



RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress  
P.O. Box 12967  
Austin, Texas 78701-2967

Status: Approved  
Date: 04/03/2017  
Tracking No.: 163734

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

OPERATOR INFORMATION

Operator Name: SHELL WESTERN E&P Operator No.: 774719  
Operator Address: PO BOX 576 HOUSTON, TX 77001-0000

WELL INFORMATION

API No.: 42-301-32848 County: LOVING  
Well No.: 2303H RRC District No.: 08  
Lease Name: UNIVERSITY 19 PW UNIT Field Name: PHANTOM (WOLFCAMP)  
RRC Lease No.: 42401 Field No.: 71052900  
Location: Section: 23, Block: 19, Survey: UNIVERSITY LAND, Abstract:  
  
Latitude: Longitude:  
This well is located 16.6 miles in a SE  
direction from MENTONE,  
which is the nearest town in the county.

FILING INFORMATION

Purpose of filing: Initial Potential  
Type of completion: New Well  
Well Type: Producing Completion or Recompletion Date: 10/19/2016  

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or Deepen	02/02/2016	813604
Rule 37 Exception		0299586
Fluid Injection Permit		
O&G Waste Disposal Permit		
Other:		

COMPLETION INFORMATION

Spud date: 05/04/2016	Date of first production after rig released: 10/19/2016
Date plug back, deepening, recompletion, or drilling operation commenced: 05/04/2016	Date plug back, deepening, recompletion, or drilling operation ended: 06/20/2016
Number of producing wells on this lease in this field (reservoir) including this well: 11	Distance to nearest well in lease & reservoir (ft.): 2578.0
Total number of acres in lease: 8588.11	Elevation (ft.): 2830 GL
Total depth TVD (ft.): 11714	Total depth MD (ft.): 18700
Plug back depth TVD (ft.):	Plug back depth MD (ft.):
Was directional survey made other than inclination (Form W-12)? Yes	Rotation time within surface casing (hours): 89.0
Recompletion or reclass? No	Is Cementing Affidavit (Form W-15) attached? Yes
Type(s) of electric or other log(s) run: Gamma Ray (MWD)	Multiple completion? No
Electric Log Other Description:	
Location of well, relative to nearest lease boundaries	Off Lease : No
of lease on which this well is located: 1496.0 Feet from the	NE Line and
1491.0 Feet from the	SE Line of the
	UNIVERSITY 19 A Lease.

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type
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PACKET: N/A

W2:	N/A		
FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:			
GAU Groundwater Protection Determination	Depth (ft.):	1075.0	Date: 02/01/2016
SWR 13 Exception	Depth (ft.):	5090.0	

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION		
Date of test: 10/29/2016		Production method: Flowing
Number of hours tested: 24		Choke size: 32/64
Was swab used during this test?	No	Oil produced prior to test: 6138.00
PRODUCTION DURING TEST PERIOD:		
Oil (BBLS): 1224.00		Gas (MCF): 1697
Gas - Oil Ratio: 1386		Flowing Tubing Pressure: 2165.00
Water (BBLS): 4527		
CALCULATED 24-HOUR RATE		
Oil (BBLS): 1224.0		Gas (MCF): 1697
Oil Gravity - API - 60.:	44.3	Casing Pressure: 2169.00
Water (BBLS): 4527		

CASING RECORD											
Row	Type of Casing	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi - Stage Depth (ft.)	Multi - Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
1	Surface	9 5/8	12 1/4	5005	1229		CLASS C	3455	6255.0	0	Circulated to Surface
2	Intermediate	7	8 3/4	12145			50/50 POZ	515	1108.0	1667	Calculation

LINER RECORD									
Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement (ft.)	TOC Determined By
N/A									

TUBING RECORD			
Row	Size (in.)	Depth	Size (ft.)
N/A			

PRODUCING/INJECTION/DISPOSAL INTERVAL			
Row	Open hole?	From (ft.)	To (ft.)
1	No	L1 12317	18332.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment performed? Yes			
Is well equipped with a downhole actuation sleeve? Yes			
If yes, actuation pressure (PSIG): 5600.0			
Production casing test pressure (PSIG) prior to hydraulic fracturing treatment: 8900			
Actual maximum pressure (PSIG) during hydraulic fracturing: 9167			
Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR29)? Yes			
Row	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)
1	Fracture	WELL DATA HAS BEEN UPLOADED INTO FRAC FOCUS.	12317 18332

