

Well Name: GREEN WAVE 20 17
FEDERAL

Well Location: T26S / R34E / SEC 20 /
SWNE / 32.0296146 / -103.4909245

County or Parish/State: LEA /
NM

Well Number: 4H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM114991

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002546039

Well Status: Approved Application for
Permit to Drill

Operator: DEVON ENERGY
PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2387052

Type of Submission: Notice of Intent

Type of Action: Other

Date Sundry Submitted: 05/13/2021

Time Sundry Submitted: 09:20

Date proposed operation will begin: 07/10/2020

Procedure Description: Previously submitted sundry, stuck in WIS. Please see attached previously submitted sundry. Devon Energy Production Co., L.P. respectfully requests the following changes to the original APD: SHL move from 2401 FNL & 2346 FEL to 2126 FNL & 2340 FEL, both 20-26S-34E BHL move from 20 FNL & 2300 FEL to 20 FNL & 2430 FEL, both 17-26S-34E TVD/MD change (and subsequent field/pool) from 12,870'/20,579' Bobcat Draw; UWC to 11,000'/18,419' BRADLEY;BONE SPRING Please see attached revised C-102, directional and drilling plans.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

MB_Wellhd_5M_13.375_9.625_5.5_20210513091952.pdf

13.375_48lb_H40_20210513091952.pdf

9.625_40lb_J_55_20210513091952.pdf

5.5_17lb_P110_BTC_20210513091952.pdf

GREEN_WAVE_20_17_FED_4H_C_102_20210513091714.pdf

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Permit to Drill

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PRODUCTION COMPANY LP

Devon_Green_Wave_20_17_Fed_4H_Permit_Plan_3_20210513091711.pdf

Green_Wave_20_17_Fed_4H_Submitted_SHL_NOI_20210513091652.pdf

Conditions of Approval

Additional Reviews

Green_Wave_20_17_Federal_4H_COA_Sundry_ID_2387052_20210513124615.pdf

Operator Certification

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 submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: REBECCA DEAL

Signed on: MAY 13, 2021 09:19 AM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

City: Oklahoma City **State:** OK

Phone: (405) 228-8429

Email address: Rebecca.Deal@dvn.com

Field Representative

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 Email Address: cwalls@blm.gov

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-46039	² Pool Code 7280	³ Pool Name BRADLEY;BONE SPRING
⁴ Property Code	⁵ Property Name GREEN WAVE 20-17 FED	⁶ Well Number 4H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3342.0

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	20	26 S	34 E		2126	NORTH	2340	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	17	26 S	34 E		20	NORTH	2430	EAST	LEA

¹² Dedicated Acres 480	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p>N89°34'36"E 2646.46 FT</p> <p>NW CORNER SEC. 17 LAT. = 32.0506993°N LONG. = 103.5004452°W NMSP EAST (FT) N = 383177.75 E = 799384.71</p> <p>W/4 CORNER SEC. 17 LAT. = 32.0434462°N LONG. = 103.5004355°W NMSP EAST (FT) N = 380539.17 E = 799408.06</p> <p>SECTION CORNER LAT. = 32.0361972°N LONG. = 103.5004293°W NMSP EAST (FT) N = 377902.09 E = 799430.33</p> <p>W/4 CORNER SEC. 20 LAT. = 32.0289377°N LONG. = 103.5004198°W NMSP EAST (FT) N = 375261.22 E = 799453.63</p> <p>SW CORNER SEC. 20 LAT. = 32.0216783°N LONG. = 103.5004145°W NMSP EAST (FT) N = 372620.35 E = 799475.65</p>		<p>N/4 CORNER SEC. 17 LAT. = 32.0506967°N LONG. = 103.4919052°W NMSP EAST (FT) N = 383197.31 E = 802030.69</p> <p>LAST TAKE POINT 100' FNL, 2430' FEL LAT. = 32.0504218°N LONG. = 103.4912157°W</p> <p>QUARTER CORNER LAT. = 32.0362184°N LONG. = 103.4919125°W NMSP EAST (FT) N = 377930.28 E = 802069.47</p> <p>S/4 CORNER SEC. 20 LAT. = 32.0216780°N LONG. = 103.4918672°W NMSP EAST (FT) N = 372640.77 E = 802124.71</p>		<p>N89°33'29"E 2643.62 FT</p> <p>NE CORNER SEC. 17 LAT. = 32.0506958°N LONG. = 103.4833743°W NMSP EAST (FT) N = 383217.69 E = 804673.83</p> <p>E/4 CORNER SEC. 17 LAT. = 32.0434435°N LONG. = 103.4833713°W NMSP EAST (FT) N = 380579.41 E = 804695.54</p> <p>SECTION CORNER LAT. = 32.0361753°N LONG. = 103.4833607°W NMSP EAST (FT) N = 377935.34 E = 804719.64</p> <p>E/4 CORNER SEC. 20 LAT. = 32.0289285°N LONG. = 103.4833553°W NMSP EAST (FT) N = 375299.06 E = 804742.05</p> <p>SE CORNER SEC. 20 LAT. = 32.0216672°N LONG. = 103.4833470°W NMSP EAST (FT) N = 372657.52 E = 804765.39</p>	
<p>2430'</p> <p>BOTTOM OF HOLE</p> <p>20'</p> <p>2126'</p> <p>2340'</p> <p>SURFACE LOCATION</p> <p>FTP</p> <p>SEC 17</p> <p>SEC 20</p> <p>FIRST TAKE POINT 2549' FNL, 2430' FEL LAT. = 32.0292079°N LONG. = 103.4911952°W</p> <p>GREEN WAVE 20-17 FED 4H ELEV. = 3342.0' LAT. = 32.0303703°N (NAD83) LONG. = 103.4909056°W</p>					

