

U.S. Department of the Interior BUREAU OF LAND MANAGEMENT

Sundry Print Report

Well Name: BLUE KRAIT 23 FED Well Location: T24S / R33E / SEC 23 / County or Parish/State: LEA /

SESE / 32.196943 / -103.537606

Well Number: 21H Type of Well: OIL WELL Allottee or Tribe Name:

Lease Number: NMLC063798 Unit or CA Name: Unit or CA Number:

US Well Number: 3002546857 Well Status: Approved Application for Operator: DEVON ENERGY

Permit to Drill PRODUCTION COMPANY LP

## **Notice of Intent**

**Sundry ID: 2711476** 

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 01/18/2023 Time Sundry Submitted: 12:53

Date proposed operation will begin: 01/18/2023

**Procedure Description:** DRILLING ONLY SUNDRY. Devon Energy Production Co., L.P. (Devon) respectfully requests to change the hole size for surface, intermediate, and production strings; the casing size of the surface and intermediate design; and the depth of the intermediate casing string. Please see the updated drill plan along with the supporting attachments.

# **NOI Attachments**

# **Conditions of Approval**

# Additional

Blue\_Krait\_23\_Fed\_21H\_Sundry\_ID\_2711476\_Dr\_COA\_20230124083756.pdf

23\_24\_33\_Sundry\_ID\_2711476\_Blue\_Krait\_23\_Fed\_21H\_Lea\_LC063798\_DEVON\_ENERGY\_PRODUCTION\_COMP ANY\_LP\_13\_22d\_1\_23\_2023\_LV\_20230124083756.pdf

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eceived by OCD: 2/6/2023 5:07:22 PM Well Name: BLUE KRAIT 23 FED Well Location: T24S / R33E / SEC 23 /

SESE / 32.196943 / -103.537606

County or Parish/State: LEA/ 2 of

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**Unit or CA Number:** Lease Number: NMLC063798 **Unit or CA Name:** 

**US Well Number: 3002546857** Well Status: Approved Application for **Operator: DEVON ENERGY** 

Permit to Drill PRODUCTION COMPANY LP

# **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

Signed on: JAN 18, 2023 12:50 PM **Operator Electronic Signature: CHELSEY GREEN** 

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Compliance Professional Street Address: 333 West Sheridan Avenue City: Oklahoma City State: OK

Phone: (405) 228-8595

Email address: Chelsey.Green@dvn.com

# **Field**

**Representative Name:** 

**Street Address:** 

City: State: Zip:

Phone:

**Email address:** 

# **BLM Point of Contact**

**BLM POC Name: CHRISTOPHER WALLS BLM POC Title:** Petroleum Engineer

**BLM POC Phone:** 5752342234 BLM POC Email Address: cwalls@blm.gov

**Disposition:** Approved Disposition Date: 02/06/2023

Signature: Chris Walls

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# Blue Krait 23 Fed 21H

# 1. Geologic Formations

TVD of target	11502	Pilot hole depth	N/A
MD at TD:	16597	Deepest expected fresh water	

## Basin

Dasin			
	Depth	Water/Mineral	
Formation	(TVD)	Bearing/Target	Hazards*
	from KB	Zone?	
Rustler	1280		
Salt	1801		
Base of Salt	5224		
Delaware	5224		
Bone Spring 1st	10155		
Bone Spring 2nd	10406		
3rd Bone Spring Lime	11230		

<sup>\*</sup>H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program (Primary Design)

	Wt				Casing	Interval	Casing Interval	
Hole Size	Csg. Size	(PPF)	Grade	Conn	From (MD)	To (MD)	From (TVD)	To (TVD)
17 1/2	13 3/8	48	H40	STC	0	1350	0	1350
12 1/4	9 5/8	40	J-55	LTC	0	5400	0	5400
8 3/4	5 1/2	17	P110	ВТС	0	16597	0	11502

<sup>•</sup> 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	1466	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1122	Surf	9	1.94	Lead: Class C Cement + additives
	190	4900	13.2	1.33	Tail: Class H / C + additives
Production	884	4900	9	1.94	Lead: Class H /C + additives
	1158	11057	13.2	1.33	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	100%
Intermediate 1	50%
Intermediate 1 (Two Stage)	50%
Prod	10%

