FY 2003-2004 REPORT TO THE

WATER QUALITY CONTROL COMMISSION
and
WATER QUALITY CONTROL DIVISION
of
THE COLORADO DEPARTMENT OF
PUBLIC HEALTH AND ENVIRONMENT

by

THE COLORADO OIL AND GAS CONSERVATION COMMISSION

of

THE DEPARTMENT OF NATURAL RESOURCES

IN ACCORDANCE
WITH

THE AUGUST 28, 1990 MEMORANDUM OF AGREEMENT
and
THE IMPLEMENTING PROVISIONS OF SENATE BILL 181

OCTOBER, 2004

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1. INTRODUCTION

The Colorado Oil and Gas Conservation Commission (COGCC) is an implementing agency for water quality standards and classifications adopted by the Water Quality Control Commission (WQCC) for ground water protection. This authority was provided by SB89-181, and is restated and clarified by a Memorandum of Agreement (MOA) between the agencies.

Section 5.1 of the MOA specifies that the COGCC must report annually to the WQCC as to how its programs assure compliance with WQCC water quality standards and classifications for the activities, which are subject to the jurisdiction of the implementing agency.

This thirteenth annual report includes a summary of COGCC activity and changes in ground water protection programs that were made during the preceding year. Major issues concerning the implementation of water quality standards and classifications are also reported. Use of technical language and industry jargon is avoided where possible, as well as recitation of the COGCC statute and rules.

2. COGCC ORGANIZATION AND FUNCTIONS

Public Outreach and Communication

The COGCC employs the following strategies for effective communication with the public and the regulated industry:

- The Monthly Staff Report is prepared for submittal to the COGCC Commissioners. It describes ongoing staff activities such as compliance and enforcement actions, environmental and landowner issues, and other topics relevant to the mission of the COGCC. The report is distributed widely to interested parties and it is posted on the COGCC website www.oil-gas.state.co.us.

- A toll free telephone number (888-235-1101) to the Denver office has been established as a complaint hotline for citizen use.

- A total of 11 local public forums (LPF) have been held since October 1998, as provided for in Rule 508. These meetings are held so citizens can provide input to the COGCC regarding potential impacts to the environment and public health, safety, and welfare from the approval of applications to create drilling units (establish well spacing) or to increase well density within units. Two LPFs have been held in Yuma County, one in Las Animas County, two in Huerfano County, five in La Plata County, and one in Garfield County.

- Meetings are held in counties and areas where the oil and gas industry is active, particularly in areas where concerns ranging from potential impacts to public health, safety, and welfare to the economic effects of fluctuating commodity prices have been voiced.

- The Commission is committed to holding at least three of its 10 hearings outside Denver each year. We continue to be successful in securing funding for these trips as part of our annual budget. In FY 2003-2004 the COGCC held two hearings Glenwood Springs, and one each in Golden and Greeley.

- The COGCC continues to solicit participation on all levels from "stakeholders" - those representing the oil and gas industry, local government, citizens, other agencies, agriculture, and the environmental community.

- The COGCC continues to expand our internet presence. In addition to being able to access oil and gas well data, users are able to access information regarding pits, spills/releases, and complaints on the web. Soon they will be able to access information regarding remediation projects too. Please visit our website at www.oil-gas.state.co.us.

COGCC Commissioners

The Colorado Oil and Gas Conservation Act requires a total of seven (7) Commissioners to represent the COGCC; two (2) Commissioners appointed from west of the continental divide and five (5) Commissioners appointed taking into account the need for representation for areas with high levels of oil and gas activity or employment. The current seven (7) Commissioners have a wide range of experience and expertise in petroleum geology, petroleum engineering, farming, environmental sciences, and finance and operations. Biographical sketches of the COGCC Commissioners are included in Appendix 1.

COGCC Staff

The COGCC has thirty-four (34) employees as shown on the organization chart included in Appendix 2. This number reflects the elimination of one (1) FTE data entry position by the Joint Budget Committee. COGCC staff still includes 15 engineers, field inspectors, and environmental protection specialists (EPS). One (1) of the engineers and five (5) of the field inspectors are located in field offices in Grand Junction, Battlement Mesa, Durango, Greeley, Sterling, and Trinidad, which helps to maximize their available field inspection time. An office was opened in Parachute in August 1998, but was moved to Battlement Mesa in April 2004, in response to increased gas well drilling and urban and rural residential development occurring along the I-70 corridor through the Piceance Basin.

COGCC Environmental Staff

The Operations Unit includes the engineers, field inspectors, and environmental staff. The placement of these disciplines into one group has improved implementation of COGCC programs and cross training. Morris Bell is the Manager of the Operations Unit. The map included in Appendix 3 shows the geographical areas of responsibility assigned to the engineer/inspector and the environmental staff.

The COGCC environmental staff is comprised of three Environmental Protection Specialists (EPS) and the Environmental Supervisor, with professional experience and expertise in environmental issues associated with oil and gas operations, hydrogeology, and geology. We continue to handle questions, concerns, problems, programs, and issues relating to the oil and gas industry's impact on the environment, and public health safety and welfare. The environmental staff works closely with the COGCC engineering staff and in particular with the field inspectors. Incidents resulting in environmental impacts are referred to the environmental staff. The primary responsibilities of the environmental staff are discussed below:

A. Spill/Release Response: Operators are obligated to report spills and releases that occur as a result of oil and gas operations. Produced oil, gas, and water are the substances most commonly spilled or released. These substances fall under the exploration and production (E&P) waste exemption to regulation as hazardous wastes under Subtitle C of the Resource

Conservation and Recovery Act (RCRA), and therefore, are subject to COGCC jurisdiction. Generally, impacts from these events are limited to soils and are relatively small in areal extent.

Spill response by the environmental staff includes onsite inspections, remediation oversight, review of reports and remediation plans, as well as operating practices, to ensure protection of surface and ground water, in accordance with COGCC rules and WQCC standards and classifications. Spills are tracked in COGCC's MRDB database and can be accessed via the COGCC website. In FY 2003-2004 approximately 243 spills and releases were reported and approximately 219 spills and releases were resolved and/or remediated.

B. Complaint Response: The COGCC responds diligently to complaints, which are received from individuals and other agencies. Complaints are tracked in the COGCC's MRDB database and can be accessed via the COGCC website. In FY 2003-2004 approximately 157 complaints filed and responded to, and approximately 143 complaints were resolved. Often the complaints are from landowners, alleging damage to their land or water wells. The environmental staff follows up where appropriate, taking samples when necessary. Operators often are required to perform additional investigation and remediation, as needed, to bring sites into compliance with soil and ground water standards.

C. Remediation Projects: Operators are required to remediate significant adverse environmental impacts that occur as a result of oil and gas activities. Situations requiring remediation often result from spills and releases of produced water and hydrocarbons discovered at the time of occurrence or during due diligence investigations, well pluggings, or pit closures. The environmental staff manages remediation projects by evaluating reports and plans, establishing cleanup standards, points of compliance, and other requirements for operators to meet. Remediation projects are tracked in a stand-alone database, but soon will be incorporated into COGCC's MRDB database. During FY 2003-2004, approximately 38 operators submitted approximately 114 new remediation plans for approval and approximately 46 remediation projects were closed. The environmental staff handled approximately 297 remediation projects during FY 2003-2004.

