



Regulation of oil and gas operations within the Town of Windsor occurs at both the state and local level. The Colorado Oil and Gas Conservation Commission (COGCC) is the state regulatory agency on oil and gas. The COGCC rules for drilling operations can be found on their webpage: <http://cogcc.state.co.us>. The Town of Windsor also regulates oil and gas operations under Chapter 16, Article 7, Section 60 of the Windsor Municipal Code (<http://www.colocode.com/windsorpdf.html>). The Municipal Code requires that oil and gas operators receive approval of a conditional use grant (CUG) prior to the commencement of any oil and gas operations within the Town of Windsor. The CUG is reviewed by the Planning Commission and Town Board at separate public hearings. The Planning Commission and Town Board have the ability to attach conditions of approval to any oil and gas CUG. Listed in the table below are the conditions of approval typically required by the Planning Commission and Town Board for a CUG alongside the COGCC rules on some of the major topics related to Oil and Gas Operations.

*Areas highlighted in yellow exceed the State's requirements

Oil and Gas Regulation Comparison		
Regulation	Town of Windsor Typical Conditions of Approval	State of Colorado Colorado Oil and Gas Conservation Commission (COGCC) Rules
Access	The Drilling and Site Improvement Plans and supplemental information shall address site access points and haul routes for review and approval based upon the unique characteristics of the site.	COGCC Rule 1002.e(4) Access roads. Existing roads shall be used to the greatest extent practicable to avoid erosion and minimize the land area devoted to oil and gas operations. Roadbeds shall be engineered to avoid or minimize impacts to riparian areas or wetlands to the extent practicable. Unavoidable impacts shall be mitigated. Road crossings of streams shall be designed and constructed to allow fish passage, where practicable and appropriate. Where feasible and practicable, operators are encouraged to share access roads in developing a field. Where feasible and practicable, roads shall be routed to complement other land usage. To the greatest extent practicable, all vehicles used by the operator, contractors, and other parties associated with the well shall not travel outside of the original access road boundary. Repeated or flagrant instance(s) of failure to restrict lease access to lease roads which result in unreasonable land damage or crop losses shall be subject to a penalty under Rule 523.
Air Quality	The applicant shall participate in any required Environmental Protection Agency (EPA) air quality monitoring and/or testing by allowing EPA to install equipment on site for said monitoring and testing. The applicant shall install and operate an emissions control device (ECD) capable of reducing Volatile Organic Compound (VOC) emissions on the subject oil and gas equipment in accordance with Colorado Oil and Gas Conservation Commission (COGCC) and/or the Colorado Department of Public Health and Environment (CDPHE) rules and regulations.	In addition to COGCC rules, the Commission consults with the Colorado Department of Public Health and Environment (CDPHE) on issues of air quality: http://www.colorado.gov/cs/Satellite/CDPHE-DEHS/CBON/1251594746968 COGCC Rule 805. Odors and Dust a. General. Oil and gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare. b. Odors. (1) Compliance.



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Air Quality (cont.)	The applicant shall submit to the Town copies of all air emissions reporting as required by the COGCC and/or the CDPHE's Air Pollution Control Division.	<p>A. Oil and gas operations shall be in compliance with the Department of Public Health and Environment, Air Quality Control Commission, Regulation No. 2 Odor Emission, 5 C.C.R. 1001-4, Regulation No. 3 (5 C.C.R. 1001-5), and Regulation No. 7 Section XVII.B.1 (a-c) and Section XII.</p> <p>B. No violation of Rule 805.b.(1) shall be cited by the Commission, provided that the practices identified in Rule 805.b.(2) are used.</p> <p>(2) Production Equipment and Operations.</p> <p>A. Crude Oil, Condensate, and Produced Water Tanks. All crude oil, condensate, and produced water tanks with uncontrolled actual emissions of volatile organic compounds (VOC) of five (5) tons per year (tpy) or greater, located within 1,320 feet of a Building Unit, or a Designated Outside Activity Area shall use an emission control device capable of achieving 95% control efficiency of VOC and shall obtain a permit as required by Colorado Department of Public Health and Environment, Air Pollution Control Commission Regulation as set forth in 805. b. (1).</p> <p>B. Glycol Dehydrators. All glycol dehydrators with uncontrolled actual emissions of VOC of five (5) tpy or greater, located within 1,320 feet of a Building Unit , or a Designated Outside Activity Area shall use an emission control device capable of achieving 90% control efficiency of VOC and shall obtain a permit as required by Colorado Department of Public Health and Environment, Air Pollution Control Commission Regulation as set forth in 805.b.(1).</p> <p>C. Pits. Pits with uncontrolled actual emissions of VOC of five (5) tpy or greater shall not be located within 1,320 feet of a Building Unit, or a Designated Outside Activity Area. For the purposes of this section, compliance with Rule 902.c is required. Operators may provide site-specific data and analyses to COGCC staff establishing that pits potentially subject to this subsection do not have a potential to emit VOC of five (5) tpy or greater.</p>



