



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 05/15/2018
Tracking No.: 184371

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	42-301-33213	County:	LOVING
Well No.:	1406H	RRC District	08
Lease	UNIVERSITY 19 PW UNIT	Field	PHANTOM (WOLFCAMP)
RRC Lease	42401	Field No.:	71052900
Location	Section: 9, Block: 19, Survey: UL, Abstract: U9		
Latitude	31	Longitud	-103
This well is 11.1 miles in a SE direction from MENTONE, which is the nearest town in the			

FILING INFORMATION			
Purpose of	Initial Potential		
Type of	New Well		
Well Type:	Producing	Completion or Recompletion	01/06/2018
Type of Permit	Date	Permit No.	
Permit to Drill, Plug Back, or Rule 37 Exception	02/15/2017	823045	
Fluid Injection			
O&G Waste Disposal			
Other:			

COMPLETION INFORMATION			
Spud	05/08/2017	Date of first production after rig	01/06/2018
Date plug back, deepening, drilling operation	04/30/2017	Date plug back, deepening, recompletion, drilling operation	08/18/2017
Number of producing wells on this lease this field (reservoir) including this	25	Distance to nearest well in lease & reservoir	778.0
Total number of acres in	8588.11	Elevation	2767 GL
Total depth TVD	11698	Total depth MD	19615
Plug back depth TVD		Plug back depth MD	
Was directional survey made other inclination (Form W-	Yes	Rotation time within surface casing Is Cementing Affidavit (Form W-15)	49.5 Yes
Recompletion or	No	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	1567.0 Feet from the	Off Lease :	No
	4651.0 Feet from the	NE Line and	
		NW Line of the	
		UNIVERSITY 19 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	1000.0	Date 02/01/2017
SWR 13 Exception	Depth	4900.0	

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION			
Date of	01/15/2018	Production	Flowing
Number of hours	24	Choke	28/64
Was swab used during this	No	Oil produced prior to	3356.00
PRODUCTION DURING TEST PERIOD:			
Oil	971.00	Gas	1932
Gas - Oil	1989	Flowing Tubing	1989.00
Water	4449		
CALCULATED 24-HOUR RATE			
Oil	971.0	Gas	1932
Oil Gravity - API - 60.:	43.0	Casing	3053.00
Water	4449		

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	4921	1171		CLASS C	3567	6400.0	0	Circulated to Surface
2	Intermediate	7	8 3/4	11968			CLASS C AND CLASS H	750	1607.0	1505	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 1/8	11069	19615	CLASS H	820	988.0	11069	

TUBING RECORD			
<u>Ro</u>	<u>Size (in.)</u>	<u>Depth</u>	<u>Size (ft.)</u>
1	2 7/8	10987	
			<u>Packer Depth (ft.)/Type</u>
			10956 / VERSASET PACKER

PRODUCING/INJECTION/DISPOSAL INTERVAL			
<u>Ro</u>	<u>Open hole?</u>	<u>From (ft.)</u>	<u>To (ft.)</u>
1	No	L1 11977	19386.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.			
Was hydraulic fracturing treatment	Yes		
Is well equipped with a downhole sleeve?	Yes	If yes, actuation pressure	8227.0
Production casing test pressure (PSIG) during hydraulic fracturing	9800	Actual maximum pressure (PSIG) during fracturin	9552
Has the hydraulic fracturing fluid disclosure been	Yes		
<u>Ro</u>	<u>Type of Operation</u>	<u>Amount and Kind of Material Used</u>	<u>Depth Interval (ft.)</u>

FORMATION RECORD					
Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
RED BLUFF	No			No	FORMATION NOT GEOLOGICALLY PRESENT
BELL CANYON	Yes	5028.0	5048.0	Yes	
BRUSHY CANYON	Yes	7160.0	7181.0	Yes	
DELAWARE	Yes	5005.0	5026.0	Yes	
CHERRY CANYON	Yes	5961.0	5982.0	Yes	
BONE SPRINGS	Yes	8616.0	8638.0	Yes	
WOLFCAMP	Yes	11381.0	11431.0	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 AT 11,111.

