rules.

However, small businesses that operate such treatment facilities may elect to accept wastewater from HVHF operations for disposal, and will be subject to similar requirements and costs. Therefore, the costs associated with complying with the proposed revised rule will not vary across the state or in rural areas, since the decision to accept wastewater from HVHF wells is voluntary.

Professional services. Local governments are not required to take any affirmative actions under the proposed revised rules. However, in order to be responsive to situations that could arise, local governments may want to proactively retain professional services to assist with emergency response and traffic control in certain circumstances. It is not anticipated that small businesses associated with high-volume hydraulic fracturing will need to enter into contracts for professional services to comply with these proposed revised regulations.

Compliance Costs. For small businesses and local governments that are actively participating in an activity associated with HVHF operations, the compliance costs for the proposed revised rules will be associated with: additional paperwork requirements for waste tracking; additional paperwork, permitting, testing and other costs associated with operation of a wastewater treatment plant when such small business or local government plans to treat wastewater from an HVHF well; emergency response activities; and impacts to county health departments who respond to complaints about water well quality. Local governments may also incur costs associated with road maintenance. As stated above, it is not expected that small businesses or local government will be engaged in HVHF itself. For small businesses that apply for a permit to drill an HVHF well, revised Parts 560 and 750-3 rules will result in increased compliance costs compared to a non-HVHF well. However, the costs are not expected to materially differ from the costs expected to implement the mitigation measures identified in the 2011 rdSGEIS. Cost projections from the Independent Oil and Gas Association of New York (IOGA) for complying with the 2011 rdSGEIS range from \$400,000 to \$1,700,000 for the first well

drilled on a well pad. The Department conducted its own limited cost assessment, and found that, with respect to at least two categories of cost estimates, IOGA's estimates were excessive. Unfortunately, despite repeated requests by the Department to industry to provide additional cost of compliance information, industry has refused to provide the Department with any additional cost information.

Apart from the provisions in the proposed revised rules related to HVHF, the proposed revised changes to Parts 550-556 will raise the minimum requirements to plug and abandon a well under the Department's jurisdiction. There have been occasions where local governments have drilled self-help wells, or wells meant to supply gas to local buildings. There also exists the possibility that abandoned wells may exist on public lands. Part 555 currently provides minimum plugging standards for wells; however, plugging procedures often depend on site-specific factors such as the condition of the well and well construction methods. The proposed revisions to Part 555 would still specify minimum standards but the proposed revisions to Part 555 would not raise the cost of plugging a well above that which is often already required by current Department practices. The costs associated with the new reporting requirements contained in the proposed changes to 6 NYCRR Parts 550-556 are expected to be minimal.

Economic and technological feasibility. There should be no economic or technological feasibility issues created by the proposed revised rules. To the extent that local governments or small business may want to allow and/or participate in a facet of HVHF operations, such could result in a substantial increase in economic activity in the affected areas and also result in a substantial increase in tax revenues to the state and to localities.

Minimizing adverse impact. The proposed revised rules contain some measures to mitigate potential impacts on local government, such as the need for well operators to submit a transportation plan to the Department prior to issuance of a drilling permit. A transportation plan would assist localities in planning for HVHF to allocate resources and initiate a dialogue with well operators. As stated above, the regulated

community under the proposed revised rules includes large national and international corporations. Small businesses who intend to drill an HVHF well will be subject to the same rules as larger businesses and the costs of complying with the proposed revised rules is not expected to differ from the cost of complying with the application requirements and mitigation measures identified in the 2011 rdSGEIS. Small businesses, such as waste haulers and water haulers, who provide support services to well operators will have minimal costs to comply with the rules, with costs limited to paperwork requirements (e.g., tracking waste from an HVHF well pad to a destination for disposal or reuse).

Small business and local government participation. The Department participated in outreach to the regulated community through the initial rulemaking process, including the solicitation of comments from affected industry. Additionally, the proposed use of HVHF in New York has been the subject of substantial public outreach and input over the last several years. During scoping sessions, before and after issuance of the 2009 draft SGEIS, prior to issuance of the 2011 rdSGEIS, and since the issuance of the 2011 rdSGEIS, the Department received over 66,000 individual public comments on these documents, from postal mail, electronic submissions, and speakers at public hearings in several of the potentially affected areas. The Department has had multiple interactions with the regulated community, small business, and local governments on HVHF and the quickly-evolving HVHF industry. The scope of the 2011 rdSGEIS also considered the impact of proposed additions and revisions of the Department's HVHF regulations, allowing for extensive participation on both the rules and the environmental review process simultaneously. Through this proposed revised rulemaking, the Department will provide for an additional public review and comment period.

6 NYCRR Parts 52, 190, 550-556, 560, and 750  
HIGH-VOLUME HYDRAULIC FRACTURING

REVISED RURAL AREA FLEXIBILITY ANALYSIS

The proposed revised rulemaking will modify the Department of Environmental Conservation's (Department) existing regulations and promulgate new regulations related to the use of high-volume hydraulic fracturing (HVHF). HVHF involves the fracturing of wells utilizing more than three hundred thousand gallons of water as the base fluid for fracturing operations and is proposed to be used in natural gas wells permitted by the Department. Also included in the proposed rules are updates to the Department's oil and gas and State Pollutant Discharge Elimination System (SPDES) regulations.

Type and Estimate of the Number of Rural Areas Affected. The proposed revisions and additions to the Department's regulations will apply to the use HVHF statewide; however, two formations likely to be initially targeted for production are the Marcellus and the Utica Shales. The prospective region for the extraction of natural gas from the Marcellus and Utica Shales has been roughly described as an area extending from Chautauqua County eastward to Greene, Ulster and Sullivan counties, and from the Pennsylvania border north to the approximate location of the east-west portion of the New York State Thruway between Schenectady and Auburn. According to 2010 Census figures, all of these nearly 30 counties, except for portions of Erie, Monroe, Onondaga, and Albany counties, would be considered rural areas. The updates to the Department's oil and gas and SPDES regulations will apply statewide.

