



RAILROAD COMMISSION OF TEXAS

Form W-2

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

Status: Approved
Date: 05/11/2023
Tracking No.: 290478

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION			
Operator	PDEH LLC	Operator	646827
Operator	600 W ILLINOIS AVE MIDLAND, TX 79701-0000		

WELL INFORMATION			
API	42-495-33544	County:	WINKLER
Well No.:	1001H	RRC District	08
Lease	UL 20 S BUCKTAIL	Field	PHANTOM (WOLFCAMP)
RRC Lease	57938	Field No.:	71052900
Location	Section: 10, Block: 20, Survey: UL, Abstract:		
Latitude		Longitud	
This well is 9.5 miles in a W direction from WINK, which is the nearest town in the			

FILING INFORMATION			
Purpose of	Well Record Only		
Type of	Other/Recompletion		
Well Type:	Producing	Completion or Recompletion	07/13/2014
Type of Permit	Date	Permit No.	
Permit to Drill, Plug Back, or Rule 37 Exception	12/31/2013	775589	
Fluid Injection			
O&G Waste Disposal			
Other:			

COMPLETION INFORMATION			
Spud	02/04/2014	Date of first production after rig	07/13/2014
Date plug back, deepening, drilling operation	02/04/2014	Date plug back, deepening, recompletion, drilling operation	03/15/2014
Number of producing wells on this lease this field (reservoir) including this	6	Distance to nearest well in lease & reservoir	342.0
Total number of acres in	640.70	Elevation	2796 GL
Total depth TVD	11658	Total depth MD	16451
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)	156.0 No
Recompletion or	Yes	Multiple	No
Type(s) of electric or other log(s)	Resistivity only		
Electric Log Other Description:			
Location of well, relative to nearest lease of lease on which this well is	246.0 Feet from the NW Line and 2600.0 Feet from the SW Line of the UL 20 S BUCKTAIL Lease.	Off Lease :	No

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	300.0	Date 01/02/2014
SWR 13 Exception	Depth	5102.0	

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION			
Date of		Production	
Number of hours	24	Choke	
Was swab used during this	No	Oil produced prior to	
PRODUCTION DURING TEST PERIOD:			
Oil		Gas	
Gas - Oil	0	Flowing Tubing	
Water			
CALCULATED 24-HOUR RATE			
Oil		Gas	
Oil Gravity - API - 60.:		Casing	
Water			

CASING RECORD											
	<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>
Ro											
1	Surface	9 5/8	12 1/4	5092	405		C	360	87.0	0	Circulated to Surface
2	Surface	9 5/8	12 1/4	5092			C	2450	4761.0	405	Calculation
3	Intermediate	7	8 3/4	11934			H	720	1602.0	4000	Calculation

LINER RECORD									
	<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>
Ro									
1	4 1/2	6 1/8	11111	16456					

TUBING RECORD			
<u>Ro</u>	<u>Size (in.)</u>	<u>Depth</u>	<u>Size (ft.)</u>
1	2 7/8	11012	
			<u>Packer Depth (ft.)/Type</u>
			10984 / VERSASET

PRODUCING/INJECTION/DISPOSAL INTERVAL			
<u>Ro</u>	<u>Open hole?</u>	<u>From (ft.)</u>	<u>To (ft.)</u>
1	No	L1 11967	16281.0

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	5230.0
Production casing test pressure (PSIG)		Actual maximum pressure (PSIG) during	
hydraulic fracturing	4049	fracturin	8738
Has the hydraulic fracturing fluid disclosure been	Yes		
Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

FORMATION RECORD					
Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
RUSTLER - POSSIBLE FLOW; POSSIBLE USABLE QUALITY W COLBY-QUEEN	No			No	NOT ENCOUNTERED
YATES	No			No	NOT ENCOUNTERED
QUEEN-SEVEN RIVERS	No			No	NOT ENCOUNTERED
SAN ANDRES - HIGH FLOWS, H2S, CORROSIVE HOLT	No			No	NOT ENCOUNTERED
DELAWARE	Yes	5157.0	5166.0	Yes	
GLORIETA	No			No	NOT ENCOUNTERED
CLEARFORK	No			No	NOT ENCOUNTERED
WICHITA ALBANY	No			No	NOT ENCOUNTERED
BRUSHY CANYON	Yes	7472.0	7481.0	Yes	
CHERRY CANYON	Yes	6136.0	6145.0	Yes	
CANYON	No			No	NOT ENCOUNTERED
BONE SPRINGS	Yes	9535.0	9545.0	Yes	
MONTOYA	No			No	NOT ENCOUNTERED
WADDELL	No			No	NOT ENCOUNTERED
WOLFCAMP	Yes	11700.0	11937.0	Yes	
ATOKA	No			No	NOT ENCOUNTERED
STRAWN	No			No	NOT ENCOUNTERED
PENNSYLVANIAN	No			No	NOT ENCOUNTERED
MISSISSIPPIAN	No			No	NOT ENCOUNTERED
DEVONIAN	No			No	NOT ENCOUNTERED
SILURIAN	No			No	NOT ENCOUNTERED
FUSSELMAN	No			No	NOT ENCOUNTERED
ELLENBURGER	No			No	NOT ENCOUNTERED
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

ATTACH P16 SHOWS NEW ACREAGE ALLOCATION.