P-6 FOR THE UNIVERSITY 19 PW UNIT IS CURRENTLY BEING REVISED. ONCE APPROVED, REVISED UNIT PLAT AND P-12 AND P-16 WILL BE ATTACHED TO THIS PACKAGE.

RRC REMARKS	
PUBLIC COMMENTS: [RRC Staff 2018-02-23 09:28:43.458] EDL=7409 feet, max acres=704, PHANTOM (WOLFCAMP) oil or gas well	
CASING RECORD : DV TOOL SET, BUT NOT OPENED AS APPROVED IN SWR 13.	
TUBING RECORD:	
PRODUCING/INJECTION/DISPOSAL INTERVAL :	
ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :	
POTENTIAL TEST DATA:	

OPERATOR'S CERTIFICATION			
Printed	Michael Boutwell	Title:	Regulatory Specialist
Telephone	(832) 337-0258	Date	05/02/2018



RAILROAD COMMISSION OF TEXAS

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

Form W-15

Rev. 08/2014

CEMENTING REPORT

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

OPERATOR INFORMATION					
Operator Name: SHELL EXPLORATION & PRODUCTION CO			Operator P-5 No.: 774719		
Cementor Name: BJ SERVICES LLC			Cementor P-5 No.: 403101		
WELL INFORMATION					
District No.: 08		County: LOVING			
Well No.: #1406H		API No.: 42301332130000		Drilling Permit No.: 823045	
Lease Name: UNIVERSITY 19 UNIT		Lease No.:			
Field Name: Phantom (Wolfcamp)		Field No.: 71052900			
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.): 12.25		Depth of drilled hole (ft.): 4936		Est. % wash-out or hole enlargement: 31%	
Size of casing in O.D. (in.): 9.625		Casing weight (lbs/ft) and grade: 40# J-55		No. of centralizers used: 29	
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.): 4921		Top of liner (ft.):	
				Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out: +12		Calculated top of cement (ft.): SURFACE		Cementing date: 5/3/17	
SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	3067	C	REMARKS	5735	19311
2	500	C	REMARKS	665	2123
3					
Total	3567			6400	20434
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:		
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.)		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:		
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 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:35/65;POZ PREMIUM PLUS C+.005/SF+.5% SALT+.65%R-3+.01GPS FP-6L+.4%GEL+.65%SMS TAIL:C+.005/SF+.35%R-3+.01GPS FP-6L+.15%SMS CIRCULATED 350 BBLS, 1051 SACKS TO SURFACE First well on pad; high washout factor expected.

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.

BRIAN LEVANDOWSKI- FIELD SPECIALIST III BJ SERVICES LLC

Name and title of cementer's representative	Cementing Company	Signature
11211 FM 2920 RD	TOMBALL, TX 77375 (281) 408-2361	5/3/17
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
150 N. Dairy Ashford	Houston TX 77079	832-337-0953
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.



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 & PRODUCTION CO	Operator P-5 No.: 774719
Cementer Name: BJ SERVICES, LLC	Cementer P-5 No.: 403101

WELL INFORMATION	
District No.: 08	County: LOVING
Well No.: 1406H	API No.: 4230133213
Lease Name: UNIVERSITY 19 UNIT	Drilling Permit No.: 823045
Field Name: Phantom (Wolfcamp)	Lease No.:
	Field No.: 71052900

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.): 8.75	Depth of drilled hole (ft.): 11983	Est. % wash-out or hole enlargement: 10%	
Size of casing in O.D. (in.): 7	Casing weight (lbs/ft) and grade: 29, P-110	No. of centralizers used: 54	
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.): 11,968	Top of liner (ft.):	
Hrs. waiting on cement before drill-out: +12	Calculated top of cement (ft.): 1505	Setting depth liner (ft.):	
Cementing date: 06/21/2017			

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	285	C	SEE REMARK #1	1,048	6,971
2	465	H	SEE REMARK #2	559	3,718
3					
Total	750			1,607	10,689

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 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.)	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 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					

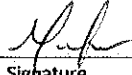
CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount 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: C65/35POZ+ 10% BA-90+ 6% BENTONITE+ 5% A-10+ 1.4% R3+ 1% CD32+ 2.25% SMS+ 1.5% FL-52+ 3% POTASSIUM CHLORIDE+ 0.005 LB/SK STATIC FREE+ 0.01 GAL/SK FP-6L. REMARK #2: H50/50POZ+ 2% BENTONITE+ 0.6% FL-66+ 0.35% CD-32+ 0.3% R-3+ 0.35% SMS+ 0.005 LB/SK STATIC FREE+ 0.01 GAL/SK FP-6L.

