



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
 Date: 12/20/2017
 Tracking No.: 177467

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION			
Operator	SHELL WESTERN E&P	Operator	774719
Operator	PO BOX 576 HOUSTON, TX 77001-0000		

WELL INFORMATION			
API	42-301-32938	County:	LOVING
Well No.:	2004H	RRC District	08
Lease	UNIVERSITY 20 PW UNIT	Field	PHANTOM (WOLFCAMP)
RRC Lease	44020	Field No.:	71052900
Location	Section: 29, Block: 20, Survey: UNIVERSITY LAND, Abstract:		
Latitude	31	Longitud	-103
This well is	15.8	miles in a	SOUTHEAST
direction from	MENTONE,		
which is the nearest town in the			

FILING INFORMATION			
Purpose of	Initial Potential		
Type of	Other/Recompletion		
Well Type:	Producing	Completion or Recompletion	09/08/2016
<u>Type of Permit</u>		<u>Date</u>	<u>Permit No.</u>
Permit to Drill, Plug Back, or		06/28/2016	816416
Rule 37 Exception			0300947
Fluid Injection			
O&G Waste Disposal			
Other:			

COMPLETION INFORMATION			
Spud	08/01/2016	Date of first production after rig	09/08/2016
Date plug back, deepening, drilling operation	08/01/2016	Date plug back, deepening, recompletion, drilling operation	09/08/2016
Number of producing wells on this lease this field (reservoir) including this	8	Distance to nearest well in lease & reservoir	1004.0
Total number of acres in	13144.15	Elevation	2780 GL
Total depth TVD	11967	Total depth MD	19700
Plug back depth TVD		Plug back depth MD	19695
Was directional survey made other inclination (Form W-	Yes	Rotation time within surface casing Is Cementing Affidavit (Form W-15)	69.0 Yes
Recompletion or	Yes	Multiple	No
Type(s) of electric or other log(s)	Gamma Ray (MWD)		
Electric Log Other Description:			
Location of well, relative to nearest lease of lease on which this well is	337.0 Feet from the	1633.0 Feet from the	Off Lease : Yes NW Line and NE Line of the UNIVERSITY 20 PW UNIT Lease.

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.			
Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type
PACKET:	N/A		

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination	Depth	1100.0	Date	06/14/2016
SWR 13 Exception	Depth	5048.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of	07/28/2017	Production	Flowing
Number of hours	24	Choke	14/64
Was swab used during this	No	Oil produced prior to	13776.00
PRODUCTION DURING TEST PERIOD:			
Oil	312.00	Gas	1248
Gas - Oil	4000	Flowing Tubing	3316.00
Water	1560		
CALCULATED 24-HOUR RATE			
Oil	312.0	Gas	1248
Oil Gravity - API - 60.:	47.0	Casing	2161.00
Water	1560		

CASING RECORD

<u>Ro</u>	<u>Type of Casing</u>	<u>Casing Size (in.)</u>	<u>Hole Size</u>	<u>Setting Depth</u>	<u>Multi - Stage Tool</u>	<u>Multi - Stage Shoe</u>	<u>Cement Class</u>	<u>Cement Amoun</u>	<u>Slurry Volume (cu.)</u>	<u>Top of Cement (ft.)</u>	<u>TOC Determined By</u>
1	Surface	9 5/8	12 1/4	5015	1247		C	3340	5989.0	1247	Calculation
2	Surface	9 5/8	12 1/4	5015	1247		C	1141	2156.0	270	Calculation
3	Surface	9 5/8	12 1/4	5015	1247		C	1785	3373.0	270	Calculation
4	Surface	9 5/8	12 1/4	5015	1247		C	400	1132.0	270	Calculation
5	Surface	9 5/8	12 1/4	5015	1247		C	3570	6747.0	270	Cement Evaluation Log
6	Intermediate	7	8 3/4	11164			C,H	710	1430.0	4000	Calculation

LINER RECORD

<u>Ro</u>	<u>Liner Size</u>	<u>Hole Size</u>	<u>Liner Top</u>	<u>Liner Bottom</u>	<u>Cement Class</u>	<u>Cement Amoun</u>	<u>Slurry Volume (cu.)</u>	<u>Top of Cement (ft.)</u>	<u>TOC Determined</u>
1	4 1/2	6 1/4	10983	19695	H	790	948.0	1098 3	Calculation

TUBING RECORD

<u>Ro</u>	<u>Size (in.)</u>	<u>Depth Size (ft.)</u>	<u>Packer Depth (ft.)/Type</u>
1	2 7/8	10940	10912 / 6.0" HES VERSA SET PACKER

PRODUCING/INJECTION/DISPOSAL INTERVAL

<u>Ro</u>	<u>Open hole?</u>	<u>From (ft.)</u>	<u>To (ft.)</u>
1	No	L1 12202	19526.0

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

Was hydraulic fracturing treatment	No
Is well equipped with a downhole sleeve?	No
	If yes, actuation pressure
Production casing test pressure (PSIG) hydraulic fracturing	9500
	Actual maximum pressure (PSIG) during fracturin
	9399
Has the hydraulic fracturing fluid disclosure been	No

<u>Ro</u>	<u>Type of Operation</u>	<u>Amount and Kind of Material Used</u>	<u>Depth Interval (ft.)</u>
1	Fracture	WELL DATA HAS BEEN SUBMITTED IN FRACFOCUS	12202 19526

FORMATION RECORD

<u>Formations</u>	<u>Encountere</u>	<u>Depth TVD</u>	<u>Depth MD</u>	<u>Is formation</u>	<u>Remarks</u>
RED BLUFF	No			No	FORMATION NOT GEOLOGICALLY PRESENT
BELL CANYON	Yes	5137.0	5150.0	Yes	
BRUSHY CANYON	Yes	7370.0	5150.0	Yes	
DELAWARE	Yes	5109.0	5122.0	Yes	
CHERRY CANYON	Yes	6085.0	6098.0	Yes	
BONE SPRINGS	Yes	8748.0	8760.0	Yes	
WOLFCAMP	Yes	11660.0	11750.0	Yes	
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	No
Is the completion being downhole commingled	No

REMARKS

KOP: 11,236'
 THIS PACKAGE IS FOR SUBMITTAL OF INITIAL POTENTIAL. FOR ALL OTHER ATTACHMENTS, PLEASE REFERENCE TRACKING NO. 168156.
 THIS IS NOW A POOLED UNIT.