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Air Quality (cont.)		<p>D. Pneumatic Devices. Low- or no-bleed pneumatic devices must be used when existing pneumatic devices are replaced or repaired, and when new pneumatic devices are installed.</p> <p>(3) Well completions.</p> <p>A. Green completion practices are required on oil and gas wells where reservoir pressure, formation productivity, and wellbore conditions are likely to enable the well to be capable of naturally flowing hydrocarbon gas in flammable or greater concentrations at a stabilized rate in excess of five hundred (500) MCFD to the surface against an induced surface backpressure of five hundred (500) psig or sales line pressure, whichever is greater. Green completion practices are not required for exploratory wells, where the wells are not sufficiently proximate to sales lines, or where green completion practices are otherwise not technically and economically feasible.</p> <p>B. Green completion practices shall include, but not be limited to, the following emission reduction measures:</p> <ul style="list-style-type: none"> i. The operator shall employ sand traps, surge vessels, separators, and tanks as soon as practicable during flowback and cleanout operations to safely maximize resource recovery and minimize releases to the environment. ii. Well effluent during flowback and cleanout operations prior to encountering hydrocarbon gas of salable quality or significant volumes of condensate may be directed to tanks or pits (where permitted) such that oil or condensate volumes shall not be allowed to accumulate in excess of twenty (20) barrels and must be removed within twenty-four (24) hours. The gaseous phase of non-flammable effluent may be directed to a flare pit or vented from tanks for safety purposes until flammable gas is encountered. iii. Well effluent containing more than ten (10) barrels per day of condensate or within two (2) hours after first encountering hydrocarbon gas of salable quality shall be directed to a combination of sand traps, separators, surge vessels, and tanks or other equipment as needed to ensure safe separation of sand,



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Air Quality (cont.)		<p>hydrocarbon liquids, water, and gas and to ensure salable products are efficiently recovered for sale or conserved and that non-salable products are disposed of in a safe and environmentally responsible manner.</p> <p>iv. If it is safe and technically feasible, closed-top tanks shall utilize backpressure systems that exert a minimum of four (4) ounces of backpressure and a maximum that does not exceed the pressure rating of the tank to facilitate gathering and combustion of tank 800-5 As of August 1, 2013 vapors. Vent/backpressure values, the combustor, lines to the combustor, and knock-outs shall be sized and maintained so as to safely accommodate any surges the system may encounter.</p> <p>v. All salable quality gas shall be directed to the sales line as soon as practicable or shut in and conserved. Temporary flaring or venting shall be permitted as a safety measure during upset conditions and in accordance with all other applicable laws, rules, and regulations.</p> <p>C. An operator may request a variance from the Director if it believes that using green completion practices is infeasible due to well or field conditions, or would endanger the safety of wellsite personnel or the public.</p> <p>D. In instances where green completion practices are not technically feasible, operators shall employ Best Management Practices (BMPs) to reduce emissions. Such BMPs shall consider safety and shall include measures or actions to minimize the time period during which gases are emitted directly to the atmosphere, and monitoring and recording the volume and time period of such emissions.</p> <p>c. Fugitive dust. Operators shall employ practices for control of fugitive dust caused by their operations. Such practices shall include but are not limited to the use of speed restrictions, regular road maintenance, restriction of construction activity during high-wind days, and silica dust controls when handling sand used in hydraulic fracturing operations. Additional management practices such as road surfacing, wind breaks and barriers, or automation of wells to reduce truck traffic may also be required if technologically feasible</p>



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		and economically reasonable to minimize fugitive dust emissions.
Clean Streets	Public street clean-up and tracking prevention. The Drilling and Site Improvement Plans and supplemental information shall include a tracking pad for review and approval.	COGCC Rule 1002.f(2)F Vehicle tracking control practices to control potential sediment discharges from operational roads, well pads, and other unpaved surfaces. Practices could include road and pad design and maintenance to minimize rutting and tracking, controlling site access, street sweeping or scraping, tracking pads, wash racks, education, or other sediment controls.
Emergency Containment	The secondary containment berm surrounding all storage vessels shall be designed and constructed to contain a minimum of 110% of the volume of the largest vessel located within the containment area or to State of Colorado standards, whichever requirements are more stringent.	COGCC Rule 604 c. Mitigation Measures. The following requirements apply to an Oil and Gas Location within a Designated Setback Location and such requirements shall be incorporated into the Form 2A or associated Form 2 as Conditions of Approval. (2) Location Specific Requirements – Designated Setback Locations. Subject to Rule 502.b., the following mitigation measures shall apply to any Well or Production Facility proposed to be located within a Designated Setback Location for which a Form 2 Application for Permit to Drill or Form 2A Oil and Gas Location Assessment is submitted on or after August 1, 2013: G. Berm construction. Berms or other secondary containment devices in Designated Setback Locations shall be constructed around crude oil, condensate, and produced water storage tanks and shall enclose an area sufficient to contain and provide secondary containment for one-hundred fifty percent (150%) of the largest single tank. Berms or other secondary containment devices shall be sufficiently impervious to contain any spilled or released material. All berms and containment devices shall be inspected at regular intervals and maintained in good condition. No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel. Refer to American Petroleum Institute Recommended Practices, API RP - D16.
Equipment	The applicant shall utilize electric motors in order to mitigate the noise impacts to the neighboring properties.	COGCC Rule 802. Noise Abatement a. The goal of this rule is to identify noise sources related to oil and gas operations that impact surrounding