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.

DALE TOMLINSON	BJ SERVICES, LLC	
Name and title of cementer's representative	Cementing Company	Signature
11211 FM 2920 RD.	TOMBALL, TX 77375	(281) 408-2361
Address	City, State, Zip Code	Tel: Area Code Number
		Date: mo. day yr. 06/21/2017

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	
Typed or printed name of operator's representative	Title	Signature
150 N. Dairy Ashford	Houston TX 77079	832-337-0953
Address	City, State, Zip Code	Tel: Area Code Number
		Date: mo. day yr. 01/15/2018

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_loc=&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_loc=&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 calliper 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.



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 Name: SHELL EXPLORATION & PRODUCTION CO		Operator P-5 No.: 774719
Cementer Name: BJ SERVICES, LLC		Cementer P-5 No.: 403101

District No.: 08	County: LOVING	
Well No.: 1406H	API No.: 42301332130000	Drilling Permit No.: 823045
Lease Name: UNIVERSITY 19 UNIT	Lease No.:	
Field Name: Phantom (Wolfcamp)	Field No.: 71052900	

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.): 6.125	Depth of drilled hole (ft.): 19,615	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.): 4.5	Casing weight (lbs/ft) and grade: 11.6, P-110	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.): 19615	Top of liner (ft.): 11069
		Setting depth liner (ft.): 19615
Hrs. waiting on cement before drill-out: N/A	Calculated top of cement (ft.): 11069	Cementing date: 07/08/2017

SLURRY					
Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	820	H	SEE REMARK #1	988	9,929
2					
3					
Total	820			988	9,929

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					

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.)	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 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 SURFACE, 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: H50/50POZ+ 2% BENTONITE+ 0.65% FL-66+ 0.6% R-3+ 0.35% SMS+ 0.3% CD-32+ 0.01 GAL/SK FP-6L+ 0.005 LB/SK STATIC FREE. RIG CIRCULATED 24 BBLs @ 14.5 PPG (112 SACKS) FROM THE TOP OF THE LINER 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

BJ SERVICES, LLC

Name and title of cementer's representative

Cementing Company

11211 FM 2920 RD.

TOMBALL, TX 77375 (281) 408-2361

Signature

07/06/2017

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

Typed or printed name of operator's representative

Title

Signature

150 N. Dairy Ashford

Houston TX 77079

832-337-0953

01/15/2018

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.

CHRISTI CRADDICK, CHAIRMAN
RYAN SITTON, COMMISSIONER
WAYNE CHRISTIAN, 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 19 PW UNIT

Address1: PO BOX 576

Address2:

City: HOUSTON

State: TX

Well No: 1406H

Sec: 9 **Block:** 19

County: LOVING

Survey Name: UL

SWR13EX Application Number: 13269

Drilling Permit No: 823045

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for the **LEASE NAME:** UNIVERSITY 19 PW UNIT ;
WELL NUMBER: 1406H 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 4900 feet of surface casing with a multistage tool set at a depth of not less than 1150 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.

The proposed alternative drilling fluid program for the fresh water protected interval is hereby approved.

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 02/27/2017.
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: 03/03/2017

D. CRAIG PEARSON

DISTRICT DIRECTOR



APPLICATION FOR APPROVAL OF SURFACE CASING > 3500 FEET
Statewide Rule 13(b)(1)(A)
RAILROAD COMMISSION OF TEXAS

Operator's Name and Address: Shell Western E&P
150 N. Dairy Ashford
Houston, Texas 77079

P5 Number: 774719

Area for review: District 8
Lease Name: UNIVERSITY 19 PW UNIT 1406H
Field Name: Phantom (Wolfcamp) County: Loving
Survey: University Land Abstract: U9
Drilling Permits: 823045

Note: Attach a map if the request is for more than one pad.