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

7/20/2020

Signature _____ Date _____

Rebecca Deal, Regulatory Analyst

Printed Name _____

rebecca.deal@dmn.com


E-mail Address _____

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

APRIL 27, 2020

Date of Survey _____

Signature and Seal of Professional Surveyor: 

Certificate Number: **PAUL MON E. JARAMELLO, PLS 12797**
SURVEY NO. 6392A

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 20-T26S-R34E

Green Wave 20-17 Fed 4H

Wellbore #1

Plan: Permit Plan 3

Standard Planning Report - Geographic

09 July, 2020

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Green Wave 20-17 Fed 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3367.00ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3367.00ft
Site:	Sec 20-T26S-R34E	North Reference:	Grid
Well:	Green Wave 20-17 Fed 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Project	Lea County (NAD83 New Mexico East)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 20-T26S-R34E				
Site Position:		Northing:	375,305.15 usft	Latitude:	32.028952
From:	Map	Easting:	804,412.02 usft	Longitude:	-103.484420
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45

Well	Green Wave 20-17 Fed 4H					
Well Position	+N/-S	0.00 ft	Northing:	375,805.22 usft	Latitude:	32.030370
	+E/-W	0.00 ft	Easting:	802,398.07 usft	Longitude:	-103.490906
Position Uncertainty		0.50 ft	Wellhead Elevation:		Ground Level:	3,342.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/6/2020	6.57	59.86	47,518.81544217

Design	Permit Plan 3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	358.81

Plan Survey Tool Program	Date	7/8/2020		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,499.12 Permit Plan 3 (Wellbore #1)	MWD+HDGM	
			OWSG MWD + HDGM	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,312.41	3.12	194.00	3,312.26	-8.26	-2.06	1.00	1.00	0.00	194.00	
9,878.74	3.12	194.00	9,868.83	-355.49	-88.63	0.00	0.00	0.00	0.00	
10,087.02	0.00	0.00	10,077.00	-361.00	-90.00	1.50	-1.50	0.00	180.00	
10,437.06	0.00	0.00	10,427.04	-361.00	-90.00	0.00	0.00	0.00	0.00	
11,337.06	90.00	359.53	11,000.00	211.94	-94.71	10.00	10.00	0.00	359.53	PBHL - Green Wave 2
18,499.12	90.00	359.53	11,000.00	7,373.75	-153.62	0.00	0.00	0.00	0.00	PBHL - Green Wave 2

