

DISTRICT COURT, LARIMER COUNTY, COLORADO 201 La Porte Avenue, Suite 100 Fort Collins, Colorado 80521	DATE FILED: April 18, 2014 12:39 PM FILING ID: 94DC31078701D CASE NUMBER: 2013CV31385 <p style="text-align: center;">▲ COURT USE ONLY ▲</p>
<p>Plaintiff:</p> <p>COLORADO OIL & GAS ASSOCIATION</p> <p>v.</p> <p>Defendant:</p> <p>CITY OF FORT COLLINS, COLORADO</p>	
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COLORADO OIL & GAS ASSOCIATION'S MOTION FOR SUMMARY JUDGMENT	

Plaintiff Colorado Oil & Gas Association (“COGA”) submits this motion for summary judgment and the contemporaneously filed brief in support of this motion under C.R.C.P 56(c), and requests that this Court enter judgment in its favor on its First Claim for Relief.

The issue raised by this motion is whether the City of Fort Collins, a home-rule municipality, may, through a citizen-initiated ordinance, ban for five years hydraulic fracturing of oil and gas wells and the storage of resulting waste products within the City, in light of the state’s dominant interest in efficient and equitable oil and gas production, the irreconcilable

conflict between the City's bans and the Colorado Oil and Gas Conservation Commission's extensive regulation and permitting of oil and gas activities and the state's exclusive authority to regulate technical areas of oil and gas production.

There is no genuine issue of material fact and COGA is entitled to summary judgment in its favor for the reasons set forth in its brief in support of this motion. COGA therefore, respectfully requests that this Court grant COGA's motion and declare that the Fort Collins ordinance adopted pursuant to Ballot Measure 2A, which prohibits the use of hydraulic fracturing and the storage of related waste products within the City, is preempted by state law and is therefore invalid and unenforceable.

Dated this 18th day of April, 2014.

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CERTIFICATE OF SERVICE

I hereby certify that on this 18th day of April 2014, I electronically filed a true and correct copy of the foregoing **COLORADO OIL & GAS ASSOCIATION'S MOTION FOR SUMMARY JUDGMENT** via the ICCES electronic filing system which will send notification of such filing to the following:

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<p>COLORADO OIL & GAS ASSOCIATION’S BRIEF IN SUPPORT OF ITS MOTION FOR SUMMARY JUDGMENT</p>	

Pursuant to C.R.C.P. 56(c), the Colorado Oil & Gas Association (“COGA”) submits this brief in support of its motion for summary judgment, and respectfully requests the Court to declare that the City of Fort Collins’s (the “City” or “Fort Collins”) five-year ban on the use of hydraulic fracturing and the storage in open pits of hydraulic fracturing waste is preempted by state law.

I. INTRODUCTION

COGA seeks a declaration invalidating a recently-adopted moratorium enacted by Fort Collins as preempted by state law. A majority of the voters in Fort Collins on November 5, 2013, voted to adopt Ballot Measure 2A, a citizen-initiated ordinance (the “Ordinance”) to place a five-year moratorium on the use of hydraulic fracturing and the storage of its waste products within the City. The City adopted Ballot Measure 2A upon certification of the November 5, 2013 election results.

Pursuant to the Oil and Gas Conservation Act, C.R.S. §§ 34-60-101 *et seq.* (the “Act”), the Colorado Oil and Gas Conservation Commission (the “Commission”) comprehensively regulates oil and gas extraction and operations under authority expressly delegated by the state legislature. The Commission’s rules explicitly regulate and allow oil and gas extraction and the storage and transport of waste generated by oil and gas operations—all of which is prohibited within the City by the Charter Amendment.

Accordingly, COGA is entitled to summary judgment invalidating the adoption of the Ordinance. Under Colorado law, the only way that the City’s five-year bans on hydraulic fracturing activities can survive this motion is if the City can demonstrate that these operations are matters of *purely* local concern and that the state has *no* interest in their regulation.

The City cannot make this showing for at least three reasons. First, the Colorado Supreme Court in *Voss v. Lundvall Bros. Inc.*, 830 P.2d 1060, 1068 (Colo. 2002), held that the state interest in oil and gas operations is “sufficiently dominant” so as to impliedly preempt a home-rule municipality’s attempt to ban oil and gas operations. Fort Collins’s bans similarly conflict with the state’s “sufficiently dominant” interest in oil and gas and are impliedly preempted.

Second, even if the Court views hydraulic fracturing regulation as a matter of mixed state and local concern, the Ordinance cannot survive. As stated last year by the Colorado Supreme

Court in *Webb v. City of Black Hawk*, in matters of mixed state and local concern, “the test to determine whether a conflict exists is whether the home-rule city’s ordinance authorizes what state statute forbids, or forbids what state statute authorizes.” 295 P.3d 480, 493 (Colo. 2013). Here, the City’s five-year ban on hydraulic fracturing plainly forbids what state law allows, and is therefore preempted.

Finally, the Colorado Supreme Court held in *Board of County Commissioners v. Bowen/Edwards Associates, Inc.*, 830 P.2d 1045, 1058 (Colo. 1992), that local governments may not regulate the technical aspects of oil and gas operations. The Ordinance intrudes upon technical areas of oil and gas development that are within the exclusive jurisdiction of the Commission.

For these reasons, the Ordinance is preempted.

II. SUMMARY JUDGMENT STANDARD

Summary judgment is proper when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. C.R.C.P. 56; *Suss Pontiac-GMC, Inc. v. Boddicker*, 208 P.3d 269, 1270 (Colo. App. 2008). Summary judgment is not a disfavored procedural shortcut, but an integral part of the rules of procedure that is designed to secure the just and inexpensive determination of every action. *Celotex Corp. v. Catrett*, 477 U.S. 317, 327 (1986); *Cont’l Airlines, Inc. v. Keenan*, 731 P.2d 708, 712 (Colo. 1987) (applying *Celotex* in Colorado).

III. UNDISPUTED FACTS

1. Hydraulic fracturing is a well-completion technique. Fluid is pumped under high pressure into a cased wellbore that is perforated where it passes through an oil-and-gas-bearing rock formation, creating small fissures in the target rock formation and allowing trapped hydrocarbons to be produced. *See* Report of the Commission adopting new rules and

amendments to address hydraulic fracturing, December 13, 2011, and its attached Exhibit A, Proposed Statement of Basis and Purpose, at p. 9 (a true and correct copy of both documents are attached as Exhibit 1). The fluids used in hydraulic fracturing consist primarily of water, with sand or silica added as a proppant to keep the fissures from re-sealing and a small percentage of chemical additives. *Id.*; *see also* “Information on Hydraulic Fracturing” (COGCC 2013, a true and correct copy of which is attached as Exhibit 2); “Colorado Hydraulic Fracturing State Review; State Review of Oil and Natural Gas Environmental Regulations” (October 2011), at p. 8 (a true and correct copy of which is attached as Exhibit 3).

2. Hydraulic fracturing has been used to complete wells in Colorado for many decades, and tens of thousands of wells have been hydraulically fractured in Colorado. Ex. 1, p. 9; Ex. 2, p. 1.

3. On August 20, 2013, the Fort Collins City Council passed Resolution 2013-072 (a true and correct copy of which is attached as Exhibit 4), which submitted to the voters a citizen-initiated proposal to amend the Fort Collins City Code to place a five-year moratorium on the use of hydraulic fracturing and the storage of its waste products with the City. As a result, Ballot Measure 2A was placed on the November 5, 2013 ballot for a vote by City residents. Ballot Measure 2A provides: “An ordinance placing a moratorium on hydraulic fracturing and the storage of its waste products with the City of Fort Collins or on lands under its jurisdiction for a period of five years, without exemption or exception, in order to fully study the impacts of this process on property values and human health, which moratorium can be lifted upon a ballot measure approved by the people of the City of Fort Collins and which shall apply retroactively as of the date this measure was found to have qualified for placement on the ballot.” *Id.* at 2.

4. On October 1, 2013, the Fort Collins City Council passed Resolution 2013-085 (a true and correct copy of which is attached as Exhibit 5) opposing the adoption of Ballot Measure 2A. The City Council found that Ballot Measure 2A “is unnecessary, is not in the best interest of the City, and could result in litigation that, if not resolved in the City’s favor, could not only work to the detriment of the City, but could also establish legal precedents that would be damaging to the interests of other Colorado municipalities.” *Id.* at 2. The City also determined that imposing the five-year moratorium would be inconsistent with the fact that the City and Prospect Energy had entered into an Operator Agreement using forty-eight best management practices, “and could result in costly, protracted litigation against the City.” *Id.* The Resolution also noted that “significant concerns” had been raised by the City Manager that the moratorium would negatively impact the City’s collaboration with the State Land Board and other entities in the “Energy by Design” process to protect biological, cultural, scenic and recreation conservation goals for the City’s natural areas, while also allowing reasonable access to mineral estates. *Id.* The Resolution stated: “the ‘Energy by Design’ process provides the best strategy for protection of areas of land under the City’s jurisdiction and outside of the City limits, and if the Initiated Measure is approved, such approval could undo [this] process and result in more significant negative impacts to the natural areas” *Id.*

5. At the election held on November 5, 2013, City voters voted in favor of Ballot Measure 2A. As a result, City adopted Ballot Measure 2A as an ordinance upon certification of the November 5, 2013 election results. Section 12-135 of the Fort Collins Code (“Code,” a true and correct copy of which is attached as Exhibit 6) now states that “The use of hydraulic fracturing to extract oil, gas or other hydrocarbons, and the storage in open pits of solid or liquid wastes and/or flowback created in connection with the hydraulic fracturing process, are

prohibited within the City.” Section 12-136 of the Code states that: “The prohibitions contained in § 12-135 shall not apply to oil and gas wells or pad sites existing within the City on February 19, 2013, that become the subject of an operator agreement between the operator of the same and the City, as long as such agreement includes strict controls on methane release and, in the judgment of the City Council, adequately protects the public health, safety and welfare.” *Id.*

IV. ARGUMENT: THE CITY MAY NOT PROHIBIT OIL AND GAS EXTRACTION AND RELATED OPERATIONS AND ACTIVITIES

The Ordinance is preempted by comprehensive state statutes and regulations relating to oil and gas because every aspect of hydraulic fracturing involves statewide concerns. Those concerns are sufficiently dominant to preclude Fort Collins from implementing a five-year ban on activities that are regulated and permitted by the state. Even in matters that implicate both state and local interests, cities may not prohibit what the state permits, as Fort Collins has attempted through the Ordinance. Finally, cities lack authority to regulate the technical areas of oil and gas production, as the Ordinance purports to do.

A. A HOME-RULE CITY’S BAN ON ACTIVITIES THAT THE STATE ALLOWS IS PREEMPTED, EXCEPT IN MATTERS OF PURELY LOCAL CONCERN.

In evaluating whether legislation by a home-rule municipality, such as the City, is preempted by state law, the Court must first determine whether the subject matter of the legislation is of statewide concern, of mixed state and local concern, or of purely local concern. *Webb v. City of Black Hawk*, 295 P.3d 480, 486 (Colo. 2013); *City of Commerce City v. State*, 40 P.3d 1273, 1279 (Colo. 2002). If a matter is found to be of statewide concern, “the state legislature exercises plenary authority, and home-rule cities may regulate only if the constitution or statute authorizes such legislation.” *Webb*, 295 P.3d at 486.

Where matters involve mixed state and local concerns, a home-rule regulation may “exist with a state regulation only so long as there is no conflict; if there is a conflict, the state statute

supersedes the conflicting local regulation.” *Id.* The relevant test applicable in this case to determine whether home-rule legislation conflicts with state law “is whether the home-rule city’s ordinance authorizes what state statute forbids, or forbids what state statute authorizes.” *Id.* at 493 (citing *Commerce City*, 40 P.3d at 1284); accord *City of Northglenn v. Ibarra*, 62 P.3d 153, 165 (Colo. 2003); *Lakewood Pawnbrokers, Inc. v. City of Lakewood*, 519 P.2d 834, 836 (Colo. 1973).

Finally, home-rule municipalities may “legislate in areas of local concern that the state General Assembly traditionally legislated in, thereby limiting the authority of the state legislature with respect to local and municipal affairs.” *Webb*, 295 P.3d at 486 (emphasis added). If a local regulation conflicts with a state statute, it supersedes state law only in a matter of purely local concern. *Id.*

In characterizing a matter addressed by home-rule legislation as purely local, purely state, or mixed local and state, Colorado courts evaluate four factors: (1) whether there is a need for state uniformity of regulation; (2) whether the municipal regulation has an extraterritorial impact; (3) whether the subject matter is one traditionally governed by state or local government; and (4) whether the Colorado Constitution specifically commits a particular matter to state or local regulation. *Webb*, 295 P.3d at 486; *Ibarra*, 62 P.3d at 156; *Voss*, 830 P.2d at 1067.

To defeat this motion, the City must demonstrate that its five-year ban on hydraulic fracturing and the storage of hydraulic fracturing waste and flowback are matters of purely local concern. The City cannot make this showing. The City’s bans are either impliedly preempted under *Voss* by the state’s dominant interest in the efficient production and development of oil and gas, or are preempted under the *Webb* test as matter of mixed state and local law by the

COGCC’s comprehensive regulation of oil and gas activity. The Ordinance is also preempted because it impermissibly regulates the technical aspects of oil and gas extraction.

B. THE STATE HAS A SUBSTANTIAL INTEREST IN OIL AND GAS REGULATION.

1. Colorado case law has repeatedly confirmed the state’s interest in oil and gas regulation.

Every Colorado case that has considered the nature of oil and gas regulation has held that the state has a substantial interest in this area. Indeed, no Colorado case has ever held that the regulation of oil and gas operations is a matter of purely local concern.

Voss is the key preemption case involving a ban of oil and gas operations. In *Voss*, the citizens of the City of Greeley, a home-rule municipality, voted to adopt an ordinance banning the drilling of any oil and gas well within the city limits. The Greeley City Council adopted a similar measure. Although recognizing the broad land use authority granted to home-rule jurisdictions by the Local Government Land Use Control Enabling Act, C.R.S. §§ 29-20-101 to 107, *see* 830 P.2d at 1064–65, the Court held that “[t]he state has an interest in oil and gas development and operations. That interest finds expression in the Oil and Gas Conservation Act [“Conservation Act”], §§ 34-60-101 to -126.” *Id.* at 1065.

The Court analyzed Greeley’s ban “against the state regulatory scheme to determine if the Greeley ordinances conflict with the state’s interest in the efficient production and development of oil and gas resources in a manner preventative of waste and protective of the rights of common-source owners and producers to a fair and equitable share of production profits.” *Id.* at 1066. To do so, the Court weighed the four factors to assess whether Greeley’s ban would be preempted.

The Court found that “the first factor—the need for statewide uniformity of regulation of oil and gas development and production—weighs heavily in favor of state preemption of

Greeley’s total ban on drilling within city limits.” *Id.* at 1067. The Court relied upon the fact that oil and gas reserves do not conform to any jurisdictional pattern and that Greeley’s ban could result in uneven and potentially wasteful production of oil and gas, which would conflict with the Commission’s express authority to establish drilling units and to protect the correlative rights of owners and producers. *Id.* On that basis, the Court held:

In our view, the state’s interest in the efficient and fair development and production of oil and gas resources in the state, including the location and spacing of individual wells, militates against a home-rule city’s total ban on drilling within the city limits.

Id.

With regard to the second factor, the Court held that “extraterritorial effect of the Greeley ordinances also weighs in favor of the state’s interest in effective and fair development and production.” *Id.* The Court relied upon the fact that limiting production to only one portion of a pool of oil and gas outside the city limits can result in increased production costs. *Id.* at 1067–68. Greeley’s drilling ban, the Court also found, affected the ability of those with mineral interests both within and outside the city boundary to obtain an equitable share of production profits in contravention of the Conservation Act. *Id.* at 1068.

Regarding the third factor, the Court found that “[t]he regulation of oil and gas development and production has traditionally been a matter of state rather than local control.” *Id.* In evaluating the fourth factor, the Court held that the Colorado Constitution does not direct that oil and gas operations be regulated at the state or local level. *Id.*

As a result of its analysis, the Court concluded that Greeley’s ban on oil and gas drilling was preempted by state law:

[T]he state’s interest in efficient oil and gas development and production throughout the state, as manifested in the Oil and Gas Conservation Act, is *sufficiently dominant* to override a home-rule

city's imposition of a total ban on the drilling of any oil, gas, or hydrocarbon wells within the city limits.

Id. (emphasis added).

Even outside of the context of a ban on oil and gas development, Colorado courts have consistently recognized the state's interest in oil and gas regulation. Contemporaneously with *Voss*, the Court issued the companion opinion of *Board of County Commissioners v. Bowen/Edwards Associates, Inc.*, in which it reaffirmed the state's interest in efficient and fair development and production of oil and gas, the prevention of waste, and the protection of common-source owners and producers. 830 P.2d at 1058. While the Court did not find that the Conservation Act evidenced a legislative intent to preempt "all aspects of a county's statutory authority to regulate land use" involving oil and gas operations, it held that a local government could not regulate matters involving technical aspects of oil and gas or the location of wells. *Id.* at 1060. Thus, in addition to affirming the significant state role in oil and gas regulation, *Bowen/Edwards* provides an additional independent basis on which the City's ban is preempted, because the Colorado Supreme Court explicitly recognized that the imposition of technical conditions on the drilling and pumping of wells—such as the City's ban of hydraulic fracturing here—necessarily conflicts with the state statutory and regulatory scheme. *See infra* § IV.E.

Similarly, in *Town of Frederick v. North American Resources Company*, the Court of Appeals relied on the "state's interest in oil and gas development and operations as expressed in the [Conservation Act]" to void several of the Town's oil and gas regulations as a matter of law. 60 P.3d at 761. Relying on *Bowen/Edwards*, the court held that "the local imposition of technical conditions on well drilling where no such conditions are imposed under state regulations, as well as the imposition of safety regulations or land restoration requirements contrary to those required by state law, gives rise to operational conflicts and requires that the local regulations yield to the

state interest.” *Id.* at 765.¹ Accordingly, when considering whether a local ban or regulation is preempted by state law, Colorado courts have always recognized the significant state interest in oil and gas regulation.

2. The substantial state interest in oil and gas regulation is reflected in the state’s comprehensive regulatory scheme.

As the Colorado Supreme Court has determined: “There is no question that the [Conservation Act] evidences a significant interest on the part of the state in the efficient and fair development, production, and utilization of oil and gas resources. . . .” *Voss*, 830 P.2d at 1065–66 (citing *Bowen/Edwards*). In the Conservation Act, the Colorado legislature “declared [it] to be in the public interest to”:

- (I) Foster the responsible, balanced development, production, and utilization of the natural resources of oil and gas in the state of Colorado in a manner consistent with protection of public health, safety, and welfare, including protection of the environment and wildlife resources;
- (II) Protect the public and private interests against waste in the production and utilization of oil and gas;
- (III) Safeguard, protect, and enforce the coequal and correlative rights of owners and producers in a common source or pool of oil and gas to the end that each such owner and producer in a common pool or source of supply of oil and gas may obtain a just and equitable share of production there from; and
- (IV) Plan and manage oil and gas operations in a manner that balances development with wildlife conservation in recognition of the state’s obligation to protect wildlife resources and the hunting,

¹ The courts in *Bowen/Edwards* and *Town of Frederick* did not apply *Webb* and *Ibarra* test, *supra* at 7, because neither case involved a home-rule municipality. Moreover, neither case involved a ban on activity permitted by the state. In *Bowen/Edwards*, the county had imposed permitting requirements for certain oil- and gas-related activities. *Bowen/Edwards*, 830 P.2d at 1051. Similarly, the Town of Frederick had also adopted permitting requirements regulating aspects of oil and gas operations. *Town of Frederick*, 60 P.3d at 760. Because the regulations at issue did not ban activities outright, and because these cases concerned statutory local governments, the courts applied the operational preemption test rather than the *Webb* test to determine preemption.

fishing, and recreation traditions they support, which are an important part of Colorado's economy and culture.

C.R.S. § 34-60-102(1)(a).

The General Assembly has also declared that it is the “intent and purpose of the [Conservation Act] to permit each oil and gas pool in Colorado to produce up to its maximum efficient rate of production, subject to the prevention of waste, consistent with the protection of public health, safety, welfare, the environment and wildlife resources,” and “subject further to the enforcement and protection of the co-equal and correlative rights of the owners and producers of a common source of oil and gas, so that each common owner and producer may obtain a just and equitable share of production therefrom.” C.R.S. § 34-60-102(1)(b).

The *Voss* Court relied on these expressions of state policy and public interest, as well as on the Conservation Act's definition of waste, to highlight the state's interest in ensuring the production of oil and gas at maximum efficient rates of production. *Voss*, 830 P.2d at 1067. Indeed, C.R.S. § 34-60-107 provides that “[t]he waste of oil and gas in the state of Colorado is prohibited by this article.” Waste is specifically defined to include “the production of gas in quantities or in such manner as . . . unreasonably diminishes the quantity of oil or gas that ultimately may be produced.” C.R.S. § 34-60-103(11); *accord* C.R.S. § 34-60-103(13).

As the *Voss* Court noted, the Conservation Act established the Commission and vested it with broad authority to enforce the Act's provisions, make and enforce rules and orders, and do whatever may be reasonably necessary to carry out the provisions of the Conservation Act. C.R.S. § 34-60-105(1); *Voss*, 830 P.2d at 1065. The Commission also is vested with authority to regulate oil and gas operations “so as to prevent and mitigate significant adverse environmental impacts on any air, water, soil, or biological resource resulting from oil and gas operations to the extent necessary to protect public health, safety, and welfare, including protection of the

environment and wildlife resources, taking into consideration cost-effectiveness and technical feasibility.” C.R.S. § 34-6-106(2)(d); *see also* C.R.S. § 34-60-106(1)(c) (Commission regulates well construction to prevent the escape of oil and gas, the pollution of water supplies and blowouts and other dangerous conditions). In addition, the legislature gave the Commission the authority to regulate the spacing of wells, C.R.S. § 34-60-106(2)(c), including to establish or amend drilling and spacing units. C.R.S. § 34-60-106(11)(a)(I)(A).