Where ground water has been impacted, operators are required to: mitigate any continued release; investigate the extent of contamination; remove the source of contamination (such as the impacted soils in contact with ground water or "free product"); remediate, establish points of compliance, and monitor contaminant levels.

D. Pit Program: The "pit program" was a result of the May 1995 "points of compliance" rulemaking. The pit program required operators to:

- Inventory all pits, buried and partially buried tanks and vessels by 12/31/95;
- Determine whether the structures listed above are located in a Sensitive Area;
- Test all buried and partially buried tanks and vessels located within a Sensitive Area to determine whether they leaked;
- Close those pits located within a Sensitive Area by 12/31/97;
- Repair, replace, upgrade, or close those structures located within a Sensitive Area that leak by 12/31/97;
- Provide a written summary of the above activities by 12/31/97.

As a result of the program, a significant number of pits were closed in areas where there was a high potential for adverse impact to ground water. Many operators took advantage of the program, closing pits to eliminate discharges with potential impacts, performing closures using cost-effective methods, and reducing overall environmental liability. Also, leaking buried or partially buried concrete vaults, tanks and structures were removed, replaced and impacts remediated. Closures and cleanups are conducted under the oversight of COGCC staff.

During FY 2003-2004, COGCC staff approved permits for 234 new earthen pits and approved the closure of 12 pits, primarily in conjunction with plugging and abandonment of wells. Most of these new pits are located in Las Animas County and are associated with coalbed methane wells. Approximately 11,038 earthen pits are still used for disposal of produced water throughout the state.

E. Permitted Waste Management Facilities: The 900-Series rule modifications that became effective 12/31/97 included a change to the previous landfarm rule. The rule now applies to all non-commercial Centralized Exploration and Production (E&P) Waste Management Facilities and includes waste treatment methods such as large pits, thermal and centrifuge systems, or waste treatment for beneficial reuse, as well as landfarms. The Colorado Department of Public Health and Environment (CDPHE) HMHWM-SWM permits commercial E&P waste management facilities, while the COGCC permits non-commercial Centralized E&P Waste Management Facilities.

This change allows the operator greater flexibility in waste management methods, and creates a simple approach to regulation of these facilities. The rule requires operators to apply for an operating permit, and as part of the approval process, staff evaluates the proposed siting, operation, financial assurance, and preliminary closure plans. Generally these facilities are larger than a typical tank battery that might handle wastes from only one or a few wells. These larger facilities handle wastes from many wells and that may be from more than one field or lease. These facilities are required to have financial assurance of $50,000. The COGCC has permitted approximately 6 centralized landfarms and 3 centralized pits. Two centralized landfarms are located on federal lands and are not necessarily under the jurisdiction of the COGCC.

F. Reuse of Produced Water: About 90 percent of the water co-produced with oil and gas is disposed or used for enhanced recovery by underground injection. Most of the rest is disposed in evaporation and percolation pits. A small amount is discharged under CDPS permit as a waste and an even smaller amount is used for dust suppression on oil and gas lease roads. Three landowners in La Plata County have filed for and obtained the right from Water Court to use produced water for agricultural purposes.

Environmental Response Fund

The Severance Tax Trust Fund continues to be the source for the COGCC's $400,000 Environmental Response Fund (ERF). During FY 2003-2004 this money was used to plug and abandon orphaned wells and to fund a number of projects related to environmental issues. Detailed descriptions of these are provided in Section 6.

ERF Projects proposed for FY 2004-2005 include:

- Plugging, abandoning, and reclamation of orphaned oil and gas wells and associated facilities in various counties.
- Complaint and Spill Response.
- Additional gas and ground water sampling in the Piceance and D-J Basins.
- La Plata County ongoing seep study, and operation and maintenance of 3M monitoring wells.

Data Management and Geographical Information Systems (GIS)

A major function of the COGCC is the management of records and data related to exploration and production of oil and gas resources, and potentially related impacts. Historically, the majority of these records and data were available to the public as paper records filed in the COGCC Public Room, located in the Denver office. The number of records and volume of data available through the COGCC continues to grow each year. In 1999, a new data system (Colorado Oil and Gas Information System [COGIS]) was developed. COGIS allows staff and Internet users to access COGCC data through a relational database and imaging system. Almost all entries from COGCC permit/reporting forms are stored in the database. Data pertaining to wells, spills, complaints, and pits are managed in the COGIS database system. In addition, hundreds of thousands of paper documents have been scanned, including a relatively complete set of geophysical well logs. Users are currently able to search the COGCC databases on the web, call up related scanned documents, and view plotted locations on a map.

To ensure that local governments are informed, an Internet application has been developed to allow the local government representatives to view new permits and other well information in their respective areas of concern.

The COGCC GIS Online Internet Map is also available. This map contains several GIS layers including oil/gas wells, facilities (such as pits), roads, cities, counties, geology, basins, regulatory contacts, CDPHE Regulation 42 Specified Areas, and BLM Federal Unit Boundaries. The COGCC Spacing Order Layer is about 75% complete and should be finished within the year. In addition, area-specific spatial data has been added for the San Juan and Raton Basins. These data focus on oil and gas development issues related to water quality and

methane seeps. When the user zooms into the San Juan Basin on the map, the Fruitland Coal outcrop, water sampling locations, and methane monitoring stations can be viewed. The Raton Basin data set includes: methane seep locations, coal mine boundaries, sampled water wells/springs, and samples gas wells.

Various specific studies in the San Juan Basin and Raton Basin are available for review and download via the Internet. The raw data from the Raton Basin Baseline Study are also available for download.

COGIS is currently available on laptop computers that allows the engineering and environmental staff to take the entire COGIS database and GIS Online Map System to the field for quick information queries while conducting investigations.

New applications under development include the online download of digital geophysical well logs, online monitoring and reporting of underground injection wells, and various enforcement applications. COGCC development of online reporting continues to be a goal with objectives to provide users real time access to COGCC regulatory information.

Industry Services

The COGCC continues to promote its mission to encourage the development of the state's oil and gas resources by providing information and assistance in complying with the COGCC rules and requirements, including our expanded website, GIS capabilities, and new computer system.

Industry Compliance/Violations/Penalties

In FY 2003-2004, the COGCC found 13 operators in violation of rules and orders and assessed penalties totaling approximately $119,000. Violations included:

- Failure to:
  - comply with approved Access and Transportation Plans,
  - prevent unauthorized discharged,
  - notify and consult with a surface owner,
  - obtain approval for shut-in wells,
  - ensure mechanical integrity or plug and abandon wells,
  - obtain APD approval prior to drilling/recompletion,
  - plug and abandon wells lacking mechanical integrity.
  - incomplete reclamation,
  - remediate spills.

