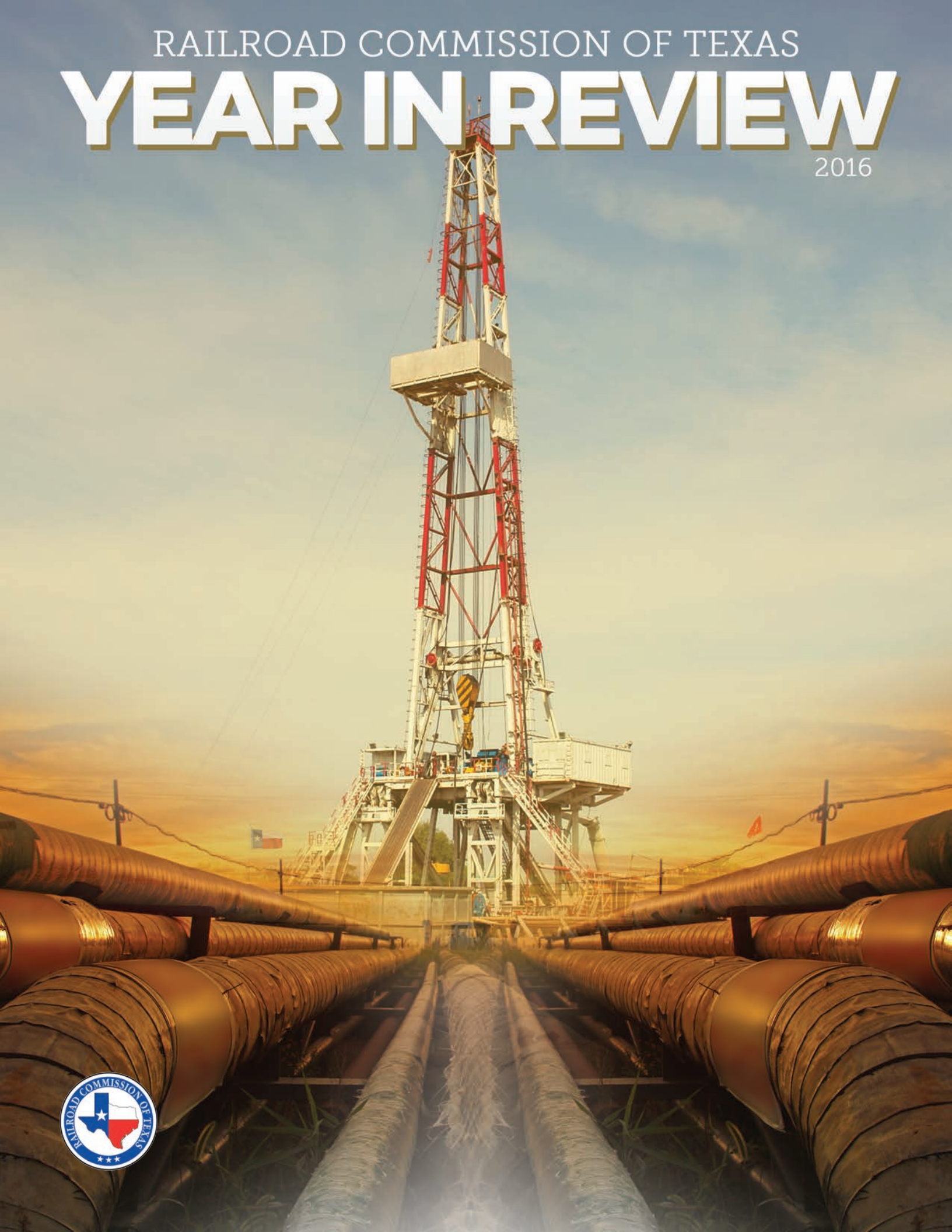
RAILROAD COMMISSION OF TEXAS

# YEAR IN REVIEW

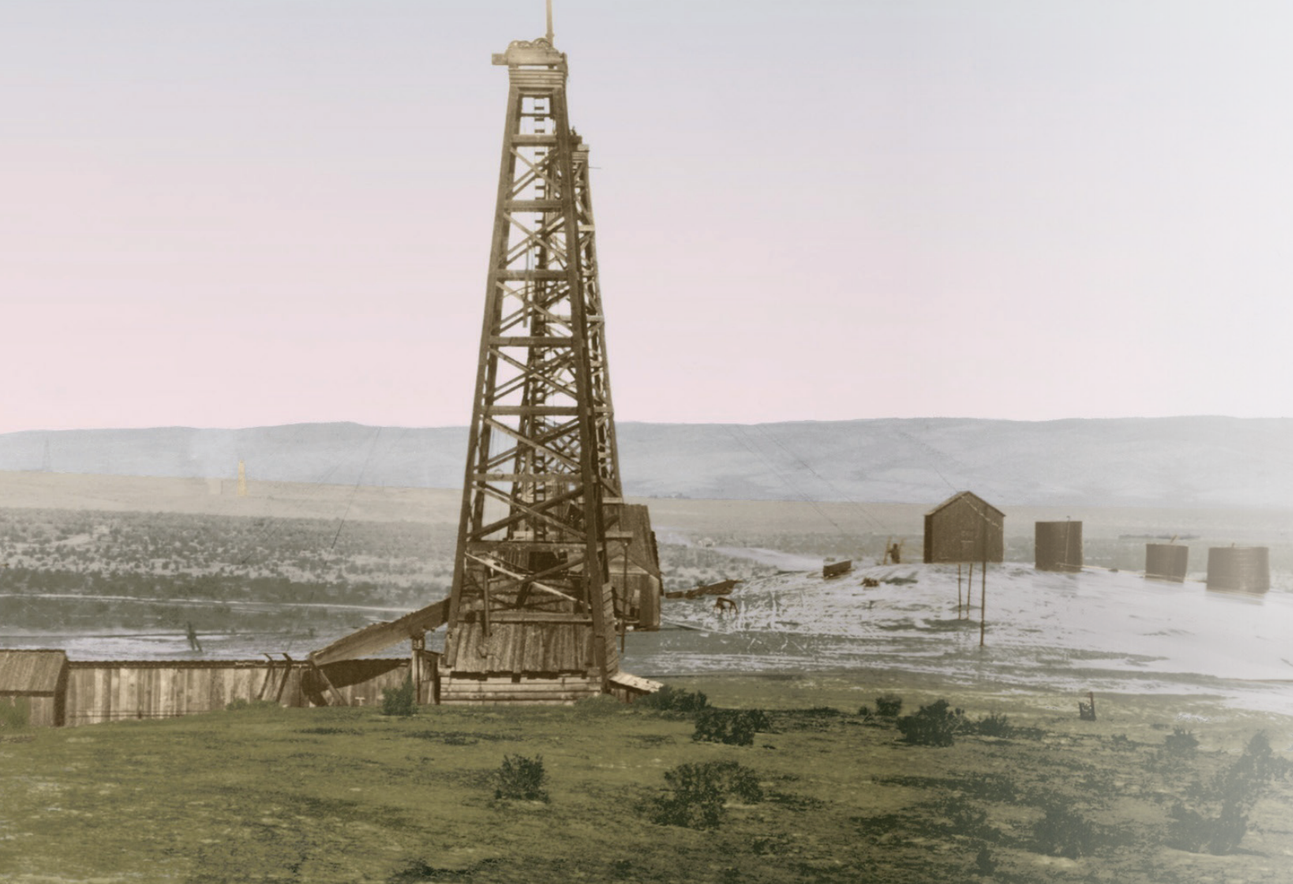
2016



## RAILROAD COMMISSION OF TEXAS MISSION STATEMENT

The Railroad Commission serves Texas through:

- our stewardship of natural resources and the environment;
- our concern for personal and community safety; and
- our support of enhanced development and economic vitality for the benefit of Texans.