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Green Wave 20-17 Fed 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3367.00ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3367.00ft
Site:	Sec 20-T26S-R34E	North Reference:	Grid
Well:	Green Wave 20-17 Fed 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
100.00	0.00	0.00	100.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
200.00	0.00	0.00	200.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
300.00	0.00	0.00	300.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
400.00	0.00	0.00	400.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
500.00	0.00	0.00	500.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
600.00	0.00	0.00	600.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
700.00	0.00	0.00	700.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
800.00	0.00	0.00	800.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
900.00	0.00	0.00	900.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,000.00	0.00	0.00	1,000.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,100.00	0.00	0.00	1,100.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,200.00	0.00	0.00	1,200.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,300.00	0.00	0.00	1,300.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,400.00	0.00	0.00	1,400.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,500.00	0.00	0.00	1,500.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,600.00	0.00	0.00	1,600.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,700.00	0.00	0.00	1,700.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,800.00	0.00	0.00	1,800.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
1,900.00	0.00	0.00	1,900.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,000.00	0.00	0.00	2,000.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,100.00	0.00	0.00	2,100.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,200.00	0.00	0.00	2,200.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,300.00	0.00	0.00	2,300.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,400.00	0.00	0.00	2,400.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,500.00	0.00	0.00	2,500.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,600.00	0.00	0.00	2,600.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,700.00	0.00	0.00	2,700.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,800.00	0.00	0.00	2,800.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
2,900.00	0.00	0.00	2,900.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
3,000.00	0.00	0.00	3,000.00	0.00	0.00	375,805.22	802,398.07	32.030370	-103.490906
3,100.00	1.00	194.00	3,099.99	-0.85	-0.21	375,804.37	802,397.86	32.030368	-103.490907
3,200.00	2.00	194.00	3,199.96	-3.39	-0.84	375,801.83	802,397.22	32.030361	-103.490909
3,300.00	3.00	194.00	3,299.86	-7.62	-1.90	375,797.60	802,396.17	32.030349	-103.490912
3,312.41	3.12	194.00	3,312.26	-8.26	-2.06	375,796.96	802,396.01	32.030348	-103.490913
3,400.00	3.12	194.00	3,399.72	-12.89	-3.21	375,792.32	802,394.85	32.030335	-103.490917
3,500.00	3.12	194.00	3,499.57	-18.18	-4.53	375,787.04	802,393.54	32.030320	-103.490921
3,600.00	3.12	194.00	3,599.42	-23.47	-5.85	375,781.75	802,392.22	32.030306	-103.490925
3,700.00	3.12	194.00	3,699.27	-28.76	-7.17	375,776.46	802,390.90	32.030291	-103.490930
3,800.00	3.12	194.00	3,799.12	-34.05	-8.49	375,771.17	802,389.58	32.030277	-103.490934
3,900.00	3.12	194.00	3,898.97	-39.33	-9.81	375,765.88	802,388.26	32.030262	-103.490939
4,000.00	3.12	194.00	3,998.82	-44.62	-11.12	375,760.60	802,386.94	32.030248	-103.490943
4,100.00	3.12	194.00	4,098.67	-49.91	-12.44	375,755.31	802,385.62	32.030233	-103.490947
4,200.00	3.12	194.00	4,198.53	-55.20	-13.76	375,750.02	802,384.31	32.030219	-103.490952
4,300.00	3.12	194.00	4,298.38	-60.49	-15.08	375,744.73	802,382.99	32.030204	-103.490956
4,400.00	3.12	194.00	4,398.23	-65.77	-16.40	375,739.44	802,381.67	32.030190	-103.490960
4,500.00	3.12	194.00	4,498.08	-71.06	-17.72	375,734.16	802,380.35	32.030175	-103.490965
4,600.00	3.12	194.00	4,597.93	-76.35	-19.03	375,728.87	802,379.03	32.030161	-103.490969
4,700.00	3.12	194.00	4,697.78	-81.64	-20.35	375,723.58	802,377.71	32.030146	-103.490974
4,800.00	3.12	194.00	4,797.63	-86.93	-21.67	375,718.29	802,376.40	32.030132	-103.490978
4,900.00	3.12	194.00	4,897.49	-92.21	-22.99	375,713.00	802,375.08	32.030117	-103.490982
5,000.00	3.12	194.00	4,997.34	-97.50	-24.31	375,707.72	802,373.76	32.030103	-103.490987
5,100.00	3.12	194.00	5,097.19	-102.79	-25.63	375,702.43	802,372.44	32.030088	-103.490991
5,200.00	3.12	194.00	5,197.04	-108.08	-26.94	375,697.14	802,371.12	32.030074	-103.490996
5,300.00	3.12	194.00	5,296.89	-113.37	-28.26	375,691.85	802,369.80	32.030059	-103.491000