How will the operator maintain well control during drilling operations:

While drilling the surface hole Shell utilizes drilling fluid of sufficient weight to overbalance the formations being penetrated.
In the event that flow is encountered a low-pressure rotating head is rigged-up under the rig floor to divert flow to the reserve pit.

How will the operator ensure cement is circulated to surface and that there is adequate bonding of cement:

A DV tool is placed below the water table (as defined by the GAU), and Shell pumps a minimum of 250% excess cement for the second stage of the surface cement job. Depending on nearby offsets the amount of excess pumped has been as high as 300%. Adequate bonding of cement is achieved by utilizing the centralizer program as outlined in RRC Rule 3.13 (b) (1) (G). A second stage of cement is only included in this request plan as a contingency measure to achieve cement returns to surface, in which case the DV tool would be opened.

How will the operator prevent the migration of formation fluids thru the annular space:

All cement slurries pumped by Shell comply with RRC Rule 3.13 (b) (1) (D) and Rule 3.13 (b) (1) (E). These slurries have been effective in preventing migration of formation fluids after the cement has been placed in the 100+ wells Shell has drilled in the Permian.

Signature: Sondra Bienvenu Name: Sondra Bienvenu Date: 02/27/2017 Phone: 832-337-3100

RRC Use Only ►

RRC District Office Action:			
<input checked="checked" type="checkbox"/> Approved	<input type="checkbox"/> Approved as Modified	<input type="checkbox"/> Denied	By <u>Erik Hanson</u> Date: <u>3-3-17</u>
Remarks/Modifications:			

Tracking No.: 184371

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: 01/06/2018
Field Name PHANTOM (WOLFCAMP)	Drilling Permit No. 823045	
Lease Name UNIVERSITY 19 PW UNIT	Lease/ID No. 42401	Well No. 1406H
County LOVING	API No. 42- 301-33213	

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&P

Name (print)

Regulatory Specialist

Title

(832) 337-0953

Phone

01/24/2018

Date

-FOR RAILROAD COMMISSION USE ONLY-



PHOENIX TECHNOLOGY SERVICES

MD
1:1200
Feet

MWD Gamma / ROP (1")

Client: Swepi

Well Name: University 19 PW Unit 1406H
API/UWID: 42301332130000
County: Loving Field: Permian
Permit #: 30264949
State: Texas Country: USA

Longitude: 103° 24' 38.27546 W
Latitude: 31° 41' 57.39575 N

Personnel

Company Representative
Bim Johnson

Geologist

Directional Driller(s)
John Hill
Dustin St Clair

MWD Operator(s)
Gatlin Finley
Peter Mavrelis

Reference Data

North Reference: Grid North
Magnetic Declination: 7.02
Grid Convergence: -1.58
Total Mag Correction: 8.60

Comments:

Main Leg

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Operational Run Summary

60957

	Run 1	Run 2	Run 3	Run 4	
Run Start Depth (ft)	0.00	4936.08	11115.39	11982.99	
Run End Depth (ft)	4936.08	11115.39	11982.99	19615.23	
Run Start Date	4/29/2017	6/15/2017	6/18/2017	6/21/2017	
Run Start Time	11:44 AM	3:07 AM	5:16 PM	5:56 PM	
Run End Date	5/1/2017	6/18/2017	6/19/2017	6/26/2017	
Run End Time	10:36 PM	11:15 AM	11:51 PM	3:04 PM	

Tool Information Summary

60957

	Run 1	Run 2	Run 3	Run 4	
Gamma Probe Serial No	EGNF0182	EGNF-0165	EGNF 0165	EGNF-0165	
Probe Cal Ratio	1	1	1	1	
Gamma Scale Factor	2.875	2.875	2.875	2.875	
Tool Carrier ID (in)	4.500	4.500	4.490	2.688	
Tool Carrier OD (in)	8.130	6.500	6.620	5.110	
Survey-to-Bit (PTB) (ft)	73.00	63.00	55.00	50.00	
Gamma-to-Bit (GTB) (ft)	69.92	59.91	51.42	46.68	
Annular Pressure-to-Bit (APT) (ft)	0.00	0.00	0.00	0.00	