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Equipment (cont.)	<p>The applicant shall ensure that the wells and tanks are of the minimum size required to satisfy present and future functional requirements to mitigate visual impacts.</p> <p>Low profile tanks shall be utilized and shall be installed in the least visible manner possible.</p> <p>All tanks and equipment shall be painted to blend-in with the surrounding landscape.</p>	<p>landowners and to implement cost-effective and technically-feasible mitigation measures to bring oil and gas facilities into compliance with the allowable noise levels identified in subsection c. Operators should be aware that noise control is most effectively addressed at the siting and design phase, especially with respect to centralized compression and other downstream “gas facilities” (see definition in the 100 Series of these rules).</p> <p>b. Oil and gas operations at any well site, production facility, or gas facility shall comply with the following maximum permissible noise levels.</p> <table border="1"> <thead> <tr> <th>ZONE</th> <th>7:00 am to next 7:00 pm</th> <th>7:00 pm to next 7:00 am</th> </tr> </thead> <tbody> <tr> <td>Residential/Agricultural/Rural</td> <td>55 db(A)</td> <td>50 db(A)</td> </tr> <tr> <td>Commercial</td> <td>60 db(A)</td> <td>55 db(A)</td> </tr> <tr> <td>Light industrial</td> <td>70 db(A)</td> <td>65 db(A)</td> </tr> <tr> <td>Industrial</td> <td>80 db(A)</td> <td>75 db(A)</td> </tr> </tbody> </table> <p>The type of land use of the surrounding area shall be determined by the Director in consultation with the Local Governmental Designee taking into consideration any applicable zoning or other local land use regulations. In the hours between 7:00 a.m. and the next 7:00 p.m. the noise levels permitted above may be increased ten (10) db(A) for a period not to exceed fifteen (15) minutes in any one (1) hour period. The allowable noise level for periodic, impulsive or shrill noises is reduced by five (5) db(A) from the levels shown.</p> <p>Except as required pursuant to Rule 604.c.(2)A., operations involving pipeline or gas facility installation or maintenance, the use of a drilling rig, completion rig, workover rig, or stimulation is subject to the maximum permissible noise levels for industrial zones.</p>	ZONE	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am	Residential/Agricultural/Rural	55 db(A)	50 db(A)	Commercial	60 db(A)	55 db(A)	Light industrial	70 db(A)	65 db(A)	Industrial	80 db(A)	75 db(A)
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Equipment (cont.)		<p>In remote locations, where there is no reasonably proximate occupied structure or designated outside activity area, the light industrial standard may be applicable.</p> <p>Pursuant to Commission inspection or upon receiving a complaint from a nearby property owner or local governmental designee regarding noise related to oil and gas operations, the Commission shall conduct an onsite investigation and take sound measurements as prescribed herein.</p> <p>c. The following provide guidance for the measurement of sound levels and assignment of points of compliance for oil and gas operations:</p> <ul style="list-style-type: none"> (1) Sound levels shall be measured at a distance of three hundred and fifty (350) feet from the noise source. At the request of the complainant, the sound level shall also be measured at a point beyond three hundred fifty (350) feet that the complainant believes is more representative of the noise impact. If an oil and gas well site, production facility, or gas facility is installed closer than three hundred fifty (350) feet from an existing occupied structure, sound levels shall be measured at a point twenty-five (25) feet from the structure towards the noise source. Noise levels from oil and gas facilities located on surface property owned, leased, or otherwise controlled by the operator shall be measured at three hundred and fifty (350) feet or at the property line, whichever is greater. In situations where measurement of noise levels at three hundred and fifty (350) feet is impractical or unrepresentative due to topography, the measurement may be taken at a lesser distance and extrapolated to a 350-foot equivalent using the following formula: $db(A)_{DISTANCE\ 2} = db(A)_{DISTANCE\ 1} - 20 \times \log_{10} (distance\ 2 / distance\ 1)$ (2) Sound level meters shall be equipped with wind screens, and readings shall be taken when the wind velocity at the time and place of measurement is not more than five (5) miles per hour. (3) Sound level measurements shall be taken four (4) feet above ground level. (4) Sound levels shall be determined by averaging minute-by-minute measurements made over a minimum fifteen (15) minute sample duration if practicable. The sample shall be taken under conditions that are representative of the noise experienced by the complainant (e.g., at night,



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Equipment (cont.)		<p>morning, evening, or during special weather conditions). (5) In all sound level measurements, the existing ambient noise level from all other sources in the encompassing environment at the time and place of such sound level measurement shall be considered to determine the contribution to the sound level by the oil and gas operation(s).</p> <p>d. In situations where the complaint or Commission onsite inspection indicates that low frequency noise is a component of the problem, the Commission shall obtain a sound level measurement twenty-five (25) feet from the exterior wall of the residence or occupied structure nearest to the noise source, using a noise meter calibrated to the db(C) scale. If this reading exceeds 65 db(C), the Commission shall require the operator to obtain a low frequency noise impact analysis by a qualified sound expert, including identification of any reasonable control measures available to mitigate such low frequency noise impact. Such study shall be provided to the Commission for consideration and possible action.</p> <p>e. Exhaust from all engines, motors, coolers and other mechanized equipment shall be vented in a direction away from all building units.</p> <p>f. All Oil and Gas Facilities with engines or motors that are within four hundred (400) feet of Building Units shall be equipped with quiet design mufflers or equivalent. All mufflers shall be properly installed and maintained in proper working order.</p>
Fencing	The Drilling and Site Improvement Plans shall depict fencing of the perimeter of the site. Fencing materials shall be reviewed for approval by the Town based upon the character of the surrounding neighborhood.	<p>COGCC Rule 604.c Mitigation Measures. The following requirements apply to an Oil and Gas Location within a Designated Setback Location and such requirements shall be incorporated into the Form 2A or associated Form 2 as Conditions of Approval.</p> <p>(2) Location Specific Requirements – Designated Setback Locations. Subject to Rule 502.b., the following mitigation measures shall apply to any Well or Production Facility proposed to be located within a Designated Setback Location for which a Form 2 Application for Permit to Drill or Form 2A Oil and Gas Location Assessment is submitted on or after August 1, 2013:</p> <p>M. Fencing requirements. Unless otherwise requested by the Surface Owner, well sites</p>



