



Land Use

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BOULDER COUNTY BOARD OF COUNTY COMMISSIONERS

November 15, 2016, 12:00 P.M.

Commissioners' Hearing Room, Third Floor
Boulder County Courthouse
Boulder, Colorado

Docket DC-16-0004: Amendments to Oil and Gas Development Regulations

Public Hearing for the Board of County Commissioners to consider proposed Land Use Code amendments addressing oil and gas development within the Boulder County Land Use Code

Staff: Kimberly Sanchez, Chief Planner (Land Use Department)
David Hughes, Deputy County Attorney (County Attorney's Office)

AGENDA

1. COUNTY STAFF PRESENTATION
2. PUBLIC COMMENT (3-min allowance per individual speaker**)
3. BOARD OF COUNTY COMMISSIONERS DISCUSSION/DIRECTION TO STAFF

**Time may be pooled (up to 10 minutes maximum) provided all individuals who are pooling time are present.

All public comment received to date is available on the County's oil and gas website at:

<http://www.bouldercounty.org/dept/landuse/pages/oilgas.aspx>

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Item	Pages
o Land Use Department Memo	1 – 11
o Draft Regulations (Exhibit A), as revised by Planning Commission	A1 – A37
o Resolution 2016-65, terminating the Temporary Moratorium First Enacted by Resolution 2012-16, as Extended and Amended by Resolutions 2012-46, 2013-18, 2013-50, 2013-55, 2013-56, 2014-88, and 2015-23 and establishing a New Moratorium on Processing Oil and Gas Development Applications until November 18, 2016 (Exhibit B)	B1–B5
o Boulder County Voluntary Oil and Gas Inspection Program- IR Camera Data (Exhibit C)	C1

ACTION REQUESTED FROM BOARD OF COUNTY COMMISSIONERS

Today's public hearing is for the Board of County Commissioners to consider the Boulder County Land Use Code amendments ("Draft Regulations") that update the County's review of oil and gas development in unincorporated Boulder County. The Draft Regulations reflect direction given to staff by the Board of County Commissioners (BOCC) in May 2016 after a Colorado Supreme Court decision that overturned efforts by Longmont and Fort Collins to limit oil and gas drilling in the form of hydraulic fracturing.

Planning Commission Action (October 2016)

The Planning Commission heard this docket and took public testimony at a public hearing on October 12, 2016. On October 27, 2016, they then convened for a follow-up public meeting to take action on the docket. At the October 27, 2016 public meeting, the Planning Commission voted (9-0) to:

- A. Approve and recommend approval of the proposed regulations (Docket DC-16-0004) to the Board of County Commissioners with the edits and comments provided at the October 27, 2016 public meeting, along with an additional focus on creating a robust baseline testing and a monitoring program of air, water, and soils, and how to fund inspections and monitoring at the county level;
- B. Recommend that the Board of County Commissioners continue with a multi-pronged approach to addressing oil and gas development and consider a temporary moratorium on the processing of the required development plans for local oil and gas permits, for a period of time less than 5 years, to craft additional regulations based on new and recently published studies.

Board of County Commissioners Action

Following today's staff presentation and public testimony, staff requests that the BOCC discuss the Draft Regulations and provide direction to staff. Staff will bring back any necessary revisions to BOCC on November 17, at which time we request that the Board deliberate and take final action on the proposed text amendments.

Anticipated Schedule for Review of the Draft Regulations

Board of County Commissioners

- **Tuesday, Nov. 15, 12 p.m.** Board of County Commissioners public **hearing** – public comment to be taken. (Note: Online speaker sign-ups began on Nov. 1. Limit 3 min. per speaker)
- **Thursday, Nov. 17 11 a.m.** Board of County Commissioners public **meeting** – no further testimony will be taken.

Meetings (and any updates to the schedule) will be posted on the County's oil and gas website: <http://www.bouldercounty.org/dept/landuse/pages/oilgas.aspx>

Boulder County's current moratorium remains in effect until November 18, 2016.

BACKGROUND

Boulder County is extremely concerned about the potential for expanded oil and gas development within the County and supports appropriate local restrictions to mitigate the impacts of these activities. To ensure that the County's Comprehensive Plan and Land Use regulations were as thorough and up-to-date as possible, the BOCC enacted a temporary moratorium on February 2,

2012, on the processing of county oil and gas development applications. (Resolution 2012-16). On November 13, 2014, the Commissioners voted to extend the county's moratorium until July 1, 2018 (Resolution 2014-88). The purpose of these moratoria were to allow County staff a reasonable amount of time to explore the adequacy of the County's Comprehensive Plan policies and Development Plan Review (DPR) regulations, based upon a more informed assessment of industry activities and trends, anticipated associated land use impacts, and an appropriate regulatory response at the County level. The resolutions directed County staff to prepare necessary amendments to the Land Use Code to ensure that the development of new oil and gas operations within Boulder County is regulated in a manner to ensure protection of the environment, and the health, safety and welfare of the county.

The predominant reasons behind the moratorium included the recently rapid pace of development of the oil and gas industry in the Denver-Julesburg Basin generally and Wattenberg Field in particular; potentially major changes in drilling and resource recovery methods and technology; growing public concern, County-wide, statewide and nationwide, over hydraulic fracturing operations including possible adverse air and water quality impacts and ineffective waste disposal methods; the impacts associated with evolving industry technologies in such areas as truck traffic and road usage, land surface disturbance and reclamation, location and extent of structures (well pads, tank batteries, fencing, and the like), noise and odor, and wildlife, soil, air and water resources; major amendments over the past five or so years to the Colorado Oil and Gas Conservation Commission's (and related state agencies') regulations, as well as the growing involvement of federal agencies such as the U.S. Environmental Protection Agency; the outdated nature of the County's oil and gas DPR regulations which were enacted in 1993 and never substantively amended thereafter; and the outpouring of letters, e-mails, and other expressions of concern by residents of Boulder County who are worried about existing and future oil and gas development plans and questioning the ability of state and local regulation to deal with associated impacts.

Ultimately the Planning Commission adopted new Comprehensive Plan policies in August 2012, and the BOCC adopted new regulations in December 2012. The new regulations were never in force due to the moratorium extension.

Colorado Supreme Court Decisions

On May 2, 2016, the Colorado Supreme Court overturned efforts by the Front Range cities of Fort Collins and Longmont to limit oil and gas drilling in the form of hydraulic fracturing. In light of these decisions, the Board of County Commissioners voted on May 19, 2016, to terminate the temporary moratorium and establish a new moratorium until November 18, 2016. (Resolution 2016-65). The purpose of the new temporary moratorium was to provide the County enough time to review the oil and gas regulations that the County adopted December 2012, and adopt changes that fit with the current status of oil and gas drilling operations. Specifically, the Board asked staff to analyze and recommend necessary regulatory updates in the following areas:

- re-evaluation of the Expedited and Standard tracks for review of new wells in the December 2012 regulations;

- county air regulations that match or exceed new AQCC regulations, including tankless drilling and production;
- evaluation of impacts and mitigation methods for large-scale facilities, consolidated multi-well pad sites, and their ancillary facilities;
- adequate protection of the floodplain;
- improvements concerning pipelines;
- water supply for drilling, completion, and operations phases;
- changes necessary to conform county regulations with the most recent state rules from COGCC;
- fees applicable to oil and gas development; and
- general use of land use and zoning powers and comprehensive planning techniques.

PURPOSE OF THE AMENDED REGULATIONS

The County's objective with the amended oil and gas regulations is to protect public health, safety, welfare, and the environment to the maximum extent permitted by law. Oil and gas development is, by its very nature, industrial in nature, intensive, and has the potential to significantly impact the surrounding community and environment. Boulder County residents and officials have raised concerns about health problems, air pollution, water contamination, noise, odor, vibration, property damage, and other impacts that may be caused by oil and gas development, particularly the extraction method known as hydraulic fracturing or fracking. Traditional zoning generally would separate these industrial uses from residential and rural areas. However, due to the unique circumstance of the severed mineral estate, complete separation of uses may not be possible so the Draft Regulations are proposed to minimize potential land use conflicts between oil and gas operations and current or future land uses.

Local governments have regulatory authority to address local impacts of oil and gas development. Although Colorado state agencies and the federal government also have authority to regulate certain aspects of oil and gas operations, these agencies may not adequately review the impact that individual proposed oil and gas development operations may have on local residents. A responsible review of such development should include (1) the submission of all necessary information related to proposed development and its potential impacts; (2) thorough analysis and review of such information; (3) multiple opportunities for public input, especially for those who are adjacent to or near the proposed development; and (4) action on the request, including a determination about all necessary or warranted mitigation measures.

SUMMARY OF THE PROPOSED REGULATIONS

In an effort to update the regulations adopted in 2012, staff has drafted new regulations. The proposed regulations employ our local land use authority to protect public health and the environment. The County's proposed regulations provide for close scrutiny of all proposed oil and gas development and multiple opportunities for public input prior to any decision being made. They also allow staff, the Planning Commission, and the Board to consider site-specific circumstances related to each development application and to customize avoidance, minimization, and mitigation measures to best address each of these circumstances. Finally, the proposed regulations will help to ensure close monitoring and enforcement of post-approval compliance with all requirements and mitigation measures.

Under its amended regulations, the County will require Special Review for all new oil and gas development in Boulder County. The Special Review process will allow for a thorough and comprehensive review of any proposal, along with the implementation on conditions on the development that will reduce the impacts on neighboring landowners and preserve the County land and environment.

Regulatory areas included in the Draft Regulations include:

- Analysis of well locations, surrounding land uses, and alternative sites that would allow for extraction of the resource;
- Air quality provisions, including a leak detection and repair (LDAR) program, reporting requirements, and prompt repair of any discovered leaks;
- Submission of monthly reports certifying compliance with all air quality requirements imposed by the State and County;
- Water quality review;
- Adequacy of water supply and source;
- Emergency preparedness and response plan and immediate reporting of chemical spills;
- Transportation standards requiring operations to mitigate any adverse impacts to roads and public infrastructure;
- Floodway prohibition;
- Protection of cultural and historic resources, recreational activities, scenic and rural character impacts, impacts to agricultural land, wetland and natural resource protection, and geologic hazards;
- Waste disposal information;
- Dust suppression and compliance with Boulder County Public Health's fugitive dust regulations;
- Pipelines and off-site transport of the resource; and
- Physical marking of abandoned wells.

The table on the following pages summarizes the key elements of the proposed regulations.

Key Elements of the Draft Regulations
<p data-bbox="219 201 760 226">1. Application Submittal Requirements (12-500)</p> <p data-bbox="219 233 1552 294">For all oil and gas operations, applicants must submit detailed information on the proposal and its anticipated impacts in their application materials. This includes, among other submission requirements, the following:</p> <ul data-bbox="267 300 1552 1056" style="list-style-type: none"> • siting plan showing the location of proposed wells and associated oil and gas facility and identified features on the subject parcel where the facility is proposed • information showing existing structures within one (1) mile from the oil and gas operation • map showing other wells and oil and gas operations within one (1) mile of the site • analysis and consideration of at least three (3) alternative site locations • air quality plan • emergency preparedness and response plan, regular emergency response training with local agencies. • mitigation plans for impacts on agricultural land, land disturbance, cultural and historic resources, geologic hazards, natural resources, and scenic attributes and rural character • wetlands protection plan • operations plan, including the method, schedule, and duration of time for drilling, completion, transporting, production, and post-operation activities • information on surrounding land uses and potential impacts • transportation route and traffic plan • water quality plan • water supply and quantity necessary for all phases of the operation • plan identifying how water and the retrieved resource will be transported to and from the site, including options for both pipelines and vehicles • site electrification plan • waste disposal plan
<p data-bbox="219 1094 764 1119">2. Review Process / Public Involvement (12-400)</p> <p data-bbox="219 1125 1227 1150">The following steps are required as part of the public process for a new oil and gas operation:</p> <ul data-bbox="267 1157 1552 1829" style="list-style-type: none"> • Pre-application conference, which may involve a site visit to begin to identify potential site-specific issues and concerns • Neighborhood meeting with adjacent and surrounding landowners and other interested parties. <ul data-bbox="370 1268 1552 1451" style="list-style-type: none"> ➤ The neighborhood meeting must occur at least 20 days after the pre-application conference and requires a 14-day notice prior to the meeting. ➤ An application cannot be submitted for 20 days following the neighborhood meeting in order for the applicant / operator to meaningfully consider the input at the neighborhood meeting in the proposal. A summary of the neighborhood meeting must be submitted with the application. • Notice to landowner, owners of land and water wells within one-half mile of the proposed oil and gas operation, and to residents (i.e., physical address) within one-half mile is required upon application submittal and before commencement of drilling and completion activity. Signage on site is also required. • Referrals to County departments, fire district, County Sheriff, adjacent municipalities, school district is required, and the county may hire technical experts at applicant's expense for assistance in reviewing the application. • If the proposed well is on or near county open space, Parks and Open Space Advisory Committee (POSAC) review may be required. • Site visit by staff • Planning Commission public hearing • Public hearing before the Board of County Commissioners

Key Elements of the Draft Regulations
<p>3. Review Standards (12-600)</p> <p>The Planning Commission and Board of County Commissioners will review applications by applying 16 special review standards. The standards are intended to allow staff and the boards to evaluate the impacts and compatibility of the proposed operation with surrounding land uses, and minimize potential land use conflicts.</p> <p>For example, above ground oil and gas operations are prohibited in floodways and shall not be located in a floodplain unless all alternate locations outside of the floodplain that allow for extraction or transportation of the resource are more detrimental to health, safety, welfare or the environment than the proposed location in the floodplain.</p> <p>The Board of County Commissioners may impose one or more specific conditions of approval and mitigation measures, such as air and water quality conditions, to ensure compliance with the standards.</p>
<p>4. Site Specific Mitigation Measures (12-700)</p> <p>The Board of County Commissioners would impose standard conditions of approval that would include mitigation measures, reporting requirements, and inspection requirements that the County has determined are necessary for all oil and gas operations. In addition to the standard conditions, the Board may impose site-specific mitigation measures depending on a variety of factors. For example, hydrocarbon emissions control measures may be required, including:</p> <ul style="list-style-type: none"> ▪ Electrification from the power grid or from renewable sources ▪ Environmentally sensitive and efficient production techniques ▪ Hydrocarbon destruction or control efficiency of 98% or better ▪ Closed loop pitless systems. ▪ A leak detection and repair program using modern leak detection technologies such as infra-red cameras for equipment used on the well site ▪ Continuous ambient air quality monitoring to measure hydrocarbon emissions and meteorological data <p>Similarly, water well quality monitoring and well testing may be required, including:</p> <ul style="list-style-type: none"> • Notice to water well owners with wells located within one-quarter (1/4) mile of the projected track of the borehole of a proposed well and within one-half (1/2) mile of a proposed well 60 days prior to completing or fracking a well • Assessment and monitoring of plugged and abandoned wells within one-quarter (1/4) mile of the projected track of the borehole of a proposed well • Identification and offer to sample all water wells located within one-quarter (1/4) mile of the projected track of the borehole of a proposed well and within one-half (1/2) mile of the radius of a proposed well, as well as post-completion testing within one (1) year and repeated two (2) and six (6) years after completion <p>To minimize impacts to the site and its resources and ensure compatibility, the following may be required:</p> <ul style="list-style-type: none"> • Change of the proposed location, reduction of the number of wells on a pad, adjustment of the pad dimensions and/or structures and surface equipment • Disruption payments to surrounding occupants of residential structures if they are significantly adversely affected by drilling and compaction activities • Use of shared existing infrastructure by oil and gas operations • Buffering from sensitive visual areas by providing landscaping, berming, or other types of screening • Use of natural screening and maintenance of existing vegetation • Buried or low profile tanks • Remote monitoring <p>The Board of County Commissioner’s application of site specific mitigation measures could evolve with time because, in imposing these measures, the Board can consider the current state of technology, rules adopted by the COGCC, and Air Quality Control Commission regulations.</p>