**4. Pressure Control Equipment (Three String Design)** 

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Ty	ype	✓	Tested to:					
				nular	X	50% of rated working pressure					
Int 1	13-58"	5M	Bline	d Ram	X						
IIIt I	13-36	JIVI	Pipe	Ram		5M					
			Doub	le Ram	X	JIVI					
			Other*								
			Annul	ar (5M)	X	50% of rated working pressure					
Post disc	13-5/8" 5M	5) (	Blind Ram		X	_					
Production		13-5/8 51/1	13-5/8" 5MI	13-5/8**	5M	5M	13-5/8" 5M	Pipe	Ram		5M
											·
			Other*								
			Annul	ar (5M)							
			Blind Ram								
			Pipe Ram			1					
			Double Ram			1					
			Other*								
N A variance is requested for	the use of a	diverter or	the surface	casing. See a	attached for s	chematic.					
Y A variance is requested to 1	A variance is requested to run a 5 M annular on a 10M system										

5. Mud Program (Three String Design)

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

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

6. Logging and Testing Procedures

<u> </u>	6			
Logging, C	Logging, Coring and Testing			
	Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the			
X	Completion Report and sbumitted 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	Specfiy what type and where?
BH pressure at deepest TVD	5383
Abnormal temperature	No

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

Hydrogren 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 RLM

Cheountered	cheodificated reasoned values and formations will be provided to the BEM.	
N	H2S is present	
Y	H2S plan attached.	

#### 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
- 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

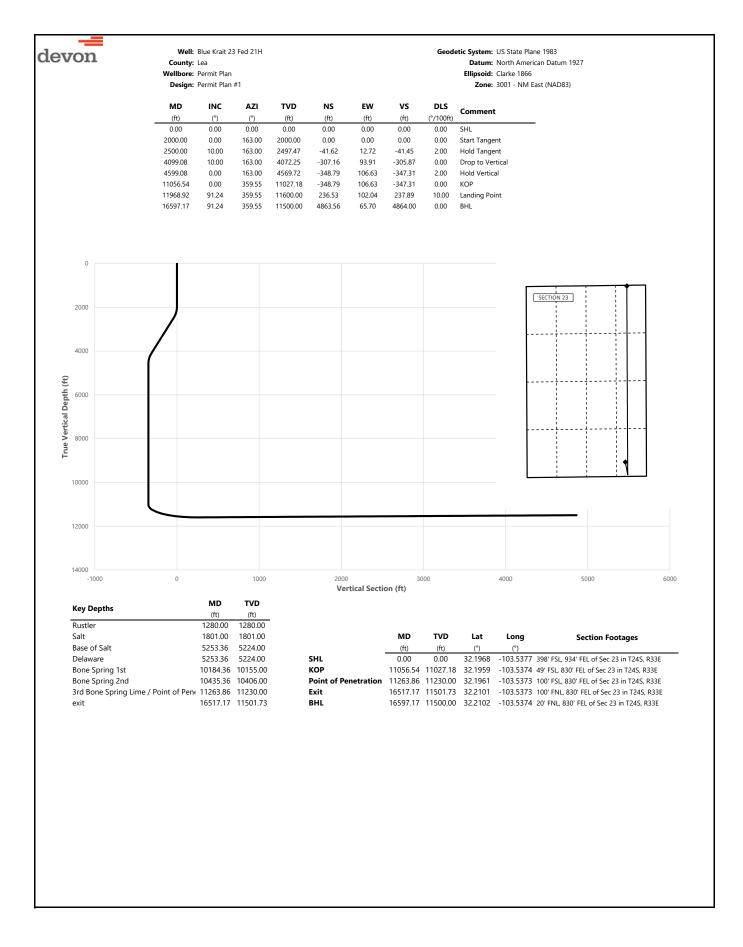
#### Blue Krait 23 Fed 21H

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 nippled 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.