- Lack of reporting.

In August 2004 (FY 2004-2005) the COGCC commissioners issued an operator a Notice Finding Violation for numerous violation of COGCC rules including significant impacts to public health safety and welfare, and the environment. The fine for these violations was $371,200, which is the highest ever imposed by the COGCC commissioners

Underground Injection Control (UIC)

Rulemaking for site-specific ground water classifications of "Limited Use and Quality" and revised standards for the Morrow Formation in eight fields in Cheyenne and Kit Carson Countains and certain oil and gas producing horizon (Middle Oil Sand of the Wasatch Formation) in the Hiawatha Field in Moffat County were approved by the WQCC.

COGCC staff will continue to work with WQCD and EPA staff to ensure that operators of Class II injection wells in Colorado are in compliance with ground water standards and classifications and that points of compliance are established.

3. COGCC COORDINATION WITH WQCD/WQCC

The COGCC, WQCD, and WQCC continued our semi-annual meetings in FY 2003-2004, Martha Rudolph and Michael Klish are serving as the commissioner representatives of the WQCC and the COGCC, respectively.

4. LEGISLATIVE ACTIVITY

SB 04-100 was introduced in the 2004 session that would have authorized the Oil and Gas Conservation Commission to resolve private party disputes between unleased non-consenting owners of mineral interests and cost-bearing owners of a well. This would have been a new area of law for the Commission to administer. The bill was postponed and a task force was formed to study the issues relating to the bill. There was no additional legislation affecting the COGCC.

5. RULEMAKING

One rulemaking hearing was held since the last report. The Commission decreased the conservation levy, specified when approval of Applications for Permits-to-Drill (ADPs) may be withheld or suspended, and clarified certain other procedures in the COGCC rules.

6. OIL & GAS EXPLORATION & PRODUCTION ACTIVITY IN COLORADO BY REGION/FIELD

There are approximately 26,000 active oil and gas wells in Colorado. These wells produce approximately 2.8 billion cubic feet (bcf) of natural gas and 58,000 barrels (bbls) of oil per day, with a total value of approximately $4.7 billion dollars for 2003.

The activity of the oil and gas industry may be measured in part by the number of drilling and recompletion permits processed by the COGCC. In FY 2003-2004 the COGCC approved approximately 2,578 drilling permits for new wells and 184 recompletion permits for existing wells, which is an increase of approximately 25% from FY 2002-2003.

This section describes oil and gas activity and highlights COGCC studies, issues and concerns relating specifically to ground water by region. In each region there are remediation projects of various size and type in which impacted soils and/or ground water are being investigated or cleaned up by operators. All the projects are not described individually in this

report. The COGCC environmental staff directs and monitors these projects, as described in Section 1.

SOUTHWEST COLORADO

Oil and Gas E&P Activity

Gas production has continued to increase in this area due to the continued development of coalbed methane wells. Drilling activity currently has leveled off with approximately 162 approved permits for new wells and recompletions of existing wells for FY 2003-2004. There are approximately 2,461 active wells in La Plata County. These well produce 1.3 bcf of natural gas per day. This is almost one-half of the total amount of natural gas produced in the entire State. There are also a total of approximately 319 wells oil, gas, and carbon dioxide wells in four other southwestern Colorado counties, including San Miguel, Delores, Montezuma, and Archuleta.

Public Involvement

La Plata County Gas and Oil Regulatory Team (GORT)

The COGCC established the La Plata County Gas and Oil Regulatory Team (GORT) to provide a forum for meaningful dialogue between operators, La Plata County, the Southern Ute Indian Tribe, the Bureau of Land Management (BLM) and the COGCC. Members of this group continue to fund the ongoing monitoring of methane seeps along the Fruitland Coal outcrop, including $15,000 of COGCC ERF money.

Ground Water and Other Environmental Issues

XTO (formerly J.M. Huber) Development Plan

In 1998, J.M. Huber Corp. (Huber) applied to the COGCC for an additional well per spacing unit within an area of existing Fruitland coalbed methane wells. A condition for COGCC approval of this request was that Huber create and implement a Development Plan to address concerns regarding potential impacts to public health, safety, and welfare. This was the first instance where COGCC had required such a plan. Subsequently XTO Energy, Inc. (XTO) purchased these wells from Huber. Monitoring, testing, and reporting requirements are being met. XTO (formerly Huber) has sampled 19 water wells as specified in the Development Plan. In addition, they have sampled 27 water wells in the Bellflower Subdivision as required by La Plata and they have sampled 26 other water wells in response to requests by landowners.

Conditions for Optional Additional Coalbed Methane Wells

At the July 2000 hearing the COGCC approved the request by a number of operators for an order to allow the drilling of additional wells on certain drilling and spacing units in lands both north and south of the Ute Line. At the conclusion of the Public Issues Hearing, the COGCC found that additional conditions were necessary to protect the environment and public health, safety and welfare and approved the application by attaching a number of conditions, including extensive sampling of water wells. Selected water wells must be sampled prior to the drilling of an additional well and at least three more times, including within one (1) year, three (3) years, and six (6) years after completion..

As a result of COGCC Orders 112-156 and 112-157, operators have collected approximately 927 water samples from 512 water wells. The analytical results have been submitted to the COGCC. In March 2004 COGCC Staff and Dr. Anthony Gorody, Universal

Geoscience Consultants Inc., completed an evaluation of all of these water quality data as well as all of the previously collected data to determine whether current drilling activity is having an impact on ground water quality in La Plata County. To date there has not been any detectable impacts to ground water resources from the optional additional CBM wells drilled in La Plata County. The final report has been prepared and presented to COGCC commissioners and to La Plata County, and it is available on the COGCC website (www.oil-gas.state.co.us Library, Studies in the San Juan Basin).

During FY 2003-2004 $20,000 of ERF funds were spent on the evaluation of all ground water data currently available in the COGCC water quality database.

3M Project

Methane gas has been observed seeping from the outcrop of the Fruitland Formation in many areas along the northern margin of the San Juan Basin, in southwestern Colorado. Some of these seeps were identified prior to the initial development of any Fruitland Coal wells; however, in places the intensity and areal extent of these seeps appears to have increased subsequent to coalbed methane (CBM) production. In addition, what appear to be new seeps have been identified in some areas. Gas seepage at the newly identified and expanding seeps could be linked to depressurization of the Fruitland coals near the outcrop.

The COGCC and the US BLM funded the installation of a network of monitoring wells at four locations between the outcrop of the Fruitland Formation and downbasin production. The wells are equipped with transducers and dataloggers and will be used for the long term monitoring of pressure and water levels in the Fruitland Formation. A total of seven (7) wells, were completed and data are being collected. Pressure monitoring data from these wells are available on the COGCC website.

During FY 2003-2004, approximately $33,000 in ERF money was used for the operation and maintenance of these wells, and report preparation.