Key Elements of the Draft Regulations
<p data-bbox="219 201 915 226">5. Oil and Gas Pipelines and Water / Wastewater Lines (4-514)</p> <p data-bbox="219 233 1174 258">Like new oil and gas development, new oil and gas pipelines also require Special Review.</p> <ul data-bbox="269 264 1511 516" style="list-style-type: none"> <li data-bbox="269 264 1511 405">➤ Pipelines proposed on site must meet the Additional Provisions listed in the amended pipeline regulations in Article 4-514.E of the Code for “Gas and/or Hazardous Liquid Pipelines.” Gathering lines and flow lines that are part of new oil and gas development and which are located on the same parcel or parcels as the well head, pumping units, tanks and/or treaters are included in the Special Review for the oil and gas facility. <li data-bbox="269 411 1511 516">➤ Pipelines that are proposed offsite from a proposed oil and gas facility require a separate Special Review application that must be processed in tandem with the Special Review for the facility, and will be conditioned upon approval of the application for the oil and gas operation (or vice versa). <p data-bbox="219 552 1542 709">The additional provisions in the pipeline regulations (Article 4-514.E) create new requirements for the siting of pipelines, including minimum distances (50 feet) from residential, commercial, and industrial buildings, places of public assembly, or the high water mark of any surface water body. Leak detection and repair (LDAR), secondary containment, or other mitigation requirements are included for pipelines and gathering lines that pass within 150 feet of general residential, commercial, and industrial buildings or the high water mark of any surface body.</p> <p data-bbox="219 745 1542 808">The Draft Regulations contain provisions concerning minimization of disturbance, sharing of existing pipeline rights-of-way, and consolidation of new corridors for pipeline rights-of-way.</p> <p data-bbox="219 844 1070 869">New water and wastewater transmission lines or pipelines also require review:</p> <ul data-bbox="269 875 1317 938" style="list-style-type: none"> <li data-bbox="269 875 1317 903">➤ Permanent water and wastewater transmission lines require Special Review (Article 4-514.K) <li data-bbox="269 909 1317 938">➤ Temporary above-ground pipelines require Limited Impact Special Review (Article 4-517.J)
<p data-bbox="219 978 951 1003">6. Water and Waste Disposal / Injection Wells (12-500 and 4-500)</p> <p data-bbox="219 1010 1549 1136">Waste disposal is an area in which the COGCC has a number of specific requirements. However, in response to concerns about disposal of waste and wastewater, as well as concern for potential earthquakes, information detailing where and how water will be consumed, the amount of wastewater produced, and disposal plans for wastewater and other projected waste from the site are required.</p> <p data-bbox="219 1171 963 1197">Additionally, injection wells are now prohibited in all zoning districts.</p>
<p data-bbox="219 1241 1122 1266">7. Compliance, Right to Enter, and Enforcement (12-700.C., 12-900, and 12-1000)</p> <p data-bbox="219 1272 1520 1367">As shown by the data attached in Exhibit C (p.C-1), Boulder County Public Health has determined that gas leaks from oil and gas operations are a significant issue. Accordingly, certification and reporting throughout the oil and gas exploration and development process are included (Section 12-700.C).</p> <p data-bbox="219 1402 1495 1528">Any site under an approved special review may be inspected by the County at any time to ensure compliance with the requirements of the approved special review. County inspections shall be coordinated with the operator to ensure operator presence onsite and to ensure the site visit is conducted in accordance with all applicable operator safety requirements.</p> <p data-bbox="219 1564 1549 1755">The Director may issue a written order to the Applicant suspending the approved special use and all activity otherwise allowed by the special use approval. If the violation presents an immediate threat to the health, safety or welfare of the public, the Director may immediately issue the written order to the Applicant in writing and, upon receipt, the Applicant must cease all activities and operations immediately until the violation is remedied. In all other instances, prior to issuing a written order, the Director shall provide written notice to the Applicant describing the violation, and stating a reasonable time within which the violation must be corrected.</p>

Key Elements of the Draft Regulations	
8. Suit to Enjoin and Falsification (12-1000)	<p>If the Director discovers a violation or threatened violation of any State rule, regulation, or order, the Director shall notify the COGCC in writing. If the COGCC fails to bring suit to enjoin any actual or threatened violation, then the County Attorney may file an action on behalf of the Board seeking injunctive relief (Section 12-1000.C).</p> <p>If the Land Use Director, in the course of administering Article 12, learns that any person, has made a false entry, omitted an entry, or altered an entry in violation of CRS § 34-60-121, he may report such information to the District Attorney for criminal prosecution (Section 12-1000.D).</p>
9. Substantial Modification (12-300 and 12-900)	<p>Any substantial modification to a legally established oil and gas operation requires a new Special Review (12-300.B). A request to modify an approved special use application will be evaluated following the process outlined in Article 4-603 of the Code, along with the additional criteria in Section 12-900.D.</p> <p>These criteria specify that the following changes shall be considered a substantial modification:</p> <ul style="list-style-type: none"> • Addition of one or more new wells on an existing pad • Changes that significantly alter the nature, character, or extent of the land use impacts of the special review approval or will result in an increase in hydrocarbon emissions • Refracking of an existing well <p>A modification shall not be considered a substantial modification if it results in a net decrease in hydrocarbon emissions or other net mitigation of existing or potential environmental impacts.</p>
10. Financial solvency, Bonds, and Performance Guarantees	<p>Concern has been expressed regarding bankruptcy of operators and performance guarantees. Staff talked to Industry, the COGCC, researched COGCC Rules, and looked at examples of what individual companies post for bonds in an attempt to determine what role, if any, is available to the County.</p> <p>Information from the COGCC:</p> <p>Environmental clean-up is addressed by (1) requiring operators to pay for clean-up at the first instance; (2) requiring bonds and insurance coverage for clean-up and damage not paid by the operator; (3) a state environmental reserve cash fund and penalty revenue.</p> <p>In fiscal year 2015-2016, penalty revenue totaled approximately \$1.5 million. Penalty revenue, while not specifically appropriated by the GA, is used along with other cash fund monies (about \$750,000 this year) to support the environmental-related expenditures mentioned above such as plugging and reclaiming orphaned wells, environmental studies, and emergency response. Since fiscal year 2007-2008 through the end of FY 2015-2016, the Commission has collected approximately \$6.6 million in penalty revenue and spent \$5.5 million of it on these items.</p> <p>Planning Commission asked for staff to continue examining this area.</p>

Other Proposed Amendments to the Land Use Code

Other proposed amendments to the Code include Code-conforming amendments to Article 4 and as needed throughout the Code, such as changing reference to “Development Plan Review” to “Special Review;” modification of the Board of Adjustment provisions; and cross-reference changes/other clerical changes as needed.

STAFF RESPONSE TO PLANNING COMMISSION’S MORATORIUM RECOMMENDATION

The Planning Commission voted 9-0 to recommend that the County adopt a new moratorium in response to three studies that evaluated potential public health hazards related to hydraulic fracturing. Specifically, the Planning Commission pointed to a 2016 study published in the *Journal of Exposure Science and Environmental Epidemiology*, in which scientists concluded that 157 chemicals

commonly contained in fracking fluids and wastewater are toxic. The Planning Commission also referenced a study appearing in the September 2016 issue of *Endocrinology*, which found that prenatal mice exposed to fracking fluids experienced a variety of adverse health effects. Finally, the Planning Commission pointed to a study scheduled to appear in *Environmental Health Perspectives*, which concluded that an association exists between fracking and nasal and sinus symptoms, migraine headaches, and fatigue.

As the Board of County Commissioners noted when adopting its prior moratoria, numerous scientific studies continue to look at the health impacts of drilling and production activities, especially with respect to air and water quality. Based on such studies, Boulder County residents have expressed serious concerns related to the potential health, environmental, and safety hazards presented by future oil and gas development. Prior the Colorado Supreme Court decisions in the *Longmont* and *Fort Collins* cases, the Board believed that the best land use tool to address this public concern was a moratorium on oil and gas development, which would have allowed Boulder County to delay oil and gas development in Boulder County until the health, environmental, and safety impacts of fracking could be adequately assessed.

Although Boulder County supported Longmont and Fort Collins by submitting amicus briefs, the Colorado Supreme Court determined that local jurisdictions cannot ban fracking or enact a lengthy fracking moratorium. This is true despite the ongoing safety concerns with fracking. In particular, Longmont argued that the Court should not rule on its fracking ban when a fact dispute existed regarding whether fracking can be done safely. The Court found that a fact dispute about the safety of fracking was “immaterial” to its analysis of Longmont’s fracking ban. Accordingly, a moratorium of the nature and duration recommended by the PC would be unlikely to withstand a legal challenge.

The legal constraints on adopting local bans and moratoria do not prevent local governments from taking other actions that address public health and environmental concerns arising from oil and gas development. The proposed regulations, as further outlined in this recommendation, address the potential public health and environmental impacts of oil and gas development by allowing the County to impose site-specific location, monitoring, testing, and remediation requirements for the purpose of protecting public health and safety.

TEXT AMENDMENT CRITERIA REVIEW

Pursuant to Article 16-100 of the Land Use Code, no text amendment shall be adopted by the Board of County Commissioners unless the Board has determined that:

1. the existing text is in need of the amendment;
2. the amendment is not contrary to the intent and purpose of this Code; and
3. the amendment is in accordance with the *Boulder County Comprehensive Plan*

The moratorium adopted by the Board of County Commissioners demonstrated the need for the subject amendments and update to the regulations adopted in 2012 based on changed circumstances. The amendments are not contrary to the intent and purpose of the Code but update and address the issues raised by the Commissioners in May 2016. The amendments do not conflict with the Boulder County Comprehensive Plan (BCCP); rather, they implement many of the BCCP policies adopted by the Planning Commission on August 15, 2012 when the BCCP was updated to address oil and gas development. The Planning Commission motion to the Board of County Commissioners included a recommendation to approve the proposed regulations with the edits and direction they provided at the October 27, 2016 public meeting. Consequently, staff finds the criteria for text amendments in Article 16-100.B. of the Land Use Code are met.

SUMMARY AND RECOMMENDATION

The overall goal contained within the Draft Regulations is to work within the land use authority provided to counties by enacting the most protective regulations governing new oil and gas operations. **STAFF RECOMMENDS THAT THE BOARD OF COUNTY COMMISSIONERS APPROVE Docket DC-16-0004: Amendments to Oil and Gas Development Regulations and the official record of the Docket before the Commission with its staff comments, public testimony, and Board's discussion/action.**

Exhibit A
New Article 12
Special Review for Oil and Gas Operations

12-100 Purpose

- A.** The County's objective is to protect public health, safety, welfare, and the environment to the maximum extent permitted by law. Oil and gas exploration and development is industrial in nature, intensive, and has the potential to significantly impact the surrounding community and environment. Boulder County residents, officials, and staff have raised concerns about health problems, air pollution, water contamination, soil contamination, loss of agricultural land, noise, odor, vibration, property damage, transportation impacts, and other local land use impacts that may be caused by oil and gas development, particularly the extraction method known as hydraulic fracturing or fracking. Traditional zoning would separate these industrial uses from residential and rural areas. However, due to the unique circumstance of the severed mineral estate, complete separation of uses may not be possible, and this Article has been enacted to minimize potential land use and transportation conflicts between those activities and current or future land uses.
- B.** Although Colorado state agencies and the federal government also have authority to regulate certain aspects of oil and gas operations, they may not adequately review the impact that individual proposed oil and gas development operations may have on local residents. A responsible review of such development should include (1) the submission of all necessary information related to proposed oil and gas development and its potential impacts; (2) thorough analysis and review of such information; (3) multiple opportunities for public input, especially from those who are near the proposed development; and (4) action on the proposal, including a thorough evaluation of and determination about all necessary or warranted mitigation measures. These local land use regulations are intended to provide close scrutiny of all proposed oil and gas development and multiple opportunities for public input prior to any decision being made. They also allow staff, the Planning Commission, and the Board of County Commissioners to consider site-specific circumstances related to each development application and to customize avoidance, minimization, and mitigation measures to best address each of the site-specific circumstances. Finally, these regulations will help to ensure close inspection, monitoring, and enforcement of all post-approval compliance with all requirements and mitigation measures imposed by this Article.

12-200 Authority of Article

This article is authorized by C.R.S. §§ 25-8-101 et seq., 29-20-101 et seq., 30-28-101 et seq., 34-60-101 et seq., 25-7-101 et seq., and other authority as applicable.

12-300 Effective Date; Pre-Existing Uses

- A.** This Article shall become effective on the date specified in the adopting resolution of the Board. The provisions of this Article shall apply to all oil and gas operations for which a complete application for special review has not been accepted by the County as of the effective date.
- B.** Oil and gas operations that were legally established prior to the effective date of this Article but do not conform to this Article shall be allowed to continue. Any substantial modification of such oil and gas operations requires special review under this Article. The Director shall make substantial modification determinations for such oil and gas operations as provided in 12-900(D).

- C. Should the Applicant dispute the Director's determination that a pre-effective date operation is not effectively the same as the post-effective date operation, the Applicant may appeal the Director's determination to the Boulder County Board of Adjustment. During the course of any Board of Adjustment Proceeding or subsequent appeal, the application shall not be processed.

12-400 Application Procedure for Special Review

A. Review and Community Engagement

1. **Special Review Required.** Except as provided for in 12-300, all oil and gas operations on public and private land within the unincorporated areas of Boulder County must comply with this Article. Prior to the commencement of any oil and gas operations in the unincorporated County, an Applicant must submit a special review application and the Board must approve the application according to this Article. No other form of discretionary land use review under this Code is required for oil and gas operations covered by this Article 12. Special review approval is also required prior to the issuance of any County building permits, or associated pipeline, grading, access, floodplain, transportation impact fee, or other County permits necessary for the oil and gas operation. Oil and gas operations that may not require a building or other associated County permit must still obtain special review approval under this Article.
2. **Community Engagement.** Boulder County requires Applicants to engage with local communities, residents, and other stakeholders prior to exploration or development activity. The purpose of this engagement is to provide sufficient opportunity for comment on plans, operations, and performance, to listen to concerns of the community, and to address all reasonable concerns as a result of a proposed operation.
3. **Surface Use Agreements.** Oil and gas operators commonly enter into surface use agreements with landowners at or near the location of the development. The County recommends that surface agreements not be finalized until the Applicant has completed special review, at which time the impacts related to the proposed siting of the operation will be analyzed.
4. **APD approval.** Application and Permit to Drill ("APD") approval from the COGCC is not local approval, and compliance with all terms and conditions of special review approval is required in addition to the requirements of APD approval. The County strongly recommends that applicants apply to the County for special review prior to applying for APD so that the Applicant is aware of applicable County requirements and mitigation measures prior to filing its APD application.