The Conservation Act also specifically vests the Commission with authority to issue permits for oil and gas wells, § 34-60-106(1)(f), and to regulate the drilling, shooting, and chemical treatment of hydrocarbon wells, § 34-60-106(2)(a),(b). “Shooting” is the process of fracturing the rock in the target formation, which once was accomplished by detonating high explosives in the wellbore, but which now is typically accomplished by hydraulic fracturing. *See* The Dictionary for the Oil and Gas Industry 244 (Univ. of Texas Ext., 1st ed. 2005). “Chemical treatment” refers to any process, including hydraulic fracturing, that involves the use of a chemical to affect an operation. *Id.* at 44.

Under the authority of the Conservation Act, the Commission has adopted a comprehensive set of oil and gas regulations covering drilling, developing, producing and abandoning wells (300 Series), safety, including groundwater sampling (600 Series), aesthetics and noise control (800 Series), waste management (900 Series), protection of wildlife (1200 Series), among other areas. 2 CCR 404-1, *available at* http://cogcc.state.co.us/RR_Docs_new/Rules_new2.html. These regulations, which are discussed in more detail below, unequivocally reflect the state’s substantial interest in the regulation all aspects of oil and gas operations.

C. THE CITY’S BANS ON OIL AND GAS EXTRACTION AND RELATED OIL AND GAS ACTIVITIES ARE IMPLIEDLY PREEMPTED BY THE STATE’S “SUFFICIENTLY DOMINANT” INTERESTS.

Despite the state’s substantial interest in—and regulation of—oil and gas operations, the Ordinance purports to ban for five years all hydraulic fracturing within the City, as well as the storage in open pits of hydraulic fracturing waste and flowback. These provisions are impliedly preempted by the state’s dominant interest in efficient and equitable oil and gas production.

In *Voss*, the Colorado Supreme Court held that the state’s interest in the efficient and equitable development and production of oil and gas, as manifested in the Conservation Act, was “sufficiently dominant” to override Greeley’s ban on oil and gas operations. *Voss*, 830 P.2d at 1068. The Court did not make clear whether the home-rule city’s ban was impliedly preempted due the state’s dominant interest, or whether the ban was preempted due to its irreconcilable conflict with state law in a matter of mixed state and local interest.

The answer to the precise basis for the *Voss* decision came 17 years later in *Colorado Mining Ass’n v. Board of County Commissioners*, 199 P.3d 718 (Colo. 2009). In that case, Summit County banned a widely-used mining technique involving the use of cyanide or other chemicals in heap or vat leach mining operations. In evaluating the ban, the Court first noted that “local land use ordinances banning an activity that a statute authorizes an agency to permit are subject to heightened scrutiny in preemption analysis,” *id.* at 725, and that “[c]ourts examine with particular scrutiny those zoning ordinances that ban certain land uses or activities.” *Id.* at 730. The Court next reasoned that the Mined Land Reclamation Act (“MLRA”) and its implementing regulations set forth a “sufficiently dominant state interest in the controlled use of chemicals to process valuable minerals.” *Id.* at 732. In finding that dominant state interest, the Court afforded “significant weight” to a statement in the MLRA that extraction of minerals is “necessary and proper,” and that the legislature “encouraged the development of an

economically sound and stable mining and minerals industry” and “encouraged the orderly development of the state’s natural resources.” As discussed above, these MLRA’s legislative declarations have counterparts in the Act, many of which the *Voss* Court similarly relied upon.

Echoing *Voss*, the Court concluded that “a patchwork of county-level bans on certain mining extraction methods would inhibit what the General Assembly has recognized as a necessary activity and would impede the orderly development of Colorado’s mineral resources.” *Id.* at 731. As such, the Court held that “[d]ue to the sufficiently dominant state interest in the use of chemicals for mineral processing, . . . the MLRA impliedly preempts Summit County’s ban.” *Id.* at 721.

The Court extensively discussed and relied on its decision in *Voss* to void the County’s ban as impliedly preempted: “We find *Voss* particularly instructive because, if a home-rule city may not enact a ban prohibiting what the state agency may authorize under the statute, surely a statutory county may not do so.” *Id.* The Court confirmed that its holding in *Voss* was based on implied preemption: “We held that the state interest manifested in the state act was ‘sufficiently dominant’ to override the local ordinance. [Citation omitted.] Sufficient dominancy is one of the several grounds for implied state preemption of a local ordinance.” *Id.* at 724. But in contrasting *Bowen/Edwards*, the Court made clear that the state interest did not impliedly preempt all aspects of local land-use regulations applicable to oil and gas operations. *Id.* The home-rule city’s ban in *Voss* was impliedly preempted because it addressed matters involving the efficient and equitable production of hydrocarbons:

We found [in *Voss*] the ban to be unenforceable because “the state’s interest in efficient development and production of oil and gas in a manner preventative of waste and protective of the correlative rights of common-source owners and producers to a fair share of production profits preempts a home-rule city from totally excluding all drilling operations within the city limits. *Id.* at 1069.”

*Id.*²

The City's five-year ban on the use of hydraulic fracturing and the storage of hydraulic fracturing waste, no less than Greeley's oil and gas ban, intrude into these areas of oil and gas operations in which the State has a sufficiently dominant interest. Indeed, all of the key considerations the *Voss* Court relied upon in finding preemption remain true today: oil and gas reserves still do not conform to any jurisdictional pattern, and the City's ban could result in uneven and potentially wasteful production of oil and gas. Moreover, the City's ban affect the ability of those with mineral interests both within and outside the city boundary to obtain an equitable share of production profits, as limiting production to only one portion of a pool of oil and gas outside the city limits can still result in increased production costs. Furthermore, the City's bans conflict with the Commission's express authority to prevent waste, establish drilling units and to protect the correlative rights of owners and producers. Equally obvious is that the City's ban will have extraterritorial effect by forcing operators to complete wells outside the City but prohibiting well completions from extending into the City limits. This diminishes the availability of resources from neighboring jurisdictions as well. Thus, the City's ban will create the same "patchwork" of local prohibitions that the Court proscribed in *Voss*, *Colorado Mining Ass'n* and *Ibarra*.

² In another notable case involving a municipal ban, the Supreme Court held that state law preempted a home-rule city ordinance banning unrelated sex offenders from living together. *Ibarra*, 62 P.3d 151. There the Court held that the City's ban would create a "'patchwork approach' to the placement of certain foster care children," the effect of which would "ripple" outside of the municipality. *Id.* at 161. The Court concluded that the state's interest in fulfilling its statutory mandates to protect delinquent children in need of state supervision and treatment "is *sufficiently dominant* to override a home-rule city's interest in regulating the number of registered juvenile sex offenders who may live in one foster care family." *Id.* at 163 (emphasis added).

For these reasons, the City's bans are impliedly preempted by the state's sufficiently dominant interest in the efficient and equitable development and production of oil and gas resources.

D. THE CITY'S BANS PROHIBIT CONDUCT THAT THE STATE ALLOWS AND IS THEREFORE PREEMPTED.

The Ordinance is preempted for another reason: it prohibits what is authorized by the state. Just last year, the Supreme Court in *Webb* struck down Black Hawk's ban on bicycles travelling from outside its boundaries, on the grounds that, in this area of mixed local and state concern, the ban failed to comply with the state statute requiring that local governments provide alternative bicycle paths as a condition of banning bicycles on city streets: "Black Hawk does not have authority, in a matter of mixed state and local concern, to negate a specific provision the General Assembly has enacted in the interest of uniformity." *Webb*, 295 P.3d at 492–93.

This holding is consistent with *Colorado Mining Ass'n*, in which the Court relied upon the following "common themes" in *Voss and Bowen/Edwards*: "(1) the state has a significant interest in both mineral development and in human health and environmental protection, and (2) the exercise of local land use authority complements the exercise of state authority but cannot negate a more specifically drawn statutory provision the general assembly has enacted." 199 P.3d at 730.

Consistent with the Act's directives to foster efficient and responsible production of oil and gas resources, to prevent waste and to protect environmental and wildlife resources, the Commission had adopted regulations comprehensively regulating and authorizing oil and gas operations, specifically including hydraulic fracturing.

Accordingly, the Ordinance conflicts with state law because it “negates” hydraulic fracturing activities that the Commission extensively authorizes and regulates.³ The Commission took hydraulic fracturing into consideration when it comprehensively updated its regulations in 2008, analyzed groundwater quality trends in 2009, adopted a special notification policy in 2010, and designed a new groundwater sampling program during 2011. Ex. 3 at 19. It amended its Rules in December 2011 for the specific purpose of addressing hydraulic fracturing concerns. Ex. 2 at 9. As amended, the Commission Rules use the term “hydraulic fracturing” at least 41 times.

The Commission’s technical review of a proposed hydrocarbon well typically begins when an operator files an application for a permit to drill a well (“APD” or “Form 2”) and an Oil and Gas Location Assessment (“OGLA” or “Form 2A”). Rule 303. The Commission’s Rules provide specific rights to local governments to review the APD and the OGLA, extend deadlines for review, request consultation, present arguments and evidence to the full nine (9) member Commission as to why any proposed well should not be permitted, and to appeal any of the Commission’s decisions or determinations pursuant to the State Administrative Procedure Act. Rules 305.d, 305.e, 306.b, 509, 510, 528. Among other things, the Commission requires the producer to provide extensive information regarding both the surface and bottom-hole locations of the proposed well and the topography, soils, vegetation, wildlife, water sources, land uses, dwellings, and other structures in the proposed well’s proximity. *Id.* The Commission imposes

³ The Ordinance is a temporary yet total ban. *See Deighton v. City Council of Colo. Springs*, 902 P.2d 426, 428 (Colo. App. 1994) (“A moratorium is ‘a suspension of activity; a temporary ban on the use or production of something.’”) (quoting Webster’s Third New International Dictionary 1469). The fact that the ban will expire in five years does nothing to remove it from the scope of what is preempted while it is in effect. Further, the temporary nature of the ban does not change the fact that, for five years, the Ordinance bans what the state authorizes and intrudes upon technical areas of oil and gas development. Accordingly, the Ordinance is preempted. *Webb*, 295 P.3d at 486; *Bowen/Edwards*, 830 P.2d at 1058.

specific requirements on the technical design of the well. Rule 317. To evaluate the information regarding the proposed well and its potential impact upon the proposed location, the Commission's employs a technical staff that receives specific training on hydraulic fracturing technology and developments. Ex. 3 at 29–30.

The Commission also requires producers to test their well casings in advance to verify that they can withstand the pressures that will be applied during hydraulic fracturing. Rule 317(j). It mandates that the operator design its well such that hydraulic fracturing fluids are confined to the target formations, and to monitor and record pressures continuously during hydraulic fracturing operations to assure that hydraulic fracturing fluids are confined to the target formation and that wellbore integrity is maintained. Rule 341. Within thirty days after completing or re-stimulating a formation, operators must file a Completed Interval Report (Form 5A) that summarizes the fracturing treatment. Rule 308B.

The Commission also regulates the chemicals used in hydraulic fracturing. It requires producers to maintain Material Safety Data Sheets and an inventory of all chemical products used down hole, including hydraulic fracturing fluids. Rule 205. Upon the conclusion of a hydraulic fracturing treatment, producers must report the total volume of water or other base fluid that was used in the hydraulic fracturing treatment, information regarding each chemical or additive used in the hydraulic fracturing fluid, the maximum concentration of each chemical added to the fracturing fluid, and the chemical abstract service number for each such chemical. Even if the supplier of the fluid claims that its specific formula is a trade secret, specific information about the chemicals nevertheless must be provided to the Commission or to any health care professional who requires such information. Rules 205A(b)(5) and (d)(2).

Producers must notify landowners and local governments in advance of their intention to hydraulically fracture a well. Additionally, they must provide landowners with a copy of the Commission's informational brochure on hydraulic fracturing, (Ex. 2), instruct them on how to access additional information regarding the proposed well on the Commission's website, and inform them of their right to oppose or comment upon the proposed operations. Rule 305(c).

The Commission also extensively regulates the handling, transportation, and disposal of waste products associated with the drilling and operation of oil and gas wells. *See* Rules 316A, 323, 324A, 325, 326, 326, and 901–08. The Commission may authorize the disposal of produced water by evaporation in a properly constructed and permitted pit or by injection into a properly designed and permitted disposal well. Rules 907(c)(2) & 325. An operator must apply to the Commission for a permit to construct a pit. Rule 903. The Commission specifically regulates the locations of pits, their design, and the materials used to construct them. Rules 902–04. The Commission also regulates the closure of pits, the disposal of materials from pits, and the reclamation of land where a closed pit was located. Rules 905, 1001–04.

Finally, drilling fluids may never be disposed in a pit, but must be injected into a disposal well that has been approved and permitted by the Director, delivered to a commercial solid waste disposal facility, or treated for use in land applications at a centralized exploration and production waste management facility. Rule 907(d). The Commission has been delegated the authority to permit underground injection wells under the Environmental Protection Act. 2 CCR 404-1, Rule 325; 42 U.S.C. § 300g-2. Before the Commission permits injection of fluids, the operator must demonstrate that the injection operations will not pollute any underground source of potable water. Rule 324A(d). The operator cannot commence operations for the underground disposal of fluids without written authorization from the Director of the Commission. Rule 325.

To obtain such authorization, the operator must file an Underground Injection Formation Permit Application and an Injection Well Permit Application. Rule 325. Operators must file a monthly report of fluids injected. Rule 316A. Produced and injected water must be measured. Rule 330. The operator also must provide detailed technical information and perform a mechanical integrity test. Rule 325, 326. The Commission must publish a notice of the permit application and consider comments submitted by interested stakeholders, like the City, before deciding whether to permit the proposed injection well. Rule 325 (l)–(n).

All of these regulations are negated if the City’s bans are upheld. The City’s bans are preempted under the conflict test applied in *Webb*, and other Colorado cases, because it impermissibly prohibits what state law allows.

E. THE CITY’S BAN IMPERMISSIBLY INTRUDES INTO TECHNICAL ASPECTS OF OIL AND GAS.

A final basis on which the Court may find that the Ordinance is preempted is that it seeks to regulate technical aspects of oil and gas operations, which the Colorado Supreme Court has held necessarily conflicts with the state scheme of oil and gas regulation. This specific issue was addressed in *Bowen/Edwards*, 830 P.2d at 1045. In that case, an operator challenged La Plata County’s oil and gas regulations, claiming that they were entirely preempted by state law.

Though the County did not ban oil and gas operations, it adopted regulations that required oil and gas operators to obtain County approval for any oil and gas facility, and imposed application and approval requirements based on the nature of the proposed facilities. *Id.* at 1050. The Court held that a local government could not regulate matters involving technical aspects of oil and gas or the location of wells:

There is no question that the efficient and equitable development and production of oil and gas resources within the state requires uniform regulation of the technical aspects of drilling, pumping, plugging, waste prevention, safety precautions, and environmental restoration. Oil and gas production is closely tied to well location,

with the result that the need for uniform regulation extends also to the location and spacing of wells.

Bowen/Edwards, 830 P.2d at 1058 (citing *Voss*).

The Court found that local government regulations may be in operational conflict with the state regulatory scheme, and to the extent those regulations cannot be harmonized, the state's regulations would prevail. *Id.* at 1060. The Court was clear that any local regulation of the technical aspects of oil and gas operations would necessarily conflict with the state statutory scheme and the need for uniformity in that area:

We hasten to add that there may be instances where the county's regulatory scheme conflicts in operation with the state statutory or regulatory scheme. For example, the operational effect of the county regulations might be to impose technical conditions on the drilling or pumping of wells under circumstances where no such conditions are imposed under the state statutory or regulatory scheme, or to impose safety regulations or land restoration requirements contrary to those required by state law or regulation. To the extent such operational conflicts might exist, the county regulations must yield to the state interest.

Id.

Ten years later, the Colorado Court of Appeals applied this same operational conflict test in *Town of Frederick*, 60 P.3d 758, and, citing *Bowen/Edwards* and *Voss*, voided several Town regulations on oil and gas operations: "the local imposition of technical conditions on well drilling where no such conditions are imposed under state regulations, as well as the imposition of safety regulations or land restoration requirements contrary to those required by state law, gives rise to operational conflicts and requires that the local regulations yield to the state interest." *Id.* at 765. And in *Board of County Commissioners v. BDS International, LLC*, the Court of Appeals, in assessing whether Gunnison County's oil and gas regulations were preempted, reaffirmed that a local government may not impose technical conditions on oil and gas wells. 159 P.3d 773, 779 (Colo. App. 2006).

In the present case, the City seeks to ban for five years the use of hydraulic fracturing and the storage of resulting waste—which are highly technical matters involving well drilling and environmental protection that are regulated and authorized by the Commission. For this reason too, the Ordinance is preempted.

V. CONCLUSION

For the foregoing reasons, COGA respectfully requests that the Court grant summary judgment in favor of COGA declaring that the Ordinance’s five year bans on the use of hydraulic fracturing and the storage of hydraulic fracturing wastes are preempted and, thus, invalid and unenforceable.

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CERTIFICATE OF SERVICE

I hereby certify that on this 18th day of April 2014, I electronically filed a true and correct copy of the foregoing **COLORADO OIL & GAS ASSOCIATION'S BRIEF IN SUPPORT OF ITS MOTION FOR SUMMARY JUDGMENT** via the ICCES electronic filing system which will send notification of such filing to the following:

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DATE FILED: April 18, 2014 12:39 PM
FILING ID: 94DC31078701D
CASE NUMBER: 2013CV31385

EXHIBIT 1

BEFORE THE OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO

IN THE MATTER OF CHANGES TO THE RULES) CAUSE NO. 1R
OF PRACTICE AND PROCEDURE OF THE OIL)
AND GAS CONSERVATION COMMISSION OF) ORDER NO. 1R-114
THE STATE OF COLORADO)

REPORT OF THE COMMISSION

TO ALL INTERESTED PARTIES AND TO WHOM IT MAY CONCERN:

DEFINITIONS
(100 SERIES)

BASE FLUID shall mean the continuous phase fluid type, such as water, used in a hydraulic fracturing treatment.

CHEMICAL ABSTRACTS SERVICE shall mean the division of the American Chemical Society that is the globally recognized authority for information on chemical substances.

CHEMICAL ABSTRACTS SERVICE NUMBER OR CAS NUMBER shall mean the unique identification number assigned to a chemical by the chemical abstracts service.

CHEMICAL(S) shall mean any element, chemical compound, or mixture of elements or compounds that has its own specific name or identity such as a chemical abstract service number, whether or not such chemical is subject to the requirements of 29 Code of Federal Regulations §1910.1200(g)(2) (2011).

CHEMICAL DISCLOSURE REGISTRY shall mean the chemical registry website known as fracfocus.org developed by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission. If such website becomes permanently inoperable, then chemical disclosure registry shall mean another publicly accessible information website that is designated by the Commission.

CHEMICAL FAMILY shall mean a group of chemicals that share similar chemical properties and have a common general name.

HEALTH PROFESSIONAL shall mean a physician, physician assistant, nurse practitioner, registered nurse, or emergency medical technician licensed by the State of Colorado.

HYDRAULIC FRACTURING ADDITIVE shall mean any chemical substance or combination of substances, including any chemicals and proppants, that is intentionally added to a base fluid for purposes of preparing a hydraulic fracturing fluid for treatment of a well.

HYDRAULIC FRACTURING FLUID shall mean the fluid, including the applicable base fluid and all hydraulic fracturing additives, used to perform a hydraulic fracturing treatment.

HYDRAULIC FRACTURING TREATMENT shall mean all stages of the treatment of a well by the application of hydraulic fracturing fluid under pressure that is expressly designed to initiate or propagate fractures in a target geologic formation to enhance production of oil and natural gas.

PROPPANT shall mean sand or any natural or man-made material that is used in a hydraulic fracturing treatment to prop open the artificially created or enhanced fractures once the treatment is completed.

TOTAL WATER VOLUME shall mean the total quantity of water from all sources used in the hydraulic fracturing treatment, including surface water, ground water, produced water or recycled water.

TRADE SECRET shall have the meaning set forth in § 7-74-102(4) (2011) of the Colorado Uniform Trade Secrets Act.

GENERAL RULES
(200 SERIES)

205. ACCESS TO RECORDS

- a. All producers, operators, transporters, refiners, gasoline or other extraction plant operators and initial purchasers of oil and gas within this State, shall make and keep appropriate books and records covering their operations in the State, including natural gas meter calibration reports, from which they may be able to make and substantiate the reports required by the Commission or the Director.
- b. Beginning May 1, 2009 on federal land and April 1, 2009 on all other land, operators shall maintain MSDS sheets for any Chemical Products brought to a well site for use downhole during drilling, completion, and workover operations, excluding hydraulic fracturing treatments. With the exception of fuel as provided for in Rule 205.c., the reporting and disclosure of hydraulic fracturing additives and chemicals brought to a well site for use in connection with hydraulic fracturing treatments is governed by Rule 205A.
- c. Beginning June 1, 2009, operators shall maintain a Chemical Inventory by well site for each Chemical Product used downhole during drilling, completion, and workover operations, excluding hydraulic fracturing treatments, in an amount exceeding five hundred (500) pounds during any quarterly reporting period. Operators shall also maintain a chemical inventory by well site for fuel stored at the well site during drilling, completion, and workover operations, including hydraulic fracturing treatments, in an amount exceeding five hundred (500) pounds during any quarterly reporting period.

