RAILROAD COMMISSION OF TEXAS

Directional Surveys and Associated Issues

Keith May
Technical Permitting
Engineering Unit
Presentation Overview

Introduction
Survey Requirements
Submission Procedures
Engineering Review
Presentation Overview

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Thanks to advancements in drilling technology, drillers have incredible control and precision over their drilling operations.
Measurement while drilling or MWD tools allow the driller to “steer” the drill bit.

After each joint of pipe is added positional data is transmitted up the wellbore. What we end up with is X, Y and Z coordinates of the wellbore.
Even vertical wells can have substantial drifts from their intended direction.
An Example

Drilling a 5280’ horizontal with 3 degree error in a particular direction would result in offset of 276’ in that direction!

Only 3°!
An Example

Drilling a 5280’ horizontal with 3 degree error in a particular direction would result in offset of 276’ in that direction!

• Typical horizontals in Eagle Ford are thousands of feet in length.
• Typical lease line spacing is 330’.
• Must be in compliance with spacing rules.
The RRC has a job to do

Why must surveys and inclination reports be submitted?

• To insure lease line and wellbore spacing rules are being followed.
• Protection of oil and gas reservoirs
Where can I find the Rules?
Where can I find the Rules?

RRC Rules Email Service: You can now join the RRC Rules Email Service to receive email notifications of the RRC's rulemaking actions. The list is free; just provide an email address. For questions or comments, please contact us.

NEW! RRC Rulemaking Requirements and Procedures (PDF format)

[Red Box]
Railroad Commission of Texas Current Rules
April 17, 2014
Read More...

Emergency Rules
April 17, 2014
Read More...

Railroad Commission of Texas Proposed Rules
April 23, 2014
Read More...

Draft Proposed Rules for Informal Comment
April 23, 2014
Read More...

Railroad Commission of Texas Online Comment Form for Proposed Rulemakings
Where can I find the Rules?

Regulation Part 1. Railroad Commission of Texas

The official rules of the Railroad Commission of Texas are found in the Texas Administrative Code (TAC). Title 16, Part 1, Chapters 1 through 20. The TAC is maintained by the Office of the Secretary of State and is available online by clicking on the links below. The Railroad Commission's rules are located in Title 16, Economic Regulation, Part 1.

RRC Rules Email Service: You can join the RRC Rules Email Service to receive email notifications of the RRC's rulemaking actions. The list is free, just provide an email address. For questions or comments, please contact us.

Please send questions regarding the Railroad Commission's rules to the Office of General Counsel at gcwebmaster@rcr.state.tx.us.

NEW! Printable versions of certain chapters are now available in PDF format; click on the PDF link to see that chapter. Please note that the PDF versions include the official text of each chapter in effect on the date the PDF was produced, which is indicated at the bottom of each page. PDF versions of additional chapters will be added in the future.

Below is the list of Railroad Commission chapters currently in effect. Click on the chapter title to go to the list of subchapter and/or rules in that chapter:

Chapter 1: Practice and Procedure
Chapter 2: Informal Complaint Procedure
Chapter 3: Oil and Gas Division (PDF version 3/28/2014)
Chapter 4: Environmental Protection (PDF version 11/14/2013)
Chapter 5: Carbon Dioxide (CO2) (PDF version 3/31/2014)
Where can I find the Rules?

Texas Administrative Code

TITLE 16   ECONOMIC REGULATION
PART 1     RAILROAD COMMISSION OF TEXAS
CHAPTER 3  OIL AND GAS DIVISION

Rules

§3.1 Organization Report; Retention of Records; Notice Requirements
§3.2 Commission Access to Properties
§3.3 Identification of Properties, Wells, and Tanks
§3.4 Oil and Geothermal Lease Numbers and Gas Well ID Numbers Required on All Forms
§3.5 Application To Drill, Deepen, Reenter, or Plug Back
§3.6 Application for Multiple Completion
§3.7 Strata To Be Sealed Off
§3.8 Water Protection
§3.9 Disposal Wells
§3.10 Restriction of Production of Oil and Gas from Different Strata
§3.11 Inclination and Directional Surveys Required
§3.12 Directional Survey Company Report
§3.13 Casing, Cementing, Drilling, Well Control, and Completion Requirements
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Statewide Rule 3.11 (SWR 11)

SWR11 outlines the requirements for inclination and directional surveys.

