

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***HOBBS OGD**

NOV 01 2019

**SUBMIT IN TRIPLICATE - Other instructions on page 2****RECEIVED**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NMNM123533
2. Name of Operator EOG RESOURCES INCORPORATED Contact: EMILY FOLLIS E-Mail: emily_follis@eogresources.com		6. If Indian, Allottee or Tribe Name
3a. Address PO BOX 2267 MIDLAND, TX 79702	3b. Phone No. (include area code) Ph: 432-636-3600	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 26 T24S R34E SWSW 453FSL 956FWL 32.182510 N Lat, 103.446190 W Lon		8. Well Name and No. KESTREL 26 FED 311H
		9. API Well No. 30-025-46353-00-X1
		10. Field and Pool or Exploratory Area WC025G09S243336I-UP WOLFCAMP
		11. County or Parish, State LEA COUNTY, NM

**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original APD
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

**Carlsbad Field Office****OGD Hobbs**

EOG respectfully requests an amendment to our approved APD for this well to reflect the following changes:

Well number change from 701H to 311H

Target depth change from 12,559? (Wolfcamp) to 10,447? (1st Bone Spring Sand)

Change HSU from 320 acres to 160 acres

Changes in-casing and cement programs to reflect shallower target

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL***All Previous COAs Still Apply, Except For the Following:*

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #485528 verified by the BLM Well Information System For EOG RESOURCES INCORPORATED, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 09/27/2019 (19PP3312SE)	
Name (Printed/Typed) BEN HO	Title REGULATORY
Signature (Electronic Submission)	Date 09/27/2019

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By JEREMY PORTER	Title PETROLEUM ENGINEER	Date 10/21/2019
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Hobbs

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.

(Instructions on page 2)

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\****K-2*

# **Revisions to Operator-Submitted EC Data for Sundry Notice #485528**

	<b>Operator Submitted</b>	<b>BLM Revised (AFMSS)</b>
<b>Sundry Type:</b>	APDCH SR	APDCH NOI
<b>Lease:</b>	NMNM123533	NMNM123533
<b>Agreement:</b>		
<b>Operator:</b>	EOG RESOURCES INC PO BOX 2267 MIDLAND, TX 79702 Ph: 432-636-3600	EOG RESOURCES INCORPORATED PO BOX 2267 MIDLAND, TX 79702 Ph: 432.686.3689
<b>Admin Contact:</b>	EMILY FOLLIS SR REGULATORY ADMINISTRATOR E-Mail: emily_follis@eogresources.com  Ph: 432-636-3600	EMILY FOLLIS SR REGULATORY ADMINISTRATOR E-Mail: emily_follis@eogresources.com  Ph: 432-636-3600
<b>Tech Contact:</b>	BEN HO REGULATORY ASSOC. E-Mail: Ben_Hocher@eogresources.com Cell: 432-231-9548 Ph: 432-636-3600	BEN HO REGULATORY E-Mail: Ben_Hocher@eogresources.com  Ph: 432-686-3623
<b>Location:</b>		
<b>State:</b>	NM	NM
<b>County:</b>	LEA COUNTY	LEA
<b>Field/Pool:</b>	2220 ANTELOPE RIDGE WOLFC	WC025G09S243336I-UP WOLFCAMP
<b>Well/Facility:</b>	KESTREL 26 FEDERAL 311H Sec 26 T24S R34E 453FSL 956FWL	KESTREL 26 FED 311H Sec 26 T24S R34E SWSW 453FSL 956FWL 32.182510 N Lat, 103.446190 W Lon

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-025-46353		<sup>2</sup> Pool Code 2220 96474	<sup>3</sup> Pool Name ANTELOPE RIDGE; WOLFCAMP- RED HILLS; BONE SPRING, NORTH	
<sup>4</sup> Property Code 326100	<sup>5</sup> Property Name KESTREL 26 FED			<sup>6</sup> Well Number #311H
<sup>7</sup> GRID No. 7377	<sup>8</sup> Operator Name EOG RESOURCES, INC.			<sup>9</sup> Elevation 3428'