Compliance with the Revised Rules. These proposed revised requirements are applicable to HVHF activities statewide, and would not result in any disproportionate impact on the regulated community in rural areas. The proposed rules will apply to any well operator who intends to utilize HVHF to produce natural gas

from wells permitted by the Department. This will, for the most part, involve large national and international corporations and the well operator's ability to comply with the proposed rules is not expected to be affected by the fact that a well is located in a rural area.

The proposed revised rules include recordkeeping and reporting requirements for well operators related to: well construction; private water well testing; and well completion reporting, when an operator proposes to use HVHF. The proposed revised changes to the Department's existing oil and gas regulations which include: a new reporting requirement to re-fracture an existing well; the need to file an interim completion report and enhanced minimum plugging requirements, will apply statewide. The capital required to secure the requisite percentage of mineral rights needed to obtain a permit from the Department, and to drill a natural gas well with or without the use of HVHF, is substantial. Therefore, the Department does not expect public or private sector interests in rural areas to be adversely affected by the proposed changes to the Department's existing oil and gas regulations. Moreover, the costs associated with notifying and receiving approval to re-fracture a well or to submit an interim completion report are expected to be minimal. Enhancement of the Department's minimum plugging requirements will also not adversely affect the regulated community, as the regulations provide only minimum standards and the Department regularly requires more stringent plugging procedures depending on site-specific circumstances. Therefore, due to current Department and industry practices, the costs associated with plugging a well by the either public or private sector in rural areas will not substantially change as a result of the proposed regulations.

Another sector of the regulated community that will be impacted by the proposed rules are mineral rights owners involved in compulsory integration proceedings administered by the Department. Compulsory integration, governed by Environmental Conservation Law (ECL) Article 23, Title 9, is the process by which the Department addresses un-leased mineral rights in a proposed spacing unit surrounding the well established by the Department-issued permit to drill. In situations where a mineral rights owner elects to participate in the

costs of developing a well where HVHF will be used, the proposed revised rules will increase the costs of participation. In such cases, the cost of complying with the proposed revised rules will still fall largely on the well operator since the well operator is required by the ECL to control at least sixty percent of the mineral rights in the spacing unit that would be produced before the well operator may apply for a permit to drill. The new application, reporting and operating requirements proposed to be added as a new, revised Part 560 to 6 NYCRR will impact mineral rights owners. However, these requirements have been identified by the Department as necessary measures to ensure HVHF wells are drilled and operated properly and to ensure all waste generated during well construction, hydraulic fracturing and production are handled appropriately.

The proposed revised rules also contain testing, monitoring and recordkeeping requirements for operators of publicly owned treatment works (POTW). Therefore, POTW operators in rural areas may be affected by the proposed revised rules, to the extent that such POTWs accept wastewater associated with wells where HVHF was utilized. In general, POTWs must have a DEC approved pretreatment or mini pretreatment program for accepting any HVHF wastewater and must notify DEC if they plan to receive wastewater at their facility before acceptance. POTWs are required to perform a headworks analysis to ensure they can handle the wastewater without upsetting their system or causing a problem in the receiving water. While there are costs associated with the headworks analysis and securing DEC approval of such, this may be offset by the disposal fee that the municipality may impose for allowing disposal of the HVHF wastewater at their facility. Small businesses that operate privately owned industrial treatment facilities are not required to take any affirmative actions under the proposed revised rules. However, small businesses that operate such treatment facilities may elect to accept wastewater from HVHF operations for disposal, and will be subject to similar requirements and costs. Therefore, the costs associated with complying with the proposed revised rule will not vary across the state or in rural areas, since the decision to accept wastewater from HVHF wells is voluntary.

Although the Department does not expect the proposed revised rules to adversely affect the regulated community in rural areas, the proposed rules will indirectly impact the ability of rural areas to respond to activities associated with the approval of HVHF. Indirectly the proposed rules may require local governments to respond to additional complaints about water well quality as well owners are made aware of water well testing required by the proposed rules. Approval of HVHF is also expected to increase local traffic and in some areas, increase the local population. As a result, local governments may experience increased demand on local services, such as emergency response and local road maintenance. The 2011 rdSGEIS contains a detailed analysis of the socioeconomic impacts associated with approval to utilize HVHF and proposed mitigation measures.

With respect to professional services in rural areas, the proposed revised rules may require the regulated community to hire professionals to assist in compliance activities required by the regulations. The additional stormwater requirements and requirements for disposal of HVHF wastewater are two examples where the proposed revised rules may require well operators to hire experts. However, the ability of a well operator to comply with the proposed revised rules is not expected to be affected by the fact that a well is located in rural areas.

Local governments are not required to take any affirmative actions under the proposed rules. However, local governments may proactively retain professional services to assist with emergency response and traffic control in certain circumstances, where approval of HVHF leads to impacts in those areas of local government.

Costs. The recordkeeping, reporting and compliance requirements included in the proposed revised 6 NYCRR Part 560 and the Part 750-3, would promulgate the application requirements and mitigation measures identified by the Department in the SEQRA process. Therefore the costs of complying with the proposed revised regulations pertaining to HVHF will not differ substantially from the costs of complying with the



SGEIS. Cost projections from the Independent Oil and Gas Association of New York (IOGA) for complying with the 2011 rdSGEIS range from \$400,000 to \$1,700,000 for the first well drilled on a well pad. The Department conducted its own limited cost assessment, and found that, with respect to at least two categories of cost estimates, IOGA's estimates were excessive. Unfortunately, despite repeated requests by the Department to industry to provide additional cost of compliance information, industry has refused to provide the Department with any additional cost information.