Purpose: to accurately confine well location in 3-D space (X, Y, Z)

*Different survey combinations required depending on wellbore profile*
Survey Types

Inclination surveys
- Inclination and offset data only (Form W-12)
- No coordinates or directional data

Directional surveys
- Gyroscopic borehole survey (GYRO)
- Measurement while drilling (MWD)
- Provide coordinate data (X, Y, and Z)

Each survey type has different data and certification requirements. It pays to get it right the first time.
Statewide Rule 3.11 (SWR 11)

INCLINATION SURVEYS

Required of any well drilled/deepened with rotary tools

First data point shall not exceed 500’ deep

Data points not to exceed 1000’ apart

Outlines several exceptions to the rule based on depth and spacing to lease lines
Statewide Rule 3.11 (SWR 11)

INCLINATION SURVEYS

Submitted on form W-12 by operator

Performed by drilling company

Certified by drilling company and operator

Report horizontal offset without direction, so offset direction assumed to be toward nearest lease line
**Form W-12**

**RAILROAD COMMISSION OF TEXAS**
**OIL AND GAS DIVISION**

**INCLINATION REPORT**
(One Copy Must Be Filed With Each Completion Report.)

1. FIELD NAME (as per RRC Records or Writed)
2. OPERATOR
3. ADDRESS
4. LOCATION (Section, Block, and Survey)

**RECORD OF INCLINATION**

<table>
<thead>
<tr>
<th>No.</th>
<th>Measured Depth (feet)</th>
<th>Course Length (Hundred Feet)</th>
<th>Angle of Inclination (Degrees)</th>
<th>Displacement per Hundred Feet (Deviation Angle X 1000)</th>
<th>Cumulative Displacement (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If additional space is needed, use the reverse side of this form.

17. Is any information shown on the reverse side of this form? [ ] yes [ ] no

18. Accumulative total displacement of well bore at total depth of

19. Inclination measurements were made in - [ ] Tailing [ ] Drilling [ ] Casing [ ] Open hole [ ] Drill Pipe

20. Distance from surface location of well to the nearest lease line

21. Minimum distance to lease line as prescribed by field rules

22. Was the subject well at any time intentionally deviated from the vertical in any manner whatsoever?

(If the answer to the above question is “yes,” attach written explanation of the circumstances.)

**INCLINATION DATA CERTIFICATION**
I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have personal knowledge of the inclination data and facts placed in both sides of this form, and that such data and facts are true, correct, and complete to the best of my knowledge. This certification covers all data and information presented herein except inclination data as indicated by the box in the numbers on this form.

Signature of Authorized Representative

State of Person and Title (type or print)

State of Company

Operator

Telephone

Area Code

Railroad Commission Use Only:

Approved By: ____________________________ Title: ____________________________ Date: ____________________________

*Designates items certified by company that conducted the inclination surveys.

**OPERATOR CERTIFICATION**
I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have personal knowledge of the inclination data and facts placed in both sides of this form and that such data and facts are true, correct, and complete to the best of my knowledge. This certification covers all data and information presented herein except inclination data as indicated by the box in the numbers on this form.

