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| **1.5 Pipeline Regulation** | | | | | |
| The dSGEIS will describe pipelines and associated facilities likely to be associated with a multi-well shale gas production site | Yes | 5.16.8 | Gas Gathering | 129-130 | dSGEIS includes general summary, but does not describe details or specs of any equipment or facility. |
| The dSGEIS will describe the environmental review process for pipelines and identify potential measures to prevent or minimize adverse impacts. | Yes | 5.16.8.1 | Regulation of Gas Gathering and Pipeline Systems | 131-132 | References Public Service Law, Public Service Commission (PSC) and DEC application and review process. |
| **2.1.1 Horizontal Drilling** | | | | | |
| The dSGEIS will examine whether there are any potential environmental impacts associated with horizontal drilling itself that have not already been sufficiently reviewed and mitigated. | Yes | 5.2<br><br>6.1.3 | Horizontal Drilling<br><br>Cumulative Impacts | 21-31<br><br>141-146 | Description of rigs, well pad development, drilling mud, cuttings volume and content associated with multi-well pads.<br>Site specific and quantified impacts of multi-well pad. |
| The dSGEIS will review the potential impacts of multi-well site development, considering the requirement in ECL §23-0501(1)(b)(1)(vi) that all horizontal infill wells in a multi-well shale unit be drilled within three years of the date the first well in the unit commences drilling. In conjunction with the temporal noise, visual and air quality impacts referenced in Section 4 of this Final Scope, this review will also evaluate the need for a larger setback from private buildings or dwellings. | Yes | 6.1.4<br><br>5.18.3.2<br><br>7.1.12 | Groundwater Impacts Associated with Well Drilling and Construction<br><br>Setbacks<br><br>Setbacks | 34-36<br><br>154<br><br>64-72 | Turbidity, release of well drilling fluids, natural gas migration.<br><br>Review of other states programs and details related to setbacks.<br><br>Setback guidelines. |
| The dSGEIS will also address the management and disposal of the larger volume of cuttings at multi-well sites. | Yes | 5.13.1<br><br>6.1.9<br><br>7.1.9 | Cuttings from Mud Drilling<br><br>Solids Disposal<br><br>Solids Disposal | 118<br><br>40-41<br><br>7-61 | Requirements for non-freshwater fluids.<br><br>Cuttings disposal |
| **2.1.2 Hydraulic Fracturing** | | | | | |
| Chemical composition of fracturing fluid additives proposed for fracturing shale formations in New York. This information will be shared with other appropriate Divisions within DEC, including the Division of Water ("DOW"), as well as with the NYS Department of | Yes | 5.4<br><br>5.41<br><br>5.42 | Fracturing Fluid<br><br>Properties of Frac Fluids<br><br>Classes of Additives | 33-66 | Includes CAS #s for individual compounds for each class of additive. |

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| Health and will be reviewed to determine if applicable standards and regulations are sufficient to prevent or mitigate potential impacts of their use and management. | | 5.43 | Composition of Frac Fluids | | |
| The feasibility of requiring use of green or non-chemical fracturing technologies and additives. | Yes | 9.3.1 | Environmentally Friendly Chemical Alternatives | 8-11 | Indicates requirement might not be feasible, additional studies should be completed |
| Fluid handling at the surface and whether any additional controls are warranted. | Yes | 5.6<br><br><br>5.11.2<br><br>7.1.3.3 | On-site Storage and Handling of Hydraulic Fracturing Additives<br>Flowback Water Handling at Well Site<br>Hydraulic Fracturing Additives | 69-72<br><br><br>98-99<br><br>32-34 | Includes description of applicable NYSDEC regs.<br><br><br><br><br>Containment Controls and spill response |
| Hydraulic fracturing design and modeling, with emphasis on containment of fractures and fracturing fluid in the target formation. The dSGEIS will review the available methodologies for ensuring containment, and evaluate the design parameters that should be included in well permit applications for staff review prior to permit issuance. | Yes | 5.8 | Hydraulic Fracturing Design | 86-90 | Subsections for fracture development and methods to limit fracture growth. |
| The effectiveness of the regulations of other oil and gas producing states with high volume hydraulic fracturing of shale and other low permeability reservoirs. This evaluation will consider the advisability of adopting additional protective measures based on those that have proven successful in other states for similar activities. | Yes | 5.18 | Other States Regulations | 144-158 | GWPC, ICF, Alpha reviews. Review of 27 states. Includes fracturing, permitting, well construction, abandonment, well plugging, pits, waste handling, and spills. |
| **2.1.2.1 Fluid Handling at the Well Site** | | | | | |
| Examination of whether pit liner specifications should be required for high-volume hydraulic fracturing flowback operations. | Yes | 7.1.3.2<br><br>Appendix 10 | Drilling Fluids<br><br>Proposed Supplementary Permit Condition for High Volume Fracturing | 28-31 | Liner specifications<br><br>Includes liner specifications. |
| Assessment of whether steel tanks should be required in some or all areas to contain flowback fluids from high- | Yes | 5.18.3.2 a | Alpha Review – Best Management Practices | 150 | Recommends steel tanks for flowback water. |