FORMATION RECORD

Formations	Encountered	Depth TVD (ft.)	Depth MD (ft.)	Is formation isolated?	Remarks
DELAWARE	Yes	5130.0	5167.0	Yes	
BELL CANYON	Yes	5144.0	5191.0	Yes	
CHERRY CANYON	Yes	6094.0	6134.0	Yes	
BRUSHY CANYON	Yes	7265.0	7306.0	Yes	
BONE SPRINGS	Yes	8660.0	8702.0	Yes	PRODUCTIVE
WOLFCAMP	Yes	11455.0	11561.0	Yes	PRODUCTIVE
RED BLUFF	No			No	FORMATION NOT GEOLOGICALLY PRESENT
PENNSYLVANIAN	No			No	BELOW WELLBORE DEPTH
STRAWN	No			No	BELOW WELLBORE DEPTH
ATOKA - HIGH PRESSURE	No			No	BELOW WELLBORE DEPTH
MORROW	No			No	BELOW WELLBORE DEPTH
DEVONIAN	No			No	BELOW WELLBORE DEPTH
FUSSELMAN	No			No	BELOW WELLBORE DEPTH
ELLENBURGER	No			No	BELOW WELLBORE DEPTH

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm (SWR 36)? No

Is the completion being downhole commingled (SWR 10)? No

REMARKS

KOP AT 10997'.

THIS WELL IS PART OF THE UNIVERSITY 19 PW UNIT, LEASE ID 42401.

RRC REMARKS

**PUBLIC COMMENTS:**

[RRC Staff 2016-11-17 10:32:28.129] EDL=6015 feet, max acres=704, PHANTOM (WOLFCAMP) oil or gas well

**CASING RECORD :**

**TUBING RECORD:**

TUBING HAS NOT BEEN INSTALLED, BUT WILL BE INSTALLED 30-45 AFTER PRODUCTION HAS BEEN ESTABLISHED.

**PRODUCING/INJECTION/DISPOSAL INTERVAL :**

**ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :**

**POTENTIAL TEST DATA:**

OPERATOR'S CERTIFICATION	
Printed Name: Maureen Kovacic	Title: Regulatory Specialist
Telephone No.: (832) 337-0953	Date Certified: 03/30/2017



# RAILROAD COMMISSION OF TEXAS

1701 N. Congress  
P.O. Box 12967  
Austin, Texas 78701-2967

Form W-15

Rev. 08/2014

## CEMENTING REPORT

Cementer: Fill in shaded areas.  
Operator: Fill in other items.

### OPERATOR INFORMATION

Operator Name: SHELL WESTERN E & P	Operator P-5 No.: 774719
Cementer Name: HALLIBURTON ENERGY SERVICES	Cementer P-5 No.: 347151

### WELL INFORMATION

District No.: 08	County: LOVING	
Well No.: 2303 H	API No.: 42-301-32848	Drilling Permit No.: 813604
Lease Name: UNIVERSITY 19 A	Lease No.:	
Field Name: Phantom (Wolfcamp)	Field No.:	

### I. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Conductor <input checked="" type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production		
Drilled hole size (in.): 12 1/4"	Depth of drilled hole (ft.): 5057'	Est. % wash-out or hole enlargement: 200%
Size of casing in O.D. (in.): 9 5/8"	Casing weight (lbs/ft) and grade: 40#/K55	No. of centralizers used: 35
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 5,005	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: 0	Calculated top of cement (ft.): Surface	Cementing date: 5/7/16

### SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	2960	C	SEE REMARKS	5594	3030
2	495	C	SEE REMARKS	661	2027
3					
Total	3455			6255	5057

### II. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement shoe <input type="checkbox"/> Multiple parallel strings		
Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight (lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO	Setting depth shoe (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

### SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

### III. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings		
Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight (lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO	Setting depth tool (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

### SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

## CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON

	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

## REMARKS

LEAD- .25LBM D-AIR 5000, 3% SALT, .65% HR-600 TAIL- .5% BENTONITE, .35% HR-800

Cir 1726 sk

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

JASON WELTON - SSIII

Halliburton

Name and title of cementer's representative

Cementing Company

Signature

6155 W. Murphy St.

Odessa, TX, 79763

432-571-8600

5/7/16

Address

City, State, Zip Code

Tel: Area Code

Number

Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Maureen Kovacic

Regulatory Specialist

Signature

Typed or printed name of operator's representative

Title

150 N. Dairy Ashford

Houston TX 77079

832-337-0953

11/16/2016

Address

City, State, Zip Code

Tel: Area Code

Number

Date: mo. day yr.

## Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

- What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.  
The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.
- How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (<https://webapps.rrc.state.tx.us/security/login.do>) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).
- Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.  
To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 ([http://info.sos.state.tx.us/pls/pub/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1&p\\_tac=&ti=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14)). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.
- Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.
- Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.
- Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.
- Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.



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Form W-15

Rev. 08/2014

Cementer: Fill in shaded areas.  
Operator: Fill in other items.

## CEMENTING REPORT

### OPERATOR INFORMATION

Operator Name: SHELL WESTERN E & P - EBUS	Operator P-5 No.:
Cementer Name: HALLIBURTON	Cementer P-5 No.: 347151

### WELL INFORMATION

District No.: 08	County: LOVING	
Well No.: 2303H	API No.: 42-301-32937	Drilling Permit No.: 816306
Lease Name: UNIVERSITY 19 A	Lease No.:	
Field Name: Phantom (Wolfcamp)	Field No.:	

### I. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input checked="" type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production					
Drilled hole size (in.): 7"		Depth of drilled hole (ft.): 12,208		Est. % wash-out or hole enlargement: 40%	
Size of casing in O.D. (in.): 8 3/4"		Casing weight (lbs/ft) and grade: p110/29#		No. of centralizers used: 0	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If no for surface casing, explain in Remarks.			Setting depth shoe (ft.): 12,145		Top of liner (ft.):
			Setting depth liner (ft.):		
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 1,667		Cementing date:	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	950	LEAD ECONOCEM (TM) SYSTEM/ 8 lbm Salt	0.25 %m D-AIR 5000/ 0.80 % HP-202/ 20 % Bentonia	903.7	8729.28
2		0.05 % SA-1015			
3	165	TAIL 50/50 Pos Freedom/ 0.50 lbm D-AIR 5000	0.30 % CFR-3/ 0.0250 % SA-1015/ 0.50 % LAP-1	204.765	1796.65
Total	515			1108.465	10525.93

### II. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement shoe: <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.):		Depth of drilled hole (ft.):		Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):		Casing weight (lbs/ft) and grade:		No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:			Tapered string depth of drilled hole (ft.) Upper: Lower:		
Tapered string size of casing in O.D. (in.) Upper: Lower:			Tapered string casing weight (lbs/ft) and grade Upper: Lower:		Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO					Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):		Cementing date:	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

### III. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Production <input type="checkbox"/> Tapered production <input type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.):		Depth of drilled hole (ft.):		Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):		Casing weight (lbs/ft) and grade:		No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:			Tapered string depth of drilled hole (ft.) Upper: Lower:		
Tapered string size of casing in O.D. (in.) Upper: Lower:			Tapered string casing weight (lbs/ft) and grade Upper: Lower:		Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO					Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:		Calculated top of cement (ft.):		Cementing date:	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CEMENTING TO SQUEEZE PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

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**ALI ELKADRI / SERVICE SUPERVISOR**

Halliburton

Name and title of cementer's representative

Cementing Company

Signature

6155 W. Murphy St.

Odessa, TX, 79763

432-571-8600

05/17/2016

Address

City, State, Zip Code

Tel: Area Code

Number

Date: mo. day yr.

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Maureen Kovacic

Regulatory Specialist

Signature

Typed or printed name of operator's representative

Title

150 N. Dairy Ashford

Houston, TX 77079

832-337-0953

11/16/2016

Address

City, State, Zip Code

Tel: Area Code

Number

Date: mo. day yr.

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- How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (<https://webapps.rrc.state.tx.us/security/login.do>) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).
- Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.  
To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 ([http://info.sos.state.tx.us/pls/pub/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1&p\\_tac=&ti=16&pt=1&ch=3&rl=14](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14)). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.
- Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.
- Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.
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- Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.





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

**OPERATOR Name:** SHELL WESTERN E&P

**RE: Lease:** UNIVERSITY 19 A

**Address1:** PO BOX 576

**Address2:**

**Well No:** 2303H

**City:** HOUSTON

**Sec:** 23 **Block:** 19

**State:** TX

**County:** LOVING

**Survey Name:** UNIVERSITY LAND

**SWR13EX Application Number:** 7365

**Drilling Permit No:** 813604

**SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED**

The Proposed Casing and Cementing Program submitted for the **LEASE NAME:** UNIVERSITY 19 A ;  
**WELL NUMBER:** 2303H has been approved by the Railroad Commission of Texas District Office.

