

Well Name: SERPENTINE 35-26 FED COM	Well Location: T22S / R33E / SEC 35 / NWSW /	County or Parish/State:
Well Number: 2H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM113969	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002551405	Well Status: Approved Application for Permit to Drill	Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

LONG VO

Digitally signed by LONG VO
Date: 2023.05.24 14:46:14
-05'00'

Sundry ID: 2731499

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 05/17/2023

Time Sundry Submitted: 04:36

Date proposed operation will begin: 05/17/2023

Procedure Description: Engineering Only - Devon Energy Production Company, L.P. respectfully requests a change to the original casing program: Reduce surface hole size from 17-1/2" to 14-3/4" Reduce surface casing size from 13-3/8" to 10-3/4" Change Intermediate casing connect from Sprint FJ to TWL Change Surface casing connect from DWC/C IS+ to BTC Cement program updated per casing change, including addition of intermediate squeeze. Please see attached revised drilling plan with casing and cement revisions and spec sheets.

NOI Attachments

Procedure Description

5.5_17lb_P110_BTC_20230517163350.pdf

8.625_32lb_P110HSCY_TLW_20230517163323.PDF

10.750_40.50lb_H40_20230517161648.pdf

SERPENTINE_35_26_Fed_Com_2H_Directional_Plan_09_28_22_20230517161554.pdf

SERPENTINE_35_26_Fed_Com_2H_14.75in_20230517161554.pdf

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Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: REBECCA DEAL**Signed on:** MAY 17, 2023 04:34 PM**Name:** DEVON ENERGY PRODUCTION COMPANY LP**Title:** Regulatory Analyst**Street Address:** 333 W SHERIDAN AVE**City:** OKLAHOMA CITY **State:** OK**Phone:** (303) 299-1406**Email address:** REBECCA.DEAL@DVN.COM**Field****Representative Name:****Street Address:****City:** **State:** **Zip:****Phone:****Email address:**

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM113969
LOCATION:	Section 35, T.22 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Serpentine 35-26 Fed Com 2H
SURFACE HOLE FOOTAGE:	1346'/S & 651'/W
BOTTOM HOLE FOOTAGE:	20'/N & 330'/W
ATS/API ID:	3002551405
APD ID:	10400081772
Sundry ID:	2731499

COA

H2S	No ▼		
Potash	None ▼		
Cave/Karst Potential	Low ▼		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	Conventional and Multibowl ▼		
Other	<input type="checkbox"/> 4 String	Capitan Reef None ▼	<input type="checkbox"/> WIPP
Other	Pilot Hole None ▼	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None ▼	Echo-Meter Int 1 ▼	Primary Cement Squeeze None ▼
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1150 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **14 3/4** inch in diameter.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

- a. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon at 7319' (515 sxs Class H/C+ additives)**.
- b. Second stage:
 - Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified. **(Squeeze 361 sxs Class C)**

Operator has proposed to pump down 10-3/4" X 8-5/8" annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus Or operator shall run a CBL from TD of the 8-5/8" casing to surface after the second stage BH to verify TOC.

Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must run one CBL per Well Pad.

If cement does not reach surface, the next casing string must come to surface.

Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.

Production casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.

- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **10-3/4** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 2.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin

after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

LVO 5/24/2023

SERPENTINE 35-26 Fed Com 2H

1. Geologic Formations

TVD of target	12275	Pilot hole depth	N/A
MD at TD:	21201	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	952		
Salt	1233		
Base of Salt	5068		
Delaware	5068		
Cherry Canyon	5918		
Brushy Canyon	7319		
1st Bone Spring Lime	8981		
Bone Spring 1st	10018		
Bone Spring 2nd	10590		
3rd Bone Spring Lime	11087		
Bone Spring 3rd	11755		
Wolfcamp	12072		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

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2. Casing Program (Primary Design)

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
14 3/4	10 3/4	40 1/2	H40	BTC	0	977	0	977
9 7/8	8 5/8	32	P110	Sprint FJ	0	11755	0	11755
7 7/8	5 1/2	17	P110	DWC/C IS+	0	21201	0	12275

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for contingency casing.

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	590	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	361	Surf	9	3.27	Lead: Class C Cement + additives
	515	7319	13.2	1.44	Tail: Class H / C + additives
Production	117	9728	9	3.27	Lead: Class H / C + additives
	1254	11728	13.2	1.44	Tail: Class H / C + additives

3. Cementing Program (Contingency Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	590	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	361	Surf	9	3.27	Bradenhead Squeeze - Lead: Class C Cement + additives
	515	7319	13.2	1.44	Tail: Class H / C + additives
Production	117	9728	9	3.27	Lead: Class H / C + additives
	1254	11728	13.2	1.44	Tail: Class H / C + additives

Assuming no returns are established while drilling, Devon requests to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program. Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

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4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?		Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
Production	13-5/8"	10M	Annular (5M)		X	100% of rated working pressure
			Blind Ram		X	10M
			Pipe Ram			
			Double Ram		X	
			Other*			
			Annular (5M)			
			Blind Ram			
			Pipe Ram			
			Double Ram			
			Other*			
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
Y	A variance is requested to run a 5 M annular on a 10M system					

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5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	10-10.5

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain.
	Coring? If yes, explain.