RRC REMARKS

PUBLIC COMMENTS:

[RRC Staff 2017-08-17 11:14:55.516] EDL=7324 feet, max acres=704, PHANTOM (WOLFCAMP) oil or gas well

CASING RECORD :

SURFACE CASING SET, DV TOOL OPENED, CEMENT NOT CIRCULATED TO SURFACE ON 08/05/2016. SECOND ATTEMPT TO CIRCULATE MADE ON 08/06/16; THIRD ATTEMPT ON 08/07/2016; FOURTH ATTEMPT WAS ON 08/08/16; FINAL TOP JOB ON 08/19/2016 AND ACHIEVED CEMENT TO SURFACE - NO W-15 PROVIDED BY VENDOR.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

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

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Maureen Kovacic	Title:	Regulatory Specialist
Telephone	(832) 337-0953	Date	11/30/2017



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION

Operator Name: SHELL EXPLORATION & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.	Cementer P-5 No.: 046292

WELL INFORMATION

District No.: 08	County: LOVING	
Well No.: 2004H	API No.: 42301329380000	Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B	Lease No.:	
Field Name: PHANTOM WOLFCAMP	Field No.:	

I. CASING CEMENTING DATA

Type of casing: Conductor Surface Intermediate Liner Production

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:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.):	Top of liner (ft.):
		Setting depth liner (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					

II. CASING CEMENTING DATA

Type of casing: Surface Intermediate Production Tapered production Multi-stage cement shoe Multiple parallel strings

Drilled hole size (in.): 12 1/4"	Depth of drilled hole (ft.): 5,015	Est. % wash-out or hole enlargement: 200%
Size of casing in O.D. (in.): 9 5/8"	Casing weight (lbs/ft) and grade: 40, J-55	No. of centralizers used: 8
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 checked="" type="checkbox"/> NO	Setting depth shoe (ft.): 5015'	
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 1247'	Cementing date: 08/05/2016

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	2,840	C	SEE REMARK #1	5,325	17,002
2	600	C	SEE REMARK #2	884	2,120
3					
Total	3,340			5,999	19,122

III. CASING CEMENTING DATA

Type of casing: Surface Intermediate Production Tapered production Multi-stage cement/DV tool Multiple parallel strings

Drilled hole size (in.): 12 1/4"	Depth of drilled hole (ft.): 5,015	Est. % wash-out or hole enlargement: 200%
Size of casing in O.D. (in.): 9 5/8"	Casing weight (lbs/ft) and grade: 40, J-55	No. of centralizers used: 26
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 checked="" type="checkbox"/> NO	Setting depth tool (ft.): 1,247'	
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 270'	Cementing date: 08/05/2016

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,141	C	SEE REMARK #3	2,166	6,884
2					
3					
Total	1,141			2,166	6,884



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Operator: Fill in other items.

CEMENTING REPORT

OPERATOR INFORMATION	
Operator Name: SHELL EXPLORATION & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.	Cementer P-5 No.: 046292

WELL INFORMATION	
District No.: 08	County: LOVING
Well No.: 2004H	API No.: 42301320380000
Lease Name: UNIVERSITY 20 B	Drilling Permit No.: 816416
Field Name: PHANTOM WOLFCAMP	Lease No.:
	Field No.:

I. CASING CEMENTING DATA					
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production					
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:			
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.		Setting depth shoe (ft.):	Top of liner (ft.):		
			Setting depth liner (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					

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.)		Tapered string depth of drilled hole (ft.)			
Upper: Lower:		Upper: Lower:		Upper: Lower:	
Tapered string size of casing in O.D. (in.)		Tapered string casing weight (lbs/ft) and grade		Tapered string no. of centralizers used	
Upper: Lower:		Upper: Lower:		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					

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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"	Depth of drilled hole (ft.): 5,015	Est. % wash-out or hole enlargement: 200%			
Size of casing in O.D. (in.): 9 5/8"	Casing weight (lbs/ft) and grade: 40, J-55	No. of centralizers used: 8			
Tapered string drilled hole size (in.)		Tapered string depth of drilled hole (ft.)			
Upper: Lower:		Upper: Lower:		Upper: Lower:	
Tapered string size of casing in O.D. (in.)		Tapered string casing weight (lbs/ft) and grade		Tapered string no. of centralizers used	
Upper: Lower:		Upper: Lower:		Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Setting depth tool (ft.) 1,247			
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 270	Cementing date: 08/06/2016			
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1,785	C	SEE REMARK #1	3,373	10,769
2					
3					
Total	1,785			3,373	10,769



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

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OPERATOR INFORMATION	
Operator Name: SHELL EXPLORATION & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.	Cementer P-5 No.: 048282

WELL INFORMATION	
District No.: 08	County: LOVING
Well No.: 2004H	API No.: 423013203B0000
Lease Name: UNIVERSITY 20 B	Drilling Permit No.: 816416
Field Name: PHANTOM WOLFCAMP	Lease No.:
	Field No.:

I. CASING CEMENTING DATA			
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production			
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:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.		Setting depth shoe (ft.):	Top of liner (ft.):
		Setting depth liner (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					

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.)		Tapered string depth of drilled hole (ft.)	
Upper:	Lower:	Upper:	Lower:
Tapered string size of casing in O.D. (in.)		Tapered string casing weight (lbs/ft) and grade	
Upper:	Lower:	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					

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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings			
Drilled hole size (in.):	12 1/4"	Depth of drilled hole (ft.):	5,015
Size of casing in O.D. (in.):	9 5/8"	Casing weight (lbs/ft) and grade:	40, J-55
Tapered string drilled hole size (in.)		Tapered string depth of drilled hole (ft.)	
Upper:	Lower:	Upper:	Lower:
Tapered string size of casing in O.D. (in.)		Tapered string casing weight (lbs/ft) and grade	
Upper:	Lower:	Upper:	Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Setting depth tool (ft.):	
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 270'	
Cementing date: 08/07/2016			

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	400	C	SEE REMARK #1	1,132	3,614
2					
3					
Total	400			1,132	3,614

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)							

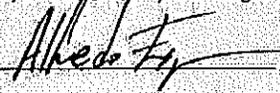
REMARKS

REMARK #1: C+ 12% A-10+ 10% BENTONITE+ 1% SMS+ 0.005 LB/SK STATIC FREE+ 0.005 GAL/SK FP-6L. AFTER THE CEMENT, 30 BBLs OF FRESH WATER AND 570 BBLs BRINE WATER WERE PUMPED, WHEN PUMPING THE BRINE WATER, 24 BBLs OF CEMENT @ 12.0 PPG (48 SACKS) CAME BACK TO SURFACE.

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.

JESUS ALFREDO ESPARZA

BAKER HUGHES OILFIELD OPS, INC.



Name and title of cementer's representative	Cementing Company	Signature
2929 Allen Parkway Suite 2100 Houston, Texas, 77019	(713) 439-8600	08/07/2016
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.

Sondra Bienvenu

Onshore Waste SME



Typed or printed name of operator's representative	Title	Signature
150 N. Dairy Ashford	Houston, TX 77079	832-337-2100
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.

- A. 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.
- B. 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).
- C. 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_floc=&poloc=&p_ploc=&pg=1&p_tac=&tl=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_floc=&poloc=&p_ploc=&pg=1&p_tac=&tl=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.
- D. 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.
- E. 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.
- F. 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.
- G. 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

CEMENTING REPORT

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

OPERATOR INFORMATION	
Operator Name: SHELL EXPLORATION & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BAKER HUGHES OILFIELD OPS, INC.	Cementer P-5 No.: 048292

WELL INFORMATION		
District No.: 08	County: LOVING	
Well No.: 2004H	API No.: 42301329380000	Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B	Lease No.:	
Field Name: PHANTOM WOLFCAMP	Field No.:	

I. CASING CEMENTING DATA					
Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input type="checkbox"/> Liner <input type="checkbox"/> Production					
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:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.			Setting depth shoe (ft.):		Top of liner (ft.):
					Setting depth liner (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					

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.)			Tapered string depth of drilled hole (ft.)		
Upper: Lower:			Upper: Lower:		
Tapered string size of casing in O.D. (in.)			Tapered string casing weight (lbs/ft) and grade		Tapered string no. of centralizers used
Upper: Lower:			Upper: Lower:		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					

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 checked="" type="checkbox"/> Multi-stage cement/DV tool <input type="checkbox"/> Multiple parallel strings					
Drilled hole size (in.): 12 1/4"		Depth of drilled hole (ft.): 5,015		Est. % wash-out or hole enlargement: 200%	
Size of casing in O.D. (in.): 9 5/8"		Casing weight (lbs/ft) and grade: 40, J-55		No. of centralizers used: 8	
Tapered string drilled hole size (in.)			Tapered string depth of drilled hole (ft.)		
Upper: Lower:			Upper: Lower:		
Tapered string size of casing in O.D. (in.)			Tapered string casing weight (lbs/ft) and grade		Tapered string no. of centralizers used
Upper: Lower:			Upper: Lower:		Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Setting depth tool (ft.): 1,250 1,247	
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): 0 270		Cementing date: 08/08/2016	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	3,570	C	SEE REMARK #1	6,747	21,543
2					
3					
Total	3,570			6,747	21,543



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 EXPLORATION	Operator P-5 No.: 774719
Cementer Name: BAKER HUGHES	Cementer P-5 No.: 046202

WELL INFORMATION		
District No.: 08	County: LOVING	
Well No.: 2004H	API No.: 42301329380000	Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B	Lease No.:	
Field Name: PHANTOM	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.): 8 3/4"	Depth of drilled hole (ft.): 11180'	Est. % wash-out or hole enlargement: 40%
Size of casing in O.D. (in.): 7	Casing weight (lbs/ft) and grade: 29# P110	No. of centralizers used: 43
Was cement circulated to ground surface (or bottom of cellar) outside casing? <input type="checkbox"/> YES <input type="checkbox"/> NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 11164	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 4,000'	Cementing date: 8-24-2016

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	470	C	REMARKS #1	1151	7856
2	240	H	REMARKS #2	288	1915
3					
Total	710			1439	9571

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					

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					



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

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

CEMENTING REPORT

OPERATOR INFORMATION

Operator Name: Shell Exploration & Production Co	Operator P-5 No.: 774719
Cementor Name: Baker Hughes Inc	Cementor P-5 No.: 048292