Public entities will incur minimal costs under this revised proposal as the public sector is not the focus of the proposed revised rules. This is no different than the public entities' role with respect to other industries, and public entities may be able to use increased tax and other revenue generated through HVHF activities to offset any increased burden on services it provides.

Apart from the provisions in the proposed revised rules related to HVHF, the proposed revised changes to Parts 550-556 will raise the minimum requirements to plug and abandon a well under the Department's jurisdiction. There have been occasions where local governments have drilled self-help wells, or wells meant to supply oil or gas to local buildings. There also exists the possibility that abandoned wells may exist on public lands. However, as described above, the proposed revisions to Part 555 would still specify minimum standards and the proposed revisions to Part 555 would not raise the cost of plugging a well above that which is often already required by current Department practices. The costs associated with the new reporting requirements contained in the proposed changes to 6 NYCRR Parts 550-556 are expected to be minimal.

Minimizing adverse impact. The regulated community, which is the main focus of the proposed revised rules, is well operators who plan to drill wells and utilize HVHF to facilitate production of natural gas. Although natural gas wells will be located in rural areas, the proposed revised rules will not have an adverse impact on private or public members of the regulated community in rural areas due to the location of the well.

With respect to indirect costs on local governments in rural areas, the proposed revised rules contain some measures to mitigate potential impacts, such as the need for well operators to submit a transportation plan to the Department prior to issuance of a drilling permit. A transportation plan would assist localities in planning for HVHF operations to allocate resources and initiate a dialogue with well operators. Supporting industries, such as waste haulers and water haulers, who provide a service to well operators will have minimal costs to comply with the rules, with costs limited to paperwork requirements (e.g. tracking waste from an HVHF well pad to a destination for disposal or reuse).

Rural Area Participation. The Department participated in outreach to the regulated community through the initial rulemaking process, including the solicitation of comments from affected industry. Additionally, the proposed use of HVHF in New York has been the subject of substantial public outreach and input over the last several years through the SEQRA process. During scoping sessions, before and after issuance of the 2009 draft SGEIS, prior to issuance of the 2011 rdSGEIS, and since the issuance of the 2011 rdSGEIS, the Department received over 66,000 individual public comments on these documents, from postal mail, electronic submissions, and speakers at public hearings in several of the potentially affected rural areas. The Department has had multiple interactions affected rural areas, which provided additional opportunities for affected rural areas to participate in the rulemaking process. Through this proposed revised rulemaking, the Department will provide for an additional public review and comment period.

6 NYCRR Parts 52, 190, 550-556, 560, and 750  
HIGH-VOLUME HYDRAULIC FRACTURING

SUMMARY OF ASSESSMENT OF PUBLIC COMMENT

This assessment summarizes and responds to the consolidated comments received on the draft regulations for Parts 52, 190, 550-556, 560, 750-1, and 750-3. The revised draft Supplemental Generic Environmental Impact Statement (rdSGEIS) was released for public comment on September 7, 2011. On September 28, 2011, the New York State Department of Environmental Conservation (Department) released for public comment draft regulations concerning high-volume hydraulic fracturing and the SPDES General Permit for Stormwater Discharges from High-Volume Hydraulic Fracturing (HVHF General Permit). Public hearings were held concurrently on all of these documents and the combined public comment period was held open until January 11, 2012. In total, the Department received over 66,000 individual public comments on these documents, from postal mail, electronic submissions, and speakers at public hearings held in 2011.

The Department processed every comment and comments received equal consideration. The Department broke down comment submissions into smaller, more manageable segments. Similar segments were combined into one consolidated statement. Therefore, one consolidated statement could represent portions of identical or similar comments received from a number of commentors. Of the 66,000 comments, there are more than 650 consolidated statements on the draft regulations to which the Department provided responses.

The Department received comments from many diverse groups and individuals including mineral rights owners, federal, state and local agencies, environmental organizations, landowner coalitions, industry representatives, and legislators. During preparation of the proposed revised regulations, the Department incorporated suggestions made by the public (both with respect to the proposed regulations and the 2011 rdSGEIS).

The Assessment of Public Comment presents and responds to all of the consolidated comments. This is a summary of the most frequent comments and the Department's responses. In addition to comments on the proposed regulations, the Department received comments on the

substance of the regulatory supporting documents. The Department provided additional discussion with respect to estimated costs of the regulations on industry in the revised Regulatory Impact Statement and made changes to the other revised regulatory documents, where appropriate.

With respect to the proposed regulations at 6 NYCRR 750-3, the majority of comments were submitted on the following topics: setbacks; wastewater disposal; and chemical disclosure and the alternative analysis. The majority of comments received on the setbacks were that the setbacks are not restrictive enough to protect water resources; however, some comments stated that the setbacks are too conservative.

Setbacks were developed as an effective risk management tool to protect water resources in the event of a spill. In this regard, each setback reflects the magnitude of the potential risk or harm. In developing the setbacks, the Department considered the designated use of the resource, such as drinking water supply (and in such cases, population served).

In addition to setbacks, the revised regulations at 6 NYCRR 750-3 and the draft HVHF General Permit propose measures to prevent spills and releases and to contain those that occur. Specific Best Management Practices are required for all aspects of high-volume hydraulic fracturing operations (e.g., pit construction and liner specifications; closed-loop systems in certain instances; wastewater storage; secondary containment; peripheral berm; and emergency and spill response plans).