## <sup>10</sup>Surface Location

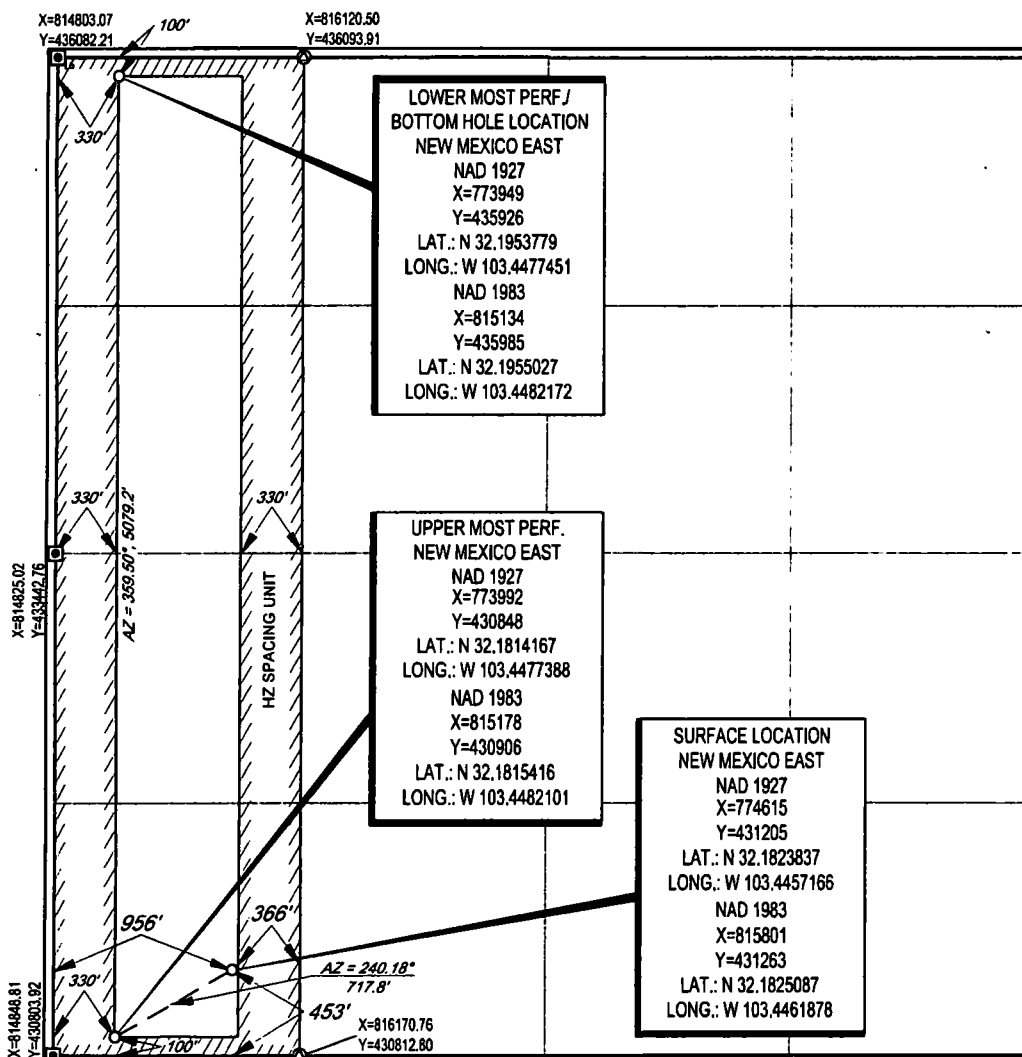
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	26	24-S	34-E	-	453'	SOUTH	956'	WEST	LEA

<sup>11</sup>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
D	26	24-S	34-E	-	100'	NORTH	330'	WEST	LEA

<sup>12</sup> Dedicated Acres <b>160.00</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.**



## 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.

Emily Follis 09/27/19

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Emily Follis

Printed Name \_\_\_\_\_

emily\_follis@eogresources.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 to the best of my belief.

09/17/2018

Date of Survey \_\_\_\_\_  
Signature and Seal of Professional Surveyor \_\_\_\_\_

**Certificate Number**

**Revised Permit Information 9/27/2019:**

Well Name: Kestrel 26 Fed #311H

**Location:**

SHL: 453' FSL &amp; 956' FWL, Section 26, T-24-S, R-34-E, Lea Co., N.M.

BHL: 100' FNL &amp; 330' FWL, Section 26, T-24-S, R-34-E, Lea Co., N.M.