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Green Wave 20-17 Fed 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3367.00ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3367.00ft
Site:	Sec 20-T26S-R34E	North Reference:	Grid
Well:	Green Wave 20-17 Fed 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	3.12	194.00	5,396.74	-118.65	-29.58	375,686.56	802,368.49	32.030045	-103.491004
5,500.00	3.12	194.00	5,496.59	-123.94	-30.90	375,681.28	802,367.17	32.030030	-103.491009
5,600.00	3.12	194.00	5,596.45	-129.23	-32.22	375,675.99	802,365.85	32.030016	-103.491013
5,700.00	3.12	194.00	5,696.30	-134.52	-33.54	375,670.70	802,364.53	32.030001	-103.491017
5,800.00	3.12	194.00	5,796.15	-139.81	-34.85	375,665.41	802,363.21	32.029987	-103.491022
5,900.00	3.12	194.00	5,896.00	-145.09	-36.17	375,660.12	802,361.89	32.029972	-103.491026
6,000.00	3.12	194.00	5,995.85	-150.38	-37.49	375,654.84	802,360.58	32.029958	-103.491031
6,100.00	3.12	194.00	6,095.70	-155.67	-38.81	375,649.55	802,359.26	32.029943	-103.491035
6,200.00	3.12	194.00	6,195.55	-160.96	-40.13	375,644.26	802,357.94	32.029929	-103.491039
6,300.00	3.12	194.00	6,295.41	-166.25	-41.45	375,638.97	802,356.62	32.029914	-103.491044
6,400.00	3.12	194.00	6,395.26	-171.53	-42.76	375,633.68	802,355.30	32.029900	-103.491048
6,500.00	3.12	194.00	6,495.11	-176.82	-44.08	375,628.40	802,353.98	32.029885	-103.491053
6,600.00	3.12	194.00	6,594.96	-182.11	-45.40	375,623.11	802,352.67	32.029871	-103.491057
6,700.00	3.12	194.00	6,694.81	-187.40	-46.72	375,617.82	802,351.35	32.029856	-103.491061
6,800.00	3.12	194.00	6,794.66	-192.69	-48.04	375,612.53	802,350.03	32.029842	-103.491066
6,900.00	3.12	194.00	6,894.51	-197.98	-49.36	375,607.24	802,348.71	32.029827	-103.491070
7,000.00	3.12	194.00	6,994.36	-203.26	-50.68	375,601.96	802,347.39	32.029813	-103.491075
7,100.00	3.12	194.00	7,094.22	-208.55	-51.99	375,596.67	802,346.07	32.029798	-103.491079
7,200.00	3.12	194.00	7,194.07	-213.84	-53.31	375,591.38	802,344.76	32.029784	-103.491083
7,300.00	3.12	194.00	7,293.92	-219.13	-54.63	375,586.09	802,343.44	32.029769	-103.491088
7,400.00	3.12	194.00	7,393.77	-224.42	-55.95	375,580.80	802,342.12	32.029755	-103.491092
7,500.00	3.12	194.00	7,493.62	-229.70	-57.27	375,575.52	802,340.80	32.029740	-103.491096
7,600.00	3.12	194.00	7,593.47	-234.99	-58.59	375,570.23	802,339.48	32.029726	-103.491101
7,700.00	3.12	194.00	7,693.32	-240.28	-59.90	375,564.94	802,338.16	32.029711	-103.491105
7,800.00	3.12	194.00	7,793.18	-245.57	-61.22	375,559.65	802,336.85	32.029697	-103.491110
7,900.00	3.12	194.00	7,893.03	-250.86	-62.54	375,554.36	802,335.53	32.029682	-103.491114
8,000.00	3.12	194.00	7,992.88	-256.14	-63.86	375,549.08	802,334.21	32.029668	-103.491118
8,100.00	3.12	194.00	8,092.73	-261.43	-65.18	375,543.79	802,332.89	32.029653	-103.491123
8,200.00	3.12	194.00	8,192.58	-266.72	-66.50	375,538.50	802,331.57	32.029639	-103.491127
8,300.00	3.12	194.00	8,292.43	-272.01	-67.81	375,533.21	802,330.25	32.029624	-103.491132
8,400.00	3.12	194.00	8,392.28	-277.30	-69.13	375,527.92	802,328.94	32.029610	-103.491136
8,500.00	3.12	194.00	8,492.14	-282.58	-70.45	375,522.64	802,327.62	32.029595	-103.491140
8,600.00	3.12	194.00	8,591.99	-287.87	-71.77	375,517.35	802,326.30	32.029581	-103.491145
8,700.00	3.12	194.00	8,691.84	-293.16	-73.09	375,512.06	802,324.98	32.029566	-103.491149
8,800.00	3.12	194.00	8,791.69	-298.45	-74.41	375,506.77	802,323.66	32.029552	-103.491153