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Fencing (cont.)		<p>constructed within Designated Setback Locations, shall be adequately fenced to restrict access by unauthorized persons.</p> <p>COGCC Rule 605 Oil and Gas Facilities</p> <p>c. Special Equipment. Under unusual circumstances special equipment may be required to protect public safety. The Director shall determine if such equipment should be employed to protect public safety and if so, require the operator to employ same. If the operator or the affected party does not concur with the action taken, the Director shall bring the matter before the Commission at public hearing.</p> <p>(3) All pumps, pits, and producing facilities shall be adequately fenced to prevent access by unauthorized persons when the producing site or equipment is easily accessible to the public and poses a physical or health hazard.</p> <p>COGCC Rule 1002. Site Preparation and Stabilization</p> <p>a. Effective June 1, 1996:</p> <p>(1) Fencing of drill sites and access roads on crop lands. During drilling operations on crop lands, when requested by the surface owner, the operator shall delineate each drillsite and access road on crop lands constructed after such date by berms, single strand fence, or other equivalent method in order to discourage unnecessary surface disturbances.</p> <p>(2) Fencing of reserve pit when livestock is present. During drilling operations where livestock is in the immediate area and is not fenced out by existing fences, the operator, at the request of the surface owner, will install a fence around the reserve pit.</p> <p>(3) Fencing of well sites. Subsequent to drilling operations, where livestock is in the immediate area and is not fenced out by existing fences, the operator, at the request of the surface owner, will install a fence around the wellhead, pit, and production equipment to prevent livestock entry.</p>
Fire	The applicant shall address and comply with the conditions of Windsor Severance Fire Rescue based upon their review under	<p>COGCC Rule 606A. Fire Prevention and Protection</p> <p>a. Gasoline-fueled engines shall be shut down during fueling operations if the fuel tank is an integral part</p>



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Fire (cont.)	<p>adopted regulations such as the International Fire Code (IFC). The 2012 IFC can be found here: http://publicecodes.cyberregs.com/icod/ifc/2012/index.htm</p>	<p>of the engine.</p> <p>b. Handling, connecting and transfer operations involving liquefied petroleum gas (LPG) shall conform to the requirements of the State Oil Inspector.</p> <p>c. Flammable liquids storage areas within any building or shed shall:</p> <ol style="list-style-type: none"> (1) be adequately vented to the outside air; (2) have two (2) unobstructed exits leading from the building in different directions if the building is in excess of five hundred (500) square feet. (3) be maintained with due regard to fire potential with respect to housekeeping and materials storage; (4) be identified as a hazard and appropriate warning signs posted; <p>d. Flammable liquids shall not be stored within fifty (50) feet of the wellbore, except for the fuel in the tanks of operating equipment or supply for injection pumps. Where terrain and location configuration do not permit maintaining this distance, equivalent safety measures should be taken.</p> <p>e. Liquefied petroleum gas (LPG) tanks larger than two hundred fifty (250) gallons and used for heating purposes, shall be placed as far as practical from and parallel to the adjacent side of the rig or wellbore as terrain and location configuration permit. Installation shall be consistent with provisions of NFPA 58, "Standards for the Storage and Handling of Liquid Petroleum Gases".</p> <p>f. Smoking shall be prohibited at or in the vicinity of operations which constitute a fire hazard and such locations shall be conspicuously posted with a sign, "No Smoking or Open Flame". Matches and all smoking equipment may not be carried into "No Smoking" areas.</p> <p>g. No source of ignition shall be permitted in an area where smoking has been prohibited unless it is first determined to be safe to do so by the supervisor in charge or his designated representative.</p>



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Fire (cont.)		<p>h. Open fires, transformers, or other sources of ignition shall be permitted only in designated areas located at a safe distance from the wellhead or flammable liquid storage areas.</p> <p>i. Only approved heaters for Class I Division 2 areas, as designated by API RB 500B, shall be permitted on or near the rig floor. The safety features of these heaters shall not be altered.</p> <p>j. Combustible materials such as oily rags and waste shall be stored in covered metal containers.</p> <p>k. Material used for cleaning shall have a flash point of not less than one hundred (100° F) degrees Fahrenheit. For limited special purposes, a lower flash point cleaner may be used when it is specifically required and should be handled with extreme care.</p> <p>l. Firefighting equipment shall not be tampered with and shall not be removed for other than fire protection and firefighting purposes and services. A firefighting water system may be used for wash down and other utility purposes so long as its firefighting capability is not compromised. After use, water systems must be properly drained or properly protected from freezing.</p> <p>m. An adequate amount of fire extinguishers and other firefighting equipment shall be suitably located, readily accessible, and plainly labeled as to their type and method of operation.</p> <p>n. Fire protection equipment shall be periodically inspected and maintained in good operating condition at all times.</p> <p>o. Firefighting equipment shall be readily available near all welding operations. When welding, cutting or other hot work is performed in locations where other than a minor fire might develop, a person shall be designated as a fire watch. The area surrounding the work shall be inspected at least one (1) hour after the hot work is completed.</p> <p>p. Portable fire extinguishers shall be tagged showing the date of last inspection, maintenance or recharge. Inspection and maintenance procedures shall comply with the latest edition of the National Fire Protection</p>