B. Operator Registration.

All operators planning oil and gas operations within the County must complete an Operator Registration Form before requesting a pre-application conference. The Operator Registration Form must contain the following information:

1. Company name, address, email and mobile phone contact information for two individuals associated with the company who live within thirty miles of Boulder County and who will serve as 24 hour emergency contacts.
2. Comprehensive planning information as follows:
 - a. Based on an operator's business plan as of the date of the request, a good faith estimate of the number of wells the operator intends to drill in the next five years within unincorporated Boulder County. A publicly traded company's well

estimates may be based on reserves classified as “proved undeveloped” for SEC reporting purposes.

- b. A map showing the location within unincorporated Boulder County of the Operator’s existing well sites and related production facilities; sites for which the operator has approved or has submitted applications for drilling and spacing orders, or Form 2s or Form 2As; and sites the operator has identified for development on its current drilling schedule for which it has not yet submitted applications for COGCC permits.

- 3. Well estimates provided under this subsection must be made using reasonable business judgment based on information known to the operator as of the date the estimates are requested. The operator must update the Form at the time of any changes.

C. Special Review Process. The special review process is a regulatory process based primarily upon subjective or context-specific criteria for new or substantially modified oil and gas operations. Special review applications require staff review, public hearing, and recommendation by the Planning Commission followed by review, public hearing, and decision by the Board of County Commissioners. Some applications may also require review by the Parks and Open Space Advisory Committee as provided for in subsection (I).

D. Pre-Application Conference.

- 1. **Timing.** A pre-application conference as defined in Article 3-201 of this Code must be held at prior to the Applicant submitting an application for special review.
- 2. **Conference.** At the pre-application conference, the Director and the Applicant will discuss the points contained in Article 3-201 of this Code and review the County’s special review process so that the Applicant can plan its proposed oil and gas operation in a manner that ensures compliance with the special review regulations and applicable state and federal regulations. The pre-application conference allows the Applicant and Director to identify potential site-specific concerns and issues that relate to the special review process, to discuss project impacts and potential mitigation methods, and to discuss coordination of the County process with the State permitting process. Applicants are encouraged to conduct the pre-application conference with the County prior to completing well siting decisions. Completion of the pre-application conference qualifies the Applicant to submit an application for a special review provided the application is filed within six (6) months after the pre-application conference.
- 3. **Site Visit.** At the discretion of the Director after consultation with the landowner, the Director may require a site visit as part of the pre-application conference with the Applicant to evaluate well locations, compliance with this Article, or mitigation measures that may be required to adequately ensure compliance with this Article.

E. Applicant Neighborhood Meeting. The Applicant must conduct a neighborhood meeting with adjacent and surrounding land owners and other interested parties at a convenient date, time, and public location. The meeting must occur at least twenty days (20) after the pre-application conference. The neighborhood meeting must be noticed to the County and to all individuals entitled to notice pursuant to Section 12-400(H)(2) at least fourteen (14) days prior to the meeting. At the neighborhood meeting, the Applicant must provide an overview of its proposed oil and gas operation and allow those in attendance to provide input as to the proposed operation, including, but not limited to, well siting and well locations, issues that arise from application of this Article to the proposed operation, and suggested mitigation to adequately ensure compliance with this Article. The Applicant may not submit an application until at least twenty (20) days after the neighborhood meeting and must provide a report of all of the neighbor

comments and any proposals from the Applicant for addressing neighborhood concerns to the Director with the Application.

F. Application Submission. The application must include documentation establishing how the proposed operation complies with all applicable requirements of Section 12-600. The Applicant must submit the application, the application fee, and supporting documentation in electronic format with up to two (2) additional copies of the application materials in paper format. The Director may require additional paper copies of the application, or a portion of the application materials, if needed for review purposes. The application must contain a certification from the Applicant that the proposed operation complies with all applicable provisions of this Article and that the information in the application, as well as in any accompanying documentation, is true and accurate. The application must be signed by a person authorized to sign on behalf of the Applicant and identify who will be the primary contact during the course of processing the application. The point of contact information in the application must be amended to specify the new point of contact if the Applicant's point of contact changes during the application process.

G. Completeness Determination. Upon acceptance of the application, the Director will determine if Land Use staff needs consultants or staff other than the Land Use Department to assist the Director with the completeness determination. Upon review of the application materials by the Director and any necessary outside consultants, the Director shall determine whether a special review application is complete. The Director shall make a completeness determination within forty-five (45) days of acceptance of the application. After notice to and consultation with the Applicant and an appropriate time for the Applicant to cure deficiencies, the Director may reconsider his completeness determination at any time during the application process, including upon the request of a referral agency.

1. Application Deemed Incomplete. If the Director finds that the application is incomplete, the Director shall inform the Applicant of the deficiencies. No further action shall be taken on an incomplete application until all of the specified deficiencies have been addressed. Should the Applicant fail to correct deficiencies within twenty-four (24) months, the application shall expire and the Applicant may submit a new application and fee as specified in section (F) above. The twenty-four (24) month time frame may be extended by the Director according to Article 4-604(D). Should the Applicant dispute the Director's completeness determination, the Applicant may appeal the Director's determination to the Boulder County Board of Adjustment. During the course of any Board of Adjustment Proceeding or subsequent appeal, the application shall not be processed.

2. Application Deemed Complete. If the Director finds that the application is complete, containing all documentation required by this Article, the Director shall process the application.

H. Notice.

1. The Applicant must mail notice to surface owners, to surrounding landowners, to water well owners, and to residents as identified in this section after the neighborhood meeting but no less than ten (10) days prior to the application being submitted to the Department. If approved by the Director, the Applicant may provide notice using alternative notice methods.

2. Notice of the application must be made as follows:

a. To the surface owners of the parcels of land on which the oil and gas operation is proposed to be located; and

- b. To the owners of the parcels of land within one-half mile (2,640 feet) of the parcel on which the oil and gas operation is proposed to be located; and
- c. To the physical address of all parcels within one-half mile (2,640 feet) of the parcel on which the oil and gas operation is proposed to be located if Boulder County Assessor's records indicate a mailing address for the parcel owner that is different than the physical address.
- d. Water well owners within one-half mile (2,640 feet) of the parcel on which the oil and gas operation is proposed to be located. The Applicant is responsible for determining the addresses of such well owners and providing a list of such owners to the Director.

The Land Use Department shall provide the list of addresses of record for property owners within one-half mile (2,640 feet) of the parcel on which the oil and gas operation is proposed to be located to the Applicant at the pre-application conference so the Applicant can provide notice as required by subsection (a), (b), and (c) of this Section.

3. The notice must contain the following:

- a. A message in bolded 14-point or larger font on the front page of the notice that states as follows: **"Attention: An oil and gas operation consisting of [number of wells] is being proposed in your area. Please read this notice carefully."** Slight variations in this notice language may be approved by the Director at the Applicant's request.
- b. A description of the proposed operation site location, including the legal description; parcel number; a street address for the site, if available from the County's rural addressing system; the company name of the operator; the name of a company contact; the current business address, telephone number, and email address for the Applicant; a vicinity map; and a brief description and overview of the proposed operation including details of the drilling techniques (i.e., a detailed description of the type and estimated duration of any proposed hydraulic fracturing).
- c. Information concerning the facilities and equipment proposed at the site when operational, and proposed access roads and gathering lines.
- d. The anticipated submittal date of the application to the Department.
- e. A statement that public comments on the application may be submitted to the County Land Use Department after the application submittal date.
- f. A statement concerning the County's right to enter property that is the subject of the application as follows: "For the purpose of implementing and enforcing the County's special review for oil and gas operation regulations, County staff may from time to time need to enter onto the property that is the subject of a special review application."
- g. The current mailing address, website address, email, and telephone number for both the County Land Use Department and the COGCC, as well as a statement that additional information on the application will be available from the County Land Use Department.

4. **Notice Review.** The Applicant must submit a copy of the notice for review by the Director. If the Director determines that the notice does not comply with the requirements of this Article, the Director may require the Applicant to send additional notice complying with this Article.
5. **Posting Public Notice Signage Onsite.** Within five (5) days after submitting the application, the Applicant must post a public notice sign or signs on the site of the proposed operation that meet the following requirements:
 - a. The sign must be posted in a location visible to the public (i.e., visible from a public road) and approved by the Director. If the Director determines that a single sign will not provide adequate public notice, multiple signs meeting the requirements of this section may be required.
 - b. Signs must be four feet by six feet in area. The background must be bright yellow and the lettering must be in black.
 - c. In lettering clearly visible and proportionate to the size of the sign, the sign must contain the following:
 - i. "Attention: An oil and gas operation consisting of potentially [number of wells] is being proposed in your area. Please read this notice carefully."
 - ii. "The applicant has applied for Special Review, [docket number]"
 - iii. "Information regarding this application may be obtained from the Boulder County Land Use Department at [phone number]"
 - d. Within five (5) days of the posting of the sign, the Applicant must submit a photograph of the sign or signs as posted for review by the Director. If the Director determines that the sign not comply with the requirements of this Article, the Director may require the applicant post a sign or signs complying with this Article.
 - e. The approved sign or signs must be posted kept on the site until the special review process is complete. The Applicant must repair or replace signs that are damaged or defaced within five (5) days of learning of damage or defacement.
- I. **Referral Agency Comments.** Following the determination that an application is complete, the Director shall forward one copy to the County Transportation and Parks and Open Space Departments; Boulder County Public Health; the appropriate fire district; County Sheriff; and any appropriate municipality and school district for comment. If the proposed well site is on or within 1,500 feet of County Parks and Open Space property, the Parks and Open Space Director may refer the application to the Parks and Open Space Advisory Committee for a public hearing. After the public hearing, the Parks and Open Space Advisory Committee may forward recommendations for assuring the protection of environmental, ecological, wildlife, historical, archeological, and agricultural resources of the open space. The Director may also refer the application to other government agencies or entities for review and comment. Referral comments on the proposed development shall be returned to the Director within seventy-five (75) days of date of referral, unless the referral agency or consultant makes a reasonable request to the Director for additional time.
- J. **Consultant Review.** Where reasonable and necessary, the Director may submit the application for review and recommendation by consultants retained by the County with the necessary expertise to review technical or other aspects of the application. Among other consultant reviews, third party consultant review may be required to evaluate the risks and associated mitigation plans addressing the use of hydraulic fracturing near residential development. The Applicant shall be notified if the Director decides to retain a consultant, shall be given the opportunity to provide input concerning consultant selection and scope of work, and shall escrow funds sufficient to cover the anticipated cost of the consultant's review. The Applicant

shall be responsible for the actual costs associated with this consultant review and shall be refunded any excess escrowed funds.

- K. Site Visit.** The Department will conduct a site visit to allow the Director to determine compliance with these standards. The Department may coordinate a site visit with other County departments and governmental agencies.
- L. Planning Commission Notice and Hearing.** Not less than fourteen (14) days prior to the Planning Commissioner's public hearing, a legal notice of the public hearing shall be published in a newspaper of general circulation within the County, and written notice to the surface owners and surrounding property owners of the time and place of the Planning Commission's public hearing shall be provided pursuant to Section 12-400(H). The Planning Commission shall hold a public hearing on the application and shall make a recommendation of approval, approval with conditions necessary to ensure compliance with this Article, or denial, and the recommendation shall be forwarded to the Board of County Commissioners.
- M. Notice of Board of County Commissioners' Hearing.** Not less than fourteen (14) days prior to the Board of County Commissioners' public hearing on the standard permit review, a legal notice of the public hearing shall be published in a newspaper of general circulation within the County, and written notice to the surface owner and surrounding property owners of the time and place of the Board's public hearing shall be provided pursuant to Section 12-400(H).
- N. Board of County Commissioners Hearing and Decision.** The Board of Commissioners shall conduct a noticed public hearing for review of a special review application. Any action taken by the Board of County Commissioners will be based on the entire record of proceedings on the matter, as that record is maintained by the Land Use Department Director and/or the Clerk of the Board of County Commissioners, including but not limited to: recordings or transcripts of public hearings; all written comments of referral agencies; the review and recommendations of the Land Use Department; and all written commitments, statements, or evidence made or submitted by or in behalf of the Applicants, landowners or interest holders or their agents, and interested members of the public. The Applicant shall have the burden of proof to show that the applicable criteria for approval have been met. On the basis of the evidence received at such public hearing(s), the Board shall make its determination to approve, approve with conditions necessary to ensure compliance with this Article, or deny the application. The Board's action shall contain appropriate findings or reasons in support of its decision. The Board shall render its decision on the special review application in writing following the conclusion of the public hearing.

12-500 Application Submittal Requirements

Unless the submittal requirement is waived or modified by the Director based upon the Applicant's request, the Applicant must submit the information and documents specified in this section with the special review application for oil and gas operations. The Director may waive or modify the submission requirements in this section if (1) because of the nature of the Application, the requested information is unlikely to be useful to the Board in applying the special review criteria or determining appropriate mitigation measures; (2) the usefulness of the information is substantially outweighed by the hardship placed on the Applicant in providing the information. Should the Applicant request a modification or waiver and dispute the Director's determination a submission requirement under this section should not be modified or waived, the Applicant may appeal the Director's determination to the Boulder County

Board of Adjustment. During the course of any Board of Adjustment Proceeding or subsequent appeal, the application shall not be processed.

A. County Application Form.

B. Ownership. Certification of ownership of the mineral estate proposed for development or of all necessary lease interests in the mineral estate proposed for development. Identification of all persons with a real property interest in surface of the subject property.

C. Neighborhood Meeting Information. A report identifying all neighbor comments and specific proposals from the Applicant for addressing neighborhood concerns.

D. Date of APD Filing. Anticipated or actual date of associated APD filing with the COGCC. If the APD filing has occurred prior the filing of the application, the Applicant must include a written explanation regarding why the Applicant chose to proceed with APD prior to special review.

E. Surface Agreements. A copy of any surface use agreements or memorandums of surface use agreements the Applicant entered into related to the oil and gas operation.

F. Proof of pre-application Conference. Date the Applicant conducted the pre-application conference with the Department.

G. Proof of Notice. Certification of proper notice, including Director approval of the notice, as required by Section 12-400(H).

