

|  |  |   |  |  |   |   |
|--|--|---|--|--|---|---|
| API No.<br><u>42-301-33171</u>   | <b>RAILROAD COMMISSION OF TEXAS<br/>OIL &amp; GAS DIVISION</b>                                 |   |  |  | <b>FORM W-1</b> 07/2004                               |   |
| Drilling Permit #<br><u>821065</u>   | <b>APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER</b>                                |   |  |  | Permit Status: <b>Approved</b>                        |   |
| SWR Exception Case/Docket No.<br>_____   |  | <i>This facsimile W-1 was generated electronically from data submitted to the RRC.<br/>A certification of the automated data is available in the RRC's Austin office.</i> |  |  |   |   |
| 1. RRC Operator No.<br><b>774719</b>   | 2. Operator's Name (as shown on form P-5, Organization Report)<br><b>SHELL WESTERN E&amp;P</b> |   |  | 3. Operator Address (include street, city, state, zip):<br><b>PO BOX 576<br/>HOUSTON, TX 77001-0000</b>  |   |   |
| 4. Lease Name<br><b>UNIVERSITY 19 PW UNIT</b>  |  | 5. Well No.<br><b>1504H</b>   |  |  |   |   |
| <b>GENERAL INFORMATION</b>   |  |   |  |  |   |   |
| 6. Purpose of filing (mark ALL appropriate boxes):<br><input checked="" type="checkbox"/> New Drill <input type="checkbox"/> Recompletion <input type="checkbox"/> Reclass <input type="checkbox"/> Field Transfer <input type="checkbox"/> Re-Enter<br><input type="checkbox"/> Amended <input type="checkbox"/> Amended as Drilled (BHL) (Also File Form W-1D) |  |   |  |  |   |   |
| 7. Wellbore Profile (mark ALL appropriate boxes):<br><input type="checkbox"/> Vertical <input checked="" type="checkbox"/> Horizontal (Also File Form W-1H) <input type="checkbox"/> Directional (Also File Form W-1D) <input type="checkbox"/> Sidetrack  |  |   |  |  |   |   |
| 8. Total Depth<br><b>12000</b>   |  | 9. Do you have the right to develop the minerals under any right-of-way ?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                          |  | 10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |   |
| <b>SURFACE LOCATION AND ACREAGE INFORMATION</b>  |  |   |  |  |   |   |
| 11. RRC District No.<br><b>08</b>  |  | 12. County<br><b>LOVING</b>   |  | 13. Surface Location<br><input checked="" type="checkbox"/> Land <input type="checkbox"/> Bay/Estuary <input type="checkbox"/> Inland Waterway <input type="checkbox"/> Offshore   |   |   |
| 14. This well is to be located <u>9.7</u> miles in a <u>SE</u> direction from <u>Mentone</u> which is the nearest town in the county of the well site.   |  |   |  |  |   |   |
| 15. Section<br><b>8</b>  | 16. Block<br><b>19</b>   | 17. Survey<br><b>UL</b>   |  | 18. Abstract No.<br><b>A-U8</b>  | 19. Distance to nearest lease line:<br><b>200</b> ft. | 20. Number of contiguous acres in lease, pooled unit, or unitized tract: <b>8588.11</b> |
| 21. Lease Perpendiculars: <u>1279</u> ft from the <u>SW OFF LEASE</u> line and <u>570</u> ft from the <u>SE OFF LEASE</u> line.  |  |   | 22. Survey Perpendiculars: <u>1279</u> ft from the <u>SW OFF LEASE</u> line and <u>570</u> ft from the <u>SE OFF LEASE</u> line. |  |   |   |
| 23. Is this a pooled unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   |  | 24. Unitization Docket No:  |  | 25. Are you applying for Substandard Acreage Field? <input type="checkbox"/> Yes    (attach Form W-1A) <input checked="" type="checkbox"/> No  |   |   |
| <b>FIELD INFORMATION</b> List all fields of anticipated completion including Wildcat. List one zone per line.  |  |   |  |  |   |   |
| 26. RRC District No.   | 27. Field No.  | 28. Field Name (exactly as shown in RRC records)  |  | 29. Well Type  | 30. Completion Depth                                  | 31. Distance to Nearest Well in this Reservoir  |
| <b>08</b>  | <b>71052900</b>  | <b>PHANTOM (WOLFCAMP)</b>   |  | <b>Oil Well</b>  | <b>11500</b>  | <b>403.00</b>   |
|  |  |   |  |  |   |   |
|  |  |   |  |  |   |   |
|  |  |   |  |  |   |   |
| <b>BOTTOMHOLE LOCATION INFORMATION</b> is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS (see W-1H attachment)   |  |   |  |  |   |   |
| <b>Remarks</b><br>See W1 Comments attached   |  |   |  | <b>Certificate:</b><br>I certify that information stated in this application is true and complete, to the best of my knowledge.<br><b>George Mullen, Sr. Regulatory Specialist</b><br>Name of filer _____ Date submitted <b>Dec 07, 2016</b><br><b>(832)337-0549</b> <b>george.mullen@shell.com</b><br>Phone _____ E-mail Address (OPTIONAL) _____ |   |   |
| <b>RRC Use Only</b> Data Validation Time Stamp:    Jan 18, 2017 11:33 AM( 'As Approved' Version )  |  |   |  |  |   |   |