**Casing Program:**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF <sub>min</sub> Collapse	DF <sub>min</sub> Burst	DF <sub>min</sub> Tension
17.5"	0' - 1,125'	13.375"	54.5#	J-55	STC	1.125	1.25	1.60
12.25"	0' - 4,000'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
12.25"	4,000' - 5,065'	9.625"	40#	HCK-55	LTC	1.125	1.25	1.60
8.75"	0' - 10,810'	5.5"	20#	HCP-110	LTC	1.125	1.25	1.60
8.5"	10,810' - 15,366'	5.5"	20#	HCP-110	LTC	1.125	1.25	1.60

Variance is requested to waive the centralizer requirements for the 9-5/8" FJ casing in the 12-1/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 12-1/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 5-1/2" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

**Cementing Program:**

Depth	No. Sacks	Wt. ppg	Yld Ft <sup>3</sup> /sk	Slurry Description
1,125'	680	13.5	1.73	Lead: Class C + 4.0% Bentonite + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	160	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 925')
5,065'	510	9.0	3.5	Lead: Class C + 10% NaCl + 6% Bentonite Gel + 3% MagOx (TOC @ Surface)
	350	14.4	1.20	Tail: Class C + 10% NaCl + 3% MagOx (TOC @ 4,050')
15,366'	340	11.0	3.21	Lead: Class C + 3% CaCl <sub>2</sub> + 3% Microbond (TOC @ 4,565')
	2,710	14.4	1.2	Tail: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 9,910')

<b>Additive</b>	<b>Purpose</b>
Bentonite Gel	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
MagOx	Expansive agent
Sodium Chloride	Accelerator
FL-62	Fluid loss control
Halad-344	Fluid loss control
Halad-9	Fluid loss control
HR-601	Retarder
Microbond	Expansive Agent

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

<b>Depth</b>	<b>Type</b>	<b>Weight (ppg)</b>	<b>Viscosity</b>	<b>Water Loss</b>
0 – 1,125'	Fresh - Gel	8.6-8.8	28-34	N/c
1,125' – 5,065'	Brine	8.6-8.8	28-34	N/c
5,065' – 15,366'	Oil Base	8.8-9.0	58-68	N/c - 6

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 14.0 ppg may be utilized.

453' FSL  
956' FWL  
Section 26  
T-24-S, R-34-E

Proposed Wellbore  
Revised 9/27/2019

KB: 3,453'  
GL: 3,428'

API: 30-025-46353

Bit Size: 17-1/2"

13-3/8", 54.5#, J-55, STC 0' - 1,125'

Bit Size: 12-1/4"

9-5/8", 40#, J-55, LTC @ 0' - 4,000'  
9-5/8", 40#, HCK-55, LTC @ 4,000' - 5,065'

TOC: 4,565'

Bit Size: 8-3/4"

5-1/2", 20#, HCP-110, LTC @ 0' - 15,366'

KOP: 9,910'

Lateral: 15,366' MD, 10,447' TVD  
Upper Most Perf:  
100' FSL & 330' FWL Sec. 26  
Lower Most Perf:  
100' FNL & 330' FWL Sec. 26  
BH Location: 100' FNL & 330' FWL  
Section 26  
T-24-S, R-34-E

Bit Size: 8-1/2"



## **EOG Resources - Midland**

**Lea County, NM (NAD 83 NME)**

**Kestrel 26 Fed Com**

**#311H**

**OH**

**Plan: Plan #0.1**

## **Standard Planning Report**

**26 September, 2019**

Database: EDM 5000.14  
 Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Kestrel 26 Fed Com  
 Well: #311H  
 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #311H  
 TVD Reference: KB = 25' @ 3453.0usft  
 MD Reference: KB = 25' @ 3453.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Kestrel 26 Fed Com		
Site Position:		Northing:	431,263.00 usft
From:	Map	Easting:	815,801.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32.1825084°N
		Longitude:	103.4461867°W
		Grid Convergence:	0.47 °

Well	#311H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	
		Latitude:	32.1825084°N
		Longitude:	103.4461867°W
		Ground Level:	3,428.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	9/26/2019	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)
			6.64
			60.01
			47,692.38693751

Design	Plan #0.1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			351.96

Plan Survey Tool Program Date 9/26/2019

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	15,366.2 Plan #0.1 (OH)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,279.8	5.60	236.84	2,279.4	-7.5	-11.4	2.00	2.00	0.00	236.84	
9,630.1	5.60	236.84	9,594.6	-399.5	-611.6	0.00	0.00	0.00	0.00	
9,909.9	0.00	0.00	9,874.0	-407.0	-623.0	2.00	-2.00	0.00	180.00	KOP (Kestrel 26 Fed ;
10,809.9	90.00	359.51	10,447.0	165.9	-627.9	10.00	10.00	-0.05	359.51	
15,366.2	90.00	359.51	10,447.0	4,722.0	-667.0	0.00	0.00	0.00	0.00	PBHL (Kestrel 26 Fed