AS 2016 comes to an end, the Railroad Commission of Texas reflects on a year that brought significant milestones, exciting changes and a renewed commitment to protecting the public and our natural resources while maintaining a fair and stable regulatory environment.

During the past year the Commission celebrated its 125th anniversary, welcomed new leadership, made advancements in our use of technology, enhanced regulations and improved communication across all divisions of the agency to better inform the public of our responsibilities and activities.

The 2016 Year in Review highlights a few of the many accomplishments realized at the Commission. Each day almost 700 dedicated RRC employees working across the state commit to making Texas a better place to live. The Year in Review tells just a few of their stories and demonstrates the positive impact the work of the Railroad Commission of Texas has on the citizens of our great state.

David Porter
**COMMISSIONER**

Christi Craddick
**CHAIRMAN**

Ryan Sitton
**COMMISSIONER**

**RRC ACROSS TEXAS**

There are few things we Texans take greater pride in than the majestic, rugged beauty of our state. Railroad Commission staff regularly capture that beauty in photos from the field, where they work every day to ensure safe, reliable energy production.

**Caracara in South Texas**
by Engineering Specialist Steve M. | More photos at www.flickr.com/photos/txrrc

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# LEADING TEXAS

## THE RAILROAD COMMISSION OF TEXAS

is charged with regulating the oil and gas industry, gas utilities, pipeline safety, alternative fuels safety and surface coal and uranium mining. Established by the Texas Legislature in 1891, it is the state's oldest regulatory agency and recognized globally as the leader in energy regulation.

The Railroad Commission of Texas is led by three statewide officials elected to six-year staggered terms. Currently serving are Chairman Christi Craddick, Commissioner David Porter and Commissioner Ryan Sitton. They are responsible for overseeing the responsible development of the state's energy resources while protecting public health and the environment, preventing waste and conserving the state's lignite, oil and natural gas resources.

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**CHAIRMAN CHRISTI CRADDICK** is in the forefront of the newest wave of pragmatic conservatives in leadership roles across Texas. Raised in a strong conservative household, retained as legal counsel by prominent Texas firms, and shaped by more than a decade as a trusted political adviser, Christi has set a clear standard of integrity, self-reliance and innovation in her role as Chairman at the Railroad Commission of Texas.

Since her tenure on the Commission began in November 2012, Craddick has pushed to maximize the effectiveness and efficiency of an energy industry that is driving the state's unparalleled economic success. In the process, she has repeatedly proven that sensible regulations, careful listening and plain talk can foster innovation that has solidified Texas leadership in the energy sector.

Making it a top priority, Christi has worked to educate the public about the oil and gas industry and its impact in Texas. She has fought against Washington's one-size-fits-all environmental policies that would kill jobs and stifle energy production growth. Christi has advocated for recycling in the oilfields, helping to drive the percentage of reclaimed water upwards, an essential achievement in a state enduring a multi-year drought.

As part of her efforts to modernize the agency, Christi has championed an Information Technology (IT) overhaul for the Commission, seeking improvements that would upgrade the Geographic Information System, increase public access to the agency's data, and speed up inspections and permitting times.

A native of Midland, Christi earned both her Bachelor's Degree as a Plan II graduate and her Doctorate of Jurisprudence from The University of Texas at Austin. During her career as an attorney, she specialized in oil and gas, water, tax issues, electric deregulation and environmental policy.

Following the example of her father and mother, Craddick has been drawn to public service and politics. As president of a grassroots advocacy firm, she took the lead on work in coalition building in the public policy arena and development and implementation of issue strategies.

Christi serves her community as a member of organizations including the State Bar of Texas, University of Texas Liberal Arts Alumni Advisory Council, Southern States Energy Board, The National Petroleum Council and Dell Children's Medical Center Foundation. Christi resides in Austin with her daughter, Catherine, and is an active member of St. Austin's Catholic Church.

**Click to watch Chairman Craddick's Video**

**COMMISSIONER DAVID PORTER** was elected statewide by the people of Texas in November 2010 to serve a six-year term as Railroad Commissioner and was unanimously elected by his fellow commissioners to serve as Chairman of the agency from June 2015 to December 2016. Commissioner Porter has a strong and proven record of principle-driven free market, conservative leadership for Texas.

Since taking office, Commissioner Porter has been appointed to the Interstate Oil and Gas Compact Commission as the Official Representative of Texas and served as Vice Chairman of the organization in 2016. He is an advisory board member for the Texas Journal of Oil, Gas, and Energy Law. He also served as the Official Representative on the Interstate Mining Compact Commission from 2011 to 2014.

Upon taking office in 2011, Porter created the Eagle Ford Shale Task Force, the first of its kind at the Texas Railroad Commission, to establish a forum that brings the community together to foster a productive and forward-looking dialogue regarding drilling activities in the Eagle Ford Shale. The Task Force is comprised of local community leaders, elected officials, industry representatives, environmental groups, and landowners. The goal of the group is to open the lines of communication between all parties involved, establish recommendations for developing the Eagle Ford Shale, and promote economic benefits locally and statewide.

In 2013, Porter launched his Texas Natural Gas Initiative: a series of statewide events that bring stakeholders together to discuss business opportunities, challenges and regulatory barriers and solutions for natural gas conversion and infrastructure – focusing largely on the transportation and exploration and production sectors.

In recognition of his foresight and leadership, Porter was named "Man of the Year" by "The Oil & Gas Year," Eagle Ford, Texas 2013. He has also been recognized by Shale Oil & Gas Business Magazine and Unconventional Oil & Gas Magazine for his proactive efforts to implement policies that allow industry to safely, efficiently, and economically produce the energy that is needed to support Texans and the Texas economy.

Before taking office, Porter built a successful small business around his CPA practice in Midland, Texas, providing accounting and tax services to oil and gas producers, royalty owners, oil field service companies, and other small businesses and individuals.

Porter was born in Fort Lewis, Washington in 1956 while his father was serving in the US Army. He graduated magna cum laude from Harding University in 1977 with a bachelor's degree in accounting, and passed the CPA exam later that year. He became a Texas CPA in 1981, the same year he moved to Midland.

David met his wife, Cheryl, while attending Harding University, and they were married in 1979. They are the proud parents of one daughter and grandparents of three grandchildren.

**Click to watch Commissioner Porter's Video**

**COMMISSIONER RYAN SITTON** a native of North Texas, graduated from Texas A&M University where he earned a degree in Mechanical Engineering, and met his wife, Jennifer. Following college, Ryan went to work as an engineer in the energy industry.

In 2006 Ryan and Jennifer founded PinnacleART, an engineering and technology company focused on reliability and integrity programs for the oil, gas, and petrochemical industries.

Since its founding, PinnacleART has experienced sustained growth, expanding to over 600 employees and offering services around the globe. Inc. Magazine recognized Pinnacle in 2012 and 2013 as one of the top 1,500 fastest-growing privately held companies in the world. PinnacleART has also been part of the coveted Aggie 100, which celebrates and recognizes the fastest growing Aggie-owned businesses.

With over 20 years of experience in the oil, gas, and petrochemical industry, Ryan is considered a leading expert in his field. He's been an active member of several industry groups including: The Texas Alliance of Energy Producers (TAEP), American Society of Mechanical Engineers (ASME), and the American Petroleum Institute (API). Ryan has also served as an energy engineer expert in both regulatory and civil court cases.

Active in higher education, Ryan is a leader on Texas A&M's Mechanical Engineering Advisory Council, regularly working with leaders in Texas higher education to support the principles that will keep our state's institutions among the best in America.