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	6702
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S plan attached.

SERPENTINE 35-26 Fed Com 2H

8. Other facets of operation

Is this a walking operation? Potentially

- 1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
- 2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
- 3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

- 1 Spudder rig will move in and batch drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
- 2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
- 3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
- 4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
- 5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pa.
- 6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
- 7 Drilling operations will be performed with drilling rig. A that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

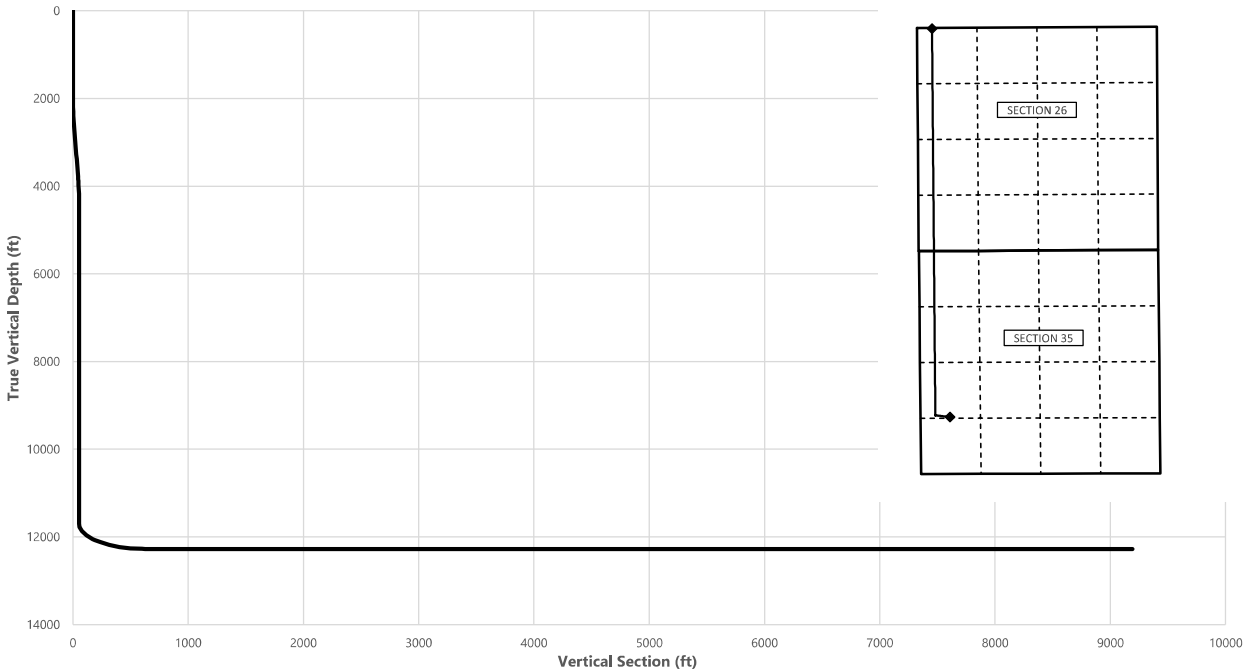
X Directional Plan
 Other, describe



Well: SERPENTINE 35-26 Fed Com 2H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	277.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	277.00	2497.47	5.30	-43.20	7.17	2.00	Hold Tangent
3867.67	10.00	277.00	3844.36	34.25	-278.92	46.31	0.00	Drop to Vertical
4367.67	0.00	277.00	4341.83	39.55	-322.12	53.48	2.00	Hold Vertical
11727.89	0.00	359.52	11702.04	39.55	-322.12	53.48	0.00	KOP
12627.89	90.00	359.52	12275.00	612.49	-326.92	626.09	10.00	Landing Point
21200.96	90.00	359.52	12275.00	9185.26	-398.74	9193.91	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	952.00	952.00
Salt	1233.00	1233.00
Base of Salt	5093.85	5068.00
Delaware	5093.85	5068.00
Cherry Canyon	5943.85	5918.00
Brushy Canyon	7344.85	7319.00
1st Bone Spring Lime	9006.85	8981.00
Bone Spring 1st	10043.85	10018.00
Bone Spring 2nd	10615.85	10590.00
3rd Bone Spring Lime	11112.85	11087.00
Bone Spring 3rd	11780.92	11755.00
Wolfcamp / Point of Penetration	12130.07	12072.00
exit	21120.96	12275.01

