

API No. <u>42-301-33171</u> Drilling Permit # <u>821065</u> SWR Exception Case/Docket No. _____		RAILROAD COMMISSION OF TEXAS OIL & GAS DIVISION APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER <i>This facsimile W-1 was generated electronically from data submitted to the RRC.</i> <i>A certification of the automated data is available in the RRC's Austin office.</i>				FORM W-1 07/2004 Permit Status: Approved	
1. RRC Operator No. 774719		2. Operator's Name (as shown on form P-5, Organization Report) SHELL WESTERN E&P			3. Operator Address (include street, city, state, zip): PO BOX 576 HOUSTON, TX 77001-0000		
4. Lease Name UNIVERSITY 19 PW UNIT		5. Well No. 1504H					
GENERAL INFORMATION							
6. Purpose of filing (mark ALL appropriate boxes): <input checked="" type="checkbox"/> New Drill <input type="checkbox"/> Recompletion <input type="checkbox"/> Reclass <input type="checkbox"/> Field Transfer <input type="checkbox"/> Re-Enter <input type="checkbox"/> Amended <input type="checkbox"/> Amended as Drilled (BHL) (Also File Form W-1D)							
7. Wellbore Profile (mark ALL appropriate boxes): <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 12000		9. Do you have the right to develop the minerals under any right-of-way ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
SURFACE LOCATION AND ACREAGE INFORMATION							
11. RRC District No. 08		12. County LOVING		13. Surface Location <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 8		16. Block 19		17. Survey UL		18. Abstract No. A-U8	
				19. Distance to nearest lease line: 200 ft.		20. Number of contiguous acres in lease, pooled unit, or unitized tract: 8588.11	
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			
FIELD INFORMATION 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	
08	71052900	PHANTOM (WOLFCAMP)		Oil Well	11500	403.00	
BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS (see W-1H attachment)							
Remarks See W1 Comments attached				Certificate: I certify that information stated in this application is true and complete, to the best of my knowledge. <div style="text-align: center;"> George Mullen, Sr. Regulatory Specialist </div> <div style="display: flex; justify-content: space-between;"> <div> <u>George Mullen, Sr. Regulatory Specialist</u> Name of filer </div> <div> <u>Dec 07, 2016</u> Date submitted </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <u>(832)337-0549</u> Phone </div> <div> <u>george.mullen@shell.com</u> E-mail Address (OPTIONAL) </div> </div>			
RRC Use Only							
Data Validation Time Stamp: Jan 18, 2017 11:33 AM('As Approved' Version)							

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

RAILROAD COMMISSION OF TEXAS
 OIL & GAS DIVISION

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

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Permit #	821065
Approved Date:	Jan 18, 2017

1. RRC Operator No. 774719	2. Operator's Name (exactly as shown on form P-5, Organization Report) SHELL WESTERN E&P	3. Lease Name UNIVERSITY 19 PW UNIT	4. Well No. 1504H
Lateral Drainhole Location Information			
5. Field as shown on Form W-1 PHANTOM (WOLFCAMP) (Field # 71052900, RRC District 08)			
6. Section 17	7. Block 19	8. Survey UL / A-U17	9. Abstract
		10. County of BHL LOVING	
11. Terminus Lease Line Perpendiculars 429 ft. from the SW line. and 8616 ft. from the N line			
12. Terminus Survey Line Perpendiculars 3329 ft. from the NW line. and 429 ft. from the SW line			
13. Penetration Point Lease Line Perpendiculars 1304 ft. from the W (offlease) line. and 377 ft. from the S (offlease) line			

Permit Status: **Approved**

*The RRC has not approved this application.
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the user's own risk.*

