



Land Use

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**BOULDER COUNTY
BOARD OF COUNTY COMMISSIONERS**

November 10, 2014, 2:00 p.m.

**The Plaza Event Center
1850 Industrial Circle
Longmont, Colorado**

Public Hearing to receive a status update from staff on the matters discussed in Resolutions 2014-56 and 2013-55, and to consider whether to extend or otherwise amend the current temporary moratorium on Boulder County's processing of applications for oil and gas development in the unincorporated county

Coordinating County Staff: Land Use Department, Public Health, Attorney's Office

PACKET CONTENTS:

Item

- Update on the Moratorium on Processing Applications for Oil & Gas Development
- Addendum 1 – Results of Scientific Studies
- Addendum 2 – Ongoing Studies
- Addendum 3 – Oil and Gas Legislation from 2014 Legislative Session
- Addendum 4 - Executive Orders creating the Statewide Oil and Gas Task Force

AGENDA FOR NOVEMBER 10th PUBLIC HEARING

- I. County staff presentation: Status Update Related to the Current Moratorium**
- II. Public Testimony will be taken**

Note: No decision will be made by the Board of County Commissioners at the November 10th hearing. A public meeting has been scheduled for Thursday, November 13 at 9:30 a.m. in the Commissioners' Hearing Room for deliberation on the Commissioners' decision. No further public comment will be taken at that time.

PUBLIC COMMENT

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>

BACKGROUND

Today's Hearing

The Board of County Commissioners last held a public meeting on June 12, 2014, to receive a status update from staff on the matters discussed in Resolution 2013-55, which extended the temporary moratorium on processing oil and gas development applications in the unincorporated county until January 1, 2015, and to consider whether to extend or otherwise amend the moratorium.

At the June meeting, staff provided an update on a number of matters related to the current temporary oil and gas development moratorium, including impacts from the September 2013 Flood¹, the status of scientific studies and any reported results, and changes to the regulatory landscape. The moratorium was amended (Resolution 2014-56) to allow flood recovery, such as relocating facilities further away from flood-prone areas to reduce the risks to public health, safety, welfare and the environment when future severe weather events occur, and other health & safety work to proceed.

No action on extending the moratorium was taken in June 2014, but the Board indicated they wanted to revisit this question in the fall, which is the purpose of today's (Nov. 10, 2014) public hearing.

A summary of updates subsequent to the update provided on June 12, 2014, is provided below.

History

Boulder County has been involved in analyzing the impacts of hydraulic fracturing since early 2012. For a summary of the efforts and meetings to date please visit the Boulder County oil and gas webpage at: <http://www.bouldercounty.org/dept/landuse/pages/oilgas.aspx>

A temporary moratorium on the processing of local oil and gas permits under County Land Use Code was first approved by the Boulder County Commissioners on February 2, 2012 (Resolution 2012-16). The predominant reasons behind the moratorium included the rapid pace of development of the oil and gas industry in the Denver Julesberg Basin, generally, and the Wattenberg Field in particular; potentially major changes in drilling and resource recovery methods and technology; growing public concern, county-wide, statewide and nationally, over hydraulic fracturing operations including possible adverse 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, worried about existing and future oil and gas development plans and questioning the ability of state and local regulation to deal with associated impacts.

¹ Boulder County commissioned its own third party assessment (by Terracon Consultants, Inc.) of oil and gas facilities within the county impacted by the floods, which did not reveal any major spills or releases within Boulder County but did identify some damaged facilities requiring cleanup or abandonment.

Staff therefore embarked on the process of updating the Comprehensive Plan (approved August 2012) and Land Use regulations (approved in December 2012 and amended in May 2013). On January 2, 2013, the Board of County Commissioners extended the temporary moratorium on the processing of applications for oil and gas development in the unincorporated county until June 10, 2013 in order to work on implementation of the newly approved regulations. On June 18, 2013, the Board extended the temporary moratorium on new oil and gas development applications another 18 months through January 1, 2015 (Resolution 2013-55).

Summary of Updated Oil and Gas Development Regulations Adopted in December 2013

The updated county Development Plan Review (“DPR”) regulations addressing oil and gas development in unincorporated Boulder County were adopted in December 2012, and amended in May 2013, in order to provide sufficient to protect public health, safety, and welfare. The regulations are in the form of a new Article 12 to the Boulder County Land Use Code.