SHL
KOP
Point of Penetration
Exit
BHL

MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
0.00	0.00	32.3446	-103.5497	1346' FSL, 651' FWL of Sec 35 in T22S, R33E
11727.89	11702.04	32.3447	-103.5507	1386' FSL, 330' FWL of Sec 35 in T22S, R33E
12130.07	12072.00	32.3449	-103.5506	1418' FSL, 330' FWL of Sec 35 in T22S, R33E
21120.96	12275.01	32.3697	-103.5507	100' FNL, 330' FWL of Sec 26 in T22S, R33E
21200.96	12275.00	32.3698	-103.5508	20' FNL, 330' FWL of Sec 26 in T22S, R33E



Well: SERPENTINE 35-26 Fed Com 2H
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Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	277.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	277.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	277.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	277.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	277.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	277.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	277.00	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	277.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	277.00	900.00	0.00	0.00	0.00	0.00	
952.00	0.00	277.00	952.00	0.00	0.00	0.00	0.00	Rustler
1000.00	0.00	277.00	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	277.00	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	277.00	1200.00	0.00	0.00	0.00	0.00	
1233.00	0.00	277.00	1233.00	0.00	0.00	0.00	0.00	Salt
1300.00	0.00	277.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	277.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	277.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	277.00	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	277.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	277.00	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	277.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	277.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	277.00	2099.98	0.21	-1.73	0.29	2.00	
2200.00	4.00	277.00	2199.84	0.85	-6.93	1.15	2.00	
2300.00	6.00	277.00	2299.45	1.91	-15.58	2.59	2.00	
2400.00	8.00	277.00	2398.70	3.40	-27.67	4.59	2.00	
2500.00	10.00	277.00	2497.47	5.30	-43.20	7.17	2.00	Hold Tangent
2600.00	10.00	277.00	2595.95	7.42	-60.43	10.03	0.00	
2700.00	10.00	277.00	2694.43	9.54	-77.67	12.90	0.00	
2800.00	10.00	277.00	2792.91	11.65	-94.90	15.76	0.00	
2900.00	10.00	277.00	2891.39	13.77	-112.14	18.62	0.00	
3000.00	10.00	277.00	2989.87	15.88	-129.38	21.48	0.00	
3100.00	10.00	277.00	3088.35	18.00	-146.61	24.34	0.00	
3200.00	10.00	277.00	3186.83	20.12	-163.85	27.20	0.00	
3300.00	10.00	277.00	3285.31	22.23	-181.08	30.07	0.00	
3400.00	10.00	277.00	3383.79	24.35	-198.32	32.93	0.00	
3500.00	10.00	277.00	3482.27	26.47	-215.55	35.79	0.00	
3600.00	10.00	277.00	3580.75	28.58	-232.79	38.65	0.00	
3700.00	10.00	277.00	3679.23	30.70	-250.02	41.51	0.00	
3800.00	10.00	277.00	3777.72	32.81	-267.26	44.37	0.00	
3867.67	10.00	277.00	3844.36	34.25	-278.92	46.31	0.00	Drop to Vertical
3900.00	9.35	277.00	3876.23	34.91	-284.32	47.21	2.00	
4000.00	7.35	277.00	3975.16	36.68	-298.73	49.60	2.00	
4100.00	5.35	277.00	4074.54	38.03	-309.72	51.43	2.00	
4200.00	3.35	277.00	4174.25	38.95	-317.25	52.68	2.00	
4300.00	1.35	277.00	4274.16	39.45	-321.33	53.35	2.00	
4367.67	0.00	277.00	4341.83	39.55	-322.12	53.48	2.00	Hold Vertical
4400.00	0.00	359.52	4374.15	39.55	-322.12	53.49	0.00	
4500.00	0.00	359.52	4474.15	39.55	-322.12	53.49	0.00	
4600.00	0.00	359.52	4574.15	39.55	-322.12	53.49	0.00	
4700.00	0.00	359.52	4674.15	39.55	-322.12	53.49	0.00	
4800.00	0.00	359.52	4774.15	39.55	-322.12	53.49	0.00	
4900.00	0.00	359.52	4874.15	39.55	-322.12	53.49	0.00	
5000.00	0.00	359.52	4974.15	39.55	-322.12	53.49	0.00	
5093.85	0.00	359.52	5068.00	39.55	-322.12	53.49	0.00	Base of Salt, Delaware
5100.00	0.00	359.52	5074.15	39.55	-322.12	53.49	0.00	
5200.00	0.00	359.52	5174.15	39.55	-322.12	53.49	0.00	
5300.00	0.00	359.52	5274.15	39.55	-322.12	53.49	0.00	
5400.00	0.00	359.52	5374.15	39.55	-322.12	53.49	0.00	
5500.00	0.00	359.52	5474.15	39.55	-322.12	53.49	0.00	
5600.00	0.00	359.52	5574.15	39.55	-322.12	53.49	0.00	
5700.00	0.00	359.52	5674.15	39.55	-322.12	53.49	0.00	
5800.00	0.00	359.52	5774.15	39.55	-322.12	53.49	0.00	
5900.00	0.00	359.52	5874.15	39.55	-322.12	53.49	0.00	
5943.85	0.00	359.52	5918.00	39.55	-322.12	53.49	0.00	Cherry Canyon
6000.00	0.00	359.52	5974.15	39.55	-322.12	53.49	0.00	
6100.00	0.00	359.52	6074.15	39.55	-322.12	53.49	0.00	
6200.00	0.00	359.52	6174.15	39.55	-322.12	53.49	0.00	
6300.00	0.00	359.52	6274.15	39.55	-322.12	53.49	0.00	