Signature of Authorized Representative

State of Person and Title (type or print)

Operator

Telephone

Area Code
**Form W-12**

**Record of Inclination**

<table>
<thead>
<tr>
<th></th>
<th>11. Measured Depth (feet)</th>
<th>12. Course Length (Hundreds of feet)</th>
<th>13. Angle of Inclination (Degrees)</th>
<th>14. Displacement per Hundred Feet (Sine of Angle x 100)</th>
<th>15. Course Displacement (feet)</th>
<th>16. Accumulative Displacement (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shows cumulative displacement from vertical. Must not exceed distance to nearest lease line.
Operator certifies that the well was not intentionally deviated from vertical.
SWR 11: Vertical Wells

Ideal Vertical Well

W-12 accepted for entire depth
Cumulative total displacement: 75' + 65' + 10' = 155'

Actual displacement: 10'
DIRECTIONAL SURVEYS

Required for any intentionally-deviated well

Data points no more than 200’ apart, *beginning within 200’ of the surface

May begin immediately below surface casing depth
(W-12 required in this case)
Surface Casing (W-12 accepted)

Gyro or MWD required
Directional Survey Required
Inclination Survey Accepted

*SPECIAL permission required to drill an S-curve
SWR 86 outlines requirements for Horizontal Drainhole Wells

Purpose: to establish standard requirements for horizontal wells

*Directional surveys required*
SWRs 11 & 86: Surveys

• Common mistakes:
  — WRONG SURVEYS for wellbore profile
  — Surveys missing completely
  — Surveys lacking certification
  — Surveys don’t tie-in
  — Surveys attached for wrong well

• Solution:
  — Survey company must correct and resubmit
Statewide Rule 3.12 (SWR 12)

Outlines requirements for Submission and Certification of Directional Surveys:

• Survey Company Name
• Name and title of individual performing survey
• Date survey was performed
• Type of survey conducted
• Complete well identification
• Depths surveyed
• Drilling permit plat with bottom hole location.
I, **name**, an authorized employee of **THE SURVEY COMPANY**, have verified the **GYRO/MWD** survey performed on **04/01/2013 to 04/02/2013**, from **200’ to 15000’**. The data are true, correct, complete and within the limitations of the tool. This survey was conducted at the request of **OPERATOR** for **LEASE WELL# (API#)** drilled in **TRAVIS COUNTY**, Texas.
Directional Surveys must be submitted and certified by the company that performed the survey.

They cannot be accepted directly from the operator.
Common mistakes:
- Uploading cover letter instead
- Double-certifying another company’s interval
- Certification completely missing

Solution:
- Survey company must correct and resubmit
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Submission of Directional surveys is the responsibility of the survey company.

Survey companies:
• Must appear on list of approved survey companies*
• Must have active P-5 (Organization Report)
• Must upload certification letter as a separate file
Surveys can be submitted hardcopy through the mail or through the RRC online system.

- Submitted hard copy takes at least two (2) weeks.
- Surveys submitted online are immediately available for review.
Online Submission

P-8 On-Line filing system now available.

- Instantly submit your P-8.
- Query available to review P-8’s status and to print or save the form.
- Upon RRC action, an e-mail will be sent to the filer that evening.
- List primary Gatherer under item 14 of the P-8, include all Gatherers on P-4.
- Operators are responsible to supply the Gatherer with the approved P-8 form.

Please review the Help tab should you need assistance prior to contacting the RRC.

On-Line Completions

Additional information requests have recently been added to the Online Completion system.

If the well is being down hole commingled (SWR 10), you will receive a request for the approval letter to be attached. If you have not received the approval letter, place a remark under page 5 of the G-1/W-2 stating the submitted date of the SWR 10 application. See Notice of Form Changes to SWR 10.

If the Drilling Permit has fields associated with H2S (SWR 36), the completion system will provide the following warning: “Producing intervals are associated with a hydrogen sulfide field, an H-9 may need to be filed.” Should you feel an H-9 is not needed, you may submit your completion without attaching the form. Commission staff will make the final determination.

Please review the help section prior to contacting RRC staff. Questions can be e-mailed to prorationunit@rrc.state.tx.us
Online Submission
Online Query
Online Query

Search online by API number to verify submission
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Engineering Review

• Survey completeness
  • Tie-ins
  • Certification

• Well construction
  • Wellbore profile
  • Abandoned wellbore
  • Required plugs and cementing

• Spacing
  • Lease line spacing
  • Between-well spacing
  • Permitted location
  • NPZs
Survey Completeness: Tie ins

• RRC will accept *specific* combinations of surveys that represent a complete picture of the entire wellbore.