H. Verification of Legal Access and Use of Private Roads. Information demonstrating that the Applicant has the right to use private access roads that are necessary for the operation and that the Applicant has entered into an agreement with the private road owner regarding maintenance, improvements necessitated by the proposed oil and gas operation, and reimbursement for damages. Recorded or historically used easements providing access to or across the parcel(s) must be provided.

I. Proximity of Other Wells and Other Oil and Gas Operations. A map showing the location of all producing, closed, abandoned, and shut-in wells and any other oil and gas operations within one (1) mile of the site.

J. Site Plan and Parcel Information. The following information must be included:

1. Facility siting. The proposed location of wellhead, pumping units, tanks, treaters, staging and storage areas, temporary use areas and permanent well pads for all phases, fencing, and equipment associated with the oil and gas operation.

2. Alternative site analysis. Submission of an alternative site analysis that identifies and examines the feasibility of at least three (3) alternative well locations that would allow for extraction of the resource and that considers concentration of multiple wells on a single well pad versus smaller well pads with fewer or single wells. The Applicant shall show that reasonable consideration has been given to such alternative sites.

3. Existing structures. Identification of all existing occupied structures and other improvements within one (1) mile from any wellhead, pumping units, tanks, and treaters.

4. **Water bodies.** Any surface water bodies including, but not limited to, ditches and reservoirs as identified and mapped on the County's Ditch and Reservoir Directory, within one (1) mile of the wellhead, pumping units, tanks, and treaters.
 5. **Water wells.** Any domestic or commercial water wells or irrigation wells within one-half mile of the wellhead, pumping units, tanks, and treaters.
 6. **Geologic hazards.** All high hazard geologic areas as defined in the Comprehensive Plan within one-half mile of the wellhead, pumping units, tanks, and treaters.
 7. **Floodplain.** Mapping of all floodplains and floodways as defined in Article 4-400, including the FEMA Floodplain and the Boulder County Floodplain, within one-half mile of the wellhead, pumping units, tanks, and treaters.
 8. **Comprehensive Plan natural resources.** All mapped significant natural communities, natural landmarks and natural areas, rare plant areas, significant riparian corridors, or critical wildlife habitat as each is defined in the Comprehensive Plan, in effect as of the effective date of this Article within one (1) mile of the wellhead, pumping units, tanks, and treaters.
 9. **Drainage.** Drainage patterns, ditches, wetlands or aquatic habitat, vegetative cover, wildlife habitat and wildlife migration routes, and geologic features as defined in the Comprehensive Plan or identified onsite and within one-half mile of the location on which the operation is proposed.
 10. **Site disturbance.** Dimensions of the site, indicating area in square feet and acres, and the area of the site to be disturbed for permanent operations and temporary operations.
 11. **Easements and Rights-of-Way.** Utility line easements and rights-of-way within 150 feet of the proposed site and access road.
 12. **Existing and Proposed Lines.** Existing and proposed water pipelines to or from the site and all other pipelines, tanks, wells, gathering lines, and flow lines serving the site, including information on the age, location, depth, diameter, thickness, typical and maximum operating pressures, the nature of the material carried in the pipes.
 13. **Existing and Proposed Roads.** Existing and proposed roads within the parcel and on the site as well as ingress and egress from public and private roads.
 14. **Topography.** Existing and proposed topography at five-foot intervals to portray the direction and slope of the area within 1500 feet of the operation.
- K. **Agricultural Land Mitigation Plan.** An assessment of any agricultural lands potentially impacted by the proposed operation and a plan for mitigating impacts in compliance with Section 12-600.
- L. **Air Quality Plan.** A plan establishing compliance with the air quality provisions of Section 12-600, including a leak detection and repair program.
- M. **Emergency Preparedness Plan.** Each Applicant with an operation in the County is required to implement an emergency preparedness plan for each oil and gas operation. The emergency preparedness plan must consist of at least the following information:

1. Name, address and phone number, including 24-hour emergency numbers for at least two persons located in or near Boulder County who are responsible for emergency field operations. The Applicant is responsible for ensuring that at least one of these emergency contacts can respond to a phone call within thirty (30) minutes.
2. An as-built facilities map in a format suitable for input into the County's GIS system depicting the locations and type of above and below ground facilities including sizes and depths below grade of all onsite and offsite oil and gas gathering and transmission lines and associated equipment, isolation valves, surface operations and their functions. The as-built map must be submitted with thirty (30) days of removal of the completions crew from the specific oil and gas location.
3. Transportation routes to and from exploration and development sites for emergency response and management purposes, including at least two evacuation routes.
4. Detailed information addressing each potential emergency that may be associated with the operation. This may include any or all of the following: explosions, fires, gas, oil or water pipeline leaks or ruptures, hydrogen sulfide or other toxic gas emissions, or hazardous material vehicle accidents or spills. This may also include hazards to the site such as earthquakes, floods, or wildfire. For each potential emergency, threshold / trigger levels shall be pre-identified that govern when an emergency state is declared by the Applicant.
5. The plan must include a provision that any spill outside of the containment area or that has the potential to leave the facility or to threaten a water body or groundwater must be reported to the emergency dispatch and the Director immediately, and in no case more than twenty-four (24) hours.
6. Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.
7. Project specific emergency preparedness plans are required for any project that involves drilling or penetrating through known zones of hydrogen sulfide gas.
8. The plan must include a provision that obligates the Applicant to reimburse the appropriate emergency response service providers for costs incurred in connection with any emergency. The appropriate emergency response service provider may specify alternative methods for reimbursement of its services. If requested by the emergency response agency, a provision in the plan that includes regular training exercises.
9. Detailed information that the Applicant has adequate personnel, supplies, and funding to implement the emergency response plan immediately at all times during construction and operations.
10. The plan must include provisions that obligate the Applicant to keep onsite and make immediately available to any emergency responders the identification and corresponding Safety Data Sheets (SDS) of all products used, stored or transported to the site. The SDS must be updated weekly and provided immediately upon request to the Director, emergency responders, a County Public Health representative, or a health professional. Operators must timely provide SDS to the public in response to a written request. In cases of spills or other emergency events, the plan must include provisions establishing a notification process to emergency responders of potential products they may encounter, including the products used in the hydraulic fracturing fluids.

11. The plan must include a provision establishing a process by which the Applicant engages with the surrounding neighbors to educate them on the risks and benefits of the onsite operations and to establish a process for surrounding neighbors to communicate with the Applicant.
- N. Land Disturbance Mitigation Plan.** An assessment of areas of land disturbance, an analysis of the species, character and density of existing vegetation on the site, a summary of the potential impacts to vegetation as a result of the proposed operation, and a plan, including proposed landscaping, revegetation, and other mitigation measures, demonstrating compliance with the standards of Section 12-600. If site work has been done less than one year before the application submittal, the condition of the property prior to site work shall be used as a baseline. The application shall include any COGCC required interim and final reclamation procedures.
- O. Operations Plan.** A plan describing the proposed operations including the method, schedule, and duration of time for drilling, completion, transporting, production and post-operation activities.
- P. Transportation Plan.** The Applicant must submit a plan establishing compliance with the transportation standards in Section 12-600 and which contains the following information:
1. Map indicating proposed trip routes for all traffic serving the oil and gas operation during all phases of well development and operations.
 2. Indicate for each segment of the proposed route in Boulder County the types, sizes, weight, number of axles, volumes, and frequencies (daily, weekly, total) and timing (times of day) of all vehicles to be used for the proposed oil and gas operation.
 3. Identify all measures necessary to ensure the safety and quality of life experience of other users of the county transportation system, adjacent residents, and affected property owners, including without limitation:
 - a. operational measures to minimize impacts to the public including, but not limited to, time of day, time of week, vehicle fuel and emissions reduction technology, noise minimization, and traffic control safety measures;
 - b. maintenance practices on the proposed route, including without limitation, grading of unpaved roads, dust suppression, vehicle cleaning necessary to minimize re-entrained dust from adjacent roads, snow and ice management, sweeping of paved roads/shoulders, pothole patching, repaving, crack sealing, and chip sealing necessary to maintain an adequate surface of paved roads along the proposed route; and
 4. any necessary physical infrastructure improvements to ensure public safety for all modes of travel along travel routes to and from the site.
- Q. Water Supply.** Applicant must submit estimated water supply requirements and usage for the proposed development including:
1. An estimate of the amount of water needed for the through all phases of the oil and gas operation;
 2. A list of all available physical water sources of water supply for the project, and if multiple sources are available, and analysis of which source is least detrimental to the environment;
 3. A description of the physical source of water supply that the Applicant proposes to use to serve the oil and gas operation;

4. Water conservation measures, if any, that may be implemented within the oil and gas operation; and
 5. An estimate of the amount of water that will be used at the site, where and how the water will be consumed, the amount of wastewater produced, and disposal plans for wastewater.
- R. Offsite Transport Plan.** A plan identifying the alternatives for transporting water and oil and gas resources to and from the site. The plan must include:
1. Pipeline Option. A plan demonstrating how pipelines may be used to transport water, wastewater, and the resource, including all flowlines, gathering lines, and pipelines located within Boulder County that may be used to serve the site and establishing compliance with the pipeline provisions of Section 12-600.
 2. Vehicle Option. A plan demonstrating how truck transportation may be used to transport water, wastewater, and the resource as an alternative to pipelines. The plan must include the information in subsection (P) above with respect to trucks uses to transport water and oil and gas.
- S. Electrification Plan.** A plan identifying all sources of electricity that will be brought to or used at the site during all phases, including drilling, completion, and operations.
- T. Cultural and Historic Resources Mitigation Plan.** A cultural, historical and archeological survey of the parcel or parcels to be used for the proposed oil and gas operation that demonstrates compliance with the standards of Section 12-600.
- U. Geologic Hazard Area Mitigation Plan.** A geologic hazard mitigation plan identifying hazard types and areas on the parcels demonstrating compliance with the standards of Section 12-600. If the Applicant proposes above-ground oil and gas facilities in the floodplain, a flood mitigation plan must be included as a part of the geologic hazard mitigation plan.
- V. Natural Resources Mitigation Plan.** A plan identifying natural resources on the parcels and information demonstrating compliance with Section 12-600.
- W. Recreational Activity Mitigation Plan.** Information identifying recreational activities, such as public trails and open space, in the area of the proposed oil and gas operation, and a plan demonstrating how impacts will be mitigated and compliance with the standards of Section 12-600.
- X. Scenic Attributes and Rural Character Mitigation Plan.** An assessment of scenic attributes and rural character potentially impacted by the proposed oil and gas operation and a plan for mitigating impacts in compliance with Section 12-600.
- Y. Surrounding Land Uses Mitigation Plan.** Information identifying surrounding land uses within one-half (1/2) mile of the proposed oil and gas operation, an assessment of any potential impacts to surrounding land uses, and a plan mitigating impacts in compliance with Section 12-600.
- Z. Waste Disposal Plan.** Information identifying the projected waste from the site and plans for disposal of such waste.
- AA. Water Quality Plan.** A plan establishing compliance with the water quality provisions of Section 12-600. The plan may include details such as the Applicant's plans for water quality testing, prevention of illicit or inadvertent discharges, stormwater discharge management, containment of pollutants, and spill notification and response as required by federal and state

agencies. The Applicant shall provide the County with the information it provides to the COGCC ensuring compliance with the water quality protection standards contained in Rule 317(B), Rule 910, and any other applicable COGCC rules governing water quality protection. The Applicant shall provide all water well test results. The Applicant shall provide its plans concerning downhole construction details and installation practices, including casing and cementing design, and shall inform the County how the plans establish that the operation does not create significant degradation to surface waters or drinking water aquifers.

BB. Wetlands Protection Plan. Information identifying wetlands in the area and demonstrating compliance with the standards of Section 12-600.

CC. Additional Information. If the Director determines that the County needs additional information to determine whether the proposed oil and gas operation meets the criteria in Section 12-600, the Director may require the Applicant to submit such information.

12-600 Special Review Standards

All special review applications shall be reviewed according to the following standards, which the Board, considering the advice of the Director, has determined to be applicable based on the nature and extent of the proposed development. When two or more of the standards listed below conflict, the Board, based upon advice of the Director, shall evaluate the applicability and importance of each of the conflicting standards under the facts of the specific application and make a reasonable attempt to balance the conflicting standards in reaching a decision. The Board's decision will be based upon compliance with all special review standards it determines are applicable. In evaluating compliance with these standards, the Board shall take into consideration the number of wells proposed on a well pad and the parcel. Depending on site specific factors, a greater number of wells on a site is likely to have a greater impact and, as a result, may require more mitigation measures than a pad or parcel with fewer wells.

- A. Adequate Water Supply.** Development applications for proposed oil and gas operations must demonstrate that the available water supply is the least detrimental to the environment among the available sources and adequate to meet the needs of the development. Special review approval may be conditioned upon sufficient proof of adequate water supply.
- B. Agricultural Land.** Oil and gas operations shall, to the maximum extent practicable, avoid the loss of agricultural land, including farm or ranch land, or any other vegetated land; shall minimize impacts on agricultural operations; and shall avoid impacts to livestock, grazing permits or leases, or grazing permittees or lessees.
- C. Air Quality.** The installation and operation of any oil and gas operation shall, to the maximum extent practicable, avoid causing degradation to air quality. To the maximum extent practicable, the installation and operation of any oil and gas operation must eliminate, capture, or minimize all potentially harmful emissions and dust associated with onsite activities and traffic on access roads must be minimized.
- D. Cultural and Historic Resources.** Oil and gas operations shall, to the maximum extent practicable, avoid causing degradation of cultural or historic or archaeological resources, sites eligible for County landmarking, or sites in the National Historic Register.
- E. Emergency Prevention and Response.** Oil and gas operations shall, to the maximum extent practicable, avoid risks of emergency situations such as explosions, fires, gas, oil or water

pipeline leaks, ruptures, hydrogen sulfide or other toxic gas or fluid emissions, and hazardous material vehicle accidents or spills. Oil and gas operations shall ensure that, in the event of an emergency, adequate practices and procedures are in place to protect public health and safety and repair damage caused by emergencies.