	Other, describe
X	Directional Plan
Attachmen	ts





Well: Blue Krait 23 Fed 21H

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)

	Design:	Permit Plan	#1					<b>Zone:</b> 3001 - NM East (NAD83)
MD	INC	AZI	TVD	NS	EW	vs	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00 100.00	0.00	0.00 163.00	0.00 100.00	0.00	0.00	0.00 0.00	0.00	SHL
200.00	0.00	163.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	163.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	163.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	163.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	163.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	163.00	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	163.00	800.00	0.00	0.00	0.00	0.00	
900.00 1000.00	0.00	163.00 163.00	900.00 1000.00	0.00	0.00	0.00 0.00	0.00	
1100.00	0.00	163.00	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	163.00	1200.00	0.00	0.00	0.00	0.00	
1280.00	0.00	163.00	1280.00	0.00	0.00	0.00	0.00	Rustler
1300.00	0.00	163.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	163.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	163.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	163.00	1600.00	0.00	0.00	0.00	0.00	
1700.00 1800.00	0.00	163.00 163.00	1700.00 1800.00	0.00	0.00	0.00	0.00	
1800.00	0.00	163.00	1801.00	0.00 0.00	0.00	0.00 0.00	0.00	Salt
1900.00	0.00	163.00	1900.00	0.00	0.00	0.00	0.00	<del></del>
2000.00	0.00	163.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	163.00	2099.98	-1.67	0.51	-1.66	2.00	-
2200.00	4.00	163.00	2199.84	-6.67	2.04	-6.65	2.00	
2300.00	6.00	163.00	2299.45	-15.01	4.59	-14.94	2.00	
2400.00	8.00	163.00	2398.70	-26.66	8.15	-26.55	2.00	W.117
2500.00	10.00	163.00	2497.47	-41.62	12.72	-41.45	2.00	Hold Tangent
2600.00 2700.00	10.00 10.00	163.00 163.00	2595.95 2694.43	-58.23 -74.83	17.80 22.88	-57.98 -74.52	0.00	
2800.00	10.00	163.00	2792.91	-91.44	27.96	-91.05	0.00	
2900.00	10.00	163.00	2891.39	-108.04	33.03	-107.59	0.00	
3000.00	10.00	163.00	2989.87	-124.65	38.11	-124.12	0.00	
3100.00	10.00	163.00	3088.35	-141.26	43.19	-140.66	0.00	
3200.00	10.00	163.00	3186.83	-157.86	48.26	-157.20	0.00	
3300.00	10.00	163.00	3285.31	-174.47	53.34	-173.73	0.00	
3400.00	10.00	163.00	3383.79	-191.08	58.42	-190.27	0.00	
3500.00 3600.00	10.00 10.00	163.00 163.00	3482.27 3580.75	-207.68 -224.29	63.49 68.57	-206.80 -223.34	0.00	
3700.00	10.00	163.00	3679.23	-240.89	73.65	-239.88	0.00	
3800.00	10.00	163.00	3777.72	-257.50	78.73	-256.41	0.00	
3900.00	10.00	163.00	3876.20	-274.11	83.80	-272.95	0.00	
4000.00	10.00	163.00	3974.68	-290.71	88.88	-289.48	0.00	
4099.08	10.00	163.00	4072.25	-307.16	93.91	-305.87	0.00	Drop to Vertical
4100.00	9.98	163.00	4073.16	-307.32	93.96	-306.02	2.01	
4200.00	7.98	163.00	4171.93	-322.25	98.52	-320.89	2.00	
4300.00 4400.00	5.98 3.98	163.00 163.00	4271.18 4370.80	-333.87 -342.17	102.07 104.61	-332.46 -340.73	2.00 2.00	
4500.00	1.98	163.00	4470.66	-342.17	104.61	-345.68	2.00	
4599.08	0.00	163.00	4569.72	-348.79	106.63	-347.31	2.00	Hold Vertical
4600.00	0.00	359.55	4570.64	-348.79	106.63	-347.31	0.01	
4700.00	0.00	359.55	4670.64	-348.79	106.63	-347.31	0.00	
4800.00	0.00	359.55	4770.64	-348.79	106.63	-347.31	0.00	
4900.00	0.00	359.55	4870.64	-348.79	106.63	-347.31	0.00	
5000.00 5100.00	0.00	359.55 359.55	4970.64 5070.64	-348.79 -348.79	106.63	-347.31 -347.31	0.00	
5200.00	0.00	359.55 359.55	5070.64	-348.79 -348.79	106.63 106.63	-347.31 -347.31	0.00	
5253.36	0.00	359.55	5224.00	-348.79	106.63	-347.31	0.00	Base of Salt, Delaware
5300.00	0.00	359.55	5270.64	-348.79	106.63	-347.31	0.00	
5400.00	0.00	359.55	5370.64	-348.79	106.63	-347.31	0.00	
5500.00	0.00	359.55	5470.64	-348.79	106.63	-347.31	0.00	
5600.00	0.00	359.55	5570.64	-348.79	106.63	-347.31	0.00	
5700.00	0.00	359.55	5670.64	-348.79	106.63	-347.31	0.00	
5800.00	0.00	359.55	5770.64	-348.79	106.63	-347.31	0.00	
5900.00 6000.00	0.00	359.55 359.55	5870.64 5970.64	-348.79 -348.79	106.63	-347.31 -347.31	0.00	
6100.00	0.00	359.55	5970.64 6070.64	-348.79 -348.79	106.63 106.63	-347.31 -347.31	0.00	
6200.00	0.00	359.55	6170.64	-348.79	106.63	-347.31	0.00	
6300.00	0.00	359.55	6270.64	-348.79	106.63	-347.31	0.00	
6400.00	0.00	359.55	6370.64	-348.79	106.63	-347.31	0.00	