• All surveys must tie in at given depths with identical X,Y, and Z coordinates.
# Eng Review: Tie-Ins

## Survey A (GYRO)

<table>
<thead>
<tr>
<th>Depth</th>
<th>Incl.</th>
<th>Azimuth</th>
<th>+N/-S</th>
<th>+E/-W</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>600’</td>
<td>2.3</td>
<td>270°</td>
<td>5</td>
<td>20</td>
<td>GYRO</td>
</tr>
<tr>
<td>800’</td>
<td>3.3</td>
<td>268°</td>
<td>9</td>
<td>-80</td>
<td>GYRO</td>
</tr>
</tbody>
</table>

## Survey B (MWD)

<table>
<thead>
<tr>
<th>Depth</th>
<th>Incl.</th>
<th>Azimuth</th>
<th>N-S</th>
<th>E-W</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>800’</td>
<td>3.3</td>
<td>268°</td>
<td>9 N</td>
<td>80 W</td>
<td>GYRO</td>
</tr>
<tr>
<td>1000</td>
<td>10</td>
<td>272°</td>
<td>15 N</td>
<td>120 W</td>
<td>MWD</td>
</tr>
</tbody>
</table>

Tie-in point

We will contact you if the tie-in data are missing.
### Eng Review: Certification

#### Attachments page of the G-1 or W-2

<table>
<thead>
<tr>
<th>Attachment Type</th>
<th>Name</th>
<th>From</th>
<th>To</th>
<th>Attach to Packet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gyro</td>
<td>728663714.pdf</td>
<td>0</td>
<td>2205</td>
<td></td>
</tr>
<tr>
<td>MWD</td>
<td>RVB No 20 Survey Letter.pdf</td>
<td>2243</td>
<td>9900</td>
<td></td>
</tr>
<tr>
<td>MWD</td>
<td>Rosa V Benavides 20H ST1 Survey Letter.pdf</td>
<td>2205</td>
<td>10300</td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>RVB No 20 Certified Letter.pdf</td>
<td>2243</td>
<td>9900</td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>rosa v benavides 20h-laredo-2205=071.pdf</td>
<td>0</td>
<td>2205</td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>Rosa V Benavides 20H ST1 Certified Letter.pdf</td>
<td>2205</td>
<td>10300</td>
<td></td>
</tr>
</tbody>
</table>
Wellbore Construction:

- Compiled from inclination and directional surveys
  - SWR 11 requires ALL directional surveys
- Well location projected onto Permit Plat
- Permit and As-drilled plat requirements follow
Eng Review: Construction

Plat Requirements

- Lease boundary
- Scale bar
- North Arrow
- Surface Location (SL)
- Penetration Point (PP)
- First Take Point (FTP)
- Last Take Point (LTP)
- Terminus/Bottom Hole Location (BHL)
- Distance to Lease Lines
Eng Review: Construction

Permit Location  As-drilled Location

[Diagram showing permit location and as-drilled location with distance scale 0 to 1000']
Eng Review: Construction

Wellbore construction

(SL) (PP) (FTP) (LTP) (BHL)
Sometimes directional surveys indicate abandoned sections of wellbore (pilot holes or sidetracks) that must be plugged.

District Offices don’t necessarily review directional surveys, so it is crucial to communicate any intentions to abandon portions of the wellbore with the District Offices directly and in advance.
Eng Review: Construction

Wellbore construction

Penetration Point (PP)
Eng Review: Construction

Wellbore construction

Kick-off Point (KOP)
Penetration Point (PP)
Kick Off Points

PLUG REQUIRED

PLUG NOT REQUIRED
Statewide Rule 3.14 (SWR 14)

Outlines Cementing and Plugging Requirements

Purpose: To isolate and protect usable water and productive formations from migration and contamination

*Minimum plug dimensions*:

- 100’ thick, centered on penetration point
- Additional 10’ required for each 1000’ TVD.
Eng Review: Construction