- F. Floodplains and Floodways.** Above ground oil and gas operations are prohibited in floodways. Above ground oil and gas operations shall not be located in a floodplain unless all alternate locations outside of the floodplain that allow for extraction or transportation of the resource are more detrimental to health, safety, welfare or the environment than the proposed location in the floodplain. All above-ground oil and gas operations approved in a floodplain must comply with the flood protection measures in Article 4-400. Tanks in the 500 year floodplain also require flood protection measures.
- G. Geologic Hazard Areas Other than Floodplains and Floodways.** To the maximum extent practicable, oil and gas operations shall not be located in geologic hazard areas as mapped in the Comprehensive Plan.
- H. Land Disturbance.** The installation and operation of any oil and gas operation shall, to the maximum extent practicable, avoid causing degradation to the surface of the property used for the oil and gas operation. Considerations for application of this standard include, but are not limited to, the natural topography and existing vegetation, unnecessary or excessive site disturbance, and minimization of the amount of cut and fill.
- I. Natural Resources.** The installation and operation of any oil and gas operation shall, to the maximum extent practicable, avoid causing degradation to mapped significant natural communities, natural landmarks and natural areas, rare plant areas, significant riparian corridors, prominent natural features such as distinctive rock and land forms, rivers and streams and other landmarks or other identified visual or scenic resources, wildlife, or critical wildlife habitat as defined in the Comprehensive Plan or identified on the site.
- J. Pipelines.** Any newly constructed or substantially modified oil and gas pipelines on site must meet the Additional Provisions listed at Article 4-514(E)(5)(a) – (f). If the special review application creates a need for new or substantially modified oil and gas pipelines located off the site of the special review application but within Boulder County, the special review application must be processed in tandem with the separate application for special review required for such offsite pipelines under Article 4-514(E). In such case, any approval of the special review application for oil and gas operations shall be conditioned on approval of the separate special review application for the associated Gas and/or Hazardous Liquid Pipelines, and vice versa. If the special review creates a need for new or substantially modified water or wastewater pipelines located off the site of the special review application but within Boulder County, the special review application must be processed in tandem with the separate special review required for permanent offsite pipelines under Article 4-514(K) or limited impact review required for temporary offsite water or wastewater transmission lines under Article 4-517(J). Any approval of the special review application for oil and gas operations shall be conditioned on approval of the separate special review or limited impact special review application, as applicable, for the associated water or wastewater pipelines, and vice versa.
- K. Recreational Activity.** Oil and gas operations shall, to the maximum extent practicable, avoid causing degradation to the quality and quantity of recreational activities in the County. Considerations for application of this standard include, but are not limited to, designated environmental resources, trails, and recreational uses, as identified in the Comprehensive Plan or identifiable on or near the site.

- L. Scenic Attributes and Rural Character.** Oil and gas operations shall, to the maximum extent practicable, avoid causing degradation to the scenic attributes and rural character of the area.
- M. Surrounding Land Uses.** Oil and gas operations shall be, to the maximum extent practicable, sited and operated in a manner so that the operation is compatible with surrounding land uses. In applying this standard, separation from surrounding land uses shall be considered the most effective measure to ensure compatibility between proposed oil and gas operations and existing land uses. Considerations for application of this standard also include, but are not limited to, impacts on used or occupied structures; the natural topography and existing vegetation; the location of surrounding land uses; prevailing weather patterns, including wind directions; and hilltops, ridges, slopes, and silhouetting.
- N. Transportation, Roads, and Access.** Oil and gas operations shall, to the maximum extent practicable, be designed and implemented to minimize or mitigate impacts to physical infrastructure of the county transportation system, ensure public safety, and maintain quality of life for other users of the county transportation system, adjacent residents, and affected property owners. Where available, existing private roads must be used to minimize land disturbance unless traffic safety, visual concerns, noise concerns, or other adverse surface impacts dictate otherwise.
- O. Water Quality.** Oil and gas operations shall, to the maximum extent practicable, avoid causing degradation to surface or ground waters within Boulder County.
- P. Wetlands Protection.** Oil and gas operations shall, to the maximum extent practicable, avoid causing degradation to wetlands within Boulder County. Among other methods to achieve compliance with this standard, the proposed oil and gas operation shall not alter historic drainage patterns and/or flow rates or shall include acceptable mitigation measures to compensate for anticipated drainage impacts.

12-700 Conditions of Approval Applicable to All Special Review Approvals

The following oil and gas facility operational requirements and mitigation measures are likely necessary to meet the approval criteria in 12-600. Accordingly, unless the Board deems a condition unnecessary to establish compliance with this Article, all of the following shall apply to all oil and gas operations in the form of conditions of approval applicable to each special review permit:

- A. Anchoring.** All mechanized equipment associated with oil and gas operations must be anchored to minimize transmission of vibrations through the ground and prevent flood hazards.
- B. Applications and Permits.** The Applicant must provide copies of local, state and federal applications required for the operation, and permits, when issued, to the Director.
- C. Certification and Reporting.** An authorized representative for the Applicant must submit monthly reports to the Director certifying compliance with all air quality requirements imposed by the State and the County as conditions of approval and documenting any periods of non-compliance, including the date and duration of each deviation and a compliance plan and schedule to achieve compliance. The reports must contain a certification as to the truth, accuracy and completeness of the reports. The Applicant must immediately notify the Director whenever public health or safety is in jeopardy. The Applicant must notify the Director within twenty-four

(24) hours of any uncontrolled oil, gas, or water flowing from a well. The Applicant must otherwise notify the Director within ten days of any significant downhole problem, mechanical failure, or accident or natural event that results in injuries to a member of the public requiring medical treatment or significant damage to the well site.

- D. Color.** Facilities must be painted in a uniform, non-contrasting, non-reflective color that blend with the surrounding landscape.
- E. Discharge Valves.** Open-ended discharge valves on all storage tanks, pipelines and other containers must be secured where the operation site is unattended or is accessible to the general public. Open-ended discharge valves must be placed within the interior of the tank secondary containment.
- F. Dust Suppression and Fugitive Dust.** Dust associated with on-site activities and traffic on access roads must be minimized throughout construction, drilling and operational activities such that there are no visible dust emissions from access roads or the site to the extent practicable given wind conditions. The Applicant must comply with permit and control provisions of the Colorado Air Quality Control Program, Boulder County Public Health's best management practices for dust suppression.
- G. Emergency Preparedness Plan.** The Applicant must implement the Emergency Preparedness plan approved by the Director. The plan must be updated on an annual basis, or as conditions change, such as responsible field personnel and ownership.
- H. Exhaust.** The exhaust from all engines, motors, coolers and other mechanized equipment must be vented up or in a direction away from the closest occupied structures.
- I. Flammable Material.** Oil and gas operations must comply with COGCC rules concerning control of fire hazards.
- J. Flares and Combustion Devices.** All flares shall be designed and operated as follows:
 - 1. The flare must be fired with natural gas.
 - 2. The flare must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions means observations of smoke for any period or periods of duration greater than or equal to one (1) minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.
 - 3. The flare must be operated with a flame present at all times when emissions may be vented to it.
 - 4. All combustion devices must be equipped with an operating auto-igniter.
 - 5. If using a pilot flame ignition system, the presence of a pilot flame must be monitored using a thermocouple or other equivalent device to detect the presence of a flame. A pilot flame must be maintained at all times in the flare's pilot light burner. If the pilot flame goes out and does not relight, then if no telemetry system is in place, a visible alarm shall be in place on-site and activated.
 - 6. If using an electric arc ignition system, the arcing of the electric arc ignition system must pulse continually and a device must be installed and used to continuously monitor the electric arc ignition system.
- K. Hydrocarbon Emissions Leak and Detection and Repair.** The Applicant must develop and maintain a leak detection and repair program approved by the Director using modern leak detection technologies, such as infra-red cameras, for equipment used on the well site. Any

leaks discovered should be reported to the County immediately. Operators must repair leaks as quickly as practicable; if more than 48-hours repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the Director.

- L. Lighting.** Except during drilling, completion or other operational activities requiring additional lighting, down-lighting is required, meaning that all bulbs must be fully shielded to prevent light emissions above a horizontal plane drawn from the bottom of the fixture. A lighting plan must be developed to establish compliance with this provision. The lighting plan must indicate the location of all outdoor lighting on the site and any structures, and must include cut sheets (manufacturer's specifications with picture or diagram) of all proposed fixtures. Lighting must be no greater than required for safe operation.
- M. Log.** The Applicant must maintain a log for each well completion operation at each gas wellhead affected facility. The log must be completed on a daily basis and must contain the records specified in 40 C.F.R. § 60.5420(c)(1)(iii).
- N. Maintenance of Machinery.** Routine field maintenance of vehicles or mobile machinery must not be performed within three hundred (300) feet of any water body.
- O. Noise.** Any equipment used in drilling, completion, or production of an oil and gas operation must comply with the maximum permissible noise levels set forth in COGCC regulations..
- P. Notice of Commencement.** The Applicant must mail notice to the Department; surface owners of the parcels of land on which the oil and gas operation is located; owners of the parcels of land within one-half mile (2,640 feet) of the parcel on which the oil and gas operation is located; and the physical addresses of all parcels within one-half mile (2,640 feet) of the parcel on which the oil and gas operation is located at least thirty (30) days prior to the commencement of the drilling and completion phase. The notification must include contact information for the Applicant; the American Petroleum Institute (API) well number; the latitude and longitude coordinates for each well in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983; and the planned date of the beginning of drilling and estimated date of completion.
- Q. Performance Guarantee.** If approval is conditioned upon revegetation, road improvements, or similar specific site improvements, the Applicant will be required to submit a letter of credit or other financial guarantee in a form satisfactory to the County for the full cost of such improvements prior to issuance of a special review construction permit. The Applicant may apply to the Director for release of the letter of credit upon completion of the improvements.
- R. Reclamation Plan.** Any special review approval must include any COGCC required interim and final reclamation procedures.
- S. Removal of Debris.** Oil and gas operations must comply with COGCC rules concerning removal of debris. Burning of trash must not occur in association with an oil and gas operation per C.R.S. 25-7-128(5).
- T. Removal of Equipment.** All equipment used for drilling, re-drilling and maintenance of the facility must be removed from the site within thirty (30) days after completion of the work, unless otherwise agreed to by the surface owner and the Director. Permanent storage of equipment on well pad sites is not allowed.
- U. Representations.** The approved special review application is subject to all commitments of record, including verbal representations made by the Applicant at any public hearing and written

commitments in the application file, and without limitation must encompass compliance with all approved mitigation plans.

- V. Spills and Leaks.** Chemical spills and releases, including spills of produced water, oil, condensate, natural gas liquids, all spills outside of secondary containment, and E & P waste, must be reported and cleaned up according to applicable state and federal laws, including the Oil and Pollution Act and the Clean Water Act, as applicable. Operators must report spills and hydrocarbon emissions leaks to the Director immediately and no later than twenty –four (24) hours of the time the leak or spill is discovered.
- W. Stormwater Control.** A stormwater control plan that establishes that all operations shall use most effective performance techniques and best management practices to minimize impacts to surface waters from erosion, sediment, and other sources of pollution such as chemicals. The stormwater control plan required by COGCC Rule 1002(f) may be provided to establish compliance with this stormwater control plan provision. Prior to commencement of operations, the Applicant must also provide the Director with a letter from the Water Quality Control Division of the Colorado Department of Public Health and Environment showing that the project is covered under the Colorado Discharge Permit System (CDPS) general permit for *Stormwater Discharges Associated with Construction Activities* (state stormwater discharge permit), when applicable.
- X. Temporary Access Roads.** Property subject to temporary access roads associated with oil and gas operations shall be reclaimed and re-vegetated to its original state within sixty (60) days after discontinued use of the temporary access roads.
- Y. Transportation Fees.** All applicable transportation fees shall be paid prior to issuance of a special review construction permit, including without limitation:

 - 1. access permit fees;
 - 2. oversize/overweight permit fees;
 - 3. right of way construction permit fees; and
 - 4. fees to mitigate the cumulative impacts of heavy truck traffic on the county transportation system.
- Z. Transportation Infrastructure.** Any costs to improve county transportation system infrastructure necessitated by the proposed oil and gas operation shall be the responsibility of the Applicant. All transportation system infrastructure improvements and associated costs shall be determined by the County Transportation Department after consultation with the Applicant. The County shall perform the work or arrange for it to be performed. If the Applicant disagrees with the infrastructure improvements or associated costs as assessed by County Transportation, it may request that County Transportation approve a different route for its proposed oil and gas operation that avoids the need for such improvements. Alternatively, the Applicant may engage a licensed civil engineering firm to perform a study to independently evaluate county transportation system infrastructure improvements necessitated by the proposed oil and gas operation. The County Transportation Department shall consider the results of such a study in making a final determination on infrastructure improvements.
- AA. Transportation Permits.** Applicant shall obtain all applicable transportation permits as specified in the County’s Multimodal Transportation Standards, including but not limited to County access, driveway, utility construction, and oversize and overweight permits, as well as all appropriate Colorado Department of Transportation (CDOT) access permits pursuant to the CDOT State Highway Access Code. Access roads on the site and access points to public roads as identified in the application materials shall be reviewed by the County Transportation Department and shall

be built and maintained in accordance with the engineering specifications and access road standards defined in the Multimodal Transportation Standards.

BB. Vegetation. An analysis of the existing vegetation on the site establishing a baseline for re-vegetation upon temporary or final reclamation or abandonment of the operation.

CC. Vehicle Tracking Control Practices. Vehicle tracking control practices must be used 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. Traction chains from heavy equipment shall be removed before entering a County road.

DD. Water Quality. A water quality control plan that establishes that all operations shall use most effective performance techniques and best management practices to minimize impacts to water quality, including plans for water quality testing, prevention of illicit or inadvertent discharges, and containment of pollutants as required by state and federal agencies.

EE. Weed Control. Oil and gas operations must keep wells and surface production facilities free of weeds. . The Applicant is also responsible for ongoing weed control along access roads during construction and operation, until abandonment and final reclamation is completed per County or other applicable agency regulations. For access roads, the appropriate weed control methods and species to be controlled must be determined through review and recommendation by the County Weed Coordinator by reference to the Boulder County Noxious Weed Management Plan and, where appropriate, in coordination with the requirements of the surface owner.

FF. Well Abandonment or Decommissioning. The Applicant must comply with any COGCC rules regarding well abandonment, decommission, or reclamation. Upon plugging and reclaiming a well, the Applicant must provide the County with surveyed coordinates of the decommissioned or reclaimed well. Unless otherwise requested by the surface owner, the Applicant must leave onsite a permanent physical marker of the well location.

12-701 Potential Site Specific Mitigation Measures

Application of these potential mitigation measures will be site-specific and based on the land use impacts of the particular oil and gas operation, the environmental impacts of the particular oil and gas operation, the Applicant's ability to undertake particular mitigation measures given the current state of technology, and consideration of any associated standards or rules adopted by the COGCC, the Air Quality Control Commission, or the EPA.

A. Air Quality.

- 1. Minimization of Hydrocarbon Emissions.** To protect air quality, hydrocarbon emissions control measures may be required, including, but not limited to, one or more of the following:
 - a. Electrification from the power grid or from renewable sources of all permanent operation equipment with engines or motors that can be electrified.
 - b. Pipelines for water delivery to the site.
 - c. Pipelines for transportation of oil and gas away from the site.
 - d. Limitations on truck traffic to and from the site.