- a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.
- b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.
- c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.
- d. The casing and cement program shall adhere to the following specifications:  
  
Set 5090 feet of surface casing with a multistage tool set at a depth of not less than 1226 feet. Circulate cement from the multistage tool to the ground surface. If cement does not circulate to surface during the first stage, the multistage tool MUST be opened and neat cement be circulated from the tool to the surface.

Please notify the Midland District Office immediately if any gas, H<sub>2</sub>S or otherwise, is encountered before surface casing is set.

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted on 03/30/2016 .  
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: Erik Hanson

DATE: 04/04/2016

DISTRICT DIRECTOR

Tracking No.: 163734

This facsimile L-1 was generated electronically from data submitted to the RRC.

## Instructions

**When to File Form L-1:**

- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

**When is Form L-1 NOT required:**

- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

**Where to File Form L-1:**

- with the appropriate Commission district office

**Filling out Form L-1:**

- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

**Type of log required:**

- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

## SECTION I. IDENTIFICATION

Operator Name: SHELL WESTERN E&P	District No. 08	Completion Date: 10/19/2016
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 813604	
Lease Name UNIVERSITY 19 PW UNIT	Lease/ID No. 42401	Well No. 2303H
County LOVING	API No. 42- 301-32848	

## SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN☒ B. BASIC ELECTRIC LOG RUN. (Select one)

- ☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.
- ☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).
- ☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).
- ☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: \_\_\_\_\_

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). \_\_\_\_\_

Well No(s). \_\_\_\_\_

Maureen Kovacic

Signature

SHELL WESTERN E&amp;P

Name (print)

Regulatory Specialist

Title

(832) 337-0953

Phone

11/11/2016

Date

-FOR RAILROAD COMMISSION USE ONLY-



1. Field name exactly as shown on proration schedule <b>PHANTOM (WOLFCAMP)</b>			2. Lease name as shown on proration schedule <b>UNIVERSITY 19 PW UNIT</b>			
3. Current operator name exactly as shown on P-5 Organization Report <b>SHELL WESTERN E&amp;P</b>			4. Operator P-5 no. <b>774719</b>	5. Oil Lse/Gas ID no <b>42401</b>	6. County <b>LOVING</b>	7. RRC district <b>08</b>
8. Operator address including city, state, and zip code <b>PO BOX 576 HOUSTON, TX 77001</b>			9. Well no(s) <i>(see instruction E)</i> <b>2303H</b>			
10. Classification <input checked="" type="checkbox"/> Oil <input type="checkbox"/> Gas <input type="checkbox"/> Other <i>(see instruction A)</i>			11. Effective Date <b>10/19/2016</b>			
12. Purpose of Filing. (Complete section a or b below.) <i>(See instructions B and G)</i> <b>a. Change of:</b> <input type="checkbox"/> operator <input type="checkbox"/> oil or condensate gatherer <input type="checkbox"/> gas gatherer <input type="checkbox"/> gas purchaser <input type="checkbox"/> gas purchaser system code <input type="checkbox"/> field name from _____ <input type="checkbox"/> lease name from _____ <hr style="border-top: 1px dashed black;"/> <b>OR</b> <b>b. New RRC Number for:</b> <input checked="" type="checkbox"/> oil lease <input type="checkbox"/> gas well <b>Due to:</b> <input checked="" type="checkbox"/> new completion or recompletion <input type="checkbox"/> reclass oil to gas <input type="checkbox"/> reclass gas to oil <input type="checkbox"/> other well (specify) _____ <input type="checkbox"/> consolidation, unitization, or subdivision (oil lease only)						
13. Authorized GAS WELL GAS or CASINGHEAD GAS Gatherer(s) and/or Purchaser(s). <i>(See instruction G).</i>						
Gatherer	Purchaser	Name of GAS WELL GAS or CASINGHEAD GAS Gatherer(s) or Purchaser(s) As Indicated in Columns to the Left <i>(Attach an additional sheet in same format if more space is needed)</i>	Purchaser's RRC Assigned System Code	Percent of Take	Full-well stream	
X		DELAWARE BASIN JV GATHERING LLC(211490)		100.0		
	X	SHELL ENERGY NORTH AM. (US), LP(773822)	0001	100.0		
14. Authorized OIL or CONDENSATE Gatherer(s). <i>(See instruction G).</i>						
Name of OIL or CONDENSATE Gatherer(s) - List Highest Volume Gatherer First <i>(Attach an additional sheet in same format if more space is needed)</i>					Percent of Take	
SHELL WESTERN E&P(774719)					100.0	
<b>RRC USE ONLY:</b> Reviewer's initials: <u>RRC Staff</u> Approval date: <u>04/03/2017</u>						
<b>15. PREVIOUS OPERATOR CERTIFICATION FOR CHANGE OF OPERATOR P-4 FILING.</b> Being the PREVIOUS OPERATOR, I certify that operating responsibility for the well(s) designated in this filing, located on the subject lease has been transferred in its entirety to the above named Current Operator. I understand, as Previous Operator, that designation of the above named operator as Current Operator is not effective until this certificate is approved by the Commission.						
Name of Previous Operator _____ Name (print) _____ Title _____			Signature _____ <input type="checkbox"/> <b>Authorized Employee of previous operator</b> <input type="checkbox"/> <b>Authorized agent of previous operator</b> <i>(see instruction G)</i> Date _____      Phone with area code _____			
<b>16. CURRENT OPERATOR CERTIFICATION.</b> By signing this certificate as the Current Operator, I certify that all statements on this form are true and correct and I acknowledge responsibility for the regulatory compliance of the subject lease including plugging of well(s) pursuant to Rule 14. I further acknowledge that I assume responsibility for the physical operation, control, and proper plugging of each well designated in this filing. I also acknowledge that I will remain designated as the Current Operator until a new certificate designating a new Current Operator is approved by the Commission.						
<b>SHELL WESTERN E&amp;P</b> Name (print) <u>Regulatory Specialist</u> Title <u>maureen.kovacic@shell.com</u> E-mail Address (optional)			<b>Maureen Kovacic</b> Signature <input checked="" type="checkbox"/> <b>Authorized Employee of current operator</b> <input type="checkbox"/> <b>Authorized agent of current operator</b> <i>(see instruction G)</i> <u>10/19/2016</u> <u>(832) 337-0953</u> Date      Phone with area code			

# CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

# P-12

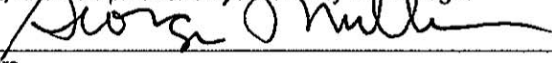
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned)	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 2303H
7. Pooled Unit Name University 19 A	8. API Number	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving	11. Total acres in pooled unit 1282.3	

## DESCRIPTION OF INDIVIDUAL TRACTS CONTAINED WITHIN THE POOLED UNIT

TRACT/PLAT IDENTIFIER	TRACT NAME	ACRES IN TRACT (See inst. #7 below)	INDICATE UNDIVIDED INTERESTS	
			UNLEASED	NON-POOLED
	University 19-18 LOV	641.31	<input type="checkbox"/>	<input type="checkbox"/>
	University 19-23 LOV	640.99	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

### CERTIFICATION:

I declare under penalties prescribed pursuant to the Sec. 91.143, Texas Natural Resources Code, that I am authorized to make the foregoing statements and that the information provided by me or under my direction on this Certificate of Pooling Authority is true, correct, and complete to the best of my knowledge.



George Mullen

Signature

Print Name

Sr. Reg. Specialist

george.mullen@shell.com

02/01/2016

(832) 337-0549

Title

E-mail (if available)

Date

Phone

### INSTRUCTIONS — Reference: Statewide Rules 31, 38 and 40

- When two or more tracts are pooled to form a unit to obtain a drilling permit, file completion paperwork, or reform a pooled unit pursuant to Rule 38(d)(3) the operator must file an original Certificate of Pooling Authority and certified plat.
- The certified plat shall designate each tract with an outline and a tract identifier. The tract identifier on the plat shall correspond to the tract identifier and associated information listed on the Certificate.
- If within an individual tract, a non-pooled and/or unleased interest exists, indicate by checking the appropriate box.
- If the Purpose of Filing is to obtain a drilling permit, in box #1 list all applicable fields separately or enter "All Fields" if the Certificate pertains to all fields requested on Form W-1.
- If the Purpose of Filing is to file completion paperwork, enter the applicable field name in box #1 for the completion.
- Identify the drill site tract with an \* to the left of the tract identifier.
- The total number of acres in the pooled unit in #11 should equal the total of all acres in the individual tracts listed.