Phase III of the Fruitland Outcrop Seepage Study

Industry, La Plata County, BLM, and the COGCC continue to contribute money and/or staff for the ongoing evaluation, maintenance, and monitoring of the 140 permanent soil gas monitoring probes, six flux chambers, and one meteorological station. Aerial surveying with infrared imagery technology is also being used. A draft annual report has just been released by our contractor and is currently being reviewed by COGCC staff.

One of the monitored locations has been the gas seeps in the Basin Creek drainage, which is located southwest of Durango. The seeps occur just down stream of the new Animas-La Plata project dam, so the flux chamber and several of the soil gas probes have had to be removed to accommodate construction activities. We are hopeful that once construction of the dam and associated facilities is complete we will be able to relocate our monitoring devices.

In addition, 2 operators who will be drilling CBM wells have applied these techniques for establishing pre-gas development conditions at the outcrop of the Fruitland Formation in the western portion of Archuleta County.

During FY 2003-2004, $15,000 in ERF money was contributed to this project.

Pine River Ranches Subdivision Methane Seepage

Monitoring of ground water conditions using existing monitoring wells continues by BP America, although the active mitigation efforts have been stopped. In addition, permanent soil gas monitoring probes, a gas flux chamber, and meteorological station have been installed as part of the Phase III – Fruitland Outcrop Seepage Study described above.

Bradenhead Testing Program

COGCC and BLM continue to co-fund and share staff responsibility for ensuring that Bradenhead tests are conducted on all wells in La Plata County annually. COGCC or BLM personnel witness the tests on gas wells located in areas known to have methane in shallow ground water. Test results are evaluated to determine whether well casings are leaking. Since annual testing requirements were instituted, leaking casing has been detected in approximately 125 wells on tribal, federal, state, and fee land. Remediation of these conditions has been accomplished.

Citizen Complaints Regarding Ground Water

COGCC received 13 complaints alleging impacts to water wells and other environmental damage from oil and gas activities. COGCC staff investigated all of these complaints. One complaint was associated with a 1940's orphaned oil and gas well that was bubbling water and gas on private land owned by the Ute Mountain Ute Tribe, but located outside the exterior boundary of the reservation. Approximately $31,000 of ERF money was used to properly plug and abandon the well and reclaim the site. One complaint brought to our attention that a very large impoundment associated with a major gas plant was leaking produced water, which was flowing down hill and entering Pine Gulch. COGCC staff notified WQCD, conducted the initial investigation, but to avoid duplication of enforcement actions this matter was handed over to CDPHE – Solid Waste, who is now overseeing remediation of the pit and associated impacts. Several relatively small spills of E&P waste that impacted soil and/or waters of the state were remediated by the operator in accordance with COGCC regulations.

The results of the investigations of water well complaints indicated that five of the six wells of concern had not been impacted by oil and gas activities. The other water well is completed in the Fruitland Formation, so the occurrence of Fruitland CBM gas in this well would be expected; however, impacts to the land surface by increased gas seepage is of concern to COGCC staff and is being investigated.

During FY 2003-2004 approximately $17,700 of ERF money was spent investigating these complaints.

Orphaned Wells

During FY 2003-2004 approximately $42,5000 of ERF money was used to plug and abandon two oil and gas wells. One was located in Archuleta County and the other, discussed above, located in La Plata County:

- The wells in Archuleta County and La Plata Counties had been abandoned by the original operator in the early 1930's and late 1940's, respectively, but had not been plugged. Proper plugging ensures that surface water and shallow fresh water aquifers in this area are protected from fluid migration in the boreholes.

NORTHWEST COLORADO

Oil and Gas E&P Activity

Northwest Colorado continues experience a high level of oil and gas activity, especially in Garfield and Rio Blanco Counties. Northwest Colorado drilling permits for FY 2003 accounted for approximately 40 percent of the total drilling permits. The driving forces behind this active development continues to be the extensive natural gas reserves in the Piceance Basin, the gas sales market and overall higher natural gas prices, the change in COGCC rules allowing an increase in well density in the Rulison, Grand Valley, and Parachute Fields in Garfield County, a continuing interest in coal bed methane (CBM) potential throughout the Basin, and an expanding pipeline infrastructure that enables improved marketing of natural gas from the area.

Public Involvement

The Northwest Colorado Oil and Gas Forum

The Northwest Colorado Oil and Gas Forum (NWCOGF) continues to meet regularly, with a recent change from three per year back to quarterly meetings.
The NWCOGF is an important forum for the discussion of oil and gas issues and concerns at the local level. The participants include of the COGCC, other federal, state, and local government agencies, the oil and gas industry, and concerned landowners and citizens. Meetings are well attended.

Colorado Oil and Gas Conservation Commission Hearing

As part of the Commission's commitment to hold a portion of their hearings outside Denver each year, the February and August 2004 hearings were held in Glenwood Springs, Colorado.

Ground Water Issues

Water Well Impact Complaints

COGCC staff and contractors sampled 7 water wells during FY 2003-2004 in response to requests from the water users in Garfield County (6 users) and Rio Blanco County (1 user). None of the water wells sampled had any impacts to water quality as a result of oil and gas operations.

During FY 2003-2004 COGCC staff spent approximately $5,581 of ERF money on these investigations.

West Divide Creek Gas Seep – Garfield County

On April 1, 2004, the COGCC was alerted by landowners along West Divide Creek south of Silt, Colorado that gas bubbles had suddenly appeared in the creek. The COGCC staff investigated and collected gas and water samples from both the creek and adjacent natural gas production wells. Analytical results showed the gas in the creek was similar to production gas from nearby wells. The sample of water from the creek had detectable concentrations of benzene, toluene, and total xylenes compounds. Benzene was detected at a concentration of benzene of 99 µg/l, which exceeded the State water quality standard for surface waters (1.2 µg/l). The COGCC, following our MOA with the WQCC, notified the WQCC of the standard

exceedance and the release of both methane gas and benzene into West Divide Creek and discussed with WQCC staff the gas seep investigation and appropriate emergency response actions.

Investigation by COGCC staff identified a nearby gas well, the Schwartz 2-15B, operated by EnCana Oil & Gas (USA) ("EnCana") as the source of the gas. The well required remedial cementing to isolate gas leaking from the production zone (5,827 to 4,453 feet below ground surface (fbgs) into shallower sections of the well bore. The leaking gas in the well bore was the result of an incomplete cementing job and not the result of a failure to isolate the production zones from upper sections of the well bore during the "fracing". The well was remedial cemented on April 5, 2004, and within two weeks the volume and extent of gas bubbles in West Divide Creek decreased significantly. The concentrations of benzene, toluene, and xylenes compounds in the surface water in the creek also decreased, and since late April, 2004 all surface water samples collected have been non-detectable for benzene, toluene, and total xylenes.