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

**Form W-1H** 07/2004  
**Supplemental Horizontal Well Information**

Permit Status: **Approved**  
*The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.*

**APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER**

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A certification of the automated data is available in the RRC's Austin office.*

Permit # **821065**  
Approved Date: **Jan 18, 2017**

|                                      |  |   |                             |
|--------------------------------------|--|---|-----------------------------|
| 1. RRC Operator No.<br><b>774719</b> | 2. Operator's Name (exactly as shown on form P-5, Organization Report)<br><b>SHELL WESTERN E&amp;P</b> | 3. Lease Name<br><b>UNIVERSITY 19 PW UNIT</b> | 4. Well No.<br><b>1504H</b> |
|--------------------------------------|--|---|-----------------------------|

**Lateral Drainhole Location Information**

5. Field as shown on Form W-1 **PHANTOM (WOLFCAMP) (Field # 71052900, RRC District 08)**

|                         |                       |                                |             |                                    |
|-------------------------|-----------------------|--------------------------------|-------------|------------------------------------|
| 6. Section<br><b>17</b> | 7. Block<br><b>19</b> | 8. Survey<br><b>UL / A-U17</b> | 9. Abstract | 10. County of BHL<br><b>LOVING</b> |
|-------------------------|-----------------------|--------------------------------|-------------|------------------------------------|

|  |
|--|
| 11. Terminus Lease Line Perpendiculars<br><b>429</b> ft. from the <b>SW</b> line. and <b>8616</b> ft. from the <b>N</b> line                               |
| 12. Terminus Survey Line Perpendiculars<br><b>3329</b> ft. from the <b>NW</b> line. and <b>429</b> ft. from the <b>SW</b> line                             |
| 13. Penetration Point Lease Line Perpendiculars<br><b>1304</b> ft. from the <b>W (offlease)</b> line. and <b>377</b> ft. from the <b>S (offlease)</b> line |