RRC REMARKS	
PUBLIC COMMENTS: [RRC Staff 2023-04-20 08:47:24.742] EDL=4306 feet, max acres=640, PHANTOM (WOLFCAMP) oil or gas well	
CASING RECORD :	
TUBING RECORD:	
PRODUCING/INJECTION/DISPOSAL INTERVAL :	
ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :	
POTENTIAL TEST DATA:	

OPERATOR'S CERTIFICATION			
Printed	Martha Finley	Title:	Regulatory Coordinator
Telephone	(432) 688-6036	Date	04/19/2023



RAILROAD COMMISSION OF TEXAS

STATEWIDE RULE 13 EXCEPTION APPLICATION/ALTERNATIVE REQUEST

Surface Casing: 13(b)(1)(H), Tubing: 13(b)(4)(B), Drilling Fluid: 13(a)(6)(C), or Non-standard Cement 13(b)(1)(D)

1. Operator: Shell Western E&P	2. P-5 No.: 774719	3. Lease Name: University 20-10 WNK	4. Well No.: 1H
5. Street Address: 150 N. Dairy Ashford, Houston TX 77079		6. RRC District: 08	7. Drill Permit No.: 775589
8. Field Name: Phantom (Wolfcamp)	9. County: Winkler	10. Proposed Depth: <input type="checkbox"/> TVD <input type="checkbox"/> MD	
11. Survey: UL	12. Abstract No:	13. Block/Township: 10	14. Section: 20
15. GPS Datum: 27		Coordinates: N 31.736619, W 103.321397	
16. GAU No.: 6151 (attach letter)		17. Usable-Quality Water (determined by GAU): 300' ft.	
<input type="checkbox"/> Well <input type="checkbox"/> Lease <input type="checkbox"/> Survey <input type="checkbox"/> Pad <input type="checkbox"/> Radius:		Separation points: _____ ft.	

18. Exception Request: <input type="checkbox"/> Short Surface Csg <input checked="" type="checkbox"/> Excess Surface Csg <input type="checkbox"/> Single-string <input type="checkbox"/> Tubing <input type="checkbox"/> Area-wide ²	
19. Alternate Program Request: <input checked="" type="checkbox"/> Drilling Fluid Program <input type="checkbox"/> Non-API Cement <input type="checkbox"/> Other: _____	
20. Reason for this request: <input type="checkbox"/> Economic <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Other Please explain: _____ If this application includes a request for exception to tubing requirements outlined in 13(b)(4)(A), indicate requested duration: _____	
21. Is this a proposed injection or disposal well ³ ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	22. Is this a Minimum Separation well ⁴ ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
23. Are there any water wells within 1/4 mile of this proposed well location ⁵ ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, provide information requested below Type of water well: _____ Depth: _____ Distance: _____ Direction: _____	
24. Are there any INJECTION or DISPOSAL wells within 1/4 mile of the proposed well location ⁶ ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, list names and depths of all formations permitted for INJECTION OR DISPOSAL within 1/4 miles of the well location ⁷ : _____	
25. Have there been any blowouts within a mile of this wellsite ⁸ ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, name operator(s), lease(s), and date(s) blowout(s) occurred: _____	

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(B)(2)(g)(III) OR AS REQUIRED BY THE DISTRICT OFFICE.

26. Proposed Casing and Cementing Program		Surface Casing			Intermediate Casing			Production Casing		
Hole Size (in.)		12 1/4			8 3/4			6 1/8		
O.D. (in.), Grade, Weight (lb/ft.)		9 5/8	J55	40	7	P110	29	4.5	J110	13.5
Setting Depth (ft.)		5102'			12132'			16632'		
Multi-Stage Tool Depth (ft.)		400'								
LEAD/FILLER CEMENT	Type and Free Water Content	Class C .8%			Class H .6%					
	# of Sacks and Yield (cu. ft/sk)	1933 2.09			604 2.31					
	Cement Additives	See attached			See attached					
	24/72-Hr. Comp. Strength (psi)	499 psi > 729 psi			229 psi > 321 psi					
	Cement Height (TOC) (ft.)	400' (DV tool)			4102" (1000" above prev shoe)					
	% Excess	200%			50%					
TAIL/CRITICAL CEMENT	Type and Free Water Content	Class C .4%			Class H 0%			Class H .4%		
	# of Sacks and Yield (cu. ft/sk)	809 1.35			140 1.94			530 1.23		
	Cement Additives	See attached			See attached			See attached		
	24/72-Hr. Comp. Strength (psi)	1597 psi > 2203 psi			1120 psi > 1255 psi			64 psi > 1334 psi		
	Cement Height (TOC) (ft.)	4102'			10632'			11100'		
	Centralizers No. & Placement ⁹	See attachment								
	% Excess	200%			20%			15%		

PROVISIONS APPLICABLE TO RULE 13 EXCEPTIONS:

1. REQUESTS FOR EXCEPTIONS TO STATEWIDE RULE 13 SUBMITTED AFTER THE WELL HAS BEEN DRILLED OR COMPLETED MAY RESULT IN ENFORCEMENT ACTION AGAINST THE OPERATOR.
2. For area-wide exception requests, please provide additional information which clearly defines the area to be exempted. Area-wide approvals are NOT allowed for short surface casing applications (only approved on a well-by-well basis). Note: District Offices are not required to grant area-wide exceptions.
3. **Caution:** If this well is being drilled for injection or disposal purposes, a(n) injection/disposal well permit may be denied unless surface casing is set and cemented through all zones of usable-quality groundwater.
4. A **Minimum Separation Well**, further defined in section 13(a)(2)(L), is a well in which hydraulic fracturing treatments will be conducted AND for which: the vertical distance between BUQW and the top of the formation to be fracture stimulated is less than 1000 ft. or for which the District Director has determined there to be inadequate separation between the BUQW and the top of the formation to be fracture stimulated.
5. Review applications 1-3 (Groundwater Database, Submitted Driller's Report, and Brackish Groundwater Database) at the following link to determine location(s) of water wells within ¼ mile of the proposed well: <http://wiid.twdb.texas.gov/>.
6. Refer to the Railroad Commission of Texas Public GIS map viewer to locate injection and disposal wells within ¼ mile of the well(s) mentioned on this application: <http://www.rrc.state.tx.us/data/online/gis/index.php>.
7. Review W-14 or H-1a applications at (<http://www.rrc.state.tx.us/data/online/OGImagedRecordsQuery.php>) to determine permitted injection/disposal zones for wells within ¼ mile of the proposed well. Additionally, refer to Rule 13 Formation Tables provided on the RRC website for information regarding saltwater, H2S, and other notable formation depths by county. (<http://www.rrc.state.tx.us/environmental/rule13/index.php>). Statewide Rule 13 may require additional cementing across these formations.
8. Blowout and well-control problem records can be found at the following URL: <http://www.rrc.state.tx.us/data/drilling/blowouts/index.php>.
9. Centralizers must be used through all usable-quality waters. Refer to Rule 13(b)(1)(G).
10. Notify District Office at least 8 hours prior to setting and cementing casing.
11. The alternative surface casing program authorized by this letter is subject to the condition that drilling fluid used while drilling to the base of usable quality groundwater have a salinity of 3000 ppm TDS or less and be conditioned to form a filter cake sufficient to prevent infiltration into the protected water while drilling with fluid having a salinity greater than 3000 ppm TDS below the base of usable quality groundwater to the approved surface casing depth. *The use of oil-based and emulsion drilling fluids are prohibited until casing is set and cemented across the base of usable quality groundwater.*
12. **Note:** The following attachments may be requested by the District Office:
 - a. Proposed wellbore diagram or cementing proposal
 - b. Lab reports containing compressive strength and free water data for Lead and/or Tail Slurry
 - c. Any other information that may be required by the District Office.
13. Please note that a copy of the approved application form must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing and Cementing Program on the original application without additional approval from the District Office.