## GROUNDWATER PROTECTION DETERMINATION

Form GW-2



## Groundwater Advisory Unit

**Date Issued:** 01 February 2016**GAU Number:** 150534**Attention:** SHELL WESTERN E&P  
PO BOX 576  
HOUSTON, TX 77001**Operator No.:** 774719**API Number:**  
**County:** LOVING  
**Lease Name:** University 19 A  
**Lease Number:**  
**Well Number:** 2303H  
**Total Vertical Depth:** 12300  
**Latitude:** 31.660075  
**Longitude:** -103.395619  
**Datum:** NAD27**Purpose:** New Drill**Location:** Survey-UL; Abstract-U23; Block-19; Section-23

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 350 feet and the Rustler, which is estimated to occur from 675 to 1075 feet must be protected.

This recommendation is applicable to all wells within a radius of 200 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 02/01/2016. 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



UNIVERSITY 19 A 2303H  
WELL LOCATION  
1282.30 ACRES (MEASURED)  
SECTIONS 18 & 23, BLOCK 19, UNIVERSITY LAND  
LOVING COUNTY, TEXAS

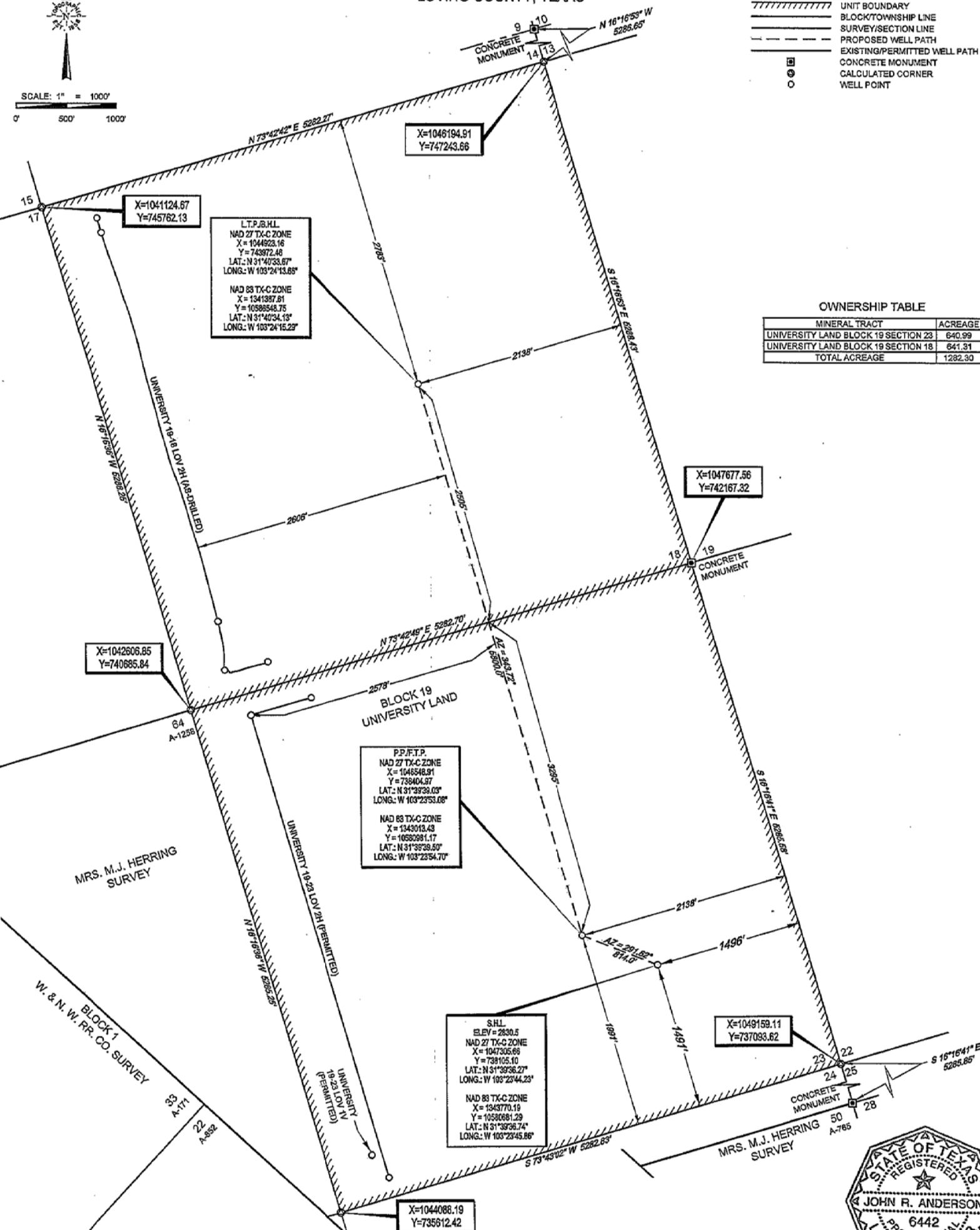
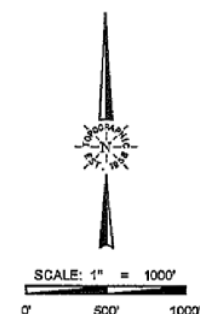
SHELL WESTERN  
E&P

