



DEPARTMENT OF NATURAL RESOURCES

*Bill Ritter, Jr., Governor*  
1120 Lincoln St., Suite 801  
Denver, CO 80203  
Phone: (303) 894-2100  
FAX: (303) 894-2109  
[www.oil-gas.state.co.us](http://www.oil-gas.state.co.us)

April 3, 2007

Saguache County Commissioners  
501 Fourth Street  
Saguache, CO 81149

VIA FACSIMILE (719) 655-2635

Re: Lexam Explorations (U.S.A.) Inc. Applications for Permits to Drill  
Baca No. 5 Well NE $\frac{1}{4}$  SW $\frac{1}{4}$ , Section 28, Township 43 North, Range 11 East, N.M.P.M.  
Baca No. 6 Well SE $\frac{1}{4}$  NE $\frac{1}{4}$ , Section 33, Township 43 North, Range 11 East, N.M.P.M.  
Baca National Wildlife Refuge

Dear Commissioners,

The Colorado Oil and Gas Conservation Commission (COGCC) has received your comment letter dated November 14, 2006 regarding Lexam Explorations (U.S.A.) Inc.'s (Lexam's) application for two exploratory oil and gas wells that are planned to be drilled in the Baca National Wildlife Refuge. This letter responds to your comments in the order that they were presented. For your convenience, copies of the approved Lexam drilling permits and the conditions of approval for the two wells are attached. Lexam must comply not only with the conditions of permit approval but also the comprehensive set of rules that are enforced by the COGCC to protect public health, safety and welfare and the environment. Please see the COGCC's website (<http://oil-gas.state.co.us/>) for a full set of its rules, or you may order a hard copy.

### **Shallow Ground Water Protection**

Both Lexam wells will be constructed with 350 feet of steel conductor casing and 3,000 feet of steel surface casing. These casing strings are set at depths sufficient to protect both shallow and deep groundwater aquifers, and both of these casing strings will be cemented from setting depth to surface with a continuous column of cement. This type of well construction will provide protection for all of the aquifers in the drilling area. It is the COGCC's intention to witness the running and cementing of these casing strings in the construction of both wells.

Water wells within one mile of the drill sites have been sampled and analyzed to provide baseline data for the aquifers in the Baca National Wildlife Refuge. In addition, Lexam is required by a drilling permit condition of approval to install a minimum of one up-gradient and two down-gradient monitoring wells around each drill pad prior to the construction of the exploratory oil and gas wells. These monitoring wells will ensure that in the unlikely event any ground water contamination occurs it would be detected in a short period of time. The shallow monitoring wells will be logged and surveyed to provide detailed hydrologic information. Another condition of approval for the protection of shallow ground water is a requirement that an inventory of all chemicals and products that will be used or stored on site must be provided to the COGCC, the surface owner, and local emergency response personnel prior to bringing the substances into the Baca National Wildlife Refuge.

A condition of permit approval has been attached that requires Lexam to use a closed loop mud and drill cutting system and to place drill cuttings in an above-ground, lined enclosure unless otherwise approved by the surface owner. In addition, a condition of permit approval has been attached that prohibits Lexam

from leaving or burying any drill cuttings on site, unless it obtains surface owner approval, and requires Lexam to dispose of all drill cuttings off site in accordance with applicable COGCC rules.

### **Environmental Impact Statement**

The Federal government is responsible for requiring an Environmental Impact Statement (EIS), and in this situation, it has indicated to the COGCC that it will not require an EIS when private minerals are being developed beneath federally owned surface. The COGCC cannot require that an EIS be prepared nor can it withhold issuance of the drilling permits pending an EIS that is not planned. On January 11, 2007, COGCC engineering and environmental staff conducted onsite inspections of the two proposed drilling locations along with representatives of Saguache County, the Baca Grande Water and Sanitation District, the United States Fish and Wildlife Service (USFWS) and Lexam. The purpose of the onsite inspections was to examine the surface that will be used for the drilling of the wells, to discuss subsurface aquifers and other environmental considerations related to the drilling of the wells, and to talk about any local government issues. The result of the onsite inspections was the development of the numerous conditions of permit approval that are additional site-specific precautions the COGCC requires of Lexam to address environmental concerns associated with these two exploratory oil and gas wells.

### **Air Quality**

The COGCC has broad statutory authority with respect to "...impacts on any air, water, soil, or biological resource resulting from oil and gas operations...." CRS § 34-60-106(2)(d) (2006). The Colorado Department of Public Health and the Environment (CDPHE) Air Pollution Control Division (APCD) regulates air quality over the entire state to minimize emissions from a variety of sources, and to ensure that air quality on a statewide basis meets federal air quality standards. The COGCC has rules that address specific air-related issues associated with oil and gas operations, such as the flaring of gas wells. The COGCC also cooperates and coordinates closely with CDPHE-APCD with respect to oil and gas operations, with the COGCC generally deferring to the expertise of CDPHE-APCD on broad air quality issues, such as emissions.