Specific changes from the proposed regulations can be found in the revised regulations at 6 NYCRR 750-3.3 (prohibitions) and 750-3.11 (ineligible for coverage under a stormwater general permit for HVHF operations, but where an individual SPDES permit and site-specific State Environmental Quality Review Act review are required).

The Department also received numerous comments regarding the disposal of HVHF wastewater. The proposed revised regulations at 6 NYCRR 750-3 require an approvable Fluid

Disposal Plan that identifies the ultimate disposition of HVHF wastewater and contains an acceptable contingency plan for disposition of such fluids.

Many comments related to a Publicly Owned Treatment Works (POTW), as a disposal option. POTWs may accept HVHF wastewater so long as the POTW is in compliance with applicable regulations, including any necessary approvals and permits. The revised regulations at 6 NYCRR 750-3 include requirements for acceptance of this wastewater for disposal at POTWs. The POTW must have an Environmental Protection Agency (EPA) or Department approved pretreatment program and must conduct a headworks analysis and receive approval prior to applying to accept HVHF wastewater. The headworks analysis evaluates the pollutants present in the wastewater against the capabilities of the treatment system and assesses any potential adverse impacts to a treatment system process and the receiving waterbody. All State Pollutant Discharge Elimination System (SPDES) permits require periodic monitoring to ensure compliance with applicable limits to ensure water quality standards are met. A similar demonstrable showing is required for other HVHF wastewater disposal options in New York State (e.g. privately owned industrial treatment facilities; deep well injection).

Comments were also received on the requirements for disclosure of chemical additives and the alternatives analysis. The analysis must include documentation to the Department's satisfaction that proposed alternatives exhibit reduced aquatic toxicity and pose at least a low potential risk to water resources and the environment as all known available alternatives. The Department intends to provide further guidance regarding the specifics of the alternatives analysis. Also, the revised regulations at 6 NYCRR 750-3 require that the owner or operator maintain a list, at the well site, of the chemical additives used. All documents submitted to the Department would be available to the public, subject to exceptions in the Freedom of Information Law.

With respect to the proposed regulations at 6 NYCRR 52 and 190, the majority of comments sought an expansion of the prohibition from Department administered State-owned lands to all public lands, a prohibition of pipelines on State-owned lands, a prohibition of subsurface access, or a prohibition of drilling on private lands adjacent to State-owned lands.

The Department received some comments opposed to the prohibition on surface disturbances associated with high-volume hydraulic fracturing on State-owned lands.

With respect to Department administered state-owned lands, the proposed regulatory prohibition on surface disturbances associated with high-volume hydraulic fracturing on these lands is based, in part, upon the unique legislative protections and legal constraints applying to these lands. This prohibition was not extended to adjacent private lands because these lands are not subject to the same legal and legislative constraints. Similarly, the Department did not prohibit subsurface access from adjacent private lands because subsurface access to mineral resources underneath State lands would not be inconsistent with the purposes for which these State lands were acquired. The Department determined that government entities having jurisdiction over other publicly-owned lands should decide whether to prohibit high-volume hydraulic fracturing on the surface of those lands.

Finally, with respect to pipelines, the Department does not believe that a prohibition is necessary to ensure that State-owned lands are managed consistent with the purposes for which they were acquired. Pipelines would be permitted on State-owned lands only if certain provisions of the ECL are met, and in compliance with an approved Unit Management Plan.

With respect to the proposed rulemaking at 6 NYCRR 550-556 and 560, the comments received contained critiques from various stakeholders, some stating that the regulations went too far in regulating the proposed activity of high-volume hydraulic fracturing, while others stated the proposed rules are too permissive. Some of these comments necessitated revisions to the proposed rules, but the majority did not.

Several of the comments on Part 550 expressed concern over the Department's ability to enforce its regulations. The Department believes that there are ample existing legal mechanisms available to the Department to enforce the proposed regulatory requirements.

Some comments on Part 551 expressed concern over the financial security requirements related to plugging of wells and abandonment of well sites. Several commentators expressed

concern over the removal of the \$2 Million cap on financial security, and others expressed concern that financial security should cover more activities (clean up, contingency) than plugging and abandonment. The proposed revised regulations allow for the plugging of wells without predetermination of the associated costs, creating flexibility for the Department to capture the true potential costs.

A few comments suggested severance taxes or other fees, but these revisions are beyond the Department's authority and would require legislative action.

Several of the comments on Part 552 expressed varied opinions regarding extending the permit period to two years. The Department believes the proposed extension is warranted because the complexity of permitting a high-volume hydraulically fractured well makes the 180 day time period unmanageable. Comments on this Part also questioned the provision for verbal authorization of emergency operations, however, the Department believes this provision is necessary to allow rapid responses to unexpected or non-routine situations that could impact public health and safety and the environment. Comments also focused on the details of what should be included in a well permit application, and in some cases suggested that requirements specific to high-volume hydraulic fracturing should apply to all wells. The potential impacts of other wells are effectively addressed by existing regulations and permit conditions.

Many of the comments on Part 553 expressed concern that the spacing units referenced in the proposed regulations were too small and may result in concentrating more well pads over the landscape and increasing the potential for habitat fragmentation. Spacing unit size is constrained by statute. Other comments addressed proposed variance provisions or compulsory integration (the latter of which is prescribed by statute and beyond the scope of this proposed rulemaking).

Many comments on Part 554 expressed concern over the potential for improper disposal of waste fluids and solids. In addition to the requirements set forth in the proposed regulations, the revised rulemaking includes a requirement that the owner or operator state in its fluid disposal plan that it will maximize the reuse and/or recycling of used drilling mud, flowback

water and production brine to the maximum extent feasible. Furthermore, some record-keeping requirements set forth in Part 554 have been enhanced in the revised rulemaking.