8,900.00	3.12	194.00	8,891.54	-303.74	-75.72	375,501.48	802,322.34	32.029537	-103.491158
9,000.00	3.12	194.00	8,991.39	-309.02	-77.04	375,496.20	802,321.03	32.029523	-103.491162
9,100.00	3.12	194.00	9,091.24	-314.31	-78.36	375,490.91	802,319.71	32.029508	-103.491167
9,200.00	3.12	194.00	9,191.10	-319.60	-79.68	375,485.62	802,318.39	32.029494	-103.491171
9,300.00	3.12	194.00	9,290.95	-324.89	-81.00	375,480.33	802,317.07	32.029479	-103.491175
9,400.00	3.12	194.00	9,390.80	-330.18	-82.32	375,475.04	802,315.75	32.029465	-103.491180
9,500.00	3.12	194.00	9,490.65	-335.46	-83.63	375,469.76	802,314.43	32.029450	-103.491184
9,600.00	3.12	194.00	9,590.50	-340.75	-84.95	375,464.47	802,313.12	32.029436	-103.491189
9,700.00	3.12	194.00	9,690.35	-346.04	-86.27	375,459.18	802,311.80	32.029421	-103.491193
9,800.00	3.12	194.00	9,790.20	-351.33	-87.59	375,453.89	802,310.48	32.029407	-103.491197
9,878.74	3.12	194.00	9,868.83	-355.49	-88.63	375,449.73	802,309.44	32.029395	-103.491201
9,900.00	2.81	194.00	9,890.06	-356.56	-88.89	375,448.66	802,309.18	32.029392	-103.491202
10,000.00	1.31	194.00	9,989.99	-360.04	-89.76	375,445.18	802,308.31	32.029383	-103.491205
10,087.02	0.00	0.00	10,077.00	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205
10,100.00	0.00	0.00	10,089.98	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205
10,200.00	0.00	0.00	10,189.98	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205
10,300.00	0.00	0.00	10,289.98	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205
10,400.00	0.00	0.00	10,389.98	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Green Wave 20-17 Fed 4H
Company:	WCDC Permian NM	TVD Reference:	RKB @ 3367.00ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3367.00ft
Site:	Sec 20-T26S-R34E	North Reference:	Grid
Well:	Green Wave 20-17 Fed 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,437.00	0.00	0.00	10,426.98	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205
KOP & FTP @ 10437' MD, 2487' FNL, 2430' FEL									
10,437.06	0.00	0.00	10,427.04	-361.00	-90.00	375,444.22	802,308.07	32.029380	-103.491205
10,500.00	6.29	359.53	10,489.86	-357.55	-90.03	375,447.67	802,308.04	32.029389	-103.491205
10,600.00	16.29	359.53	10,587.80	-337.99	-90.19	375,467.23	802,307.88	32.029443	-103.491205
10,700.00	26.29	359.53	10,680.85	-301.72	-90.49	375,503.50	802,307.58	32.029543	-103.491205
10,800.00	36.29	359.53	10,766.19	-249.84	-90.91	375,555.38	802,307.15	32.029686	-103.491206
10,900.00	46.29	359.53	10,841.23	-183.94	-91.46	375,621.28	802,306.61	32.029867	-103.491206
11,000.00	56.29	359.53	10,903.68	-106.00	-92.10	375,699.22	802,305.97	32.030081	-103.491206
11,100.00	66.29	359.53	10,951.65	-18.41	-92.82	375,786.81	802,305.25	32.030322	-103.491206
11,200.00	76.29	359.53	10,983.68	76.19	-93.60	375,881.41	802,304.47	32.030582	-103.491206
11,300.00	86.29	359.53	10,998.80	174.91	-94.41	375,980.13	802,303.66	32.030853	-103.491206
11,337.06	90.00	359.53	11,000.00	211.94	-94.71	376,017.16	802,303.36	32.030955	-103.491206
11,400.00	90.00	359.53	11,000.00	274.88	-95.23	376,080.10	802,302.84	32.031128	-103.491206
11,500.00	90.00	359.53	11,000.00	374.88	-96.05	376,180.09	802,302.02	32.031403	-103.491206
11,600.00	90.00	359.53	11,000.00	474.87	-96.88	376,280.09	802,301.19	32.031678	-103.491207
11,700.00	90.00	359.53	11,000.00	574.87	-97.70	376,380.09	802,300.37	32.031953	-103.491207
