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

IN THE MATTER OF CHANGES TO THE RULES OF PRACTICE AND PROCEDURE OF THE OIL & GAS CONSERVATION COMMISSION OF THE STATE OF COLORADO	))))	CAUSE NO. IR DOCKET NO. 1211-RM-03

PREHEARING STATEMENT

The Board of County Commissioners of Arapahoe County, by and through the Arapahoe County Attorney's Office, hereby submits its comments and suggested revisions, to proposed 609 Rule, as shown as the attached Exhibit A.

Respectfully submitted,

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Dated: November 9, 2012

EXHIBIT A

Re Case Number 1211-RM-04
Exhibit A

SERIES SAFETY REGULATIONS
609. STATEWIDE GROUNDWATER BASELINE SAMPLING AND MONITORING:
Except coalbed methane wells, which are subject to Rule 608, new Oil and Gas Locations shall be subject to the following groundwater baseline sampling and monitoring requirements:
a. **Sampling locations**: Initial baseline samples and subsequent monitoring samples shall be collected from two (2) groundwater sources or springs within a one-half (1/2) mile radius of the proposed Oil and Gas Location. Sampling locations shall be selected by the operator based on the following criteria:

(1) Type of water feature. Permitted, well maintained domestic water wells are preferred over other water features. Springs may be sampled when no water wells are available. Permitted, perennial springs are preferred to unpermitted or intermittent springs.

(2) Proximity to the proposed Oil and Gas Location. Water features closest to the proposed Location are preferred.Local topography and hydrogeology. Groundwater and surface water flow directions, to the extent known or reasonably can be inferred, should be considered in selecting sampling locations.

(3) Orientation of locations with respect to the Oil and Gas Location. Where possible, the sampling locations should be on opposite sides of the Oil and Gas Location, with a preference for down-gradient and up-gradient, rather than cross-gradient, from the Location.

(4) Multiple identified aquifers available. Where multiple defined aquifers are present, sampling the deepest identified aquifer is preferred for Locations that include a well. If a Location does not include a well, sampling the shallowest identified aquifer is preferred.

(5) Previously sampled domestic wells. An operator may rely on groundwater sampling data collected from any domestic well located within one-half mile of a proposed Oil and Gas Location, provided the data was collected within the 18 months preceding construction of the Location, to satisfy one of the two sampling locations required by this subsection.

b. **Inability to locate or access satisfactory sampling locations:**

(1) Applying the criteria in subsection a., above, if the operator cannot locate two satisfactory sampling locations within one-half (1/2) mile of the proposed Oil and Gas Location the operator shall attempt to locate acceptable sampling locations within one (1) mile of the proposed Location. If the operator cannot locate two satisfactory sampling locations under these criteria, the operator may request an exception from the requirements of this Rule 609.

(2) Where the owners of all suitable sampling locations refuse to grant access despite an operator's best efforts to obtain consent to conduct sampling, the operator may request an exception from the requirements of this Rule 609.

c. **Timing of initial sampling:** Initial sampling shall be conducted:
(1) Prior to commencement of drilling or, on Oil and Gas Locations where no wells are planned, prior to commencement of installation of an Oil and Gas Facility on the Location; and

(2) Prior to re-stimulation of a well if more than twelve (12) months have passed since the initial, pre-drilling sampling event or the most recent re-stimulation sampling event was conducted.

d. **Subsequent monitoring sampling:** Subsequent monitoring sampling shall be conducted:

(1) Not less than 12 months, nor more than 18 months, following any well completion or facility installation; and

(2) Not less than sixty (60) months, nor more than seventy-eight (78) months, after the last sampling event performed pursuant to Rule 609.d.(1). Wells that are drilled and abandoned without ever producing hydrocarbons are exempt from this requirement.

(3) Additional "post-completion" test(s) may be required if changes in water quality are identified during follow-up testing.

(4) The Director may require further water well sampling at any time in response to complaints from water well owners.

e. **Sampling procedures and analytical:**

(1) Sampling and analysis shall be conducted in conformance with an accepted industry standard as described in Rule 910.b.(2).

(2) The initial baseline testing described in this section shall include pH, specific conductance, total dissolved solids (TDS), dissolved gases (methane, ethane, propane), alkalinity (total bicarbonate and carbonate as CaCO3), major dissolved anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, phosphorus), major dissolved cations (calcium, iron, magnesium, manganese, potassium, sodium), other elements (barium, boron, selenium and strontium), presence of bacteria (iron related, sulfate reducing, slime and coliform), total petroleum hydrocarbons (TPH) and BTEX compounds (benzene, toluene, ethylbenzene and xylenes). Hydrogen sulfide shall also be measured using a field test method. Field observations such as odor, water color, sediment, bubbles, and effervescence shall also be included. The sample location shall be surveyed in accordance with Rule 215. Rule 215 does not specify a requirement for a photograph. COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs. Per standard baseline sampling protocol, any sample location should be supplemented by a photograph of the sample collection location.

The County suggests that a table be created to summarize the analytes and analytical methods. A table is easier to reference and use.

(3) If free gas or a dissolved methane concentration greater than 1.0 milligram per liter (mg/l) is detected in a water well, gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen – 12C, 13C, 1H and 2H) shall be performed to determine gas type. The operator shall notify the Director and the owner of the water well immediately if:

A. the test results indicated thermogenic or a mixture of thermogenic and biogenic gas;

B. the methane concentration increases by more than 5.0 mg/l between sampling periods; or

C. increases to more than 10 mg/l.

(4) Copies of all test results described above shall be provided to the Director and the water well owner within three (3) months of collecting the samples. The analytical data and surveyed well locations shall also be submitted to the Director in an electronic data deliverable format. The County requests that three (3) months be changed to two (2) months. Laboratories typically issue an analytical report within 4-6 weeks. With a shorter lag time between

collection and reporting, any concentrations of analytes exceeding standards could be identified earlier and another sample could be collected prior to drilling through the aquifers or prior to fracking.

Also of note, it is not uncommon for laboratory contaminants to result in exceedances of BTEX constituents. This addition to 609 e. would protect the Operator.

Additional request based on aquifer protection:
The County requests a requirement for one-time sample collection of upgradient and downgradient water wells from the three confined Denver Basin aquifers: the Denver, Arapahoe, and Laramie-Fox Hills aquifers, if Division of Water Resources records indicate that these aquifers are present within a ½ mile radius of an oil and gas location. Subsequent sampling would not be necessary, unless there is a future suspected impact to groundwater quality in the ½ mile radius of those oil and gas locations.