Elected to the Railroad Commission on November 4, 2014 to a six-year term, Ryan won the general election with over 58% of the vote.

Ryan is a passionate conservative committed to putting his energy expertise to work for the people of Texas. As Railroad Commissioner, Ryan is working to make the commission more efficient and effective so Texas can lead America to energy independence. Ryan understands that the Railroad Commission exists to serve the people of Texas by keeping them safe while encouraging the responsible production of our natural resources. He also understands Texas, not the EPA or other federal agencies, should be responsible for overseeing the production of our natural resources and he is committed to fighting burdensome federal interference.

Ryan and his wife Jennifer have three children and are active members of St. Andrews Episcopal Church. A lifelong entrepreneur, Ryan enjoys developing different inventions, especially with his kids, and building all sorts of creations with the family's collection of over 100,000 Legos. He is deeply honored to serve as your Railroad Commissioner.

**Click to watch Commissioner Sitton's Video**

IN April 2016 the Railroad Commission of Texas celebrated its 125th birthday and its long, proud tradition of protecting public safety and natural resources. Current and former commissioners, legislators, retirees and staff joined to commemorate this significant milestone.

Anniversary highlights included district office celebrations across the state, an employee appreciation luncheon and a historical display at the Commission building in Austin.

**Click to watch the 125th Celebration Video**

RAILROAD COMMISSION OF TEXAS
SERVING TEXAS FOR 125 YEARS
★1891-2016★

**Blooming Spanish Dagger in Kleberg County**
by Engineering Specialist Steve M. | More photos at www.flickr.com/photos/txrrc

**Ichthyosaurs Preserved in the Eagle Ford Shale**
by Geologist James H. | More photos at www.flickr.com/photos/txrrc

# PROTECTING TEXAS

## THE COMMISSION'S HIGHEST PRIORITY

is to protect public safety and the state's natural resources through enforcement of state and federal laws governing the energy industry.

The Commission takes a comprehensive regulatory approach that includes permitting, monitoring and inspection processes to safeguard the public and the environment. Permit applications must meet stringent requirements and, in some cases, cannot be approved until after a hearings process. The Commission continues to improve its technology used for inspection and monitoring in the field, allowing inspectors to identify potential risks of pollution or threats to public safety more efficiently. Enforcement tools include assessing penalties, severing leases and rescinding permits to operate and produce hydrocarbons.

As industries regulated by the Commission rapidly evolve in their development and use of science, technology, and best practices, the Commission is working to streamline processes and eliminate operational inefficiency.

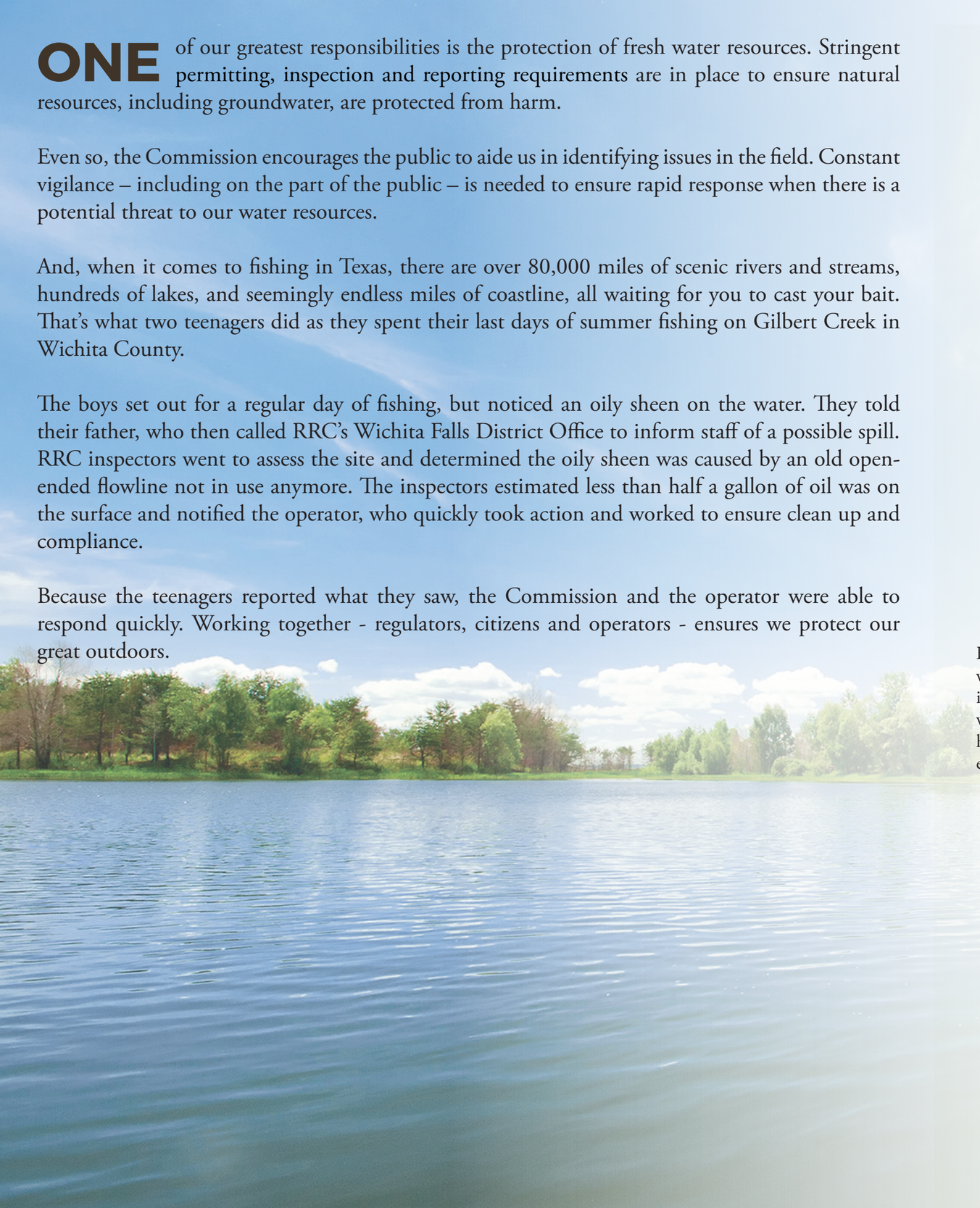
**ONE** of our greatest responsibilities is the protection of fresh water resources. Stringent permitting, inspection and reporting requirements are in place to ensure natural resources, including groundwater, are protected from harm.

Even so, the Commission encourages the public to aide us in identifying issues in the field. Constant vigilance – including on the part of the public – is needed to ensure rapid response when there is a potential threat to our water resources.

And, when it comes to fishing in Texas, there are over 80,000 miles of scenic rivers and streams, hundreds of lakes, and seemingly endless miles of coastline, all waiting for you to cast your bait. That's what two teenagers did as they spent their last days of summer fishing on Gilbert Creek in Wichita County.

The boys set out for a regular day of fishing, but noticed an oily sheen on the water. They told their father, who then called RRC's Wichita Falls District Office to inform staff of a possible spill. RRC inspectors went to assess the site and determined the oily sheen was caused by an old open-ended flowline not in use anymore. The inspectors estimated less than half a gallon of oil was on the surface and notified the operator, who quickly took action and worked to ensure clean up and compliance.

Because the teenagers reported what they saw, the Commission and the operator were able to respond quickly. Working together - regulators, citizens and operators - ensures we protect our great outdoors.