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| volume hydraulic fracturing operations. | | 7.1.3.4<br><br>Appendix 10 | Flowback Water<br><br>Proposed Supplementary Permit Condition for High Volume Fracturing | 34-35 | DEC proposal for steel tanks<br><br>Step 35. Steel tanks must be used for flowback water |
| **2.1.2.2 Fluid Removal from Well Site and Ultimate Disposition of Returned Fluids** | | | | | |
| Review of information the Department is presently collecting from operators regarding volume and composition of the spent fracturing fluid. | Yes | 5.11<br><br>5.11.3.2 | Fluid Return<br><br>Composition of Flowback Water | 97-99<br><br>107-110 | 2.4 – 7.8 million gallons,<br><br>Chemical categories and lab testing. |
| Examination of each of the above disposal options (other than road-spreading which has been prohibited), discussion of the limitations or regulatory controls that apply to each, and determination of whether any additional controls are warranted. This will include a review of the suitability and implications of fluid disposal at permitted municipal waste water treatment plants. | Yes | 5.13.3 | Flowback Water | 119-123 | Injection wells, sewage treatment facility, treatment plants, enhanced oil recovery etc. |
| Evaluation of the feasibility of requiring reuse/recycling of fracturing flowback fluids. | Yes | 5.12 | Flowback Water Treatment, Re-Use, and Recycle | 110-117 | Membrane, reverse osmosis, thermal distillation, ion exchange, ozone, ultraviolet, electro dialysis. |
| Examination of whether additional waste tracking and manifesting requirements are necessary. | Yes | 7.1.6.1 | Drilling and Production Waste Tracking Form | 50 | Required for all activities in SGEIS |
| Evaluation of potential well permitting procedures, such as verification of a disposal well permit or contract with a specific treatment plant, to ensure that available capacity exists for any proposed disposal destination. | Yes | 7.1.8.1 | Treatment Facilities | 56-60 | Verification review for POTW, private treatment facilities and disposal wells. |
| **2.1.2.4 Re-Fracturing** | | | | | |
| Because of the possibility, not addressed in the GEIS, for additional high-volume hydraulic fracturing subsequent to the initial well completion, the dSGEIS will address the potential impacts of re-fracturing wells and will evaluate the need for additional procedures to avoid or mitigate such impacts. | Yes | 5.10<br><br>8.3.2 | Refracturing<br><br>High Volume Refracturing | 96-97<br><br>9 | Description<br><br>High volume refracturing will require submittal of EAF addendum. |
| **2.1.3 Well Testing** | | | | | |

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| The dSGEIS will consider whether any aspects of testing shale wells after high volume hydraulic fracturing warrant additional regulatory control. | No | 5.14 | Well Cleanup and Testing | 123 | Description of process, but did not find review to determine need for additional regulatory control. |
| **2.1.4 Natural Gas Production** | | | | | |
| The dSGEIS will examine the likelihood of larger production well pads to determine whether there are any associated environmental impacts not addressed by the GEIS. | Yes | 5.1.2 | Well Pad | 9-10 | Concludes production phase will use less area than fracturing phase. |
| **2.1.6 Well Density** | | | | | |
| The scenario of multiple horizontal wells drilled from common pads is not specifically reviewed in the GEIS. It will be addressed by the dSGEIS, with emphasis on whether size of the well pad and time needed to drill multiple horizontal wells at the same surface location may cause any potential environmental impact not addressed by the GEIS. | Partial | 5.1.3 | Well Pad Density | 10-20 | Description of density and area. Time needed to drill discussed in section 5.2. No specific discussion on potential impacts associated with well pad size or time needed to drill, but size/time parameters appear to be used for Section 6. |
| **3.0 GEOLOGY** | | | | | |
| Description of the Marcellus and other shale formations and summary of their history of development in New York, if any, along with recent reports on shale potential and reserve estimates. Stratigraphic columns for central and southeastern New York will be included. | Yes | 4.1 to 4.5 | Geology | 1-356 | |
| Analysis of NORM data and review of any required special precautions for cuttings or fluids handling and disposal. | Yes | 4.6<br>5.1.3<br>5.16.7<br>5.1.7<br>5.2.4.2<br>6.1.9.1<br>6.8 | NORM in Marcellus Shale<br>Waste disposal – Cuttings<br>NORM in Production Brine<br>Well Plugging<br>NORM in Marcellus Cuttings<br>Solids Disposal – Norm Considerations – Cuttings<br>Norm Materials in | 36<br>118<br>129<br>143<br>30-31<br>40<br>129-131 | |