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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6400.00	0.00	359.52	6374.15	39.55	-322.12	53.49	0.00	
6500.00	0.00	359.52	6474.15	39.55	-322.12	53.49	0.00	
6600.00	0.00	359.52	6574.15	39.55	-322.12	53.49	0.00	
6700.00	0.00	359.52	6674.15	39.55	-322.12	53.49	0.00	
6800.00	0.00	359.52	6774.15	39.55	-322.12	53.49	0.00	
6900.00	0.00	359.52	6874.15	39.55	-322.12	53.49	0.00	
7000.00	0.00	359.52	6974.15	39.55	-322.12	53.49	0.00	
7100.00	0.00	359.52	7074.15	39.55	-322.12	53.49	0.00	
7200.00	0.00	359.52	7174.15	39.55	-322.12	53.49	0.00	
7300.00	0.00	359.52	7274.15	39.55	-322.12	53.49	0.00	
7344.85	0.00	359.52	7319.00	39.55	-322.12	53.49	0.00	Brushy Canyon
7400.00	0.00	359.52	7374.15	39.55	-322.12	53.49	0.00	
7500.00	0.00	359.52	7474.15	39.55	-322.12	53.49	0.00	
7600.00	0.00	359.52	7574.15	39.55	-322.12	53.49	0.00	
7700.00	0.00	359.52	7674.15	39.55	-322.12	53.49	0.00	
7800.00	0.00	359.52	7774.15	39.55	-322.12	53.49	0.00	
7900.00	0.00	359.52	7874.15	39.55	-322.12	53.49	0.00	
8000.00	0.00	359.52	7974.15	39.55	-322.12	53.49	0.00	
8100.00	0.00	359.52	8074.15	39.55	-322.12	53.49	0.00	
8200.00	0.00	359.52	8174.15	39.55	-322.12	53.49	0.00	
8300.00	0.00	359.52	8274.15	39.55	-322.12	53.49	0.00	
8400.00	0.00	359.52	8374.15	39.55	-322.12	53.49	0.00	
8500.00	0.00	359.52	8474.15	39.55	-322.12	53.49	0.00	
8600.00	0.00	359.52	8574.15	39.55	-322.12	53.49	0.00	
8700.00	0.00	359.52	8674.15	39.55	-322.12	53.49	0.00	
8800.00	0.00	359.52	8774.15	39.55	-322.12	53.49	0.00	
8900.00	0.00	359.52	8874.15	39.55	-322.12	53.49	0.00	
9000.00	0.00	359.52	8974.15	39.55	-322.12	53.49	0.00	
9006.85	0.00	359.52	8981.00	39.55	-322.12	53.49	0.00	1st Bone Spring Lime
9100.00	0.00	359.52	9074.15	39.55	-322.12	53.49	0.00	
9200.00	0.00	359.52	9174.15	39.55	-322.12	53.49	0.00	
9300.00	0.00	359.52	9274.15	39.55	-322.12	53.49	0.00	
9400.00	0.00	359.52	9374.15	39.55	-322.12	53.49	0.00	
9500.00	0.00	359.52	9474.15	39.55	-322.12	53.49	0.00	
9600.00	0.00	359.52	9574.15	39.55	-322.12	53.49	0.00	
9700.00	0.00	359.52	9674.15	39.55	-322.12	53.49	0.00	
9800.00	0.00	359.52	9774.15	39.55	-322.12	53.49	0.00	
9900.00	0.00	359.52	9874.15	39.55	-322.12	53.49	0.00	
10000.00	0.00	359.52	9974.15	39.55	-322.12	53.49	0.00	
10043.85	0.00	359.52	10018.00	39.55	-322.12	53.49	0.00	Bone Spring 1st
10100.00	0.00	359.52	10074.15	39.55	-322.12	53.49	0.00	
10200.00	0.00	359.52	10174.15	39.55	-322.12	53.49	0.00	
10300.00	0.00	359.52	10274.15	39.55	-322.12	53.49	0.00	
10400.00	0.00	359.52	10374.15	39.55	-322.12	53.49	0.00	
10500.00	0.00	359.52	10474.15	39.55	-322.12	53.49	0.00	
10600.00	0.00	359.52	10574.15	39.55	-322.12	53.49	0.00	
10615.85	0.00	359.52	10590.00	39.55	-322.12	53.49	0.00	Bone Spring 2nd
10700.00	0.00	359.52	10674.15	39.55	-322.12	53.49	0.00	
10800.00	0.00	359.52	10774.15	39.55	-322.12	53.49	0.00	
10900.00	0.00	359.52	10874.15	39.55	-322.12	53.49	0.00	
11000.00	0.00	359.52	10974.15	39.55	-322.12	53.49	0.00	
11100.00	0.00	359.52	11074.15	39.55	-322.12	53.49	0.00	
11112.85	0.00	359.52	11087.00	39.55	-322.12	53.49	0.00	3rd Bone Spring Lime
11200.00	0.00	359.52	11174.15	39.55	-322.12	53.49	0.00	
11300.00	0.00	359.52	11274.15	39.55	-322.12	53.49	0.00	
11400.00	0.00	359.52	11374.15	39.55	-322.12	53.49	0.00	
11500.00	0.00	359.52	11474.15	39.55	-322.12	53.49	0.00	
11600.00	0.00	359.52	11574.15	39.55	-322.12	53.49	0.00	
11700.00	0.00	359.52	11674.15	39.55	-322.12	53.49	0.00	
11727.89	0.00	359.52	11702.04	39.55	-322.12	53.48	0.00	KOP
11780.92	5.30	359.52	11755.00	42.00	-322.14	55.94	10.00	Bone Spring 3rd
11800.00	7.21	359.52	11773.96	44.08	-322.16	58.01	10.00	
11900.00	17.21	359.52	11871.58	65.21	-322.34	79.13	10.00	
12000.00	27.21	359.52	11964.04	102.96	-322.65	116.86	10.00	
12100.00	37.21	359.52	12048.54	156.19	-323.10	170.06	10.00	
12130.07	40.22	359.52	12072.00	175.00	-323.26	188.85	10.00	Wolfcamp / Point of Penetration
12200.00	47.21	359.52	12122.51	223.29	-323.66	237.12	10.00	
12300.00	57.21	359.52	12183.71	302.22	-324.32	316.00	10.00	
12400.00	67.21	359.52	12230.27	390.57	-325.06	404.30	10.00	
12500.00	77.21	359.52	12260.79	485.66	-325.86	499.34	10.00	