The five hundred (500) pound reporting threshold shall be based on the cumulative maximum amount of a Chemical Product present at the well site during the quarterly reporting period. Entities maintaining Chemical Inventories under this section shall update these inventories quarterly throughout the life of the well site. These records must be maintained in a readily retrievable format at the operator's local field office. The Colorado Department of Public Health and Environment may obtain information provided to the Commission or Director in a Chemical Inventory upon written request to the Commission or the Director.

- d. Where the composition of a Chemical Product is considered a Trade Secret by the vendor or service provider, Operators shall only be required to maintain the identity of the Trade Secret Chemical Product and shall not be required to maintain information concerning the identity of chemical constituents in a Trade Secret Chemical Product or the amounts of such constituents. The vendor or service provider shall provide to the Commission a list of the chemical constituents contained in a Trade Secret Chemical Product upon receipt of a letter from the Director stating that such information is necessary to respond to a spill or release of a Trade Secret Chemical Product or a complaint from a potentially adversely affected landowner regarding impacts to public health, safety, welfare, or the environment. Upon receipt of a written statement of necessity, information regarding the chemical constituents contained in a Trade Secret Chemical Product shall be disclosed by the vendor or service provider directly to the Director or his or her designee.

The Director or designee may disclose information regarding those chemical constituents to additional Commission staff members to the extent that such disclosure is necessary to allow the Commission staff member receiving the information to assist in responding to the spill, release, or complaint, provided that such individuals shall not disseminate the information further. In addition, the Director may disclose information regarding those chemical constituents to any Commissioner, the relevant County Public Health Director or Emergency Manager, or to the Colorado Department of Public Health and Environment's Director of Environmental Programs upon request by that individual. Any information so disclosed to the Director, a Commission staff member, a Commissioner, a County Public Health Director or Emergency Manager, or to the Colorado Department of Public Health and

Environment's Director of Environmental Programs shall at all times be considered confidential and shall not become part of the Chemical Inventory, nor shall it be construed as publicly available. The Colorado Department of Public Health and Environment's Director of Environmental Programs, or his or her designee, may disclose information regarding the chemical constituents contained in a Trade Secret Chemical Product to Colorado Department of Public Health and Environment staff members under the same terms and conditions as apply to the Director.

- e. The vendor or service provider shall also provide the chemical constituents of a Trade Secret Chemical Product to any health professional who requests such information in writing if the health professional provides a written statement of need for the information and executes a Confidentiality Agreement, Form 35. The written statement of need shall be a statement that the health professional has a reasonable basis to believe that (1) the information is needed for purposes of diagnosis or treatment of an individual, (2) the individual being diagnosed or treated may have been exposed to the chemical concerned, and (3) knowledge of the chemical constituents of such Trade Secret Chemical Product will assist in such diagnosis or treatment. The Confidentiality Agreement, Form 35, shall state that the health professional shall not use the information for purposes other than the health needs asserted in the statement of need, and that the health professional shall otherwise maintain the information as confidential. Where a health professional determines that a medical emergency exists and the chemical constituents of a Trade Secret Chemical Product are necessary for emergency treatment, the vendor or service provider shall immediately disclose the chemical constituents of a Trade Secret Chemical Product to that health professional upon a verbal acknowledgement by the health professional that such information shall not be used for purposes other than the health needs asserted and that the health professional shall otherwise maintain the information as confidential. The vendor or service provider may request a written statement of need, and a Confidentiality Agreement, Form 35, from all health professionals to whom information regarding the chemical constituents was disclosed, as soon as circumstances permit. Information so disclosed to a health professional shall not become part of the Chemical Inventory and shall in no way be construed as publicly available.
- f. Such books, records, inventories, and copies of said reports required by the Commission or the Director shall be kept on file and available for inspection by the Commission for a period of at least five years except for the Chemical Inventory, which shall be kept on file and available for inspection by the Commission for the life of the applicable oil and gas well or oil and gas location and for five (5) years after plugging and abandonment. Upon the Commission's or the Director's written request for information required to be maintained or provided under this section, the record-keeping entity or third-party vendor shall supply the Commission or the Director with the requested information within three (3) business days in a format readily-reviewable by the Commission or the Director, except in the instance where such information is necessary to administer emergency medical treatment in which case such information shall be provided as soon as possible. Information provided to the Commission or the Director under this section that is entitled to protection under state or federal law, including C.R.S. § 24-72-204, as a trade secret, privileged information, or confidential commercial, financial, geological, or geophysical data shall be kept confidential and protected against public disclosure unless otherwise required, permitted, or authorized by other state or federal law. Any disclosure of information entitled to protection under any state or federal law made pursuant to this section shall be made only to the persons required, permitted, or authorized to receive such information under state or federal law in order to assist in the response to a spill, release, or complaint and shall be subject to a requirement that the person receiving such information maintain the confidentiality of said information. The Commission or the Director shall notify the owner, holder, or beneficiary of any such protected information at least one (1) business day prior to any required, permitted, or authorized disclosure. This notification shall include the name and contact information of the intended recipient of such protected information, the reason for the

disclosure, and the state or federal law authorizing the disclosure. Information so disclosed shall not become part of the Chemical Inventory and shall in no way be construed as publicly available. 200-4 As of May 30, 2009

- g. The Director and the authorized deputies shall have access to all well records wherever located. All operators, drilling contractors, drillers, service companies, or other persons engaged in drilling or servicing wells, shall permit the Director, or authorized deputy, at the Director's or their risk, in the absence of negligence on the part of the owner, to come upon any lease, property, or well operated or controlled by them, and to inspect the record and operation of such wells and to have access at all times to any and all records of wells; provided, that information so obtained shall be kept confidential and shall be reported only to the Commission or its authorized agents.
- h. In the event that the vendor or service provider does not provide the information required by Rules 205.d, 205.e, or 205.f directly to the Commission or a health professional, the operator is responsible for providing the required information.
- i. In the event the operator establishes to the satisfaction of the Director that it lacks the right to obtain the information required by Rules 205.d, 205.e, or 205.f and to provide it directly to the Commission or a health professional, the operator shall receive a variance from these rule provisions from the Director.

205A. HYDRAULIC FRACTURING CHEMICAL DISCLOSURE.

a. Applicability. This Commission Rule 205a applies to hydraulic fracturing treatments performed on or after April 1, 2012.

b. Required disclosures.

(1) Vendor and service provider disclosures. A service provider who performs any part of a hydraulic fracturing treatment and a vendor who provides hydraulic fracturing additives directly to the operator for a hydraulic fracturing treatment shall, with the exception of information claimed to be a trade secret, furnish the operator with the information required by subsection 205A.b.(2)(A)(viii) – (xii) and subsection 205A.b.(2)(B), as applicable, and with any other information needed for the operator to comply with subsection 205A.b.(2). Such information shall be provided as soon as possible within 30 days following the conclusion of the hydraulic fracturing treatment and in no case later than 90 days after the commencement of such hydraulic fracturing treatment.

(2) Operator disclosures.

A. Within 60 days following the conclusion of a hydraulic fracturing treatment, and in no case later than 120 days after the commencement of such hydraulic fracturing treatment, the operator of the well must complete the chemical disclosure registry form and post the form on the chemical disclosure registry, including:

- (i) the operator name;
- (ii) the date of the hydraulic fracturing treatment;
- (iii) the county in which the well is located;
- (iv) the API number for the well;
- (v) the well name and number;
- (vi) the longitude and latitude of the wellhead;

(vi) the true vertical depth of the well;

(vii) the total volume of water used in the hydraulic fracturing treatment of the well or the type and total volume of the base fluid used in the hydraulic fracturing treatment, if something other than water;

(ix) each hydraulic fracturing additive used in the hydraulic fracturing fluid and the trade name, vendor, and a brief descriptor of the intended use or function of each hydraulic fracturing additive in the hydraulic fracturing fluid;

(x) each chemical intentionally added to the base fluid;

(xi) the maximum concentration, in percent by mass, of each chemical intentionally added to the base fluid; and

(xii) the chemical abstract service number for each chemical intentionally added to the base fluid, if applicable.

B. If the vendor, service provider, or operator claim that the specific identity of a chemical, the concentration of a chemical, or both the specific identity and concentration of a chemical is/are claimed to be a trade secret, the operator of the well must so indicate on the chemical disclosure registry form and, as applicable, the vendor, service provider, or operator shall submit to the Director a Form 41 claim of entitlement to have the specific identity of a chemical, the concentration of a chemical, or both withheld as a trade secret. The operator must nonetheless disclose all information required under subsection 205A.b.(2)(A) that is not claimed to be a trade secret. If a chemical is claimed to be a trade secret, the operator must also include in the chemical registry form the chemical family or other similar descriptor associated with such chemical.

C. At the time of claiming that a hydraulic fracturing chemical, concentration, or both is entitled to trade secret protection, a vendor, service provider or operator shall file with the commission claim of entitlement, Form 41, containing contact information. Such contact information shall include the claimant's name, authorized representative, mailing address, and phone number with respect to trade secret claims. If such contact information changes, the claimant shall immediately submit a new Form 41 to the Commission with updated information.

D. Unless the information is entitled to protection as a trade secret, information submitted to the Commission or posted to the chemical disclosure registry is public information.

(3) Ability to search for information.

A. If the Commission determines, as of January 1, 2013, that:

(i) The chemical disclosure registry does not allow the Commission staff and the public to search and sort the registry for Colorado information by geographic area, ingredient, chemical abstract service number, time period, and operator; and

(ii) There is no reasonable assurance that the registry will allow for such searches by a date certain acceptable to the Commission,

Then the provisions of subsection 205A.b.(3)(B) below shall apply.

B. Beginning February 1, 2013, any operator who posts a chemical disclosure form on the chemical disclosure registry shall also submit the form to the Commission in an electronic format acceptable to the Commission. As soon thereafter as

practicable, the Commission shall make such forms available on the Commission's website in a manner that allows the public to search the information and sort the forms by geographic area, ingredient, chemical abstract service number, time period and operator, as practicable.

(4) Inaccuracies in information. A vendor is not responsible for any inaccuracy in information that is provided to the vendor by a third party manufacturer of the hydraulic fracturing additives. A service provider is not responsible for any inaccuracy in information that is provided to the service provider by the vendor. An operator is not responsible for any inaccuracy in information provided to the operator by the vendor or service provider.

(5) Disclosure to health professionals. Vendors, service companies, and operators shall identify the specific identity and amount of any chemicals claimed to be a trade secret to any health professional who requests such information in writing if the health professional provides a written statement of need for the information and executes a confidentiality agreement, Form 35. The written statement of need shall be a statement that the health professional has a reasonable basis to believe that (1) the information is needed for purposes of diagnosis or treatment of an individual, (2) the individual being diagnosed or treated may have been exposed to the chemical concerned, and (3) knowledge of the information will assist in such diagnosis or treatment. The confidentiality agreement, Form 35, shall state that the health professional shall not use the information for purposes other than the health needs asserted in the statement of need, and that the health professional shall otherwise maintain the information as confidential. Where a health professional determines that a medical emergency exists and the specific identity and amount of any chemicals claimed to be a trade secret are necessary for emergency treatment, the vendor, service provider, or operator, as applicable, shall immediately disclose the information to that health professional upon a verbal acknowledgement by the health professional that such information shall not be used for purposes other than the health needs asserted and that the health professional shall otherwise maintain the information as confidential. The vendor, service provider, or operator, as applicable, may request a written statement of need, and a confidentiality agreement, Form 35, from all health professionals to whom information regarding the specific identity and amount of any chemicals claimed to be a trade secret was disclosed, as soon as circumstances permit. Information so disclosed to a health professional shall in no way be construed as publicly available.

c. Disclosures not required. A vendor, service provider, or operator is not required to:

(1) disclose chemicals that are not disclosed to it by the manufacturer, vendor, or service provider;

(2) disclose chemicals that were not intentionally added to the hydraulic fracturing fluid; or

(3) disclose chemicals that occur incidentally or are otherwise unintentionally present in trace amounts, may be the incidental result of a chemical reaction or chemical process, or may be constituents of naturally occurring materials that become part of a hydraulic fracturing fluid.

d. Trade secret protection.

(1) Vendors, service companies, and operators are not required to disclose trade secrets to the chemical disclosure registry.

(2) If the specific identity of a chemical, the concentration of a chemical, or both the specific identity and concentration of a chemical are claimed to be entitled to protection as a trade secret, the vendor, service provider or operator may withhold the specific identity, the concentration, or both the specific identity and concentration, of the chemical, as the case may be, from the information provided to the chemical disclosure registry. Provided, however, operators must provide the information required by Rule 205A.b.(2)(B) & (C).

The vendor, service provider, or operator, as applicable, shall provide the specific identity of a chemical, the concentration of a chemical, or both the specific identity and concentration of a chemical claimed to be a trade secret to the Commission upon receipt of a letter from the Director stating that such information is necessary to respond to a spill or release or a complaint from a person who may have been directly and adversely affected or aggrieved by such spill or release. Upon receipt of a written statement of necessity, such information shall be disclosed by the vendor, service provider, or operator, as applicable, directly to the Director or his or her designee and shall in no way be construed as publicly available.

The Director or designee may disclose information regarding the specific identity of a chemical, the concentration of a chemical, or both the specific identity and concentration of a chemical claimed to be a trade secret to additional Commission staff members to the extent that such disclosure is necessary to allow the Commission staff member receiving the information to assist in responding to the spill, release, or complaint, provided that such individuals shall not disseminate the information further. In addition, the Director may disclose such information to any Commissioner, the relevant county public health director or emergency manager, or to the Colorado Department of Public Health and Environment's director of environmental programs upon request by that individual. Any information so disclosed to the Director, a Commission staff member, a Commissioner, a county public health director or emergency manager, or to the Colorado Department of Public Health and Environment's director of environmental programs shall at all times be considered confidential and shall not be construed as publicly available. The Colorado Department of Public Health and Environment's director of environmental programs, or his or her designee, may disclose such information to Colorado Department of Public Health and Environment staff members under the same terms and conditions as apply to the director.

e. Incorporated materials. Where referenced herein, these regulations incorporate by reference material originally published elsewhere. Such incorporation does not include later amendments to or editions of the referenced material. Pursuant to section 24-4-103 (12.5) C.R.S., the Commission maintains copies of the complete text of the incorporated materials for public inspection during regular business hours. Information regarding how the incorporated material may be obtained or examined is available at the Commission's office located at 1120 Lincoln Street, Suite 801, Denver, Colorado 80203.

DRILLING, DEVELOPMENT, PRODUCTION AND ABANDONMENT (300 SERIES)

RULE 305.E.(1).A CONTENT OF NOTICES.

A. Landowner Notice. The landowner notice shall include the Form 2A itself (without attachments), a copy of the information required under Rule 303.d.(3).B, 303.d.(3).C, 303.d.(3).E, the COGCC's information sheet on hydraulic fracturing treatments and any additional information the operator deems appropriate and inform the recipient that the complete application (including attachments) may be reviewed on the COGCC website and that he or she may submit comments to the Director, as provided on the COGCC website. The operator need not provide the COGCC's information sheet on hydraulic fracturing treatments where hydraulic fracturing treatments are not going to be applied to the well in question. For the surface owner, this notice shall include a copy of the COGCC Informational Brochure for Surface Owners, a postage-paid, return-addressed post card whereby the surface owner may request consultation pursuant to Rule 306, and, where the oil and gas location is not subject to a surface-use agreement, a copy of the COGCC Onsite Inspection Policy (See Appendix or COGCC website).

RULE 316C. NOTICE OF INTENT TO CONDUCT HYDRAULIC FRACTURING TREATMENT.

Operators shall give at least 48 hours advance written notice to the Commission of a hydraulic fracturing treatment at any well. Such notice shall be provided on a Form 42 notice of hydraulic fracturing treatment. The Commission shall provide prompt electronic notice of such intention to the relevant local governmental designee (LGD).

**RULES OF PRACTICE AND PROCEDURE
(500 SERIES)**

523.c. BASE FINE SCHEDULE

Rule 523c. Base fine schedule

Base fine schedule. The following table sets forth the base fine for violation of the rules listed

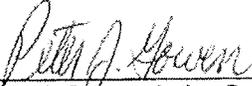
Rule Number 205A

Base Fine \$1000

Attached, as **Exhibit A**, is a statement giving the basis and purpose of the revisions and such statements are incorporated herein by reference.

DONE AND PERFORMED by the Oil and Gas Conservation Commission of the State of Colorado this 13th day of December, 2011.

IN THE NAME OF THE COLORADO
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF COLORADO

By 
Peter J. Gowen, Acting Secretary

Dated at Suite 801
1120 Lincoln Street
Denver, Colorado 80203
December 13, 2011

Exhibit A

Proposed Statement of Basis, Specific Statutory Authority, and Purpose

AMENDMENTS TO 100 SERIES DEFINITIONS, 200 SERIES GENERAL RULES, 300 SERIES DRILLING, DEVELOPMENT, PRODUCTION AND ABANDONMENT RULES and 500 SERIES PRACTICE AND PROCEDURE RULES

2 CCR 404-1

This statement sets forth the basis, specific statutory authority, and purpose for the new rules and amendments to Rules 100, 205, 305, 316 and 523 of the Rules of the Colorado Oil and Gas Conservation Commission promulgated by the Colorado Oil and Gas Conservation Commission ("Commission" or "COGCC").

In adopting the new rules and amendments, the Commission relied upon the entire administrative record for this rulemaking proceeding, which formally began in the fall of 2011 and informally began in the summer of 2011. The new rules and amendments were initially discussed with representatives of the oil and gas industry and conservation community during informal meetings in August 2011. These discussions continued during September 2011, and the Commission staff held work sessions with these groups during October 2011 to help develop the proposed rules. The administrative record includes the proposed rules and recommended modifications and alternatives; public comments, testimony, and exhibits; and one day of public and party hearings.

Statutory Authority

The new rules and amendments are based on: 1) general Commission jurisdiction and rulemaking authority granted in section 34-60-105 (1) C.R.S; and 2) specific statutory authority of sections 34-60-106(2), 34-60-106(4) and 34-60-106(10) C.R.S. The Commission adopted the following statement of basis and purpose consistent with section 24-4-103(4), C.R.S., of the Administrative Procedure Act. This statement is incorporated by reference in the rules adopted. The rulemaking hearing for these new rules and amendments was held by the Commission on December 5, 2011. These amendments become effective twenty days after publication in the *Colorado Register*.

Basis and Purpose

INTRODUCTION

A major reason for adopting the new rules and amendments was to address concerns regarding hydraulic fracturing. Members of the public have expressed interest in learning the identity of chemicals in hydraulic fracturing fluids. Many oil and gas operators are currently providing such information through the FracFocus.org website, and several other states have adopted or are adopting similar regulations.

Hydraulic fracturing, commonly referred to as *fracing*, is the process of creating small cracks, or fractures, in underground geological formations providing pathways to allow oil and natural gas to flow into the wellbore and thereby increase production. Prior to initiating hydraulic fracturing, engineers and geoscientists study and model the physical characteristics of the hydrocarbon bearing rock formation, including its permeability, porosity and thickness. Using this information, they design the process to keep the resulting fractures within the target formation. In Colorado, the target formation is often more than 7,000 feet below the ground surface and more than 5,000 feet below drinking water aquifers.

To fracture the formation, fracturing fluids are injected down the well bore and into the formation. These fluids typically consist of water, sand, and chemical additives. The pressure created by injecting the fluid opens the fractures. Sand is carried into the fractures by the fluid and keeps the fractures open to increase the flow of oil or natural gas to the well bore. The chemicals serve a variety of purposes, including increasing viscosity, reducing friction, controlling bacteria, and decreasing corrosion. Following the treatment, much of the fracturing fluid flows back up the well bore and is collected at the surface in tanks or lined pits.

Fracture treatment of oil and gas wells in Colorado began in the 1970s and has evolved since then. Most of the hydrocarbon bearing formations in Colorado would not produce economic quantities of hydrocarbons without hydraulic fracturing.

The Commission Staff believes the new rules and amendments will significantly increase the transparency of hydraulic fracturing operations. The proposed rules require service companies and vendors to disclose all known chemicals in hydraulic fracturing fluids to operators and require operators to disclose such chemicals to the public via the website FracFocus.org or, with respect to an operator's trade secrets, directly to the Commission or health professionals. FracFocus.org is a hydraulic fracturing chemical registry website created by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission.

The new rules and amendments reflect staff discussions with those intergovernmental organizations, as well as other states, industry associations, individual operators, and conservation groups. Although states have taken different approaches to disclosure, and the industry and conservation groups disagree on several issues, the Commission believes the proposed new rules and amendments strike a responsible balance.

The following discussion summarizes the new rules and amendments and explains their purpose.

IDENTIFICATION AND EXPLANATION OF AMENDMENTS

The new rules and amendments make substantive amendments and additions to the Rules and Regulations of the Colorado Oil and Gas Conservation Commission, 2 CCR 404-1 ("Commission Rules"). The general authority for adoption of these rules is set out in the Statutory Authority section set forth above and is generally applicable to all the new rules and amendments. The most specific authority and a summary of the purpose for each rule change are set forth below. References to particular factors or testimony are intended to be illustrative and not comprehensive.

100 Series Definitions

The Commission's 100 Series Rules contain many definitions that occur throughout the Commission Rules and throughout the Oil and Gas Conservation Act, § 34-60-100 C.R.S. *et seq.*

Amendments

The following definitions were substantively amended:

Chemical(s)

Basis: The statutory basis for this amendment is § 34-60-106 (2)(d) C.R.S.