Database: EDM 5000.14  
 Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Kestrel 26 Fed Com  
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 Design: Plan #0.1

Local Co-ordinate Reference: Well #311H  
 TVD Reference: KB = 25' @ 3453.0usft  
 MD Reference: KB = 25' @ 3453.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	2.00	236.84	2,100.0	-1.0	-1.5	-0.7	2.00	2.00	0.00
2,200.0	4.00	236.84	2,199.8	-3.8	-5.8	-3.0	2.00	2.00	0.00
2,279.8	5.60	236.84	2,279.4	-7.5	-11.4	-5.8	2.00	2.00	0.00
2,300.0	5.60	236.84	2,299.5	-8.5	-13.1	-6.6	0.00	0.00	0.00
2,400.0	5.60	236.84	2,399.0	-13.9	-21.2	-10.8	0.00	0.00	0.00
2,500.0	5.60	236.84	2,498.5	-19.2	-29.4	-14.9	0.00	0.00	0.00
2,600.0	5.60	236.84	2,598.0	-24.5	-37.6	-19.1	0.00	0.00	0.00
2,700.0	5.60	236.84	2,697.6	-29.9	-45.7	-23.2	0.00	0.00	0.00
2,800.0	5.60	236.84	2,797.1	-35.2	-53.9	-27.3	0.00	0.00	0.00
2,900.0	5.60	236.84	2,896.6	-40.5	-62.1	-31.5	0.00	0.00	0.00
3,000.0	5.60	236.84	2,996.1	-45.9	-70.2	-35.6	0.00	0.00	0.00
3,100.0	5.60	236.84	3,095.6	-51.2	-78.4	-39.7	0.00	0.00	0.00
3,200.0	5.60	236.84	3,195.2	-56.6	-86.6	-43.9	0.00	0.00	0.00
3,300.0	5.60	236.84	3,294.7	-61.9	-94.7	-48.0	0.00	0.00	0.00
3,400.0	5.60	236.84	3,394.2	-67.2	-102.9	-52.2	0.00	0.00	0.00
3,500.0	5.60	236.84	3,493.7	-72.6	-111.1	-56.3	0.00	0.00	0.00
3,600.0	5.60	236.84	3,593.3	-77.9	-119.2	-60.4	0.00	0.00	0.00
3,700.0	5.60	236.84	3,692.8	-83.2	-127.4	-64.6	0.00	0.00	0.00
3,800.0	5.60	236.84	3,792.3	-88.6	-135.6	-68.7	0.00	0.00	0.00
3,900.0	5.60	236.84	3,891.8	-93.9	-143.7	-72.9	0.00	0.00	0.00
4,000.0	5.60	236.84	3,991.4	-99.2	-151.9	-77.0	0.00	0.00	0.00
4,100.0	5.60	236.84	4,090.9	-104.6	-160.0	-81.1	0.00	0.00	0.00
4,200.0	5.60	236.84	4,190.4	-109.9	-168.2	-85.3	0.00	0.00	0.00
4,300.0	5.60	236.84	4,289.9	-115.2	-176.4	-89.4	0.00	0.00	0.00
4,400.0	5.60	236.84	4,389.4	-120.6	-184.5	-93.6	0.00	0.00	0.00
4,500.0	5.60	236.84	4,489.0	-125.9	-192.7	-97.7	0.00	0.00	0.00
4,600.0	5.60	236.84	4,588.5	-131.2	-200.9	-101.8	0.00	0.00	0.00
4,700.0	5.60	236.84	4,688.0	-136.6	-209.0	-106.0	0.00	0.00	0.00
4,800.0	5.60	236.84	4,787.5	-141.9	-217.2	-110.1	0.00	0.00	0.00
4,900.0	5.60	236.84	4,887.1	-147.2	-225.4	-114.3	0.00	0.00	0.00
5,000.0	5.60	236.84	4,986.6	-152.6	-233.5	-118.4	0.00	0.00	0.00
5,100.0	5.60	236.84	5,086.1	-157.9	-241.7	-122.5	0.00	0.00	0.00
5,200.0	5.60	236.84	5,185.6	-163.2	-249.9	-126.7	0.00	0.00	0.00