**Form: W-15**

- Plugging record on page 2
- Used to calculate plug thickness

<table>
<thead>
<tr>
<th>CEMENTING TO PLUG AND ABANDON</th>
<th>PLUG # 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Cementing date</td>
<td></td>
</tr>
<tr>
<td>24. Size of hole or pipe plugged (in.)</td>
<td></td>
</tr>
<tr>
<td>25. Depth to bottom of tubing or drill pipe (ft.)</td>
<td></td>
</tr>
<tr>
<td>26. Sacks of cement used (each plug)</td>
<td></td>
</tr>
<tr>
<td>27. Slurry volume pumped (cu. ft.)</td>
<td></td>
</tr>
<tr>
<td>28. Calculated top of plug (ft.)</td>
<td></td>
</tr>
<tr>
<td>29. Measured top of plug, if tagged (ft.)</td>
<td></td>
</tr>
<tr>
<td>30. Slurry wt. (lbs/gal)</td>
<td></td>
</tr>
<tr>
<td>31. Type cement</td>
<td></td>
</tr>
</tbody>
</table>
The MWD directional survey from _____ indicates an abandoned section of sidetrack 0 below the KOP of sidetrack 1. The section of abandoned wellbore must comply with section (d)(7) and section (k) of SWR 14. The operator must provide documentation that it complied with the district office's instructions concerning plugging the abandoned wellbore prior to sidetracking, as per section (d)(7) of SWR 14.
Eng Review: Construction

SWR 14

(j) “The district director or the director's delegate shall review and approve the notification of intention to plug in a manner so as to accomplish the purposes of this section.”

- Exceptions may be granted by district offices, not Austin
- Note Job# of communication/notification with District in the remarks section of W-2/G-1
SWR 14 Exceptions

1. Contact District Office:
   ✓ Acknowledge/advise of SWR 14 violation
   ✓ Explain circumstances of violation
   ✓ Make a case for adequate isolation
   ✓ Formally request an exception to the rule

2. Forward District Office response to Engineering
   ! Letter from operator to District may not resolve issue

➢ Repeat violations may result in recommendation for administrative penalty action
Oil and Gas Division
District Offices:
- Abilene
- Corpus Christi
- Houston
- Kilgore
- Midland
- Pampa
- San Angelo
- San Antonio
- Wichita Falls

SWR 14 Exceptions
District Office Contact Info

Railroad Commission of Texas

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.

Learn More

Recent News

View All

RRC Production Statistics and Allowables for May 2014
April 25, 2014
Read More...

Texas Monthly Oil and Gas Statistics
April 25, 2014
Read More...
District Office Contact Info

The Railroad Commission is committed to providing outstanding services to the state's citizens. Listed below are important contact phone numbers.

<table>
<thead>
<tr>
<th>Division</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
<td>(877) 228-5740</td>
</tr>
<tr>
<td></td>
<td>(512) 463-7158</td>
</tr>
<tr>
<td>TTY/TDD</td>
<td>(800) 735-2989</td>
</tr>
<tr>
<td>24 Hour Emergency Number</td>
<td>(512) 463-6788</td>
</tr>
</tbody>
</table>

Call to report an environmental emergency, discharge, spill, or air release from oil and gas facilities, pipelines, or alternative fuels.

<table>
<thead>
<tr>
<th>Division</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative Energy Division</td>
<td>(512) 463-6692</td>
</tr>
<tr>
<td>Alternative Fuels Research &amp; Education Division (AFRED)</td>
<td>(512) 463-7110</td>
</tr>
</tbody>
</table>

Main Office:
1701 N. Congress
Austin, Texas 78701 (map)