11,800.00	90.00	359.53	11,000.00	674.87	-98.52	376,480.08	802,299.55	32.032227	-103.491207
11,900.00	90.00	359.53	11,000.00	774.86	-99.34	376,580.08	802,298.73	32.032502	-103.491207
12,000.00	90.00	359.53	11,000.00	874.86	-100.17	376,680.08	802,297.90	32.032777	-103.491207
12,100.00	90.00	359.53	11,000.00	974.86	-100.99	376,780.07	802,297.08	32.033052	-103.491207
12,200.00	90.00	359.53	11,000.00	1,074.85	-101.81	376,880.07	802,296.26	32.033327	-103.491207
12,300.00	90.00	359.53	11,000.00	1,174.85	-102.63	376,980.06	802,295.44	32.033602	-103.491207
12,400.00	90.00	359.53	11,000.00	1,274.85	-103.46	377,080.06	802,294.61	32.033877	-103.491208
12,500.00	90.00	359.53	11,000.00	1,374.84	-104.28	377,180.06	802,293.79	32.034152	-103.491208
12,600.00	90.00	359.53	11,000.00	1,474.84	-105.10	377,280.05	802,292.97	32.034426	-103.491208
12,700.00	90.00	359.53	11,000.00	1,574.84	-105.92	377,380.05	802,292.15	32.034701	-103.491208
12,800.00	90.00	359.53	11,000.00	1,674.83	-106.75	377,480.05	802,291.32	32.034976	-103.491208
12,900.00	90.00	359.53	11,000.00	1,774.83	-107.57	377,580.04	802,290.50	32.035251	-103.491208
13,000.00	90.00	359.53	11,000.00	1,874.82	-108.39	377,680.04	802,289.68	32.035526	-103.491208
13,100.00	90.00	359.53	11,000.00	1,974.82	-109.21	377,780.04	802,288.86	32.035801	-103.491209
13,200.00	90.00	359.53	11,000.00	2,074.82	-110.04	377,880.03	802,288.03	32.036076	-103.491209
13,251.00	90.00	359.53	11,000.00	2,125.82	-110.45	377,931.03	802,287.61	32.036216	-103.491209
Cross section @ 13251' MD, 0' FSL, 2430' FEL									
13,300.00	90.00	359.53	11,000.00	2,174.81	-110.86	377,980.03	802,287.21	32.036351	-103.491209
13,400.00	90.00	359.53	11,000.00	2,274.81	-111.68	378,080.03	802,286.39	32.036625	-103.491209
13,500.00	90.00	359.53	11,000.00	2,374.81	-112.50	378,180.02	802,285.57	32.036900	-103.491209
13,600.00	90.00	359.53	11,000.00	2,474.80	-113.33	378,280.02	802,284.74	32.037175	-103.491209
13,700.00	90.00	359.53	11,000.00	2,574.80	-114.15	378,380.01	802,283.92	32.037450	-103.491209
13,800.00	90.00	359.53	11,000.00	2,674.80	-114.97	378,480.01	802,283.10	32.037725	-103.491210
13,900.00	90.00	359.53	11,000.00	2,774.79	-115.79	378,580.01	802,282.28	32.038000	-103.491210
14,000.00	90.00	359.53	11,000.00	2,874.79	-116.62	378,680.00	802,281.45	32.038275	-103.491210
14,100.00	90.00	359.53	11,000.00	2,974.79	-117.44	378,780.00	802,280.63	32.038550	-103.491210
14,200.00	90.00	359.53	11,000.00	3,074.78	-118.26	378,880.00	802,279.81	32.038824	-103.491210
14,300.00	90.00	359.53	11,000.00	3,174.78	-119.08	378,979.99	802,278.99	32.039099	-103.491210
14,400.00	90.00	359.53	11,000.00	3,274.78	-119.91	379,079.99	802,278.16	32.039374	-103.491210
14,500.00	90.00	359.53	11,000.00	3,374.77	-120.73	379,179.99	802,277.34	32.039649	-103.491211
14,600.00	90.00	359.53	11,000.00	3,474.77	-121.55	379,279.98	802,276.52	32.039924	-103.491211
14,700.00	90.00	359.53	11,000.00	3,574.77	-122.37	379,379.98	802,275.70	32.040199	-103.491211
14,800.00	90.00	359.53	11,000.00	3,674.76	-123.20	379,479.98	802,274.87	32.040474	-103.491211
14,900.00	90.00	359.53	11,000.00	3,774.76	-124.02	379,579.97	802,274.05	32.040749	-103.491211
15,000.00	90.00	359.53	11,000.00	3,874.76	-124.84	379,679.97	802,273.23	32.041024	-103.491211
15,100.00	90.00	359.53	11,000.00	3,974.75	-125.66	379,779.96	802,272.41	32.041298	-103.491211
15,200.00	90.00	359.53	11,000.00	4,074.75	-126.49	379,879.96	802,271.58	32.041573	-103.491211