The bulk of the comments on Part 555 were on construction specifics related to casing and well plugging requirements. Many of the comments on Part 556 expressed concern about the potential air impacts of venting and flaring. A revision was made to the proposed regulations to clarify the approval process for flaring that would reduce potential air impacts. Other comments focused on the proposed Sundry Well Notice and Report form, requesting either clarification on when it would be required or the time frames for submission. The revised rulemaking includes time frames, a verbal approval process for sundry notice operations similar to the verbal approval process in Part 553 and authority for the Department to suspend or terminate sundry notice approvals for good cause.

Most comments on the proposed rulemaking were on the new Part 560 that specifically covers high-volume hydraulic fracturing activities. The proposed rules for this Part mirror many of the environmental mitigation measures identified during the SEQRA process. The comments corresponded to similar comments the Department has received on the 2011 rdSGEIS, including areas such as emergency response, transportation impacts, local government and public input, fracturing fluid disclosure, setbacks and prohibitions, notification and reporting requirements, water well testing requirements, cementing and casing requirements, Naturally Occurring Radioactive Materials (NORM) and other areas.

The revised proposed regulations provide for enhanced environmental protections while providing for efficient utilization of mineral resources. Specifically, in response to these comments, the Department has proposed substantial revisions to the Part 560 regulations to include: several new definitions; an enhanced application process, including a 15-day public notice period; authority to collect SEQRA fees; enhanced chemical disclosure provisions with website posting; an increased setback from inhabited private dwellings or places of assembly, with a variance process; enhanced notification and records retention requirements; specified parameters for water well testing and a requirement to report deviations from baseline; public posting of Drilling and Production Waste Tracking Form, and post-completion fracturing fluid



disclosure; and specifics on NORM testing. Other non-substantial clarifying revisions were made to proposed Part 560 based on comments received regarding application requirements, fluid disposal plans, setbacks, casing and cementing requirements, site reclamation, and recordkeeping.

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6 NYCRR Parts 52, 190, 550-556, 560, and 750  
HIGH-VOLUME HYDRAULIC FRACTURING  
REVISED SUMMARY OF EXPRESS TERMS

The proposed revised rules include revisions and additions to the Department's oil and gas regulations, regulations on the management of state land and to State Pollutant Discharge Elimination System (SPDES) permitting regulations. High-volume hydraulic fracturing involves the fracturing of wells utilizing more than 300,000 gallons of water as the base fluid.

Mineral Resources.

Several of the changes proposed for the oil and gas regulations are administrative in nature and are necessary to update existing regulations to current Department and industry practices. Included in this category of changes is the language proposed to be added to section 552.2, which will clarify that the expiration of a permit to drill, deepen, plug back or convert a well does not relieve an operator from compliance with the terms specified in a permit when the operator commences operations during the permit term. Definitions will also be added to Part 550 for hydraulic fracturing, hydraulic fracturing fluid, true measured depth, true vertical depth, well spud, and workover.

The proposed rules will modify section 551.6 to remove the blanket bond available to operators who drill multiple wells and will revise section 552.2 to extend the term of a permit to drill, deepen, plug back or convert a well from six months to two years. Section 552.3 is proposed to be modified to allow the Department to re-issue a permit to another operator for a location that has already been permitted by the Department.

Several provisions in the proposed rules will also modernize the Department's regulations to make them consistent with recent statutory changes made to Environmental Conservation Law Article 23. Chapter 386 of the Laws of 2005 made significant changes to the statewide spacing scheme for natural gas wells and the proposed rules will incorporate some of those changes. Statutory statewide spacing provisions were also

adopted by the Legislature in 2008. The proposed rules promulgate these changes related to shale well development.

Additional recordkeeping requirements are included in the proposed rules, including a provision that will require operators to file an interim completion report for any gap in drilling operations lasting longer than thirty days. Enhancements are also proposed for Part 555, which contains standards for the plugging and abandonment of wells under the Department's jurisdiction. Proposed changes to section 555.5 would require operators to obtain well logs prior to plugging to aid in determining the appropriate plugging procedures. The proposed rules will also clarify the density of the fluid that may be utilized between plugs set in the bore hole during plugging of the well and will clarify the reclamation requirements for the land adjacent to the surface location of the well.

A new Part 560 is proposed to address high-volume hydraulic fracturing. Part 560 consists of seven sections, beginning with section 560.1 which makes Part 560 applicable to all wells where high-volume hydraulic fracturing is proposed. Section 560.1 also states that Parts 550-558 will continue to apply to the extent not superseded by Part 560. Proposed section 560.2 contains several definitions related to high-volume hydraulic fracturing including additive, chemical constituent, flowback, and high-volume hydraulic fracturing, as well as definitions related to new setbacks specific to high-volume hydraulic fracturing surface activities.

Section 560.3 will promulgate many of the application requirements specified in the SGEIS, including: the need for a blowout preventer use and testing plan; detailed mapping requirements; and disclosure of additives proposed to be used during hydraulic fracturing including the proposed volume of each and the proposed percent by weight of base fluid, each additive and proppants, if used. The chemical disclosure must also identify each chemical constituent intentionally added to the base fluid and its proposed concentration. Section 560.3 also sets out a process for Department review of permit applications, including a 15 day public comment period. This section provides for collection of fees, including ones that may be charged for preparation of GEISs (see 6 NYCRR sections 617.13 and 618.1).

Section 560.4 proposes setbacks for high-volume hydraulic fracturing for surface activities, including setbacks for wells proposed within 500 feet of a primary aquifer, private water well, domestic use spring, water supply for crops or livestock, inhabited dwelling or place of assembly, and specified distances from certain water resources. Section 560.4 provides that the Department may grant variances from the 500 foot setback from a private water well, domestic use spring, or water supply for crops or livestock, and from an inhabited dwelling or place of assembly subject to landowner and tenant consent (as applicable) where there are no reasonable allowable alternative locations for the well pad. The Department shall impose reasonable and necessary conditions to minimize any adverse impact.