Mailing Address:
P.O. Box 12967
Austin, Texas 78711-2967

Organization Chart

RRC Locations

RRC Phone Directory
## District Office Contact Info

Austin, TX 78721  
(512) 463-2662

### Oil & Gas Locations

- District Office Map
- District Offices by County

<table>
<thead>
<tr>
<th>District</th>
<th>City</th>
<th>Address</th>
<th>Phone / FAX</th>
</tr>
</thead>
</table>
| 1        | San Antonio | 115 East Travis St (map)  
San Antonio, TX 78205 | (210) 227-1313 |
| 2        | San Antonio | 115 East Travis St (map)  
San Antonio, TX 78205 | (210) 227-1313 |
| 3        | Houston     | 1706 Seamist Dr (map)  
Houston, TX 77008 | (713) 869-5001 |
| 4        | Corpus Christi | 10320 IH 37 (map)  
Corpus Christi, TX 78410 | (361) 242-3113 |
| 5        | Kilgore     | 2005 North State Highway 42 (map)  
Kilgore, TX 75662 | (903) 984-3026 |
| 6        | Kilgore     | 2005 North State Highway 42 (map)  
Kilgore, TX 75662 | (903) 984-3026 |
Eng Review: Spacing

Spacing concerns

Lease Line Spacing
Between-well spacing (horizontal wells)
Between-well spacing (vertical wells)
Eng Review: Spacing

Permitted Location

0 1000'
If the as-drilled location does not match the permit location, the permit may need to be revised.
Permitted As-Drilled Location

If the as-drilled location does not match the permit location, the permit may need to be revised. However, this may be the result of an inaccurate North arrow.
Eng Review: Spacing

Permitted As-Drilled Location

0 1000'

N
Eng Review: Spacing

Permitted Location

0  1000'

N
Permitted Location

If the scale bar is inaccurate, lease line spacing will be unreliable.
Online messages

- Attached if an issue arises
- Dispatched at the end of the day
- No notification is sent when an operator responds, email to notify us directly for rapid response
- Otherwise, we go through all old messages periodically, takes a few days depending on reviewer.
Special Field rules are tailor made rules approved by the Commission for various fields.

There are a couple common rules that are seen in various fields. Here are a few:

- Lease Line spacing
- Well Spacing
- Off lease penetration points
- Box rule
- Heel & Toe Provisions
Special Field Rules

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.

Learn More

Recent News  View All

Railroad Commissioner David Porter Tours Westmoreland Jewett Mine
April 29, 2015
Railroad Commissioner David Porter today toured the Texas Westmoreland Coal Company Jewett Mine, a 35,000-acre surface mine complex located between Dallas and Read More...

Texas Coal Production Increases in 2014—Production up by More than One Million Tons
April 28, 2015
The Railroad Commission of Texas reports Texas coal production increased by 2.6 percent in calendar year 2014 over the previous year by 1,164,207 tons for a total Read More...

RRC PRODUCTION STATISTICS AND ALLOWABLES FOR MAY 2015
April 27, 2015
The Texas average rig count as of April 17, was 411, representing about 45 percent of all active land rigs in the United States according to Baker Hughes Incorporated. The Railroad Commission of Texas (Commission) reports that in the last 12 months, total Texas reported production was 930 million barrels of oil and 8.3 trillion cubic feet of natural gas Read More...
Online Research Queries

The links in the boxes allow users to research oil & gas production, drilling permits, well records, gas utility and pipeline information, surface coal/ignite mining permit information and other related queries.

**Note:** The online research queries are intended for use by individuals needing specific information from the Railroad Commission of Texas. The use of automated tools to retrieve volumes of data can cause severe degradation of Railroad Commission of Texas systems. If the query system detects that data is being retrieved using an automated tool, the Railroad Commission of Texas will end the session for that user.

Requirements for Accessing Online Research Queries

The Railroad Commission of Texas recommends accessing the online research queries using a broadband Internet connection (Cable Modem, DSL, Fiber, Wireless, Satellite are common examples). A dial-up connection may work, but performance will not be desirable.