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Green Wave 20-17 Fed 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3367.00ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3367.00ft
Site:	Sec 20-T26S-R34E	North Reference:	Grid
Well:	Green Wave 20-17 Fed 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,300.00	90.00	359.53	11,000.00	4,174.75	-127.31	379,979.96	802,270.76	32.041848	-103.491212
15,400.00	90.00	359.53	11,000.00	4,274.74	-128.13	380,079.95	802,269.94	32.042123	-103.491212
15,500.00	90.00	359.53	11,000.00	4,374.74	-128.95	380,179.95	802,269.12	32.042398	-103.491212
15,600.00	90.00	359.53	11,000.00	4,474.74	-129.78	380,279.95	802,268.29	32.042673	-103.491212
15,700.00	90.00	359.53	11,000.00	4,574.73	-130.60	380,379.94	802,267.47	32.042948	-103.491212
15,800.00	90.00	359.53	11,000.00	4,674.73	-131.42	380,479.94	802,266.65	32.043223	-103.491212
15,900.00	90.00	359.53	11,000.00	4,774.73	-132.24	380,579.94	802,265.83	32.043497	-103.491212
16,000.00	90.00	359.53	11,000.00	4,874.72	-133.07	380,679.93	802,265.00	32.043772	-103.491213
16,100.00	90.00	359.53	11,000.00	4,974.72	-133.89	380,779.93	802,264.18	32.044047	-103.491213
16,200.00	90.00	359.53	11,000.00	5,074.72	-134.71	380,879.92	802,263.36	32.044322	-103.491213
16,300.00	90.00	359.53	11,000.00	5,174.71	-135.53	380,979.92	802,262.54	32.044597	-103.491213
16,400.00	90.00	359.53	11,000.00	5,274.71	-136.36	381,079.92	802,261.71	32.044872	-103.491213
16,500.00	90.00	359.53	11,000.00	5,374.71	-137.18	381,179.91	802,260.89	32.045147	-103.491213
16,600.00	90.00	359.53	11,000.00	5,474.70	-138.00	381,279.91	802,260.07	32.045422	-103.491213
16,700.00	90.00	359.53	11,000.00	5,574.70	-138.82	381,379.91	802,259.25	32.045696	-103.491214
16,800.00	90.00	359.53	11,000.00	5,674.70	-139.65	381,479.90	802,258.42	32.045971	-103.491214
16,900.00	90.00	359.53	11,000.00	5,774.69	-140.47	381,579.90	802,257.60	32.046246	-103.491214
17,000.00	90.00	359.53	11,000.00	5,874.69	-141.29	381,679.90	802,256.78	32.046521	-103.491214
17,100.00	90.00	359.53	11,000.00	5,974.69	-142.11	381,779.89	802,255.96	32.046796	-103.491214
17,200.00	90.00	359.53	11,000.00	6,074.68	-142.94	381,879.89	802,255.13	32.047071	-103.491214
17,300.00	90.00	359.53	11,000.00	6,174.68	-143.76	381,979.89	802,254.31	32.047346	-103.491214
17,400.00	90.00	359.53	11,000.00	6,274.68	-144.58	382,079.88	802,253.49	32.047621	-103.491215
17,500.00	90.00	359.53	11,000.00	6,374.67	-145.40	382,179.88	802,252.67	32.047895	-103.491215
17,600.00	90.00	359.53	11,000.00	6,474.67	-146.23	382,279.87	802,251.84	32.048170	-103.491215
17,700.00	90.00	359.53	11,000.00	6,574.67	-147.05	382,379.87	802,251.02	32.048445	-103.491215
17,800.00	90.00	359.53	11,000.00	6,674.66	-147.87	382,479.87	802,250.20	32.048720	-103.491215
17,900.00	90.00	359.53	11,000.00	6,774.66	-148.69	382,579.86	802,249.38	32.048995	-103.491215
18,000.00	90.00	359.53	11,000.00	6,874.66	-149.52	382,679.86	802,248.55	32.049270	-103.491215
18,100.00	90.00	359.53	11,000.00	6,974.65	-150.34	382,779.86	802,247.73	32.049545	-103.491215
18,200.00	90.00	359.53	11,000.00	7,074.65	-151.16	382,879.85	802,246.91	32.049820	-103.491216
18,300.00	90.00	359.53	11,000.00	7,174.65	-151.98	382,979.85	802,246.09	32.050094	-103.491216
18,400.00	90.00	359.53	11,000.00	7,274.64	-152.81	383,079.85	802,245.26	32.050369	-103.491216
18,419.00	90.00	359.53	11,000.00	7,293.64	-152.96	383,098.85	802,245.11	32.050422	-103.491216
LTP @ 18419' MD, 100' FNL, 2430' FEL									
18,499.11	90.00	359.53	11,000.00	7,373.75	-153.62	383,178.95	802,244.45	32.050642	-103.491216
PBHL; 20' FNL, 2430' FEL									
18,499.12	90.00	359.53	11,000.00	7,373.75	-153.62	383,178.96	802,244.45	32.050642	-103.491216