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Fire (cont.)		<p>Association's publication NFPA 10.</p> <p>q. Personnel shall be familiarized with the location of fire control equipment such as drilling fluid guns, water hoses and fire extinguishers and trained in the use of such equipment. They shall also be familiar with the procedure for requesting emergency assistance as terrain and location configuration permit. Installation shall be consistent with provisions of NFPA 58, "Standards for the Storage and Handling of Liquefied Petroleum Gases"</p>
Grading	The Drilling and Site Improvement Plans and supplemental information shall address site grading, including any earth berms for emergency containment.	<p>COGCC Rule 1002</p> <p>f. Stormwater management.</p> <p>(1) All oil and gas locations are subject to the Best Management Practices requirements of Rule 1002.f.(2). In addition, upon the termination of a construction stormwater permit issued by the Colorado Department of Public Health and Environment for an oil and gas location, such oil and gas location is subject to the Post-Construction Stormwater Program requirements of Rule 1002.f.(3), except that such requirements are not applicable to Tier 1 Oil and Gas Locations.</p> <p>(2) Oil and gas operators shall implement and maintain Best Management Practices (BMPs) at all oil and gas locations to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. BMPs shall be maintained until the facility is abandoned and final reclamation is achieved pursuant to Rule 1004. Operators shall employ BMPs, as necessary to comply with this rule, at all oil and gas locations, including, but not limited to, well pads, soil stock piles, access roads, tank batteries, compressor stations, and pipeline rights of way. BMPs shall be selected based on site-specific conditions, such as slope, vegetation cover, and proximity to water bodies, and may include maintaining in-place some or all of the BMPs installed during the construction phase of the facility. Where applicable based on site-specific conditions, operators shall implement BMPs in accordance with good engineering practices, including measures such as:</p> <p style="padding-left: 40px;">A. Covering materials and activities and stormwater diversion to minimize contact of</p>



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Grading (cont.)		<p>precipitation and stormwater runoff with materials, wastes, equipment, and activities with potential to result in discharges causing pollution of surface waters.</p> <ul style="list-style-type: none"> B. Materials handling and spill prevention procedures and practices implemented for material handling and spill prevention of materials used, stored, or disposed of that could result in discharges causing pollution of surface waters. C. Erosion controls designed to minimize erosion from unpaved areas, including operational well pads, road surfaces and associated culverts, stream crossings, and cut/fill slopes. D. Self-inspection, maintenance, and good housekeeping procedures and schedules to facilitate identification of conditions that could cause breakdowns or failures of BMPs. These procedures shall include measures for maintaining clean, orderly operations and facilities and shall address cleaning and maintenance schedules and waste disposal practices. In conducting inspections and maintenance relative to stormwater runoff, operators shall consider seasonal factors, such as winter snow cover and spring runoff from snowmelt, to ensure site conditions and controls are adequate and in place to effectively manage stormwater. E. Spill response procedures for responding to and cleaning up spills. The necessary equipment for spill cleanup shall be readily available to personnel. Spill Prevention, Control, and Countermeasure plans incorporated by reference must be identified in the Post-Construction Stormwater Management Program specified in Rule 1002.f.(3). F. Vehicle tracking control practices to control potential sediment discharges from operational roads, well pads, and other unpaved surfaces. Practices could include road and pad design and maintenance to minimize rutting and tracking, controlling site access, street sweeping or scraping, tracking pads, wash racks, education, or other sediment controls. <p>(3) Operators of oil and gas facilities shall develop a Post-Construction Stormwater Program in compliance with this section no later than the time of termination of stormwater permits issued by the Colorado Department of Public Health and Environment for construction of oil and gas facilities.</p>



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Grading (cont.)		<p>A. The Post-Construction Stormwater Program shall reflect good faith efforts by operators to select and implement BMPs intended to serve the purposes of this rule. BMPs shall be selected to address potential sources of pollution which may reasonably be expected to affect the quality of discharges associated with the ongoing operation of production facilities during the post-construction and reclamation operation of the facilities. Pollutant sources that must be addressed by BMPs, if present, include:</p> <ul style="list-style-type: none"> i. Transport of chemicals and materials, including loading and unloading operations; ii. Vehicle/equipment fueling; iii. Outdoor storage activities, including those for chemicals and additives; iv. Produced water and drilling fluids storage; v. Outdoor processing activities and machinery; vi. Significant dust or particulate generating processes; vii. Erosion and vehicle tracking from well pads, road surfaces, and pipelines; viii. Waste disposal practices; ix. Leaks and spills; and x. Ground-disturbing maintenance activities. <p>B. The Post-Construction Stormwater Program shall be developed, supervised, documented, and maintained by a qualified person(s) with training or prior work experience specific to stormwater management. Employees and subcontractors shall be trained to make them aware of the BMPs implemented and maintained at the site and procedures for reporting needed maintenance or repairs. Documentation shall include a description of the BMPs selected to ensure proper implementation, operation, and maintenance.</p> <p>C. Facility-specific maps, installation specification, and implementation criteria shall also be included when general operating procedures and descriptions are not adequate to clearly describe the implementation and operation of BMPs.</p>