OPERATOR CONTACT INFORMATION			
Signature: X		Name: Jeffrey Stevenson	Title: Regulatory and Environmental Team Lead
Date: Jan 10, 2014	Phone: 832-337-0694	Fax: _____	
Email Address (optional): jeff.stevenson@shell.com			

RRC
Use
Only ▶

RRC District Office Action:	Ref. No:
TUBING EXCEPTION: <input type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By: _____ Date: _____
SURFACE CASING EXCEPTION: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By: Date: 1-14-14
DRILLING FLUID PROGRAM: <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By: Date: 1-14-14
ALTERNATE CEMENT PROGRAM: <input type="checkbox"/> Approved <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Denied	By: _____ Date: _____
Remarks/Modifications: Fresh water mud system required to top of salt sections	

13b Information										
Well Name			University 20-3 WNK 1HN							
County			Winkler, Tx							
Field Rules			Phantom (Wolfcamp)							
Engineer			Mark Blanchard							
Date			1/9/2014							
LEAD / FILLER CEMENT				Surface		Intermediate		Production		
	Hole Size (in.)			12-1/4		8-3/4		6-1/8		
	O.D. (in.), Grade, Weight (lb/ft.)			9-5/8	J55	40	7	P110	29	4.5 P110 13.5
	Setting Depth (ft.)			5102		12132		16632		
	Multi-Stage Tool Depth (ft.)			400						
	Type and Free Water Content			Class C		0.8%		Class H		0.6%
	# of Sacks and Yield (cu. ft/sk)			1933		2.09		609		2.31
	Cement Additives			Class C / Pozmix (65/35) + 6% BWOC Bentonite + 5% salt + 3lbm/sk Kol-Seal (Lost Circulation)+ 0.5% BWOC of HR-800 (retarder)		Class H / Pozmix (65/35) + 8% BWOC Bentonite + 3lbm/sk Kol-Seal (Lost Circulation)+ 0.45 % BWOC of HR-601				
	24/72-Hr. Comp. Strength (psi)			499 psi		> 729 psi		229 psi		> 321 psi
	Cement Height (TOC) (ft.)			400' (DV tool)		4102' (1000' above prev shoe)				
TAIL / CRITICAL CEMENT	% Excess			200%		50%				
	Type and Free Water Content			Class C		0.4%		Class H		0%
	# of Sacks and Yield (cu. ft/sk)			809		1.35		140		1.94
	Cement Additives			Class C + 0.2% BWOC of HR-800 (retarder) + 3 lb/sk Kol-Seal (LCM)		Class H / Pozmix / Silicalite blend (65/5/30) + 0.5% BWOC Halad 344 (Fluid loss) + 3 lbm/sk Salt (Salt) + 3 lbm/sk Kol-Seal (Lost Circulation)+ 0.1% BWOC of SA-1015 (Suspension agent)		Class H / Pozmix (50/50) + 2% BWOC Bentonite (viscosant) + 0.6% BWOC Halad 344 (Fluid loss) + 0.4% BWOC of HR800 (Retarder)		
	24/72-Hr. Comp. Strength (psi)			1597 psi		> 2203		1120 psi		> 1255 psi
	Cement Height (TOC) (ft.)			4102' (TOC: 0')		10632 (1500ft coverage)		11100' (TOC)		
	Centralizers No. & Placement			9		2 on shoe track; 1 on 3rd jt; 1 every 4 jt to surface				
	% Excess			200%		20%		15%		
2nd Stage	Type and Free Water Content			Class C		0.4%				
	# of Sacks and Yield (cu. ft/sk)			377		1.34				
	Cement Additives			Class C + 3 lb/sk Kol-Seal (LCM)						
	24/72-Hr. Comp. Strength (psi)			1167 psi		1731 psi (48h)				
	Cement Height (TOC) (ft.)			TOC @ 0' (surface)						
	Centralizers No. & Placement			9						
	% Excess			250%						



University 20-3 WNK 1HN

Patterson 274

SHL (off lease / all ref points regard sec 10)

Well Information

245' FNL	2,620' FWL	X	1071163	Y	765302
Section 10	Block 20	LAT	N31°44'11.75"	LONG	W103°19'16.75"
County Winkler					
200' FNL	2,620' FWL	X	1069666	Y	770421
Section 3	Block 20	LAT	N31°45'01.99"	LONG	W103°19'35.67"

Network #

API # 42-495-33545

Lease: University 20-3 WNK

Permit TVD: 12,500'

RKB | GROUND ELEV.: 28,50' 2796.0'