Section 560.5 will promulgate the well testing, recordkeeping and reporting requirements in the SGEIS. This section includes requirements for well operators to prepare an emergency response plan and notify county emergency management offices, report non-routine incidents, and test residential water wells within a specified distance from the proposed gas well. The regulations authorize the Department to require water well testing after wells are completed to investigate whether drilling activities have impacted residential water well quality.

Section 560.6 contains detailed well construction and operational requirements for high-volume hydraulic fracturing wells and separate subdivisions specify requirements for site preparation, such as the design standards for reserve pits; site maintenance, such as secondary containment and other operational requirements; and drilling, hydraulic fracturing and flowback, including several requirements in relation to these activities, such as cementing and casing, monitoring during fracturing operations, storage of flowback water, and venting and flaring requirements.

Section 560.7 includes waste management and reclamation requirements that specify how wastes generated on the well pad should be managed and further specifying that partial and final reclamation of the well site must be done in accordance with the plans approved by the Department.

Lands and Forests and Fish, Wildlife and Marine Resources.

Parts 52 and 190 of 6 NYCRR will be modified to prohibit the leasing of state-owned land for surface activities related to HVHF. The prohibition, however, will not prevent the Department from leasing state land to allow subsurface access to the state's mineral rights from locations adjacent to state-owned land. Nor would the proposed rule prohibit the siting of pipelines on state-owned lands because pipeline are not considered associated with the drilling of a natural gas well. However, a determination to permit the siting of a pipeline would be subject to its own site-specific review.

#### Water Resources.

This revised rulemaking updates Section 750-1.5 to conform the existing regulation to the current federal process for issuance of Underground Injection Control permits.

Part 750-3 will consist of twelve sections. Unless in conflict, superseded or expressly stated otherwise in this Subpart, the provisions set forth in Subpart 750-1 and Subpart 750-2 of this Part apply to HVHF operations.

Section 750-3.2 incorporates the definitions provided in 750-1.2 and provides additional definitions specific for HVHF operations.

Section 750-3.3 prohibits certain HVHF activities and discharges and does not allow the issuance of a SPDES permit for such activities or discharges. These specifically include well pads for HVHF operations: within 4,000 feet of, and including, an unfiltered surface drinking water supply watersheds; within 500 feet of, and including, a primary aquifer; within 100 year floodplains; within 2,000 feet of any public (municipal or otherwise) drinking water supply well, reservoir, natural lake, man-made impoundment, or springs; within 2,000 feet of any public (municipal or otherwise) drinking water supply intake in flowing water with an additional prohibition of 1,000 feet on each side of the main flowing waterbody and any upstream tributary to that waterbody for a distance of 1 mile from the public drinking water supply intake; and within 500 feet of a private water well or domestic use spring, or water supply for crops or livestock, unless the department has

granted a variance. The distances are measured from the closest edge of the HVHF well pad.

For the purposes of obtaining a SPDES permit for HVHF operations, Section 750-3.4 states that HVHF operations cannot commence without a valid HVHF SPDES permit.

Section 750-3.5 provides the minimum information required for the Department to determine that groundwater or surface water quality will not be degraded by the injection of water, gas or other material through HVHF into a well to facilitate the production of gas resources.

The requirements in Sections 750-3.6, 750-3.7, and 750-3.8 protect water resources by ensuring necessary and adequate stormwater management practices are in place and properly operated and maintained. The requirements of these sections also ensure water resources are protected through the application of the Uniform Procedure Act and SEQRA.

Section 750-3.6 details the requirements for an individual HVHF SPDES permit application. This section provides a list of the certifications required including: disclosure of chemical additives; evaluation and use of less toxic alternatives; on-site maintenance of a list of chemical additives used; residential water well testing; removal of HVHF wastewater from the well site; secondary containment; containment of flowback and production brine; construction and use of reserve pits; and closed-loop system requirements. These certifications are also regulatory requirements found in Section 750-3.7. Section 750-3.6 also requires the proper handling and disposal of HVHF wastewater; identification of the depth of the HVHF drilling; and the development of a comprehensive stormwater pollution prevention plan (SWPPP), which addresses the construction, HVHF and production phases of natural gas well development through the Construction SWPPP and HVHF SWPPP.

Section 750-3.7 details the requirements of a Comprehensive SWPPP (both the Construction SWPPP and the HVHF SWPPP), including effective implementation, operation and maintenance; recordkeeping; and inspections. The Construction SWPPP must include erosion and sediment control practices and post-construction control practices. The HVHF SWPPP must include the applicable BMPs for HVHF operations,

which includes the requirements for certification under Section 750-3.6. Additionally, Section 750-3.7 includes requirements for partial site reclamation, implementation of a Spill Prevention Control and Countermeasure plan, and plugging and abandonment of gas wells prior to termination of a SPDES permit for HVHF operations.

Section 750-3.8 details the monitoring, recording and reporting requirements for a SPDES permit for HVHF operations. Monitoring includes: stormwater discharges; volume of water used at the well site; volume of HVHF and sanitary wastewater generated; amount of chemical additives used in HVHF operations.

Section 750-3.9 details the requirements for the renewal of an existing SPDES permit for HVHF operations.

Section 750-3.10 details the bases upon which the department may deny, suspend, or revoke an existing SPDES permit for HVHF operations.