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

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

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W-1 Comments

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

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER 821065	DATE PERMIT ISSUED OR AMENDED Jan 18, 2017	DISTRICT * 08	
API NUMBER 42-301-33171	FORM W-1 RECEIVED Dec 07, 2016	COUNTY LOVING	
TYPE OF OPERATION NEW DRILL	WELLBORE PROFILE(S) Horizontal	ACRES 8588.11	
OPERATOR SHELL WESTERN E&P PO BOX 576 HOUSTON, TX 77001-0000		NOTICE This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored. District Office Telephone No: (432) 684-5581	
LEASE NAME UNIVERSITY 19 PW UNIT		WELL NUMBER 1504H	
LOCATION 9.7 miles SE direction from MENTONE		TOTAL DEPTH 12000	
Section, Block and/or Survey SECTION 8 BLOCK 19 ABSTRACT U8 SURVEY UL			
DISTANCE TO SURVEY LINES 1279 ft. SW OFF LEASE 570 ft. SE OFF LEASE		DISTANCE TO NEAREST LEASE LINE 200 ft.	
DISTANCE TO LEASE LINES 1279 ft. SW OFF LEASE 570 ft. SE OFF LEASE		DISTANCE TO NEAREST WELL ON LEASE See FIELD(s) Below	
FIELD(s) and LIMITATIONS: <p style="text-align: center;">* SEE FIELD DISTRICT FOR REPORTING PURPOSES *</p>			
FIELD NAME LEASE NAME	ACRES NEAREST LEASE	DEPTH NEAREST LEASE	WELL # NEAREST WE
-----	-----	-----	-----
PHANTOM (WOLFCAMP)	8588.11	11,500	1504H
UNIVERSITY 19 PW UNIT	200	403	08

WELLBORE PROFILE(s) FOR FIELD: Horizontal			

RESTRICTIONS: The designated interval, for one or more of the fields approved on this permit, appears to overlap with the designated interval of another field or fields in this district. In the case of conflicting designated intervals you will be required to be consistent in field designation on this lease. Further, if the designated interval overlap of wells on this lease results in an actual or potential double assignment of reservoir and the applicant cannot conclusively demonstrate that there is no double assignment, the permitted well may not be assigned an allowable until the conflict is resolved. Because of the overlapping designated intervals in this area, issuance of this permit does not guarantee that the completion of the well will be approved or that the well will receive an allowable in any given field, even if that field is listed on the approved permit application. Permitted for oil only. This is a hydrogen sulfide field. Hydrogen Sulfide Fields with perforations must be isolated and tested per State Wide Rule 36 and a Form H-9 filed with the district office. Fields with SWR 10 authority to downhole commingle must be isolated and tested individually prior to commingling production. Lateral: TH1 Penetration Point Location Lease Lines: 1304.0 F W (OFFLEASE) L 377.0 F S (OFFLEASE) L Terminus Location BH County: LOVING			