Directional	Formation	MD	TVDRKB
KOP Build at 2 deg/100		200	200
Usable Water		300	300
DV Tool @ 400' (100' deeper than water table)			
Hold at 8 deg		600	598
Drop at 2 deg/100		1,000	995
Begin vertical hold		1,400	1,394
Surface Casing Point		5,102	5,102
Top of Delaware		5,152	5,152
Cherry Canyon Sandstone		-	6,140
Brushy Canyon Sandstone		-	7,443
Upper Avalon Carbonate		-	8,755
Build at 12 deg/100 and turn		11,283	11,253
Third BSPG Sandstone		-	11,357
Hold 90 deg INC, 344 deg AZI			
Int. Casing point @ ~90° Inc.		12,037	11,742
Top Target: 3rd BSPG B Sand @ 90° Inc		-	11,726
Base Target: 3rd BSPG B Sand @ 90° Inc		-	11,745
Expected TD		16,877	11,742

Casing Program

12-1/4" Hole
9-5/8" 40# J55 LTC
TOC (Surf): Surface

Cement Program

Stage 2 Details (250% excess)
Primary: 377 sks 400' Fill
14.8 ppg / Yield: 1.35
TOC @ Surface:

Stage 1 Details (200% excess)
Lead: 1933 sks 3702' Fill
12.5 ppg / Yield: 2.09
Tail: 808 sks 1000' Fill
14.8 ppg / Yield: 1.35
TOC @ DV Tool

Mud Program

Fresh Water / Spud Mud
MW: < 9 ppg to top of salts

Saturated Brine MW: 10.2 ppg
from salts to section TD at 5102'

From	To	Footage
0'	5,102'	5,102'

9-5/8" 40# J55 LTC (8.75" Special Drift)

FIT to 12.5 ppg EMW Test Surface Casing: 30 min / 1500 psi.

8-3/4" Hole

7" 29# P110 LTC
TOC (7" csg): 4102'
1000' inside 9-5/8" casing

7" Cement Details

Lead: 599 sks 6435' Fill
50% Excess
11.9 ppg / Yield: 2.31
Top of Lead: 4102'

Tail: 140 sks 1500' Fill
20% Excess
12.5 ppg / Yield: 1.93
Top of Tail: 10537'

Mud System: Brine Water
MW: 8.7-8.9 ppg
Vis: 28-30

From	To	Footage
0'	12,037'	12,037'

7" 29# P110 LTC (6.125" Special Drift)

6-1/8" Hole

TOC (4.5" csg): 50', 50'
above KOP

4.5" x 7" Liner Hanger and 10K ZXPN Top Packer
4.5" 13.5# P110 DQX/DWC // KOP to TD

OBM: TBD ppg
Vis: TBD; PV: TBD; YP: TBD

From	To	Footage
11,233'	11,243'	10'
11,243'	16,877'	5,634'

Groundwater
Advisory Unit

GROUNDWATER PROTECTION DETERMINATION

Date **January 2, 2014**

GAU File No.: SC- **6152**

***** EXPEDITED APPLICATION *****

API Number **49533545**

Attention: **GEORGE MULLEN**

RRC Lease No. **000000**

SC_774719_49533545_000000_6152.pdf

SHELL WESTERN E&P
150 DAIRY ASHFORD
HOUSTON TX 77079

--Measured--

2620 ft FWL

230 ft FNL

MRL: SECTION

Digital Map Location:

X-coord/Long **103.32100**

Y-coord/Lat **31.73660**

Datum **27** Zone

P-5# 774719

County **WINKLER**

Lease & Well No. **UNIVERSITY 20 3 WNK #1HN**

Purpose **ND**

Location **SUR-UL,BLK-20,SEC-3,--[TD=12500],[RRC 8],**

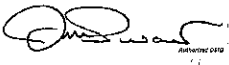
To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Texas Railroad Commission recommends:

The interval from the land surface to a depth of 300 feet must be protected.

Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area-wide use. This recommendation is intended for normal drilling, production, and plugging operations only. It does not apply to saltwater disposal operation into a nonproductive zone (RRC Form W-14).

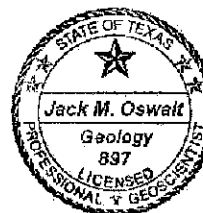
If you have any questions, please contact us at 512-463-2741, gau@rrc.state.tx.us, or by mail.

Sincerely,


Digitally signed by Jack M. Oswalt
DN: cn=US, st=TEXAS, o=Austin, o=Railroad
Commission of Texas, ou=Groundwater
Advisory Unit, cn=Jack Oswalt,
email=jack.oswalt@rrc.state.tx.us
Date: 2014.01.02 08:24:48 -06'00'

Jack M. Oswalt, P.G.