Purpose: The purpose of this amendment is to clarify the scope of disclosure obligations under the new and amended rules. Under the proposed Colorado rule, all chemicals used in hydraulic fracturing treatments must be disclosed irrespective of whether the chemical is listed on a Material Safety Data Sheet pursuant to the federal Occupational Safety and Health Act.

Trade Secret

Basis: The statutory basis for this amendment is § 34-60-106 (2)(d) C.R.S.

Purpose: The purpose of this amendment is to conform the definition of trade secret in the rules to the statutory definition set forth in the Uniform Trade Secrets Act, § 7-74-102(4).

The following definitions were added:

Base Fluid; Chemical Abstracts Service; Chemical Abstracts Service Number or CAS Number; Chemical Disclosure Registry; Chemical Family; Health Professional; Hydraulic Fracturing Additive; Hydraulic Fracturing Fluid; Hydraulic Fracturing Treatment; Proppant; and Total Water Volume.

Basis: The statutory basis is § 34-60-106 (2)(d) C.R.S.

Purpose: These definitions are necessary as terms of art to give meaning to Colorado's disclosure regime.

200 Series Rules

Amendments to 200 Series Rules: Rule 205., Access to Records

Basis: The statutory basis is § 34-60-106 (2)(d) C.R.S.

Purpose: Rule 205 requires operators, among other things, to maintain chemical inventories for chemical substances brought to a well site for use downhole. Under amended Rule 205, chemicals used for hydraulic fracturing treatments are exempted from this requirement and are instead addressed in new Rule 205A, which requires the public disclosure of chemicals used in hydraulic fracturing. Public disclosure under Rule 205A would be limited to hydraulic fracturing fluids, while other chemical products used downhole, other than hydraulic fracturing fluids, would continue to be inventoried and disclosed upon request to the Commission and health professionals under Rule 205. Operators will still need to maintain inventories of fuel regardless of whether such fuel is used in connection with hydraulic fracturing treatments or other activities. Further, if diesel or other fuel is used as a hydraulic fracturing fluid, such use shall be disclosed pursuant to Rule 205A.

Additions to 200 Series Rules: Rule 205A., Hydraulic Fracturing Chemical Disclosure

Basis: The statutory basis is § 34-60-106 (2)(d) C.R.S.

Purpose: New Rule 205A would require public disclosure of hydraulic fracturing chemicals using the FracFocus.org website, which has been voluntarily used by numerous Colorado operators to report information on about 50% of the wells hydraulically fractured in Colorado this year. It is similar to regulations recently proposed in Texas. Other states have similarly adopted or are considering adopting regulations mandating the public disclosure of hydraulic fracturing chemicals through the FracFocus.org website.

Rule 205A, Subpart a: Applicability. Rule 205A provides that the new fracturing chemical disclosure requirements will apply to all hydraulic fracturing treatments performed on or after April 1, 2012. As previously noted, many Colorado operators are already submitting information to the FracFocus.org website. Therefore, the COGCC staff believes that it is feasible and fair for Rule 205A to apply to all treatments performed on or after April 1, 2012. If an operator finds that, despite diligent efforts, it is unable to satisfy the requirements of Rule 205A beginning April 1, 2012, then it may seek a temporary variance under Rule 502.b(1).

Rule 205A, Subpart b: Required Disclosures. Rule 205A imposes disclosure obligations on suppliers, service companies, and operators. The supplier or service company must, as soon as possible within 30 days following the conclusion of a hydraulic fracturing treatment, furnish the operator of the well with the information necessary for the operator to meet its disclosure obligations. Provided, however, vendor and service providers need not provide information claimed to be a trade secret to operators. The operator must, within 60 days following the conclusion of a hydraulic fracturing treatment, complete and post the chemical registry disclosure form with FracFocus. The FracFocus form includes information about the well, the volume of water used, and the chemicals and their concentrations. The Commission acknowledges concerns expressed by industry that certain formats for disclosure may present the possibility of competitors "reverse engineering" proprietary formulas for hydraulic fracturing additives. Accordingly, the rule permits operators to report the required information in a format that does not link chemical ingredients (including chemical names, CAS numbers and concentrations) to their respective hydraulic fracturing additive. If a chemical is entitled to trade secret protection, then the operator must still provide information on its chemical family. The supplier, service company, or operator, as applicable, must also provide the identity of a trade secret chemical to a health professional that satisfies certain conditions (immediate disclosure is required in medical emergencies).

At the time of claiming that a chemical, concentration, or both is a trade secret, the vendor, service provider or operator must file with the Commission a Claim of Entitlement, Form 41, containing the claimant's name, authorized representative, mailing address, and phone number. Among other things, this is intended to assist

the Commission and health professionals in promptly obtaining trade secret information where appropriate.

FracFocus currently allows the public to search and sort information by well, geographic area and operator, but not by ingredient, chemical abstract service number or time period. In the event FracFocus does not permit searching and sorting by ingredient, chemical abstract service number and time period by January 1, 2013, and there is no reasonable assurance that FracFocus will allow for such searches by a date certain acceptable to the Commission, then the proposed rules require operators to also file their disclosure reports with the Commission by February 1, 2013. As soon thereafter as practicable, the Commission will make the forms available on the Commission's website in a manner that enables the public to search and sort them by geographic area, ingredient, chemical abstract service number, time period, and operator, as practicable.

The requirement that information claimed to be a trade secret be disclosed to health professionals under certain circumstances is patterned after existing Rule 205. In addition, most other states have required or are proposing to require similar disclosure, and several of them have patterned their requirements after Rule 205 as well. The Commission staff believes that this type of disclosure is generally well accepted and just as appropriate for hydraulic fracturing chemicals as for other downhole chemicals.

Rule 205A, Subpart c: Disclosures Not Required. Rule 205A will not require suppliers, service companies or operators to disclose chemicals which are not disclosed to them, were not intentionally added to the hydraulic fracturing fluid, or occur incidentally or are otherwise unintentionally present. This part of Rule 205A is similar to the proposed Texas disclosure rule and is intended to ensure that requiring disclosure of all chemicals will not impose unfair or unreasonable burdens on companies.

Rule 205A, Subpart d: Trade Secret Protection. As previously noted, Rule 205A will protect information claimed to be a trade secret from disclosure. Under the Commission Rules, a trade secret is defined as "any confidential formula, pattern, process, device, information, or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it." Unless the information is entitled to protection as a trade secret, information submitted to the Commission or posted through FracFocus is public information.

The Colorado Open Records Act, the Colorado Uniform Trade Secrets Act, all other states that require hydraulic fracturing chemical disclosure and the FracFocus website protect trade secrets. The trade secret provisions of the proposed rule are patterned after existing Rule 205, which was the subject of extensive comment, review, and deliberation by the Commission in 2008. It allows suppliers, service companies, and operators to withhold trade secret information. But they must still provide such information to the Commission if the Commission determines the information is necessary to respond to a spill, release, or complaint.

Trade Secret Challenges Whether and under what circumstances a vendor, service company or operator's use of the trade secret provisions of Rule 205A could be challenged was the subject of much discussion during the rulemaking.

Section 114 of the Oil and Gas Conservation Act provides: "In the event the commission fails to bring suit to enjoin any actual or threatened violation of this article, or of any rule, regulation, or order made under this article, then any person or party in interest adversely affected and who has notified the commission in writing of such violation or threat thereof and has requested the commission to sue, may, to prevent any or further violation, bring suit for that purpose in the district court of any county in which the commission could have brought suit. If, in such suit, the court holds that injunctive relief should be granted, then the commission shall be made a party and shall be substituted for the person who brought the suit, and the injunction shall be issued as if the commission had at all times been the complaining party." § 34-60-114, C.R.S. This allows an adversely affected individual to notify the COGCC if they believe that a trade secret claim is invalid. The COGCC could issue an order

requiring the claimant to substantiate the validity of its claim. If the COGCC declines to act, or if the adversely affected individual disagrees with a COGCC determination that a claim is valid, then such individual could seek judicial review.

In addition, Rule 522.(a)(1) authorizes any person who may be directly and adversely affected or aggrieved as a result of an alleged violation of any COGCC Rule to file a complaint requesting that the Director issue a Notice of Alleged Violation (NOAV). If the Director, after investigating the complaint, decides not to issue an NOAV, the complainant may file an application to the COGCC requesting the COGCC to enter an Order Finding Violation. Such a proceeding could be resolved without disclosure of the chemical identity or concentration. The issue would be whether the claimant can substantiate that the information constitutes a trade secret as defined in Rule 100.

For purposes of determining public challenges to trade secret designation under Section 114 of the Oil and Gas Conservation Act and under Commission Rule 522, the COGCC believes the question of whether someone has been directly and adversely affected or aggrieved should be broadly construed.

The Commission determined that the foregoing statutory and regulatory provisions allowed the COGCC, in its discretion, to receive, investigate, assess and determine claims that a vendor, service company or operator has improperly claimed a trade secret. The COGCC's exercise of these powers will be utilized on a case-by-case basis. In some circumstances, the COGCC may exercise its authority to investigate and challenge a trade secret claim. In other circumstances, the COGCC may abstain from such a challenge to allow for immediate resolution by a court, which should have more experience, and better procedural tools and protections.

Designation of Trade Secrets Whether the COGCC should review and approve trade secret claims was likewise the subject of much discussion during the rulemaking. The Commission considered and rejected a trade secrets regime that would have required the COGCC to review and approve all trade secret claims. Such a regime raised a number of concerns, including the COGCC's general lack of experience in evaluating trade secret claims, the risk of inadvertent disclosure, and the reprioritization of COGCC objectives and reallocation of COGCC resources, potentially at the expense of other priorities, many of which directly or indirectly involve environmental protection.

Additionally, the Commission was also concerned that a review and approval process would enable any person to request, under the Colorado Open Records Act, all documents concerning a trade secret designation from the COGCC, including the identity or concentration of the chemical and any internal staff documents evaluating the trade secret claim. In the event of such a request, the COGCC would be obligated to either disclose such information to the requesting party, or withhold it as a trade secret. Under the latter scenario, the requesting party could sue the COGCC in district court to challenge the trade secret designation. Although the trade secret claimant would likely intervene in the lawsuit to preserve the confidentiality of the information, the COGCC would nonetheless be a party and would have to devote resources to the litigation. Further, the requesting party could be entitled to its attorneys' fees and costs from the COGCC under CRS § 24-72-204(5). The Commission wished to avoid these risks.

Rule 205A.b.(2).B. provides, among other things, that a vendor, service provider, or operator, as applicable, "shall submit to the director a Form 41, Claim of Entitlement, to have the specific identity of a chemical, the concentration of a chemical, or both withheld as a trade secret." The Commission has adopted a Form 41, Claim of Entitlement, for this purpose. A copy of Form 41 is attached as Appendix IX to these Rules and may be modified only through the Commission's rulemaking procedures as provided in Rule 529.

The Commission also notes that, in the event of a spill or release of a trade secret chemical, or for purposes of investigating a complaint alleging such a spill or release, the COGCC Director can demand the trade secret information. The COGCC, in turn, may disclose this information to its Commissioners, certain county officials, and the Colorado Department of Public Health and Environment.

The Commission expects the Director to issue a report identifying, among other relevant information, the number of trade secret claims made under Rule 205A and identifying the vendors, service providers and operators making such claims. The Commission expects the Director to issue such a report within twelve months of the effective date of the proposed rules.

The Commission considered the foregoing issues carefully and determined that the proposed rules reflect an appropriate policy choice balancing numerous interests.

Rule 205A, Subpart e: Incorporated Material. This is boilerplate language that Colorado law requires where a regulation incorporates by reference material published elsewhere, e.g., the OSHA regulations.

300 Series Rules

Additions to 300 Series Rules:

Rule 305.e.(1).A, Landowner Notice.

Basis: The statutory basis is § 34-60-106 (2)(d) C.R.S.

Purpose: An operator making application for approval of an Oil and Gas Location Assessment, Form 2A, must provide the surface owner and owners of surface property within five hundred (500) feet of the proposed oil and gas location with various information. These information requirements are broadened under the amendment to include a new COGCC information sheet on hydraulic fracturing. This information sheet will, among other things, advise surface owners that most wells in Colorado are hydraulically fractured, provide general information on hydraulic fracturing treatments, and offer instruction in the collection of baseline water samples if the surface owner is concerned about potential impacts from hydraulic fracturing. However, such notice will not be required if hydraulic fracturing treatments are not going to be applied to the well in question.

Rule 316C., Notice of Intent to Conduct Hydraulic Fracturing Treatment.

Basis: The statutory basis is § 34-60-106 (2)(d) C.R.S.

Purpose: New Rule 316C will require operators to provide the Commission with 48 hours advance written notice of their intention to hydraulically fracture a well. The COGCC shall then provide prompt electronic notice of such intention to the relevant local governmental designee. The COGCC staff would develop a new form for this purpose, which would be designated Form 42, Notice of Hydraulic Fracturing Treatment. This notification would assist the COGCC in arranging inspections to observe hydraulic fracturing where appropriate.

500 Series Rules

Addition to 500 Series Rules: Rule 523C., Base Fine Schedule.

Basis: The statutory basis is § 34-60-106 (2)(d) C.R.S.

Purpose: Amended Rule 523C was proposed in order to establish a base line fine for violations of the new and amended rules. A fine of \$1000 per day, subject to adjustment by the Commission, is consistent with the fines imposed by the Commission for violations of the majority of the Commission's Rules.

CONCLUSION

The new rules and amendments are expected to increase the transparency of hydraulic fracturing operations in the State of Colorado and, at the same time, afford appropriate protections for vendor, service provider and operator trade secrets. The new rules and amendments are also expected to increase the Commission Staff's ability to inspect and oversee hydraulic fracturing operations.

APPENDIX IX

FORM 41

Form 41

Section A - Classification of Entity Asserting Trade Secret Claim

Operator Vendor Service provider Other - specify in detail: _____

Section B - Entity Asserting Trade Secret Claim

The entity below submits this form to claim that it is entitled under COGCC Rule 205A to withhold certain information from disclosure as a trade secret:

Entity name: _____

Street Address: _____

City/State/Zip Code: _____

Contact person: _____

Contact phone: _____ Contact fax: _____

Contact email: _____

Section C - Claim of Entitlement to Trade Secret Protection

Rule 205A requires disclosure of all chemicals intentionally added to base fluid as part of a hydraulic fracturing treatment, as well as the maximum concentrations and (if applicable) CAS numbers for those chemicals, except in those limited situations where the specific identity or concentration of a chemical are permitted to be withheld as a trade secret. For purposes of Rule 205A, the term "trade secret" is defined in the COGCC Series 100 Definitions.

The Entity identified in Section B claims that the (____) identity or (____) maximum concentration, or (____) both, of the following chemical qualifies as a trade secret:

_____ (Chemical identifier). You may use a descriptive label, such as "Company TS1," for a chemical identifier in lieu of identifying the chemical. This chemical identifier may be used to reference the chemical in subsequent disclosures filed with the Chemical Disclosure Registry.

In order to claim that information is entitled to protection as a trade secret, you must check all the affirmations below and submit specific information regarding each of the following (can be attached on separate pages).

- 1. The entity holding the trade secret information has not disclosed the information to any other person, other than a member of a local emergency planning committee, an officer or employee of the United States or a state or local government, an employee of such person, or a person who is bound by a confidentiality agreement, and such person has taken reasonable measures to protect the confidentiality of such information and intends to continue to take such measures, or disclosure has otherwise been limited such that the information is not readily available to competitors.
- 2. The information is not required to be disclosed, or otherwise made available, to the public under any other Federal or State law.
- 3. Disclosure of the information is likely to cause harm to the competitive position of the entity holding the trade secret information.
- 4. The information is not readily discoverable through reverse engineering.

CERTIFICATION

This form must be signed by an authorized agent of the entity identified in Section B.

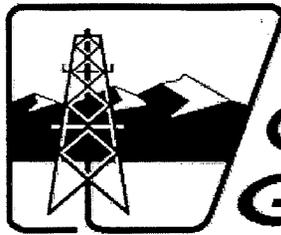
I declare under penalty of perjury that this report has been examined by me and to the best of my knowledge is true, correct and complete.

Signature

Name and title

DATE FILED: April 18, 2014 12:39 PM
FILING ID: 94DC31078701D
CASE NUMBER: 2013CV31385

EXHIBIT 2



STATE OF
COLORADO

**OIL &
GAS**

CONSERVATION COMMISSION

Colorado Department of Natural Resources

Information on Hydraulic Fracturing

What is hydraulic fracturing?

Hydraulic fracturing is the process of creating small cracks, or fractures, in deep, underground geological formations to liberate oil or natural gas and allow it to flow up the well for capture and use in heating our homes, fueling our cars and providing the electricity we all use for our televisions, computers and other devices.

To fracture the formation, fracturing fluids – mostly water and sand, with a small percentage of chemical additives – are injected down the well bore into the formation. The fluid, injected under pressure, causes the rock to fracture along weak areas.

The fluids that create the initial fractures are then mixed with thicker fluids that include sand and gelatin. These thicker fluids lengthen the openings in the rock. When the fractures are complete, and pressure is relieved, the fluids flow back up the well where they are captured and stored for later treatment or disposal.

As the fluids flow back up, sand remains in the fractures and props the rock open, maintaining

an open pathway to the well. This allows the oil and gas to seep from the rock into the pathway, up the well and to the surface for collection. In Colorado, the targeted formations for hydraulic fracturing are often more than 7,000 feet underground, and some 5,000 feet below any drinking water aquifers.

The process of hydraulic fracturing has been used for decades in Colorado, dating to the 1970s. Hydraulic fracturing continues to be refined and improved and is now standard for virtually all oil and gas wells in our state, and across much of the country. Hydraulic fracturing has made it possible to get the oil and gas out of rocks that were not previously considered as likely sources for fossil fuels.

Common questions and answers about hydraulic fracturing.

Q: *Can hydraulic fracturing open up pathways for oil and gas to reach ground water zones where water wells are producing?*

A: The distance between the oil and gas formation and the water formations is substantial. In the case of the Niobrara and the Fox Hills Aquifer in northeast Colorado, for example, the separation is about 5,000 feet – or roughly a mile – of bedrock.

Q: *How do you ensure the fracturing fluid, including the chemical additives, don't escape the oil and gas wellbore and impact nearby water wells?*

A: The COGCC requires all wells to be cased with multiple layers of steel and cement to isolate fresh water aquifers from the hydrocarbon zone. The steel casing and surrounding layers of cement protect the drinking water aquifers that the wellbore penetrates. Surface casing is required to extend 50 feet below the base of the deepest freshwater aquifer to seal it off from any possible

migration of fluids associated with oil and gas development. After it is determined that the well is capable of producing oil or natural gas, a production casing is set to provide an added layer of separation between the oil or natural gas stream and freshwater aquifer. A well survey called a cement bond log is performed to ensure the cement is properly sealed around the casing. Additionally, the COGCC requires that prior to hydraulic fracturing, the casing be pressure tested with fluid to the maximum pressure that will ever be applied to the casing. The well's construction design is reviewed by the professional engineering staff at the COGCC. Any flaw in the design will be corrected prior to issuing the required drilling permit.

Q: *What kinds of fluids do operators use to hydraulically fracture wells?*

A: Approximately 99.5% of the fracturing fluid volume is water and sand. The remaining portion is made up of a variety of chemicals. There are chemical additives used to reduce friction during pumping and prevent corrosion of the steel, biocide to kill bacteria in the water and surfactant to promote water flowback. The exact formulation may vary depending on the well and the objectives of the specific fracturing treatment. Fracturing chemicals are similar to other industrial chemicals which must be handled properly. For certain chemicals, safe work practices, proper site preparation, and attentive handling are required to ensure that employees, the public, and the environment are protected.

COGCC rules require that operators publicly disclose the ingredients and concentrations of fracturing chemicals for each well within 60 days of completion. That information is required to be posted on the website www.fracfocus.org, which is searchable by county, operator and well. The website also provides information on chemicals used and their purpose.

Q: How are these fluids managed on the surface?

A: Large volumes of fluids are maintained on the drill site during the drilling and hydraulic fracturing process. Operators must take great care to prevent spills; operators are charged with protecting environmental resources and spills violate state law. The fluids are blended on site in equipment that adjusts the mix of sand, water and chemicals at different stages of the operation. The blended mix is sent to pumping units to raise the pressure and send the fluid down the well. Like spills, operators must prevent leaks. In addition to complying with state regulations, leaks and spills would create costly delays, providing additional incentive for operators to ensure all fittings and connections are pressure tested with clean water before any operations begin.

After the fracturing is completed, fluids return to the surface as "flowback." These fluids are now considered exploration and production waste and must be treated accordingly in compliance with state regulations. Production fluids, including oil and related substances, also rise to the surface. All of these fluids must be separated and contained in impervious vessels and waste fluids must either be recycled or properly disposed of under regulatory oversight.

Q: What can neighbors expect to experience during the fracture stimulation work?

A: After the drilling rig is moved off site, water tanks are brought to the site and water-hauling trucks arrive. The day the operation is to begin, the sand haulers, pump truck, blender and the control van arrive. The equipment will all be connected together and then connected to the well head with high pressure hoses. After testing the equipment, the actual fracture stimulation will begin. The operation may take several hours

to several days depending on the number of fracture zones. You will not feel the fracture of the rock because of its very low energy and depth of the formation. The equipment noise is the most noticeable occurrence during the operations.