While the Board of County Commissioners understands that the public would like to see a ban on fracking, there is significant concern that such a ban would not be upheld by the courts. Consequently they wanted the County to adopt a protective set of regulations in order to have adequate rules in place to review any proposed oil and gas operations, while at the same time continuing to actively engage at the State in order to get better statewide rules and preserving and increasing authority for local governments. The Board has indicated they foresee that these regulations will need to continue to be improved upon and amended as more information and further studies become available and in response to changes at the State level.

Staff drafted the new oil and gas development regulations with several goals in mind. The regulations were intended to address issues raised by the Planning Commission in its update of the Comprehensive Plan policies applicable to oil and gas development; to reflect today’s industry, its practices, and impacts on land use, transportation, public health, parks and open space, and other environmental and natural resources across the county; to respond to public questions and concerns; and to provide the maximum protection possible for local public health, safety, and welfare under current state and federal law. Lastly, an overarching goal is to require that impacts from oil and gas operations be mitigated to the greatest extent possible, where they cannot be entirely avoided.

To this end, the updated regulations include the following key substantive elements:

New or expanded regulatory areas:

- Well siting provisions;
- Air quality provisions;
- Water quality provisions;
- An expansive emergency response and emergency preparedness plan;
- Refined transportation standards requiring operations to mitigate any adverse impacts to public and private roads, as well as transportation impact fees to offset impacts to public roads;
- More expansive plans involving the siting of wells to address compatibility and visual concerns;
- Newly identified areas for additional purview of cultural and historic resources, recreational activities, scenic and rural character impacts, wetland protection, and well abandonment.
- Certification, monitoring, and inspection throughout the oil and gas exploration and development process.

Transportation Impact Fees

In addition to updated oil and gas regulations, Boulder County also adopted a Transportation Impact Fee in the amount of \$37,900 per well for oil and gas activities in the unincorporated county. For details on the regulations and studies, please visit the Boulder County oil and gas webpage at: <http://www.bouldercounty.org/dept/landuse/pages/oilgas.aspx>

SUMMARY OF UPDATES RELATED TO THE OIL AND GAS DEVELOPMENT MORATORIUM

Inspections of Oil and Gas Operations

In February 2014, Boulder County Public Health filled a County-funded (two-year) term position to conduct inspections of oil and gas operations. After completing the necessary training and creating a detailed inspection checklist covering air quality, water quality, and basic site characteristics, the inspector began conducting site inspections and has completed inspections at 128 sites for a total of 219 site visits. 113 of these were performed with an Optical Gas Imaging camera on loan from the Regional Air Quality Council. The inspector observed air releases at 49 (43%) of the inspections and stains indicative of past or active water releases at approximately 39 (29%) of the inspections. Some of the key issues that have been identified are discussed in the sections on Air Quality Issues and Water/Soil Contamination Issues below.

Air Quality Issues

Boulder County has a significant number of smaller wells that are not required by state law to control air emissions. However, many small sources can add up to a large number. The Colorado Department of Public Health and Environment (“CDPHE”) does not require well production facilities with less than 6 tons per year uncontrolled emissions to install air pollution controls. The recent updates to CDPHE’s air quality regulations provide more specificity to operators in understanding what actions are necessary to control air emissions. There are also aspects of the new rule that the Local Government Coalition urged the Air Quality Control Commission to strengthen, including increasing Leak Detection and Repair (LDAR) frequency for smaller operators. An example of a change proposed to strengthen the regulation during the rulemaking includes requiring LDAR to be conducted at least semi-annually for the smaller sources versus one time in the life of the operation. In light of this new information, it makes sense to consider requiring greater monitoring frequency and controls for small operators based on proximity to human activity including homes and schools. The Optical Gas Imaging Camera has been a great tool used to identify leaks at production sites, and inspection staff is seeing signs of operators using the camera for their own inspections. If a leak is identified, County staff contacts the operator of the site and provides follow up to make certain the issue is resolved. New State regulations require operators to respond initially within five working days of identification of a leak starting January 1, 2015; Boulder County is currently observing an average initial response time of two days. The main release points observed are at the wellhead and the oil/gas/water separator.

Water/Soil Contamination Issues

Current COGCC requirements for spill reporting are 201 gallons within a containment area, 42 gallons property wide, and any amount that impacts or threatens to impact waters of the state, occupied structure, livestock or public byway. Research is ongoing to better understand the extent that smaller spills may impact shallow ground water. Since 2009, 25 spills have been reported in Boulder County according to the COGCC database. Twenty of these spills were not contained and 14 spills impacted groundwater. In the event that a spill occurs, even in small amounts, soil clean up and confirmatory soil sampling documenting the cleanup can ensure that spills are being addressed. When a spill or release does occur it is essential that containment and clean up procedures occur as soon as possible to prevent the migration and transport of the contaminants deep into soil or groundwater. In order to ensure proper containment and clean up, Public Health staff should be

notified as soon as possible. Staff recommends that, in the event of a spill or release that has the potential to leave the facility or threaten to impact waters of the state, the operator report the incident to emergency dispatch and the Land Use Director immediately.