GEOLOGIST SEAL



Geologist, Groundwater Advisory Unit
Oil & Gas Division

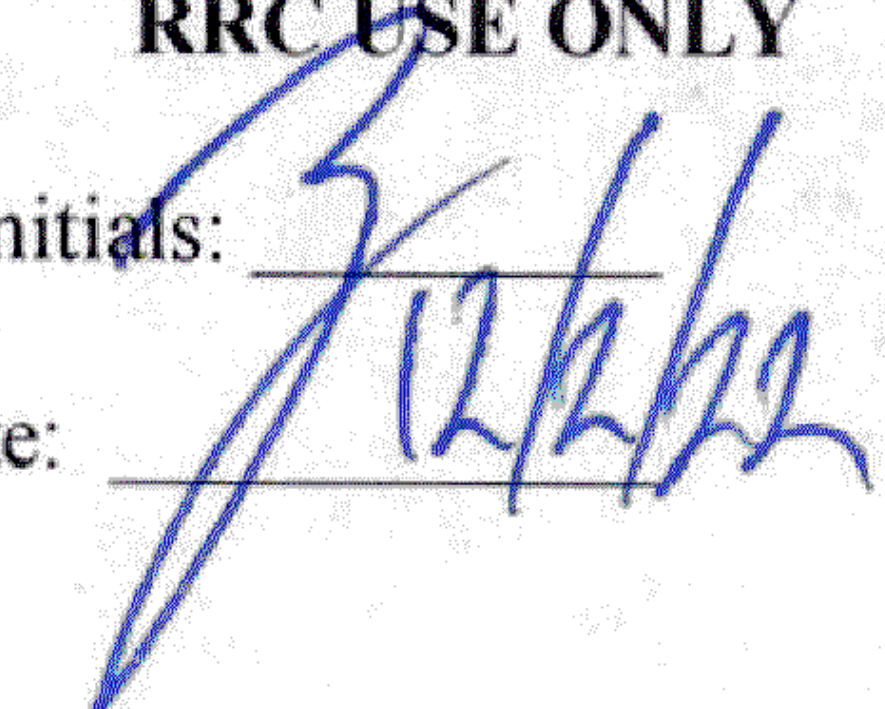
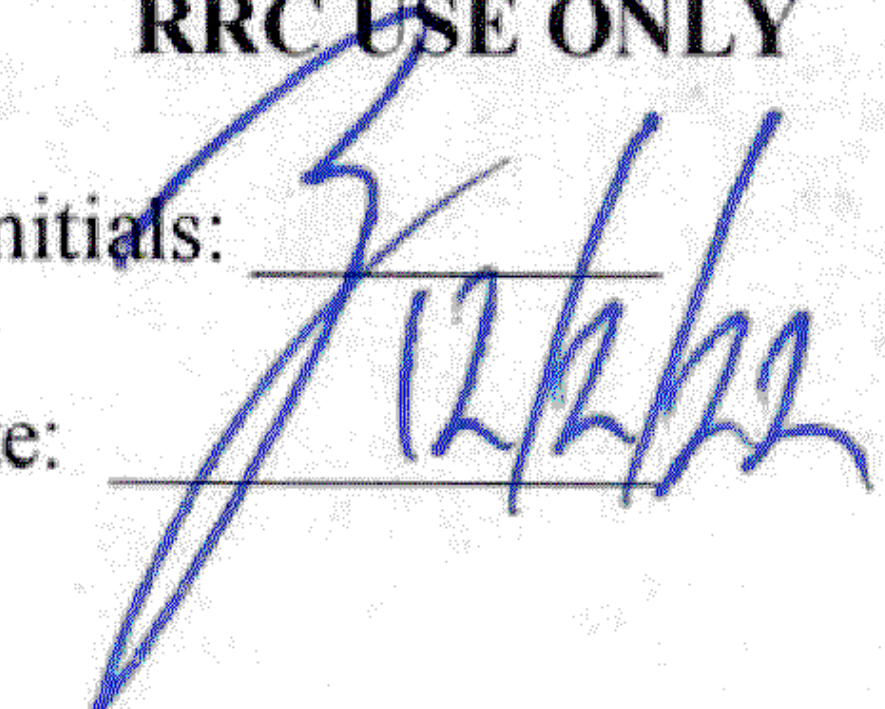
The seal appearing on this document was authorized by Jack M. Oswalt on 1/2/2014
Note: Alteration of this electronic document will invalidate the digital signature.

CERTIFICATE OF COMPLIANCE
AND TRANSPORTATION AUTHORITY

Form P-4

06/21

REFER TO INSTRUCTIONS

1. Field name exactly as shown on proration schedule Phantom (Wolfcamp)		2. Lease name as shown on proration schedule UL 20 S Bucktail					
3. Current operator name exactly as shown on P-5 Organization Report PDEH LLC		4. Operator P-5 no. 646827	5. Oil Lse/Gas ID no. 57138	6. County Winkler	7. RRC District 08		
8. Operator address including city, state, and zip code 600 W. Illinois Midland, TX 79701		9. Well no(s) (see instruction E) 1001H					
		10. Classification <input checked="" type="checkbox"/> Oil <input type="checkbox"/> Gas <input type="checkbox"/> Other (see instruction A)		11. Effective Date 08/01/22			
12. Purpose of Filing. (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: _____ Docket #: _____ <input checked="" type="checkbox"/> lease name from: UNIVERSITY 20 PW UNIT 1001H							
b. New RRC Number for: <input checked="" type="checkbox"/> oil lease <input type="checkbox"/> gas well <input type="checkbox"/> other well (specify) _____ Due to: <input type="checkbox"/> new completion or recompletion <input type="checkbox"/> reclass oil to gas <input type="checkbox"/> reclass gas to oil <input type="checkbox"/> consolidation <input type="checkbox"/> unitization <input checked="" type="checkbox"/> subdivision (oil lease only) <input type="checkbox"/> field transfer							
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	X	Brazos Midstream Operating (089903)			0001	100	
14. Authorized OIL or CONDENSATE Gatherer(s). (See instruction G).				RRC USE ONLY			
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	Reviewer's initials: 			
Plains Marketing L.P. (667883)			100	Approval date: 			
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.							
Chasity Jackson			Chasity Jackson				
Name (print)			Signature				
Sr. Regulatory Coordinator			<input checked="" type="checkbox"/> Authorized Employee of current operator <input type="checkbox"/> Authorized agent of current operator (see instruction G)				
Title			Date		Phone with area code		
Chasity.Jackson@conocophillips.com			7/20/2022		432-686-3087		
E-mail Address (optional)			Date		Phone with area code		

REQUEST FOR PERMISSION TO SUBDIVIDE OR CONSOLIDATE OIL LEASE(S)