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MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
12600.00	87.21	359.52	12274.32	584.61	-326.69	598.23	10.00	
12627.89	90.00	359.52	12275.00	612.49	-326.92	626.09	10.00	Landing Point
12700.00	90.00	359.52	12275.00	684.60	-327.52	698.16	0.00	
12800.00	90.00	359.52	12275.00	784.59	-328.36	798.10	0.00	
12900.00	90.00	359.52	12275.00	884.59	-329.20	898.04	0.00	
13000.00	90.00	359.52	12275.00	984.59	-330.04	997.97	0.00	
13100.00	90.00	359.52	12275.00	1084.58	-330.88	1097.91	0.00	
13200.00	90.00	359.52	12275.00	1184.58	-331.72	1197.85	0.00	
13300.00	90.00	359.52	12275.00	1284.58	-332.55	1297.79	0.00	
13400.00	90.00	359.52	12275.00	1384.57	-333.39	1397.73	0.00	
13500.00	90.00	359.52	12275.00	1484.57	-334.23	1497.67	0.00	
13600.00	90.00	359.52	12275.00	1584.57	-335.07	1597.61	0.00	
13700.00	90.00	359.52	12275.00	1684.56	-335.91	1697.55	0.00	
13800.00	90.00	359.52	12275.00	1784.56	-336.75	1797.48	0.00	
13900.00	90.00	359.52	12275.00	1884.56	-337.58	1897.42	0.00	
14000.00	90.00	359.52	12275.00	1984.55	-338.42	1997.36	0.00	
14100.00	90.00	359.52	12275.00	2084.55	-339.26	2097.30	0.00	
14200.00	90.00	359.52	12275.00	2184.54	-340.10	2197.24	0.00	
14300.00	90.00	359.52	12275.00	2284.54	-340.94	2297.18	0.00	
14400.00	90.00	359.52	12275.00	2384.54	-341.78	2397.12	0.00	
14500.00	90.00	359.52	12275.00	2484.53	-342.61	2497.06	0.00	
14600.00	90.00	359.52	12275.00	2584.53	-343.45	2596.99	0.00	
14700.00	90.00	359.52	12275.00	2684.53	-344.29	2696.93	0.00	
14800.00	90.00	359.52	12275.00	2784.52	-345.13	2796.87	0.00	
14900.00	90.00	359.52	12275.00	2884.52	-345.97	2896.81	0.00	
15000.00	90.00	359.52	12275.00	2984.52	-346.81	2996.75	0.00	
15100.00	90.00	359.52	12275.00	3084.51	-347.64	3096.69	0.00	
15200.00	90.00	359.52	12275.00	3184.51	-348.48	3196.63	0.00	
15300.00	90.00	359.52	12275.00	3284.51	-349.32	3296.57	0.00	
15400.00	90.00	359.52	12275.00	3384.50	-350.16	3396.50	0.00	
15500.00	90.00	359.52	12275.00	3484.50	-351.00	3496.44	0.00	
15600.00	90.00	359.52	12275.00	3584.50	-351.83	3596.38	0.00	
15700.00	90.00	359.52	12275.00	3684.49	-352.67	3696.32	0.00	
15800.00	90.00	359.52	12275.00	3784.49	-353.51	3796.26	0.00	
15900.00	90.00	359.52	12275.00	3884.49	-354.35	3896.20	0.00	
16000.00	90.00	359.52	12275.00	3984.48	-355.19	3996.14	0.00	
16100.00	90.00	359.52	12275.00	4084.48	-356.03	4096.08	0.00	
16200.00	90.00	359.52	12275.00	4184.47	-356.86	4196.01	0.00	
16300.00	90.00	359.52	12275.00	4284.47	-357.70	4295.95	0.00	
16400.00	90.00	359.52	12275.00	4384.47	-358.54	4395.89	0.00	
16500.00	90.00	359.52	12275.00	4484.46	-359.38	4495.83	0.00	
16600.00	90.00	359.52	12275.00	4584.46	-360.22	4595.77	0.00	
16700.00	90.00	359.52	12275.01	4684.46	-361.06	4695.71	0.00	
16800.00	90.00	359.52	12275.01	4784.45	-361.89	4795.65	0.00	
16900.00	90.00	359.52	12275.01	4884.45	-362.73	4895.59	0.00	
17000.00	90.00	359.52	12275.01	4984.45	-363.57	4995.52	0.00	
17100.00	90.00	359.52	12275.01	5084.44	-364.41	5095.46	0.00	
17200.00	90.00	359.52	12275.01	5184.44	-365.25	5195.40	0.00	
17300.00	90.00	359.52	12275.01	5284.44	-366.09	5295.34	0.00	
17400.00	90.00	359.52	12275.01	5384.43	-366.92	5395.28	0.00	
17500.00	90.00	359.52	12275.01	5484.43	-367.76	5495.22	0.00	
17600.00	90.00	359.52	12275.01	5584.43	-368.60	5595.16	0.00	
17700.00	90.00	359.52	12275.01	5684.42	-369.44	5695.10	0.00	
17800.00	90.00	359.52	12275.01	5784.42	-370.28	5795.03	0.00	
17900.00	90.00	359.52	12275.01	5884.41	-371.12	5894.97	0.00	
18000.00	90.00	359.52	12275.01	5984.41	-371.95	5994.91	0.00	
18100.00	90.00	359.52	12275.01	6084.41	-372.79	6094.85	0.00	
18200.00	90.00	359.52	12275.01	6184.40	-373.63	6194.79	0.00	
18300.00	90.00	359.52	12275.01	6284.40	-374.47	6294.73	0.00	
18400.00	90.00	359.52	12275.01	6384.40	-375.31	6394.67	0.00	
18500.00	90.00	359.52	12275.01	6484.39	-376.14	6494.61	0.00	
18600.00	90.00	359.52	12275.01	6584.39	-376.98	6594.54	0.00	
18700.00	90.00	359.52	12275.01	6684.39	-377.82	6694.48	0.00	
18800.00	90.00	359.52	12275.01	6784.38	-378.66	6794.42	0.00	
18900.00	90.00	359.52	12275.01	6884.38	-379.50	6894.36	0.00	
19000.00	90.00	359.52	12275.01	6984.38	-380.34	6994.30	0.00	
19100.00	90.00	359.52	12275.01	7084.37	-381.17	7094.24	0.00	
19200.00	90.00	359.52	12275.01	7184.37	-382.01	7194.18	0.00	
19300.00	90.00	359.52	12275.01	7284.37	-382.85	7294.12	0.00	
19400.00	90.00	359.52	12275.01	7384.36	-383.69	7394.05	0.00	