WELL INFORMATION

District No.: 08	County: LOVING	
Well No.: 2004H	API No.: 423013293800000	Drilling Permit No.: 816416
Lease Name: UNIVERSITY 20 B	Lease No.:	
Field Name: Phantom (Wolfcamp)	Field No.:	

I. CASING CEMENTING DATA

Type of casing: <input type="checkbox"/> Conductor <input type="checkbox"/> Surface <input type="checkbox"/> Intermediate <input checked="" type="checkbox"/> Liner <input type="checkbox"/> Production		
Drilled hole size (in.): 6 1/4"	Depth of drilled hole (ft.): 19700	Est. % wash-out or hole enlargement: 15%
Size of casing in O.D. (in.): 4 1/2"	Casing weight (lbs/ft) and grade: (#11.6) P110	No. of centralizers used:
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.): 19,695'	Top of liner (ft.): 10983'
		Setting depth liner (ft.): 19,695'
Hrs. waiting on cement before drill-out: N/A	Calculated top of cement (ft.): 10983'	Cementing date: 9/8/2016

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	790	H	SEE REMARKS	848	10066
2					
3					
Total	790			848	1068

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					

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					

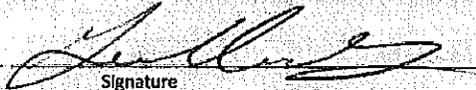
CEMENTING TO SQUEEZE, PLUGBACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount 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

SLURRY: 50% FLY ASH + 50% CLASS 'H' + 2% BENTONITE + .65% FL-66 + .3% CD-32A + 0.35% SMS + 0.6% R-3 + .005 gps FP-6L + .005 lb/sk STATIC FREE

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.

Field Specialist-GUADALUPE E GARCIA BAKER HUGHES, INC



Name and title of cementer's representative

Cementing Company

Signature

2929 ALLEN PARKWAY SUITE 2100 HOUSTON, TEXAS 77019 (713) 439-8600

9/8/2016

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.

Sondra Bienvenu

Onshore Waste SME



Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston, TX 77079

832-337-2100

02/09/2017

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.

- A. **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.
- B. **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).
- C. **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.
- D. **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.
- E. **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.
- F. **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.
- G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

DAVID PORTER, CHAIRMAN
CHRISTI CRADDICK, COMMISSIONER
RYAN SITTON, COMMISSIONER



LORI WROTENBERY
DIRECTOR, OIL AND GAS DIVISION
D. CRAIG PEARSON
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS OIL AND GAS DIVISION

OPERATOR Name: SHELL WESTERN E&P

RE: Lease: UNIVERSITY 20 B

Address1: PO BOX 576

Well No: 2004H

Address2:

Sec: 29 **Block:** 20

City: HOUSTON

County: LOVING

State: TX

Survey Name: UNIVERSITY LAND

SWR13EX Application Number: 9080

Drilling Permit No: 816416

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for the **LEASE NAME:** UNIVERSITY 20 B ;
WELL NUMBER: 2004H 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 5048 feet of surface casing and circulate cement from the shoe to the ground surface.

Contingency Plan:

Set 5048 feet of surface casing with a multistage tool set at a depth of not less than 1250 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, H2S 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 07/11/2016 .
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: Jeffery Morgan

DATE: 07/19/2016

D. CRAIG PEARSON

DISTRICT DIRECTOR

Tracking No.: 168156

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: 09/08/2016
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 816416	
Lease Name UNIVERSITY 20 B	Lease/ID No. 48423	Well No. 2004H
County LOVING	API No. 42- 301-32938	

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). _____

Sondra Bienvenu

Signature

SHELL WESTERN E&P

Name (print)

Regulatory Specialist

Title

(832) 337-0258

Phone

02/08/2017

Date

-FOR RAILROAD COMMISSION USE ONLY-



PHOENIX

TECHNOLOGY SERVICES

MD
1:1200
Feet

MWD Gamma / ROP (1")

Client: Shell

Well Name: University 20B 2004H

API/UWID: 42301329380000

County: Loving

Field: Wolfcamp B 1

Permit #: 816416

State: Texas

Country: USA

Longitude: 103° 20' 5.2635 W
Latitude: 31° 41' 12.52813 N

Personnel

Company Representative

Tyrome Russell

Geologist

Directional Driller(s)

John Spencer
Travis Malbrough

MWD Operator(s)

Shane Metcalf
Blaine Amphion

Rig Name: Precision 565
Job Number: 60215
Ground Level: 2779.00 ft
Kelly Bushing: 2807.50 ft
Drill Floor: 28.50 ft
Permanent Datum: Mean Sea Level
Drilling Measured From: Kelly Bushing
Spud Date: August 1, 2016
Bottom Hole Temp: 195.8 °F
Log Start Depth: 100.00 ft
Log End Depth: 19700.00 ft

Reference Data

North Reference: Grid North
Magnetic Declination: 7.13
Grid Convergence: -1.55
Total Mag Correction: 8.68

Comments:

Main Leg

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Operational Run Summary

60215

	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
Run Start Depth (ft)	0.00	3531.55	5015.00	8446.12	10527.01	11180.05
Run End Depth (ft)	3531.55	5015.00	8446.12	10527.01	11180.05	11247.63
Run Start Date	8/2/2016	8/3/2016	8/5/2016	8/21/2016	8/22/2016	8/24/2016
Run Start Time	6:30 PM	3:30 AM	8:08 AM	7:00 AM	8:52 PM	1:24 AM
Run End Date	8/2/2016	8/5/2016	8/21/2016	8/22/2016	8/23/2016	8/26/2016
Run End Time	10:43 PM	8:08 AM	3:42 AM	5:23 PM	3:51 PM	3:10 PM