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| | | 7.1.6.1<br><br>7.8 | Marcellus Shale Drilling and Production Waste Tracking Form<br><br>Mitigating Norm Impacts | 50<br><br>98-102 | |
| **4.1 Noise, Visual and Air Quality Impacts** | | | | | |
| The dSGEIS will explore the drilling, hydraulic fracturing, flowback and testing phases for Marcellus shale wells with respect to temporal noise, visual and air quality impacts. | | | | | See Sections 4.1.1, 4.1.2, and 4.1.3 below |
| The dSGEIS will examine how the temporal noise, visual and air quality impacts will be experienced at multi-well drilling pads. | | | | | See Sections 4.1.1, 4.1.2, and 4.1.3 below |
| **4.1.1 Noise Impacts** | | | | | |
| The dSGEIS will discuss (1) sources of noise, including truck movement into and out of the site and fluid pumping, associated with the high-volume hydraulic fracturing, flowback and well testing stages for the Marcellus Shale and other low-permeability gas reservoirs that could be developed by horizontal drilling and high-volume hydraulic fracturing and (2) available mitigation measures that may be employed, with 21 reference, as applicable, to Department Program Policy DEP-00-1, Assessing and Mitigating Noise Impacts. | Yes | 5.18.3<br><br>6.10<br><br>6.12 & 6.13.1<br><br><br>7.10 | Summary of Alpha's Regulatory Survey<br><br>Noise<br><br>Community Character & Site Specific Cumulative Impacts<br><br>Mitigating Noise Impacts | 153<br><br>134-138<br><br>139<br>141<br><br>106-108 | Study of other states that address noise issues.<br><br><br><br>Pad sighting, access roads, multi-well pads. |
| The dSGEIS will discuss whether any additional production equipment or activities would be found at Marcellus Shale wells that would necessitate new or different mitigation measures. | Partial | 6.10 | Noise | 134-138 | Not specific, general statements about typical noise levels for additional construction vehicles. No quantitative review on noise related to additional traffic. |
| **4.1.2 Visual Impacts** | | | | | |
| The dSGEIS will review the factors summarized below in the context of anticipated Marcellus Shale operations, with reference, as applicable, to Department Program Policy DEP-00-2, Assessing and Mitigating Visual Impacts: | See below | | | | Section 2.4.11 describes the visual resources for the area. |
| The possibility of larger well pads. | Yes | 6.9 | Visual Impacts | 131-133 | |
| The possibility of larger lined pits for temporary storage | | | | | |

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| of fluids associated with high-volume hydraulic fracturing operations.<br>Greater number of trucks and tanks associated with multi-stage, high-volume hydraulic fracturing operations.<br>Longer duration of impacts if multiple wells are drilled from a single surface location. | | 7.9 | Protecting Visual Resources | 130-105 | Sections 6 and 7 do not specifically mention greater number of trucks.. |
| For informational purposes, the dSGEIS will include photographs of a variety of actual well sites in New York developed since the publication of the GEIS to illustrate their appearance during each stage of operations. | Yes | NA | Photos 6.2 – 6.13 | 156-163 | |
| Aerial views of existing densely drilled areas in New York will be included to assess whether cumulative long-term visual impacts exist in areas that have been developed for natural gas production. | Yes | NA | Photos 5.8 – 5.11 | 15-18 | |
| The dSGEIS will propose thresholds for site-specific reviews of potential visual impacts in close proximity to the Catskill Forest Preserve, the Upper Delaware Scenic Byway and the Upper Delaware Scenic and Recreational River. | Partial | 2.3 | Project Location | 7 | States drilling will not occur on State-owned land in Adirondack & Catskill Forest Preserve. Does not Mention Upper Delaware Scenic Byway in Document. |
| **4.1.3 Air Quality Impacts** | | | | | |
| The dSGEIS will examine the following topics with respect to potential air quality impacts at well sites where horizontal drilling and high-volume hydraulic fracturing will be employed: | (Sections addressing Air Quality) | 6.5<br>6.6<br><br>7.5<br>7.6<br><br>App. 16<br><br>App. 17 | Air Quality<br>Greenhouse Gas Emissions<br><br>Protecting Air Quality<br>Mitigating Greenhouse Gas Emissions<br>Applicability of $NO_x$ RACT Requirements<br>Applicability of Proposed | 108<br>109-128<br><br>83 - 90<br>90 - 95 | |