CERTIFICATE OF COMPLIANCE
AND TRANSPORTATION AUTHORITY

P-4

This facsimile P-4 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

Tracking No.: 184371

1. Field name exactly as shown on proration schedule PHANTOM (WOLFCAMP)		2. Lease name as shown on proration schedule UNIVERSITY 19 PW UNIT					
3. Current operator name exactly as shown on P-5 Organization Report SHELL WESTERN E&P		4. Operator P-5 no. 774719	5. Oil Lse/Gas ID no 42401	6. County LOVING	7. RRC district 08		
8. Operator address including city, state, and zip code PO BOX 576 HOUSTON, TX 77001		9. Well no(s) (see instruction E) 1406H			11. Effective Date 01/06/2018		
		10. Classification <input checked="" type="checkbox"/> Oil <input type="checkbox"/> Gas <input type="checkbox"/> Other (see instruction A)					
12. Purpose of Filing. (Complete section a or b below.) (See instructions B and G) a. Change of: <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 _____ OR b. New RRC Number for: <input checked="" type="checkbox"/> oil lease <input type="checkbox"/> gas well Due to: <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). (See instruction G).							
Gatherer	Purchaser	Name of GAS WELL GAS or CASINGHEAD GAS Gatherer(s) or Purchaser(s) As Indicated in Columns to the Left (Attach an additional sheet in same format if more space is needed)			Purchaser's RRC Assigned System Code	Percent of Take	Full-well stream
X		DELAWARE G&P LLC(211538)				100.0	
	X	SHELL ENERGY NORTH AM. (US), LP(773822)			0001	100.0	
14. Authorized OIL or CONDENSATE Gatherer(s). (See instruction G).							
Name of OIL or CONDENSATE Gatherer(s) - List Highest Volume Gatherer First (Attach an additional sheet in same format if more space is needed)						Percent of Take	
SHELL WESTERN E&P(774719)						100.0	
RRC USE ONLY: Reviewer's initials: <u>RRC Staff</u> Approval date: <u>05/15/2018</u>							
15. PREVIOUS OPERATOR CERTIFICATION FOR CHANGE OF OPERATOR P-4 FILING. 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 _____ Signature _____ Name (print) _____ <input type="checkbox"/> Authorized Employee of previous operator <input type="checkbox"/> Authorized agent of previous operator (see instruction G) Title _____ Date _____ Phone with area code _____							
16. CURRENT OPERATOR CERTIFICATION. 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. SHELL WESTERN E&P _____ Maureen Kovacic Name (print) _____ Signature _____ Regulatory Specialist _____ <input checked="" type="checkbox"/> Authorized Employee of current operator <input type="checkbox"/> Authorized agent of current operator (see instruction G) Title _____ Date <u>05/02/2018</u> Phone with area code <u>(832) 337-0953</u> E-mail Address (optional) <u>maureen.kovacic@shell.com</u> _____							

CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

P-12

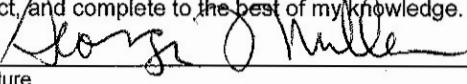
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1406H
7. Pooled Unit Name University 19 PW Unit	8. API Number	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 8588.1	

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. 1	University Lands	160.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 2	University Lands	480.72	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 3	University Lands	520.93	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 4	University Lands	641.05	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 5	University Lands	280.50	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 6	University Lands (below 11710')	40.07	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tr. 7	University Lands	320.50	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 8	University Lands	641.06	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 9	University Lands	566.27	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 10	University Lands	641.31	<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

02/08/2017

(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.

CERTIFICATE OF POOLING AUTHORITY

Revised 05/2001

P-12

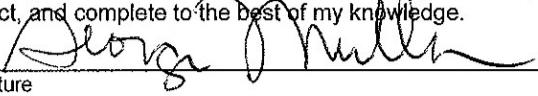
1. Field Name(s) Phantom (Wolfcamp)	2. Lease/ID Number (if assigned) 42401	3. RRC District Number 08
4. Operator Name Shell Western E&P	5. Operator P-5 Number 774719	6. Well Number 1406H
7. Pooled Unit Name University 19 PW Unit	8. API Number	9. Purpose of Filing <input checked="" type="checkbox"/> Drilling Permit (W-1) <input type="checkbox"/> Completion Report
10. County Loving & Ward	11. Total acres in pooled unit 8588.1	

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. 11	University Lands	641.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 12	University Lands	320.60	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 13	University Lands	320.61	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 14	University Lands	640.92	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 15	University Lands	640.99	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 16	University Lands	465.23	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 17	University Lands	640.96	<input type="checkbox"/>	<input type="checkbox"/>
Tr. 18	University Lands	624.93	<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.