	Run 7	Run 8	Run 9	Run 10	Run 11
Run Start Depth (ft)	11247.63	11340.47	11564.95	15058.04	15417.59
Run End Depth (ft)	11340.47	11564.95	15058.04	15417.59	19700.02
Run Start Date	8/26/2016	8/27/2016	8/29/2016	9/2/2016	9/3/2016
Run Start Time	9:48 PM	4:53 PM	7:37 PM	4:48 AM	10:49 AM
Run End Date	8/27/2016	8/29/2016	9/2/2016	9/3/2016	9/6/2016
Run End Time	2:04 PM	3:40 PM	12:19 AM	7:06 AM	8:11 PM

Tool Information Summary

60215

	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
Gamma Probe Serial No	G0166	G0060	G0172	G0060	G0172	G0195
Probe Cal Ratio	1.5	1.52	1.53	1.53	1.53	1.5
Gamma Scale Factor	16.794	17.312	9.944	8.954	8.954	4.229
Tool Carrier ID (in)	3.250	3.250	2.875	2.875	2.875	2.625
Tool Carrier OD (in)	8.000	8.000	6.750	6.500	6.500	4.500
Survey-to-Bit (PTB) (ft)	68.27	61.16	61.55	59.24	57.79	50.54
Gamma-to-Bit (GTB) (ft)	55.87	48.76	49.11	46.80	45.35	38.10

2004H Production from Phantom Wolfcamp Field

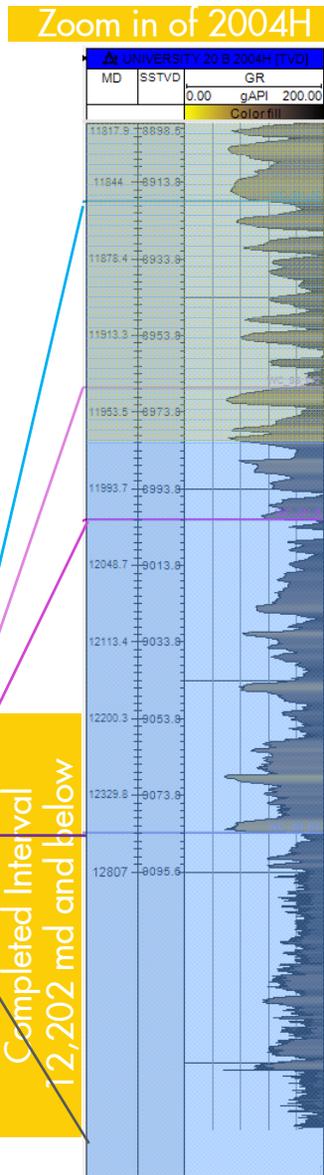
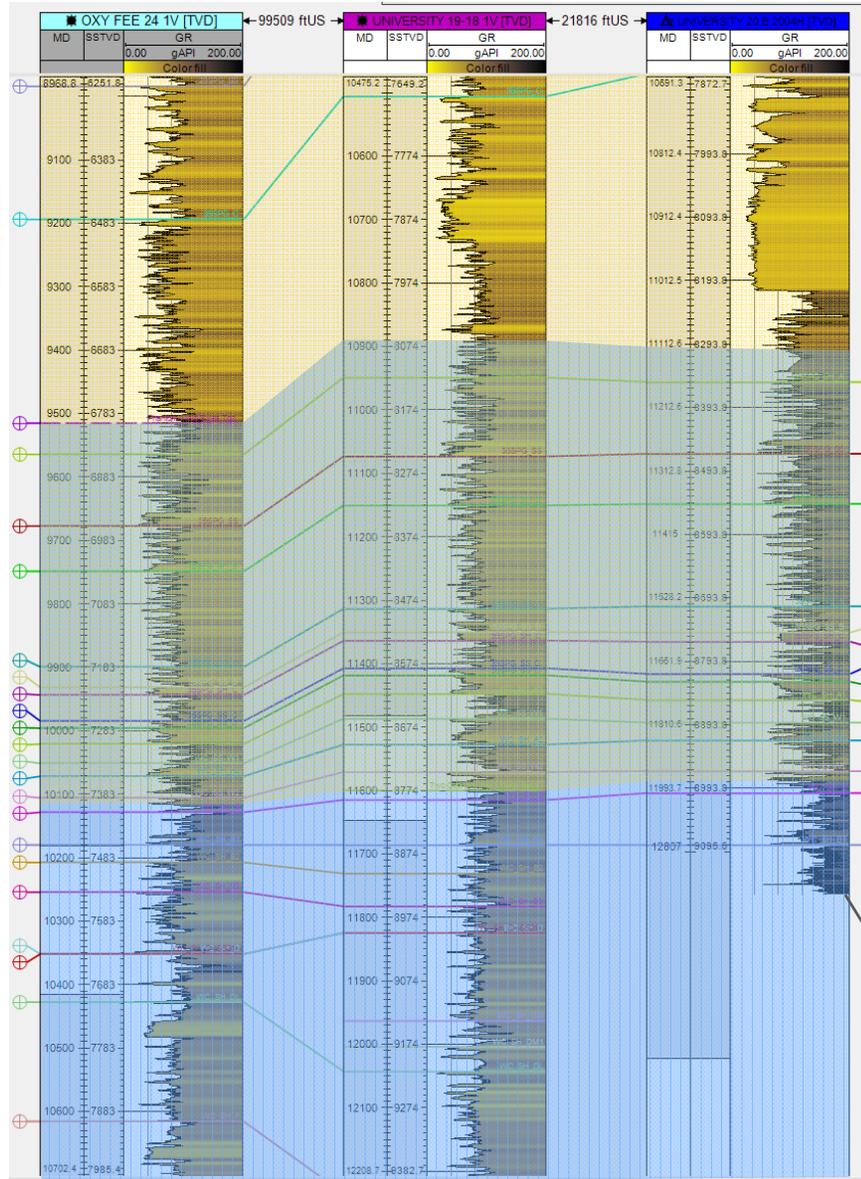
- Producing formation of the University 20 B 2004H is within the blue in this cross section and within the Phantom Wolfcamp Field. This cross section is in TVD and shows gamma through for the wells that define the field rules and the 2004H well. The 2004H lateral does not dip significantly and does not go outside of the Phantom Wolfcamp Field.