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Lighting	The Drilling and Site Improvement Plans and supplemental information shall include details regarding site lighting fixtures and locations. Security and other site lighting shall utilize full cutoff light fixtures to mitigate light pollution.	COGCC Rule 803. Lighting To the extent practicable, site lighting shall be directed downward and internally so as to avoid glare on public roads and building units within one thousand (1000) feet.
Screening – Temporary	The applicant shall install a buffer to screen the initial drilling activities and installation of site improvements from surrounding neighborhoods and streets. The temporary buffer shall include hay bales to enclose the drilling operations to provide noise mitigation.	COGCC Rule 804. Visual Impact Mitigation Production facilities, regardless of construction date, which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to but slightly darker than the surrounding landscape.
Screening - Permanent	Given the close proximity to residential neighbors, the Drilling and Site Improvement Plans shall depict proposed long-term screening materials including landscaping, earth berms and any other screening methods to mitigate visual impacts.	COGCC Rule 804. Visual Impact Mitigation Production facilities, regardless of construction date, which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to but slightly darker than the surrounding landscape.
Setbacks	Per Municipal Code Section 16-11-80 new low density (zoned E-1, I-L, or I-H) land use proposals must be setback a minimum 150' from existing oil & gas wells Per Municipal Code Section 16-11-90 new high density (all zoning except E-1, I-L, or I-H) land use proposals must be setback a minimum 350' from existing oil & gas wells	COGCC Rule 603 a. Statewide location requirements. (1) At the time of initial drilling, a Well shall be located not less than two hundred (200) feet from buildings, public roads, major above ground utility lines, or railroads. Rule 604 setback requirements apply with respect to Building Units and Designated Outside Activity Areas. (2) A well shall be located not less than one hundred fifty (150) feet from a surface property line. The Director may grant an exception if it is not feasible for the Operator to meet this minimum distance requirement and a waiver is obtained from the offset Surface Owner(s). An exception request letter stating the reasons for the exception shall be submitted to the Director and accompanied by a signed waiver(s) from the offset Surface Owner(s). Such waiver shall be written and filed in the county clerk and recorder's office and with the Director. COGCC Rule 604.a Setbacks. Effective August 1, 2013. (1) Exception Zone Setback. No Well or Production Facility shall be located five hundred (500) feet or less



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Setbacks (cont.)		<p>from a Building Unit except as provided in Rules 604.a.(1) A and B, and 604.b.</p> <p>A. Urban Mitigation Areas. The Director shall not approve a Form 2A or associated Form 2 proposing to locate a Well or a Production Facility within an Exception Zone Setback in an Urban Mitigation Area unless:</p> <ul style="list-style-type: none"> i. the Operator submits a waiver from each Building Unit Owner within five hundred (500) feet of the proposed Oil and Gas Location with the Form 2A or associated Form 2, or obtains a variance pursuant to Rule 502; and ii. the Operator certifies it has complied with Rules 305.a, 305.c., and 306.e.; and 600-4 As of August 1, 2013 iii. the Form 2A or Form 2 contains conditions of approval related to site specific mitigation measures sufficient to eliminate, minimize or mitigate potential adverse impacts to public health, safety, welfare, the environment, and wildlife to the maximum extent technically feasible and economically practicable; or iv. the Oil and Gas Location is approved as part of a Comprehensive Drilling Plan pursuant to Rule 216. <p>B. Non-Urban Mitigation Area Locations. Except as provided in subsection 604.b., below, the Director shall not approve a Form 2 or Form 2A proposing to locate a Well or a Production Facility within an Exception Zone Setback not in an Urban Mitigation Area unless the Operator certifies it has complied with Rules 305.a., 305.c., and 306.e., and the Form 2A or Form 2 contains conditions of approval related to site specific mitigation measures sufficient to eliminate, minimize or mitigate potential adverse impacts to public health, safety, welfare, the environment, and wildlife to the maximum extent technically feasible and economically practicable.</p> <p>(3) High Occupancy Buildings. No Well or Production Facility shall be located one thousand (1,000) feet or less from a High Occupancy Building Unit without Commission approval following Application and Hearing. Exception Zone Setback mitigation measures pursuant to Rule 604.c. shall be required for Oil and Gas Locations within one thousand (1,000) feet of a High Occupancy Building, unless the Commission</p>