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER <div style="text-align: right;">821065</div>	DATE PERMIT ISSUED OR AMENDED <div style="text-align: center;">Jan 18, 2017</div>	DISTRICT <div style="text-align: center;">* 08</div>															
API NUMBER <div style="text-align: right;">42-301-33171</div>	FORM W-1 RECEIVED <div style="text-align: center;">Dec 07, 2016</div>	COUNTY <div style="text-align: center;">LOVING</div>															
TYPE OF OPERATION <div style="text-align: center;">NEW DRILL</div>	WELLBORE PROFILE(S) <div style="text-align: center;">Horizontal</div>	ACRES <div style="text-align: center;">8588.11</div>															
OPERATOR <div style="text-align: right;">774719</div> <div style="text-align: center;">SHELL WESTERN E&P</div> <div style="text-align: center;">PO BOX 576</div> <div style="text-align: center;">HOUSTON, TX 77001-0000</div>		NOTICE This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored. District Office Telephone No: <div style="text-align: center;">(432) 684-5581</div>															
LEASE NAME <div style="text-align: center;">UNIVERSITY 19 PW UNIT</div>		WELL NUMBER <div style="text-align: center;">1504H</div>															
LOCATION <div style="text-align: center;">9.7 miles SE direction from MENTONE</div>		TOTAL DEPTH <div style="text-align: center;">12000</div>															
Section, Block and/or Survey <div style="display: flex; justify-content: space-between;"> <div>SECTION ◀ 8</div> <div>BLOCK ◀ 19</div> <div>ABSTRACT ◀ U8</div> </div> <div style="display: flex; justify-content: space-between;"> <div>SURVEY ◀ UL</div> <div></div> <div></div> </div>																	
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<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">FIELD NAME</th> <th style="text-align: left;">ACRES</th> <th style="text-align: left;">DEPTH</th> <th style="text-align: left;">WELL #</th> <th style="text-align: left;">DIST</th> </tr> <tr> <th style="text-align: left;">LEASE NAME</th> <th style="text-align: left;">NEAREST LEASE</th> <th></th> <th style="text-align: left;">NEAREST WE</th> <th></th> </tr> </thead> <tbody> <tr> <td colspan="5"> <div style="display: flex; justify-content: space-between;"> <div>Section: 17</div> <div>Block: 19</div> <div>Abstract:</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Survey: UL / A-U17</div> <div></div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Lease Lines:</div> <div>429.0 F SW L</div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div></div> <div>8616.0 F N L</div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Survey Lines:</div> <div>3329.0 F NW L</div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div></div> <div>429.0 F SW L</div> <div></div> </div> </td> </tr> </tbody> </table>			FIELD NAME	ACRES	DEPTH	WELL #	DIST	LEASE NAME	NEAREST LEASE		NEAREST WE		<div style="display: flex; justify-content: space-between;"> <div>Section: 17</div> <div>Block: 19</div> <div>Abstract:</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Survey: UL / A-U17</div> <div></div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Lease Lines:</div> <div>429.0 F SW L</div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div></div> <div>8616.0 F N L</div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Survey Lines:</div> <div>3329.0 F NW L</div> <div></div> </div> <div style="display: flex; justify-content: space-between;"> <div></div> <div>429.0 F SW L</div> <div></div> </div>				
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THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS																	
<p>This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.</p> <p>This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.</p> <p>The designated interval, for one or more of the fields approved on this permit, appears to overlap with the designated interval of another field or fields in this district. In the case of conflicting designated intervals you will be required to be consistent in field designation on this lease. Further, if the designated interval overlap of wells on this lease results in an actual or potential double assignment of reservoir and the applicant cannot conclusively demonstrate that there is no double assignment, the permitted well may not be assigned an allowable until the conflict is resolved. Because of the overlapping designated intervals in this area, issuance of this permit does not guarantee that the completion of the well will be approved or that the well will receive an allowable in any given field, even if that field is listed on the approved permit application.</p>																	

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



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 is 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 Surveys, 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

REVISED BY	DATE REVISED
O.M.	10/10/2016
O.M.	01/10/2017

TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	570' FSWL	1279' FSWL & 1400' FWC
P.P.	377' FSWL	1304' FSWL & 1357' FWC
F.T.P.	200' FSWL	200' FSWL & 1304' FSWL
L.T.P. / B.H.L.	429' FSWL	3329' FSWL & 6516' FSWL

LEGEND:

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



GREAT WESTERN DRILLING, LTD.
(80.11 ACRES)

PENETRATION POINT (P.P.)
X=1035719.01
Y=750083.42
LAT.: N 31°41'31.60"
LONG.: W 103°26'02.10"

SURFACE HOLE LOCATION (S.H.L.)
ELEV = 2736.1
X=1036640.81
Y=750261.79
LAT.: N 31°41'33.34"
LONG.: W 103°26'03.06"

UNIVERSITY LANDS
(40.06 ACRES)

FIRST TAKE POINT (F.T.P.)
X=1035880.73
Y=749529.55
LAT.: N 31°41'28.16"
LONG.: W 103°26'00.05"

LAST TAKE POINT/
BOTTOM HOLE LOCATION
(L.T.P./B.H.L.)
X=1038239.57
Y=741450.88
LAT.: N 31°40'09.89"
LONG.: W 103°25'30.16"

BLOCK 1
W & N. W. RR. CO. SURVEY

MRS. M. J. H. HERRING
SURVEY