Two Georges Field

Overlap Between Fields - Two Georges

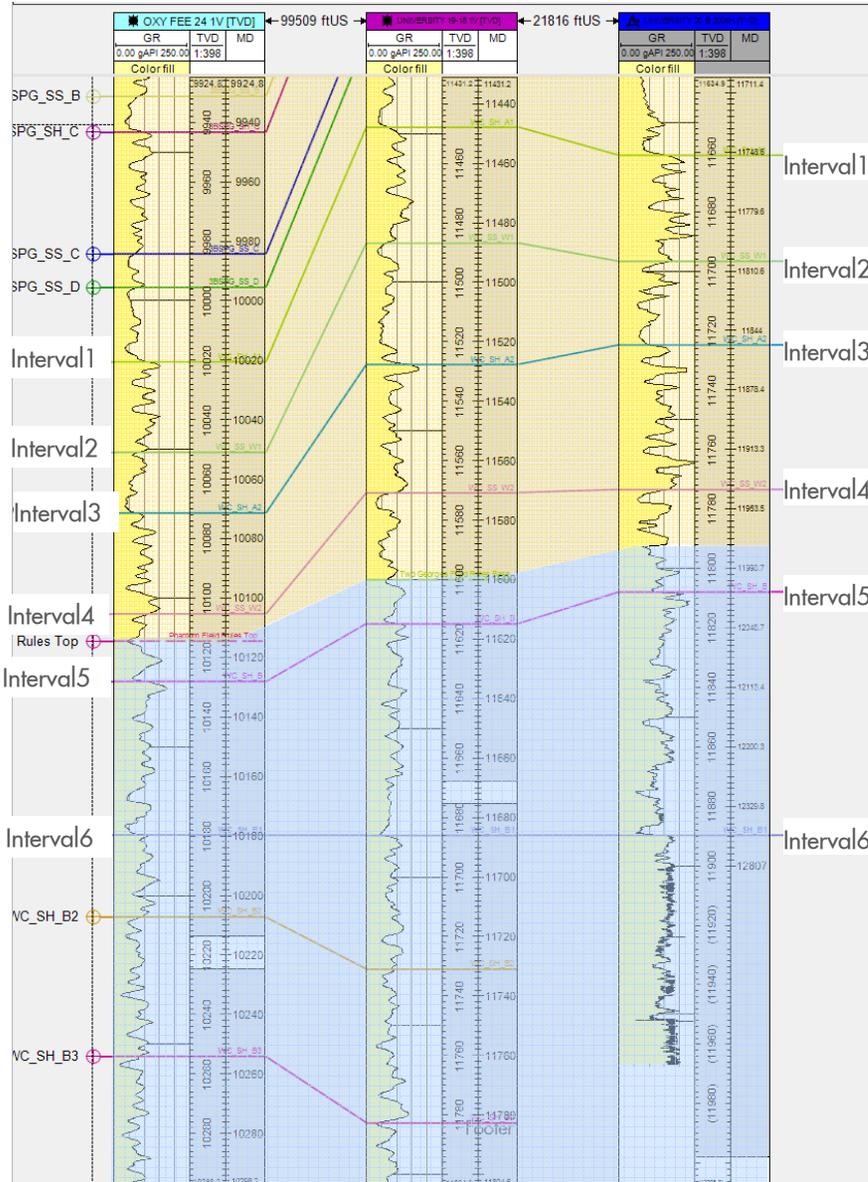
Top of Phantom Wolfcamp at 9,515' md in the Oxy Fee 1V well.
 Base of Two Georges Field at 11,600' md in the University 19-18 1V well. Below this we are in the Phantom Wolfcamp field until 12,447' md in Oxy Fee 24 1V which is significantly below the Depth interval targeted in the University 20 B 2004H well

Phantom Wolfcamp Field



2004H Production from Phantom Wolfcamp Field

Producing formation of the University 20 B 2004H is Interval 5 and 6 which are below the top of the Phantom Wolfcamp Field. This cross section is in TVD and the gamma through the producing interval in the 2004H well is on the cross section. The 2004H well does not dip significantly and does not go outside of the Phantom Wolfcamp Field.



Two Georges Field
Phantom Wolfcamp Field

Base of Two Georges Field at 11,600' md in the University 19-18 1V well. Below this we are in the Phantom Wolfcamp field Until 12,447' md in Oxy Fee 24 1V which is significantly below the Depth interval targeted in the University 20 B 2004H well

CERTIFICATE OF POOLING AUTHORITY

P-12

Revised 05/2001

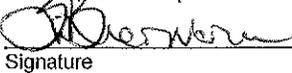
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 44020	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 2004H
7. Pooled Unit Name University 20 PW Unit	8. API Number 42-301-32938	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1)
10. County Loving, Ward & Winkler	11. Total acres in pooled unit 13144.	<input type="checkbox"/> Completion Report

DESCRIPTION OF INDIVIDUAL TRACTS CONTAINED WITHIN THE POOLED UNIT

TRACT/PLAT IDENTIFIER	TRACT NAME	ACRES IN TRACT <i>(See Inst. #7 below)</i>	INDICATE UNDIVIDED INTERESTS	
			UNLEASED	NON-POOLED
Tr. 1	University Lands	641.29	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 2	University Lands	641.16	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 3	University Lands	640.88	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 4	University Lands	640.98	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 5	University Lands	641.20	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 6	University Lands	641.33	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 8	University Lands	641.29	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 9	University Lands	641.38	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 10	University Lands	641.28	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 11	University Lands	320.63	<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.