Section 750-3.11 addresses a general SPDES permit for stormwater discharges associated with HVHF operations. This section includes a detailed list of where HVHF operations are ineligible for coverage and would require an individual SPDES permit, including HVHF operations within: 500 feet of, and including, Principal Aquifers; and 300 feet of wetlands, perennial or intermittent streams, storm drains, lakes, or ponds. This section also includes instances where HVHF operations are also ineligible for coverage under a general SPDES permit consistent with other department stormwater general permits.

Moreover, Section 750-3.11 details the requirements for obtaining coverage under an HVHF general permit, such as: filing of a complete Notice of Intent; and compliance with the regulatory requirements of 750-3.6. Additionally, Section 750-3.11 includes the procedures for administration of an HVHF general permit (e.g. duration; transfer of coverage; renewal; denial, suspension, and revocation; fees; and termination). Section 750-3.11 also includes the authority for the Department to issue a stop work order.

Section 750-12 details the requirements for the permittee to demonstrate that all HVHF wastewater will be treated, recycled or otherwise disposed of over the projected life of the well (Fluid Disposal Plan). This section details the requirements for disposal options, including: disposal at publicly owned treatment works;



disposal at privately owned industrial treatment facilities; on-site treatment and recycling; deep well injection; and disposal in accordance with the terms of a Department-approved beneficial use determination.



6 NYCRR Parts 52, 190, 550-556, 560, and 750  
HIGH-VOLUME HYDRAULIC FRACTURING

REVISED REGULATORY IMPACT STATEMENT SUMMARY

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The proposed revised rulemaking modifies Department of Environmental Conservation's (Department) regulations for oil and gas, the State Pollutant Discharge Elimination System (SPDES), fish and wildlife, and state lands and promulgates new regulations related to high-volume hydraulic fracturing (HVHF).

**Statutory Authority and Legislative Objectives.** The Department proposes these regulations to ensure potential environmental impacts resulting from HVHF are mitigated to the maximum extent practicable consistent with the legislative objectives in the Environmental Conservation Law (ECL). The Department's general authority for the proposed revised rules is found at ECL Articles 1 and 3, which identifies the state's responsibility to manage water, land, fish, wildlife and air resources to assure their protection, enhancement, and balanced utilization, without risk to health and safety.

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ECL sections 23-0301, 23-0303, 23-0305, 23-0501 and 23-0503 provide specific authority for the proposed changes to Parts 550 through Part 556, and Part 560. These provisions provide the Department with power to regulate drilling, casing, operation, plugging, replugging, and posting of financial security for wells, and reclamation.

Changes to the Department's existing rules include clarifying language to Section 552.2 to specify that expiration of a permit to drill does not relieve an operator from compliance with the permit terms once operations have commenced; removal of the \$2 Million cap on financial security; updates to statewide spacing regulations; and enhancements to the requirements for plugging and abandonment of wells.

Part 560, applicable to HVHF wells, promulgates many mitigation measures specified in the Supplement Generic Environmental Impact Statement on the Oil and Gas Regulatory Program (SGEIS). The proposed

revised rule includes requirements for: blowout preventer use and testing plan; detailed mapping; enhanced disclosure of chemical additives; and well pad siting setbacks. The chemical disclosure must identify each chemical constituent intentionally added to the base fluid and its proposed concentration. The revisions also establish a process for review of permit applications, including a 15 day public comment period, and provisions for collection of fees. The proposed revised rules also contain detailed well construction, site preparation, operational, and maintenance requirements.

These proposed revised regulations further the state's legislative goals by ensuring that wells are properly constructed and operated, while facilitating the state's goal to provide for the efficient development, production and utilization of natural resources of oil and gas in such a manner as to prevent injury to the operator, mineral rights' owners and the state as a whole.

With respect to the proposed rules related to SPDES, the ECL provides broad authority for the protection of the waters of the State. Statutory authority is provided in ECL Sections 15-0103, 15-0105, 17-0101, 17-0303, 17-0501 and 17-0511, 17-0807, 17-1709, and 71-1929. Specific authority for the proposed regulations is found at ECL Sections 17-0101 and 17-0303, which declare it to be the public policy of the State to maintain reasonable standards of water purity and authorizes the Department to prevent the pollution of the waters of the State in accordance with water quality standards. Furthermore, ECL Section 17-0501 makes it unlawful to discharge to any water of the State in violation of a water quality standard.

This proposed rulemaking updates Section 750-1.5 and add a new Part 750-3. The update to Section 750-1.5 conforms the regulation to the current federal process for issuance of Underground Injection Control permits. Part 750-3 will prohibit certain HVHF activities and discharges and prevent the issuance of a SPDES permit for such activities or discharges within specified distances from water resources. Specific changes have been made in the proposed revised rules with respect to the prohibitions from intakes in flowing water intakes and private water wells. Furthermore, Part 750-3 details the conditions that must be satisfied for the exemption

for the requirement to obtain a SPDES permit for the injection of water, gas or other material through into a well, except a disposal well, which facilitates the production of gas resources.

The proposed revised changes to Part 750-3 also specify the conditions under which an applicant may receive a SPDES permit and a list of requirements applicable to HVHF operations. The proposed revised rule also includes: a list of certifications required by the applicant; the need to develop a comprehensive stormwater pollution prevention plan (SWPPP); the need to submit documentation of the anticipated depth of the top of the objective formation, and the depth of the base of the known freshwater supply, along the proposed revised length of the wellbore; best management practices for construction, reclamation and drilling related to HVHF operations; requirements that all HVHF wastewater will be treated, recycled or otherwise disposed of; monitoring, reporting and recording requirements; testing requirements for residential water wells; and a groundwater monitoring program. The proposed revised rules also contain requirements regarding coverage under a new HVHF General Permit.