The COGCC has rules that are specific to hydraulic fracturing. For more information on these rules, visit: <http://cogcc.state.co.us>

- [Rule 205](#) Inventory chemicals
- [Rule 205A](#) Chemical disclosure
- [Rule 317](#) Well casing and cementing; Cement bond logs
- [Rule 317B](#) Setbacks and precautions near surface waters and tributaries that are sources of public drinking water
- [Rule 341](#) Monitoring pressures during stimulation
- [Rule 608](#) Special requirements for coal-bed methane wells
- [Rules 903 & 904](#) Pit permitting, lining, monitoring, & secondary containment
- [Rule 906](#) Requires COGCC notify CDPHE and the landowner of any spill that threatens to impact any water of the state

Where can I get further information?

The FracFocus website – www.fracfocus.org – contains detailed explanations on how hydraulic fracturing works, how groundwater is protected, what chemicals are used, and how to find a well near you. The COGCC has additional information on its hydraulic fracturing information page at its website: <http://cogcc.state.co.us>

What is the purpose of baseline water sampling?

The purpose of baseline water sampling is to collect data before any drilling operations at individual well sites to demonstrate the pre-drilling conditions of a water well. This provides a reference point for future evaluations of any

suspected impacts by the drilling or hydraulic fracturing of oil and gas wells.

How do I obtain baseline water samples?

The COGCC provides baseline sampling on a case-by-case basis based on proximity to new or existing drilling activity. Please contact the COGCC at 303-894-2100.

The Colorado Oil & Gas Association (COGA), an industry trade group, has a voluntary baseline ground water quality sampling program <http://www.coga.org/index.php/BaselineWaterSampling>.

Under the COGA program, samples are collected from two existing groundwater features, such as wells or springs, within one-half mile of the surface location of new oil and gas well pads, or new wells on existing pads. These samples require landowner consent and will be collected before drilling begins. A second round of sampling will be collected from each feature within one to three years after drilling is completed. Results of all samples will be provided to landowners within three months of collecting the sample. The laboratory results will also be submitted to the COGCC for inclusion in a water quality database that will be available to the public through the COGCC website.

Water well owners can also either sample their own water wells or contract a qualified individual to collect samples for baseline testing. Most analytical laboratories can provide sampling along with analytical services. A list of laboratories offering these services can be found under Laboratories-Analytical or Laboratories-Testing in the phone directory.

The Colorado Department of Public Health and Environment also offers analytical laboratory services. Call 303-692-3090 for additional information. <http://www.cdphe.state.co.us/lr/water.htm>

DATE FILED: April 18, 2014 12:39 PM
FILING ID: 94DC31078701D
CASE NUMBER: 2013CV31385

EXHIBIT 3

Colorado Hydraulic Fracturing State Review

October, 2011

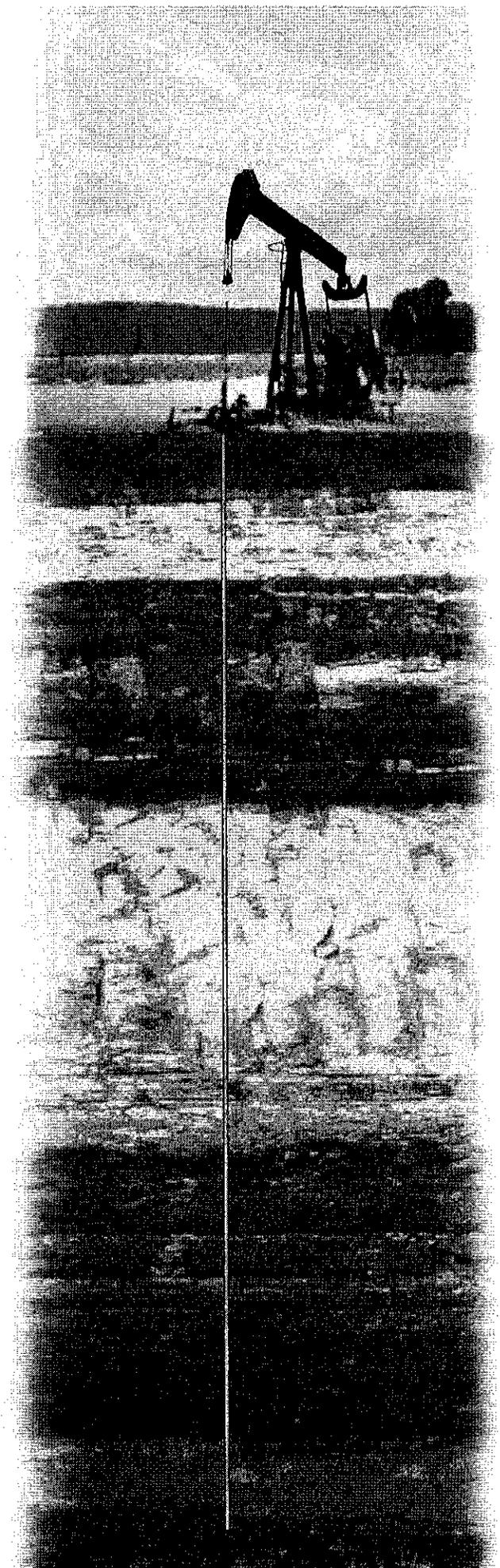


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INTRODUCTION

In 1990, the Interstate Oil Compact Commission (IOCC) and the U.S. Environmental Protection Agency (USEPA) jointly published a Study of State Regulation of Oil and Gas Exploration and Production Waste, which contained guidelines for the regulation of oil and gas exploration and production wastes by the IOCC member states (the “1990 Guidelines”). The published guidelines, developed by state, environmental and industry stakeholders, provided the basis for the State Review Process, a multi-stakeholder review of state exploration and production (E&P) waste management programs against the guidelines. The purposes of the State Review Process are to document the successes of states in regulating E&P wastes and to offer recommendations for program improvement. In 1994, the guidelines were updated and revised (the “1994 Guidelines”) by the IOCC, now named the Interstate Oil and Gas Compact Commission (IOGCC).

In 1999, administration of the State Review Process devolved to a non-profit, multi-stakeholder organization named State Review of Oil and Natural Gas Environmental Regulations, Inc. (STRONGER). STRONGER again revised, expanded and updated the Guidelines, which were accepted by the IOGCC and published in June 2000 as Guidelines for the Review of State Oil and Natural Gas Environmental Regulatory Programs (the “2000 Guidelines”). In 2005, STRONGER again revised, expanded and updated the Guidelines (the “2005 Guidelines”).

In 2009, STRONGER formed a Hydraulic Fracturing Workgroup consisting of stakeholders to review issues associated with hydraulic fracturing and develop guidelines for state regulatory programs to address identified issues. After several meetings and a round of public comment, the workgroup submitted to STRONGER a set of guidelines that represented the consensus of the workgroup. In 2010, STRONGER distributed the workgroup’s guidelines (the “2010 Hydraulic Fracturing Guidelines”) for state regulation of hydraulic fracturing. Those guidelines were used as the basis of this review.

In April 2011, the Colorado Oil and Gas Conservation Commission (COGCC) volunteered to have its hydraulic fracturing program reviewed by STRONGER. The Colorado oil and gas regulatory program has undergone one prior review. The report of the initial review of the Colorado oil and gas regulatory program was published in 1996.

The current review began with a questionnaire that was sent to the COGCC. The questionnaire had been prepared by the STRONGER Board. STRONGER intended the questionnaire to capture the status of the Colorado program relative to the 2010 Hydraulic Fracturing Guidelines. The COGCC prepared a response to the questionnaire, which was then sent to the review team.

In June through September 2011 an eight-person review team appointed by STRONGER conducted a review to evaluate the COGCC program compared to the 2010 Hydraulic Fracturing Guidelines. The review team consisted of three members and five official observers. The three team members were: Lori Wrottenbery, Oklahoma Corporation Commission; Wilma Subra, Subra Co., New Iberia, Louisiana; and Jim Collins, Independent Petroleum Association of America. The official observers were: Bruce Baizel, Earthworks; Tom Maunder, Alaska Oil and

Gas Conservation Commission; Ken Wonstolen, Beatty and Wozniak; Kate Fay, USEPA Region VIII; and Jerry Strahan, Bureau of Land Management (BLM).

The review team conducted a meeting, the in-state portion of the review, in the conference facilities of the Colorado State Land Board in Denver, Colorado on June 23, 2011. Mr. David Neslin, Director of the COGCC, and staff members Mr. Thom Kerr, Ms. Deb Baldwin, Mr. Stuart Ellsworth and Mr. Mike Leonard presented an overview of hydraulic fracturing requirements in Colorado. Following their presentations, they responded to questions from the team members and official observers. In addition to the Colorado state representatives who participated in the review and the review team, there were eight industry, nine government and twenty-two citizen attendees who observed the proceedings. The meeting was also broadcast over the internet. Following the meeting and after reviewing the written materials provided by the COGCC, the team members compiled this review report.

This is the report of the review of the Colorado program against the 2010 Hydraulic Fracturing Guidelines of STRONGER. Appendix A is a glossary of acronyms used in the report. Appendix B contains Colorado's written response to the STRONGER questionnaire.

EXECUTIVE SUMMARY

A multi-stakeholder review team has completed an in-depth review of the Colorado hydraulic fracturing regulatory program. During the review of Colorado's regulation of hydraulic fracturing, the review team members and official observers were granted full access to staff of the Colorado Oil and Gas Conservation Commission (COGCC), and all questions were answered in a responsive and open manner.

The review team has concluded that the Colorado program is well managed and professional and generally meets the 2010 Hydraulic Fracturing Guidelines. The review team identified a number of program strengths that warrant special recognition. The review team also made some specific recommendations for improvement in the program based on the guidelines.

Program Strengths

During the review, the review team identified strengths of the Colorado program, which also are noted in several of the report's findings. The following offers an overview of some of the Colorado program's strengths.

1. Comprehensive Regulation Update

In 2008, the COGCC completed a review and update of its regulations. Numerous sections of the regulations related to hydraulic fracturing were revised. The regulations now contain standards that address current hydraulic fracturing practices. The COGCC is commended for this comprehensive program update.

2. Chemical Information

Rule 205 requires operators to inventory chemicals kept at well sites during drilling, completion, and workover operations, including hydraulic fracturing. This information must be provided to agency officials promptly upon request and also to certain health care professionals who sign a confidentiality agreement. This rule allows government officials and medical professionals to investigate and address allegations of chemical contamination associated with hydraulic fracturing, while protecting proprietary information.

3. Bradenhead Annulus Pressure Monitoring

Rule 341 requires operators to monitor and record bradenhead annulus pressure during hydraulic fracturing operations, and to promptly report to COGCC increases in pressure greater than 200 psig. These requirements help to ensure that groundwater is

protected and that prompt action is taken if conditions arise that could lead to the subsurface release of hydraulic fracturing fluids.

4. Management of Field Staff

The COGCC management staff demonstrated a high level of experience and competence. They have provided field inspectors with the levels of training and types of equipment to enable them to properly perform their duties. They appear to properly prioritize field inspector work. The managers demonstrated high standards of performance.

5. Website

The information available on the COGCC website is comprehensive. It includes statutes, rules, policies, guidance, orders, maps, database information, permits, inspection reports, enforcement actions, and information on spills and releases. It also includes a regular Staff Report that contains monthly statistics and information concerning activities around the state, announces and reports on meetings and events, gives status reports on projects and investigations, explains policy changes, describes the organization of the COGCC, and provides various statistical reports on permitting and drilling activities. Last year more than one million people visited the COGCC website. The COGCC is commended for its use of internet capabilities.

Program Recommendations

The following are the primary areas where recommendations are made by the review team for improvements of the Colorado hydraulic fracturing program. Discussion and findings for these recommendations can be found in the various sections of the report. Readers are encouraged to review the specific discussion and finding for each recommendation.

1. Minimum Surface Casing Depths

The setting of surface casing to an appropriate depth is critical for meeting anticipated pressures and for protecting fresh water aquifers. In determining minimum surface casing setting depths, the COGCC considers all available information, including: a state-wide ground water atlas and area-specific aquifer studies prepared by the Colorado Geologic Survey (CGS); a statewide database of water well information maintained by the Colorado Division of Water Resources (DWR); and oil and gas well electric logs on file with the COGCC. As part of this process, the COGCC reviews information on all water wells and one representative oil and gas well within at least one mile of the new well.

The review team recommends that the COGCC work with stakeholders to review how available information is used to determine minimum surface casing depths and how those depths assure that casing and cementing procedures are adequate to protect fresh groundwater. This review should include a determination of the percentage of surface casing depths determined on the basis of existing water well depths, oil and gas well electric logs, area aquifer studies, or a combination of these sources of information. Additionally, this review should determine the percentage of wells in which the surface casing is set through the base of the freshwater aquifer.

2. Maximum Surface Casing Depth

There is no standard for the maximum depth to which surface casing can be run.

The review team recommends that the COGCC review any past instances where problems occurred in the setting or cementing of surface casing in a well to be hydraulically fractured, where casing or cement failures occurred during hydraulic fracturing, and other available relevant information, and consider whether establishing a maximum surface casing depth may be in order to prevent well control or cementing problems that may arise when lost circulation zones or gas-producing formations are penetrated before surface casing is set and cemented

3. Completion Reports

Form 5A, the Completed Interval Report, is used to report the completion of a well. The form includes a space for the narrative reporting of a brief summary of the formation treatment, but is not specific regarding pressures or materials. The review team recommends that the COGCC revise form 5A to include the identification of materials used, aggregate volumes of fracturing fluids and proppant used, and fracture pressures recorded.

4. Evaluate NORM

The report of the 1996 review of Colorado's oil and gas E&P waste management program contained a recommendation that the COGCC gather information on the occurrence and level of NORM to enable the state to develop an appropriate program for the regulation of NORM. The review team recommends that the COGCC include an evaluation of NORM in wastes associated with hydraulic fracturing operations as part of the study recommended in the report of the 1996 review.

5. Availability of Water

The review team recommends that the COGCC and the DWR jointly evaluate available sources of water for use in hydraulic fracturing. Given the significant water supply issues in this arid region, this project should also include an evaluation of whether or not availability of water for hydraulic fracturing is an issue and, in the event that water supply is an issue, how best to maximize water reuse and recycling for oil and gas hydraulic fracturing. COGCC should consider posting the results of that evaluation on the Hydraulic Fracturing Information page of the COGCC's website.

HYDRAULIC FRACTURING

I. BACKGROUND

Oil and gas development has a long history in Colorado. The first oil and gas well in the state was drilled in 1862. Oil and gas production from shale, tight sands, coal beds and other formations occurs throughout much of the state. There are approximately 45,000 active oil and gas wells in Colorado. In 2009 Colorado ranked fourth in the United States for natural gas production and ninth for oil production.

The Colorado Oil and Gas Conservation Commission (COGCC) is the regulatory agency in Colorado responsible for the regulation of oil and gas. The COGCC was created by the Oil and Gas Conservation Act in 1951. The Oil and Gas Conservation Act, as amended in recent years, gives the COGCC the authority to regulate oil and gas operations to protect public health, safety, and welfare. This authority specifically includes protection of the environment and wildlife resources.

Hydraulic fracturing has occurred in Colorado since 1947. Nearly all active wells in Colorado have been hydraulically fractured. The COGCC serves as first responder to incidents and complaints concerning oil and gas wells, including those related to hydraulic fracturing. To date, the COGCC has not verified any instances of groundwater being contaminated by hydraulic fracturing.

II. GENERAL

The COGCC is a division of the Colorado Department of Natural Resources (DNR). DNR programs include, in addition to the COGCC, the Colorado Geologic Survey, the Colorado State Land Board, the Colorado Water Conservation Board, the Division of Forestry, the Division of Reclamation, Mining and Safety, the Division of Water Resources, the Division of Parks and Wildlife, and the Inter-Basin Compact Committee.

The COGCC regulates oil and gas well drilling and production activities in a manner that prevents waste, safeguards mineral property rights, protects the environment, and ensures public safety. In 2007 the Colorado General Assembly passed legislation to increase the COGCC's regulatory authority and oversight obligations to better address the potential adverse impacts that can accompany oil and gas development. In response to this legislation, the COGCC undertook a comprehensive updating of its regulations. The regulatory process lasted 16 months. Eighty-

five parties participated in the rulemaking process. There were 24 days of hearings. Hydraulic fracturing was one of the areas addressed in the rulemaking.

Jurisdiction for hydraulic fracturing is divided among several entities. The Division of Water Resources (DWR) within the DNR oversees the administration of both surface and groundwater, including water produced by and used in oil and gas activities. The Water Quality Control Division (WQCD) of the Colorado Department of Public Health and Environment (CDPHE) has jurisdiction over discharges to surface waters. The CDPHE/WQCD has responsibility for permitting surface discharges to waters of the state under the Colorado Pollution Discharge Elimination System Permitting program. The WQCD was not a participant in the review. The COGCC reported that a Memorandum of Agreement (MOA) on response to spills and releases to surface waters has been in place for many years between the COGCC and the WQCD and has served both agencies well. The MOA transfers reporting and initial oversight responsibilities to the COGCC staff since they are in the field inspecting oil and gas facilities. These responsibilities include responding to spills and releases associated with hydraulic fracturing.

Another MOA has been developed with the Bureau of Land Management (BLM). This MOA addresses the permitting of wells on federal lands. Approximately 15 percent of the wells in Colorado are located on federal lands.

The COGCC has been delegated primacy from the USEPA for the Class II Underground Injection Control (UIC) program.

Finding 9.2.1.

The COGCC shares expertise on aquifer depths with BLM, and the two agencies coordinate the activities of their field staffs.

STANDARDS

In determining minimum surface casing setting depths, the COGCC considers all available information, including the CGS water well atlas and aquifer studies, the CDWR water well database, and the COGCC oil and gas well electric logs. The CGS has developed a general atlas containing available statewide aquifer information, which it has supplemented with detailed aquifer studies in a number of basins. The COGCC staff uses this aquifer information to help determine the aquifer depths to be covered by surface casing. In addition, all water wells are required to be registered with the CDWR, and there are 300,000 to 400,000 water wells in the CDWR database. The COGCC staff reviews this data base for information on all water wells within at least one mile of the proposed oil and gas well, which provides additional characterization of groundwater in the area. Finally, COGCC staff reviews existing electric logs from oil and gas wells, searching within at least a one-mile radius until a representative logs found, which provides additional information on groundwater depths in the area. As

mentioned above, the COGCC updated its regulations in 2008. As a result, regulations that establish requirements pertaining to hydraulic fracturing include the following:

Rule 205 requires operators to inventory chemicals kept at well sites during drilling, completion, and workover operations, including hydraulic fracturing. This information must be provided to agency officials promptly upon request and also to certain health care professionals who sign a confidentiality agreement. This rule allows government officials and medical professionals to investigate and address allegations of chemical contamination associated with hydraulic fracturing, while protecting proprietary information.

Rule 317 requires wells to be cased with steel pipe and the casing to be surrounded by cement to create a hydraulic seal and to ensure that gas and fluids do not leak into shallower aquifers. Further, operators are required to run cement bond logs on production casing to confirm that the cement has properly isolated the hydrocarbon bearing zones.

Rule 317A requires operators in the DJ Basin Fox Hills Protection Area in northeastern Colorado to run surface casing to specified minimum depths to provide well control and protect the Fox Hills Aquifer.

Rule 317B imposes mandatory setbacks, baseline sampling, and other enhanced environmental protections on oil and gas development occurring near sources of public drinking water. These requirements provide protection for public water supplies and help ensure that they are not inadvertently contaminated by oil and gas development.

Rule 318A requires operators in the Greater Wattenberg Basin to conduct baseline water well sampling for certain infill or boundary wells. This rule provides protection for water wells located near oil and gas development.

Rule 324 contains general prohibitions on significant adverse impacts to state waters and violations of state water quality standards and classifications.

Rule 341 requires operators to monitor and record bradenhead annulus pressure during hydraulic fracturing operations, and to promptly report to the COGCC increases in pressure greater than 200 psig. The monitoring allows the operator to know if the casing, cement and other equipment that may be in the well are containing the fracturing fluids in the well and directing them to the formation(s) to be treated. These requirements help to ensure that groundwater is protected and that prompt action is taken if the well experiences a mechanical failure that could allow the subsurface release of hydraulic fracturing fluids that could enter and contaminate underground sources of fresh water.

Rule 608 requires operators developing coalbed methane (CBM) wells to identify and assess plugged and abandoned wells within one-quarter mile, to sample nearby water wells, and to meet other special requirements before, during, and after operations to ensure that gas or water does not leak to the ground surface or into groundwater.

Rules 902 through 905 impose requirements for pit operation, permitting, reporting, lining, closure, monitoring, and secondary containment to ensure that fluids in pits do not contaminate soil, groundwater, or surface water. These requirements help ensure that any flowback of hydraulic fracturing fluids is properly contained.

Rule 1101 through 1103 provide regulatory requirements for the installation, operation and abandonment of flowlines, including those used for the transportation of hydraulic fracturing fluids.

In addition to the standards set by rule, the Commission has issued various orders that establish requirements pertaining to hydraulic fracturing. A series of more than 20 orders, for example, require San Juan Basin operators to collect and analyze water well samples before and after drilling coalbed methane wells. The COGCC and operators are currently working on a sampling plan for areas where horizontal wells are being drilled.

Finding 9.2.1.1.

The CGS has developed an atlas containing statewide aquifer information as well as several area-specific aquifer studies. In addition, the CDWR database contains information on water wells throughout the state, and the COGCC database contains electric logs from oil and gas wells across the state. In setting minimum surface casing depths, the COGCC considers all available information for every well permitting application, including the CGS groundwater atlas and aquifer studies, the CDWR water well database, and the oil and gas well electric logs.

Recommendation 9.2.1.1.

