

API No. <u>42-475-37766</u> Drilling Permit # <u>847614</u> SWR Exception Case/Docket No. _____	<b>RAILROAD COMMISSION OF TEXAS</b> <b>OIL &amp; GAS DIVISION</b> <b>APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER</b> <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>	<b>FORM W-1</b> Permit Status: <b>Approved</b>
1. RRC Operator No. <div style="text-align: center;">003125</div>	2. Operator's Name (as shown on form P-5, Organization Report) <div style="text-align: center;">ABRAXAS PETROLEUM CORPORATION</div>	3. Operator Address (include street, city, state, zip) 18803 MEISNER DR SAN ANTONIO, TX 78258-0000
4. Lease Name <div style="text-align: center;">WOODBERRY 3</div>	5. Well No. <div style="text-align: center;">101H</div>	
<b>GENERAL INFORMATION</b>		
6. Purpose of filing (mark ALL appropriate boxes): <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input checked="" type="checkbox"/> New Drill <input type="checkbox"/> Amended</span> <span><input type="checkbox"/> Recompletion <input type="checkbox"/> Amended as Drilled (BHL)(Also File Form W-1D)</span> <span><input type="checkbox"/> Reclass</span> <span><input type="checkbox"/> Field Transfer</span> <span><input type="checkbox"/> Re-Enter</span> </div>		
7. Wellbore Profile (mark ALL appropriate boxes): <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input type="checkbox"/> Vertical</span> <span><input checked="" type="checkbox"/> Horizontal (Also File Form W-1H)</span> <span><input type="checkbox"/> Directional (Also File Form W-1D)</span> <span><input type="checkbox"/> Sidetrack</span> </div>		
8. Total Depth <div style="text-align: center;">12000</div>	9. Do you have the right to develop the minerals under any right-of-way? <div style="text-align: center;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div>	10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? <div style="text-align: center;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div>
<b>SURFACE LOCATION AND ACREAGE INFORMATION</b>		
11. RRC District No. <div style="text-align: center;">08</div>	12. County <div style="text-align: center;">WARD</div>	13. Surface Location <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input checked="" type="checkbox"/> Land           <input type="checkbox"/> Bay/Estuary           <input type="checkbox"/> Inland Waterway           <input type="checkbox"/> Offshore         </div>
14. This well is to be located <u>1.85</u> miles in a <u>NW</u> direction from <u>PYOTE</u> which is the nearest town in the county of the well site.		
15. Section <u>98</u>	16. Block <u>F</u>	17. Survey <u>G&amp;MMB&amp;A</u>
18. Abstract No. <u>52</u>		19. Distance to nearest lease line: <u>100.0</u> ft.
20. Number of contiguous acres in lease, pooled unit, or unitized tract: <u>640.7</u>		
21. Lease Perpendiculars: <u>330.0</u> ft. from the <u>SOUTH</u> line and <u>200.0</u> ft. from the <u>WEST</u> line.		
22. Survey Perpendiculars: <u>330.0</u> ft. from the <u>SOUTH</u> line and <u>200.0</u> ft. from the <u>WEST</u> line.		
23. Is this a pooled unit? <input type="checkbox"/> Yes <input checked="" 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
32. Number of Wells on this lease in this Reservoir		
<div style="text-align: center;">08</div>	<div style="text-align: center;">71052900</div>	<div style="text-align: center;">PHANTOM (WOLFCAMP)</div>
<div style="text-align: center;">Oil Well</div>	<div style="text-align: center;">12000</div>	<div style="text-align: center;">0.0</div>
<div style="text-align: center;">1</div>		
<b>BOTTOMHOLE LOCATION INFORMATION</b> is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS		
<b>Remarks</b> [FILER 12/07/2018 10:47:31 AM]: ALSO PERMITTING THE WOODBERRY 3 #201H; [RRC STAFF 12/07/2018 05:13:37 PM]: All wells being permitted in this group shown on P-16. Well count on W-1 reflects order of submittal.; [RRC STAFF 12/07/2018 05:13:53 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF 12/12/2018 08:32:49 AM]: Problems identified with this permit are resolved.; [RRC STAFF 12/12/2018 08:33:04 AM]: Scarlet Holguin sent revised P-16;		<b>Certificate:</b> I certify that information stated in this application is true and complete, to the best of my knowledge RRC User <u>12/07/2018</u> Name of filer _____ Date Submitted _____ Phone _____ Email Address(OPTIONAL) _____
RRC Use Only Date Validation Time Stamp: Thu, 20 Dec 2018 10:25:01		