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| | | App. 18<br><br>App 19 | Revisions to 40 CFG Part 63 Subpart ZZZZ<br>Clean Air Act Facility Definition<br>Greenhouse Gas Emissions | | |
| 6 NYCRR Part 21230 applicability and potential local impacts of air toxics and odors at well sites, based on a reasonable worst-case scenario for expected emissions of natural gas contaminants and hydraulic fracturing additives. Modeling will be in accordance with Department Policy DAR-1, Guidelines for the Control of Toxic Ambient Air Contaminants. | Partial | 6.5<br>App. 16<br><br>App. 17<br><br>6.5.2 | Air Emissions<br>Applicability of $NO_x$ RACT Requirements<br>Applicability of Proposed Revisions to 40 CFR Part 63 Subpart ZZZZ<br>Air Quality Assessment | 48–108<br><br><br><br>57-108 | No direct discussion on Part 212 applicability. Appendix 16&17 contain general info on applicability of $NO_x$ RACT and proposed revisions to 40 CFR Part 63 Subpart ZZZZZ.<br><br>Complete and detailed modeling using AERMOD |
| Applicability and possible impacts of 40 CFR 63 Subpart HH32with respect to ongoing well operations such as gas dehydration. | Yes | 6.5.1.2 | Natural Gas Production Facilities NESHAP 40 CFR 63 Subpart HH32 | 51-52 | |
| Investigation of the potential applicability of major source status under 6 NYCRR Part 20133 for diesel equipment that may be present at multi-well sites for more than 30 days. | No | | | | Extensive discussion on diesel, but no mention of 6 NYCRR Part 201. |
| Investigation of possible impacts on ozone attainment. | No | | | | No mention of ozone attainment |
| Investigation of the expected amount of sulfur dioxide emissions to determine if mitigation measures such as requiring low-sulfur fuel are advisable. | Yes | 6.5.2<br>7.5<br>App. 17 | Air Quality Assessment<br>Protecting Air Quality<br>40CFR63Subpart ZZZZ | <br>86 | In-depth review<br><br>Proposed mandate of low sulfur. |
| **4.2.1 Water Withdrawals** | | | | | |
| The following concerns related to water withdrawals, including the potential cumulative impact of numerous withdrawals, will be addressed in the dSGEIS:. | | | | | (see below) |
| potential effects on volume of water available for other needs, including public water supply, | Yes | 6.1.1.6<br>6.1.1.7 | Aquifer Depletion<br>Cumulative Water Withdrawal Impacts | 6-7<br>7-9 | |
| potential degradation of a stream's designated best use, | Partial | 6.1.1.2 | Degradation of a Stream's Best Use | 4 | Does not discuss impacts, simply states uses are dependent on sufficient water. |
| potential impacts to downstream wetlands and users, | Yes | 6.1.1.5 | Impacts to Downstream Wetlands | 6 | Basic overview |