Statutory authority for the proposed revised rules concerning state-owned lands is found in New York State Constitution, Article XIV, and at ECL Sections 9-0105, 9-0301, 9-0501, 9-0507, 11-2101, 11-2103, and 45-0117. The Department has the responsibility to exercise care, custody and control of state-owned lands and to make rules and regulations governing their use. The ECL also provides the Department with the authority to receive and accept land for conservation, watershed protection, forest management and to conserve rare plants and ecological communities on state-owned lands and lands under the jurisdiction of the Department. The proposed revised regulation fulfills the legislative objectives by ensuring that the production of natural gas using HVHF does not interfere with the purpose for which state-owned land was acquired.

Needs and Benefits. The proposed revised revisions to Parts 550 through 556 will update and improve regulatory conditions in the state by ensuring that well operators obtain adequate financial security to cover the cost of plugging deep wells, providing the regulated community with sufficient time to commence operations,

and specifying requirements for properly plugging and abandoning a well. The new Parts 560 and 750-3 will ensure the minimization of the potential environmental impacts to New York's water resources, ecosystems, and air quality, as well as the impacts of HVHF on communities where these wells are expected to be drilled. These regulatory revisions will inform and serve the public and regulated community, supplement the Department's ability to monitor and enforce certain measures identified in the SGEIS, and will update some of the Department's regulations to reflect technological advances and current industry practice.

The regulations, by providing for a balanced use of both the surface environment and the natural gas in the subsurface, promote a greater level of environmental protection than would be the case without the regulations. Greater environmental protection includes minimizing the probability and risk to uncontaminated aquifers and drinking water wells, streams and surface waters, and maintaining the passive use of natural resources, amongst others. Additionally, as identified in the SGEIS, by approving the utilization of HVHF it is expected that there will be extensive job creation.

Costs to Industry. The costs to the regulated community for the proposed revised regulations will generally not differ from the potential costs that should be expected from the mitigation measures and permit conditions identified in the SGEIS. Cost projections from the Independent Oil and Gas Association of New York (IOGA) for complying with the 2011 revised SGEIS range from \$400,000 to \$1,700,000 for the first well drilled on a well pad. The Department conducted a limited cost assessment, and found that, with respect to at least two categories of cost estimates, IOGA's estimates were excessive. The Department requested industry to provide additional cost information, but the Department has not received any additional information. The use of the general permit for stormwater management will reduce regulatory fees and other burdens below what would be required if individual permits were issued. The prohibition of surface activities associated with HVHF on state-owned lands might render some gas resources unavailable, which could result in potential lost opportunity for industry and leaseholders. In addition, costs to such leaseholders could increase if they choose to acquire

surface access outside state-owned lands.

State Costs. These regulations will create additional costs for several state agencies, including the Departments of Environmental Conservation (Department), Health (DOH), Transportation (DOT), Public Service and Agriculture and Markets. DOH would incur costs investigating complaints related to public health concerns; DOT would be expected to review transportation plans that drillers submit with well applications; Public Service staff would be involved in the siting and construction of natural gas transmission pipelines; and, Agriculture and Markets would incur additional costs in its Agricultural District Program.

The actual costs that may be incurred by the Department and other state agencies cannot be currently estimated, given a lack of necessary information. However, the implementation of these regulations can be expected to require a significant increase from the existing Department staffing levels to carry out the large number of activities relating to permits, with actual staffing levels dependent on the actual level of activity.

Local Government Mandates. While the proposed revised regulations do not mandate the expenditure of funds by any sector of local government, local governments will likely incur some indirect effects as a result of the Department's approval to utilize HVHF. The rules would require well operators to test private residential water wells within 1,000 feet of a well pad's location, or 2,000 feet in some circumstances. County health departments may need to respond to issues with these residential water wells that may arise as a result of testing. Those costs will be compliance driven and cannot be quantified at this time.

These regulations would allow operators, under certain requirements, to dispose of flowback water and production brine through publically owned treatment works (POTWs). To accept this water, POTWs must perform a headworks analysis to ensure they can properly remove contaminants expected to be present in flowback water and production brine prior to discharge.

In addition, heavy truck traffic will result in local costs for road maintenance, though the proposed revised rules contain requirements to assist in mitigating those impacts. It is projected that HVHF activities

would result in a substantial increase in economic activity in the affected areas and also result in a substantial increase in tax revenues to the state and to localities. These revenues are expected to offset local government costs that may result from HVHF activities.

**Paperwork.** The proposed revised rules include new paperwork requirements for all well operators, including: the need to notify and receive approval to re-fracture a well; a requirement to submit an interim Well Drilling and Completion Report; and new paperwork requirements specific to HVHF. The draft regulations also require submissions to the Department pursuant to the stormwater general permit. Since the majority of HVHF activities would be under a general permit using standardized forms, less paperwork will be generated than required by an individual permit.

**Duplication.** This proposal is not intended to duplicate any other federal or State regulations or statutes, as there is no federal regulatory program covering HVHF.

**Alternatives.** The Department examined the “no-action” alternative, in which mitigation measures and other requirements resulting from the environmental review process would alone direct these operations. However, the no-action alternative could create uncertainty for the regulated community and the public because controls over HVHF activities would not be promulgated. The Department considered the denial of permits for HVHF, but while this alternative would fully protect the environment from any environmental impacts associated with HVHF, it would eliminate the economic benefits.

**Federal Standards.** There is no federal regulatory framework over HVHF, although in April 2012, EPA finalized air emission standards for the entire oil and gas industry. There are no applicable Federal standards for groundwater protection. Thus, the proposed revised rules exceed minimum federal government standards. There are applicable Federal standards for stormwater and New York meets or exceeds all federal requirements.



Compliance Schedule. The regulated community will be required to comply upon enactment of the rules.

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