## RAILROAD COMMISSION OF TEXAS

## OIL &amp; GAS DIVISION

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

*This facsimile W-1 was generated electronically from data submitted to the RRC.  
A certification of the automated data is available in the RRC's Austin office.*

## FORM W-1H

## 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.*

Permit # 847614

Approved Date: 12/12/2018

1. RRC Operator No. 003125	2. Operator's Name (as shown on form P-5, Organization Report) ABRAXAS PETROLEUM CORPORATION	3. Lease Name WOODBERRY 3	4 Well No. 101H
<b>Lateral Drainhole Location Information</b>			
5. Field as shown on Form W-1 PHANTOM (WOLFCAMP) ( Field # 71052900, RRC District 08 )			
6. Section 3	7. Block 17	8. Survey UL / A-U42	9. Abstract
		10. County of BHL WARD	
11. Terminus Lease Line Perpendiculars 330.0 ft. from the SOUTH line and 100.0 ft. from the WEST line			
12. Terminus Survey Line Perpendiculars 330.0 ft. from the SOUTH line and 100.0 ft. from the WEST line			
13. Penetration Point Lease Line Perpendiculars 330.0 ft. from the SOUTH line and 200.0 ft. from the WEST line			

**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;">847614</div>	DATE PERMIT ISSUED OR AMENDED <div style="text-align: center;">Dec 12, 2018</div>	DISTRICT <div style="text-align: center;">* 08</div>																																				
API NUMBER <div style="text-align: right;">42-475-37766</div>	FORM W-1 RECEIVED <div style="text-align: center;">Dec 07, 2018</div>	COUNTY <div style="text-align: center;">WARD</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;">640.7</div>																																				
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DISTANCE TO SURVEY LINES <div style="text-align: center;">330 ft. SOUTH    200 ft. WEST</div>		DISTANCE TO NEAREST LEASE LINE <div style="text-align: center;">100 ft.</div>																																				
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RESTRICTIONS:    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 <div style="margin-left: 40px;">                     Lease Lines:            330.0 F SOUTH L                                                    200.0 F WEST L                 </div> Terminus Location BH County: WARD Section: 3                      Block: 17                      Abstract: Survey: UL / A-U42 <div style="margin-left: 40px;">                     Lease Lines:            330.0 F SOUTH L                                                    100.0 F WEST L                      Survey Lines:           330.0 F SOUTH L                                                    100.0 F WEST L                 </div>																																						
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**RAILROAD COMMISSION OF TEXAS**  
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PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

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<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 in 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**