Permit Status: **Approved**

*The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.*

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

**W-1 Comments**

**APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER**

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Permit # **821065**

Approved Date: **Jan 18, 2017**

[FILER Dec 7, 2016 3:12 PM]: The SHL for this well is located off lease in Sec. 8, Blk. 19, University Land Svy. The PP and FTP are located in Sec. 15, Blk. 19, University Land Svy. The LTP and BHL are located in Sec. 17, Blk. 19, University Land Svy.; [RRC STAFF Dec 16, 2016 2:32 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Jan 9, 2017 2:31 PM]: Problems identified with this permit are resolved.; [RRC STAFF Jan 9, 2017 2:37 PM]: George Mullen provided a revised plat and a notification packet to address the change in location of the PoP from being on lease, to being off lease. Notification for University Lands was also provided. Although it appears, based on the plat, that the PoP is not located in the University lands area, the notification packet has been uploaded.; [RRC STAFF Jan 9, 2017 2:42 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Jan 17, 2017 9:49 AM]: Problems identified with this permit are resolved.; [RRC STAFF Jan 17, 2017 9:49 AM]: George Mullen submitted a revised plat. The corrected calls have been updated on the W2.; [RRC STAFF Jan 17, 2017 9:50 AM]: Nearest lease line distance corrected, per plat.; [RRC STAFF Jan 17, 2017 10:39 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Jan 17, 2017 10:40 AM]: Changed FTP lease line call to match plat.; [RRC STAFF Jan 18, 2017 7:13 AM]: Problems identified with this permit are resolved.; [RRC STAFF Jan 18, 2017 7:14 AM]: As per George Mullen: The University 19 PW Unit Well No. 1504H (Permit No. 821065) Form W-1 was submitted on 12-07-16, two days prior to the University 19 PW Unit Well No. 1507H (Permit No. 821114) which was submitted on 12-09-16 so the No. 1507H should not be included in the well count for the No. 1504H.





**RAILROAD COMMISSION OF TEXAS  
OIL & GAS DIVISION  
SWR #13 Formation Data**

**LOVING (301) County**

| Formation     | Shallow Top | Deep Top | Remarks       | Geological Order | Effective Date |
|---------------|-------------|----------|---------------|------------------|----------------|
| RED BLUFF     | 3,900       | 3,900    |               | 1                | 12/17/2013     |
| BELL CANYON   | 4,700       | 4,700    |               | 2                | 12/17/2013     |
| BRUSHY CANYON | 6,000       | 6,000    |               | 3                | 12/17/2013     |
| DELAWARE      | 3,000       | 6,500    |               | 4                | 12/17/2013     |
| CHERRY CANYON | 3,700       | 7,800    |               | 5                | 12/17/2013     |
| BONE SPRINGS  | 8,200       | 9,800    |               | 6                | 12/17/2013     |
| WOLFCAMP      | 11,000      | 12,900   |               | 7                | 12/17/2013     |
| PENNSYLVANIAN | 14,900      | 15,000   |               | 8                | 12/17/2013     |
| STRAWN        | 14,700      | 15,000   |               | 9                | 12/17/2013     |
| ATOKA         | 15,200      | 16,000   | high pressure | 10               | 12/17/2013     |
| MORROW        | 15,700      | 17,000   |               | 11               | 12/17/2013     |
| DEVONIAN      | 17,800      | 17,800   |               | 12               | 12/17/2013     |
| FUSSELMAN     | 18,900      | 19,000   |               | 13               | 12/17/2013     |
| ELLENBURGER   | 21,000      | 21,000   |               | 14               | 12/17/2013     |

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. Formation "TOP" information listed reflects an estimated range based on geologic variances across the county. To clarify, the "Deep Top" is not the bottom of the formation; it is the deepest depth at which the "TOP" of the formation has been or might be encountered. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.  
<http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info>

## GROUNDWATER PROTECTION DETERMINATION

Form GW-2



## Groundwater Advisory Unit

**Date Issued:** 30 November 2016      **GAU Number:** 163817

|                      |  |                              |                       |
|----------------------|--|------------------------------|-----------------------|
| <b>Attention:</b>    | SHELL WESTERN E&P<br>PO BOX 576<br>HOUSTON, TX 77001 | <b>API Number:</b>           |                       |
| <b>Operator No.:</b> | 774719   | <b>County:</b>               | LOVING                |
|                      |  | <b>Lease Name:</b>           | University 19 PW Unit |
|                      |  | <b>Lease Number:</b>         |                       |
|                      |  | <b>Well Number:</b>          | 1503H                 |
|                      |  | <b>Total Vertical Depth:</b> | 12000                 |
|                      |  | <b>Latitude:</b>             | 31.692625             |
|                      |  | <b>Longitude:</b>            | -103.434239           |
|                      |  | <b>Datum:</b>                | NAD27                 |

**Purpose:** New Drill  
**Location:** Survey-University Lands; Block-19; Section-8

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Water-bearing strata from the land surface to a depth of 250 feet and the Rustler, which is estimated to occur from 550 to 1050 feet must be protected.

