"Profitable Mineral Management"

**BREAKFAST SERIES for**
Surface and Mineral Owners
**Admission by Invitation Only**

**DATE:** August 15, 2017

**TOPIC:** Oil and Gas and the Texas Railroad Commission: Lessons for Regulating a Free Society

**LOCATION:** San Antonio Petroleum Club
8620 N New Braunfels, Suite 700
San Antonio, TX 78217-6363
P 210.824.9014
F 210.829.5443

**TIME:** 7:30 AM Breakfast - 8:00 AM Presenters - 8:50 AM Questions & Answers

**INTRODUCTIONS:** E.O. (Trey) Scott, III, Trinity Mineral Management, Ltd.

**PRESENTERS:** Dr. Mark A. Miller, Petroleum Engineering Consulting and Advisory Services

**Oil and Gas and the Texas Railroad Commission: Lessons for Regulating a Free Society**
- History of the Railroad Commission – How We Got There
- The Railroad Commission in Texas Politics
- Regulatory Challenges Facing the Commission
- Ways Texas Can Do Better

**UPCOMING:**
- SEP 19  Trey Scott: Oilfield Cleanup & House Bill 2259
- OCT 17  Sean Caporaletti: Fair Market Value
After graduating with a BS in Engineering from Harvey Mudd College, Dr. Mark Miller began a career in the oil and gas industry as a Petroleum Engineer. Later receiving a PhD from Stanford University, he went on to teach petroleum engineering at The University of Texas at Austin for 18 years.

After leaving UT, Mark established a worldwide petroleum engineering consulting practice and was a founder and CEO/CTO of a small company that provided software to the oil and gas industry. He is currently semi-retired and does occasional consulting.

Dr. Miller was the Libertarian Party nominee for Texas Railroad Commissioner in 2014 and 2016. In 2016 he was the only candidate for Railroad Commissioner to receive endorsements from the Texas' major newspapers.
Professional Experience

Consulting Petroleum Reservoir Engineer Jan 2015 to Present
Providing reservoir engineering consulting and advisory services in technology development, general reservoir engineering, reservoir simulation, and the reservoir engineering aspects of natural gas, naturally-fractured reservoirs, and shale plays.

Promethean Technologies Group, LLC Jun 2012 to Dec 2014
Founder and CEO/CTO – providing technical management for company that produces shale analysis software products.

Object Reservoir, Inc. Jan 2012 to May 2012
Chief Technology Officer – developed and managed shale gas analysis software products.

Consulting Petroleum Reservoir Engineer Feb 2006 to Dec 2011
Provided reservoir engineering consulting and training, with expertise in the characterization, analysis, design, and optimization of petroleum recovery projects. Specialties include general reservoir engineering, reservoir simulation, reservoir engineering aspects of natural gas and naturally fractured reservoirs, thermal oil recovery, petrophysical property analysis, well test analysis, and fluid property characterization.

Object Reservoir, Inc. Dec 2002 to Feb 2006
Senior Reservoir Engineer - provided reservoir engineering supervision, expertise, and support for consulting services, sales, and development activities of a reservoir modeling technology company.

Consulting Petroleum Reservoir Engineer Sep 2001 to Dec 2002
Reservoir engineering consulting and training for worldwide oil and gas producing companies.

University of Texas at Austin Jun 1983 to Aug 2001
Associate Professor (after 1989), Department of Petroleum and Geosystems Engineering. Taught courses and conducted research in reservoir engineering, naturally fractured reservoirs, natural gas engineering, thermal oil recovery, and petrophysics. Deputy Director, Center for Petroleum and Geosystems Engineering, 1988-97.

Stanford University Apr 1983 to Jun 1983
Acting Instructor of petroleum engineering. Taught graduate level course in Advanced Natural Gas Engineering.
**Reservoir Engineer** - reservoir simulation and general reservoir engineering for waterflood and thermal recovery projects. **Corporate Staff Engineer** - reports and recommendations to Group Vice-President and various corporate departments. **Natural Resources Engineer** - minerals project planning. **Operations Engineer** - development drilling, well completions, workovers, and artificial lift installations.

**Education**

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**Professional Registration**

Professional Petroleum Engineer: Texas 54523 (1983)

**Recent Publications**


Oil & Gas and the Texas Railroad Commission Lessons for Regulating a Free Society

Mark Miller, PhD, PE
Today’s Talk

• History of the Railroad Commission
• The Railroad Commission in Texas politics
• Regulatory challenges facing the Commission
• Ways Texas can do better
Reading List

A Brief History of the TRRC (cont.)

• Established in 1891 to regulate railroads
  - Governor Hogg wanted Commissioners to be appointed
    ✓ Texas Legislature had a different idea.

• One of the first consumer protection agencies in the US
  - Ranchers and farmers believed they were being overcharged for freightage.
  - But Texas badly needed a rail system to connect the vast reaches of the state and to support economic growth, wanting to industrialize after the Civil War.