- e. Implementation of “tankless” production techniques.
- f. Environmentally sensitive and efficient production techniques, such as using natural gas onsite rather than flaring.
- g. For well pads that are not electrically operated, use of quiet design mufflers (also referred to as hospital grade or dual dissipative) or equivalent.
- h. Use of acoustically insulated housing or covers to enclose the motor or engine.
- i. Manufacture test or other data demonstrating hydrocarbon destruction or control efficiency that complies with a design destruction efficiency of 98% or better.
- j. Bleed and vent restrictions on continuous bleed pneumatic devices, intermittent vent pneumatic devices, compressor engines, heater treaters, dehydrator reboilers, process heaters-pilot flames.
- k. Proof that any flare, auto ignition system, recorder, vapor recovery device or other equipment used to meet the hydrocarbon destruction or control efficiency requirement is installed, calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manuals.
- l. Emissions controls of 90% or better for glycol dehydrators.
- m. Zero-emission desiccant dehydrators.
- n. Hydrocarbon control of 95% or better for crude oil, condensate, and produced water tanks with uncontrolled actual emissions of VOCs greater than five (5) TPY.
- o. Year-round application of odor requirements as set forth in 5 C.C.R. 1001-9, § XII (as amended).
- p. Electronic surveillance monitors to detect when pilot lights on control devices are extinguished.
- q. Drilling, completion and operation of wells using closed loop pitless systems for containment and/or recycling of all drilling, completion, flowback and produced fluids.
- r. Emission controls of hydrocarbon emissions of 95% or better for centrifugal compressors and reciprocating compressors.
- s. Dry seals on centrifugal compressors.
- t. Routing of emissions from rod-packing and other components on reciprocating compressors to vapor collection systems.
- u. Reduction or elimination of emissions of associated gas from hybrid gas-oil wells (i.e. gas that is co-produced from a well that primarily produces oil), including prohibition of uncontrolled venting.
- v. Emission control of 90% or better during liquids unloading (i.e. maintenance activities to remove liquids from existing wells that are inhibiting production), including the installation of an automated plunger lift.
- w.Reduction or elimination of emissions from oil and gas pipeline maintenance activities such as pigging, including routing emissions to a vapor collection system.
- x. Proof of compliance with State-required dust control measures and imposition of an opacity requirement as tested using EPA Method 9.
- y. Odor reduction or elimination outside a specified distance from the well site.
- z. Use of an automated tank gauging system.

2. **Hydrocarbon Emissions Leak Detection and Repair and Air Quality Monitoring.** The Applicant may be required to develop and maintain an acceptable leak detection and repair program using modern leak detection technologies such as infra-red cameras for equipment used on the well site. Operators may be required to repair leaks on a

schedule approved by the Director. Continuous ambient air quality monitoring to measure hydrocarbon emissions and meteorological data may be required.

B. Water Quality Monitoring and Well Testing. To protect local water quality, the Board may require the Applicant to implement a water quality monitoring and well testing plan. Water quality testing and control measures may be required, including, but not limited to, one or more of the following:

- 1. Notice to Well Owners.** Sixty (60) days prior to completing or hydraulic fracturing a well, the Applicant must identify and provide notice to all water well owners with wells located within one-quarter ($\frac{1}{4}$) mile of the projected track of the borehole of a proposed well and within one-half mile of the proposed well and those who have requested notice under 12-400(H)(3)(a). The notice must contain the following provision: "Boulder County informs owners of water wells near the (name of well) that in order to establish base line water well data, it would be prudent to conduct a water well test, in conformance with Boulder County Land Use Code Section 12-700, prior to the anticipated (completion) / (hydraulic fracturing) on (date)."
- 2. Decommissioned Oil and Gas Well Assessment.** Assessment and monitoring of plugged and decommissioned or removed from use and dry and removed from use oil and gas wells (abandoned wells) within one-quarter ($\frac{1}{4}$) mile of the projected track of the borehole of a proposed well. This may include:
 - a. Based upon examination of COGCC and other publicly available records, identification of all abandoned wells located within one-quarter ($\frac{1}{4}$) mile of the projected track of the borehole of a proposed well.
 - b. Risk assessment of leaking gas or water to the ground surface or into subsurface water resources, taking into account plugging and cementing procedures described in any recompletion or plugged and abandoned (P&A) report filed with the COGCC.
 - c. Notification of the Director and COGCC of the results of the assessment of the plugging and cementing procedures.
 - d. Permission from each surface owner who has an abandoned well on the surface owner's property to access the property in order to test the abandoned well. If a surface owner has not provided permission to access after thirty (30) days from receiving notice, the Applicant shall not be required to test the abandoned well.
 - e. For each abandoned well for which access is granted, a soil gas survey of the abandoned well prior to production from the proposed well and again one (1) year and then every three (3) years after production has commenced.
 - f. Notification of the results of the soil gas survey to the Director and the COGCC within three (3) months of conducting the survey or advise the Director that access to the abandoned wells could not be obtained from the surface owner.
- 3. Water Well Sampling and Testing.** Based upon records of the Colorado Division of Water Resources, the Applicant may be required to identify and offer to sample all water wells located within one-quarter ($\frac{1}{4}$) mile of the projected track of the borehole of a proposed well and within one-half ($\frac{1}{2}$) mile of the radius of the proposed well. Sampling requirements may include:
 - a. Sampling wells on either side of the borehole track and in different aquifers, where applicable.
 - b. For each water well sampled, at least a thirty (30) day notice to respective surface owners and opportunity to respond to the notice regarding sampling the water well or advise the Director that Applicant could not obtain access to the abandoned wells from the surface owner.
 - c. Testing prior to setting of the conductor casing.
 - d. Testing for the analytes listed in Table 1.

- e. Reporting the location of the water well using a GPS with sub-meter resolution.
4. **Field observations.** Reporting on damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence.
 5. **Post Completion Testing.** Within one (1) year after completion of the proposed well, post-completion testing using the same analytical parameters as above and repeated two (2) and six (6) years after the completion of the well. Additional post-completion tests if changes in water quality are identified during follow-up testing or in response to complaints from water well owners.
 6. **Test results.** Provide copies of all test results described above to the Director, the COGCC, and the water well owners within three (3) months after collecting the samples.
 7. **Resolution and mitigation.** If sampling shows water contamination, mitigation of the contamination may be required. Mitigation measures may include the following:
 - a. If free gas or a dissolved methane concentration level greater than one (1) milligram per liter (mg/l) is detected in a water well, determination of the gas type using gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen).
 - b. If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.
 - c. Immediate notification to the Director, the COGCC, and the owner of the water well if the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l.
 - d. Immediate notification to the Director, the COGCC and the owner of the water well if BTEX and/or TPH are detected as a result of testing.
 - e. Reasonable good faith efforts to conduct initial baseline testing of the identified water wells prior to the setting of the conductor casing at the site. Post-completion tests for the same analytical parameters listed above.
 - f. Further water well sampling in response to complaints from water well owners.
 - g. Timely production and distribution of test results, well location, and analytical data in electronic deliverable format to the Director, the COGCC and the water well owner.
 8. **Qualified Independent Professional Consultant.** All abandoned well assessments and water well testing must be conducted by the Applicant or, if requested by a surface owner, by a qualified independent professional consultant approved by the Director.

Table 1. Water Quality Analytes	
GENERAL WATER QUALITY	Alkalinity
	Conductivity & TDS
	pH
	Dissolved Organic Carbon (or Total Organic Carbon)
	Bacteria
	Hydrogen Sulphide
MAJOR IONS	Calcium Chloride Fluoride Magnesium Potassium

	Sodium Sulfate Nitrate + Nitrite (total)
METALS	Arsenic Barium Boron Chromium Copper Iron Lead Manganese Selenium Strontium
VOLATILE ORGANIC COMPOUNDS	Methane BTEX compounds (Benzene, Toluene, Ethylbenzene, Xylene) Total Petroleum Hydrocarbons (TPH)
OTHER	Water Level Stable isotopes of water (Oxygen, Hydrogen, Carbon).

C. Land Disturbance and Compatibility. Conditions of approval that will reduce impacts to the site, natural resources, environmental resources, agricultural resources, floodways and floodplains, wetlands, and recreational activities, and will enhance compatibility with the surrounding area or scenic and rural character may be required, including, but not limited to, one or more of the following:

- 1. Location.** A change of the proposed location of the well pad that allows for extraction of the resource and mitigates the land use impacts.
- 2. Reduction.** A reduction of the number of wells on a single pad.
- 3. Disruption.** If surrounding occupants of residential structures are significantly adversely affected by drilling and completion activities, reasonable disruption payments to those occupants. The amount of disruption payments may be calculated using market data prepared by a qualified independent professional consultant, with consideration given to existing surface use agreements with such occupants. Consideration shall be given to the effect of disruption of health, sleep patterns, lifestyle, or the cost of replacement housing, home or land-based occupations, moving costs, transportation costs, and other factors affecting residents.
- 4. Pad dimensions.** Adjustment of pad dimensions to the minimum size necessary to accommodate operational needs while minimizing surface disturbance.
- 5. Structures and surface equipment.** Adjustment of structures and surface equipment to the minimal size necessary to satisfy operational needs.
- 6. Shared infrastructure.** Use of shared existing infrastructure by oil and gas operations, minimizing the installation of new facilities and avoiding additional disturbance to lands

in a manner that reduces the introduction of significant new land use impacts to the environment, landowners and natural resources.

7. Landscaping and irrigation.

- a. Landscaping plans including drought tolerant species that are native and less desirable to wildlife and suitable for the climate and soil conditions of the area.
- b. An irrigation plan may be required where buffering is accomplished with vegetation.

8. Buffering of Visual Impacts. Landscaping, berming, or other types of screening materials along the perimeter of the site between the surface equipment and surrounding areas.

9. Vegetation. Maximization of the amount of natural screening available for the facility. Natural screening includes, but is not limited to, the use of existing vegetation as a background, the construction of the operation near screening stands of vegetation, or placement in valleys allowing topographic screening. Construction of the operation in a manner that minimizes the removal of and damage to existing trees and vegetation. If the operation requires clearing trees or vegetation, feathering and thinning of the edges of the cleared vegetation and mowing or brush-hogging of the vegetation while leaving root structure intact, instead of scraping the surface.

10. Equipment. Use of buried or low profile tanks and less intrusive equipment.

11. Remote monitoring. Use of remote monitoring of wells.

12. Soils. Testing of soil samples to determine impacts to soil quality, which may include baseline testing.

13. Spills and leaks. A leak detection plan to monitor for fluid leaks.

D. Transportation. Conditions of approval that will ensure public safety for all modes of travel along travel routes to and from the site and maintain quality of life for other users of the county transportation system, adjacent residents, and affected property owners, including a requirement that the Applicant use a particular route for some or all of the pad construction, drilling, and completion phases of the oil and gas operation; maintenance practices on the proposed route during pad construction, drilling, and completion designed and implement to adequately minimize impacts; and compliance with Boulder County's Multimodal Transportation Standards.

12-800 Judicial Review

A final decision by the Board of County Commissioners on a special review application is subject to judicial review in a court of competent jurisdiction under C.R.C.P. 106(a)(4).

12-900 Procedures Following Approval of a Special Review Application

- A. Right to Enter.** Any site under an approved special review may be inspected by the County at any time to ensure compliance with the requirements of the approved special review, provided that four (4) hours prior notice is given to the contact person at the telephone number supplied by the Applicant. The Applicant shall provide the telephone number of a contact person who may be reached twenty-four (24) hours a day for purposes of being notified of any proposed County inspection under this Section. Each approved special review shall contain the following statement: "Applicant consents to allow the County the right of inspection of this approved operation provided the County contacts the Applicant with four (4) hours prior notice of such inspection." County inspections shall be coordinated with the Applicant to ensure Applicant

presence onsite and to ensure the site visit is conducted in accordance with all applicable Applicant safety requirements.

- B. Effect of the Approved Special Review.** After approval of a special review application and following compliance with any applicable conditions of approval, the County Land Use Department shall issue a construction permit for the proposed oil and gas operation. Following receipt of the permit, the Applicant must obtain any necessary building, grading, access, floodplain, or other County permits and, following the receipt of these additional permits, is authorized to otherwise proceed with the proposed oil and gas operation. The approval of the special review application under this Article does not result in the vesting of development rights, nor does it authorize the violation of any County or state regulations or preclude the County from refusing to issue any other permit or authorization if the plans and specifications do not comply with applicable County regulations.
- C. Duration of the Approved Special Review.** An approved special review application shall remain effective for a period of three (3) calendar years following the date of the Board's approval resolution. If the operation is not commenced within three (3) calendar years the permit shall expire and the Applicant will have to reapply for a new permit prior to undertaking operations.
- D. Amendments and Modifications.** Prior to changing or modifying a special use approved under this Article or any other existing oil and gas operation, the Applicant shall submit a written request for modification as specified under Article 4-603. Upon submission of such a request, the Director shall proceed as specified in Article 4-603 except that the Director shall consider the additional criteria specified in this subsection. Unless approved in the original special review permit, the addition of one or more new wells on an existing pad shall be considered a substantial modification to the entire pad and the entire pad shall be required to come into compliance with this Article, to the extent practical. Other changes shall be considered substantial if they significantly alter the nature, character, or extent of the land use impacts of the special review approval or will result in an increase in hydrocarbon emissions. Refracking of an existing well shall be considered a substantial modification. A modification shall not be considered a substantial modification if it results in a net decrease in hydrocarbon emissions or other net mitigation of existing or potential environmental impacts.
- E. Maintenance and Repair.** The Director may maintain a list of activities that the Director does not consider substantial modifications but rather maintenance and repair. Activities on the list may be undertaken without County review or approval.

12-1000 Enforcement

If the County determines at any time that there is a violation of an approved special review application, the Director shall be entitled to commence one or more of the following enforcement measures and remedies.

- A. Written Order Suspending the Approval.** The Director may issue a written order to the Applicant (or owner, Applicant, or agent, as applicable) identifying the violation and suspending the approved special use and all activity otherwise allowed by the special use approval. If the violation presents an immediate threat to the health, safety or welfare of the public, the Director may immediately issue the written order to the Applicant in writing and, upon receipt, the Applicant must cease all activities and operations immediately until the violation is remedied. In all other instances, prior to issuing a written order, the Director shall provide written notice to the Applicant describing the violation, and stating a reasonable time within which the violation must be corrected. If, within that time period, the Applicant has not either

corrected the violation or filed a written appeal with the Board of County Commissioners, the written order shall be delivered to the Applicant in writing and, upon receipt, the Applicant must cease all activities and operations immediately until the violation is remedied. Any appeal to the Board of County Commissioners of the threatened or actual issuance of the written order shall be acted upon pursuant to Section 12-1300(B) below.

- B. Appeal Hearing Before Board of County Commissioners.** If the Applicant files a timely appeal with the Board of County Commissioners of the Director's determination to issue a written order suspending the special use, the Board shall schedule a hearing on the appeal at the soonest possible time of which the Applicant shall receive reasonable prior notice. If the Board confirms at the hearing that the violation has occurred and has not been corrected, the Board in its discretion may confirm issuance of a written order suspending the special use or the determination to draw upon the financial guarantee. The Board, in its discretion, may also give the Applicant additional time to correct the violation, or may specify the time at which the Director may take appropriate action to have the violation corrected.
- C. Suit to Enjoin COGCC Rule Violation.** If the Director discovers a violation or threatened violation of Title 34, Article 60 of the Colorado Revised Statutes or any rule, regulation, or order made under that Article, the Director shall notify the COGCC in writing. If the COGCC fails to bring suit to enjoin any actual or threatened violation, then the County Attorney may file an action on behalf of the Board seeking injunctive relief.
- D. Falsification.** If the Director, in the course of administering this Article, learns that any person, has made a false entry, omitted an entry, or altered an entry in violation of CRS § 34-60-121, the Director may report such information to the District Attorney for criminal prosecution.
- E. Other Enforcement Remedies.** In addition to the foregoing enforcement measures, Boulder County has the right to any and all other enforcement measures and remedies provided by law, including but not limited to seeking relief through the courts to enforce an approved special review, or to stop or abate any oil and gas operations occurring or about to occur without the requisite special use or other county approvals.