Please send Gamma Ray/Porosity log of this well when it is available.

This recommendation is applicable to all wells within a radius of 300 feet of this location.

Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area-wide use. This recommendation is for normal drilling, production, and plugging operations only. It does not apply to saltwater disposal operation into a nonproductive zone (RRC Form W-14).

This determination is based on information provided when the application was submitted on 11/29/2016. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

Form GW-2      P.O. Box 12967 Austin, Texas 78771-2967      512-463-2741      Internet address: www.rrc.texas.gov  
Rev. 02/2014



# SHELL WESTERN E&P

## WELL LOCATION

LEASE NAME & WELL NO.:

UNIVERSITY 19 PW UNIT 1504H

UNIT/LEASE ACREAGE:

8588.11 ACRES

NEAREST TOWN IN COUNTY:

±9.7 MILES SOUTHEAST OF MENTONE, TEXAS

### DESCRIPTION:

SECTIONS 15 & 17, BLOCK 19, UNIVERSITY LAND SURVEY  
LOVING COUNTY, TEXAS

This location and/or unit/lease boundary has been carefully surveyed on the ground under my supervision and is true and correct to the best of my knowledge according to the evidence, official survey records, maps, and other data provided by Shell Western E&P. This plat was created for the sole purpose of filing a permit with the Railroad Commission of Texas and should not be construed as a "Boundary Survey" in compliance with T.B.P.L.S. Minimum Standards of Procedures for Boundary Surveys. This certification if made and limited to those persons or entities shown on the face of this plat is non-transferable. This Survey is Certified for this transaction only.  
Survey date of October 26, 2016.



*John R. Anderson* 1/10/17  
John R. Anderson, R.P.L.S. No. 6442

I, John R. Anderson, a Registered Professional Land Surveyor, and an authorized agent of Topographic Land Surveyors, do hereby certify that the above described well location was surveyed on the ground as shown herein.  
This plat is for Texas Railroad Commission permitting only.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.

ALL INSTRUMENTS, PREPOST DRILLING DATA, PREPOST COMPLETION DATA, HARD LINE INFORMATION, LEASE INFORMATION, AND ANY PERTINENT INFORMATION USED IN THE PREPARATION OF THIS MAP WAS PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.

ORIGINAL DOC. SIZE: 8.5"x14"

**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY  
1400 EVERMAN PARKWAY, Ste. 197 - FT. WORTH, TEXAS 76140  
TELEPHONE: (817) 744-7512 - FAX (817) 744-7548  
TEXAS FIRM REGISTRATION NO. 10042504  
WWW.TOPOGRAPHIC.COM

|   |            |
|---|------------|
| DATE:                                     | 11/22/2016 |
| DRAWN BY:                                 | O.M.       |
| LO UNIVERSITY 19 PW UNIT 1504H_OPT_1_REV2 |            |
| SHEET:                                    | 1 OF 1     |

|      |    |              |
|------|----|--------------|
| REV# | BY | DATE REVISED |
| 0.M. |    | 12/19/2016   |
| 0.M. |    | 01/10/2017   |

### TIES TABLE

| POINT              | UNIT                    | SURVEY/SECTION            |
|--------------------|-------------------------|---------------------------|
| S.H.L.             | 570' FNWL<br>1400' FWC  | 1279' FSWL &<br>570' FSEL |
| P.P.               | 377' FNWL<br>1357' FWC  | 1304' FSWL &<br>377' FSEL |
| F.T.P.             | 200' FNWL<br>1304' FSWL | 200' FNWL &<br>1304' FSWL |
| L.T.P. /<br>B.H.L. | 429' FSWL<br>8516' FNWL | 3329' FNWL &<br>429' FSWL |

### LEGEND:

- Unit Boundary
- Survey/Section line
- Proposed Well Path
- Existing/Permitted Well Path
- Mineral Tract Boundary
- Monument Found
- Calculated Corner
- Well Point