Well: Blue Krait 23 Fed 21H

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)

	Design:	Permit Plar	1#1					<b>Zone:</b> 3001 - NM East (NAD83)
MD	INC	AZI	TVD	NS	EW	vs	DLS	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	Comment
6500.00	0.00	359.55	6470.64	-348.79	106.63	-347.31	0.00	
6600.00	0.00	359.55	6570.64	-348.79	106.63	-347.31	0.00	
6700.00	0.00	359.55	6670.64	-348.79	106.63	-347.31	0.00	
6800.00	0.00	359.55	6770.64	-348.79	106.63	-347.31	0.00	
6900.00	0.00	359.55	6870.64	-348.79	106.63	-347.31	0.00	
7000.00	0.00	359.55	6970.64	-348.79	106.63	-347.31	0.00	
7100.00	0.00	359.55	7070.64	-348.79	106.63	-347.31	0.00	
7200.00	0.00	359.55	7170.64	-348.79	106.63	-347.31	0.00	
7300.00	0.00	359.55	7270.64	-348.79	106.63	-347.31	0.00	
7400.00	0.00	359.55	7370.64	-348.79	106.63	-347.31	0.00	
7500.00	0.00	359.55 359.55	7470.64	-348.79 -348.79	106.63	-347.31 -347.31	0.00	
7600.00 7700.00	0.00	359.55	7570.64 7670.64	-348.79	106.63 106.63	-347.31	0.00	
7800.00	0.00	359.55	7770.64	-348.79	106.63	-347.31	0.00	
7900.00	0.00	359.55	7870.64	-348.79	106.63	-347.31	0.00	
8000.00	0.00	359.55	7970.64	-348.79	106.63	-347.31	0.00	
8100.00	0.00	359.55	8070.64	-348.79	106.63	-347.31	0.00	
8200.00	0.00	359.55	8170.64	-348.79	106.63	-347.31	0.00	
8300.00	0.00	359.55	8270.64	-348.79	106.63	-347.31	0.00	
8400.00	0.00	359.55	8370.64	-348.79	106.63	-347.31	0.00	
8500.00	0.00	359.55	8470.64	-348.79	106.63	-347.31	0.00	
8600.00	0.00	359.55	8570.64	-348.79	106.63	-347.31	0.00	
8700.00	0.00	359.55	8670.64	-348.79	106.63	-347.31	0.00	
8800.00	0.00	359.55	8770.64	-348.79	106.63	-347.31	0.00	
8900.00	0.00	359.55	8870.64	-348.79	106.63	-347.31	0.00	
9000.00	0.00	359.55	8970.64	-348.79	106.63	-347.31	0.00	
9100.00 9200.00	0.00	359.55 359.55	9070.64 9170.64	-348.79	106.63	-347.31 -347.31	0.00	
9300.00	0.00	359.55	9270.64	-348.79 -348.79	106.63 106.63	-347.31	0.00	
9400.00	0.00	359.55	9370.64	-348.79	106.63	-347.31	0.00	
9500.00	0.00	359.55	9470.64	-348.79	106.63	-347.31	0.00	
9600.00	0.00	359.55	9570.64	-348.79	106.63	-347.31	0.00	
9700.00	0.00	359.55	9670.64	-348.79	106.63	-347.31	0.00	
9800.00	0.00	359.55	9770.64	-348.79	106.63	-347.31	0.00	
9900.00	0.00	359.55	9870.64	-348.79	106.63	-347.31	0.00	