READ INSTRUCTIONS ON BACK

P-6
5/02
WWW-1

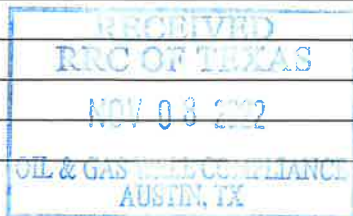
1. Receiving Operator name, exactly as shown on P-5 Organization Report	2. Operator P-5 no.	3. RRC district no.	5. Purpose of Filing: <input type="checkbox"/> Consolidation <input type="checkbox"/> Subdivision																															
		4. County																																
6. Operator address including city, state, and zip code		7. Field name exactly as shown on proration schedule																																
8. Are any of the leases being subdivided or consolidated currently overproduced or in violation of statewide rules? (check one) <input type="checkbox"/> No <input type="checkbox"/> Yes																																		
9. Lease to be subdivided or leases to be consolidated. List lease names and well numbers exactly as listed on current Commission Oil Proration Schedule. <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">LEASE NAME</th> <th style="width:15%;">LEASE NUMBER</th> <th style="width:15%;">LEASE ACRES</th> <th colspan="2" style="width:30%;">WELL NUMBERS (e.g.: 1, 2, 3-U, 3-L, 4, etc.)</th> </tr> </thead> <tbody> <tr><td>(1)</td><td></td><td></td><td colspan="2"></td></tr> <tr><td>(2)</td><td></td><td></td><td colspan="2"></td></tr> <tr><td>(3)</td><td></td><td></td><td colspan="2"></td></tr> </tbody> </table>					LEASE NAME	LEASE NUMBER	LEASE ACRES	WELL NUMBERS (e.g.: 1, 2, 3-U, 3-L, 4, etc.)		(1)					(2)					(3)														
LEASE NAME	LEASE NUMBER	LEASE ACRES	WELL NUMBERS (e.g.: 1, 2, 3-U, 3-L, 4, etc.)																															
(1)																																		
(2)																																		
(3)																																		
10. Lease(s) resulting from subdivision or after consolidation (how the leases/wells are to be listed on the Commission Oil Proration Schedule). For well number changes, give both old and new number; if there is no well number change, show the number under "old". <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">LEASE NAME</th> <th style="width:15%;">LEASE NUMBER</th> <th style="width:15%;">LEASE ACRES</th> <th style="width:10%;">WELL NUMBERS</th> <th style="width:10%;">API NUMBER</th> <th style="width:10%;">42-</th> </tr> <tr> <th></th> <th></th> <th></th> <th>Old</th> <th>New</th> <th></th> </tr> </thead> <tbody> <tr><td>(1)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>(2)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>(3)</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>					LEASE NAME	LEASE NUMBER	LEASE ACRES	WELL NUMBERS	API NUMBER	42-				Old	New		(1)						(2)						(3)					
LEASE NAME	LEASE NUMBER	LEASE ACRES	WELL NUMBERS	API NUMBER	42-																													
			Old	New																														
(1)																																		
(2)																																		
(3)																																		
11. Is the ownership, working interest, and the royalty interest for all leases listed in Items 9 or 10 identical? (check one) <input type="checkbox"/> No <input type="checkbox"/> Yes (See instruction D)																																		
12. Is the acreage listed for the resulting leases in Item 10 contiguous? (Check one) <input type="checkbox"/> No <input type="checkbox"/> Yes (See instruction F)				RRC USE ONLY Reviewer's initials: _____ Approval date: _____																														
OPERATOR CERTIFICATION: I certify that I am authorized to make this request, that it was prepared by me or under my supervision and direction, and that the data and facts stated herein are true, correct, and complete to the best of my knowledge.																																		
Signature _____		Date _____																																
Name (print or type) _____		Title _____																																
Phone number (with area code) _____		E-mail address (optional) _____																																

**REQUEST FOR PERMISSION TO SUBDIVIDE OR
CONSOLIDATE OIL LEASE(S)**

P-6

5/02

10. Lease(s) resulting from subdivision or after consolidation (how the leases/wells are to be listed on the Commission Oil Proration Schedule). For well number changes, give both old and new number; if there is no well number change, show the number under "old".					
LEASE NAME	LEASE NUMBER	LEASE ACRES	WELL NUMBERS		API NUMBER 42-
			Old	New	
(1) * Indicates PSA well after P-6/W-2 approval..					
UL 20 N Twitch	57934	640.7	0403H		301-32740
UL 20 N Paddle Tail	57935	640.7	0503H		301-31794
UL 20 S Bucktail	57938	640.7	1001H		495-33544
*UL Popper A	57940	300	1002H		495-33891
*UL 20 Popper B	57941	300	1003H		495-33892
*UL 20 Bucktail A1	57942	80	1005H		495-33889
*UL 20 Bucktail A	57943	320	1007H		495-33890
*UL 20 Bucktail C	57944	320	1009H		495-34399
*UL 20 Bucktail D	57945	260.7	1010H		495-34404
*UL Spinner A	57946	200.875	1503H		495-33705
UL 20 SW Topwater	57947	320.35	1803H		301-32609
UL 20 N Gold Spoon	57949	640.7	2002H		301-31788
*UL 20 N Gold Spoon A	57950	640.7	2003ST	2003H	301-32937
*UL 20 N Gold Spoon B	57954	640.7	2004H		301-32938
*UL 20 S Chatter A	57955	319	2701H		495-34175
*UL 20 S Chatter C	57956	319	2703H		495-34174
*UL 20 N Chatter A	57957	309	2704H		495-34170
*UL 20 N Chatter C	57958	314.7	2706H		495-34169
*UL 20 Rat Tail B	57959	200.225	2708H		495-34454
*UL 20 Silver Spoon A	57960	160	3902H		495-34004
*UL 20 Silver Spoon B	57961	160	3903H		495-33993
*UL 20 Silver Spoon C	57962	160	3904H		495-34006
*UL 20 Silver Spoon D	57963	160	3905H		495-33994
*UL 20 Silver Spoon E	57964	160	3906H		495-34449
*UL 20 Silver Spoon G	57965	140	3908H		495-34448
*UL 20 Silver Spoon H	57966	80	3909H		495-34550
*UL 20 Silver Spoon J	57967	60	3910H		495-34551
*UL 20 Silver Spoon I	57968	161.4	3911H		495-34571



Form P-16

Page 1
Rev. 06/2022

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 I. OPERATOR INFORMATION			
Operator Name:	PDEH LLC	Operator P-5 No.:	646827
Operator Address:	600 W Illinois		