Well: SERPENTINE 35-26 Fed Com 2H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
19500.00	90.00	359.52	12275.01	7484.36	-384.53	7493.99	0.00	
19600.00	90.00	359.52	12275.01	7584.36	-385.37	7593.93	0.00	
19700.00	90.00	359.52	12275.01	7684.35	-386.20	7693.87	0.00	
19800.00	90.00	359.52	12275.01	7784.35	-387.04	7793.81	0.00	
19900.00	90.00	359.52	12275.01	7884.34	-387.88	7893.75	0.00	
20000.00	90.00	359.52	12275.01	7984.34	-388.72	7993.69	0.00	
20100.00	90.00	359.52	12275.01	8084.34	-389.56	8093.63	0.00	
20200.00	90.00	359.52	12275.01	8184.33	-390.40	8193.56	0.00	
20300.00	90.00	359.52	12275.01	8284.33	-391.23	8293.50	0.00	
20400.00	90.00	359.52	12275.01	8384.33	-392.07	8393.44	0.00	
20500.00	90.00	359.52	12275.01	8484.32	-392.91	8493.38	0.00	
20600.00	90.00	359.52	12275.01	8584.32	-393.75	8593.32	0.00	
20700.00	90.00	359.52	12275.01	8684.32	-394.59	8693.26	0.00	
20800.00	90.00	359.52	12275.01	8784.31	-395.43	8793.20	0.00	
20900.00	90.00	359.52	12275.01	8884.31	-396.26	8893.14	0.00	
21000.00	90.00	359.52	12275.01	8984.31	-397.10	8993.07	0.00	
21100.00	90.00	359.52	12275.01	9084.30	-397.94	9093.01	0.00	
21120.96	90.00	359.52	12275.01	9105.26	-398.12	9113.96	0.00	exit
21200.00	90.00	359.52	12275.01	9184.30	-398.78	9192.95	0.00	
21200.96	90.00	359.52	12275.00	9185.26	-398.74	9193.91	0.00	BHL