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Setbacks (cont.)		<p>determines otherwise.</p> <p>(4) Designated Outside Activity Areas. No Well or Production Facility shall be located three hundred fifty (350) feet or less from the boundary of a Designated Outside Activity. The Commission, in its discretion, may establish a setback of greater than three hundred fifty (350) feet based on the totality of circumstances. Buffer Zone Setback mitigation measures pursuant to Rule 604.c. shall be required for Oil and Gas Locations within one thousand (1,000) feet of a Designated Outside Activity Area, unless the Commission determines otherwise.</p> <p>(5) Maximum Achievable Setback. If the applicable setback would extend beyond the area on which the Operator has a legal right to locate the Well or Production Facilities, the Operator may seek a variance under Rule 502.b. to reduce the setback to the maximum achievable distance.</p>
Waste Disposal	The applicant shall submit to the Town copies of all waste management reports as required by the COGCC and/or the CDPHE rules and regulations.	See COGCC Rule Series 900, Exploration and Production Waste Management: http://cogcc.state.co.us/RR_Docs_new/rules/900Series.pdf
Water Quality	<p>The applicant shall ensure that any hydrocarbon discharges from the site comply with all state and federal water quality requirements.</p> <p>The applicant shall participate in the Colorado Oil and Gas Association (COGA) Baseline Groundwater Quality Sampling Program utilizing independent third party sampling and laboratories and shall provide to the Town test results obtained before and after drilling operations.</p>	<p>In addition to COGCC rules, the Commission consults with the Colorado Department of Public Health and Environment (CDPHE) on issues of water quality: http://www.colorado.gov/cs/Satellite/CDPHE-EHS/CBON/1251594746968</p> <p>609. STATEWIDE GROUNDWATER BASELINE SAMPLING AND MONITORING:</p> <p>a. Applicability and effective date.</p> <p>(1) This Rule 609 applies to Oil Wells, Gas Wells (hereinafter, Oil and Gas Wells), Multi-Well Sites, and Dedicated Injection Wells as defined in the 100-Series Rules, for which a Form 2 Application for Permit to Drill is submitted on or after May 1, 2013.</p> <p>(2) This Rule 609 does not apply to an existing Oil or Gas Well that is re-permitted for use as a Dedicated Injection Well.</p>



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Water Quality (cont.)		<p>(3) This rule does not apply to Oil and Gas Wells, Multi-Well Sites, or Dedicated Injection Wells that are regulated under Rule 608.b., Rule 318A.e.(4), or Orders of the Commission with respect to the Northern San Juan Basin promulgated prior to the effective date of this Rule that provide for groundwater testing.</p> <p>(4) Nothing in this Rule is intended, and shall not be construed, to preclude or limit the Director from requiring groundwater sampling or monitoring at other Production Facilities consistent with other applicable Rules, including but not limited to the Oil and Gas Location Assessment process, and other processes in place under 900-series E&P Waste Management Rules (Form 15, Form 27, Form 28).</p> <p>(5) An operator may elect to install one or more groundwater monitoring wells to satisfy, in full or in part, the requirements of Rule 609.b., but installation of monitoring wells is not required under this Rule.</p> <p>b. Sampling locations. Initial baseline samples and subsequent monitoring samples shall be collected from all Available Water Sources, up to a maximum of four (4), within a one-half (1/2) mile radius of a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well. If more than four (4) Available Water Sources are present within a one-half (1/2) mile radius of a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well, the operator shall select the four sampling locations based on the following criteria:</p> <p>(1) Proximity. Available Water Sources closest to the proposed Oil or Gas Well, a Multi-Well Site, or Dedicated Injection Well are preferred.</p> <p>(2) Type of Water Source. Well maintained domestic water wells are preferred over other Available Water Sources.</p> <p>(3) Orientation of sampling locations. To extent groundwater flow direction is known or reasonably can be inferred, sample locations from both downgradient and up-gradient are preferred over</p>



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Water Quality (cont.)		<p>cross-gradient locations. Where groundwater flow direction is uncertain, sample locations should be chosen in a radial pattern from a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.</p> <p>(4) Multiple identified aquifers available. Where multiple defined aquifers are present, sampling the deepest and shallowest identified aquifers is preferred.</p> <p>(5) Condition of Water Source. An operator is not required to sample Water Sources that are determined to be improperly maintained, nonoperational, or have other physical impediments to sampling that would not allow for a representative sample to be safely collected or would require specialized sampling equipment (e.g. shut-in wells, wells with confined space issues, wells with no tap or pump, non-functioning wells, intermittent springs).</p> <p>c. Inability to locate an Available Water Source. Prior to spudding, an operator may request an exception from the requirements of this Rule 609 by filing a Form 4 Sundry Notice for the Director’s review and approval if:</p> <p>(1) No Available Water Sources are located within one-half (1/2) mile of a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well;</p> <p>(2) The only Available Water Sources are determined to be unsuitable pursuant to subpart b.5, above. An operator seeking an exception on this ground shall document the condition of the Available Water Sources it has deemed unsuitable; or</p> <p>(3) The owners of all Water Sources suitable for testing under this Rule refuse to grant access despite an operator’s reasonable good faith efforts to obtain consent to conduct sampling. An operator seeking an exception on this ground shall document the efforts used to obtain access from the owners of suitable Water Sources.</p> <p>(4) If the Director takes no action on the Sundry Notice within ten (10) business days of receipt, the requested exception from the requirements of this Rule 609 shall be deemed approved.</p>