## HOW RRC PROTECTS WATER

- Requires well surface casing be set at least 25 feet below the depth of the base of usable quality water
- Prevents spills and blowouts by enforcing requirements for drilling, casing, cementing, well control and fracture stimulation
- Mandates specific groundwater protection depths for each new well
- Mandates public disclosure of chemicals and water volumes used in hydraulic fracturing
- Conducts inspections, ensures compliance and responds 24/7 to emergencies
- Requires and enforces the cleanup of spills that may threaten water resources
- Ensures oilfield waste is managed in a manner that will not cause harm to the environment
- Encourages recycling of oil and gas fluids to reduce the use of surface and groundwater resources
- Serves on the Ground Water Protection Council and the Texas Groundwater Protection Committee to optimize water-quality protection
- Serves on Interstate Oil and Gas Compact Commission advocating for environmentally-sound ways to increase supply of American energy

**ALTHOUGH** the majority of oil and gas wells that are no longer productive are plugged by the responsible operators, some are not. Abandoned wells are a great concern to the Commission because they could pose a potential threat to groundwater and public safety. As these wells are identified, the Commission intervenes to safeguard the public and the environment.

Since 1984, the RRC has plugged more than 35,000 wells using fees and penalties paid by oil and gas operators, not Texas taxpayers. Deposited in the Oil and Gas Regulation and Cleanup (OGRC) Fund, these fees give the Commission the financial ability to plug abandoned oil and gas wells and remediate these sites throughout Texas.

Commission inspectors locate abandoned wells through routine lease inspections or through landowners' complaints. The Commission then investigates ownership of the well to determine if it truly is abandoned.

After the Commission deems a well abandoned, inspectors prioritize the well for the state funded plugging list. There are five priority levels for an abandoned well, with Priority 1 presenting the highest risk to public safety or environmental quality.

Priority 1 wells are the first to be repaired or plugged. Inspectors then make a recommendation and seek approval to plug the well with the Commission's OGRC funds. When possible, the Commission will work with the Texas Attorney General's Office to recover plugging costs from the responsible operator.

Oil Field Cleanup Program Annual Report for Fiscal Year 2016
http://www.rrc.texas.gov/media/37219/ogrc-annual-report-2016.pdf

**Click to watch Well Plugging Video**

**544** Number of orphaned wells plugged with the use of state managed funds

**$8.5 million** Amount of state managed funds spent plugging the wells

**$15,507** Average cost per well plugged

**9,296** Number of abandoned wells plugged by industry during that same time

**WITH** more than 439,000 miles of pipeline in the ground, Texas has the largest pipeline infrastructure in the nation. RRC oversees pipeline safety in Texas with rules and protocols in place to keep pipeline infrastructure safe and reliable.

RRC's Pipeline Safety department has jurisdiction over intrastate pipelines, those that begin and end within the state's borders. Interstate pipeline safety falls under the jurisdiction of the Pipeline and Hazardous Materials Safety Administration (PHMSA), a federal agency.

However, in the event of a pipeline spill, the Commission's Oil and Gas division oversees cleanup and remediation for both intrastate and interstate pipelines. RRC also has the authority to assess penalties related to pipeline spills resulting in contamination in Texas.

The Commission's Pipeline Damage Prevention Program (PDPP) works year-round, statewide to educate Texans that they must call 811 before digging. Whether you are planting a tree or installing a deck, Texas law requires you to call 811 before digging to have pipelines and other utilities marked by professionals. Anyone responsible for striking a pipeline during digging operations is also required by law to notify the RRC within ten working days of the incident. This important process helps prevent injuries, property damage and inconvenient outages.

RRC wants to educate industry and the public about the importance of calling 811 so that hazardous conditions and costly penalties are reduced. While the number of damages per one thousand 811 locate tickets has decreased from 4.73 percent to 3.19 percent over the past five years, the Commission remains committed to educational outreach.

In FY 2016, RRC staff took part in the Sunbelt Builders Show in Grapevine and the Nursery/Landscape Expo in Houston, providing building contractors and landscape professionals with educational information about the importance of calling 811 before you dig.

In 2016, assessed almost $2.7 million in penalties on pipeline operators and another $4.6 million on excavators causing pipeline damages.

In 2016, conducted 27 presentations in 20 Texas communities reaching over 3,200 contractors, excavators, plumbers and pipeline operators.

Estimates 22 percent of pipeline damage is caused by people digging with hand tools.

**RRC PIPELINE SAFETY DIVISION**

Regulates more than 439,000 miles of active pipeline supporting our state's energy needs.

Conducted more than 3,300 safety inspections and investigations in FY 2016.

## RRC ENFORCEMENT TOOLS

Every organization conducting oil and gas operations under the Railroad Commission's jurisdiction must file a Form P-5 "Organization Report" with the Railroad Commission. This form must be filed annually, and the annual filing of a P-5 requires a statutory filing fee with a surcharge. Well operators are required to file financial security in the form of a bond, letter of credit, or a cash deposit.

The Commission has the right to deny the P-5 filing or renewal and may rescind the P-5 at any time if the operator is found to be in violation of Commission rules. Denial of a P-5 results in the operator no longer being able to conduct business in Texas and serves as a powerful enforcement tool for the Commission.

Another powerful enforcement tool used by the Commission is the lease severance process. Operators found to be in violation of Commission rules may have their lease severed, meaning the operator is prohibited from transporting or selling any oil or gas from the lease. Gas leases have one well per lease but oil leases may have dozens, hundreds, or even thousands of wells. There may be a problem with only one well, but severance applies to all wells on the lease. Operators are also prohibited from producing the wells and storing product in tanks for future transport. Lease severance halts work on the lease resulting in an immediate and significant financial loss for the operator.

The lease severance process is an extremely effective enforcement tool that results in quick and cost-effective compliance with Commission rules.

In FY 2016, 85.9% of violations were corrected when an operator received notice their lease would be severed. Another 5.8% were resolved following issuance of a severance/seal order leaving only 8.3% unresolved and requiring further enforcement action by the Commission.

## NEW SELF-AUDIT GUIDELINES

RRC recently approved guidelines that incentivize operators to conduct voluntary audits of their regulated facilities and operations. The self-audit guidelines were developed by the Commission's Office of General Counsel as part of the Texas Oilfield Relief Initiative, to encourage proactive identification and correction of possible health and safety violations and compliance with RRC rules. The guidelines were adopted by the Commission pursuant to the Texas Environmental, Health, and Safety Audit Privilege Act.

Under the self-audit guidelines, operators may claim immunity from certain violations through self-identification, reporting and remediation of any such issues. Immunity extends to administrative penalties, but does not apply to violations determined to be intentionally or knowingly committed, recklessly committed, or which resulted in substantial economic benefit. Additionally, the self-audit may not take longer than six months without approval by the Commission.

These guidelines are expected to assist operators in assuring safe and compliant operations through voluntary self-audits. Since adoption of the Guidelines, the Office of General Counsel has been notified of several new self-audits to be conducted under this initiative.

**$8.6 million** Total fines assessed

**3,893** Enforcement Dockets

**$4 million** Assessed for oil and gas and LP-Gas rule violations

**$4.5 million** Assessed for Pipeline Damage Prevention Penalties

## IN 2016, RRC PUT NEW TECHNOLOGY

into the hands of our oil and gas field inspectors, giving them significantly greater inspection and monitoring capabilities, and improving their efficiency.

Working in partnership with the Oil and Gas Division's field operations personnel, RRC's Information Technology Services Division developed the Inspection, Compliance and Enforcement (ICE) reporting system. ICE is a web-based system that allows field inspectors the ability to file inspections on a laptop in the field without the need for internet connectivity and transfer them to the the district office when connectivity is available.

The ICE application also provides Commission inspectors with access to comprehensive, real-time data to help determine compliance while on site, rather than wait until they return to a district office. The result is a more efficient and robust inspection process that allows inspectors to be completely mobile.