Well: SERPENTINE 35-26 Fed Com 2H

County: Lea

Wellbore: Permit Plan

Design: Permit Plan #1

Geodetic System: US State Plane 1983

Datum: North American Datum 1927

Ellipsoid: Clarke 1866

Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	



U. S. Steel Tubular Products
10.750" 40.50lb/ft (0.350" Wall) H40

11/4/2021 10:14:32 AM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC		--
Minimum Yield Strength	40,000	--	--	--	psi	--
Maximum Yield Strength	80,000	--	--	--	psi	--
Minimum Tensile Strength	60,000	--	--	--	psi	--
DIMENSIONS	Pipe	BTC	LTC	STC		--
Outside Diameter	10.750	0.000	0.000	11.750	in.	--
Wall Thickness	0.350	--	--	--	in.	--
Inside Diameter	10.050	--	--	10.050	in.	--
Standard Drift	9.894	9.894	9.894	9.894	in.	--
Alternate Drift	--	--	--	--	in.	--
Nominal Linear Weight, T&C	40.50	--	--	--	lb/ft	--
Plain End Weight	38.91	--	--	--	lb/ft	--
PERFORMANCE	Pipe	BTC	LTC	STC		--
Minimum Collapse Pressure	1,390	1,390	1,390	1,390	psi	--
Minimum Internal Yield Pressure	2,280	2,280	2,280	2,280	psi	--
Minimum Pipe Body Yield Strength	457	--	--	--	1,000 lbs	--
Joint Strength	--	--	--	314	1,000 lbs	--
Reference Length	--	--	--	5,164	ft	--
MAKE-UP DATA	Pipe	BTC	LTC	STC		--
Make-Up Loss	--	--	--	3.50	in.	--
Minimum Make-Up Torque	--	--	--	2,360	ft-lb	--
Maximum Make-Up Torque	--	--	--	3,930	ft-lb	--