Signature
Sr. Reg. Specialist george.mullen@shell.com
Title E-mail (if available)

George Mullen
Print Name
02/08/2017 (832) 337-0549
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.



RAILROAD COMMISSION OF TEXAS

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

Form P-16

Page 1

Rev. 01/2016

Acres 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 and Ward	Purpose of Filing: <input type="checkbox"/> Drilling Permit Application (Form W-1) <input checked="" type="checkbox"/> Completion Report (Form G-1/W-2)
Well No.: 1406H	API No.: 42-301-33213	
Total Lease Acres: 8588.11	Drilling Permit No.: 823045	
Lease Name: University 19 PW Unit	Lease No.: 42401	
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. For all leases operated by other entities, the number of assigned acres shown are reflected on current Commission records or the filer has been authorized by the current operator to change the assigned acreage of that operator as shown 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

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)
42401	1902H	H	University 19 PW Unit	42-301-31709	640.00	N	
42401	2202H	H	University 19 PW Unit	42-301-31708	160.23	N	
42401	1702H	H	University 19 PW Unit	42-301-31703	566.65	N	
42401	2502H	H	University 19 PW Unit	42-475-35995	151.24	N	
42401	2802H	H	University 19 PW Unit	42-475-35996	160.33	N	
42401	1302H	H	University 19 PW Unit	42-301-31705	640.00	N	
42401	1602H	H	University 19 PW Unit	42-301-31872	640.00	N	
42401	1802H	H	University 19 PW Unit	42-301-32460	640.00	N	
42401	2302H	H	University 19 PW Unit	42-301-32579	640.00	N	
42401	2304H	H	University 19 PW Unit	42-301-32849	640.00	N	
42401	2303H	H	University 19 PW Unit	42-301-32848	160	N	
42401	2503H	H	University 19 PW Unit	301-33047	160	N	
42401	2504H	H	University 19 PW Unit	301-33048	160	N	
42401	2505H	H	University 19 PW Unit	301-33049	160	N	
42401	2506H	H	University 19 PW Unit	301-33054	160	N	
42401	1506H	H	University 19 PW Unit	301-33126	160		
42401	1507H	H	University 19 PW Unit	301-33144	160		

Total Well Count >	25	6958.45	< A. Total Assigned Horiz. Acreage	6958.45	< C. Total Assigned Acreage
		1629.66	< Total Remaining Horiz. Acreage	1629.66	< Total Remaining Acreage
			< B. Total Assigned Vert./Dir. Acreage		
			< Total Remaining Vert./Dir. Acreage		

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

This well should be assigned to University 19 PW Unit, lease ID 42401

Attach Additional Pages As Needed. ☐ No additional pages ☒ Additional Pages: 1 (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	Maureen Kovacic, Regulatory Specialist	maureen.kovacic@shell.com
	Name and title (type or print)	Email (include email address only if you affirmatively consent to its public release)
150 N. Dairy Ashford	Houston TX 77079	832 337-0953
Address	City, State, Zip Code	Tel: Area Code Number
		Date: mo. day yr. 03/27/2018

GROUNDWATER PROTECTION DETERMINATION

Form GW-2



Groundwater Advisory Unit

Date Issued: 01 February 2017**GAU Number:** 166499**Attention:** SHELL WESTERN E&P
PO BOX 576
HOUSTON, TX 77001**Operator No.:** 774719**API Number:**
County: LOVING
Lease Name: University 19 PW Unit
Lease Number:
Well Number: 1407H
Total Vertical Depth: 12000
Latitude: 31.699414
Longitude: -103.410281
Datum: NAD27**Purpose:** New Drill**Location:** Survey-UL; Block-19; Section-9

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

The interval from the land surface to a depth of 300 feet, and the Rustler, the top of which is estimated to occur from 500 to 550 feet depth and the base of which is estimated to occur from 950 to 1000 feet depth by reconnaissance-level evaluation, must be protected.