LEGEND

=====	UNIT BOUNDARY
=====	BLOCK/TOWNSHIP LINE
=====	SURVEY/SECTION LINE
-----	PROPOSED WELL PATH
-----	EXISTING/PERMITTED WELL PATH
●	CONCRETE MONUMENT
○	CALCULATED CORNER
○	WELL POINT

OWNERSHIP TABLE

MINERAL TRACT	ACREAGE
UNIVERSITY LAND BLOCK 19 SECTION 23	640.99
UNIVERSITY LAND BLOCK 19 SECTION 18	641.31
TOTAL ACREAGE	1282.30



TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	1496' FNEL	1496' FNEL & 1491' FSEL
P.P./F.T.P.	2138' FSEL	2138' FSEL & 1981' FSEL
L.T.P./B.H.L.	2783' FFWL	2138' FSEL & 2505' FSEL

**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



*John R. Anderson* 2/1/16  
John R. Anderson, R.P.L.S. No. 6442  
FEBRUARY 1, 2016

UNIVERSITY 19 A 2303H

DATE: 02/01/2016

FILE: UN\_UNIVERSITY\_19\_A\_2303H

DRAWN BY: O.M.

SHEET: 1 OF 1

REVISION:

INT DATE

NOTES:

1. ORIGINAL DOCUMENT SIZE: 11"x17"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.
3. 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.S.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.
4. ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.
5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.

NOTES CONT'D:

6. THE LEASE AND WELL SHOWN HEREON ARE LOCATED APPROXIMATELY 12.4 MILES SOUTHEAST OF THE CITY/TOWNSHIP/MUNICIPALITY OF MENTONE WITHIN THE COUNTY OF LOVING IN THE STATE OF TEXAS.
7. THE PRELIMINARY LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE MONTH OF OCTOBER 5, 2015, AT A GROUND LEVEL ELEVATION OF 2830.5 SURVEY FEET.
8. S.H.L. = SURFACE HOLE LOCATION
9. P.P. = POINT OF PENETRATION
10. F.T.P. = FIRST TAKE POINT
11. L.T.P. = LAST TAKE POINT
12. B.H.L. = BOTTOM HOLE LOCATION

UNIVERSITY 19 A 2303 H  
AS-DRILLED LOCATION  
1282.30 ACRES (MEASURED)  
SECTIONS 18 & 23, BLOCK 19, UNIVERSITY LAND  
LOVING COUNTY, TEXAS