10000.00	0.00	359.55	9970.64	-348.79	106.63	-347.31	0.00	
10100.00	0.00	359.55	10070.64	-348.79	106.63	-347.31	0.00	
10184.36	0.00	359.55	10155.00	-348.79	106.63	-347.31	0.00	Bone Spring 1st
10200.00	0.00	359.55	10170.64	-348.79	106.63	-347.31	0.00	
10300.00	0.00	359.55	10270.64	-348.79	106.63	-347.31	0.00	
10400.00 10435.36	0.00	359.55 359.55	10370.64 10406.00	-348.79 -348.79	106.63 106.63	-347.31 -347.31	0.00	Bone Spring 2nd
10500.00	0.00	359.55	10470.64	-348.79	106.63	-347.31	0.00	bone spring 2nd
10600.00	0.00	359.55	10570.64	-348.79	106.63	-347.31	0.00	
10700.00	0.00	359.55	10670.64	-348.79	106.63	-347.31	0.00	
10800.00	0.00	359.55	10770.64	-348.79	106.63	-347.31	0.00	
10900.00	0.00	359.55	10870.64	-348.79	106.63	-347.31	0.00	
11000.00	0.00	359.55	10970.64	-348.79	106.63	-347.31	0.00	
11056.54	0.00	359.55	11027.18	-348.79	106.63	-347.31	0.00	KOP
11100.00	4.35	359.55	11070.60	-347.14	106.62	-345.67	10.00	
11200.00	14.35	359.55	11169.14	-330.92	106.49	-329.45	10.00	
11263.86	20.73	359.55	11230.00	-311.69	106.34	-310.22	10.00	3rd Bone Spring Lime / Point of Penetration
11300.00	24.35	359.55	11263.38	-297.83	106.23	-296.37	10.00	
11400.00 11500.00	34.35	359.55 359.55	11350.43	-248.89 -185.57	105.85 105.35	-247.44 -184.13	10.00 10.00	
11600.00	44.35 54.35	359.55	11427.67 11492.73	-103.37	103.33	-104.13	10.00	
11700.00	64.35	359.55	11543.65	-23.89	104.78	-22.48	10.00	
11800.00	74.35	359.55	11578.88	69.56	103.35	70.95	10.00	
11900.00	84.35	359.55	11597.35	167.71	102.58	169.08	10.00	
11968.92	91.24	359.55	11600.00	236.53	102.04	237.89	10.00	Landing Point
12000.00	91.24	359.55	11599.33	267.61	101.79	268.96	0.00	
12100.00	91.24	359.55	11597.17	367.58	101.01	368.91	0.00	
12200.00	91.24	359.55	11595.01	467.55	100.22	468.87	0.00	
12300.00	91.24	359.55	11592.85	567.53	99.44	568.82	0.00	
12400.00	91.24	359.55	11590.69	667.50	98.65	668.77	0.00	
12500.00	91.24	359.55	11588.53	767.47	97.86	768.73	0.00	
12600.00	91.24	359.55	11586.36	867.45	97.08	868.68	0.00	
12700.00	91.24	359.55	11584.20	967.42 1067.40	96.29 95.51	968.63 1068.59	0.00	
12800.00 12900.00	91.24 91.24	359.55 359.55	11582.04 11579.88	1167.40	95.51 94.72	1168.59	0.00	
12300.00	J 1.44	JJJ.JJ	11313.00	1.01.31	J7.14	1100.34	0.00	