The review team recommends that the COGCC work with stakeholders to review how available information is used to determine minimum surface casing depths and how those depths assure that casing and cementing procedures are adequate to protect fresh groundwater. The setting of surface casing to an appropriate depth is critical for meeting anticipated pressures and for protecting fresh water aquifers. The recommended review should include a determination of the percentage of surface casing depths determined on the basis of existing water well depths, oil and gas well electric logs, area aquifer studies, or a combination of these sources of information. Additionally, this review should determine the percentage of wells in which the surface casing is set through the base of the freshwater aquifer. (STRONGER Guidelines, Section 9.2.1.)

Finding 9.2.1.2.

There is no standard for the maximum depth to which surface casing can be run. Instead, the COGCC staff reviews the proposed surface casing program for each well and determines what is appropriate based on the local geological conditions.

Recommendation 9.2.1.2.

The review team recommends that the COGCC review any past instances where problems occurred in the setting or cementing of surface casing in a well to be hydraulically fractured, where casing or cement failures occurred during hydraulic fracturing, and other available relevant information, and consider whether establishing a maximum surface casing depth may be in order to prevent well control or cementing problems that may arise when lost circulation zones or gas-producing formations are penetrated before surface casing is set and cemented. (STRONGER Guidelines, Section 9.2.1.)

Finding 9.2.1.3.

The review team commends the COGCC for the development of Rule 205 regarding the inventory of chemicals used at the well site and the availability of information concerning those chemicals to government officials and medical professionals conducting investigations.

Finding 9.2.1.4.

The review team commends the COGCC on its program to require bradenhead annulus pressure monitoring, recording, and reporting during hydraulic fracturing. These requirements allow the operators of the fracturing operation to know if the casing, cement and other equipment that may be in the well are containing the fracturing fluids in the well and directing them to the formation(s) to be treated, and to initiate prompt action in the event of the occurrence of a problem.

Finding 9.2.1.5.

The COGCC requires identification of potential conduits for fluid migration in some circumstances, for example, the requirement to identify plugged and abandoned wells with ¼ mile of CBM wells and gas seeps and springs within two miles of such wells. The COGCC GIS map system has a layer that shows the bottomhole location, and the COGCC staff includes this information in their review of historic plugged and abandoned wells within ¼ mile. Also, for horizontal wells, the COGCC adds permit conditions requiring pressure monitoring of all producing wells within 500 feet for a 24-hour period during hydraulic fracturing.

Recommendation 9.2.1.5.

The COGCC should consider whether there are additional circumstances or expanded areas where operators should be required to identify and address potential conduits for fluid migration in the area of hydraulic fracturing. (STRONGER Guidelines, Section 9.2.1.)

REPORTING

The COGCC rules and conditions of approval on drilling permits require that a number of notices and reports be submitted to the Commission. These include notification of the inspector 24 hours before drilling begins so that the inspector has an opportunity to witness operations.

The rules require the filing of a completion report (Form 5A) after hydraulic fracturing is completed. Other requirements relating to spill reporting, accidents and loss of well control are also specified in the rules.

The COGCC encourages operators to participate in reporting to FracFocus, the reporting system developed by the IOGCC and the Ground Water Protection Council (GWPC), where operators can report chemicals used during hydraulic fracturing on a well-by-well basis. The COGCC indicated that 35 percent of the operators in Colorado have contributed data to FracFocus so far this year. They encourage 100 percent participation. In August, Governor Hickenlooper directed the COGCC to develop a regulation that will provide for public disclosure of hydraulic fracturing chemicals.

Finding 9.2.2.1.

In some areas, but apparently not all, conditions of approval on drilling permits require notification to the inspector before the commencement of hydraulic fracturing operations. It is not clear whether and how the inspector is notified of hydraulic fracturing operations on a well that is being recompleted.

Recommendation 9.2.2.1.

The review team recommends that COGCC review its notification requirements to ensure they are sufficient to allow for the presence of field staff to monitor hydraulic fracturing operations. (STRONGER Guidelines, Section 9.2.2)

Finding 9.2.2.2.

Form 5A is used to report the completion of a well. The form includes a space for the narrative reporting of a brief summary of the formation treatment, but is not specific regarding pressures or materials.

Recommendation 9.2.2.2.

The review team recommends that the COGCC revise form 5A to include the identification of materials used, aggregate volumes of fracturing fluids and proppant used, and fracture pressures recorded. (STRONGER Guidelines, Section 9.2.2.)

STAFFING AND TRAINING

The COGCC is organized into seven work units, each under the supervision of a manager. These units include Information Technology, Permits/Technical Services, Hearings, Fiscal, Engineering, Environmental, and Field Inspections. Sixty-nine staff members are assigned to the COGCC. Twenty three of those positions are located in regional offices throughout the oil and gas producing areas of the state. Approximately 6,000 permits were issued and approximately 2,500 wells were drilled in 2010.

There are 15 field inspectors assigned across the state, including: a manager; a supervisor and three inspectors assigned to each of three geographical areas (northeast, northwest and south) outside of Denver and two environmental inspection specialists who focus on reclamation issues. Nearly all inspections are unannounced. Inspectors are equipped with laptop computers, global positioning system (GPS) devices, pressure gauges, range finders and cameras.

During 2010 COGCC staff conducted 17,157 inspections, with 16,702 of those being performed by the inspection group. These included 161 inspections of cementing during well abandonment, 105 inspections of surface casing cementing, 47 inspections to monitor bradenhead annulus pressure, 48 inspections to witness mechanical integrity testing, 328 drilling inspections, 12 stimulation inspections, 171 inspections witnessing mechanical integrity testing at UIC wells, 749 routine UIC inspections, 144 inspections related to complaints, 262 inspections related to environmental issues, 2,923 well site reclamation inspections, and 11,728 inspections of producing wells. The results of all inspections can be queried on the intranet or internet.

A training matrix has been established for employees.

Finding 9.2.3.1.

The COGCC is commended for its effective management of field staff, and especially for providing field inspectors with the levels of training and types of equipment to enable them to properly perform their duties. Managers appear to properly prioritize field inspector work and maximize the number of inspections in the different regions of the state. The managers interviewed displayed a high level of experience and competence, and demonstrated high standards of performance.

PUBLIC INFORMATION

In 1994 a legislative audit of websites showed agency websites were designed to only provide statistics. In 1997 COGCC undertook a stakeholder study to evaluate information management needs. When that study was completed, they proceeded to develop a new web-based system to

provide information to the public, to support decision making at the agency, and to serve staff in remote locations. The resulting system at COGCC includes intranet capabilities for the COGCC staff and internet access for stakeholders. Laptop computers that act as servers are provided to field staff. All data queries are live except those performed on the laptops, which are as current as the last synchronization with the parent database.

In support of the upgraded system, COGCC has undertaken on-going data clean-up projects, and paper records have been scanned and made available on the internet. Information available online includes statutes, rules, policies, guidance, orders, maps, Staff Reports, database information, permits, inspection reports, enforcement actions, and information on spills and releases.

Last year more than one million people visited the COGCC website. The web page includes a page on hydraulic fracturing with links to various documents prepared by COGCC as well as links to hydraulic fracturing information posted on the web by other organizations.

The COGCC staff frequently attends public meetings to discuss oil and gas issues. Recently the meeting subject matter has increasingly involved hydraulic fracturing. In the past year COGCC staff has attended meetings in 13 counties, particularly in areas with new oil and gas well development.

The COGCC holds Commission meetings every five weeks (ten meetings per year). These meetings are held in Denver as well as in the different producing areas around the state. Commission meetings are open to the public.

For each Commission meeting the COGCC staff prepares a Staff Report that contains monthly statistics and information concerning activities around the state. This informative document announces and reports on meetings and events, gives status reports on projects and investigations, explains policy changes, describes the organization of the COGCC, and provides various statistical reports on permitting and drilling activities. The Staff Report is posted on the COGCC website.

The COGCC meets quarterly with the CDPHE, WQCC and WQCD to update them on the implementation of ground water standards and classifications for the oil and gas industry and to discuss topics of mutual interest. The COGCC also prepares a written report for the WQCC which is presented annually at one of their public hearings. These reports are posted on the COGCC website.

Finding 9.2.4.1.

The COGCC has amended numerous sections of the regulations to address hydraulic fracturing concerns. These rules are posted on the COGCC website.

Recommendation 9.2.4.1. The review team recommends that the COGCC consider highlighting, on the Hydraulic Fracturing Information page or elsewhere on its website, a summary of the changes to the rules that pertain to hydraulic fracturing so that the public can have a better understanding of the program. (STRONGER Guidelines, Section 9.2.4.)

Finding 9.2.4.2.

The COGCC makes good use of its web site to distribute information to the public and to staff. The Staff Report is a particularly good example of this great effort.

Recommendation 9.2.4.2.

To further enhance the website, the review team recommends that the COGCC consider:

1. developing the capability for the public to make a comment or file a complaint through the website and post guidance for the public on the complaint response process;
2. adding average complaint response time to the monthly Staff Report; and
3. adding a link to the STRONGER website on the Hydraulic Fracturing Information page.

III. WATER AND WASTE MANAGEMENT

The DWR in the DNR administers the program governing the use of water in Colorado. Water that is used for hydraulic fracturing must come from a legal source. It is typically purchased or leased from the holder of a water right.

The recycling of water produced during oil and gas operations is encouraged. Over 50% of hydraulic fracturing flowback water is recycled. Multi-well pits are provided for in Rules 903 and 907, with the intent of promoting recycling. All pits except certain drilling pits must be lined. Pipelines between multi-well pit locations are sometimes used to transfer water used for hydraulic fracturing

There are 290 Class II disposal wells in Colorado. Hydraulic fracturing fluid that is not recycled is disposed in Class II wells or evaporation pits, or at commercial disposal facilities. In addition, some E&P wastes, including hydraulic fracturing fluids, are transported between Colorado and the states of Wyoming, New Mexico, Utah, and Kansas. No hydraulic fracturing flowback water is discharged to surface waters.

Naturally occurring radioactive materials (NORM) have not been considered to be an issue of concern in Colorado. The COGCC has authority for NORM if it is part of E&P waste. In general, elevated concentrations of NORM in hydraulic fracturing wastes have not been considered a problem. The COGCC indicated that they will consult with the CDPHE if and when the NORM issue arises.

Finding 9.3.1.

The DWR, which administers the water use program, did not participate in the review. More information on available sources of water for hydraulic fracturing would assist the state, the industry, and other stakeholders in understanding and addressing the issue.

Recommendation 9.3.1.

The review team recommends that the COGCC and DWR jointly evaluate available sources of water for use in hydraulic fracturing. Given the significant water supply issues in this arid region, this project should also include an evaluation of whether or not availability of water for hydraulic fracturing is an issue and, in the event that water supply is an issue, how best to maximize water reuse and recycling for oil and gas hydraulic fracturing. COGCC should consider posting the results of that evaluation on the Hydraulic Fracturing Information page of the COGCC's website. (STRONGER Guidelines, Section 9.3.)

Finding 9.3.2.

The report of the 1996 review of Colorado's oil and gas E&P waste management program contained a recommendation that the COGCC gather information on the occurrence and level of NORM to enable the state to develop an appropriate program for the regulation of NORM. When asked the status of that effort, the COGCC indicated that it has not been accomplished.

Recommendation 9.3.2.

The review team recommends that the COGCC include an evaluation of NORM in wastes associated with hydraulic fracturing operations as part of the study recommended in the report of the 1996 review. (STRONGER Guidelines, Section 9.3.)

APPENDIX A
Glossary of Acronyms

BLM	Bureau of Land Management
CDPHE	Colorado Department of Public Health and Environment
CGS	Colorado Geologic Survey
COGCC	Colorado Oil and Gas Conservation Commission
DNR	Department of Natural Resources
DWR	Division of Water Resources
E&P	Exploration and Production
GPS	Global Positioning System
IOCC	Interstate Oil Compact Commission
IOGCC	Interstate Oil and Gas Compact Commission
MOA	Memorandum of Agreement
STRONGER	State Review of Oil and Natural Gas Environmental Regulations, Inc.
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
WQCC	Water Quality Control Commission
WQCD	Water Quality Control Division

APPENDIX B

Response of the Colorado Oil & Gas Conservation Commission to the STRONGER Hydraulic Fracturing Questionnaire

June 13, 2011

General [9.2]

1. Has the state evaluated potential risks associated with hydraulic fracturing, taking into account factors such as depth of the reservoir to be fractured, proximity of the reservoir to fresh water resources, well completion practices, well design, and volume and nature of fluids?

COGCC response:

Yes, the Colorado Oil & Gas Conservation Commission (COGCC) has previously undertaken such evaluations in adopting and amending numerous regulations, orders, and policies over the years. For example, the COGCC evaluated hydraulic fracturing risks in comprehensively updating its regulations in 2008, in analyzing groundwater quality trends in 2009, in adopting a special notification policy in 2010, and in working on a new groundwater sampling program during 2011. Based upon these evaluations, the COGCC has imposed regulatory requirements addressing a wide range of potential risks.

The COGCC has addressed the risk of fracturing fluids migrating into fresh water aquifers by adopting minimum standards for well construction, casing, and cementing in Rule 317. To further ensure well integrity, well construction, casing, and cementing information are required under Rule 303 as part of an application for permit-to-drill (APD) (Form 2). The COGCC reviews this information to ensure that surface casing is properly set and cemented from at least 50 feet below the base of the aquifer to the ground surface and that production casing is properly set and cemented from the bottom of the well to at least 200 feet above the producing formation. The COGCC also requires operators to run cement bond logs under Rule 317 and to monitor bradenhead annular pressures during hydraulic fracturing under Rule 341.

Across much of Colorado, the risk of fracturing fluid migration is further diminished because the producing zones are separated from fresh water aquifers by thousands of feet of intervening geologic formations. The Colorado Geologic Survey and the Division of Water Resources (DWR) have mapped the aquifers, and the COGCC routinely uses this information in reviewing and conditioning APDs under Rules 303 and 305. The COGCC has also imposed additional restrictions and requirements under Rule 317B, to reduce such risks in surface water supply areas, and under Rule 608, to reduce such risks for shallow coalbed methane (CBM) wells.

Risks associated with the surface handling of fracturing fluids are addressed by regulations governing surface operations and waste management. These regulations impose specific requirements regarding chemical identification (Rule 205), tank signage (Rule 210), secondary containment (Rules 603 and 604), waste pits (Rules 902, 903, 904, and 905), spills and releases (Rule 906), waste management (Rule 907), centralized waste facilities (Rule 908), concentrations and sampling (Rule 910), and stormwater management (Rule 1002). Potential environmental impacts associated with pads, pits, and other surface facilities are also addressed through the Oil and Gas Location Assessment (Form 2A) process under Rule 303.d.

Potential water quality risks are further addressed by the COGCC through an extensive program of ground and surface monitoring that is required by order (Causes 112-138, 156, 157, and others) and regulation (Rules 317B, 318A.e.(4), and 608).

Issues associated with the volatilization of fracturing fluids are addressed by odor regulations governing production equipment and well completions. Rule 805 prohibits the use of certain flow back pits near homes, schools, and hospitals in areas of western Colorado, requires emission control devices on certain produced water tanks in those areas, and mandates the use of green completion practices where adequate reservoir pressure exists.

Finally, Rule 206 requires operators in areas of western Colorado to complete an annual compliance checklist demonstrating ongoing compliance with many of these requirements, including requirements relating to the management of stormwater, odors, and wastes, the protection of surface water supply areas, and the identification of chemicals.

2. Has the state developed standards to prevent the contamination of groundwater and surface water from hydraulic fracturing?

COGCC response:

Yes, Rule 324 prohibits both significant adverse impacts to state waters and violations of state water quality standards and classifications. This prohibition is supplemented by Rule 341, which requires stimulation fluids to be confined to the objective formations during treatment, and by Rule 317, which mandates well construction, casing, and cementing practices. Rules 317B and 608 provide additional standards for wells in surface water supply areas and shallow coalbed methane formations, respectively.

These ground and surface water protection standards are bolstered by: Rule 902, which requires that pits be constructed and operated to protect state waters from significant environmental impacts; Rule 907, which requires operators to construct and operate waste management facilities to protect state waters from such impacts; and Rule 910, which requires operators to notify the COGCC and submit an investigation and remediation plan where groundwater contaminants exceed the concentrations set forth in Table 910-1. Rules 205, 206, 210, 603, 604, 903, 904, 905, 906, 908, and 1002 impose additional surface operating and waste management standards that help protect ground and surface water.

Hydraulic Fracturing Standards [9.2.1]

3. Describe how state standards for casing and cementing meet anticipated pressures associated with hydraulic fracturing to protect other resources and the environment.

COGCC response:

Colorado's casing and cementing regulations provide design standards sufficient for all anticipated well control events, including hydraulic fracturing. COGCC engineers review casing and cement designs during well permitting and cement tickets and cement bond logs prior to approving drilling completion reports. Well construction and integrity are also verified in the field through random field inspections by COGCC field inspectors and engineers during cementing and well stimulation activities.

The following COGCC regulations impose statewide casing and cementing requirements for pressure control:

- Rule 317.d requires casing programs to prevent the migration of oil, gas, or water from one horizon to another.
- Rules 317.e & f require surface casing to reach a depth sufficient to protect all fresh water and prevent blowouts or uncontrolled flows.
- Rules 317.h & i specify compressive strength and placement requirements for cement.

- Rule 317.j requires production casing to be pressure tested for anticipated conditions during completion and production.
- Rule 317.o requires a cement bond log on all production casing or, in the case of a production liner, the intermediate casing.

These statewide requirements are supplemented by numerous, area-specific, regulations and policies, including the following:

- Rule 317A.a. applies to the D-J Basin Fox Hills Protection Area in Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Elbert, Jefferson, Morgan, and Weld Counties. It requires that surface casing be run to a minimum depth of 5% of the projected well depth, or 200 feet, whichever is deeper.
- The *Northwest Colorado Notification Policy* is made a condition of approval for all well permits in Chaffee, Delta, Eagle, Garfield, Grand, Gunnison, Jackson, Lake, Mesa, Moffat, Montrose (north of the 48N/49N township line), Routt, Pitkin, Rio Blanco, and Summit Counties. It requires operators to submit prior notice of casing and cementing operations to COGCC's field inspector and field inspection supervisor and email subsequent reports of cement jobs to COGCC's Western Colorado engineering supervisor.
- The *Notice to All Operators Drilling Williams Fork Formation Wells in Garfield County, Surface Casing Depth and Modification of Leakoff Test Requirements* requires a minimum surface casing setting depth equivalent to 10% of the proposed well depth for all wells in Garfield County. For wells in the smaller Rulison Field Overpressured Area, the minimum depth is 1100 feet.
- The *Notice to Operators Drilling Mesa Verde Group or Deeper Wells in the Mamm Creek Field Area in Garfield County, Well Cementing Procedure and Reporting Requirements* requires operators to submit a special notice for COGCC approval prior to completing wells in the area. For wells within the smaller East Mamm Creek Area, the notice requires a minimum surface casing setting depth equivalent to 15% of the proposed well depth, or 500 feet below the depth of any water well within one mile, whichever is greater. Additionally, formation integrity tests are required, and intermediate casing must be installed in certain circumstances.

4. Discuss how the program identifies and, where deemed appropriate, manages risks associated with **potential conduits for fluid migration** in the area of hydraulic fracturing.

COGCC response:

Most oil and gas wells in Colorado reach depths that provide thousands of feet of separation between the hydrocarbon zones and aquifers. Based on this separation and the intervening shale zones, it is unlikely that natural or hydraulic fractures would extend from a hydrocarbon zone to an aquifer. Offsetting wells are similarly unlikely to serve as conduits for hydraulic fracturing fluid migration given the relative fracture lengths and well distances. Therefore, the potential for fluid migration from deep zones along fractures or through offsetting wells is considered low.

For shallow CBM wells, special requirements address the risks associated with potential fluid migration conduits. Under Rule 608, operators seeking to drill such wells must identify all plugged and abandoned (P&A) wells within one-quarter mile and assess the risks of leaking gas or water. If an adjacent P&A well does not adequately isolate the coal formation, then the operator may be required to perform remedial activity to mitigate the potential risks. The operator must also: survey the P&A wells for soil gases before and after production begins;

sample water wells before and after drilling the CMB well; and survey coal outcrops or coal mines within two miles to identify any gas seeps or springs. Special static bottom-hole and bradenhead pressure tests must be conducted under certain circumstances.

The potential for fluids to migrate up the newly drilled well due to poorly cemented production casing is addressed by the regulations and policies described above in response to Question 3.

The COGCC also has an extensive ground and surface water monitoring program to determine whether impacts from oil and gas operations, including hydraulic fracturing, have occurred. Various Commission orders (Causes 112-138, 112-156, 112-157, and approximately 20 others) require San Juan Basin operators to collect water well samples; these samples must be collected before a proposed coalbed methane well is drilled, and then again one, three, and six years after completion. Rule 608 effectively extends these requirements to coalbed methane wells in other parts of the state. Rule 317B requires operators in surface water supply areas to collect surface water samples, and Rule 318A.e.(4) requires Greater Wattenberg Basin operators to conduct baseline sampling for certain infill or boundary wells. The COGCC and operators are also working on a sampling plan for areas where horizontal wells are being drilled. In addition, the COGCC conducts ground water studies throughout the state and samples individual water wells in response to landowner complaints and requests. As a result of this work, the COGCC database currently contains sampling results for more than 5,000 water wells and approximately 6,500 oil and gas wells.

*5. Describe program requirements that address actions to be taken in **response to unanticipated operational or mechanical changes** encountered during hydraulic fracturing that may cause concern.*

COGCC response:

Rule 341 requires operators to continuously monitor and record the bradenhead annular pressure during hydraulic fracturing and to notify the COGCC as soon as practicable if the pressure increases more than 200 psig. This provides prompt notice to the operator and the COGCC of circumstances indicating that fracturing fluids may have escaped the producing reservoir. Other relevant regulations include: Rule 327, which requires operators to report loss of well control as soon as practicable, but in not less than 24 hours; and Rule 906, which requires operators to control and contain all spills and releases of exploration and production (E&P) waste immediately upon discovery and to notify the COGCC if such spills and releases exceed five barrels or impact or threaten to impact any water, residence, livestock, or byway.