ICE captures inspection data at both the lease and well level. Gas leases have one well per lease but an oil lease many have many wells. Information collected at the well level is now much more detailed and can be processed more efficiently.

ICE also allows the inspector to document the specific subsection of a rule in violation. Previously a rule violation was noted at the highest level, with details contained in a written narrative.

For example, the inspector may have noted a violation of Rule §3.3, Identification of Properties, Wells, and Tanks. In order to know which sign was in violation - the sign at the principle entrance to the lease, at the well site or on a tank - it was necessary to reference the written narrative. With ICE, the inspector simply clicks a button to indicate the exact subsection of the rule, so the inspector can indicate a violation of Rule §3.3 (2) to specify the violation is related to signs posted at well sites.

Additional features include the ability to capture the inspectors' description of violations and attach photos and documents related to the inspection. When violations are referred for penalty action, the data collected in the ICE system is used to assess penalties against operators.

### RRC PROTECTS LAND AND MINERAL OWNER RIGHTS

RRC's hearings process is critical to the effective administration of the Commission's regulatory programs provide a legal forum for due process hearings. Hearings address numerous concerns including protested oil and gas enforcement cases, protested permit applications for facilities such as disposal wells, and changes in field rules or field consolidations.

RRC hearings are overseen by a legal examiner and a technical examiner who review evidence presented by both sides. Legal examiners are administrative law judges and technical examiners are engineers, geologists, and environmental scientists. This in-house expertise is critical to the effective administration of RRC's various regulatory programs. The Commission takes complainants and their protests seriously and expends a tremendous amount of resource to address their concerns.

**436k** Oil and gas production and injection wells in Texas

**10.4k** Drilling permit applications processed

**1.4k** Injection Well Permits

**124k** Inspections

**Donkeys in Concho County**
by Geoscientist Kathryn W. | More photos at www.flickr.com/photos/txrrc

**Wild Horses in Culberson County, TX**
by Engineering Specialist Cole F. | More photos at www.flickr.com/photos/txrrc

# PRESERVING TEXAS

## RAILROAD COMMISSION STAFF

are at work in the field every day across Texas working to preserve our natural resources. Whether they are working to turn an abandoned oil field site into a thriving nature preserve, reclaiming dangerous or environmentally harmful abandoned mine sites, or encouraging operators to recycle oil and gas waste, the Commission's environmental programs clean up and preserve our natural resources for future generations.

**TEXAS** has a long and proud history of oilfield operations. Many former oilfield properties lie dormant or underutilized due to real or perceived contamination. Sites such as these, known as Brownfields, also include land or buildings containing pollutants from industries unrelated to energy production, such as factories, grain elevators, industrial landfills, and dry cleaning facilities.

The Commission's **Brownfield Response Program (BRP)** restores Brownfield properties in communities across Texas by increasing the redevelopment potential of abandoned oil and gas sites. The RRC BRP provides technical and financial support for redevelopment with little to no cost to local governments, non-profit organizations, tribes, universities, school districts or economic development corporations through a Brownfield grant from the U.S. Environmental Protection Agency.

The Brownfields Response Program is one of several environmental cleanup programs at the Commission. Other environmental cleanup programs include the Voluntary Cleanup Program, the State Managed Cleanup Program, and the Operator Cleanup Program. More information can be found on the Commission website at
**http://www.rrc.texas.gov/oil-gas/environmental-cleanup-programs/site-remediation/**

## TURTLE BAYOU

In 2016, the Railroad Commission's Site Remediation section helped turn an historic, abandoned oilfield site into a thriving nature preserve which provides a coastal wildlife habitat and protects water quality. Turtle Bayou Nature Preserve, a 511-acre preserve located between Houston and Beaumont celebrated its grand opening in October.

The preserve is part of the Turtle Bayou Oil Field discovered in 1952, which had abandoned oil wells and former oilfield waste pits. The abandoned oil wells were plugged using $487,000 from the RRC's Oil and Gas Regulation and Cleanup fund (OGRC), which is financed by industry fees and penalties. An additional $49,793 from the OGRC and a $176,300 federal Brownfield grant also were used by RRC Site Remediation to assess the site and ensure it was cleaned up to standards necessary for wetland habitat

The preserve is owned by the Chambers-Liberty Counties Navigation District. Galveston Bay Foundation holds a conservation easement on the property to permanently protect the land, which provides opportunities for hiking, birding and kayaking.

**THE** Surface Mining & Reclamation Division (SMRD) of the Railroad Commission has three areas of primary regulatory jurisdiction: **Surface Coal Mining and Exploration, Uranium Exploration and Abandoned Mine Lands.**

Surface Coal Mines

SMRD oversees the permitting, inspection and enforcement of rules and regulations related to the exploration, production of surface coal mining, as well as land reclamation of coal mines. In 2016, SMRD maintained oversight of 29 coal mining permits. Each mine is inspected an average of once per month . Operations are located primarily along a path from Sulphur Springs through Henderson to Elgin and on to Eagle Pass. Texas is the 7th largest coal producer in the nation. Coal mined in Texas is used primarily for electric generation and represents about 35% of all electric generation in the state.

Uranium Mining

In 2016 there were no active uranium mine operations in Texas. But the Commission does currently monitor 12 uranium **exploration permits**. Active uranium exploration sites are inspected monthly by Commission staff.

Abandoned Mine Land

This program works to reclaim and restore land and water resources and to protect the public from the adverse effects of pre-law (August 3, 1977) mining practices. This program is fully funded by the federal Office of Surface Mining Reclamation and Enforcement (OSM) through a production tax levied on active coal mining operations in Texas.

As of February 2016, the Texas Abandoned Mine Land Reclamation Program has reclaimed 2,827 acres of abandoned surface mines and closed 462 dangerous abandoned underground mine openings at a construction cost of approximately $46 million.

Reclamation of abandoned surface mines usually consists of the following: earthwork (highwall reduction and spoil recontouring) burial or treatment of unsuitable spoil (usually acidic or naturally occurring radioactive spoil) and installation of erosion and water control structures and revegetation. Dangerous abandoned underground mine openings are usually closed by one of the following methods: backfilling, capping (concrete or metal grating) or metal gating.

## 2016 SURFACE MINING AND RECLAMATION DIVISION ACCOMPLISHMENTS

- Approved six bond release applications covering a total of about 14,231 acres
- Approved permit renewal applications for two permits
- Processed 190 permit revision applications, 97% of which were completed within statutory time frames
- Processed 436 monitoring reports and other projects related to permit maintenance
- Conducted 492 inspections of permitted lignite mines
- Processed 15 uranium exploration applications
- Responded to over 150 public inquiries
- Coordinated with several other State agencies in Light Detection and Ranging data acquisition for mapping
- Planted 110 acres of abandoned mine land to permanent vegetation
- Graded 29 acres of abandoned mine land, including disposal of 16,630 cubic yards of radioactive spoil material

## WATER RECYCLING

rules put in place by the Railroad Commission in 2013 are having a big impact today. The rules accelerate recycling efforts by encouraging recycling of produced fluids, including hydraulic fracture flowback fluid and produced formation fluid. The regulations provide a clear guide to recycling such fluids, and promote greater water conservation.

Fasken Oil and Ranch, Ltd. is using Commission rules as a guide to water recycling operations on the company's 165,000-acre C Ranch in the Permian Basin. Fasken operates 568 producing wells, each of which must be hydraulically fractured to produce oil and gas in economical quantities. These fracturing operations require approximately 45,000 bbls (1,789,200 gallons) of water in each well, and very little fresh water is located on the C Ranch.