Well: Blue Krait 23 Fed 21H

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)	Comment
13000.00	91.24	359.55	11577.72	1267.34	93.94	1268.50	0.00	
13100.00	91.24	359.55	11575.56	1367.32	93.15	1368.45	0.00	
13200.00	91.24	359.55	11573.40	1467.29	92.36	1468.40	0.00	
13300.00	91.24	359.55	11571.24	1567.26	91.58	1568.36	0.00	
13400.00	91.24	359.55	11569.08	1667.24	90.79	1668.31	0.00	
13500.00	91.24	359.55	11566.92	1767.21	90.01	1768.27	0.00	
13600.00	91.24	359.55	11564.76	1867.18	89.22	1868.22	0.00	
13700.00	91.24	359.55	11562.60	1967.16	88.44	1968.17	0.00	
13800.00	91.24	359.55	11560.44	2067.13	87.65	2068.13	0.00	
13900.00	91.24	359.55	11558.28	2167.10	86.86	2168.08	0.00	
14000.00	91.24	359.55	11556.12	2267.08	86.08	2268.03	0.00	
14100.00	91.24	359.55	11553.96	2367.05	85.29	2367.99	0.00	
14200.00	91.24	359.55	11551.80	2467.03	84.51	2467.94	0.00	
14300.00	91.24	359.55	11549.64	2567.00	83.72	2567.90	0.00	
14400.00	91.24	359.55	11547.48	2666.97	82.94	2667.85	0.00	
14500.00	91.24	359.55	11545.32	2766.95	82.15	2767.80	0.00	
14600.00	91.24	359.55	11543.15	2866.92	81.36	2867.76	0.00	
14700.00	91.24	359.55	11540.99	2966.89	80.58	2967.71	0.00	
14800.00	91.24	359.55	11538.83	3066.87	79.79	3067.67	0.00	
14900.00	91.24	359.55	11536.67	3166.84	79.01	3167.62	0.00	
15000.00	91.24	359.55	11534.51	3266.81	78.22	3267.57	0.00	
15100.00	91.24	359.55	11532.35	3366.79	77.44	3367.53	0.00	
15200.00	91.24	359.55	11530.19	3466.76	76.65	3467.48	0.00	
15300.00	91.24	359.55	11528.03	3566.73	75.86	3567.43	0.00	
15400.00	91.24	359.55	11525.87	3666.71	75.08	3667.39	0.00	
15500.00	91.24	359.55	11523.71	3766.68	74.29	3767.34	0.00	
15600.00	91.24	359.55	11521.55	3866.66	73.51	3867.30	0.00	
15700.00	91.24	359.55	11519.39	3966.63	72.72	3967.25	0.00	
15800.00	91.24	359.55	11517.23	4066.60	71.94	4067.20	0.00	
15900.00	91.24	359.55	11515.07	4166.58	71.15	4167.16	0.00	
16000.00	91.24	359.55	11512.91	4266.55	70.36	4267.11	0.00	
16100.00	91.24	359.55	11510.75	4366.52	69.58	4367.06	0.00	
16200.00	91.24	359.55	11508.59	4466.50	68.79	4467.02	0.00	
16300.00	91.24	359.55	11506.43	4566.47	68.01	4566.97	0.00	
16400.00	91.24	359.55	11504.27	4666.44	67.22	4666.93	0.00	
16500.00	91.24	359.55	11502.10	4766.42	66.43	4766.88	0.00	
16517.17	91.24	359.55	11501.73	4783.58	66.30	4784.04	0.00	exit
	J	555.55			00.00		0.00	

devon

Well: Blue Krait 23 Fed 21H

County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

**Geodetic System:** US State Plane 1983 **Datum:** North American Datum 1927

Datum: North American Datum 19 Ellipsoid: Clarke 1866

Zone: 3001 - NM East (NAD83)

INC TVD EW MD AZI NS ٧S DLS Comment (ft) (°) (°) (ft) (ft) (ft) (ft) (°/100ft)

Well: Blue Krait 23 Fed 21H Geodetic System: US State Plane 1983 County: Lea Datum: North American Datum 1927 Wellbore: Permit Plan Ellipsoid: Clarke 1866 Design: Permit Plan #1 **Zone:** 3001 - NM East (NAD83) INC AZI TVD EW MD NS ٧S DLS Comment (ft) (°) (°) (ft) (ft) (ft) (ft) (°/100ft)

# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

**Devon Energy Production Company LP OPERATOR'S NAME:** NMLC063798 LEASE NO.: Section 33, T.24 S., R.33 E., NMPM **LOCATION:** Lea County, New Mexico