*6. Briefly describe how **surface controls** associated with hydraulic fracturing, such as dikes, pits, or tanks, meet Sections 5.5 and 5.9 of the guidelines.*

COGCC response:

A number of regulations ensure that surface controls such as dikes, pits, and tanks protect the environment. These regulations address facility siting (Rule 303), tanks (Rules 603 and 604), pits (Rules 902-905), spill prevention and response (Rule 906), stormwater management (Rule 1002.f), and reclamation (Rules 1003 and 1004).

The siting of oil and gas locations, which include well pads, pits, and other surface-disturbing activities, is governed by Rule 303.d. It requires operators to submit an Oil & Gas Location Assessment (Form 2A) for COGCC review. Protection of surface and groundwater resources is one of the primary objectives of this review, and special conditions of approval (COAs) and best management practices (BMPs) are required where appropriate. Under Rule 317B, special

requirements apply to operations in surface water supply areas, including special setback requirements as well as additional requirements regarding equipment, secondary containment, baseline sampling, notice, and emergency planning. Rules 603, 604, and 805 set forth additional setback requirements for certain types of equipment and areas.

The safety regulations (600 Series Rules) address tank construction, operation, and secondary containment. For example, Rule 604.a requires tanks to comply with a series of industry standards for construction, design and maintenance. It also imposes siting, operating, labeling, and secondary containment requirements. Under Rule 603.e, tanks in high density areas are subject to additional requirements, including more stringent obligations regarding secondary containment and compliance with the National Fire Prevention Association Flammable and Combustible Liquids Code-30.

The E&P waste management regulations (900 Series Rules) address pits. These regulations impose operating standards (Rule 902), permitting requirements (Rule 903), lining specifications (Rule 904) and closure obligations (Rule 905). Rule 902.b requires operators to maintain two feet of freeboard and to measure and monitor fluid levels. The pit permit application (Form 15) gathers information on the construction details, type of pit, and location. Pit permitting also requires an Oil and Gas Location Assessment (Form 2A), which provides additional information on soils, vegetation, land use, wildlife, and hydrology. Under Rule 906.e, secondary containment must be sufficiently impervious to contain any discharges. Under Rule 908, special permitting, operating, and disclosure requirements apply to centralized E&P waste management facilities, which typically include the largest pits.

Spill prevention and control is addressed in Rule 906, which is discussed below in response to Question 7.

Rule 1002.f imposes stormwater management requirements that cover all phases of oil and gas operations. The stormwater rules include requirements for implementation of BMPs to prevent erosion by water and wind and degradation due to chemical impacts. These BMPs include material covering, material handling, spill prevention, self inspection, periodic maintenance and good housekeeping procedures. Rules 1003 and 1004 govern interim and final reclamation, and they impose specific requirements for pit reclamation.

*7. Briefly describe how **contingency planning and spill risk management** procedures related to hydraulic fracturing meet Section 4.2.1 of the guidelines*

COGCC response:

The COGCC has a multi-faceted program for contingency planning and spill risk management. This program includes rules for release reporting and remediation, mechanisms for operators and the public to report spills, and interagency agreements.

Rule 324A.a requires operators take precautions to prevent significant adverse impacts to air, water or biological resources. Rule 906 governs E&P spills and releases, and it sets forth specific reporting thresholds, deadlines, and formats. Rule 906.a requires that all spills and releases of E&P waste be controlled and contained immediately upon discovery and investigated and cleaned up as soon as practicable. Spills and releases greater than 5 barrels or that impact or threaten to impact state waters must be reported to the COGCC. A 24-hour, toll-free, telephone number is available on the COGCC website for operators or the public to report incidents. For all reportable spills, operators must submit a Spill/Release Report (Form 19). The Form 19 is entered into the COGCC database and can be queried by staff and the public. Violation of these reporting requirements will result in the issuance of a Notice of

Alleged Violation (NOAV), which may lead to a fine. Under Rule 906.d, COGCC staff can require the operator to submit a Site Investigation and Remediation Work Plan (Form 27). Forms 27s are reviewed by COGCC environmental staff and tracked in the COGCC database. The COGCC receives an annual appropriation for emergency response, which is used to investigate, prevent, monitor and mitigate significant adverse environmental impacts.

Contingency planning and spill risk management are also furthered by the Oil and Gas Location Assessment (Form 2A) review process, which is described above in response to Question 6. Through that process, site-specific environmental information is evaluated by environmental professionals. These professionals work with the operator to ensure that the site is developed and operated in a manner that protects the environment.

In addition, special emergency response and contingency plans are required for operations in surface water supply areas under Rule 317B and for centralized E&P waste management facilities under Rule 908. The COGCC also requires reports for accidents that cause excessive damage to equipment or the well site (Rule 602.b) and for loss of well control (Rule 327). The latter reports are reviewed by the area engineer, and the environmental and inspection units are notified as necessary to assess potential environmental impacts.

In addition to the COGCC, the Colorado Department of Public Health and Environment (CDPHE) maintains a 24-hour Environmental Release/Incident Report Hotline and a process for tracking spill and release information. The COGCC has entered into a Memorandum of Agreement with the CDPHE Water Quality Control Division (WQCD) regarding the state's response to spills and releases from oil and gas facilities.

*8. Briefly discuss how hydraulic fracturing **waste characterization requirements**, including, as appropriate, testing of fracturing fluids, are consistent with Section 5.2 of the guidelines.*

To ensure that E&P management practices are suited to the particular wastes involved and comply with applicable program requirements, the COGCC requires that operators characterize the waste using procedures outlined in the 900 Series Rules. Analytical parameters must be based on site-specific conditions and process knowledge, and they must be approved by the COGCC. If there is any doubt about what a waste contains or if there is reason to believe that an unidentified substance has been released, then an exhaustive list of analytical parameters, such as complete EPA Method 8260 and Method 8270 as well as the COGCC Table 910-1 list, gas composition, and stable isotopes, can be identified and analyzed.

In addition to the COGCC's own knowledge of substances used by oil and gas operators, the COGCC also requires operators to provide specific information that is used to characterize waste, identify appropriate treatment and disposal methods, and ensure that remediation is complete and satisfies the Table 910-1 concentrations. Operators are also required to maintain specific information on chemicals and waste. Under Rule 205, operators must maintain Material Safety Data Sheets (MSDSs) for and an inventory of the chemical products used downhole, including hydraulic fracturing fluids. Under Rule 907.b.(2), operators must maintain records documenting the type and volume of waste transported off site, including fracturing flowback and produced water. These requirements are further described below in response to Questions 10 and 15.

If hydraulic fracturing waste is spilled or released, it must be reported to the COGCC in accordance with Rule 906.b. and remediated in accordance with COGCC Rule 906.d. If ground water is impacted, then operators must also monitor and remediate the impacts until the standards and classifications set by the CDPHE Water Quality Control Commission (WQCC)

are met. The requirements for conducting site investigation, remediation, and closure of facilities are addressed in Rule 909. Remediation must ensure that the concentration levels in Table 910-1 are met. The Table 910-1 concentration levels for soils and other solids are adapted from the CDPHE's Hazardous Materials and Waste Management Division's *Table 1 Colorado Soil Evaluation Values (CSEV) – December 2007* and are intended to protect all future uses of impacted land, including residential uses.

In addition, Rule 910.b.(2) requires that sampling and analysis for site investigation or confirmation of successful remediation be conducted to determine the nature and extent of impact and confirm compliance with the Table 910-1 concentration levels. This regulation includes requirements for field and laboratory analyses and sample collections, including background sampling.

COGCC response:

*9. Briefly describe how the **waste management hierarchy** contained in Section 5.3 of the guidelines (source reduction, recycling, treatment, and disposal), including the provisions relating to toxicity reduction, are promoted for hydraulic fracturing.*

Rule 907 provides general requirements to ensure that E&P waste is properly stored, handled, transported, treated, recycled, and disposed. Operators are encouraged to: reduce the quantity and toxicity of their waste; re cycle, reuse and reclaim it; treat it to reduce toxicity; and dispose of it in a manner that protects the environment. Several of the 900 Series Rules require simple practices for reducing waste toxicity and volume, including: removing oil and condensate before produced water is placed in a production pit (Rule 907.c) and subsequent removal of any accumulation within 24 hours (Rule 902.c); monitoring freeboard in all pits, including those used for flowback, to ensure spills and releases do not occur (Rule 902.b); and constructing secondary containment around tanks, including tanks containing water with a TDS greater than 3,500 mg/l, that is sufficiently impervious to contain spills and releases (Rule 906.e).

In addition, the Oil and Gas Location Assessment process (Rule 303.d.) encourages operators to plan new oil and gas locations with appropriate BMPs to control stormwater. This should help reduce the quantity of contaminated stormwater that is generated as waste, including stormwater that comes in contact with hydraulic fracturing waste. BMPs commonly employed include tertiary containment, site perimeter berms, diversion ditches, site grading, and catchment basins.

The COGCC and several operators are currently working on finalizing waste sharing plans. These plans will allow produced water and flowback fluids from one operator's wells to be reused and recycled by another operator. This should help reduce both the volumes of fresh water used for drilling, completion, and workover and the volumes of waste generated. The COGCC anticipates that more operators will undertake similar plans in the future in certain areas of the state. In addition to promoting waste minimization, reuse, and recycling, these plans should also shorten truck hauling distances and reduce truck traffic; this, in turn, should decrease truck exhaust emissions, dust, noise, accidents and spills, and increase operating efficiencies.

*10. Briefly describe how the **tracking of hydraulic fracturing waste** disposed at commercial or centralized facilities meets the requirements of Section 5.10.2.3 of the guidelines.*

COGCC response:

Rule 907.b.(2) requires that for E&P waste, including hydraulic fracturing waste, transported off-site, the waste generator must maintain copies of each invoice, bill, ticket, or other record that documents the date of transport, the identity of the waste generator and transporter, the location of the pick-up site, the type and volume of waste, and the name and location of the disposal site. These records must be made available for inspection and copies provided to the COGCC upon request.

Rule 908 imposes additional requirements for centralized E&P waste management facilities. It requires that such facilities be designed to control public access, prevent unauthorized traffic, provide security and prevent illegal dumping. As part of the permitting process, operators must estimate the types, character, and amounts of wastes that will be received. Operator also must submit an annual report to the COGCC, which specifies the types and volumes of waste actually handled. At final closure, operators must dispose or treat residual waste, collect samples to verify compliance with soil and ground water standards, implement post-closure monitoring, and complete other remediation, as required.

In addition, operators must report to the COGCC on a monthly basis (Form 7) the volumes of hydraulic fracturing waste disposed of down a Class II Underground Injection Control (UIC) well. This reporting requirement applies regardless of whether the waste is trucked or piped to a UIC well.

The COGCC does not permit or regulate waste haulers; however, COGCC rules require that the oil and gas operators ensure that E&P waste is properly managed to prevent significant adverse environmental impacts and ensure compliance with soil and ground water standards. If a spill or release of E&P waste occurs during transportation, the operator must report to the COGCC and remediate any impacts (Rule 906).

*11. Briefly describe how procedures in place for receipt of **complaints** related to hydraulic fracturing are consistent with Section 4.1.2.1.*

COGCC response:

It is COGCC policy to respond to all complaints within 48 hours and the COGCC strives to do so within 24 hours. Complaint information is gathered on a Form 18, which is entered into the database by location or facility. Each complaint is analyzed and assigned to a member of the COGCC's environmental, engineering, or inspection staff. Complaints are investigated through site inspections, data collection, field review and sampling and analysis. After the initial inspection and any data collection, an assessment is completed to determine if additional work is required. Photographs, maps and other documents are entered into the database and indexed to the complaint. When the complaint is resolved or closed, a report is generated. Throughout the investigation, the database is available to the staff and public, and database queries have been developed to facilitate information retrieval.

Based on its investigation, the COGCC staff may issue an NOAV to the operator that includes abatement actions and a completion schedule (Rule 522). The mineral owner, surface owner, other state agencies or local government may request that the COGCC issue a violation. If the complainant disagrees with a staff decision not to pursue enforcement, he or she can apply to the Commission for an Order of Finding Violation.

The COGCC also has a well developed field inspection process that includes routine and systematic inspections of oil and gas facilities and locations. The Inspection Unit is comprised of 15 staff located in remote offices throughout the state. In 2010, the unit conducted more than

17,000 inspections, most of which were unannounced. Under Rule 204, the COGCC can inspect oil and gas properties, disposal facilities, and wells. Under Rule 205, the COGCC can require operators to provide records, books, and other documentation, and under Rule 207 the COGCC can require operators to conduct tests and surveys.

Reporting Associated with Hydraulic Fracturing [9.2.2]

*12. Describe any required **notification** prior to, and reporting after completion of, hydraulic fracturing operations.*

COGCC response:

The COGCC requires various notices and reports before and after a well is hydraulically fractured. As a COA on all APDs, the contact information for the assigned area inspector is placed on the permit with a requirement to contact the area inspector 24 hours prior to spudding the well.

The Northwest Colorado Notification Policy requires that operators completing wells in Northwest Colorado submit prior notice of commencement of completion operations via email to COGCC's field inspector and field inspection supervisor. The notice is attached as a COA on all APDs in Chaffee, Delta, Eagle, Garfield, Grand, Gunnison, Jackson, Lake, Mesa, Moffat, Montrose (north of the 48N/49N township line), Routt, Pitkin, Rio Blanco, and Summit Counties.

Under Rule 341, the COGCC must be promptly notified of significant increases in the bradenhead pressure during hydraulic fracturing. Within 15 days after such an occurrence, the operator must submit a sundry notice (Form 4), giving the details and corrective actions taken. Under Rule 308B, operators must report the formation treatment on a Completed Interval Report (Form 5A) within 30 days of the completion.

Special notices are required if a serious event occurs resulting in an spill, accident, or loss of well control. A spill or release of fluids requires notice under Rules 337, 905.c, and 906 (Form 19). An accident requires notice under Rule 602.b (Form 22). A loss of well control requires notice under Rule 327 (Form 23).

*13. Is notification sufficient to allow for the **presence of field staff** to monitor hydraulic fracturing activities?*

COGCC response:

The COGCC conducts inspections during and after drilling, construction and production to verify that all project work performed by the operator complies with the proper regulations and permits. The COGCC performed over 17,000 inspections 2010.

Notification concerning hydraulic fracturing can be included as a COA on an APD or Location Assessment or through procedures specific to certain areas as discussed in the response to Question 12. The notification requirements include specific time frames and contact information for operators to follow in providing notice. This process provides sufficient time for field staff to arrange the monitoring of hydraulic fracturing operations. Field inspection staff are also assigned to specific areas and are tasked with knowing rig locations and rig crews and have individualized inspection goals and priorities. Field staff are therefore routinely in the field conducting inspections and working with oil and gas operators, who provide schedules of planned operations such as hydraulic fracturing and flow back.

14. Describe **reporting requirements** for hydraulic fracturing activities and whether they include the identification of materials used, aggregate volumes of fracturing fluids and proppant used, and fracture pressures recorded.

COGCC response:

Rule 308B requires operators to file a Completed Interval Report (Form 5A) within thirty days after completing or re-stimulating a formation. The Report includes a field for summarizing the formation treatment, and operators often include information on the identity and volume of the fluids and proppants. The COGCC has also encouraged Colorado operators to provide information on hydraulic fracturing fluid constituents and volumes through the FracFocus website. To date, at least 21 Colorado operators have registered to participate in the website, and these operators accounted for approximately 83 % of the wells drilled in Colorado during the first quarter of 2011.

15. Describe any mechanisms for **disclosure of information on chemical constituents** used in hydraulic fracturing fluids to the state in the event of an investigation or to medical personnel in the event of a medical emergency.

COGCC response:

Rule 205 requires operators to maintain an inventory by well site for each chemical product used downhole or stored for use downhole in an amount exceeding 500 pounds during a quarter, including hydraulic fracturing fluids. Operators must also maintain MSDSs for all chemical products brought to the wellsite for use downhole. MSDSs and chemical inventory information, including the chemical constituents of the product, must be provided to the COGCC within three business days of request or as soon as possible in a medical emergency.

If the composition of the chemical product is a trade secret, then Rule 205 requires the vendor or service operator to provide the COGCC with the chemical constituent information upon receipt of a letter stating that such information is needed for the COGCC to respond to a spill, release, or complaint. The COGCC, in turn, may share this information with its Commissioners, the County Public Health Director or Emergency Manager, and the CDPHE.

Rule 205 also requires the vendor or service operator to provide chemical constituent information to any health professional who submits a written statement of need for the information and executes a confidentiality agreement (Form 35). Where the health professional determines that a medical emergency exists and the information is necessary for emergency treatment, the information must be provided immediately based upon the professional's verbal acknowledgement of need and confidentiality. In such event, the health professional can subsequently submit a written statement of need and a confidentiality agreement when circumstances permit.

16. Briefly describe how hydraulic fracturing information submitted that is of a **confidential business nature**, is treated consistent with Section 4.2.2 of the guidelines?

COGCC response:

Rule 205 provides special protection for hydraulic fracturing information that is of a confidential business nature. Where the vendor or service provider considers the chemical composition to be a trade secret, operators are not required to maintain information on the product constituents; instead, the vendor or service company is responsible for providing such information to the COGCC.

All such information is considered confidential, does not become part of the chemical inventory, and is not construed as publicly available. The COGCC may share it internally only as needed in responding to the spill, release, or complaint, and the recipients may not disseminate the information further. The same terms and conditions regarding use and confidentiality apply if the COGCC shares the information with its Commissioners, the County Public Health Director or Emergency Manager, or the CDPHE. Similarly, any health professional who obtains the information must provide a written statement of need and execute a confidentiality agreement.

Further restrictions apply if the information is entitled to protection as a trade secret under the Colorado Open Records Act, C.R.S. § 24-72-204, or other state or federal law. In such event, the information may be disclosed only to legally authorized persons and must be maintained by the recipient as confidential. In addition, the COGCC must provide the service company or vendor with at least one business day's prior notice of the intended disclosure.

Staffing and Training [9.2.3]

*17. Briefly discuss if, in addition to the personnel and funding recommendations found in Section 4.3 of the guidelines, **state staffing levels** sufficient to receive, record and respond to complaints of human health impacts and environmental damage resulting from hydraulic fracturing.*

COGCC response:

The COGCC is funded by Conservation Mil Levy and Severance Tax monies, both of which are based on production sales values. While the agency is considered cash funded by these monies, the agency budget is controlled by spending authority proposed in the Governor's budget request and then authorized by the legislature. For the current fiscal year (July 2010 through June 2011), the COGCC has 69 full time staff and a budget of approximately \$8.5 million.

The COGCC has increased its staffing levels over the last several years, primarily in the areas of permitting and field inspection. The last increase in personnel in these areas included environmental protection specialists to evaluate Location Assessments and specialized field inspectors to address reclamation issues. There was also an increase in the environmental group providing another person in Northwest Colorado to focus on environmental impacts and remediation.

The COGCC has always placed the highest priority on responding to environmental complaints. As discussed above in response to Question 11, the COGCC's policy is to respond to all complainants within 48 hours and often does so within 24 hours. All complaints are also memorialized and incorporated into the COGCC database. Using this database, complainants can monitor the investigation and resolution of their complaints.

The COGCC's focus on complaint response is illustrated by the COGCC's recent investigation of a complaint alleging impacts to a water well in Southeastern Colorado from hydraulic fracturing. The complaint was emailed to the COGCC late in the afternoon of June 30, 2010. A COGCC environmental protection specialist was on site the next morning to collect well water and flowback samples. He returned to collect additional water, sediment, and rock samples on July 8 and 14, obtained the fracturing fluid constituents from the vendor, and arranged for a variety of laboratory analyses. Following more than 40 hours of work, including consulting with other environmental and engineering staff, he concluded that the water well had not been impacted by hydraulic fracturing. His conclusions were memorialized in a 29-page letter, which was sent to the complainants on December 1, 2010. When the complainants were dissatisfied

with these conclusions, they received a formal hearing before the Commission in February 2011.

*18. Describe staff **training** to stay current with new and developing hydraulic fracturing technology.*

COGCC response:

In an effort to keep current with new and developing hydraulic fracturing technology, members of the COGCC staff have taken university level courses, attended industry classes, and spoken with service companies. Courses at the Colorado School of Mines have included sections on hydraulic fracturing methods. Shorter industry classes have been taken through the Petroleum Technology Transfer Council (PTTC). Recent PTTC classes have included:

- Hydraulic Fracturing: Measurement, Characterization, and Analysis;
- Completion & Stimulation(s) of Horizontal Wells in Tight and Unconventional Gas Reservoirs;
- Completions and Stimulation for Geologists; and
- Reservoir Geomechanics Applied to Unconventional Resources.

Industry experts have also provided training classes to staff on hydraulic fracturing. Schlumberger, Baker Hughes, BJ Services, and Halliburton have recently provided such training on the following topics:

- Cased Hole Logging - Ultrasonic Imaging, Reservoir Saturation Tool and Isolation Scanner of Gas Migration and Fracture Detection;
- Micro-Seismic Monitoring of Hydraulic Fracturing;
- "Frac 101"- General Hydraulic Fracture Overview of Operations and Methods;
- "Frac 301"- Detailed Discussion of Hydraulic Fracturing Fluids and Applications;
- Horizontal Drilling and Rotary Steerable Drilling;
- Formation Evaluation;
- Fracture Modeling;
- Cement Bond Logs;
- Cement Chemistry; and
- Foam and Thixotropic Cements.