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Water Quality (cont.)		<p>d. Timing of sampling.</p> <p>(1) Initial sampling shall be conducted within 12 months prior to setting conductor pipe in a Well or the first Well on a Multi-Well Site, or commencement of drilling a Dedicated Injection Well; and</p> <p>(2) Subsequent monitoring: One subsequent sampling event shall be conducted at the initial sample locations between six (6) and twelve (12) months, and a second subsequent sampling event shall be conducted between sixty (60) and seventy-two (72) months following completion of the Well or Dedicated Injection Well, or the last Well on a Multi-Well Site. Wells that are drilled and abandoned without ever producing hydrocarbons are exempt from subsequent monitoring sampling under this subpart d.</p> <p>(3) Previously sampled Water Sources. In lieu of conducting the initial sampling required pursuant to subsection d.(1) or the second subsequent sampling event required pursuant to subsection d.(2), an Operator may rely on water sampling analytical results obtained from an Available Water Source within the sampling area provided:</p> <p style="padding-left: 40px;">A. The previous water sample was obtained within the 18 months preceding the initial sampling event required pursuant to subsection d.(1) or the second subsequent sampling event required pursuant to subsection d.(2); and</p> <p style="padding-left: 40px;">B. the sampling procedures, including the constituents sampled for, and the analytical procedures used for the previous water sample were substantially similar to those required pursuant to subparts e.(1) and (2), below. An operator may not rely solely on previous water sampling analytical results obtained pursuant to the subsequent sampling requirements of subsection d.(2), above, to satisfy the initial sampling requirement of subsection d.(1); and</p> <p style="padding-left: 40px;">C. the Director timely received the analytical data from the previous sampling event.</p> <p>(4) The Director may require additional sampling if changes in water quality are identified during subsequent monitoring.</p>



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Water Quality (cont.)		<p>e. Sampling procedures and analysis.</p> <p>(1) Sampling and analysis shall be conducted in conformance with an accepted industry standard as described in Rule 910.b.(2). A model Sampling and Analysis Plan (“COGCC Model SAP”) shall be posted on the COGCC website, and shall be updated periodically to remain current with evolving industry standards. Sampling and analysis conducted in conformance with the COGCC Model SAP shall be deemed to satisfy the requirements of this subsection f.(1). Upon request, an operator shall provide its sampling protocol to the Director.</p> <p>(2) The initial baseline testing described in this section shall include pH, specific conductance, total dissolved solids (TDS), dissolved gases (methane, ethane, propane), alkalinity (total bicarbonate and carbonate as CaCO₃), major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, phosphorus), major cations (calcium, iron, magnesium, manganese, potassium, sodium), other elements (barium, boron, selenium and strontium), presence of bacteria (iron related, sulfate reducing, slime forming), total petroleum hydrocarbons (TPH) and BTEX compounds (benzene, toluene, ethylbenzene and xylenes). Field observations such as odor, water color, sediment, bubbles, and effervescence shall also be documented. The location of the sampled Water Sources shall be surveyed in accordance with Rule 215.</p> <p>(3) Subsequent sampling to meet the requirements of subpart d.(2) shall include total dissolved solids (TDS), dissolved gases (methane, ethane, propane), major anions (bromide, chloride, sulfate, and fluoride), major cations (potassium, sodium, magnesium, and calcium), alkalinity (total bicarbonate and carbonate as CaCO₃), BTEX compounds (benzene, toluene, ethylbenzene and xylenes), and TPH.</p> <p>(4) If free gas or a dissolved methane concentration greater than 1.0 milligram per liter (mg/l) is detected in a water sample, gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen – 12C, 13C, 1H and 2H) shall be performed to determine gas type. The operator shall notify the Director and the owner of the water well immediately if:</p>



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Water Quality (cont.)		<p>A. the test results indicated thermogenic or a mixture of thermogenic and biogenic gas;</p> <p>B. the methane concentration increases by more than 5.0 mg/l between sampling periods; or</p> <p>C. the methane concentration is detected at or above 10 mg/l.</p> <p>(5) The operator shall notify the Director immediately if BTEX compounds or TPH are detected in a water sample.</p> <p>f. Sampling Results. Copies of all final laboratory analytical results shall be provided to the Director and the water well owner or landowner within three (3) months of collecting the samples. The analytical results, the surveyed sample Water Source locations, and the field observations shall be submitted to the Director in an electronic data deliverable format.</p> <p>(1) The Director shall make such analytical results available publicly by posting on the Commission’s web site or through another means announced to the public.</p> <p>(2) Upon request, the Director shall also make the analytical results and surveyed Water Source locations available to the Local Governmental Designee from the jurisdiction in which the groundwater samples were collected, in the same electronic data deliverable format in which the data was provided to the Director.</p> <p>g. Liability. The sampling results obtained to satisfy the requirements of this Rule 609, including any changes in the constituents or concentrations of constituents present in the samples, shall not create a presumption of liability, fault, or causation against the owner or operator of a Well, Multi-Well Site, or Dedicated Injection Well who conducted the sampling, or on whose behalf sampling was conducted by a third-party. The admissibility and probity of any such sampling results in an administrative or judicial proceeding shall be determined by the presiding body according to applicable administrative, civil, or evidentiary rules.</p>



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Additional Notes Typically Required on Approved Plans	<ol style="list-style-type: none"> 1. The applicant shall comply with all rules and regulations of the Colorado Oil and Gas Conservation Commission (COGCC). 2. The applicant shall comply with all rules and regulations of the Colorado Department of Public Health and Environment (CDPHE). 3. The applicant shall maintain on-going compliance with all conditions of the Town and Windsor-Severance Fire Rescue. 4. The facilities shall be kept clean and otherwise properly maintained at all times. 5. The existing access may be utilized for oil and gas well activities. This access point is temporary and will be required to be removed at such time that permanent access is available in the future. 	