The COGCC staff found EnCana in violation of numerous COGCC rules with regard to both well construction and failure to perform timely remedial actions on the Schwartz 2-15B well, impacts to public health, safety, and welfare, and the environment, and impacts to ground water and surface water. The COGCC issued a Notice Finding Violation to EnCana for these violations and, during the COGCC's August 2004 hearing in Glenwood Springs, Colorado, EnCana stipulated to a $371,200 fine for the violations. Greg Naugle and Scott Klarich, of WQCD participated in preparation for, and provided testimony during this hearing. Jeff Coombs (WQCD) also attended the hearing.

Emergency response and investigation efforts by both EnCana and the COGCC to evaluate the effects of the West Divide Creek gas seep are ongoing and include:

- EnCana voluntarily ceased new drilling and completion activities for new wells within a 2-mile radius of the seep immediately upon identification of the release. This moratorium remains in effect and may be lifted only after review by COGCC staff of the success of new well construction and completion procedures designed to prevent procedural errors, such as those that resulted in the upset conditions at the Schwartz 1-15B, from occurring again.

- Supplying drinking water, as requested, to any residence within a 2-mile radius of the seep.

- Initial weekly sampling of all water wells and springs for methane and BTEX compounds within a 2-mile radius of the seep (forty-eight sample sites). With the exception of the former Dietrich well, no impacts to these water sources have been observed. The former Dietrich water well is discussed in detail in a following portion of this report. EnCana is now conducting monthly sampling of twenty-nine domestic water wells, 4 irrigation wells, 11 ponds, and 4 springs as part of this investigation. BTEX compounds continue not to be observed in any of these sample locations.

- An aquatic biological investigation to monitor and measure impacts to aquatic life from the gas seep in West Divide Creek. Initial results indicate no observable biological

impacts from the gas seep.

- Limited air sparging and installation of activated charcoal booms in the impacted section of West Divide Creek to enhance natural attenuation of BTEX compounds observed in the surface water. The remedial action was recently removed after review of the West Divide Creek seep area surface water monitoring data by WQCD and COGCC.

- An investigation of impact to ground water in the alluvium of West Divide Creek in the area of the gas seep. The investigation has identified the extent a BTEX ground water plume exceeding the State Ground Water standards and has been used to evaluate potential remedial actions to mitigate this ground water impact. A total of 24 monitoring wells have been installed and sampled, data evaluation is in process, and a draft ground water remediation plan is being reviewed.

- Extensive gas survey of the 9 square mile area surrounding the Schwartz 2-15B well and seep is being conducted to identify any other areas of potential seeping gas and/or impacts from the gas release.

During FY 2003 - 2004 COGCC staff spent approximately $34,278 of ERF money investigating and evaluating this matter.

Former Dietrich Water Well – Garfield County

The COGCC has identified a water well south of Silt, Colorado and within the 2 mile radius of the West Divide Creek gas seep investigation that has been impacted by natural gas. BTEX compounds have not been detected in water quality samples from the well; however, thermogenic natural gas that is isotopically and compositionally similar to Williams Fork Formation production gas has been detected in the well. To determine the source of this gas COGCC staff and EnCana are investigating all of the gas production wells in the vicinity of the property. On October 8, 2004 COGCC staff issued an NOAV to EnCana requiring remedial actions to mitigate the gas impact to this water well. The former Dietrich water well is on property that has been purchased by EnCana.

Amos/Walker Water Well – Garfield County

The COGCC has identified a water well south of Silt, Colorado that has been impacted by natural gas. The Amos/Walker water well has thermogenic natural gas which is isotopically and compositionally similar to Williams Fork Formation gas produced from gas wells in the area. BTEX compounds have not been detected in water quality sampling of this well. Although the impact appears to have been due to actions by Ballard Petroleum Company in 2001, EnCana, who purchased Ballard Petroleum's wells in Mamm Creek Field is the operator of record for the majority of the wells in the immediate area. On June 7, 2004 the COGCC staff issued a Notice of Alleged Violation (NOAV) to EnCana requiring remedial actions to mitigate the gas impact to this water well. During FY 2003-2004 $660 of ERF funds was spent on the evaluation of data collected in response to this complaint.

Mesa County - Plateau Field Baseline Water Well Sampling

During FY 2003-2004 COGCC staff spent approximately $16,000 collecting and analyzing samples from water wells within the Plateau Field.

Buck Peak Creek Field – Moffat County

The COGCC is in the process of plugging, abandoning, and reclaiming six Allen Oil & Gas LLC (Allen Oil) Buck Peak wells and related production facilities in compliance with an August 20, 1999 COGCC Order. This order authorized the COGCC staff to claim the operator's bond for numerous violations of COGCC rules and regulations including failure to meet a benchmark compliance schedule.

In 1999, Allen Oil filed suit in District Court seeking review of the Commission's order. The State Attorney Generals office filed for dismissal of the suit, and on April 24, 2002, the District Court Judge affirmed the Commission's order. Under appeal to the Colorado Court of Appeals (for reversing the dismissal of suit ruling) the appellate court ruled in favor of Allen Oil. Further court review of the District Court suit is ongoing.

During FY 2003-2004 COGCC staff spent approximately $69,885 of ERF money on this project.

Underground Injection Control (UIC)

Rulemaking for site-specific ground water classifications of "Limited Use and Quality" and revised standards in certain oil and gas producing horizon (Middle Oil Sand of the Wasatch Formation) in the Hiawatha Field in Moffat County was approved by the WQCC on March 9, 2004.

NORTHEAST COLORADO

Oil and Gas E&P Activity

COGCC Rule 318.A., adopted in 1998, allows operators to drill lower density spacing without a hearing for down spacing. This resulted in an increase of drilling permits in the Wattenberg Area of the D-J Basin, for deepening to the Dakota and J-Sand Formations, and for recompletions into the Codell and Niobrara Formations. Weld County, where the major part of the D-J Basin is located, accounted for approximately 34% of the total drilling permits in the State in 2003. Weld County had approximately 15% of the 2003 total gas production and 46% of the 2003 total oil production.

Smaller oil fields are located in other northeast Colorado counties. These include Adams, Arapahoe, Boulder, Broomfield, Denver, Elbert, Larimer, Logan, Morgan, Phillips, Sedgwick, Washington, and Yuma Counties. The production from some of these fields is primarily stripper well operations, where oil production is ten (10) barrels or less per day.

Public Involvement

The COGCC continues to receive and follow-up on complaints received from the Weld County Department of Public Health & Environment, Tri-County Health Department, Larimer County Environmental Advisory Board, Morgan County Office of Emergency Management, Northeast Colorado Health Department, other municipalities, and the public throughout northeastern Colorado.

The August 2003 COGCC hearing was held at the Colorado School of Mines in Golden. The May 2004 COGCC hearing was held in Greeley. Prior to this hearing, the Commissioners also inspected two field operations in Weld County.

Ground Water Issues

In all cases where ground water was impacted, the operators were required to conduct a site investigation and perform appropriate remediation to comply with COGCC requirements. In addition, the COGCC continues to oversee the investigation and remediation of contaminated soil and ground water beneath gas plant and compressor station facilities throughout northeast Colorado.