12-1400 Definitions

Terms used in this Article 12 are defined below. Any terms not specifically defined for purposes of Article 12 may be defined in Article 18.

Abandonment. The permanent abandonment of a well, which shall be determined at the time of the Applicant's filing of the appropriate abandonment form with the COGCC.

Adequate Water Supply. A water supply that will be sufficient for build-out of the proposed development in terms of quality, quantity, dependability, and availability to provide a supply of water for the type of development proposed, and may include reasonable conservation measures and water demand management measures to account for hydrologic variability.

Agent. One authorized to make binding representations on behalf of the Applicant.

Adversely Affected or Adverse Impact. The impact of an action, after mitigation, that is considerable or substantial, and unfavorable or harmful, including social, economic, physical, health, aesthetic, historical and/or biological impacts, including but not limited to, effects on natural resources, the structure or function of affected ecosystems, or persons, structures or communities.

Applicant. Person, corporation or other legal entity possessing the legal right to develop the mineral resource who has applied for a special review permit for an oil and gas operation.

BTEX and/or TPH. Benzene, Toluene, Ethylbenzene, Xylene and Total Petroleum Hydrocarbons.

Chemical(s). Any element, chemical compound or mixture of elements and/or compounds.

Closed Loop Drilling Process or System. A closed loop mud drilling system typically consists of steel tanks for mud mixing and storage, and the use of solids removal equipment, which normally includes some combination of shale shakers, mud cleaners and centrifuges sitting on top of the mud tanks. This equipment separates drill cutting solids from the mud stream coming out of the wellbore while retaining the water or fluid portion to be reused in the continued drilling of the well bore. The solids are placed in containment provided on the site. The system differs from conventional drilling where a reserve pit is used to allow gravitational settling of the solids from the mud which can then be reused. A Closed Loop Drilling System does not include use of a Conventional Reserve Drilling Pit.

COGCC. The Colorado Oil and Gas Conservation Commission.

Combustion device. Any ignition device, installed horizontally or vertically, used in exploration and production operations to combust otherwise vented emissions from completions.

Corridor. Tracts of land within which a water, wastewater, or oil and gas pipeline right-of-way is located.

County. Boulder County, Colorado, and its officers, staff, employees and agents.

Degradation. Lowering in grade or desirability; lessening in quality.

Department. Boulder County Land Use Department.

Drilling Operation. Any work or actual operation undertaken for the purposes of carrying out any of the rights, privileges or duties of a lessee for drilling of an oil well, gas well, or cathodic protection well.

Equipment. Machinery or structures located on well pads, rights-of-way, or other land uses in the oil and gas operation, including, but not limited to, wellheads, separators, dehydration units, heaters, meters, storage tanks, compressors, pumping units, internal combustion engines, and electric motors.

Flow Line. Those segments of pipe from the wellhead downstream through the production facilities ending at: (a) in the case of gas lines, the gas metering equipment; (b) in the case of oil lines, the oil loading point or lease automated custody transfer unit; or (c) in the case of water line, the water loading point, the point of discharge to a pit, or the permitted surface water discharge point.

Gas Well. A well, the principal production of which at the mouth of the well is gas, as defined by the Oil and Gas Conservation Act.

Gathering Line. A pipeline and equipment described below that transports gas from a production facility (ordinarily commencing downstream of the final production separator at the inlet flange of the custody transfer meter) to a natural gas processing plant or transmission line or main. The term “gathering line” includes valves, metering equipment, communication equipment, cathodic protection facilities, and pig launchers and receivers, but does not include dehydrators, treaters, tanks, separators, or compressors

located downstream of the final production facilities and upstream of the natural gas processing plants, transmissions lines, or main lines.

Grading Plan. Plan view and cross-section of existing and proposed land contours, cuts and fills, topsoil storage location and stabilization methods, and maximum slopes.

Ground Water. Subsurface waters in a zone of saturation.

Heavy Equipment. Drilling rigs, completion rigs, construction equipment, and individual truck/trailer combination vehicles with a gross vehicle weight exceeding five tons.

Improvement. Any new construction activity, grading or land development, or addition of equipment or materials to a site.

Mitigation. One or more of the following actions which are prioritized in order of preference:

Avoiding Impacts. Avoiding an impact by not taking a certain action or parts of an action; or

Minimizing Impacts. Limiting the degree or magnitude of the action or its implementation, or by changing its location; or

Rectifying or Remediating Impacts. Repairing, rehabilitating, or restoring the impact area, facility or service; or

Reducing or Eliminating Impacts. Decreasing or removing the impact over time by preservation and maintenance operations; and

Other Provisions for Addressing Impacts. Using alternative means not contemplated by this Article to provide equivalent biological, social, environmental and/or physical mitigation effects.

Most Effective Performance Techniques and Practices. The application of proven and emerging techniques, technologies or other Best Management Practices used in conducting oil and gas exploration and development which avoid, neutralize, exclude, eliminate, mitigate or minimize adverse on and off-site impacts to public health and the environment, landowners, and natural resources, and which may reduce conflicts between potentially impacted landowners and the oil and gas industry.

Occupied Structure. Any building or structure that requires a certificate of occupancy or building or structure intended for human occupancy.

Oil and Gas Facilities.

The site and associated equipment used for the production, transportation, treatment, and/or storage of oil and gas and waste products; or

An individual well pad built with one or more wells and operated to produce liquid petroleum and/or natural gas, including associated equipment required for such production; or

An individual well pad with one or more wells for exploration of oil and gas; or

Gathering lines, and ancillary equipment including but not limited to drip stations, vent stations, pigging facilities, chemical injection stations and valve boxes; or

Temporary storage and construction staging yards in place for less than six months; or

Oil and Gas Operations. Exploratory drilling; the siting, drilling, deepening, recompletion, reworking, refracturing, closure or abandonment of an oil and gas well; oil and gas facilities; and construction, site preparation, reclamation associated with the development of oil and gas resources. With respect to any submittal or review requirements under this Section, “oil and gas operations” shall refer to the particular oil and gas operations for which the Applicant is seeking County approval.

Oil Well. A well, the principal production of which at the mouth of the well is oil, as defined by the Oil and Gas Conservation Act.

Operation. Oil and Gas Operations.

Operator. Any person who exercises the right to control the conduct of oil and gas operations.

Owner or Applicant. Person who has the right to drill into and produce from a pool and to appropriate the oil or gas produced either for such owner or others, including owners of a well capable of producing oil, gas, or both.

Permanent Equipment. Equipment located onsite for a duration greater than one (1) year effective one (1) year after the date of first production of a well.

Person. Any individual, partnership, corporation, association, company, or other public or corporate entity, including but not limited to the State or Federal governments, and any of their political subdivisions, agencies, or instrumentalities.

Pit. Any natural or man-made depression in the ground used for oil or gas exploration or production purposes excluding steel, fiberglass, concrete or other similar vessels which do not release their contents to surrounding soils.

Practicable. Able to be done or put in practice successfully.

Regulation(s). Article 12 of the Boulder County Land Use Code.

Referral Agency. An agency, organization, or technical consultant deemed appropriate and necessary, by the County, to review an application and provide professional analysis and recommendations, including without limitation other County offices and departments, municipal, state, or federal agencies having an interest in or authority over all or part of the application or permit, and professional or legal consultants.

Right-Of-Way. The legal right to pass through grounds or property owned by another, or land, property or interest therein, usually in a strip, acquired for or devoted to transportation or conveyance purposes.

Site. The areas that are disturbed during the drilling and subsequent operation of, or affected by production facilities associated with, any oil well or gas well and its associated well pad.

Surface Owner. The owner of the surface property on which the oil and gas operation will be located or constructed.

Surrounding. Within one-half mile of a proposed oil and gas operation.

Temporary Use Area. Disturbed lands immediately adjacent to the well pad or right of way used by an Applicant during the construction or maintenance of a well, pipeline or other facility that will be reclaimed for permanent operations.

TPY—Tons per year.

Transmission Line. Pipeline transporting oil, natural gas or any other products derived from oil and gas production, which is defined as a transmission line by the U.S. Department of Transportation regulations under the Natural Gas Pipeline Safety Act of 1968, as amended.

VOC. Volatile organic compounds.

Water or Water Body. Any surface waters which are contained in or flow in or through Boulder County, excluding ephemeral streams, roadway ditches, water in sewage systems, water in treatment works of disposal systems, water in potable water distribution systems, stock ponds or irrigation ditches not discharging to live streams, and all water withdrawn for use until use and treatment have been completed.

Water Supply Entity. A municipality, county, special district, water conservancy district, water conservation district, water authority, or other public or private water supply company that supplies, distributes, or otherwise provides water at retail.

Well or Wellhead. An oil or gas well, a hole drilled for the purpose of producing oil or gas, a well into which fluids are injected, a stratigraphic well, a gas storage well, or a well used for the purpose of monitoring or observing a reservoir.

Well Blowdown. Maintenance activity designed to remove unwanted fluids from mature wells during which time gas is often vented to the atmosphere.

Well Completion. An oil well shall be considered completed when the first new oil is produced through wellhead equipment into lease tanks from the ultimate producing interval after the production string has been run. A gas well shall be considered completed when the well is capable of producing gas through wellhead equipment from the ultimate producing zone after the production string has been run. A dry hole shall be considered completed ninety (90) days after reaching total depth. If approved by the Director of the COGCC, a well that requires extensive testing shall be considered completed when the drilling rig is released or six months after reaching total depth, whichever is later.

Well Pad. Area in which permanent operations for the well take place including, at a minimum, that portion of the pad area occupied by permanent production equipment. Well pads may contain one or more wellheads and associated equipment.

EXHIBIT A.2

Amendment to Article 2

Amend section 2-800(C)(1) as follows:

C. Duties and Responsibilities

1. The Board of Adjustment holds regular meetings to hear appeals of any order, requirement, decision, or determination made by the Land Use Director or County Engineer in administering or enforcing Article 4 related provisions (i.e., definitions in Article 18) of this Code, to hear appeals of the Director specified provisions of Article 12, and to consider certain variances from the requirements of Article 4 of this Code.

Amend section 2-800(c)(2) by adding the additional section:

g. from any provision of Article 12.

Amendment to Article 3

3-300 Application Submittals and Processing

- A. The Director may create a waitlist for accepting applications. When the Director establishes a waitlist, Land Use shall inform prospective applicants regarding the waitlist and notify Applicants when they have reached the front of the waitlist so that their applications may be accepted and processed. Prospective applicants shall generally be placed on the waitlist on a first come, first served basis. However, the Director may prioritize items basis on special circumstances, such as reconstruction-related permit applications submitted after a natural disaster.
- B. When the Director establishes a waitlist, no time limit for processing applications shall apply until the application is removed from the waitlist and accepted for processing.

Amendments to Article 4-500 (use definitions)

1. **Amend Article 4-506(D) to exclude injection wells as a permitted use in the General Industrial District.**

D. Major Oil and Gas Operations

1. Definition: ~~Water injection wells and facilities,~~ Centralized water transfer stations, centralized water pump stations, storage yards and construction staging yards in place for

longer than six months, and any other oil and gas operation the location of which is not dependent upon development of the mineral resource or subject to Article 12.

Districts Permitted: By Special Review in GI

Parking Requirements: None

Loading Requirements: None

Additional Provisions: Water injection wells and facilities are prohibited in all districts.

2. Amend Article 4-508 Mining Uses by deleting current Sections 4-508(B) and 4-508(C) and replacing with new Section 4-508(B):

B. Oil and Gas Operations

1. Definition: See Article 12-1400
2. Districts Permitted: By special ~~development plan~~ review for oil and gas operations in all districts (Article 12)
3. Parking Requirements: None
4. Loading Requirements: None
5. Additional Provisions: None

Re-order remaining items and update cross-references as needed.

3. Amend Article 4-514 Utility and Public Service Uses:

Amend the definition of the use entitled “Gas and/or Hazardous Liquid Pipelines” so that it reads as follows:

E. Gas and/or Hazardous Liquid Pipelines

1. Definition: Pipelines for the collection and transmission of crude oil, natural gas or other hazardous liquids.
2. Districts Permitted: In all districts by Special Review, or review under Article 8 (areas and activities of state interest), as applicable. Gathering lines and flow lines that are part of new oil and gas development and are located on the same parcel as the well head, pumping units, tanks and/or treaters will be subject to Special Review under Article 12 of this Code.
3. Parking Requirements: None
4. Loading Requirements: None
5. Additional Provisions:
 - a. This use is not required to be located on a building lot, or comply with the minimum lot size requirement for the district in which it is located.
 - b. The Applicant must provide written notice of the application to all property owners within 500 feet of the centerline of the proposed pipeline.
 - c. Siting.
 - i. Such lines shall, to the maximum extent practicable, be sited to avoid areas containing residential, commercial, and industrial buildings; places of public assembly; and surface water bodies. In no instance may a Gas and/or Hazardous Liquid Pipeline be located closer than fifty (50) feet from a residential, commercial, or industrial buildings; a place of public assembly; or a the high-water mark of any surface water body. This distance shall be measured from the nearest edge of the pipeline. Pipelines and gathering lines that pass within 150 feet of general residential, commercial, and industrial buildings or the high water mark of any surface water body shall incorporate leak detection and repair, secondary containment, or other mitigation, as appropriate.