This recommendation is applicable for all wells drilled in this sec. 9.

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 01/25/2017. 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 PW UNIT

8588.11 ACRES (MEASURED)

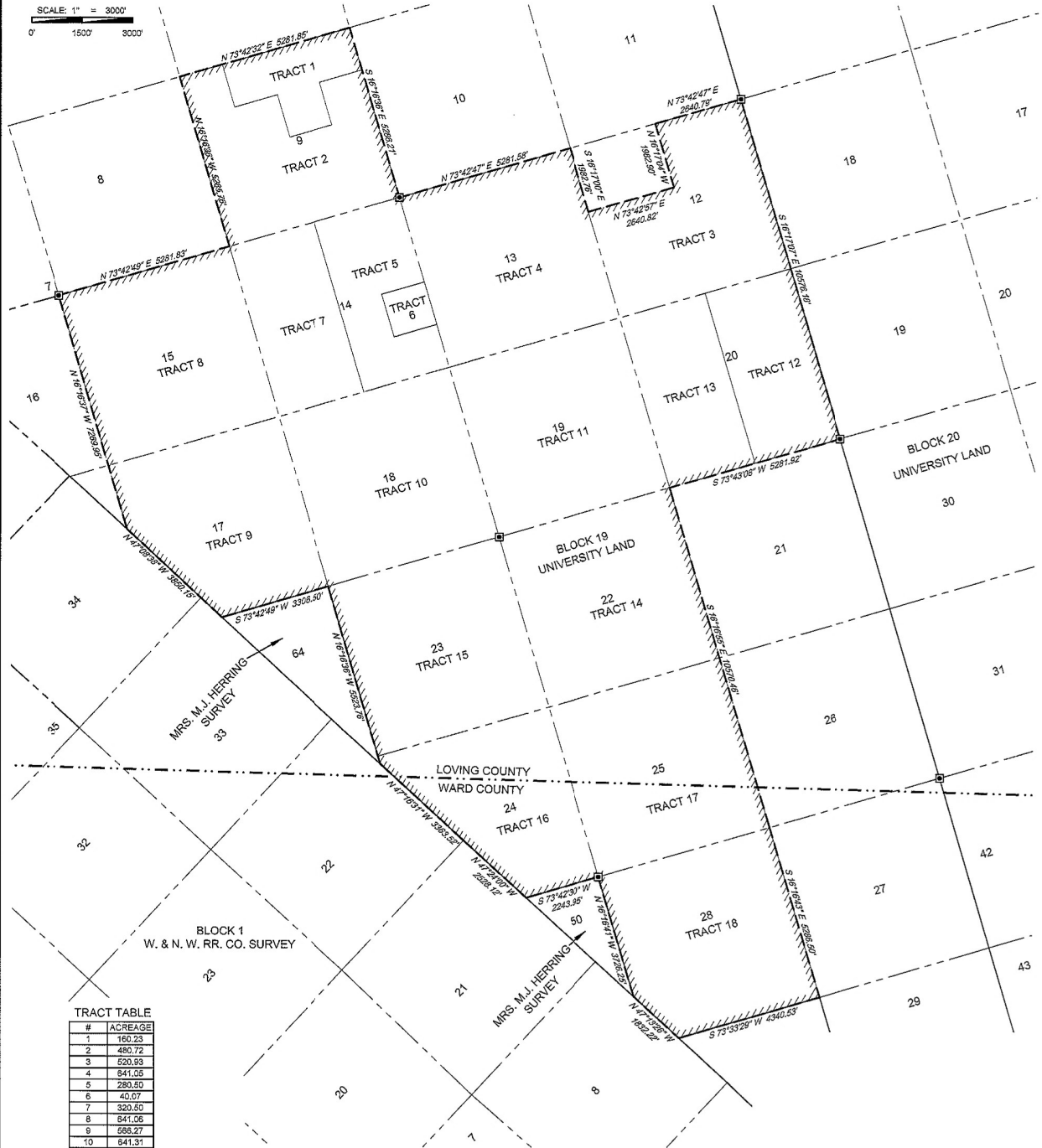
SECTIONS 9,15,14,13, 12, 17, 18, 19, 20, 22, 23, 24, 25 & 28,
SAVE & EXCEPT NW/2 NW/4 AND NW/2 SE/2 NW/4 OF SECTION 12
BLOCK 19, UNIVERSITY LAND
LOVING & WARD COUNTIES, TEXAS