Fasken began by using nano filtration technology to remove sulfate from water produced from the brackish (salty) Santa Rosa aquifer. The result? Fasken used processed Santa Rosa water in fracturing operations eliminating the use of approximately 5.2 million barrels of fresh water.

More progress was made in 2014 when a membrane unit was placed into operation. The membrane removes both sulfate and chloride, bringing brackish Santa Rosa water to a level usable for both drilling and cementing wells.

Fasken also recycles produced water, the water that is produced as a byproduct of oil and gas production. To date they have recycled over 5,550,000 oil barrels of produced water for fracturing operations. Approximately 4,000 oil barrels are now recycled per day, providing 100 percent of the water needed for fracturing operations.

Today, the use of processed Santa Rosa water combined with use of recycled produced water has eliminated the use of fresh water on the C Ranch for oilfield activity. Approximately 454,500 million gallons of fresh water that otherwise would have been used in drilling and completion operations has been left in the ground.

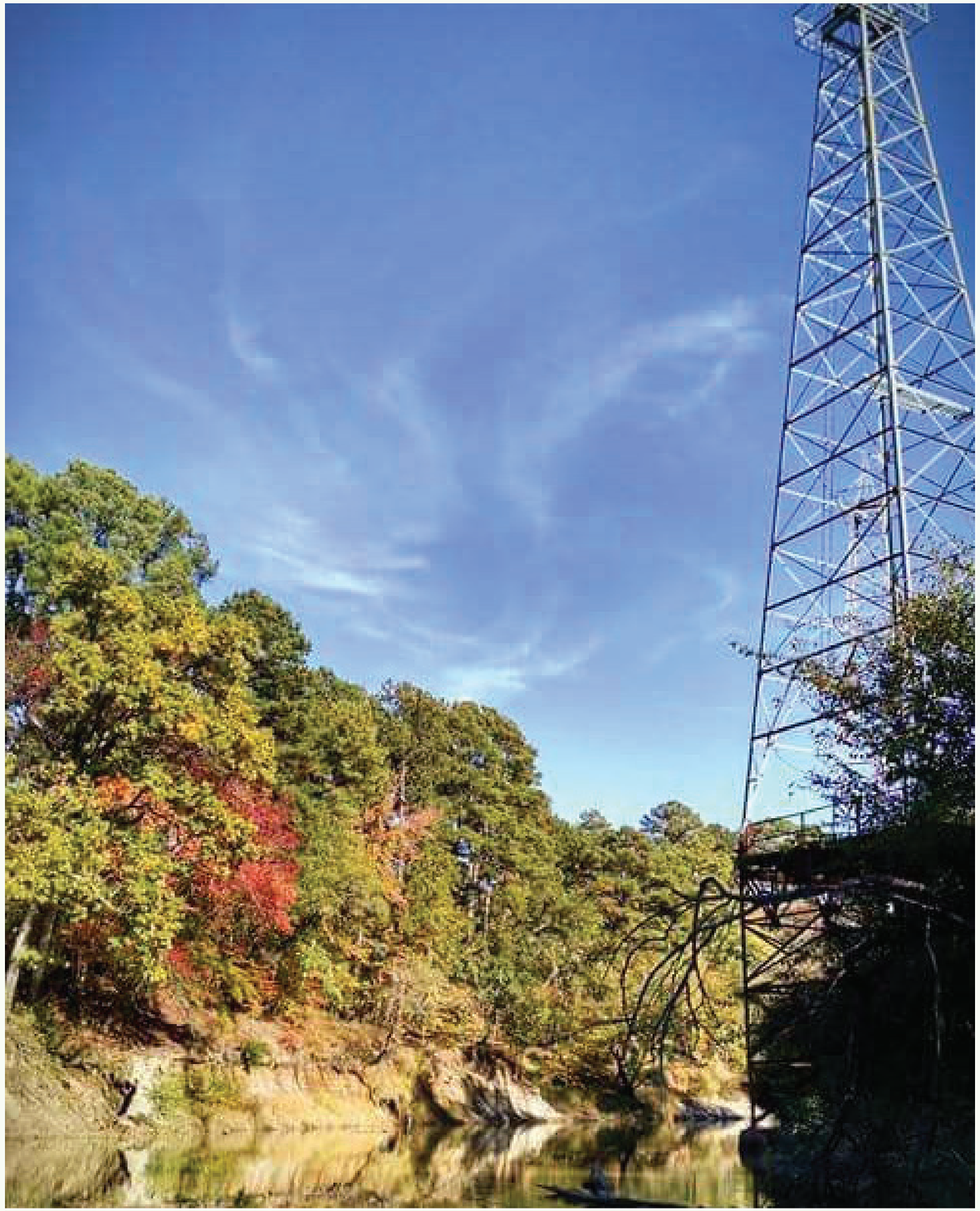
Looking ahead, Fasken estimates another 1,500 wells will be drilled on the C Ranch. Current use of Santa Rosa and recycled produced water will save an estimated 3.6 billion gallons of fresh water in future operations.

### RRC AND RECYCLING

The Commission continues to encourage operators to recycle oil and gas waste including water used in the production process. Commercial recycling rules focus on recycling drilling fluids and drilling muds for reuse in the well completion process. Recycled drilling solids can also be used as road base, reconditioned drilling mud and treated aggregate.

Fluid recycling may be authorized by rule or by permit. Wellbore fluids, such as produced formation water, may be treated and reused for downhole purposes without a permit. No permit is required for recycling mobile drinking wastewater for use as make-up water for cement and hydraulic fracturing fluid.

PHOTO: **FASKEN OIL AND RANCH, LTD.**



**East Texas Derricks on the Sabine River just North of Kilgore**
by Asst District Director  Dana M. | More photos at www.flickr.com/photos/txrrc

**Tumbleweed “Hat” on a Cow in Moore County**
by Engineering Specialist Charles D. | More photos at www.flickr.com/photos/txrrc

# ENGAGING TEXAS

## THE COMMISSION CONTINUES TO SEEK

new ways to encourage public engagement and increase educational outreach to inform Texans about its role in regulating the safe, responsible production of the state's natural resources.

Working with local governments and community partners, the Commission continues to engage new audiences and expand stakeholder communications. Programs such as the Pipeline Damage Prevention program and the Brownfields Response Program are now featured at events targeted to key audiences such as environmental/conservation groups, building contractors, landscapers and municipalities.

Electronic and social media provide extremely cost-efficient and increasingly effective communications platforms from which to provide the public and industry with important information about the Commission.

The Commission remains committed to providing timely, useful, relevant information to the public and all agency stakeholders.