Operators are also reporting that they are lining the containment areas at newer well sites and using steel instead of earth containment. The Denver Post previously reported (May 2014) that while an average of 200 gallons is spilled onto soil per day statewide, no federal or state agency has assessed the impact of the Colorado oil and gas boom on soil, whether from a human health or crop science perspective.

The use of partially buried cement vaults is an area of concern that has been seen in the field. The use of cement vaults is no longer a common practice, but some operators are continuing to use them. Because these vaults are partially buried, many times issues involving the integrity of the vault are not realized until impacts have occurred. This has the potential to have negative impacts to both water and soil quality. Staff is considering recommendations to assess and address this issue at the state and local level.

Evolution of Drilling Technology

The new regulations do not require operators to adopt new technology; however, new technology is rapidly becoming available that would lessen some of the various impacts of oil and gas development. For example, operators are reporting the use of natural gas or electric powered diesel rigs that significantly reduce air emissions and noise. Additionally, piping water to a site versus trucking it to the site has the potential to reduce associated emissions, but may create a different set of impacts to agricultural lands and other resources depending on its routing. Finally, new technology is allowing operators to increase horizontal drilling distances.

Scientific Studies Discussing Impacts on Health and Safety

Many of the studies discussed in Resolution 2013-55 have not yet been completed. However, a few results have been published. Most conclude oil and gas development may negatively affect health and safety. For example, a recent flyover study of the Front Range revealed that oil and gas operations leak as much as three times more methane and seven times more benzene as the predictions that regulators and policy makers use to evaluate air quality and climate impacts. A study of groundwater impacts of oil and gas drilling in Garfield County concluded a link over time to increased methane and chloride levels in water wells from oil and gas drilling. A number of other studies found various areas of concern related to the impacts of oil and gas development on groundwater. Finally, a study in Ohio found that sand and water injected into natural gas wells during the hydraulic fracturing likely led to at least 11 earthquakes in March, 2014, and research focused on the Raton basin found a higher frequency of earthquakes around oil and gas wastewater injection wells. A more detailed survey of the results of these recent studies is included at Addendum 1.

Other studies are still underway. Notable among these is an air quality monitoring study overseen by Boulder County Public Health and implemented by the University of Colorado's Institute for Arctic and Alpine Research and Mechanical Engineering Department. Three different types of monitoring devices collected data at five sites throughout the county over the summer months to field test new monitoring approaches and to compare emissions within the city of Boulder to five sites near oil and gas operations. The data collection stage of this study concluded in August, and early results are showing a correlation between the measurements of the summa canisters and the absorbent tubes. A preliminary report of the findings will be submitted to the Board in December.

Other studies include an intensive study of the region's atmosphere conducted by the National Oceanic and Atmospheric Administration ("NOAA"); a study by the University of Colorado National Science Foundation Sustainability Research Network to research air and water quality as well as societal impacts of oil and gas development; and the Colorado State University and Garfield County Gas Emissions Study which will look at emissions from gas well development in the Garfield County region. CDPHE will be conducting an oil and gas emissions study of the north Front Range. However, currently no funding has been approved to evaluate the health risk impacts associated with the emissions being studied.

CDPHE, the University of Colorado ("CU"), Colorado State University ("CSU"), University of California Berkeley, and other university collaborators, local projects and agencies including local school districts, NASA, NOAA, and the National Center for Atmospheric Research ("NCAR") performed the the Front Range Air Pollution and Photochemistry Experiment ("FRAPPE") along with NASA's AQ Discover study where airplanes equipped with extensive and sophisticated air monitoring equipment as well as satellite data gathered the most robust data on atmospheric chemistry from all the pollutants that appear in the atmosphere over the Front Range during the summer months. The FRAPPE monitoring concluded in August, and early results are expected within the next year to five years to fully analyze this huge data set. Currently no funding has been approved to evaluate the health risk impacts associated with the emissions being studied.

In addition, CDPHE will continue its ongoing monitoring in Platteville to identify air quality issues and trends. Finally, the Environmental Protection Agency ("EPA") will conduct a study of the impact of hydraulic fracturing on drinking water. CSU, in September, also announced the launch of Colorado Water Watch, which is a "real time" groundwater monitoring pilot program. Descriptions of the studies that are underway are included at Addendum 2.