In addition, two major Colorado operators, Anadarko and EnCana, have presented information on their hydraulic fracturing and horizontal drilling operations and procedures.

Finally, the COGCC holds internal operations meetings twice a year, which are attended by all engineering, inspection, and environmental staff. These meetings provide an additional opportunity to share information on hydraulic fracturing developments.

Public Information [9.2.4]

*19. Briefly describe how the state agency provides for **dissemination of educational information** regarding well construction and hydraulic fracturing to bridge the knowledge gap between experts and the public as provided in Section 4.2.2.2 of the guidelines. This is especially important in areas where development has not occurred historically and in areas where high volume water use for hydraulic fracturing is occurring.*

COGCC response:

The COGCC managers, supervisors, and field staff regularly participate in town hall and local government meetings around the state to provide information on oil and gas development generally and well construction and hydraulic fracturing specifically. Many of these meetings occur in areas where little or no development has occurred historically. During the past six months, the COGCC has convened or participated in such meetings in Douglas County, Elbert County, El Paso County, Fremont County, Garfield County, Gunnison County, Huerfano County, La Plata County, Mesa County, Montezuma County, Park County, Rio Grande County, and Weld County. The COGCC also recently participated in meetings on this subject conducted by the Bureau of Land Management and the Colorado Association of County Attorneys, and the COGCC plans to work with local governmental organizations to organize and present workshops for local government officials later this year.

In addition to providing educational information through public meetings, the COGCC also uses its website, www.colorado.gov/cogcc, to disseminate such information. On the website, visitors can access: information on current events; COGCC rules, policies, and forms; environmental, inspection, and production data; information on specific wells and pending applications; and various other types of data. During 2010, the website received over 1.1 million visits, indicating that it is a popular source of information. To make information about hydraulic fracturing more prominent, the COGCC has recently added a special hydraulic fracturing webpage. This webpage includes links to information on well construction and hydraulic fracturing practices, COGCC regulations, frequently asked questions, and other relevant documents, such as the COGCC's Gasland Correction Document, power point presentations, and correspondence with other agencies. It also provides links to the FracFocus, EPA, and BLM websites as well as other websites with information on this subject.

Water and Waste Management Associated with Hydraulic Fracturing [9.3]

*20. Fundamental differences exist from state to state, and between regions within a state, in terms of geology and hydrology. Describe how the state evaluated and addressed, where necessary, the **availability of water for hydraulic fracturing** in the context of all competing uses and potential environmental impacts resulting from the volume of water used for hydraulic fracturing.*

COGCC response:

The DWR oversees the administration of both surface and ground water, including water produced by and used in oil and gas activities. Water that is used for hydraulic fracturing must come from a legal source. The water can be purchased or leased from a municipality, just as other industries do. An agricultural water right can be temporarily changed to industrial use so that an operator can lease or purchase water from a rancher or farmer. Water that is "fully consumed" such as treated waste water from a municipality can be leased or purchased, or Denver Basin "non-tributary" water can be purchased from the landowner. Operators can use produced water; however, such water must either be "non-tributary," or if it is decreed tributary, then the operator must have an augmentation plan. A recent ruling in Colorado District 7 Water Court may result in changes to the requirements for operators to use and produce non-tributary water.

As explained above in response to Question 4, the COGCC also has an extensive ground and surface water monitoring program to determine whether water quality impacts have occurred.

21. Describe how the availability and use of **alternative water sources** for hydraulic fracturing, including recycled water, is encouraged.

COGCC response:

COGCC regulations encourage and promote reuse and recycling of E&P waste for all purposes, including hydraulic fracturing. Rule 907.a.(3) encourages operators to submit waste management plans for COGCC approval, and such plans may provide for the recycling and reuse of waste water for hydraulic fracturing. Rules 902.e and 903.a.(4) create a new pit classification for multiwell pits, which is likewise intended to encourage the reuse and recycling of waste water for hydraulic fracturing and other purposes. These pits are often centrally located in the oil or gas field, are used to store fluids from multiple wells, and may include treatment areas where fracturing flow-back fluids and produced water can be brought up to specifications. As explained above in response to Question 9, the COGCC is also working with several operators on waste sharing plans that will facilitate the reuse and recycling of fracturing fluids and produced water.

22. Briefly describe how **waste** associated with hydraulic fracturing is managed consistent with Section 4.1.1 and Section 7 of the guidelines.

COGCC response:

The 900 Series Rules address the management of E&P waste, including hydraulic fracturing waste. These regulations help ensure that such waste does not cause significant adverse environmental impacts and protects public health, safety, and welfare.

Under Rule 903, individual permits (Form 15) are issued for production pits, special purpose pits, drilling pits when oil or salt based drilling fluids are used, and multi-well pits that are for recycling produced water, drilling fluids, or completion fluids, including hydraulic fracturing flowback fluids. Although the individual pit permits do not have a fixed term, they can be revoked if the facility is not operated in accordance with COGCC regulations and permit requirements. When water based bentonitic drilling fluids, foam, or other non-oil or salt based drilling fluids are used, drilling pits are authorized by Rule 903, not by individual permit. These drilling pits can be used to contain fluids and solids produced during initial completion procedures, which includes flowback from hydraulic fracturing; however, drilling pits, like other kinds of pits, must be constructed and operated to protect state waters. Drilling pits that are "repurposed," that is, used for some other purpose after drilling activities are completed, such as produced water storage, must be permitted for the new activity in accordance with Rule 903. Under Rule 1003.d, drilling pits that are not "repurposed" and permitted must be closed within 3 months after drilling and completion activities conclude. The drilling fluids must be removed from the pit and the remaining contents must be dry and meet Table 910-1 concentration levels before the pit is backfilled and reclaimed.

Under Rule 908, centralized E&P waste management facilities are also individually permitted (Form 28) and bonded. This permitting process is more extensive and requires information on the site geology and hydrology, waste profile, facility design, operating plan, and contingency plan. Ground water monitoring is required, and operators must submit an annual report to the COGCC to ensure compliance with the permit regulations.

In addition to the individual permits (Forms 15 and 28), operators must submit an Oil and Gas Location Assessment (Form 2A) for all surface disturbance at previously undisturbed sites or for expanding an existing location; this includes constructing a drilling or production pit and multi-

well tank batteries. The Location Assessment process is described above in response to Questions 6, 7, and 9.

Data regarding naturally occurring radioactive waste (NORM) is limited. In general, elevated concentrations of NORM have not been considered a problem in E&P wastes, including hydraulic fracturing wastes, produced from oil and gas wells in Colorado.

*23. Discuss how the state encourages the efficient development of adequate **capacity and infrastructure** for the management of hydraulic fracturing fluids, including the transportation, recycling, treatment, and disposal of source water and hydraulic fracturing wastes.*

COGCC response:

Colorado gas production has increased from 500 billion cubic feet in 1990 to 1.5 trillion cubic feet in 2008. The majority of this increase can be attributed to tight gas sands production that would not have occurred without improvements to fracture stimulation technology, primarily through increases to the volume and size of the fracture stimulations. Large fracture treatments are prevalent in the Wattenberg Field in Northern Colorado, as well as the Piceance Basin in Northwest Colorado.

Water is a precious commodity in Colorado and the state's mountainous terrain can make fluid transportation a difficult and expensive operation. In recent years, approximately 60 to 70% of the wells permitted were for multiwell pads, where 8 to 20 or more wells would be sited. Under these circumstances, operators have increasingly developed centralized stimulation and water handling facilities, which support multiple well pads and facilitate the reuse and recycling of water for hydraulic fracturing and other purposes. As explained above in response to Questions 9 and 21, the COGCC has encouraged the development of such facilities and arrangements under Rules 903 and 907.

The predominant method of water disposal in Colorado is injection into UIC wells under Rule 325. Colorado currently has 290 Class II UIC wells used for disposal, and the number of these wells is steadily increasing. They receive about 60% of the water that is currently produced by the oil and gas industry. The remainder of the water either evaporates or is discharged into surface waters pursuant to permits issued by the WQCD. Evaporation is a common disposal method in the Piceance Basin, while surface discharges are common in the Raton Basin, where coalbed methane is produced, water production is significant, and the water meets or can be treated to meet surface discharge standards.



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DATE FILED: April 18, 2014 12:39 PM
FILING ID: 94DC31078701D
CASE NUMBER: 2013CV31385

EXHIBIT 4

RESOLUTION 2013-072
OF THE COUNCIL OF THE CITY OF FORT COLLINS
SUBMITTING TO THE REGISTERED ELECTORS OF THE CITY, AT A SPECIAL
MUNICIPAL ELECTION ON NOVEMBER 5, 2013, A PROPOSED CITIZEN-INITIATED
ORDINANCE PLACING A FIVE-YEAR MORATORIUM ON THE USE OF HYDRAULIC
FRACTURING TO EXTRACT OIL, GAS AND OTHER HYDROCARBONS AND ON THE
STORAGE OF THE WASTE PRODUCTS OF HYDRAULIC FRACTURING WITHIN
THE CITY OF FORT COLLINS OR ON LANDS UNDER THE CITY'S JURISDICTION

WHEREAS, under Article X, Section 1 of the City Charter, the registered electors of the City have the power to propose a measure to the City Council, and if the City Council fails to adopt a measure so proposed, then to adopt or reject such ordinance or resolution at the polls; and

WHEREAS, an initiative petition to place a five-year moratorium on the use of hydraulic fracturing and the storage of its waste products within the City of Fort Collins or under its jurisdiction has been submitted to the City, and the City Clerk has certified said petition as sufficient for submission of the initiated ordinance to a vote of the people at a special municipal election; and

WHEREAS, the City Clerk has presented said petition to the City Council as provided in Article X, Section 5(f)(4) of the City Charter; and

WHEREAS, under Article X, Section 1(e) of the City Charter, upon presentation of an initiative petition certified as to sufficiency by the City Clerk, the City Council must either adopt the citizen-initiated ordinance without alteration within thirty (30) days or submit said citizen-initiated ordinance in the form petitioned for, to the registered electors of the City; and

WHEREAS, under Article X, Section 6 of the City Charter, upon ordering an election on any initiative or referendum measure, the Council shall, after public hearing, adopt by resolution a ballot title and submission clause for the measure; and

WHEREAS, the ballot title for the measure must identify the measure as either a city initiated or citizen initiated measure; and

WHEREAS the submission clause must be brief, must not conflict with those selected for any petition previously filed for the same election, and must unambiguously state the principle of the provision sought to be added.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That there is hereby submitted to the registered electors of the City at a special municipal election to be held in conjunction with the Larimer County Coordinated Election on Tuesday, November 5, 2013, the following proposed citizen-initiated ordinance:

PROPOSED CITIZEN-INITIATED ORDINANCE

Fort Collins Public Health, Safety and Wellness Act.

Section 1. Purpose.

To protect property, property values, public health, safety and welfare by placing a five year moratorium on the use of hydraulic fracturing to extract oil, gas, or other hydrocarbons within the City of Fort Collins in order to study the impacts of the process on the citizens of the City of Fort Collins.

Section 2. Findings.

The people of Fort Collins hereby make the following findings with respect to the process of hydraulic fracturing within the City of Fort Collins:

The Colorado Constitution confers on all individuals in the state, including the citizens of Fort Collins, certain inalienable rights, including "the right of enjoying and defending their lives and liberties; of acquiring, possessing and protecting property; and of seeking and obtaining their safety and happiness," Colo. Const. Art. II, Sec. 3;

The Colorado Oil and Gas Act requires oil and gas resources to be extracted in a "manner consistent with protection of public health, safety, and welfare, including protection of the environment and wildlife resources," Colo. Rev. Stat. §34-60-102;

The well stimulation process known as hydraulic fracturing is used to extract deposits oil, gas, and other hydrocarbons through the underground injection of large quantities of water, gels, acids or gases; sands or other proppants; and chemical additives, many of which are known to be toxic;

The people of Fort Collins seek to protect themselves from the harms associated with hydraulic fracturing, including threats to public health and safety, property damage and diminished property values, poor air quality, destruction of landscape, and pollution of drinking and surface water;

Representatives from the State of Colorado have publically stated that they will be conducting a health impact assessment to assess the risks posed by hydraulic fracturing and unconventional oil and gas development.

The people of Fort Collins have determined that the best way to safeguard our inalienable rights provided under the Colorado Constitution, and to and ensure the "protection of public health, safety, and welfare, including protection of the environment and wildlife resources" as provided under the Colorado Oil and Gas Act, is to place a five year moratorium on hydraulic fracturing and the storage and disposal of its waste products within the City of Fort Collins in order to fully study the impacts of this process on property values and human health.

Section 3. Moratorium

Therefore, the people of Fort Collins have determined that the best way to safeguard our inalienable rights provided under the Colorado Constitution, and to ensure the "protection of public health, safety, and welfare, including protection of the environment and wildlife resources" as provided under the Colorado Oil and Gas Act, is to place a moratorium on hydraulic fracturing and the storage of its waste products within the City of Fort Collins or under its jurisdiction for a period of 5 years without exemption or exception in order to fully study the impacts of this process on property values and human health. The moratorium can be lifted upon a ballot measure approved by the people of the City of Fort Collins.

Section 4. Retroactive Application

In the event this measure is adopted by the voters, its provisions shall apply retroactively as of the date the measure was found to have qualified for placement on the ballot.

Section 2. That the foregoing proposed citizen-initiated ordinance is hereby submitted to the registered electors of the City at said regular municipal election in substantially the following form:

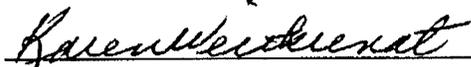
PROPOSED CITIZEN-INITIATED ORDINANCE

An ordinance placing a moratorium on hydraulic fracturing and the storage of its waste products within the City of Fort Collins or on lands under its jurisdiction for a period of five years, without exemption or exception, in order to fully study the impacts of this process on property values and human health, which moratorium can be lifted upon a ballot measure approved by the people of the City of Fort Collins and which shall apply retroactively as of the date this measure was found to have qualified for placement on the ballot.

FOR THE ORDINANCE _____

AGAINST THE ORDINANCE _____

Passed and adopted at a regular meeting of the Council of the City of Fort Collins this 20th day of August, A.D. 2013.



Mayor

ATTEST:



City Clerk



DATE FILED: April 18, 2014 12:39 PM
FILING ID: 94DC31078701D
CASE NUMBER: 2013CV31385

EXHIBIT 5

RESOLUTION 2013-085
OF THE COUNCIL OF THE CITY OF FORT COLLINS
URGING THE REGISTERED ELECTORS OF THE CITY TO VOTE AGAINST
A PROPOSED MORATORIUM ON HYDRAULIC FRACTURING AND THE
STORAGE OF ITS WASTE PRODUCTS WITHIN THE CITY OF FORT COLLINS
OR ON LANDS UNDER ITS JURISDICTION AT THE NOVEMBER 5 SPECIAL ELECTION

WHEREAS, under Article X, Section 1 of the City Charter, the registered electors of the City have the power to propose a measure to the City Council, and if the City Council fails to adopt a measure so proposed, then to adopt or reject such ordinance or resolution at the polls; and

WHEREAS, an initiative petition to place a five-year moratorium on the use of hydraulic fracturing and the storage of its waste products within the City of Fort Collins or on lands under its jurisdiction has been submitted to the City (the "Initiated Measure"), and the City Clerk has certified said petition as sufficient for submission of the initiated ordinance to a vote of the people at a special municipal election; and

WHEREAS, the City Clerk has presented said petition to the City Council as provided in Article X, Section 5(f)(4) of the City Charter; and

WHEREAS, by Resolution 2013-072, the City Council submitted the Initiated Measure to the registered electors of the City for their consideration at a special election to be held in conjunction with the November 5, 2013 coordinated election; and

WHEREAS, the geographic areas of the City that are likely to be the subject of oil and gas mining operations are very limited, both because of the geology of the area and because of the state rules and regulations governing such operations; and

WHEREAS, nonetheless, on December 18, 2012, several months prior to the submission of the Initiated Measure to the City Clerk's office, the City Council had adopted Ordinance No. 145, 2012, imposing a temporary moratorium on the acceptance, processing and approval of any land use applications relating to new oil and gas development in the City, which moratorium has expired; and

WHEREAS, the purpose of the temporary moratorium was to allow adequate time for City staff to develop and recommend to the City Council any local regulations that might also be necessary and advisable to protect the health, safety and welfare of City residents; and

WHEREAS, on March 5, 2013, by the adoption of Ordinance No. 32, 2013, the City Council enacted Section 12-135 of the City Code prohibiting the use of hydraulic fracturing in the City, as well as the storage in open pits of solid or liquid wastes and/or flowback and, through the enactment of City Code Section 12-136, exempted from the prohibition any oil or gas wells or pad sites existing within the City as February 19, 2013, that become the subject of an operator agreement between the operator of the same and the City as long as such agreement includes strict controls on the release of methane gas, and, in the judgment of the City Council, adequately protects the public health, safety and welfare; and

WHEREAS, on May 21, 2013, by Resolution 2013-036, the City Council approved an Oil and Gas Operator Agreement with Prospect Energy, LLC (the "Operator Agreement"), the sole oil and gas operator in the City and, on May 21, 2013, also adopted Ordinance No. 57, 2013, exempting Prospect Energy from the ban imposed under Code Section 12-135; and; and

WHEREAS, the Operator Agreement requires that Prospect Energy utilize 48 "best management practice," many of which exceed the current requirements of the Colorado Oil and Gas Conservation Commission and all of which are designed to protect the citizens of the City; and

WHEREAS, in approving the Operator Agreement, the City Council determined that the Agreement adequately protects the public health, safety and welfare, not only because of the stringent controls contained in the Agreement, but also because, based upon past experience, Prospect Energy's operations are not likely to produce methane gas in significant quantities, and the fracking activities that may be performed by Prospect Energy are not likely to infiltrate fresh water supplies; and

WHEREAS, imposing a new five-year moratorium on Prospect Energy would be inconsistent with the fact that the City and Prospect Energy have entered into the Operator Agreement, and could result in costly, protracted litigation against the City; and

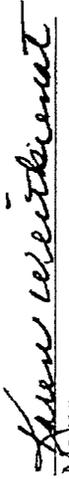
WHEREAS, in addition, significant concerns have been raised by the City Manager with respect to the impact that a five-year moratorium would have on the City's natural areas because the City has participated in a collaborative "Energy by Design" process with the State Land Board and other entities which is designed to protect biological, cultural, scenic and recreational conservation goals for the natural areas, while allowing reasonable access to the mineral estate; and

WHEREAS, the "Energy by Design" process provides the best strategy for protection of areas of land under the City's jurisdiction and outside of the City limits, and if the Initiated Measure is approved, such approval could undo the "Energy by Design" process and result in more significant negative impacts to the natural areas; and

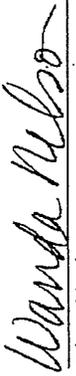
WHEREAS, for the foregoing reasons, the City Council believes that the adoption of the Initiated Measure under these circumstances is unnecessary, is not in the best interests of the City, and could result in litigation that, if not resolved in the City's favor, could not only work to the detriment of the City, but could also establish legal precedents that would be damaging to the interests of other Colorado municipalities.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FORT COLLINS that, for the reasons stated above, the City Council believes that it is in the best interests of the City that the Initiated Measure not be approved by the voters.

Passed and adopted at a regular meeting of the Council of the City of Fort Collins this 1st day of October, A.D. 2013.


Mayor

ATTEST:


City Clerk



DATE FILED: April 18, 2014 12:39 PM
FILING ID: 94DC31078701D
CASE NUMBER: 2013CV31385

EXHIBIT 6

FORT COLLINS

MUNICIPAL CODE

1987

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COLORADO CODE PUBLISHING COMPANY
Fort Collins, Colorado**

ARTICLE VIII. [top↑](#)
HYDRAULIC FRACTURING*

Sec. 12-135. Hydraulic fracturing/open pit storage prohibited. [top↑](#)

The use of hydraulic fracturing to extract oil, gas or other hydrocarbons, and the storage in open pits of solid or liquid wastes and/or flowback created in connection with the hydraulic fracturing process, are prohibited within the City.

(Ord. No. 032, 2013, 3-5-13)

Sec. 12-136. Exemptions. [top↑](#)

The prohibitions contained in § 12-135 shall not apply to any oil or gas wells or pad sites existing within the City on February 19, 2013, that become the subject of an operator agreement between the operator of the same and the City, as long as such agreement includes strict controls on methane release and, in the judgment of the City Council, adequately protects the public health, safety and welfare.

(Ord. No. 032, 2013, 3-5-13)

DISTRICT COURT, LARIMER COUNTY, COLORADO 201 La Porte Avenue, Suite 100 Fort Collins, Colorado 80521	DATE FILED: April 18, 2014 12:39 PM FILING ID: 94DC31078701D CASE NUMBER: 2013CV31385 <p style="text-align: center;">▲ COURT USE ONLY ▲</p>
<p>Plaintiff:</p> COLORADO OIL & GAS ASSOCIATION v. <p>Defendant:</p> CITY OF FORT COLLINS, COLORADO	
	Case Number: 2013CV31385 Div.: 5B
<p>ORDER GRANTING COLORADO OIL & GAS ASSOCIATION’S MOTION FOR SUMMARY JUDGMENT</p>	

THE COURT, having reviewed the Colorado Oil and Gas Association’s April 18, 2014 Motion for Summary Judgment and Brief in Support of its Motion for Summary Judgment, (the “Motion”) and being fully advised on the premises, hereby GRANTS the Motion and Orders that Summary Judgment shall enter against the Defendant.

BY THE COURT

District Court Judge