• Early Commissioners experienced some of the difficulties in regulating monopolies
  - Finding “optimal rates” that will keep charges low but high enough for companies to upgrade equipment
  - How to deal with competing technologies
    ✓ In this, pipelines and trucking, for example.

• Two phrases of note from the Childs book:
  - Pragmatic federalism
  - Dual management
Following the Splindletop discovery in 1901, Texas, by 1930, had become the #1 oil producing province in the world.

- During this time the TRRC’s responsibilities were expanded to oil pipelines (1917), oil and gas production (1919), natural gas delivery systems (1920), bus lines (1927), trucking (1929).

- A series of regulatory “crises” ensued after the East Texas field was discovered in 1930.
East Texas Field ...  
The First Texas Oil Boom (1930)

- Huge!
  - 45 miles long by 12 miles wide, extending across five counties
    - 7 billion barrels originally in-place, 5.4 billion barrels produced to date
  - Less than a year after discovery:
    - Producing > 1 million barrels of oil per day
    - A new well was being completed every hour!
  - Kilgore at one time had 1000 producing oil wells in its downtown.

- Poorly understood (at the time) geologic trap (interestingly, source rocks are Eagle Ford shale)
  - Major companies failed to acquire leases

- Regulatory issues were complicated by the (controversial and poorly understood at the time) strong waterdrive

- Oil prices fell from $1.10 per barrel to less than $0.10 per barrel

- So much chaos (caused by large diversity of ownership) that in 1931, Texas Gov. Sterling sent in the National Guard and Rangers to enforce martial law
A Brief History of the TRRC (cont.)

- Subsequent legislation established the Commission’s right to prorate oil, eventually for both physical and economic reasons
  - Consistently sought to protect independent oil companies and mineral rights owners from unrestrained competition
    - Rationale – unregulated production brings chaos – i.e., normal economic considerations are precluded because oil is discovered, a problem exacerbated by the legal principal of rule of capture
- From 1930-70 the TRRC managed the world’s oil surplus
  - “Prorating” production to match market demand
TRRC Politics

• Part of Texas’ plural executive, which includes:
  ➢ Secretary of State (appointed by Governor)
  ➢ Lieutenant Governor
  ➢ Attorney General
  ➢ Comptroller of Public Accounts
  ➢ Commissioner of the General Land Office
    ✓ Largest mineral rights owner in Texas
  ➢ Commissioner of Agriculture
  ➢ Railroad Commissioners (3)
  ➢ State Board of Education (15, elected from districts)

• Railroad Commissioners are elected to rotating 6-yr terms, one every 2 years.
Current Commissioners

• Wayne Christian (2022)
  ➢ Financial planner and former Texas House Representative, Center
  ➢ Stephen F. Austin University Bachelor of Business Administration
• Ryan Sitton (2020)
  ➢ Asset Integrity (mechanical) engineer from Houston
  ➢ Texas A&M BS Mechanical Engineering
• Christi Craddick, Chair (2018)
  ➢ Attorney, Midland native, daughter of Tom Craddick (former Speaker of Texas House of Representatives)
  ➢ UT Plan II, Law School graduate
• The only petroleum engineer to serve as Railroad Commissioner (1947-63) was Bill Murray, UT MSPE 1937
Political Idiosyncrasies

• Having three heads, the Railroad Commission is the only statewide executive position on the ballot every two years.
• The Commission has an avowed dual role as industry champion as well as its regulator.
  ➢ Institutionalized regulatory capture
• Most important regulatory agency in Texas government
  ➢ Directly responsible to voters, but it continues to operate with a misleading name.
  ➢ Fewer than 5% of voters are aware of its duties
How the TRRC Views Itself
How the Oil & Gas Industry Views the TRRC
How the Public Views the TRRC
Railroad Commission is broken

EXPRESS-NEWS EDITORIAL BOARD: MAY 9, 2014: Updated: May 9, 2014 1:35pm
Regulatory Challenges

• Fracking fears
  - Groundwater contamination
  - Air quality from natural gas leaks
  - Earthquakes from wastewater disposal
• Conflicting property rights
  - Urban drilling
  - Eminent domain
• Rapidly advancing shale technology
• Transparency and reform

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Fracking Has Entered the Public Discourse

We're going to start fracking under our biggest competitor's headquarters.

My plan is to pollute their water and generate earthquakes to destroy their campus.

The project code name is "fracking awesome."

Catchy
How the Oil & Gas Industry Views Fracking
How the Public Views Fracking
Almo Aerospace Ltd. announced today that it has completed a $2.9 million investment in air quality technologies. The investment will be used to develop new products that reduce air pollution from industrial facilities.

The investment is part of a broader effort by Almo Aerospace Ltd. to address the growing concern over air quality in urban areas. The company has already developed several innovative technologies that can help reduce emissions from power plants and other industrial facilities. These technologies are expected to be ready for commercialization within the next few years.