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| potential impacts to fish and wildlife, and | Yes | 6.1.1.3<br>6.1.1.4 | Impacts to Aquatic Habitat<br>Impacts to Aquatic Ecosystems | 5<br>5 | |
| potential aquifer depletion. | Yes | 6.1.1.6 | Aquifer Depletion | 6-7 | |
| The dSGEIS will also discuss potential mitigation measures to prevent transfer of invasive species from one surface waterbody to another as a result of water withdrawal and subsequent discharge of unused fresh water into another surface waterbody. | Yes | 3.2.2.7<br><br>6.4<br>7.4<br><br>Table 7.3 | Invasive Species Survey and Map<br>Ecosystems and Wildlife<br>Protecting Ecosystems and Wildlife<br>Summary of Regs Pertaining to Invasive Species | 11<br><br>43-47<br>73-79<br><br>80-82 | Required part of EAF Addendum<br><br>ID of plant and aquatic inv. species |
| The dSGEIS will evaluate the sufficiency of existing authorities (internal to DEC and external), protocols and regulations for addressing the potential impacts, including cumulative impacts, of water withdrawal associated with shale gas development by high-volume hydraulic fracturing. | Yes | 6.1.1.7<br><br>7.1<br><br>7.1.1 | Cumulative Water Withdrawal Impacts<br>Protecting Water Resources<br>Water Withdrawal Regulatory and Oversight Programs | 7-14<br><br>2<br><br>3-21 | Existing jurisdictions and regulatory programs, discussion of three methodologies for mitigation of SW withdrawal impacts, and NYSDEC chosen methodology. |
| The dSGEIS will propose parameters for well-specific review of the identified water source for high-volume hydraulic fracturing. Duplication of an existing authority's efforts will be avoided to the extent possible while still meeting the Department's resource protection objectives. | Yes | 3.2.2<br>3.2.3<br><br><br>App. 6 | EAF Addendum<br>Site Specific SEQRA Determination<br><br>Proposed EAF Addendum | 8-11<br>12-13 | |
| The dSGEIS will explore the opportunities and standards for alternate sources of water, such as waste water treatment plant effluent, cooling water, or saline aquifers. | No | 5.7 | Source Water for High Volume Hydraulic Fracturing | 73 | Indicates potential alternate water sources are discussed in Chapter 7. Did no find information related to alternate water sources in Chapter 7. |
| **4.2.1.4 Assessment of Water Withdrawals for High-Volume Hydraulic Fracturing in the Marcellus Shale and Other Low Permeability Gas Reservoirs** | | | | | |
| The dSGEIS's proposed parameters for well-specific review of water sources in the Susquehanna and Delaware River Basins will be based upon the Department's conclusions regarding the adequacy of the | Yes | 7.1.1 | Water Withdrawal Regulatory and Oversight Programs | 3-21 | |

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| reviews done, respectively, by SRBC and DRBC, including review of the methodologies used to protect a surface water body's designated best use during periods of low flow. | | | | | |
| For well permits which propose new water withdrawals outside the Susquehanna and Delaware River Basins for high-volume hydraulic fracturing of the Marcellus Shale and other low-permeability formations, and to the extent found necessary within the Basins, the dSGEIS will discuss potential review parameters and mitigation measures such as, but not limited to: | (see below) | | | | |
| in-stream species evaluation, | No | 7.1.1.1 | Impact to Aquatic Ecosystems | 5 | Indicates 6NYCRR Part 608 (Use and Protection of Waters) contains Subparts to address fish and wildlife species, but does not elaborate. |
| assessment of combined impact of the proposed withdrawal and upstream/downstream intakes within a certain distance, | No | | | | Did not find discussion on upstream/downstream combined impact. |
| evaluation of impacts to aquatic resources, competing users and the stream's designated best use during periods of low flow, | No | 7.1.1.5 | Cumulative Impacts | 22 | Mentions Natural Flow Regime Method could address adverse impacts IF each permitted user reported properly. No evaluation completed. |
| passby flow requirement, | Yes | 2.4.8<br>7.1.1.4 | Water Resources Replenishment<br>Natural Flow Regime Method | 32<br>18 | |
| reduction or discontinuance of the withdrawal during periods of low flow, | Partial | 2.4.8<br>7.1.1.4 | Water Resources Replenishment<br>Natural Flow Regime Method | 32<br>18 | Appears to be addressed by Natural Flow Regime Method, but no direct discussion. |
| limitation of withdrawal rates and locations as necessary to maintain compliance with the Department's narrative flow standard for fresh surface water and protect best uses of the water body even during low flow periods, | Partial | 2.4.8<br>7.1.1.4 | Water Resources Replenishment<br>Natural Flow Regime Method | 32<br>18 | Appears to be addressed by Natural Flow Regime Method, but no direct discussion. |
| water intake design to minimize aquatic impacts from impingement and entrainment, | No | | | | Mentioned in SRBC and DRBC sections, but not for areas outside of SRBC/DRBC. |