There were five complaints alleging impacts to water wells in the northeastern portion of Colorado this year. Four of these complaints involved gas present in water wells; two are completed in the Laramie/Fox Hills aquifer. Upon investigation, COGCC staff determined that three of the alleged impacts were not oil and gas related. COGCC staff determined the source of the thermogenic gas present in one of the water well complaints. Currently, there are four water well complaints involving thermogenic gas that are still under investigation. Additionally, there are five water wells with thermogenic gas where the source has been identified and remedial action is ongoing.

Approximately $27,858 of ERF money was spent investigating COGCC field inspections and citizen complaints in northeastern Colorado.

Surface Water Issues

There were four spill/release events in which released fluids flowed into a surface water body. These were reported to the WQCD in accordance with our MOA. In all cases where surface water was impacted, the operators responded with appropriate emergency procedures and other measures to comply with COGCC and WQCD requirements.

There were three complaints alleging impacts to surface water in the northeastern portion of Colorado this year. Upon investigation, COGCC staff determined that two of the alleged incidents were not oil and gas related. The third complaint was determined to be oil and gas related and involved bentonitic drilling mud within an unnamed drainage. The operator was issued a Notice of Alleged Violation (NOAV) and the site is undergoing remediation and reclamation. No significant environmental impacts resulted from the incident.

Orphaned Wells and Sites

Approximately $55,277 of ERF money was used to restore and reclaim orphaned sites in northeastern Colorado. Projects included:

Four (4) well sites in Logan County; plugging/abandonment, pit closure, and site restoration.

One (1) well site in Morgan County; re-set top plug in previously plugged and abandoned well.

One (1) project in Weld County; ongoing remediation and reclamation of approximately 10 acres of produced water impacted soils in pastureland at the Keota Field.

SOUTHEAST COLORADO

Oil and Gas E&P Activities

Raton Basin

Evergreen Production Company has been purchased by Pioneer Petroleum of Dallas Texas. Pioneer has plans to drill 300 wells a year. Evergreen drilled approximately 200 well a year. Pioneer/Evergreen has a total of 1,050 wells drilled or permitted in the Raton Basin. Pioneer/Evergreen is the operator of nine produced water injection wells.

Cedar Ridge LLC has drilled approximately 39 wells west of Aguilar. Two of the wells are stratigraphic tests and do not produce gas. Cedar Ridge is not producing any of its wells now and the 39 wells and lease properties are for sale. The produced water that was discharged from these wells averaged about 1,000 TDS, 802 bicarbonates, 387 sodium and 35 chloride. Water well values average 541 TDS, 300 bicarbonates, 40 sodium and less than 10 chloride.

Petroglyph Operating Co., Inc. has drilled approximately 46 gas wells and 3 monitor wells in Huerfano County. These gas wells are still being evaluated. Petroglyph is discharging all of its produced water under CDPHE permits. The TDS for the produced water in the northern part of the Raton Basin averages about 850. Produce water is also being applied to county roads for dust control.

XTO Production has drilled about 200 gas wells. The produced waters are injected into 2 wells; the remainder of the produced water is in pits or discharged under CDPHE permit. Williams Production was purchased by XTO Production of Houston.

Ground Water Issues

Four water wells were sampled in response to complaints from landowners alleging impacts to their water wells or from landowners concerned about potential impacts. In three of the complaints the analytical results and other data indicated that the alleged impacts were not oil and gas related.

The fourth complaint was for a water well that is completed in the alluvium of a drainage into which produced water is discharged in accordance with a CDPS discharge permit. The water chemistry has changed in the water well, becoming similar to the produced water. WQCD staff is aware of this situation and will be addressing it.

In addition eight water wells were sampled to add to the data in the Raton Basin Project. These data will be available for comparison, if in the future questions arise about whether water quality has been impacted by oil and gas activities.

Approximately $7,890 of ERF money was used in responding to these four complaints. Approximately $9,000 of ERF money was used to collect samples from the eight water wells for the Raton Data Base.

Orphaned Wells

During FY 2003-2004 approximately $9,716 of ERF money and $5,000 of a bond claim

were used to plug and abandon two (2) oil and gas wells located in Baca County:

- The former wells had been abandoned by the operator, but had not been plugged. Proper plugging ensures that surface water and shallow fresh water aquifers in this area are protected from fluid migration in the boreholes.

Raton Basin Project

The Raton Basin Project was completed in 2003-2004. One hundred water wells were sampled for the study. The samples have been analyzed for major cations and anions, as well as gas isotopes. This gives the COGCC a baseline of ground water quality that will be used to help determine impacts from oil and gas activity, if any, to water wells in the Raton Basin. Fifty gas wells were also sampled and have been analyzed for the same parameters. Additional sampling will be performed over the years to add to this data. Presentations of the study were given to the Las Animas and Huerfano County Commissioners. The project data are available on the COGCC web site.

Cheyenne and Dakota Aquifers Protection

Placement of cement plugs across the Cheyenne and Dakota Aquifers is now a requirement for drilling permit approval in all areas in southeastern Colorado where these aquifers are present.

In FY 2003-2004 an enforcement action was taken against an operator who had not properly protected these aquifers. Approximately $1,150 of ERF money was used to collect ground water quality data from water wells in support of this action.

APPENDIX 1

COGCC COMMISSIONER BIOGRAPHIES

BIOGRAPHICAL SKETCHES OF
COLORADO OIL & GAS CONSERVATION COMMISSIONERS
as of 08/18/04

John B. Ashby is President of Ashby Drilling Corporation, a contract drilling company which drilled many wells throughout the eastern plains of Colorado. He is presently retired from contract drilling and currently consults on oil and gas projects located in the Rocky Mountain region. Mr. Ashby began his industry career as a youth employed on a drilling rig, subsequently earned a B.Sc. in Geological Engineering from Colorado School of Mines and began his professional career with Tenneco Oil Company. He has worked in the midcontinent, western United States and overseas. Mr. Ashby continues to assist the independent oil and gas sector with planning and supervision of well operations.

Brian Cree is currently the Vice President of Finance and CFO for ZettaCore, Inc., a semiconductor company developing molecular memory technology. He earned a BA in Accounting from the University of Northern Iowa in 1985. Mr. Cree has extensive experience in the finance and operations related to the oil and gas industry. He served as the Executive Vice President, Chief Operating Officer and Director of Patina Oil & Gas Corporation from 1996 to 1999 and held similar positions with Gerrity Oil & Gas Corporation from 1992 through its merger with Patina. Mr. Cree held several other management and officer level positions at Gerrity and The Robert Gerrity Company between 1987 and 1992. Prior to that he held staff and supervisory level positions in the
public accounting firm of Deloitte and Touche for two years.