UNCONTROLLED

Notes

Legal Notice

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Spring, Texas 77380

1-877-893-9461
connections@uss.com
www.usstubular.com



U. S. Steel Tubular Products
5.500" 17.00lbs/ft (0.304" Wall) P110

2/21/2019 8:12:22 AM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	110,000	--	--	--	psi
Maximum Yield Strength	140,000	--	--	--	psi
Minimum Tensile Strength	125,000	--	--	--	psi
DIMENSIONS	Pipe	BTC	LTC	STC	
Outside Diameter	5.500	6.050	6.050	--	in.
Wall Thickness	0.304	--	--	--	in.
Inside Diameter	4.892	4.892	4.892	--	in.
Standard Drift	4.767	4.767	4.767	--	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	17.00	--	--	--	lbs/ft
Plain End Weight	16.89	--	--	--	lbs/ft
PERFORMANCE	Pipe	BTC	LTC	STC	
Minimum Collapse Pressure	7,480	7,480	7,480	--	psi
Minimum Internal Yield Pressure	10,640	10,640	10,640	--	psi
Minimum Pipe Body Yield Strength	546	--	--	--	1,000 lbs
Joint Strength	--	568	445	--	1,000 lbs
Reference Length	--	22,271	17,449	--	ft
MAKE-UP DATA	Pipe	BTC	LTC	STC	
Make-Up Loss	--	4.13	3.50	--	in.
Minimum Make-Up Torque	--	--	3,470	--	ft-lbs
Maximum Make-Up Torque	--	--	5,780	--	ft-lbs

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www.usstubular.com



TEC-LOCK WEDGE

8.625" 32.00 LB/FT (.352" Wall)
BORUSAN MANNESMANNP110 HSCY

Pipe Body Data

Nominal OD:	8.625	in
Nominal Wall:	.352	in
Nominal Weight:	32.00	lb/ft
Plain End Weight:	31.13	lb/ft
Material Grade:	P110 HSCY	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	125,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	7.921	in
API Drift Diameter:	7.796	in
Special Drift Diameter:	7.875	in
RBW:	87.5 %	
Body Yield:	1,144,000	lbf
Burst:	8,930	psi
Collapse:	4,230	psi

Connection Data

Standard OD:	9.000	in
Pin Bored ID:	7.921	in
Critical Section Area:	8.61433	in ²
Tensile Efficiency:	94.2 %	
Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	1,077,000	lbf
Compressive Limit:	1,144,000	lbf
Internal Pressure Rating:	8,930	psi
External Pressure Rating:	4,230	psi
Maximum Bend:	62.6	°/100

Operational Data

Minimum Makeup Torque:	29,900	ft*lb
Optimum Makeup Torque:	37,375	ft*lb
Maximum Makeup Torque:	80,900	ft*lb
Minimum Yield:	89,900	ft*lb
Makeup Loss:	5.97	in

Notes

Operational Torque is equivalent to the Maximum Make-Up Torque.



35-22-33 Sundry ID 2731499 Serpentine 35-26 Fed Com 2H Lea NM113969.xlsm

Serpentine 35-26 Fed Com 2H

10 3/4		surface csg in a		14 3/4		inch hole.		Design Factors			Surface		
Segment	#/ft	Grade		Coupling		Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.50	h 40		btc		9.81	2.59	0.36	1,150	4	0.60	4.88	46,575
"B"				btc					0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,094						Tail Cmt	does not	circ to sfc.	Totals:	1,150	46,575		
Comparison of Proposed to Minimum Required Cement Volumes													
Hole	Annular	1 Stage		1 Stage	Min	1 Stage	Drilling	Calc	Req'd		Min Dist		
Size	Volume	Cmt Sx		CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE		Hole-Cplg		
14 3/4	0.5563	590		850	640	33	9.00	3826	5M		2.00		
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.													

8 5/8		casing inside the		10 3/4		Design Factors			Int 1			
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	32.00		p 110	vam sprint fj	1.98	0.62	1.07	11,755	1	1.79	1.05	376,160
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: -124								Totals:	11,755			376,160
The cement volume(s) are intended to achieve a top of						0	ft from surface or a		1150			overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
9 7/8	0.1261	515	742	1504	-51	10.50	3995	5M				0.61
r D V Tool(s):			7319				sum of sx	Σ CuFt				Σ%excess
t by stage % :		33	25				876	1922				28
Class 'C' tail cmt yld > 1.35												

Tail cmt		casing inside the		8 5/8		Design Factors				Prod 1		
5 1/2												
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	17.00		p 110	dwc/c is+	2.62	1.12	1.59	21,201	2	2.66	1.87	360,417
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,701								Totals:		21,201		360,417
The cement volume(s) are intended to achieve a top of					11555	ft from surface or a		200			overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cplg
7 7/8	0.1733	1371	2188	1672	31	10.50						0.91
Class 'C' tail cmt yld > 1.35												

#N/A												
0	5 1/2											
Design Factors												
<Choose Casing>												
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"			0.00				0				0	
"B"			0.00				0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	0	0			
Cmt vol calc below includes this csg, TOC intended							#N/A	ft from surface or a	#N/A	overlap.		
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist			
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg			
0		#N/A	#N/A	0	#N/A							
#N/A												
Capitan Reef est top XXXX.												

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 341144

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 341144
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	5/6/2024