SECTION II. WELL INFORMATION					
District No.:	08	API No.:	42-495-33544	Purpose of Filing:	
Well No.:	1001H	Drilling Permit No.:	775589	<input type="checkbox"/>	Form W-1
Lease Name:	UL 20 S Bucktail	RRC ID or Lease No.:	57938	<input checked="" type="checkbox"/>	Form G-1/W-2
Total Lease Acres:	640.700	Field Name:	Phantom (Wolfcamp)	Ownership Interval:	
Proration Acres:	106.000	Field No.:	71052900		
Wellbore Profile:	Horizontal Well	Is this a UFT field?:	Yes		
SL Record (Parent) Well Drilling Permit No.:		County:	Winkler	Upper:	
				Lower:	

SECTION III. LISTING OF ALL WELLS IN THE REGULATORY 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.	Profile	Lease Name	API No.	Acres Assigned	SWR 38 Except. (Y/N)	Operator Name and Operator No. (if different from filing operator)
57943	1007H	PSA	UL 20 Bucktail A	42-495-33890	106.000	N	
57944	1009H	PSA	UL 20 Bucktail C	42-495-34399	107.700	N	
57945	1010H	PSA	UL 20 Bucktail D	42-495-34404	107.000	N	
57941	1003H	PSA	UL 20 Popper B	42-495-33892	107.000	N	
57940	1002H	PSA	UL 20 Popper A	42-495-33891	107.000	N	
57938	1001H	Horiz.	UL 20 S Bucktail	42-495-33544	106.000	N	
57942	1005H	PSA	UL 20 Bucktail A1	42-495-33889	0.000	N	
A. Total Assigned Horiz. Acreage		=	640.700	C. Total Assigned Acreage		=	
Total Remaining Horiz. Acreage		=	0.000	Total Remaining Acreage		=	
B. Total Assigned Vert./Dir. Acreage		=	0.000				
Total Remaining Vert./Dir. Acreage		=	640.700				

SECTION IV. REMARKS - REQUIRED FOR PSA AND CO-DEVELOPMENT <i>(refer to instructions)</i>	

Attach Additional Pages As Needed. ☒ 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.

Martha Finley

Martha Finley, Sr. Regulatory Coordinator
Name and title (type or print)

Martha.Finley@conocophillips.com

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

600 W Illinois	Midland	TX	79701	432-688-6036			05/02/23		
Address	City,	State,	Zip Code	Tel:	Area Code	Number	Date:	mo.	day yr.

Groundwater
Advisory Unit

GROUNDWATER PROTECTION DETERMINATION

Date January 2, 2014

GAU File No.: SC- 6151

***** EXPEDITED APPLICATION *****

API Number 49533544

Attention: GEORGE MULLEN

RRC Lease No. 000000

SC_774719_49533544_000000_6151.pdf

SHELL WESTERN E&P
150 DAIRY ASHFORD
HOUSTON TX 77079

--Measured--

2600 ft FWL

230 ft FNL

MRL: SECTION

P-5# 774719

Digital Map Location:

X-coord/Long 103.32100

Y-coord/Lat 31.73660

Datum 27 Zone

County WINKLER

Lease & Well No. UNIVERSITY 20 10 WNK #1H

Purpose ND

Location SUR-UL, BLK-20, SEC-10, -- [TD=12500] , [RRC 8] ,


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

The interval from the land surface to a depth of 300 feet must be protected.

Note: Unless stated otherwise, this recommendation is intended to apply only to the subject well and not for area-wide use. This recommendation is intended for normal drilling, production, and plugging operations only. It does not apply to saltwater disposal operation into a nonproductive zone (RRC Form W-14).

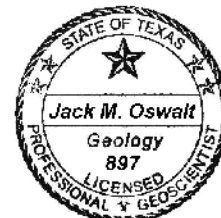
If you have any questions, please contact us at 512-463-2741, gau@rrc.state.tx.us, or by mail.

Sincerely,


Digitally signed by Jack Oswalt
DN: c=US, st=TEXAS, l=Austin, o=Railroad
Commission of Texas, ou=Groundwater
Advisory Unit, cn=Jack Oswalt,
email=jack.oswalt@rrc.state.tx.us
Date: 2014.01.02 08:23:02 -06'00'

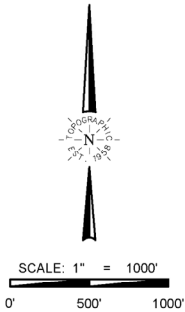
Jack M. Oswalt, P.G.

GEOLOGIST SEAL



Geologist, Groundwater Advisory Unit
Oil & Gas Division

The seal appearing on this document was authorized by Jack M. Oswalt on 1/2/2014
Note: Alteration of this electronic document will invalidate the digital signature.



OPERATOR: PDEH LLC

AS-DRILLED LOCATION

LEASE NAME & WELL NO.:

UL 20 S BUCKTAIL 1001H
API #: 4249533544

LEASE WELL ACREAGE:

640.700 ACRES (CALLED)

NEAREST TOWN IN COUNTY:

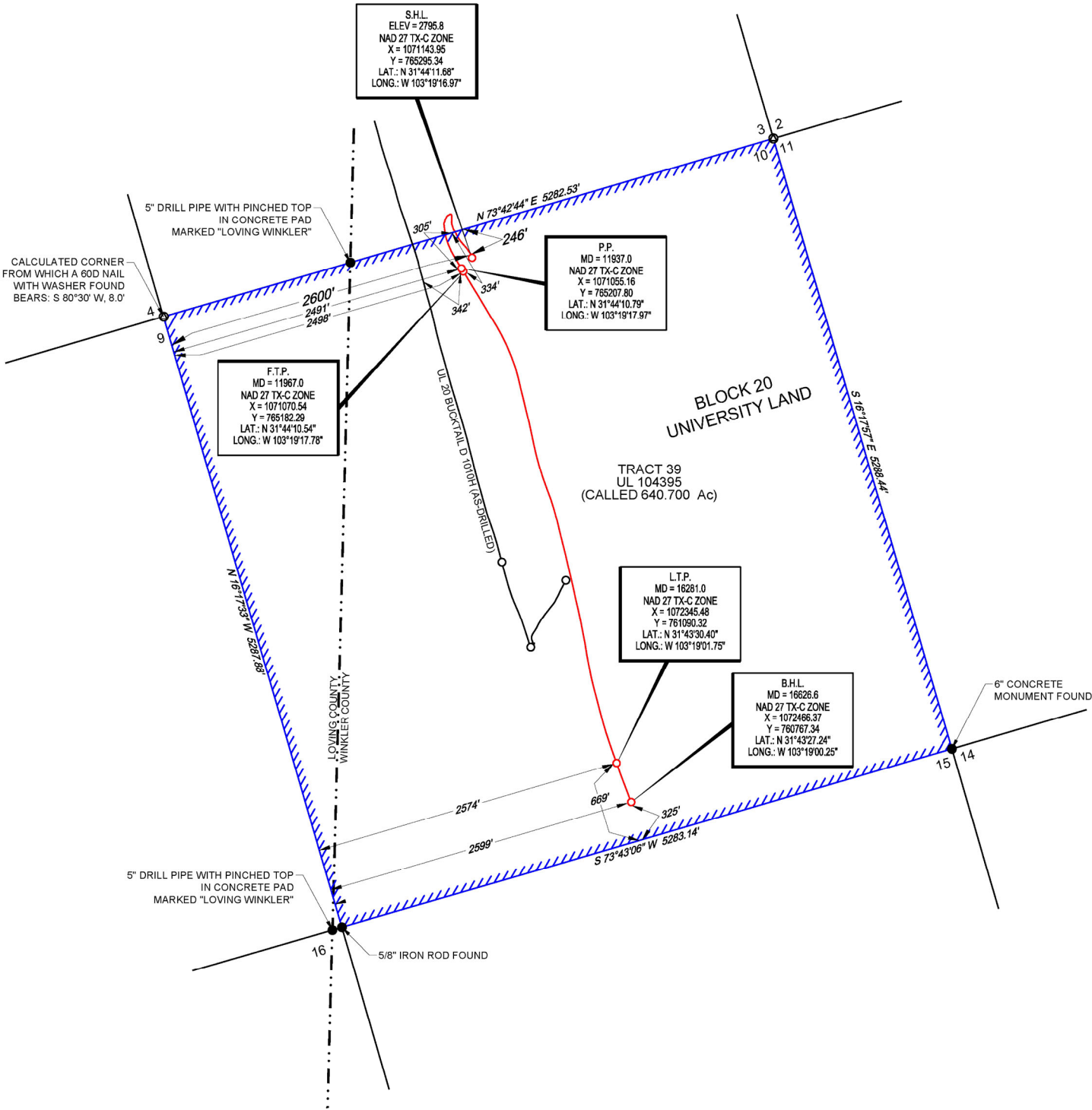
±9.5 MILES EAST OF WINKLER, TEXAS

DESCRIPTION:

S.H.L./P.P./F.T.P.: SECTION 10, BLOCK 20, UNIVERSITY LAND SURVEY

L.T./B.H.L.: SECTION 10, BLOCK 20, UNIVERSITY LAND SURVEY

WINKLER COUNTY, TEXAS



TIES TABLE

POINT	LEASE WELL	SURVEY/SECTION
S.H.L.	246' FNWL 2600' FSWL	246' FNWL & 2600' FSWL
P.P.	305' FNWL 2491' FSWL	305' FNWL & 2491' FSWL
F.T.P.	334' FNWL 2498' FSWL	334' FNWL & 2498' FSWL
L.T.P.	2574' FSWL 669' FSEL	2574' FSWL & 669' FSEL
B.H.L.	2599' FSWL 325' FSEL	2599' FSWL & 325' FSEL

PRODUCTIVE
LATERAL

LENGTH (F.T.P. TO L.T.P.)	
1	4,314.00'
TOTAL	4,314.00'

LEGEND:

- Lease Well Boundary
- Approximate Location County Line
- Survey/Section Line
- As-Drilled Well Path
- Monument Found
- Calculated Corner
- Well Point



John R. Anderson 4/12/2023
John R. Anderson, R.P.L.S. No. 6442

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
481 WINSOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX: (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

UL 20 S BUCKTAIL 1001H AS-DRILLED	REVISION:		NOTES:	NOTES CONT'D:
	A.C.L.	07/19/2022		
DATE: DECEMBER 1, 2014	O.M.	03/22/2023	1. ORIGINAL DOCUMENT SIZE: 11" X 17"	6. THE AS-DRILLED SURFACE LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF OCTOBER 20, 2014
FILE: AD_UL_20_S_BUCKTAIL_1001H_REV2_PDEH			2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.	7. THE SURFACE WELL PATH DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY PERMIAN DELAWARE ENTERPRISES HOLDINGS, LLC OR ITS SUBSIDIARIES & AFFILIATES.
DRAWN BY: O.M.			3. THIS LOCATION AND/OR UNIT/LEASE BOUNDARY HAS BEEN CAREFULLY SURVEYED ON THE GROUND UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE ACCORDING TO THE EVIDENCE, OFFICIAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY PERMIAN DELAWARE ENTERPRISES HOLDINGS, LLC. THIS PLAT WAS CREATED FOR THE SOLE PURPOSE OF FILING A PERMIT WITH THE RAILROAD COMMISSION OF TEXAS AND SHOULD NOT BE CONSTRUED AS A "BOUNDARY SURVEY" IN COMPLIANCE WITH T.B.P.L.S. MINIMUM STANDARDS OF PROCEDURES FOR BOUNDARY SURVEYS. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.	8. S.H.L. = SURFACE HOLE LOCATION
SHEET: 1 OF 1			4. ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.	9. P.P. = POINT OF PENETRATION
			5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY PERMIAN DELAWARE ENTERPRISES HOLDINGS, LLC OR ITS SUBSIDIARIES & AFFILIATES.	10. F.T.P. = FIRST TAKE POINT
				11. L.T.P. = LAST TAKE POINT
				12. B.H.L. = BOTTOM HOLE LOCATION