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| controls or treatment to prevent the spread of aquatic invasive or nuisance species, | | 3.2.2.7<br><br>6.4<br>7.4<br><br>Table 7.3 | Invasive Species Survey and Map<br><br>Ecosystems and Wildlife<br>Protecting Ecosystems and Wildlife<br><br>Summary of Regs Pertaining to Invasive Species | 11<br><br>43-47<br>73-79<br><br>80-82 | Part of EAF Addendum<br><br>ID of plant and aquatic inv. species |
| evaluation of alternative water sources such as produced brine, flowback, or other available waste water streams, and | No | | | | |
| requirement for mitigation through water storage or conservation releases. | No | | | | |
| For well permits which propose new consumptive uses of potable water from public water supply systems, the dSGEIS will additionally address potential aquifer depletion from the incremental increase in withdrawals. | Partial | 7.1.1.1 | Aquifer Depletion | 6 | Only mentions NYSDEC Division of Water's Pump Test Procedures for Water Supply applications will be used in conjunction with SRBCs aquifer testing protocol. |
| **4.2.2 Groundwater Quality** | | | | | |
| The dSGEIS will evaluate whether anticipated horizontal drilling and high-volume hydraulic fracturing in the Marcellus Shale or other low-permeability formations in New York have the potential to create any groundwater pollution scenario that is not examined by the GEIS or is not addressed by existing requirements and practices. This will include examination of the potential need for setbacks from private water wells and springs used for domestic supply. | Yes | 6.1.3 through 6.1.8 | Water Resources | 16-40 | Surface spills, drilling, additives, flowback water, surface storage, transport, and disposal |
| The dSGEIS will evaluate potential requirements for private water well sampling, testing and monitoring by gas well operators. | Yes | 7.1.4.1 | Private Water Well Testing | 38-39 | Very limited parameter list compared to listed chemicals in hydrofrac solution. |
| **4.2.3 Surface Water Quality** | | | | | |
| The dSGEIS will evaluate whether anticipated water use or other activities associated with Marcellus Shale development in New York, including in proximity to the Upper Delaware Scenic and Recreational River, have the potential to create any surface water impact that is not | Yes | 7.1.12.2 | Setbacks from Surface Water Resources | 69-72 | |

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| examined by the GEIS or is not addressed by existing authorities, requirements and practices. This will include the examination of the potential need for increased surface water setbacks for sites where horizontal drilling and high-volume hydraulic fracturing are proposed. | | | | | |
| **4.2.3.1 Surface Municipal Water Supplies** | | | | | |
| the dSGEIS will examine whether any additional environmental reviews or special mitigating permit conditions are necessary to protect surface reservoirs in the New York City Watershed. | Yes | 7.1.12.2 | Setbacks from Surface Water Resources | 69-72 | |
| **4.2.3.2 Stream Disturbance** | | | | | |
| the dSGEIS will propose parameters for well-specific review of the identified source of water for high-volume hydraulic fracturing operations. The need for an Article 15 permit, if it has not already been obtained, would be identified during this review along with the potential impacts and required mitigation measures. | Yes | 3.2.2<br>3.2.3<br><br><br>App. 6 | EAF Addendum<br>Site Specific SEQRA Determination<br><br>Proposed EAF Addendum | 8-11<br>12-13 | |
| **4.2.3.3 Erosion and Sedimentation Control** | | | | | |
| The dSGEIS will review applicability of the Department's General Stormwater Permit and the best management practices available to well operators. | Yes | 7.1.2 | Stormwater | 23-25 | SWPPP |
| **4.2.4 New York City Watershed** | | | | | |
| The dSGEIS will evaluate the sufficiency of existing protocols and regulations for protecting New York City's subsurface water supply infrastructure from potential impacts related to gas well drilling and hydraulic fracturing. | Yes | 7.1.10<br><br><br>7.1.11 | Protecting NYC's Subsurface Water Supply Infrastructure<br>Protecting the quality of NYCs Drinking Water Supply | 61-62<br><br><br>62-64 | |
| The dSGEIS will address the need for any exclusion zone, additional environmental review and additional special permit conditions. Protection of correlative rights with respect to offset drainage from wells on properties adjacent to any exclusion zone will also be considered. | Partial | 7.1.12.2 | Setbacks from Surface Water Resources | 69-72 | Could not find a mention of correlative rights with respect to offsite drainage. |
| As stated above for New York City water supply infrastructure, the dSGEIS will evaluate the sufficiency | Yes | 7.1.11 | Protecting the quality of NYCs Drinking Water | 62-64 | |