Kimberlee Miskell Gerhardt is a consulting geologist who has lived in La s Plata County for five years. She earned a B.A. in Geology from Wellesley College (1977), a M.S. in Marine Geology and Geophysics from the University of Miami (1983) and a Ph.D. in Geology from Rice University (1989). She began her professional career as a grade control geologist for Kerr-McGee Corp. in the Church Rock uranium mine near Gallup, N.M. She returned to graduate school and subsequently hired on with Exxon Production Research Company in Houston, Texas. During her ten years with EPR, Kim worked on reservoir geology projects from Wyoming, Alaska, Texas, the USSR, Australia, Norway, Algeria, China, Angola and Nigeria. Kim is the past-president of the Four Corners Geological Society, a member of AAPG and has authored and co-authored various professional publications. She is also interested in archeology and is currently pursuing research on lithic toolstone resources in southwestern Colorado.

Michael W. Klish is the Senior Environmental Scientist for WestWater Engineering. He is a member of the Society of Wetland Scientists and served as a representative for the U.S. Bureau of Land Management on numerous oil and gas drilling projects. He received his BS degree in Forest and Range Management in 1972 and his MS degree in Plant Ecology in 1977 from Colorado State University. Mr. Klish specializes in the integration of natural resource values into project design, revegetation and reclamation, environmental documentation and specialized site design and hydrology.

Peter M. Mueller is the Vice President and General Manager of Westport Resource Corporation's Northern Business Unit. He attended the University of Colorado, majoring in Economics, and earned a B.Sc. in Petroleum Engineering from the Colorado School of Mines in 1978. During his career of 25 years, Mr. Mueller has worked in management and/or staff positions in drilling, production, land, regulatory affairs, and gas management. He has worked for both majors and independents, including Amoco Production Company, Mobil Oil, Tenneco Oil Company, and Anadarko Petroleum. Mr. Mueller is a member of the Society of Petroleum Engineers and the engineering honor society, Tau Beta Pi. He also serves on the Cardiac Care Board at Denver's Children's Hospital.

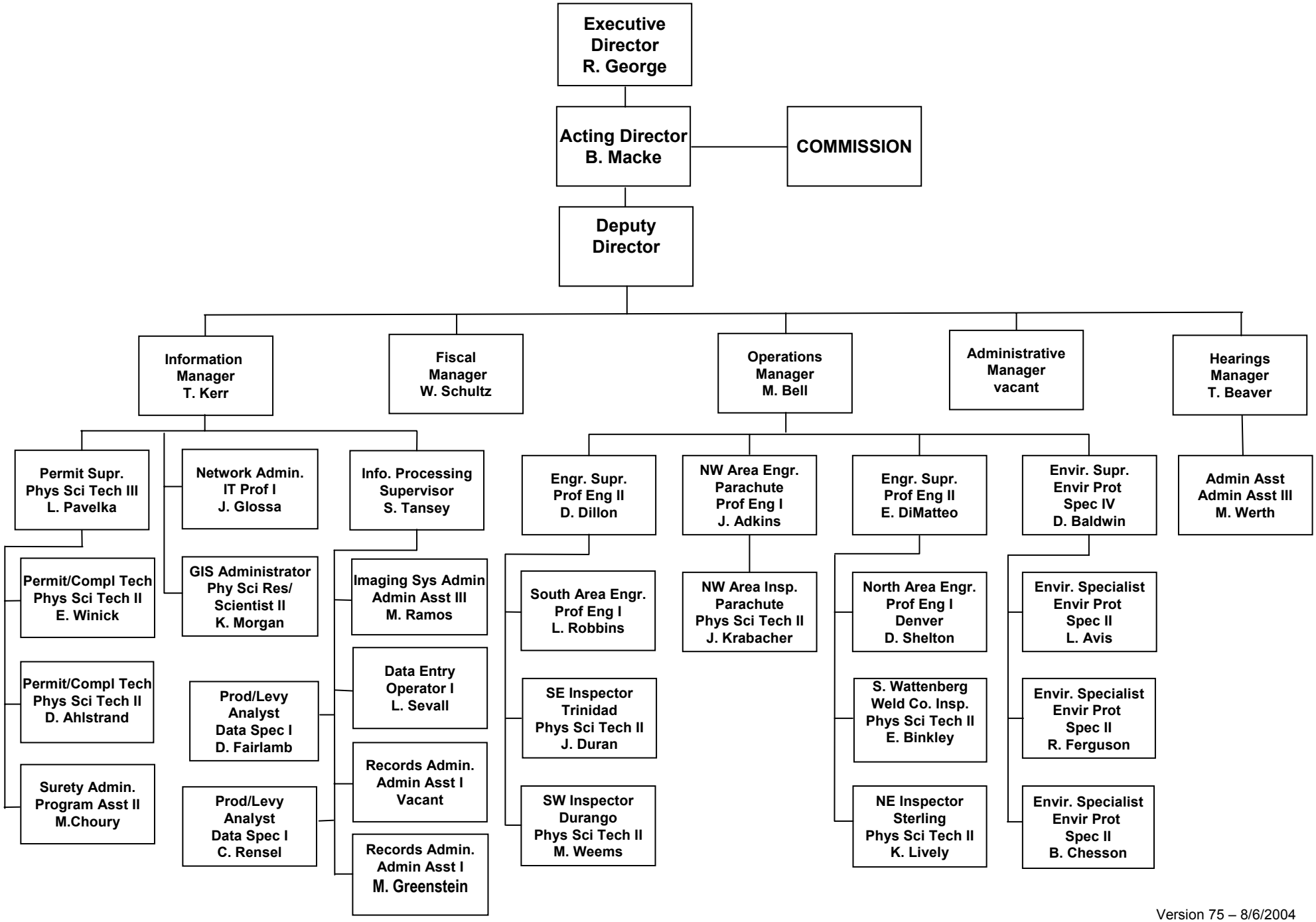
J. Thomas Reagan has over 45 years of experience as a senior corporate executive in the commercial banking and energy industries. He is currently Senior Vice President and Manager of Specialized Deposits at Wells Fargo Bank West in Denver. He earned his degree in Petroleum Engineering from the Colorado School of Mines in 1953, and graduated from the Stonier Graduate School of Banking at Rutgers University in 1972. Mr. Reagan, a Colorado Registered Professional Engineer, has held several positions with independent energy companies. He has served on numerous boards for petroleum and engineering related organizations as well as charitable organizations. Mr. Reagan is a member of various professional societies.

Lynn J. Shook is a partner with two sons in a 7500-acre family farm in Washington County, Colorado, where they produce wheat, corn, millet and sunflowers. Mr. Shook earned a BA degree from Colorado State College (University of Northern Colorado) in 1963. His major work was in Education with emphasis on History, Political Science, and Geography. After teaching history and government for twelve years in Castle Rock, Fort Morgan and Akron, he assumed the management of the family farm in 1975. Mr. Shook has been active in his political party, serving in various capacities including two terms as Washington County Chairman. He served on the 13th Judicial District Nominating Commission, was an eight year member of the Board of Directors of Colorado State Farm Bureau and Colorado Farm Bureau Mutual Insurance Company, is a member of the Customer Focus Group of the USDA Research Center in Akron, and is also a member of the Colorado Sunflower Administrative Committee.