SHELL WESTERN
E&P

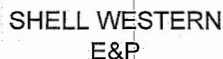
LEGEND

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

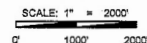
SCALE: 1" = 3000'
0' 1500' 3000'



#	ACREAGE
1	160.23
2	480.72
3	520.93
4	841.05
5	280.50
6	40.07
7	320.60
8	841.06
9	568.27
10	841.31
11	841.23
12	320.60
13	320.61
14	840.92
15	840.99
16	485.23
17	840.96
18	824.83
TOTAL	8588.11



SECTIONS 9, 14, & 18, BLOCK 19, UNIVERSITY LAND SURVEY
LOVING COUNTY, TEXAS



POINT	UNIT	SURVEY/SECTION
S.H.L	1567 FNEL	1567' FNEL &
	4651' FNWL	639' FSEL
P.P.	1770' FNEL	1770' FNEL &
	4230' FNWL	1058' FSEL
F.T.P	1762' FNEL	1762' FNEL &
	4810' FNWL	476' FSEL
L.T.P	12368' FNEL	1804' FNEL &
	12209' FNWL	1637' FNWL
B.H.L	12373' FNEL	1809' FNEL &
	12437' FNWL	1864' FNWL

LEGEND:

	Unit Boundary
	Block/Township Line
	Section line
	Proposed Well Path
	Existing/Permitted Well Path
	Mineral Tract Boundary
	Monument Found
	Calculated Corner
	Well Point



John R. Anderson 3/7/18
John R. Anderson, R.P.L.S. No. 6442



TOPOGRAPHIC
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TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
TEXAS FIRM REGISTRATION NO. 10042604
WWW.TOPOGRAPHIC.COM

UNIVERSITY 19 PW UNIT 1406H		REVISION:	
		INT	DATE
DATE: 02/22/2018			
FILE: AD UNIVERSITY 19 PW UNIT 1406H			
DRAWN BY: T.D.H.			
SHEET: 1 OF 1			

7. ALL BEARINGS, DISTANCES, COORDINATE VALUES CONTAINED HEREIN ARE GIVEN BASED UPON
CONTINENTAL U.S. DATUM 1983 (NAD 83), U.S. SURVEY FEET, HORIZONAL ALIGNMENT OF THE
AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.

8. THIS LOCATION AND/OR BOUNDARY SURVEY HAS BEEN CAREFULLY SURVEYED ON THE GROUND
AND IS CONSIDERED TO BE ACCURATE WITHIN THE LIMITS OF A FIRST-ORDER SURVEY. ACCORDING
TO THE EVIDENCE, OFFICIAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY SHELL,
THIS SURVEY WAS FOUND TO BE IN SUBSTANTIAL AGREEMENT WITH THE RECORDS OF THE
RAILROAD COMMISSION OF TEXAS AND SHOULD NOT BE CONSTRUED AS A "BOUNDARY SURVEY". THIS
SURVEY DOES NOT MEET THE MINIMUM STANDARDS OF PROCEDURES FOR BOUNDARY SURVEYS. THIS
SURVEY IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
THIS PLAN IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
ALL MEASUREMENTS WERE MADE USING AN ELECTRONIC DISTANCE MEASURING DEVICE (EDM) BASED UPON THE NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.

9. ALL GENERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL.

NOTES CONTAINED HEREIN ARE THE PROPERTY OF SHELL INTERNATIONAL CHEMICAL COMPANY LIMITED. NO PARTS OF THIS DOCUMENT ARE TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF SHELL INTERNATIONAL CHEMICAL COMPANY LIMITED.

THE ABOVE DESCRIBED SURFACE LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF APRIL 05, 2017.

7. THE SUBSURFACE WELL PATH DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN SINO OR ITS SUBSIDIARIES & AFFILIATES.

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