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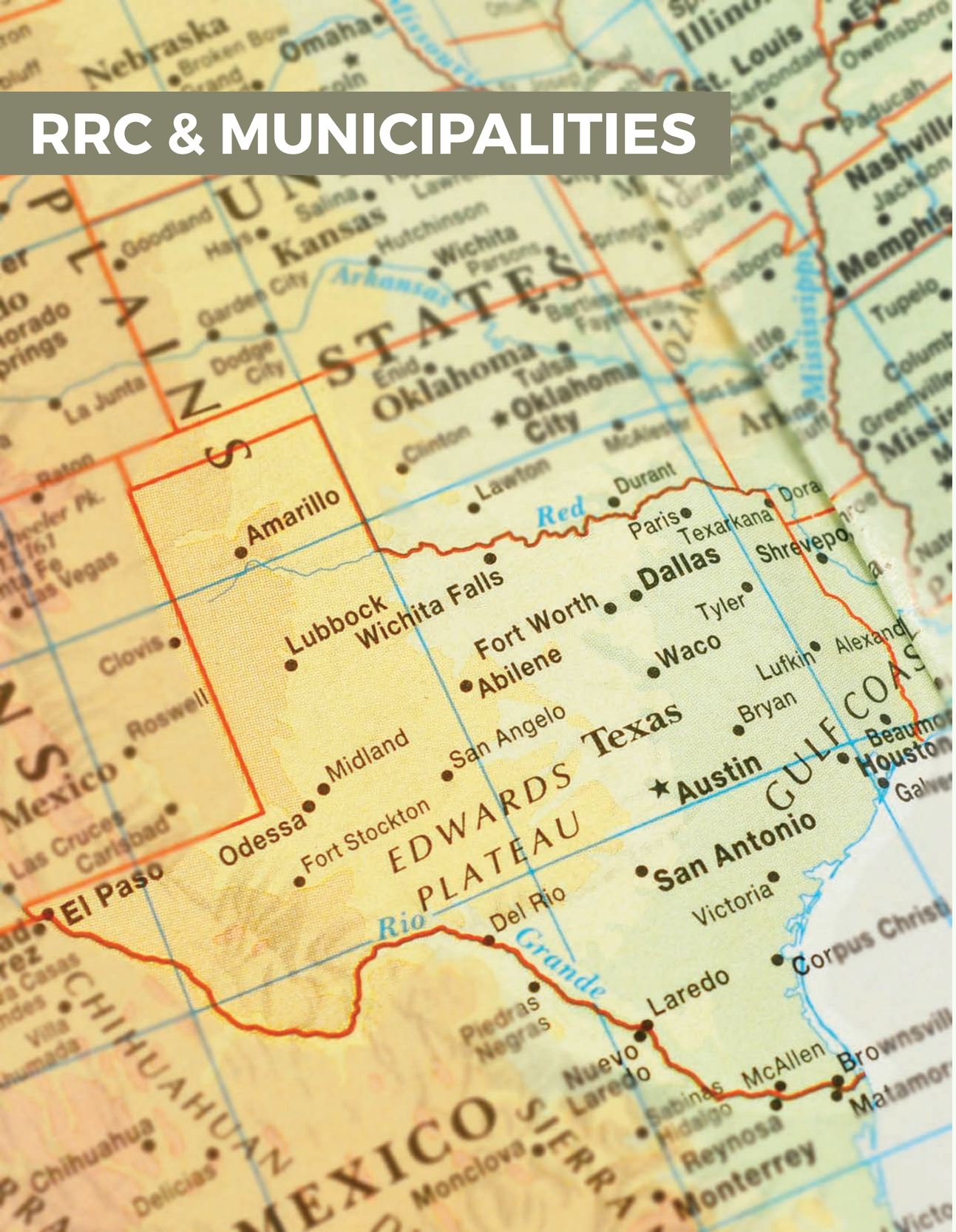


# RRC & MUNICIPALITIES

IN FY 2016, the Railroad Commission hit the road for a series of Government Outreach Workshops. The purpose of the workshops was to educate city government leaders on RRC rules, regulations, processes and policies, as well as strengthen relationships between the Commission and local regulatory partners.

The workshops brought together mayors, city managers and Texas legislators to learn more about the jurisdictions and responsibilities of the Railroad Commission, to understand the resources and expertise available to them through the RRC, and to ensure ongoing and open lines of communication between RRC and municipal governments.

The workshops also included a discussion on how RRC can work with municipal leaders to coordinate regulatory responsibility and effectively communicate issues of mutual importance.

Government outreach workshops were held in Midland, Houston, Corpus Christi, San Antonio, Kilgore, Wichita Falls, Pampa, Abilene and Laredo.

> I appreciate that you created the space and time to explain the RRC's purpose and function and how it engages communities.
>
> **Anna Alicia Romero**
> **Office of Senator Jose Menendez**

> I applaud the Railroad Commission for organizing this meeting and traveling here to provide this information.
>
> **Sharon Bailey Lewis**
> **City of Corpus Christi, Environmental Sciences**

**FOR** the first time, the Railroad Commission proudly took part in the nation's largest Earth Day celebration, in Dallas. Earth Day Texas drew a record attendance of more than 130,000 people to Fair Park in April. Expert staff from each major division within the Commission was on hand to visit with the public about our work to protect the environment.

Commissioner Ryan Sitton also took part in the Earth Day celebration. Commissioner Sitton hosted a one-on-one talk with Pioneer Natural Resources Executive Vice President Mark Berg about the state of the energy industry in Texas and all the work and innovation taking place to continually improve environmental protections.

The Commission continues to explore new ways and places to engage and educate Texans on our crucial role: protecting the environment and public safety through efficient, effective energy regulation. Events like Earth Day Texas allow Commission staff to directly communicate with attendees and share the important work the agency does in setting and enforcing rules for the energy industry.

Click to watch Earth Day Video

**EACH** year Railroad Commission staff provides information at conferences, seminars and workshops to educate and inform the public and stakeholders about duties and responsibilities of the agency. In 2016 Commission staff participated in more than 60 such events in 18 Texas cities plus Washington, D. C.

Audiences included Congressional committees, students at science, technology, engineering, and mathematics (STEM) schools, foreign dignitaries, industry groups, university researchers, municipal leaders and other government entities, emergency responders, and groundwater districts.

The Commission also expanded outreach efforts to connect with new and broader audiences:

- Earth Day Texas
- Texas Economic Development Council
- Texas Municipal League annual conference
- Sunbelt Builders Conference
- Nursery and Landscape Expo

These events gave RRC staff members the opportunity to provide educational information on programs ranging from Pipeline Damage Prevention to the Brownfield Response Program, as well as interact with the public and answer questions about the full scope of work taking place at the Commission to protect public safety and the environment.

Looking ahead, the Commission will continue to seek opportunities to share information and interact with Texans at events large and small across the state.

The Commission is recognized as the global leader in the regulation of oil and natural gas. Over the past year, RRC met with foreign delegations representing Argentina, Australia, Canada, China, Spain and Turkmenistan. These countries, and many others, understand effective regulatory practices ensure safe production of Texas' energy resources, protect the environment and prevent waste.

**WHEN** disaster strikes in Texas, Railroad Commission of Texas is among the many state agencies that responds, under the direction of the Texas Division of Emergency Management. Together, the State Operations Center (SOC), state agencies, volunteer groups and federal liaisons convene to identify, mobilize, and deploy state and volunteer group resources to respond to the emergency.

RRC staff are ready 24 hours a day, seven days a week to respond to emergencies related to oil exploration and production, intrastate pipelines and alternative fuels, including propane. Individuals can report an emergency to our toll-free, emergency number at (844) 773-0305. Although Commission employees are not emergency responders or law enforcement officials, they work closely with emergency responders to provide support in emergency situations.

During the spring and early summer of 2016, record rainfall led to flooding in many areas of the state. RRC's team of experienced staff were activated on two occasions to assist in the State Operations Center. RRC's mapping data and knowledge of cleanup and remediation response proved invaluable in responding to flooding in areas with oil and gas production.

RRC staff reviewed more than 5,000 aerial photos taken by the Civil Air Patrol for possible environmental impact resulting in approximately 70 locations being referred to Commission district offices for subsequent inspection and proper clean up.

Railroad Commission staff worked with residents of Lake Shore Estates in Lytle following a flooding incident that swept oilfield contamination into the neighborhood. Staff met with homeowners to answer questions and provide updates, and inspectors were on site to ensure the operator responsibly conducted cleanup and remediation activities. RRC also kept in close communication with the U.S. Environmental Protection Agency (EPA) keeping them updated on activity at the site.