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| of existing protocols and regulations for protecting New York City's surface water reservoirs, with consideration of the fact that New York City controls a substantial amount of the acreage surrounding the reservoirs through fee ownership or conservation easements so that drilling would not occur on such acreage without the City's permission. Like any landowner, the City has the right to enter into leases for mineral rights or other use of its lands. | | 7.1.12.2 | Supply<br>Setbacks from Surface Water Resources | 69-72 | |
| **4.4 Invasive Species** | | | | | |
| The dSGEIS will review the options available to well operators for controlling invasive species at well sites, as determined through consultation between the Division of Mineral Resources and the Department's Office of Invasive Species. | Yes | 6.4<br>7.4<br><br>Table 7.3 | Ecosystems and Wildlife<br>Protecting Ecosystems and Wildlife<br>Summary of Regs Pertaining to Invasive Species | 43-47<br>73-79<br><br>80-82 | Part of EAF Addendum<br><br>ID of plant and aquatic inv. species |
| As stated in Section 4.2.1.4 of this Final Scope, the dSGEIS will discuss potential mitigation measures for preventing the spread of aquatic invasive and nuisance species caused by water withdrawals or transfers. | Yes | 7.4 | Protecting Ecosystems and Wildlife | 73-79 | |
| **4.5 Floodplains** | | | | | |
| The dSGEIS will examine whether any additional protections or environmental reviews are needed for drilling sites in floodplains where horizontal drilling and high volume hydraulic fracturing are proposed. | Yes | 7.2 | Protecting Floodplains | 72 | Addressed with EAF and Supplemental Permit |
| **4.6 Freshwater Wetlands** | | | | | |
| The dSGEIS will propose parameters for well-specific review of the identified water source for high-volume hydraulic fracturing. The proposed parameters will address review of potential impacts to downstream wetlands. | Yes | 7.3 | Protecting Freshwater Wetlands | 73 | Addressed with EAF and Supplemental Permit |
| **4.7 Road Use** | | | | | |
| The dSGEIS will describe the types and number of vehicles and trips associated with each stage of typical development at multi-well sites where high-volume hydraulic fracturing will be employed. | Yes | 6.11 | Road Use | 138-139 | |

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| the dSGEIS will identify potential mitigation measures to ameliorate the impacts of short-term, high-volume truck traffic, such as: | Partial | 7.11 | Mitigating Road Use Impacts | 109-110 | Section just re-lists all items below. No additional discussion |
| route selection to maximize efficient driving and public safety, | | | | | (See above) |
| avoidance of peak traffic hours, school bus hours, community events, and overnight quiet periods, | | | | | |
| coordination with local emergency management agencies and highway departments, | | | | | |
| upgrades and improvements to roads that will be traveled frequently for water transport to and from many different well sites, | | | | | |
| advance public notice of any necessary detours or road/lane closures, | | | | | |
| adequate off-road parking and delivery areas at the site to avoid lane/road blockage, and | | | | | |
| use of rail or temporary pipelines where feasible to move water to and from well sites. | | | | | |
| **4.8 Cumulative Impacts** | | | | | |
| The dSGEIS will review and assess the information and methodologies that are available for estimating the potential rate of Marcellus Shale development, and will include a description of likely development based on the information and methodology deemed most applicable and appropriate. | Partial | 6.13.2.1 | Rate of Development and Thresholds | 144-146 | State that accurately estimating rate of development is inherently difficult due to the wide and variable range of the resource, rig, equipment and crew availability, permitting and oversight capacity, leasing, and most importantly, economic factors. |
| The dSGEIS will assess the levels of activity within a reasonable temporal and geographic framework that may result in adverse cumulative impacts with respect to noise, visual effects, air quality and water resources. | Partial | 6.13<br>7.13 | Cumulative Impacts<br>Mitigating cumulative Impacts | 141-146<br>111-112 | Since DEC states it can't accurately prediction rate and amount of development, it can't determining threshold for which development will result in unacceptable cumulative impacts during development |
| The analysis of cumulative water resources impacts will acknowledge and evaluate the methodologies used by | Partial | 6.1.1.7 | Cumulative Water Withdrawal Impacts | 7-16 | Indicate Natural Flow Regime Method to be used to mitigate all surface water removals is option to |