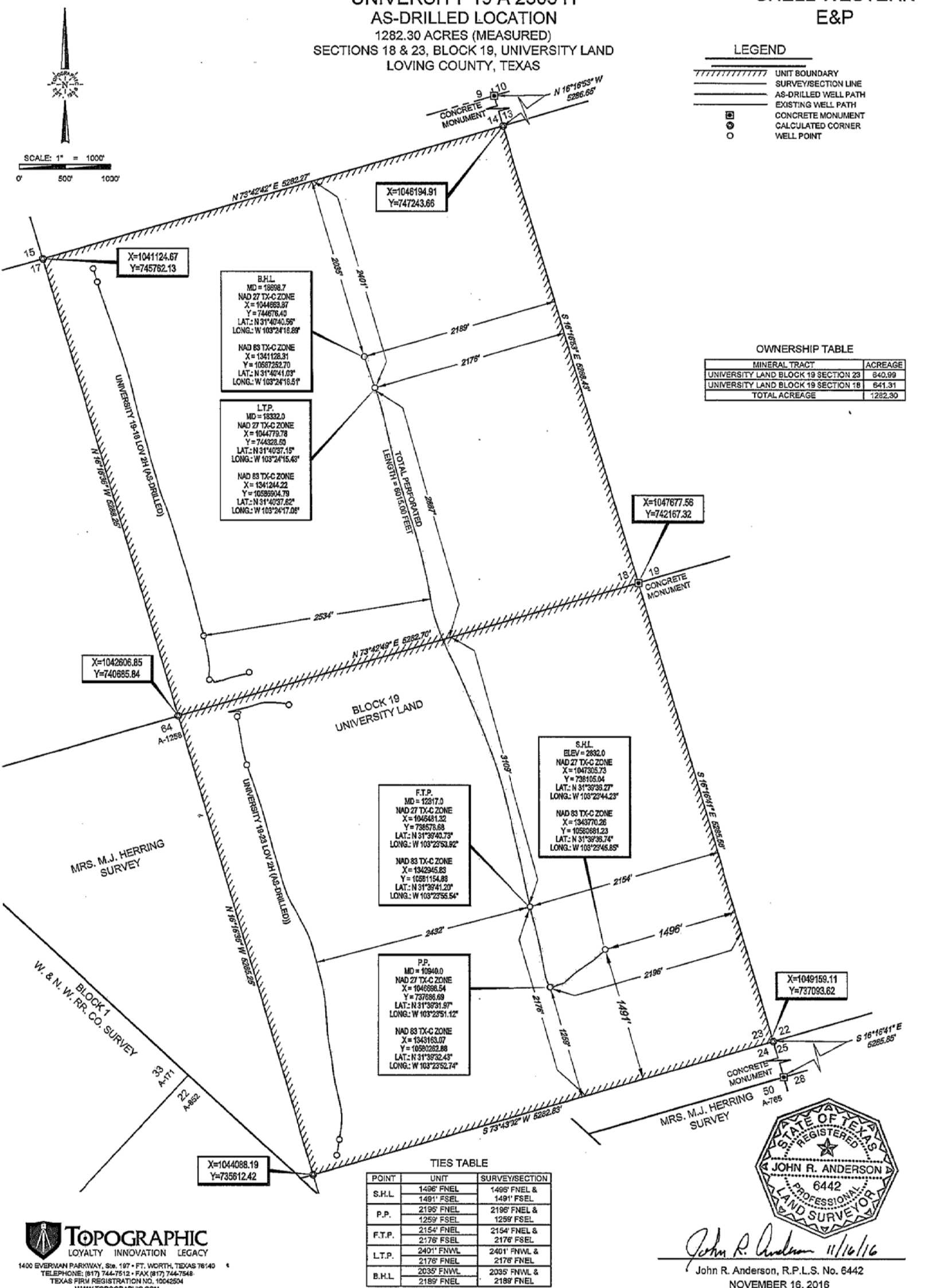
SHELL WESTERN  
E&P

LEGEND

UNIT BOUNDARY
SURVEY/SECTION LINE
AS-DRILLED WELL PATH
EXISTING WELL PATH
CONCRETE MONUMENT
CALCULATED CORNER
WELL POINT

OWNERSHIP TABLE

MINERAL TRACT	ACREAGE
UNIVERSITY LAND BLOCK 19 SECTION 23	840.99
UNIVERSITY LAND BLOCK 19 SECTION 18	641.31
TOTAL ACREAGE	1282.30



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TELEPHONE: (817) 744-7512 • FAX (817) 744-7548  
TEXAS FIRM REGISTRATION NO. 10042504  
WWW.TOPOGRAPHIC.COM

UNIVERSITY 19 A 2303 H

REVISION:

INT	DATE
O.M.	11/16/2016

DATE: 11/15/16

FILE: AD UNIVERSITY\_19\_A\_2303\_H\_REV1

DRAWN BY: MML

SHEET: 1 OF 1

NOTES:

1. ORIGINAL DOCUMENT SIZE: 11" X 17"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.
3. 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.
4. ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.
5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.

NOTES CONT'D:

6. THE LEASE AND WELL SHOWN HEREON ARE LOCATED APPROXIMATELY 12.4 MILES SOUTHEAST OF THE CITY/TOWNSHIP/MUNICIPALITY OF MENTONE WITHIN THE COUNTY OF LOVING IN THE STATE OF TEXAS.
7. THE AS-DRILLED SURFACE LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF APRIL 19, 2016, AT A GROUND LEVEL ELEVATION OF 2832.0 SURVEY FEET.
8. THE SUBSURFACE WELL PATH DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.
9. S.H.L. = SURFACE HOLE LOCATION
10. P.P. = POINT OF PENETRATION
11. F.T.P. = FIRST TAKE POINT
12. L.T.P. = LAST TAKE POINT
13. B.H.L. = BOTTOM HOLE LOCATION



John R. Anderson 11/16/16

John R. Anderson, R.P.L.S. No. 6442  
NOVEMBER 16, 2016