In the event of a federally led emergency response, the RRC also participates in the U.S. Environmental Protection Agency (EPA) Region 6 Regional Response Team (RRT-6). The RRT-6 is co-chaired by the EPA and the Coast Guard and is comprised of members from fifteen federal departments and agencies, plus state government representatives from Arkansas, Louisiana, New Mexico, Oklahoma and Texas. The RRT-6 ensures that appropriate federal and state assistance is provided should a significant oil and hazardous substance incident occur within EPA Region 6 and that pollution incidents are cleaned up quickly and efficiently.

**TEXAS EMERGENCY MANAGEMENT CONFERENCE**

**The 2016 Texas Emergency Management Conference hosted by the Texas Division of Emergency Management provided an opportunity for the Railroad Commission educate approximately 3,000 emergency management professionals, elected officials and decision makers from across Texas on how RRC supports emergency responders in oil, natural gas, pipeline and alternative fuel related incidents.**

**Click to to watch the TDEM Conference Video**

PHOTO: **CHRISTOPHER GERE, TEXAS DEPARTMENT OF PUBLIC SAFETY**

## RRC AND ALTERNATIVE FUELS

The Commission's Alternative Fuels Safety department enforces both state statutes and the Commission's regulations of alternative fuels by licensing companies and individuals engaged in alternative fuel activities, providing training to those working in the alternative fuels industries, and conducting safety evaluations of stationary facilities and mobile equipment. In FY 2016 the Alternative Fuels Safety department led 194 certification classes attended by more than 2,800 students in 27 cities across Texas.

With more than 8,500 natural gas vehicles traveling Texas roads, the Commission is working to increase awareness and safety among our state's first responders. In 2016, the Commission hosted two Compressed Natural Gas and Liquefied Natural Gas Awareness Training sessions for first responders in Pasadena and Sweetwater. Approximately 165 first responders attended these workshops to learn about the physical and chemical properties of natural gas, natural gas vehicles, CNG/LNG refueling stations and firefighting techniques. Industry representatives also shared information about their local operations and gave tours of their fueling stations. Texas has seen a steady increase in the number of alternative fuels fueling stations. In 2012 there were 51 stationary CNG installations. By 2014 that number grew to 94, and today there are 146.

In Texas, military service members, veterans and military spouses seeking to obtain certification and company licensing to work with alternative fuels, including CNG, LNG and Liquefied Petroleum Gas (LPG, Propane, Butane), can receive a military fee exemption and will not be required to pay to take examinations or obtain exempt registrations and licenses. These licenses and certifications allow operators and individuals to work as vehicle technicians, service and installation technicians, retail/wholesale dealers, service station operators, and general installers and repairmen, just to name a few.

## STUDYING SEISMICITY

With the effort to study the possible relationship between disposal well activity and seismicity in Texas, Railroad Commission seismologist, Dr. Craig Pearson began his work on the TexNet Technical Advisory Committee. Committee members were appointed by Gov. Greg Abbott. The Committee will advise the University of Texas Bureau of Economic Geology on the TexNet Seismic Monitoring Program in its effort to collect data and study seismic activity in Texas.

The TexNet program is a $4.7 million program funded by the 84th Texas Legislature to increase the number of seismic monitoring stations around the state for data gathering purposes. The first portable reporting station was installed near Venus, Texas in September 2016.

## RRC AND U.S. BORDER PATROL

RRC Chairman David Porter and Commission staff met with representatives of the U.S. Border Patrol in the Rio Grande Valley to share information, discuss concerns related to border security and identify ways to work collaboratively to ensure protection of the state's energy resources and infrastructure. RRC field inspectors and U.S. Border Patrol officers shared best practices and discussed resources to assist efforts to reduce oil field theft.

## TEXAS IS COOKING WITH GAS

Every Texan who cooks on a gas stove or adjusts a thermostat on a gas heating system is directly affected by the work of the RRC.

RRC plays a role in the rates paid by Texas consumers for natural gas. Gas utilities apply to the city government to determine the rate to charge customers. When a city and a utility can't agree on the rate, either may appeal to the Commission which will then set the rates. People living in unincorporated areas of the state are protected directly by the Commission, which has exclusive jurisdiction over gas rates and services in these areas. The Commission also has original jurisdiction over "city gate" rates - the rates for natural gas charged by a supplier to a city distribution system.

Finally, the Commission's Utility Audit section ensures operators pay the natural gas tax as required and do not over charge customers. During FY16 RRC's Gas Services conducted 143 gas utility audits resulting in the identification of $104,947 in underpaid gas utility tax and $27,331 in domestic rate overcharges refunded to Texas consumers.

**THE** stars at night are big and bright, deep in the heart of Texas, and in 2016 the RRC worked with the McDonald Observatory and oil and gas operators in West Texas to keep it that way.

RRC staff led a collaboration between representatives of the observatory and the oil and gas industry to minimize the impacts of lighting practices at oil and gas sites on the important work of the scientists and students at the observatory. The growth of oil and gas drilling and production in the Permian Basin has generated light reflecting off the sky raising concerns by the McDonald Observatory about nighttime light pollution.

As a result of this collaboration, the RRC issued a Notice to Operators in February 2016 advising them to be aware of applicable outdoor lighting requirements and referring them to helpful resources. The Commission wants industry operators to understand that lighting solutions can be simple and cost effective, resulting in better visibility for the McDonald Observatory and at oil and gas production locations.

Industry operators active in a seven-county region have worked with the McDonald Observatory to adopt new lighting practices to help prevent ambient lighting from interfering with the highly sensitive and important scientific study conducted at the McDonald Observatory. By issuing the Notice to Operators the Railroad Commission is highlighting the importance of mitigating excessive light while improving visibility at the work site.

A press release and the Notice to Industry can be found on the Commission's website at **http://www.rrc.texas.gov/all-news/021716a/.**

PHOTO: **FRANK CIANCIOLO/MCDONALD OBSERVATORY**

**Pecos River Bridge on State Highway 90**
by Safety Inspector Alan M. | More photos at www.flickr.com/photos/txrrc

**Snow Falls on the Drive East on Highway 31 Near Kilgore, TX**
by Engineering Specialist Ronnie R. | More photos at www.flickr.com/photos/txrrc

# KUDOS

## WHAT PEOPLE SAY ABOUT RRC EMPLOYEES

**DEBORAH D.**

**- PRODUCTION AUDIT**

"The world needs more people like her when it comes to helping others."

**RICK B.**

**- ENGINEERING UNIT**

"(He) is that professional who is proficient, knowledgeable and goes out of this way to assist."

**LASHONDA H.**

**- GROUNDWATER ADVISORY UNIT**

"She helped us be cost effective and efficient which is very important to us. She has been an excellent representative of your department."

**MARGOT B.**

**- INJECTION, STORAGE PERMIT**

"If there exists recognition for a 'thumbs up – atta' girl' attitude I would recommend (her) for same."

**TINA K.**

**- ENGINEERING UNIT**

"I wanted you to know that (she) was exceedingly gracious in her help, something she did not 'have' to do, but did for us."

**BRYAN C.**

**- ENVIRONMENTAL PERMITTING**

"It is a pleasure to work with an agency leader who has the get-it-done attitude."

**MARY R.**

**- WELL COMPLIANCE**

"It is not often that people will take that much time out of their day to meet other's needs."

**JIM M.**

**- INJECTION, STORAGE PERMIT**

"We are very fortunate to have him available to help us as needed. He is truly an asset to your organization. "

**LARRY E.**

**- GIS WELL MAPPING**

"You have done an outstanding job."

**SONYA W.**

**- P-5 FINANCIAL ASSURANCE**

"She went beyond what most employees do in that she found a solution to my situation. For that, I am most grateful."

**ZACHARY A.**

**- WELL COMPLIANCE**

"We appreciate all of his help and efforts and we just wanted to make sure you all know what an asset you have on your team!"

WWW.RRC.TEXAS.GOV