Adobe Acrobat Reader 9.5 or higher should be used AND one of the following browsers:

- Microsoft Internet Explorer 10 or higher
- Mozilla Firefox 10 or higher
- Google Chrome 20 or higher
- Apple Safari 5 or higher

### Oil & Gas

<table>
<thead>
<tr>
<th>Type of Query</th>
<th>Launch application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completions Query</td>
<td></td>
</tr>
<tr>
<td>Drilling Permit (W-1) Query</td>
<td></td>
</tr>
<tr>
<td>Electronic Document Management System</td>
<td>Learn more</td>
</tr>
<tr>
<td>Field Rules Query</td>
<td>Launch application</td>
</tr>
</tbody>
</table>

**Important Disclaimer**

A "data set" is any set of information electronically generated or stored by Railroad Commission of Texas (Commission) systems, including, but not limited to, the Commission's Geographic Information System, Online Research Query System, or Mainframe System.

The data sets provided by the Online Research Query System are continually being updated and are provided as a public service for informational purposes only. They are **not** intended to be used as an authoritative public record and have no legal force or effect. Users are responsible for checking the accuracy, completeness, currency, and/or suitability of these data sets themselves.

The Commission specifically disclaims any and all warranties, representations, or endorsements, express or implied, with regard to these data sets, including, but not limited to, the warranties of merchantability, fitness for a particular purpose, or non-infringement of privately owned rights.
This search function shows the key information about the field rules as well as a link to the docket.
Special Field Rules


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<table>
<thead>
<tr>
<th>Rule</th>
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<td>Rule 12</td>
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Special Field Rules


| Enforcement Actions, Unprotested (Master Default Orders) |
| Field Balancing |
| Field Consolidation |
| **Field Rules, Adopted (New, Amended and Temporary)** |
| Maximum Efficient Rate (MER) of Production |
| Mineral Interest Pooling Act |
| Miscellaneous |
| Overproduction. Cancellation of |
| P-4, Cancellation of (Severance of Lease) |
| Productive Acreage |
| Proper Operator |
Special Field Rules

Default Statewide Spacing rules:
467’ Lease Line and 1200’ Between-Well

![Diagram showing 467’ Lease Line and 1200’ Between-Well spacing]
Take-Point Provisions allow longer drainhole length. Spacing is measured to the take points instead of the SHL and terminus.
Off-lease Penetration Points

Off-lease penetration points enable operator to have surface-hole and penetration points outside of lease
Heel and Toe Provisions reduce spacing requirements measured from take points, parallel to the drainhole.
Box/Rectangle Rule

Gives operators extra leeway in drilling wellbores. A box is created around the proposed FTP and LTP, widths depend on the specific field rules.
As long as the wellbore stays in the box, it is compliant.
Common Online Messages

Problem       Solution

Plat Incomplete       Correct and resubmit
Directional survey(s) lacking
Directional survey(s) missing
Wrong Directional Survey
Invalid tie-in points
Certification lacking
Double-certification
SWR 14 violation
Off-lease Terminus
Lease-Line Violation
Between-well Spacing violation
Well location doesn’t match Plat

Search online query, contact surveyor
Have surveyor correct cert. letter
Contact District Office
Check scale bar and North arrow (on plat), amend permit if necessary
In Summation

Know your required surveys.
Certify and Submit accordingly.
Remarks are helpful.
Special Field Rules are your friend.
  - Take-Point Provisions
  - Off-Lease Penetration
  - Heel/Toe Provisions
  - Rectangle Rules
  - As-Drilled Plat requirements

For best results: contact your Engineering Specialist directly in addition to responding to Online Messages.
# Contact Information

## Technical Permitting, Engineering Unit

<table>
<thead>
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<tbody>
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</table>
Questions?
FAQs

Q: In the vertical section of a horizontal well, what is the directional survey shot point spacing?

A: The shot point spacing is always 200 feet or less for all directional survey in all cases.

Q: If the “correlative interval” is penetrated off-lease but the well is only perfed at a legal location, what does the operator need to do?

A: By statewide default rules, the well is *not allowed* to penetrate the correlative interval off-lease. However, in some fields special field rules do allow for off-lease POP. Operator is required to serve 21-day notice to the offset mineral owner. (check special field rules)

Q: If special field rules authorize an off-lease penetration point, can the terminus be drilled off-lease?

A: This provision *does not* allow the terminus to be off-lease.