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| SRBC and DRBC to address cumulative impacts related to water withdrawal. Duplication of an existing authority's efforts will be avoided to the extent possible while still meeting the Department's resource protection objectives. Evaluation of cumulative impacts of water withdrawals will consider the scale of other everyday withdrawals, the non-continuous nature of withdrawals for well development, and the likely time frame for taking into account the natural replenishment of water sources. | | 7.1.1.5 | Cumulative Water Withdrawal Impacts | 21-22 | address cumulative impacts. Only mentions surface water withdrawals for areas outside SRBC and DRBC jurisdiction, does not mention what will be used to address groundwater withdrawals |
| In conjunction with the above analyses, the dSGEIS will describe the measures available to prevent or mitigate significant adverse cumulative impacts associated with individual well pads and within defined geographic areas. | Partial | 7.10.3<br>7.11 | Multi-Well Pads<br>Mitigating Road Use Impacts | 107-108<br>109-110 | Noise impacts<br>Includes description for multi well pad, but does not expand to a defined geographic location (see stated limited factors above). |
| **4.9 Community Character** | | | | | |
| Evaluation of whether any aspect of multi-well site development or high-volume hydraulic fracturing of shale wells could be expected to change the GEIS's conclusion that major long-term changes to land use patterns, traffic and the need for public services are not anticipated as the result of gas well development. This will include review of the compatibility of shale gas development with other land uses such as agriculture, tourism, and alternative energy development. | Partial | 6.11<br>6.12<br>7.11<br>7.12 | Road Use<br>Community Character Impacts<br>Mitigating Road Use Impacts<br>Mitigating Community Character Impacts | 138-139<br>139-141<br>109-110<br>110-111 | Basic conclusion of reduced pad area=lower impacts, even with additional trucking for frac water<br>No additional evaluation of agriculture, tourism, or alt. energy development.<br>Suggests local gov't to be proactive in applying NYS traffic laws. |
| Evaluation of whether drilling and high-volume hydraulic fracturing of horizontal shale wells have any potential positive or negative community impact, including potential environmental justice impacts. | Partial | 6.12.2 | Environmental Justice | 140-141 | Simply states SGEIS/SEQRA process will provide opportunity for input and protection to communities, drilling locations are determined by location of gas, and land owners/surrounding community will benefit with revenue. |
| Evaluation of potential economic and energy supply impacts of developing the Marcellus Shale and other low-permeability reservoirs in New York. | No | | | | |
| **5.0 PERMIT PROCESS AND REGULATORY COORDINATION** | | | | | |
| The dSGEIS will include, for public review and comment, a proposed EAF Addendum for shale well | Yes | 3.2.2 | EAF Addendum | 8 | |

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| applications in New York that include plans for high-volume hydraulic fracturing. Recommendations received during scoping regarding the information that should be required with well permit applications will be evaluated as part of the EAF development process. | | App. 6 | Proposed EAF Addendum | | |
| The dSGEIS will examine the extent of necessary additional coordination with other agencies such as the Susquehanna and Delaware River Basin Commissions, the New York City Department of Environmental Protection, and the National Park Service which reviews projects in the Upper Delaware Scenic and Recreational River corridor on behalf of the Upper Delaware Council. It should be noted that DEC is already represented on both River Basin Commissions and on the Upper Delaware Council, and is actively engaged with NYCDEP regarding protection of the City's drinking water supply | Yes | 8.1 | Interagency Coordination | 1-6 | Includes statements on SRBC and DRBC. |
| The dSGEIS will provide an updated version of Table 15.1 in the GEIS which summarizes the interagency coordination involved in the regulation of oil, gas, solution mining, and brine disposal operations in New York State. | Yes | NA | Table 8.1 | 8-10 | Updated table attached to Chapter 8 |
| **5.1 Public and Local Government Participation** | | | | | |
| The dSGEIS will consider whether the Department should require the notification to include other information such as anticipated truck traffic or any planned shipments of spent fluids to municipal waste water treatment plants, which would provide the opportunity for local governments to interact directly with the permittee or the waste hauler regarding these issues, and to involve the public as the municipality may deem appropriate. | No | | | | No explanation in Permit Process and Coordination – Local Governments. Also didn't see anything in Chapter 5, 6 or 7. |
| The dSGEIS will investigate appropriate measures and timing for sharing of information with localities to ensure awareness regarding the proposed action and its potential impacts. | Yes | 8.1.1.3 | Notification to Town Supervisors | 3-4 | DEC to provide notice to town upon initial receipt of first application. |

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| The final SGEIS will be followed by a Findings Statement which will determine the level of public involvement required for the actions evaluated. Proposed Findings will be included in the dSGEIS. | Yes | 3.1<br>3.2 | Use of a GEIS Statement<br>Future SEQRA Compliance | 1-3<br>3-4 | |
| **7.0 ALTERNATIVE ACTIONS** | | | | | |
| Alternatives to be reviewed by the dSGEIS will include: | | | | | (see below) |
| the prohibition of development of Marcellus Shale and other low permeability reservoirs by horizontal drilling and high-volume hydraulic fracturing, and | Yes | 9.1 | Prohibition of Development | 1-3 | |
| use of a phased-permitting approach to developing the Marcellus Shale and other low permeability reservoirs, including consideration of limiting and/or restricting resource development in designated areas. | Yes | 9.2 | Phased Permitting Approach | 3-8 | |
| **8.2 Mapping** | | | | | |
| The dSGEIS will identify the resources used by staff and will also identify reference materials available to the public, including maps. | Partial | | Bibliography | | Each map contains a reference, and each reference is listed in the bibliography, but there is no written section describing availability to the public |