Sondra Bienvenu

Signature

Print Name

US Onshore Waste SME sondra.bienvenu@shell.com

11/15/2017

(832) 337-2100

Title

E-mail (if available)

Date

Phone

INSTRUCTIONS — Reference: Statewide Rules 31, 38 and 40

1. 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.
2. 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.
3. If within an individual tract, a non-pooled and/or unleased interest exists, indicate by checking the appropriate box.
4. 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.
5. If the Purpose of Filing is to file completion paperwork, enter the applicable field name in box #1 for the completion.
6. Identify the drill site tract with an * to the left of the tract identifier.
7. The total number of acres in the pooled unit in #11 should equal the total of all acres in the individual tracts listed.



**CERTIFICATE OF
 POOLING AUTHORITY**

P-12

Revised 05/2001

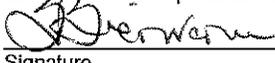
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 44020	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 2004H
7. Pooled Unit Name University 20 PW Unit	8. API Number 42-301-32938	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving, Ward & Winkler	11. Total acres in pooled unit 13144.	

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
Tr. 12	University Lands	320.62	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 13	University Lands	641.30	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 14	University Lands	641.33	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 15	University Lands	641.37	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 16	University Lands	641.29	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 17	University Lands	160.25	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 18	University Lands	480.74	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 19	University Lands	640.97	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 20	University Lands	640.97	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 21	University Lands	640.98	<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.



Sondra Bienvenu

Signature

Print Name

US Onshore Waste SME sondra.bienvenu@shell.com

11/15/2017

(832) 337-2100

Title

E-mail (if available)

Date

Phone

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- 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.

**CERTIFICATE OF
 POOLING AUTHORITY**

P-12

Revised 05/2001

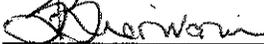
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 44020	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1003H
7. Pooled Unit Name University 20 PW Unit	8. API Number 42-301-32938	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving, Ward & Winkler	11. Total acres in pooled unit 13144.	

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
Tr. 23	University Lands	641.18	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 24	University Lands	320.59	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 25	University Lands	641.14	<input type="checkbox"/>	<input type="checkbox"/>
	TOTAL	13144.15	<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.



Sondra Bienvenu

Signature

Print Name

US Onshore Waste SME sondra.bienvenu@shell.com

11/15/2017

(832) 337-2100

Title

E-mail (if available)

Date

Phone

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- 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.



RAILROAD COMMISSION OF TEXAS

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

Form P-16

Page 1

Rev. 01/2016

Acreage Designation

SECTION I. OPERATOR INFORMATION

Operator Name: Shell Western E&P Operator P-5 No.: 774719
Operator Address: P.O. Box 576, Houston, Texas 77001

SECTION II. WELL INFORMATION

District No.: 08 County: Loving Purpose of Filing:
Well No.: 2004H API No.: 42-301-32938
Total Lease Acres: 1282.61 Drilling Permit No.: 816416
Lease Name: University 20 B Lease No.:
Field Name: Phantom (Wolfcamp) Field No.: 71052900

Filer is the owner or lessee, or has been authorized by the owner or lessee, of all or an undivided portion of the mineral estate under each tract for which filer is listed as operator below.

SECTION III. LISTING OF ALL WELLS IN THE APPLIED-FOR FIELD ON THE SAME ACREAGE AS THE LEASE, POOLED UNIT, OR UNITIZED TRACT DESIGNATED IN SECTION II ABOVE BY FILER

Table with 8 columns: RRC ID No. or Lease No., Well No., H-Horizontal D-Directional V-Vertical, Lease Name, API No., Acres Assigned, SWR 38 Except. (Y/N), Operator Name and Operator No. (if different from filing operator)

Total Well Count >
< A. Total Assigned Horiz. Acreage
< Total Remaining Horiz. Acreage
< B. Total Assigned Vert./Dir. Acreage
< Total Remaining Vert./Dir. Acreage
< C. Total Assigned Acreage
< Total Remaining Acreage

SECTION IV. REMARKS / PURPOSE OF FILING (see instructions)

This well is being drilled as an Allocation well on two (2) tracts, University 20-20 LOV and Sec. 17, Blk. 20, University Lands.

Attach Additional Pages As Needed. [X] No additional pages [] Additional Pages: ___ (No. of additional pages)

CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that this report was prepared by me or under my supervision or direction, that I am authorized to make this report, and that the information contained in this report is true, correct, and complete to the best of my knowledge.

Signature: [Handwritten Signature]

Sondra Bienvenu, Onshore Waste SME
Name and title (type or print)

sondra.bienvenu@shell.com

Email (include email address only if you affirmatively consent to its public release)

150 N. Dairy Ashford
Address

Houston TX 77079
City, State, Zip Code

832
Tel: Area Code

337-2100
Number

02/01/2017
Date: mo. day yr.