### **Speed Limits**

The COGCC does not have the authority to address speed limits on public roads. This concern is best addressed by the Colorado Highway Patrol or the County Sheriff.

### **Emergency Service Plan**

An emergency response plan is addressed in a condition of approval for both drilling permits. The condition of permit approval requires Lexam, prior to commencing its operations, to meet with the local emergency response personnel to establish an adequate safety and response plan for drilling, completion, and production activities.

### **Off Site Disposal of Drilling Wastes**

Offsite disposal of drilling wastes is required under the conditions of approval for the drilling permits. The condition of permit approval prohibits Lexam from leaving or burying drill cuttings at the drill site or elsewhere in the Baca National Wildlife Refuge, unless it obtains landowner approval in writing, and requires Lexam to dispose of drill cuttings offsite in accordance with COGCC Rule 907.

## **Best Available Technology to Protect Ground Water**

The setting depths of the conductor casing and the surface casing have been reviewed with personnel from the Colorado Division of Water Resources as well as representatives of the Baca Grande Water and Sanitation District. All casing strings that cover aquifers will be cemented to surface. This type of double casing and cement well bore construction is the best available technology for protecting ground water in this area. Another condition of permit approval requires that if production casing is run, all hydrocarbon- and water-bearing formations must be covered with cement, and a cement bond log must be run to verify coverage. It is the COGCC's intention to witness any running and cementing of production casing in both wells. In addition, there is a condition of permit approval that requires that if a well is plugged as a dry hole, the COGCC must be contacted for plugging instructions so that the plugging procedure will assure that all aquifers are properly isolated and protected. These conditions of permit approval provide important protections for aquifers.

## **Conduct Ground Water Monitoring**

Lexam is required to monitor ground water before and during drilling operations. Both permits require that a minimum of one up-gradient and two down-gradient monitoring wells will be installed around each drill pad. The wells will be completed in the shallow unconfined aquifer. The locations and elevations of the wells will be surveyed and depth to water will be measured. Lexam must also collect water samples for chemical analysis before the drilling of the wells is commenced and at predetermined intervals thereafter. If spills or releases of drilling-related chemicals at well sites occur, then the sampling frequency may be increased to a frequency agreed to by the COGCC, the USFWS, Baca Grande Water and Sanitation District, and Lexam.

In addition, a condition of permit approval has been attached that requires that the water wells in the area that were sampled for baseline water quality will be sampled again within six (6) months after the proposed oil and gas wells are completed or plugged and abandoned. The baseline and follow-up water analysis data will be provided to the COGCC (and, therefore, be available for public inspection) and to the surface owner.

## **Funding for Training of Emergency Response Personnel**

The COGCC does not have the authority to provide funds for the purpose of training emergency response personnel, nor can the agency require Lexam to provide funds for this purpose. It is important to note, however, that a condition of approval has been attached to the permits for both wells that requires Lexam to meet with the local emergency response personnel prior to the commencement of operations to establish an adequate safety and response plan for drilling, completion, and production activities.

## **Other Concerns**

There are other conditions of permit approval that are important to bring to your attention. Lexam is required to station a guard at the property gate on County Road T during all drilling and completion activities. The guard will limit access to the Baca National Wildlife Refuge to Lexam employees and contractors, and other authorized personnel. In addition, all equipment and vehicles brought into the Baca National Wildlife Refuge from outside the San Luis Valley must be cleaned and decontaminated to minimize the introduction of non-native species and noxious weeds. To ensure that proper well control practices are followed, all drilling and completion operations shall be supervised by personnel with WellCAP IADC well control certification. All blowout prevention equipment shall be rated for 5000 psi and shall be installed and tested in accordance with the requirements set forth in the United States Bureau of Land Management Onshore Order #1.

The Applications for Permits to Drill (APDs) filed by Lexam are complete packages submitted using standard petroleum industry practices and complying with COGCC rules. Each permit has been issued with conditions of approval, taking into account those issues raised by Saguache County and other concerned citizens. The COGCC has determined that the APDs are well designed and incorporate the information that has been gathered during the drilling of previous wells in the area, and will adequately address all issues needed to protect the environment and public health, safety, and welfare.

The COGCC seeks to maintain good working relationships with all of its stakeholders, including local government agencies. Please contact us if you have additional questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian J. Macke". The signature is written in a cursive, flowing style.

Brian J. Macke, P.E.  
Director

Cc: Bill McKnab – Lexam Explorations (U.S.A) Inc.  
Harris Sherman – Executive Director, Department of Natural Resources