**COUNTY:** 

WELL NAME & NO.: Blue Krait 23 Fed 21H **SURFACE HOLE FOOTAGE:** 398'/S & 934'/E

**BOTTOM HOLE FOOTAGE** 20'/N & 830'/E ATS/API ID: 3002546857 APD ID: N/A **Sundry ID:** 2711476

COA

H2S	• Yes	□ No	
Potash	O None	☐ Secretary	□ R-111-P
Cave/Karst Potential	<b>O</b> Low	☐ Medium	☐ High
Cave/Karst Potential	Critical		
Variance	None		Other
Wellhead	Conventional	☐ Multibowl	Both
Wellhead Variance	☐ Diverter		
Other	□4 String	□Capitan Reef	□WIPP
Other	Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☐ Contingency	☐ EchoMeter	☐ Primary Cement
	Cement Squeeze		Squeeze
Special Requirements	☐ Water Disposal	□СОМ	□ Unit
Special Requirements	☑ Break Testing	☐ Offline	☐ Batch Sundry
Variance		Cementing	

#### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

#### **B. CASING**

- 1. The 13-3/8 inch surface casing shall be set at approximately 1350 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.
  - 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 9-5/8 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 a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

- 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.
     Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

#### 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 3000 (3M) psi. Annular which shall be tested to 2100 (70% Working Pressure) psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 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 13-3/8 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)

#### **BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. (Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 14-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per Onshore Oil and Gas Order No. 2.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

# **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)

  - ✓ Lea CountyCall 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 2<sup>nd</sup> 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 intergrity 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 intergrity 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 1/23/2023

23-24-33 Sundry ID 2711476 Blue Krait 23 Fed 21H Lea LC063798 DEVON ENERGY PRODUCTION COMPANY LP 13-22d 1-23-2023 LV.xlsm

#### Blue Krait 23 Fed 21H

13 3/8	SI	ırface csg in a	17 1/2	inch hole.		<u>Design l</u>	Factors			Surface	e	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	48.00		h 40	stc	4.97	1.22	0.6	1,350	3	1.01	2.30	64,800
"B"				stc				0				0
	w/8.4	#/g mud, 30min Sfc Csg Test psi	g: 622	Tail Cmt	does not	circ to sfc.	Totals:	1,350				64,800
Comparison of	of Proposed to	Minimum Required Cement	Volumes									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Reg'd				Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cplg
17 1/2	0.6946	1466	1950	938	108	9.00	1709	2M				1.56
Burst Frac Gra	Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK. Site plat (pipe racks S or E) as per 0.0.4.10.0.41, not found											

9 5/8	ca	sing inside the	13 3/8			<u>Design</u>	Factors -		-	Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00	j	55	Itc	2.48	0.9	0.73	5,250	1	1.39	1.50	210,000
"B"								0				0
	w/8.	4#/g mud, 30min Sfc Csg Test psig:	474				Totals:	5,250	_			210,000
		The cement volu	me(s) are inter	nded to achieve a top of	0	ft from su	rface or a	1350				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
12 1/4	0.3132	1312	2429	1730	40	10.50	2847	5M				0.81
D V Tool(s):							sum of sx	Σ CuFt				Σ%excess
t by stage % :		#VALUE!	#VALUE!				1312	2429				40
Class 'H' tail cm	nt yld > 1.20											
Burst Frac Grac	lient(s) for Seg	gment(s): A, B, C, D = 0.75, b, c,	d All > 0.70,	OK.								

5 1/2	casin	g inside the	9 5/8			Design Fa	ctors		-	Prod 1	'	
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	17.00		p 110	btc	2.79	1.39	1.98	16,597	2	3.74	2.63	282,149
"B"								0				0
	w/8.4#/g	mud, 30min Sfc Csg Test	osig: 2,530				Totals:	16,597				282,149
		The cement v	olume(s) are inter	nded to achieve a top of	5050	ft from su	rface 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
8 3/4	0.2526	2042	3255	2918	12	9.00						1.35
Class 'C' tail cm	nt 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	pelow includes	this csg, TOC intended	#N/A	ft from su	ırface 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 es	st top XXXX.								
									All Control			

Carlsbad Field Office 1/23/2023

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 District III 1000 Rio Brazos Rd., Aztec, NM 87410

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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 183349

#### **CONDITIONS**

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	183349
	Action Type:
	[C-103] NOI Change of Plans (C-103A)

#### CONDITIONS

Created By		Condition Date
pkautz	None	2/13/2023