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued:	14 June 2016	GAU Number:	156203
Attention:	SHELL WESTERN E&P PO BOX 576 HOUSTON, TX 77001	API Number:	
Operator No.:	774719	County:	LOVING
		Lease Name:	University 20 A
		Lease Number:	
		Well Number:	2003H
		Total Vertical Depth:	12400
		Latitude:	31.686800
		Longitude:	-103.334858
		Datum:	NAD27

Purpose: New Drill
Location: Survey-UL; Block-20; Section-29

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 300 feet and the Rustler, which is estimated to occur from 700 to 1100 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 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).

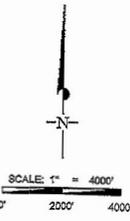
This determination is based on information provided when the application was submitted on 06/14/2016. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

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

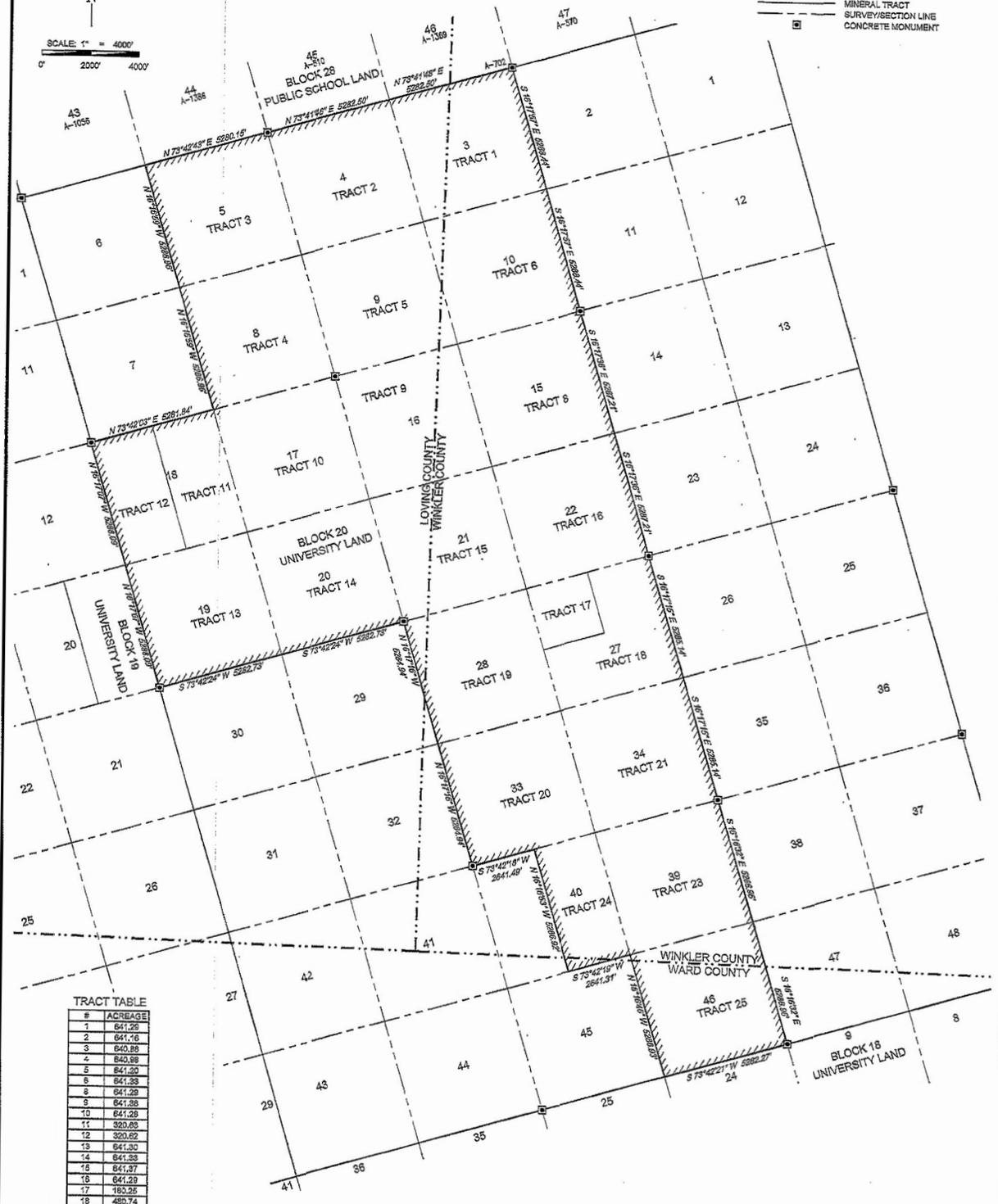
UNIVERSITY 20 PW UNIT
 13144.15 ACRES (MEASURED)
 SSECTIONS 3, 4, 5, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22
 27, 28, 33, 34, 39, 46 AND E/2 OF SECTION 40
 BLOCK 20, UNIVERSITY LANDS
 LOVING, WINKLER & WARD COUNTIES, TEXAS

**SHELL WESTERN
 E&P**



LEGEND

- UNIT BOUNDARY
- COUNTY LINE
- BLOCK/TOWNSHIP LINE
- MINERAL TRACT
- SURVEY/SECTION LINE
- CONCRETE MONUMENT



TRACT TABLE

#	ACREAGE
1	841.26
2	841.18
3	840.88
4	840.88
5	841.30
6	841.33
8	841.28
9	841.38
10	841.29
11	320.83
12	320.62
13	841.30
14	841.33
15	841.37
16	841.20
17	183.26
18	480.74
19	840.87
20	840.87
21	840.88
23	841.13
24	320.52
28	841.14
TOTAL	13144.15

I certify this plat is true and correct to the best of my knowledge.

George Mullen
 George Mullen
 Senior Regulatory Specialist