- ii. Such lines shall, to the maximum extent practicable, be sited to avoid areas that will impact county open space or road rights-of-way. Surface impacts and habitat fragmentation and disturbance must be minimized where such pipelines are permitted.
 - iii. To the maximum extent practicable, Applicants shall share existing pipeline rights-of-way and consolidate new corridors for pipeline rights-of-way to minimize surface impacts.
 - iv. To minimize negative impacts to the channel, bank, and riparian areas, when crossing streams, rivers or irrigation ditches, operators must use boring technology or alternative Director-approved most effective performance techniques and practices.
- d. Construction.
 - i. Flow lines, gathering lines, and transmission lines shall be buried below the level of cultivation, and must be installed so that the cover between the top of the pipe and the ground level, road bed, river bottom, or underwater natural bottom is at least four (4) feet deep
 - ii. The Department may require an Applicant for a pipeline to provide a risk-based engineering study for all or part of its proposed pipeline right of way that may require the implementation of more stringent construction or operation standards or space between the pipeline and other structures.
 - iii. During pipeline construction for trenches that are left open for more than five (5) days and are greater than five feet in width, install wildlife crossovers and escape ramps where the trench crosses well-defined game trails and at a minimum of one-quarter mile intervals where the trench parallels well-defined game trails.
 - iv. All pipe installed in a ditch must be installed in a manner that minimizes the introduction of secondary stresses and the possibility of damage to the pipe.
 - v. Any pipe installed underground must have at least twelve (12) inches of clearance between the outside of the pipe and the extremity of any other underground structure, except that for drainage tile the minimum clearance may be less than 12 inches but not less than two (2) inches. Where twelve (12) inches of clearance is impracticable, the Director may approve a request by the operator to reduce the minimum clearance if adequate provisions are made for corrosion control.
- e. Records. A complete record that shows the following must be maintained by the operator for the life of each pipeline facility and provided to the County in electronic format compatible with the County's geographic information system for reference in case of emergency:
 - i. The total number of girth welds and the number nondestructively tested, including the number rejected and the disposition of each rejected weld.
 - ii. The amount, location, and cover of each size of pipe installed.
 - iii. The location of each crossing of another pipeline.
 - iv. The location of each buried utility crossing.
 - v. The location of each overhead crossing.
 - vi. The location of each valve and corrosion test station.
- f. Where appropriate given the context of the application, in reviewing an application or formulating a condition of approval the Director may consult the pipeline guidelines published by the U.S. Department of Transportation Pipeline

and Hazardous Materials Safety Administration for acceptable separation distances between residential, institutional, recreational, commercial, or industrial uses and hazardous operations, available at 24 C.F.R. Part 51.

Amend existing use definition in 4-514(K) as follows:

Sewage, Wastewater, or Water Transmission Lines

1. Definition: Pipelines used for the transport of water, wastewater, or sewage.
2. Districts Permitted: By review under the regulation of areas and activities of state interest or location and extent review in all districts, unless the line is serving an oil and gas facility, in which case special review in all districts.
3. Parking Requirements: None
4. Loading Requirements: None
5. Additional Provisions:
 - a. This use is not required to be located on a building lot, or comply with the minimum lot size requirement for the district in which it is located.

Add a new Temporary Use as 4-517(J):

Temporary Water or Wastewater Transmission Line

1. Definition: Temporary above-ground pipelines used for the transport of water or wastewater to or from an oil and gas facility or location.
2. Districts Permitted: By limited impact special review in all districts
3. Parking Requirements: None
4. Loading Requirements: None
5. Additional Provisions:
 - a. This use is not required to be located on a building lot, or comply with the minimum lot size requirement for the district in which it is located.

EXHIBIT A.3

Amendment to Board of Adjustment provisions

Modify section 4-1201(D) as follows:

~~D. No Appeals to the Board of Adjustment or requests for variances before the Board of Adjustment are permitted for~~ related to any matters under Article 12, Development Plan Special Review for Oil and Gas Operations, must be specifically permitted under Article 12.

Add new section 4-1204 as follows:

4-1204 Appeal

A. Any party to a proceeding before the Board of Adjustment may appeal the Board of Adjustment's final decision under C.R.C.P. 106(a)(4).

EXHIBIT A.4

Development Standards

Modify section 7-904(D)(4) as follows:

4. A ~~Development Plan Review (“DPR”)~~ Special Review permit authorizing oil and gas operations subject to a stormwater control plan approved under Article 12-800 700 or 701 of this Code ~~(conditions of approval applicable to all county oil and gas operations DPR permits),~~ shall be considered the equivalent of a County Engineer stormwater quality under this Article 7-904, and a separate permit application under this Article 7-904 for such operations shall not be required.

EXHIBIT A.5

Clerical changes necessary to conform rest of Land Use Code to DC-16-_____

1. Delete references to “Development Plan review for Oil and Gas Operations” and replace with “Special Review for Oil and Gas Operations”
2. Delete references to “Development Plan Review” and “DPR” and replace with “Special Review.”
3. Update Table of Contents and associated cross-references in Code as necessary.
4. Update use tables as necessary.
5. All other clerical amendments necessary to conform entire Land Use Code to primary text amendments approved in this DC-16-_____.

EXHIBIT B

RESOLUTION 2016-65

Terminating the Temporary Moratorium First Enacted by Resolution 2012-16, as Extended and Amended by Resolutions 2012-46, 2013-18, 2013-50, 2013-55, 2013-56, 2014-88, and 2015-23; Establishing a New Moratorium on Processing Oil and Gas Development Applications until November 18, 2016

Recitals

A. On May 2, 2016, the Colorado Supreme Court handed down its decision in *City of Fort Collins v. Colorado Oil and Gas Association*, overturning that city's 5-year voter-approved moratorium on fracking and the storage of fracking waste within the city. As a result of the *Fort Collins* decision, the legal status of Boulder County's current moratorium on processing oil and gas development permit applications is uncertain.

B. In addition to the *Fort Collins* decision, since the County last considered its temporary moratorium in a public hearing, a number of statewide efforts ongoing at that time affecting local regulation of oil and gas development have concluded.

- i. To avoid a number of proposed statewide ballot measures in the 2015 fall election which would have clarified and increased local control of oil and gas development, the Governor established a Task Force on State and Local Regulation of Oil and Gas Development. While the Task Force produced a few positive recommendations for changes at the state level, overall the results were disappointing for those who seek greater local control over industrial operations close to homes, schools, and residents, as well as those operations that threaten sensitive environmental and natural resources.
- ii. The Colorado Oil and Gas Conservation Commission ("COGCC") conducted several rulemakings in which the County participated. These rulemakings concerned development in the floodplain, how complaints to COGCC get processed and resolved, operator submission of information on potential oil and gas development for incorporation into local comprehensive plans, and local government collaboration with operators concerning large scale oil and gas facilities. COGCC rejected most of the County's input on critical local concerns about protecting our floodplains from oil and gas operations and mitigating the impacts of large scale facilities.
- iii. In the 2015 and 2016 legislative sessions, the County worked closely with several state legislators and other interested parties to get legislation passed which delegated localities more control over oil and gas development. Ultimately, the legislature failed to clarify local government's land use authority to protect health, safety, welfare, and the environment in a manner sufficient to address each localities' unique land use patterns, economic vitality, and quality of life.
- iv. The rulemaking completed by the Colorado Air Quality Control Commission ("AQCC") on air quality requirements for certain oil and gas operations in early 2014 was a step forward, with new requirements on methane emissions

and leak detection and repair. But the AQCC did not incorporate all of our local government coalition's recommendations into the final rules.

- v. Applying the current statutory and regulatory framework governing oil and gas development in Colorado, state courts have now resolved (or, in the case of Broomfield, will resolve in the immediate future) all outstanding litigation between localities and industry and between localities and the state.

C. Since the County last considered its temporary moratorium, industry technologies and practices have evolved significantly, including in ways of great concern to local residents, schools, and others proximate to oil and gas operations. For example, the average number of wells per pad is increasing dramatically, creating large scale facilities generating land use and environmental impacts on neighbors significantly different in nature and extent than when we last updated our regulations.

D. Consequently, the County's current oil and gas regulations need to be updated to ensure our local regulations do not conflict with new state laws, to better reflect new industry practices, and to best protect public health, safety, welfare, and the environment in Boulder County.

E. Staff anticipates the time needed to analyze necessary amendments to our regulations, as well as develop a plan to administer the new regulations including reviewing appropriate permit and impact fees, is approximately six months in total. This timeframe assumes approximately one month for hiring technical expertise and internal staff meetings; two months for drafting, referral to interested third parties, and public review of those drafts; one month to notice and conduct Planning Commission hearings; one month for BOCC hearings; and one month to train staff to implement the new regulations.

NOW, THEREFORE, the Board resolves:

1. The temporary moratorium first enacted by Resolution 2012-16, as extended and amended by Resolutions 2012-46, 2013-18, 2013-50, 2013-55, 2013-56, 2014-88, and 2015-23 is hereby terminated.

2. A new temporary moratorium is reasonable and necessary to protect the public health, safety, and welfare of the County and prevent irreparable harm. The new moratorium begins on the date of this Resolution and ends at the close of business on November 18, 2016. The purpose of the moratorium is to allow time to formulate and publicly review necessary amendments to current County land use and environmental regulations governing oil and gas development in the unincorporated area.

3. Per section 16-100 of the Land Use Code, staff is directed to analyze existing County regulations governing oil and gas development and whether amending such regulations pursuant to the County's legal authority is necessary to adequately mitigate the associated impacts and hazards to best protect the public health, safety, welfare, and environment. In doing so, without limitation staff is directed to revisit the use of land use and zoning powers and comprehensive planning techniques; evaluate the Expedited and Standard Development Plan Review structure; ensure adequate protection of the floodplain; evaluate the impacts and possible mitigation methods for multi-well pads and similarly intensively developed ancillary facilities; propose all changes necessary to conform County regulations with the most recent state rules from COGCC and AQCC; analyze necessary improvements concerning pipelines; analyze necessary improvements concerning an adequate water supply for drilling, completion, and operations phases; review all fees applicable to oil and

gas development, including permit review fees and impact fees; and make any other conforming changes throughout the Land Use Code.

4. Exhibit A (Categories of Exemption from the Moratorium, Process for Requesting an Exemption, and Process for Evaluating Exemption Requests) is incorporated herein by this reference.

5. Staff shall set and notice a public hearing to occur no later than 45 days from the date of this Resolution for the purpose of deciding whether the new moratorium imposed by this Resolution should be terminated or otherwise amended.

6. Staff is directed to move expeditiously, such that the Board can end the temporary moratorium sooner if appropriate plans and regulations are in place. Any change in the duration or other terms of the temporary moratorium shall occur at a duly noticed public hearing of the Board.

* * *

A motion to this effect was made at the May 19, 2016 public meeting by Commissioner Gardner, seconded by Commissioner Domenico, and passed by a 3-0 vote of the Board.

ADOPTED on this 19th day of May, 2016.

BOARD OF COUNTY COMMISSIONERS OF BOULDER COUNTY:



Elise Jones, Chair

Cindy Domenico, Vice Chair

Deb Gardner, Commissioner

ATTEST:

Clerk to the Board

Exhibit A

Categories of Exemption from the Moratorium, Process for Requesting an Exemption, and Process for Evaluating Exemption Requests

1. **Types of Work Exempted.** The Temporary Moratorium does not apply to the following:
 - a. Any complete application for oil or gas exploration, development, or production currently being processed by the Land Use Department, which may continue to be processed and reviewed as provided in the Land Use Code.
 - b. Any application for oil or gas exploration, development, or production already approved by the Land Use Department prior to the effective date of this Resolution where such approval is validly maintained thereafter.
 - c. Development that possesses either a statutory or common law vested right.
 - d. Minor modifications to existing permits.
 - e. Plugging and abandonment of existing facilities, with the exception that associated rerouting of flowlines, gathering lines, or other pipelines will be subject to section 4-514.E of the Land Use Code, unless the Director waives one or more of the requirements of that section as inapplicable in light of the nature and extent of the proposed work.
 - f. Work on existing oil and gas facilities which the Land Use Director in his sole discretion deems necessary to either (i) repair facilities impacted by acts of God such as, without limitation, the flooding and severe weather events of September 2013, (ii) reconfigure or relocate facilities in a manner that better protects public health, safety, and welfare and the environment, or (iii) perform routine maintenance and repairs. In determining whether work is "routine maintenance or repairs," the Director may consider whether the work will require other county permits, such as floodplain development permits. For purposes of this Section, "oil and gas facilities" means the site and associated equipment used for the production, transportation, treatment, and/or storage of oil and gas and waste products; or an individual well pad built with one or more wells and operated to produce liquid petroleum and/or natural gas, including associated equipment required for such production; or gathering lines, and ancillary equipment including but not limited to drip stations, vent stations, pigging facilities, chemical injection stations and valve boxes; or any other oil and gas operation which may cause significant degradation. In no case may the Land Use Director approve repairs, reconfiguration, or relocation under this subsection where the work would involve drilling a new well or hydraulic fracturing.

2. **Request for Exemption.** If an oil and gas operator believes certain activity is not subject to the temporary moratorium given the exceptions listed in Section 5 as amended by this Resolution, the operator must submit a request for exemption in writing to the Land Use Director. Unless waived by the Land Use Director for good cause shown, the request must include at a minimum:

- a. a site plan showing the existing and planned location of the facilities;
- b. a description of the desired work;
- c. the reason(s) why the work is not subject to the moratorium including any benefit to public health, safety, and welfare and the environment;
- d. the time and dates when the work would occur;
- e. the duration of the work;
- f. any mitigating measures to reduce impacts to neighbors and other affected parties;
- g. a list of all parties that will receive notice from the operator prior to commencement of work;
- h. documentation that the operator can obtain and maintain all other required local, state, or federal permits, including without limitation county Floodplain Development Permits and any permits required by COGCC, CDPHE, and the U.S. Army Corps of Engineers.

3. **Process for Evaluating Exemption Request.** Work eligible for an administrative exemption from the moratorium may only proceed upon written approval of the Land Use Director.

- a. In evaluating a request for an exemption, the Director will use the Standard DPR Approval Standards in section 12-703 of the Boulder County Land Use Code as well as the pipeline regulations in 4-514.E as a guide. Where two or more of the standards in 12-703 or 4-514.E conflict when applied to the proposed work, the Director shall analyze the applicability and importance of each of the conflicting standards under the specific facts of the application and make a reasonable attempt to balance the conflicting standards in reaching a decision.
- b. In considering an exemption request, the Director shall notify adjacent property owners. The Director shall not issue the approval for seven days following such notification and shall consider any comments received by the public. To the extent necessary, the Director may refer requests for administrative exemptions from the moratorium to other agencies. In his sole discretion, the Director may waive this notice requirement for good cause shown (for example, necessary and routine maintenance and repairs not likely to affect adjacent property owners).
- c. Where appropriate given the nature and extent of the proposed work, the Director may impose reasonable conditions of approval to mitigate impacts, using sections 12-703, 12-800, and 4-514.E, as a guide.

EXHIBIT C

Boulder County Voluntary Oil and Gas Inspection Program- IR Camera Data

Boulder County facilities are primarily operated by the State's larger operators with a few smaller operators conducting business in the county as well. However, the large majority of facilities in Boulder County would fall under the one time AIMM inspection requirement.

Year	# Facilities Visited with IR Camera	# Facilities Found to Have a Leak or Venting Identified	Percentage with Leak or Venting Identified	Average Time Span For Repair
2014	128	53	41%	31 days
2015	75	33	44%	13 days
2016 (through August)	56	26	46%	18 days
Totals	259	112	43%	20 days (3 year average)

# Repair Confirmation Visits	Issues Unresolved	Issue Resolved	New Leak Identified	Percentage With New Leak Identified
44	3	41	12	27%

# Sites Visited in Multiple Years	# Sites Where a Leak is Detected in Multiple Years	% of Sites with Leaks Detected in Multiple Years
97	19	19%

Release Location Data	Tank	Separator	Wellhead	ECD	Pipeline	Flowline
2014	18	22	24	0	3	1
2015	18	13	10	3	1	0
2016 (through August)	12	10	7	5	0	0
Totals	48	45	41	8	4	1