Changes to the Regulatory Landscape

The following changes have occurred at the federal, state, and local levels over the past year.

Federal

Environmental Protection Agency ("EPA") Actions

The EPA is creating a federal regulatory program that would require disclosure and reporting of the chemicals used in the hydraulic fracturing process. In May of 2014, the EPA released an Advanced Notice of Proposed Rulemaking under the Toxic Substances Control Act and is developing an approach to obtain information on chemical substances and mixtures used in hydraulic fracturing.

State

New Colorado Air Quality Rules Adopted by Colorado's Air Quality Control Commission

On February 23, 2014, Colorado's Air Quality Control Commission ("Commission") fully adopted EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution found in 40 C.F.R. Part 60, Subpart OOOO ("NSPS OOOO"); adopted corresponding revisions to its emissions reporting and permitting framework; and adopted complementary oil and gas control measures. This rulemaking was the culmination of a year-long stakeholder process. These oil and gas control measures focus on identifying and repairing leaks in the oil and gas sector, and contain some recordkeeping and reporting requirements. This rulemaking received support from environmental groups and some companies within the oil and gas industry. In addition to extensive volatile organic compounds ("VOC") reductions, Regulation Number 7 revisions also regulate methane emissions from the oil and gas industry. These oil and gas control measures are estimated to reduce VOC emissions by approximately 93,500 tons per year and methane/ethane emissions by approximately 65,000 tons per year, at a cost of approximately \$42.5 million per year.

EPA is under court order to update the National Ambient Air Quality Standard for Ozone by December 2014 which may result in a reduction of the standard and the requirement to produce a new State Implementation Plan which could impact oil and gas operations and other sources.

Colorado General Assembly 2014 Session

During the 2014 General Assembly's session, no bills related to the local control of oil and gas passed. A bill which would have directed CDPHE to analyze human health and quality of life in areas of the Front Range including Boulder County to understand any possible effects of oil and gas operations on communities within these counties was postponed indefinitely. The General Assembly did pass a bill which increases fines for violations of the Oil and Gas Conservation Act. A full summary of each bill introduced and its disposition is attached as Addendum 3. The special session that was contemplated as a possibility if a compromise could be reached on a local control bill did not materialize.

Proposed Statewide Ballot Initiatives

A number of ballot initiatives related to oil and gas were proposed for the 2014 general election, but all have now been withdrawn as part of a compromise announced by the Governor between the state, industry groups and their supporters, and local control and environmental advocates. One part of the compromise was a commitment by the Governor to establish a statewide oil and gas task force to address land use issues and the role of state and local government in siting oil and gas facilities.

Statewide Oil and Gas Task Force

As noted above, in September of 2014 Governor Hickenlooper established a Statewide Oil and Gas Task Force. The Governor charged the task force with crafting recommendations to help minimize land use conflicts that can occur when siting oil and gas facilities near homes, schools, businesses and recreational areas. The 21-person commission includes members of the oil and gas industry, agricultural industry, the home building industry, the conservation community, local governments, and civic leaders. The task force has the power to make recommendations to the Governor and the legislature with a two-thirds majority, or issue majority and minority opinions. Recommendations are anticipated by March 2015, in time for possible changes to state law by the end of the 2015 legislative session. The Executive Orders creating the Task Force and naming members, which include more details on its background and purpose, the Governor's directives on focus areas for the Task Force, and its membership and duration, are attached to this staff report as Addendum 4.

Local

Since our last hearing in June 2014, the lower courts have issued a number of rulings in the various lawsuits involving Front Range home rule municipalities. The cities had either adopted regulations through the City Councils or the citizens had passed 2013 ballot measures that banned or limited fracking.

In Longmont, COGCC and COGA have now dropped their complaints regarding the city's regulations, but the City is appealing the Boulder District Court order overturning the voter-approved fracking ban. Fort Collins is appealing the Larimer District Court's order overturning the voter-approved 5-year moratorium on fracking. In Lafayette, the Boulder District Court overturned the voter-approved fracking ban, and the City decided not to appeal. In Broomfield, the District Court held that the City's voter-approved 5-year moratorium on fracking doesn't apply to Sovereign Operating Company's memorandum of understanding with the City, which was signed prior to the vote. Further proceedings and decisions on the remaining claims in that suit are still pending.

Staff is not aware of any new or ongoing suits against a statutory county since the last Boulder County moratorium hearing.

Lastly, on June 24, 2014, a proposed two-year moratorium on fracking in Loveland failed to pass.