Almo Aerospace Ltd. is headquartered in Boston, Massachusetts and has operations in several countries around the world. The company is committed to developing technologies that can help improve air quality and reduce the impact of industrial facilities on the environment.
Regulators Close Case on Flaming Texas Water, Researcher Says Not So Fast

MAY 30, 2014 | 11:19 AM
BY MOSE BUCHELE

Near Weatherford, TX
Near Azle/Reno, TX

After quakes, Texas Railroad Commission considers stricter rules on drilling

By JAMES OSBORNE
Staff Writer
josborne@dallasnews.com
Published: 12 May 2014 09:12 PM
Updated: 12 May 2014 09:48 PM

State oil and gas regulators are considering stricter rules for drillers after a series of earthquakes in North Texas less than six months ago.
Critics say new Railroad Commission rules on common-carrier pipelines don’t adequately protect landowners

Marissa Barnett

Published: December 5, 2014 10:59 am

AUSTIN — Oil and gas regulators will soon require pipeline operators to provide sworn testimony and supporting documents in...
Shale Activity in Texas

What happened to Dallas and Ft Worth?
Conflicting Property Rights

• Expanding geographic footprint of shale production means increasing encroachment into residential and commercial areas.
  ➢ Even though per-well footprint is greatly diminished

• Surface rights are increasingly severed from mineral rights
  ➢ Mineral rights are legally dominant in Texas

• Common carrier pipelines have almost unlimited authority to seize land.
  ➢ Few incentives to minimize landowner impact
Conflicts Resolved or Not?
Dissecting Denton: How a Texas City Banned Fracking

by Jim Malewitz | Dec. 15, 2014 | 12 Comments

*This story was also published in *Politico Magazine.*

DENTON — Cathy McMullen taps the brakes of her Toyota Prius after driving through a neighborhood of mostly one-story homes in Denton, about an hour northwest of Dallas. “There,” she says, nodding toward a limestone wall shielding from view a pad of gas wells. McMullen, a 56-year-old home health nurse, cruised past a stretch of yellowed grass and weeds. “They could have put that pad site on that far corner right there,” she says, pointing ahead. “The land’s all vacant.”

Instead, the wells sit on the corner of Bonnie Brae and Scripture Street. Across the way: Texas Health Presbyterian Hospital. Across another street: the basketball court, picnic tables and purple playground of McKenna Park. That was where Range Resources, a company based in...
House Bill 40 (84th Legislature)

- Response to 2014 Denton fracking ban passed Nov. 2014
- HB 40 expressly preempts local regulation of oil and gas:
  - “… a municipality or other political subdivision may not enact or enforce an ordinance or other measure ... that bans, limits, or otherwise regulates an oil and gas operation ...”
  - Exceptions, any ordinance that:
    - “regulates only aboveground activity related to an oil and gas operation … including a regulation governing fire and emergency response, traffic, lights, or noise, or imposing notice or reasonable setback requirements” and
    - “is commercially reasonable” and
    - “does not effectively prohibit an oil and gas operation conducted by a reasonably prudent operator” and
    - “is not otherwise preempted by state or federal law.”
- Went into effect 18. May. 2015
  - Vantage Energy resumed fracking operations 01. Jun. 2015
A Few Sunset Commission Transparency
Recommendations for the TRRC

- Change the name to the Texas Energy Resources Commission
- Limit campaign contributions to 1.5 yrs before an election rather than throughout full six-year terms
- Prohibit Commissioners from accepting contributions from parties with contested cases
- Require resignation when a Commissioner becomes a candidate for another elected office
- Require the Commission to adopt a more robust recusal policy
- Transform the TRRC into an agency governed by a part-time appointed board
- Transfer the Commission’s enforcement hearings to the State Office of Administrative Hearings
- Transfer gas utility regulation to the Public Utility Commission
A Few Recommendations to Consider for the Texas Railroad Commission

- **Transparency**
  - Change the name
  - Abandon Commission’s role as oil & gas industry champion

- **Regulatory reform**
  - Shed some current responsibilities, *e.g.*, natural gas rate setting, pipeline safety and permitting
  - Sunset review all regulations

- **Address urban drilling problems, *e.g.*, recommend**
  - Block grant fraction of severance taxes to local jurisdictions
    - So that risks and rewards are appropriately reconciled

- **Address property rights**
  - Increased attention to surface property rights
    - Including recommendations for statutory changes

- **More aggressive focus on earthquakes**
- **Recommend changes in Texas statutes to better balance the rights of surface and mineral owners**
Shale Technology Challenges

• Traditional view of allowables and well spacing are outdated.
• Technology is continuing to advance rapidly.
  ➢ TRRC technical staff will be challenged.
• It is unclear how the TRRC will make the transition to shale development as analogous to manufacturing.
Questions?