**WARD (475) County**

Formation	Shallow Top	Deep Top	Remarks	Geological Order	Effective Date
RUSTLER	1,700	1,700		1	12/17/2013
YATES	2,000	2,800		2	12/17/2013
SEVEN RIVERS	2,375	2,375		3	12/17/2013
QUEEN	2,200	3,200		4	12/17/2013
GLORIETA	3,900	4,000		5	12/17/2013
SAN ANDRES	2,000	4,500	high flows, H2S, corrosive	6	12/17/2013
HOLT	4,600	4,800		7	12/17/2013
CLEARFORK	4,500	5,000		8	12/17/2013
DELAWARE	2,300	5,000		9	12/17/2013
TUBB	4,600	5,300		10	12/17/2013
WICHITA ALBANY	6,000	6,200		11	12/17/2013
CHERRY CANYON	4,800	7,800		12	12/17/2013
WADDELL	7,600	9,700		13	12/17/2013
BONE SPRINGS	4,700	9,800		14	12/17/2013
WOLFCAMP	6,000	12,750		15	12/17/2013
MONTOYA	14,500	14,500		16	12/17/2013
PENNSYLVANIAN	7,500	14,900		17	12/17/2013
ATOKA	12,000	15,000		18	12/17/2013
FUSSELMAN	6,400	17,500		19	12/17/2013
DEVONIAN	6,200	17,800		20	12/17/2013
ELLENBURGER	7,900	20,800		21	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:** 08 November 2018**GAU Number:** 220504**Attention:** ABRAXAS PETROLEUM  
18803 MEISNER DR  
SAN ANTONIO, TX 78258**Operator No.:** 003125**API Number:**  
**County:** WARD  
**Lease Name:** WOODBERRY  
**Lease Number:**  
**Well Number:** 101H  
**Total Vertical Depth:** 12000  
**Latitude:** 31.559369  
**Longitude:** -103.137970  
**Datum:** NAD27**Purpose:** New Production Well**Location:** Survey-G&MMB&A; Abstract-52; Block-F; Section-98

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

The interval from the land surface to the base of the Santa Rosa, which is estimated to occur at a depth of 1400 feet, must be protected.

This recommendation is applicable to all wells within a radius of 200 feet of this location.

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

Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area-wide use. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 11/06/2018. 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

ABRAXAS PETROLEUM CORP.

LEASE NAME & WELL NO.:

WOODBERRY 3 #101H

TOPOGRAPHY & VEGETATION:

NATURAL MESQUITE PASTURE

NEAREST TOWN IN COUNTY:

±1.85 MILES NORTHWEST OF PYOTE, TEXAS

DESCRIPTION:

SHL/PP: SECTION 98, BLOCK F, G. & M.M.B. & A. SURVEY, A-52

FTP/LTP/BHL: SECTION 3, BLOCK 17, UNIVERSITY LAND SURVEY,  
WARD COUNTY, TEXAS

SPECIAL NOTES:

Original Document Size: 8.5"x14"  
All Coordinates are in NAD 27 TX-C Zone unless otherwise noted.

CERTIFICATION:  
This well location shown on this permit plat was surveyed on the ground under my direct supervision. This plat is for Texas Railroad Commission permit purpose only and should not be considered a boundary survey.