APPENDIX 2

COGCC STAFF ORGANIZATION CHART

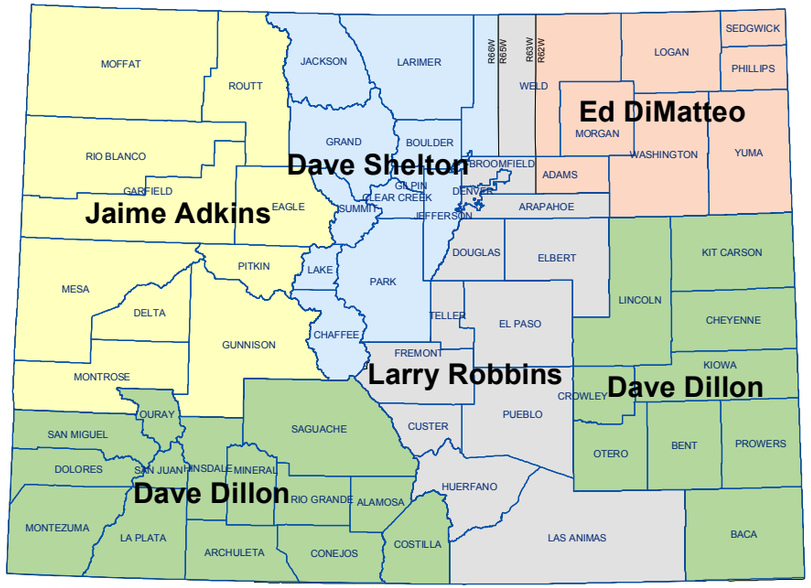
COLORADO OIL & GAS CONSERVATION COMMISSION ORGANIZATION



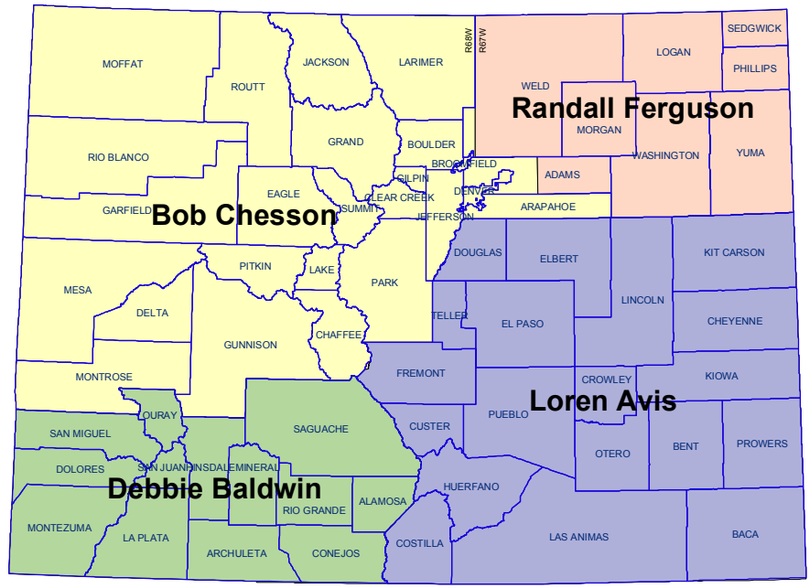
Version 75 – 8/6/2004

APPENDIX 3

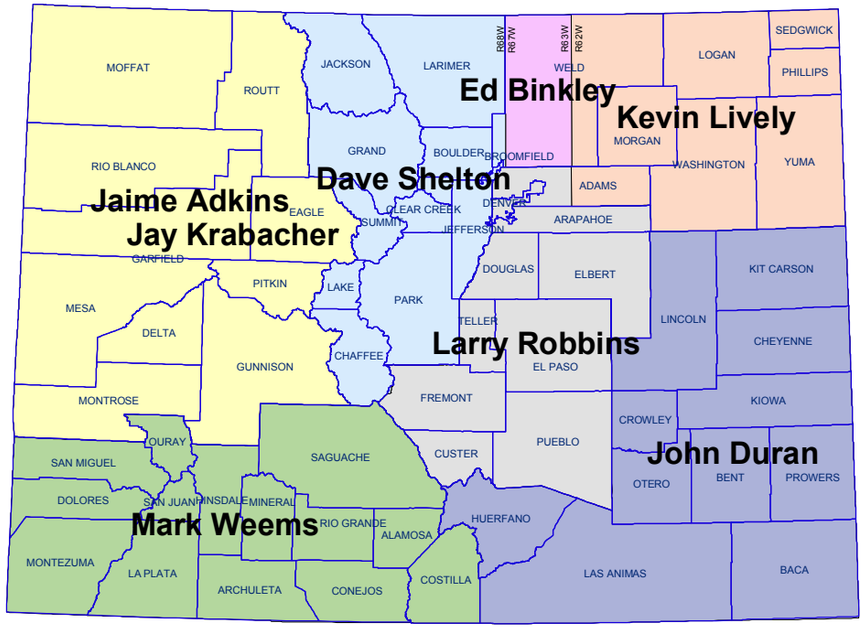
COGCC STAFF
GEOGRAPHIC AREAS OF
TECHNICAL RESPONSIBILITIES



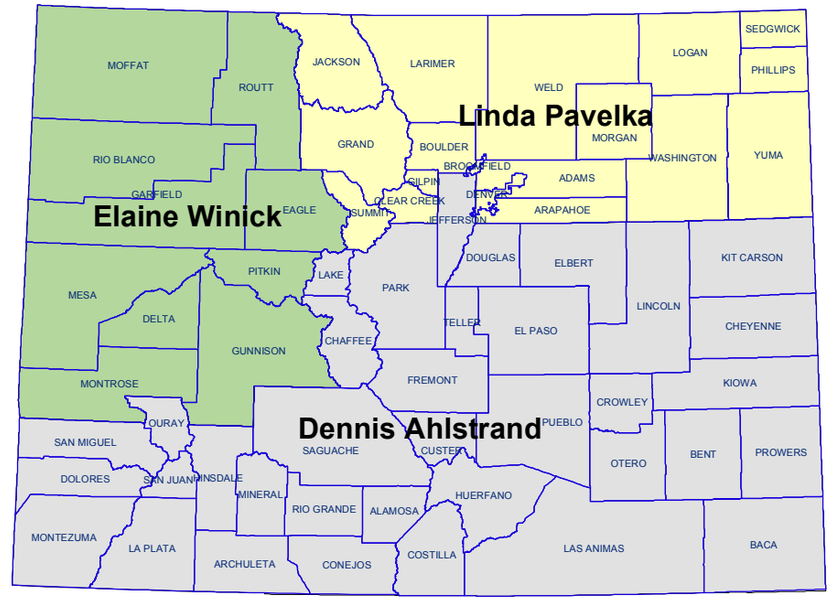
ENGINEERING



ENVIRONMENTAL



FIELD OPERATIONS



PERMITS (APDs)

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Debbie Baldwin	111
Bob Chesson	112
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COGCC: July 6, 2004