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL - Green Wave 20-	0.00	0.01	0.00	7,373.75	-153.62	383,178.96	802,244.45	32.050642	-103.491216
- plan misses target center by 7375.35ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Green Wave 20-17 Fed 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3367.00ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3367.00ft
Site:	Sec 20-T26S-R34E	North Reference:	Grid
Well:	Green Wave 20-17 Fed 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,437.00	10,426.98	-361.00	-90.00	KOP & FTP @ 10437' MD, 2487' FNL, 2430' FEL
13,251.00	11,000.00	2,125.82	-110.45	Cross section @ 13251' MD, 0' FSL, 2430' FEL
18,419.00	11,000.00	7,293.64	-152.96	LTP @ 18419' MD, 100' FNL, 2430' FEL
18,499.11	11,000.00	7,373.75	-153.62	PBHL; 20' FNL, 2430' FEL

Green Wave 20-17 Fed 4H

1. Geologic Formations

TVD of target	11000	Pilot hole depth	N/A
MD at TD:	18499	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	700		
Salt	1060		
Base of Salt	5092		
Delaware	5350		
Bone Spring 1st	10580		
Bone Spring 2nd	11115		
Bone Spring 3rd	12215		
Wolfcamp	12635		

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

Green Wave 20-17 Fed 4H

2. Casing Program

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
17 1/2	13 3/8	48	H40	BTC	0	725	0	725
12 1/4	9 5/8	40	J-55	BTC	0	5325	0	5325
8 3/4	5 1/2	17	P110	BTC	0	18499	0	11000

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

Green Wave 20-17 Fed 4H

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft ³ /sack)	Slurry Description
Surface	563	Surf	13.2	1.4	Lead: Class C Cement + additives
Int 1	594	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9.0	3.3	Squeeze Lead: Class C Cement + additives
	594	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Production	478	500' tieback	9.0	3.3	Lead: Class H / C + additives
	1556	KOP	13.2	1.4	Tail: Class H / C + additives

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	10%

Green Wave 20-17 Fed 4H

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-58"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular (5M)		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

Green Wave 20-17 Fed 4H

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	Brine	10-10.5
Production	WBM	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
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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	
	Density	
X	CBL	Production casing
X	Mud log	KOP to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	5148
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.

Green Wave 20-17 Fed 4H

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 pad.
- 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. At 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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM114991
WELL NAME & NO.:	Green Wave 20-17 Fed 4H
SURFACE HOLE FOOTAGE:	2126'/N & 2340'/E
BOTTOM HOLE FOOTAGE:	20'/N & 2430'/E
LOCATION:	Section 20, T.26 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Potash	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Secretary	<input type="checkbox"/> R-111-P
Cave/Karst Potential	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input type="checkbox"/> Other
Wellhead	<input type="checkbox"/> Conventional	<input checked="" type="checkbox"/> Multibowl	<input type="checkbox"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input checked="" type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input type="checkbox"/> Unit

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 **13-3/8** inch surface casing shall be set at approximately **775 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) 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 shall be set at approximately **5325 feet** is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Operator has proposed to pump down 13-3/8" X 9-5/8" annulus. Operator must run a CBL from TD of the 9-5/8" casing to surface. Submit results to BLM.

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 might be required.

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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 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.

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)
393-3612

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 when specified), 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. 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.

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
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 50167

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 50167
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	9/21/2021