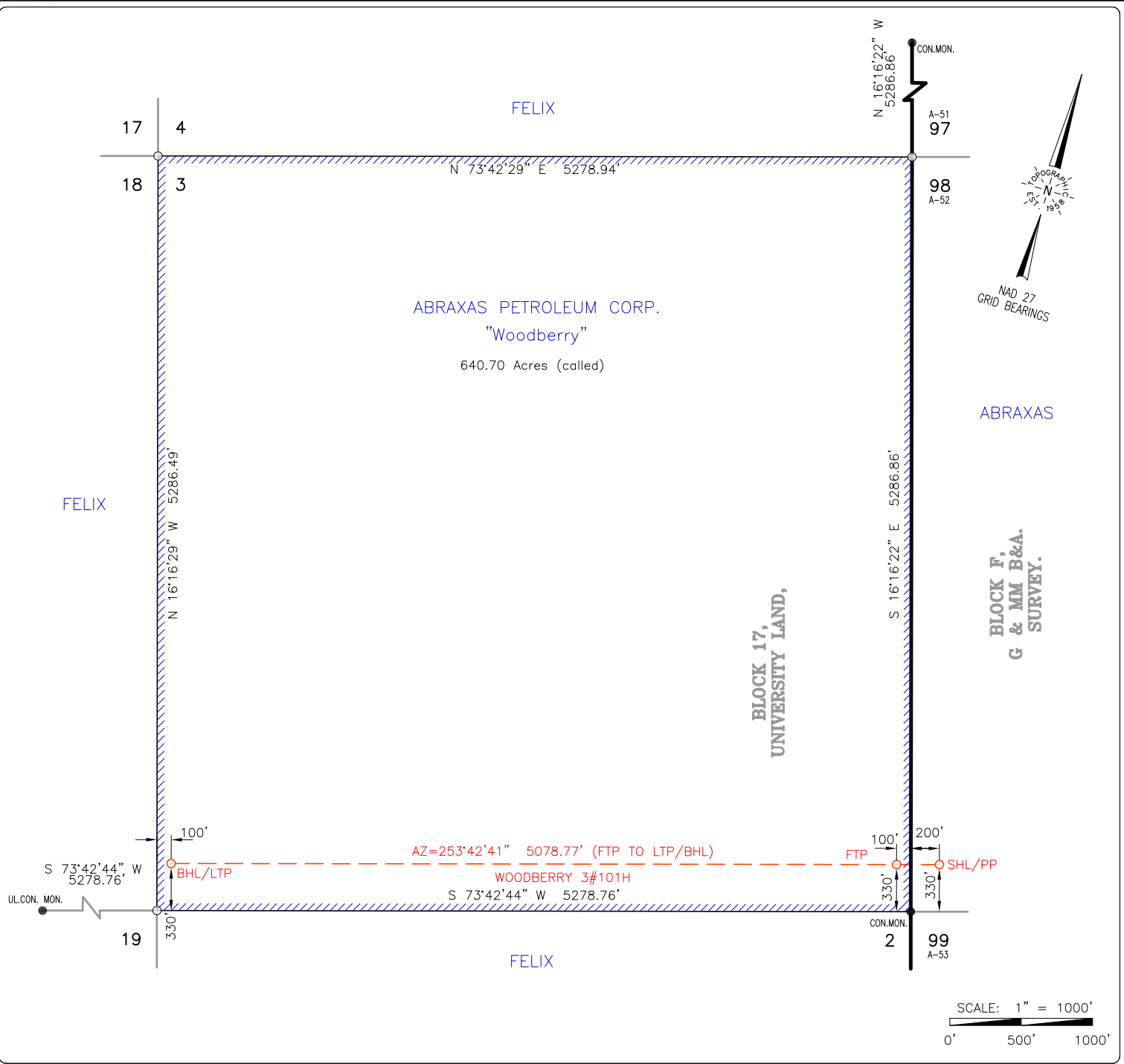
*William J. Keating*  
Texas Reg. No. 5041



2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743  
WWW.TOPOGRAPHIC.COM  
Texas FIRM Registration NO. 10042500  
LO\_WOODBERRY\_3\_#101H

Surface Hole Location/  
Penetration Point:  
330' FSL & 200' FWL (SEC.98)  
SHL Ground Elevation: 2653'  
X = 1126385 Y = 699424  
LAT.: N 31.5595027 LONG.: W 103.1384100  
NAD 83 TX-C ZONE  
X = 1422851 Y = 10541999  
LAT.: N 31.5596354 LONG.: W 103.1388498  
First Take Point:  
330' FSL & 100' FEL (SEC.3)  
X = 1126097 Y = 699340  
LAT.: N 31.5592515 LONG.: W 103.1393274  
NAD 83 TX-C ZONE  
X = 1422563 Y = 10541915  
LAT.: N 31.5593842 LONG.: W 103.1397672  
Last Take Point/  
Bottom Hole Location:  
330' FSL & 100' FWL (SEC.3)  
X = 1121222 Y = 697915  
LAT.: N 31.5549976 LONG.: W 103.1548575  
NAD 83 TX-C ZONE  
X = 1417688 Y = 10540491  
LAT.: N 31.5551303 LONG.: W 103.1552978

- LEGEND
- Section Line
  - Block Line
  - Abstract Line
  - Tract Line
  - Lease Road
  - County Road
  - Unit/Lease Boundary
  - Found Monument
  - Set 1/2" Rebar w/cap
  - Calculated Corner



Surveyed:	10/09/2018	COGO: 575-120469	Drawn By: YB; 10/10/2018	
Scale:	1"=1000'		Revision: 1(YB)	Date Revised: 11/09/18