Database: EDM 5000.14  
 Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
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 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #311H  
 TVD Reference: KB = 25' @ 3453.0usft  
 MD Reference: KB = 25' @ 3453.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	5.60	236.84	5,285.2	-168.6	-258.0	-130.8	0.00	0.00	0.00
5,400.0	5.60	236.84	5,384.7	-173.9	-266.2	-135.0	0.00	0.00	0.00
5,500.0	5.60	236.84	5,484.2	-179.2	-274.4	-139.1	0.00	0.00	0.00
5,600.0	5.60	236.84	5,583.7	-184.6	-282.5	-143.2	0.00	0.00	0.00
5,700.0	5.60	236.84	5,683.3	-189.9	-290.7	-147.4	0.00	0.00	0.00
5,800.0	5.60	236.84	5,782.8	-195.2	-298.8	-151.5	0.00	0.00	0.00
5,900.0	5.60	236.84	5,882.3	-200.6	-307.0	-155.7	0.00	0.00	0.00
6,000.0	5.60	236.84	5,981.8	-205.9	-315.2	-159.8	0.00	0.00	0.00
6,100.0	5.60	236.84	6,081.3	-211.2	-323.3	-163.9	0.00	0.00	0.00
6,200.0	5.60	236.84	6,180.9	-216.6	-331.5	-168.1	0.00	0.00	0.00
6,300.0	5.60	236.84	6,280.4	-221.9	-339.7	-172.2	0.00	0.00	0.00
6,400.0	5.60	236.84	6,379.9	-227.2	-347.8	-176.4	0.00	0.00	0.00
6,500.0	5.60	236.84	6,479.4	-232.6	-356.0	-180.5	0.00	0.00	0.00
6,600.0	5.60	236.84	6,579.0	-237.9	-364.2	-184.6	0.00	0.00	0.00
6,700.0	5.60	236.84	6,678.5	-243.2	-372.3	-188.8	0.00	0.00	0.00
6,800.0	5.60	236.84	6,778.0	-248.6	-380.5	-192.9	0.00	0.00	0.00
6,900.0	5.60	236.84	6,877.5	-253.9	-388.7	-197.1	0.00	0.00	0.00
7,000.0	5.60	236.84	6,977.1	-259.2	-396.8	-201.2	0.00	0.00	0.00
7,100.0	5.60	236.84	7,076.6	-264.6	-405.0	-205.3	0.00	0.00	0.00
7,200.0	5.60	236.84	7,176.1	-269.9	-413.2	-209.5	0.00	0.00	0.00
7,300.0	5.60	236.84	7,275.6	-275.2	-421.3	-213.6	0.00	0.00	0.00
7,400.0	5.60	236.84	7,375.1	-280.6	-429.5	-217.8	0.00	0.00	0.00
7,500.0	5.60	236.84	7,474.7	-285.9	-437.6	-221.9	0.00	0.00	0.00
7,600.0	5.60	236.84	7,574.2	-291.2	-445.8	-226.0	0.00	0.00	0.00
7,700.0	5.60	236.84	7,673.7	-296.6	-454.0	-230.2	0.00	0.00	0.00
7,800.0	5.60	236.84	7,773.2	-301.9	-462.1	-234.3	0.00	0.00	0.00
7,900.0	5.60	236.84	7,872.8	-307.2	-470.3	-238.4	0.00	0.00	0.00
8,000.0	5.60	236.84	7,972.3	-312.6	-478.5	-242.6	0.00	0.00	0.00
8,100.0	5.60	236.84	8,071.8	-317.9	-486.6	-246.7	0.00	0.00	0.00
8,200.0	5.60	236.84	8,171.3	-323.2	-494.8	-250.9	0.00	0.00	0.00
8,300.0	5.60	236.84	8,270.9	-328.6	-503.0	-255.0	0.00	0.00	0.00
8,400.0	5.60	236.84	8,370.4	-333.9	-511.1	-259.1	0.00	0.00	0.00
8,500.0	5.60	236.84	8,469.9	-339.3	-519.3	-263.3	0.00	0.00	0.00
8,600.0	5.60	236.84	8,569.4	-344.6	-527.5	-267.4	0.00	0.00	0.00
8,700.0	5.60	236.84	8,668.9	-349.9	-535.6	-271.6	0.00	0.00	0.00
8,800.0	5.60	236.84	8,768.5	-355.3	-543.8	-275.7	0.00	0.00	0.00
8,900.0	5.60	236.84	8,868.0	-360.6	-552.0	-279.8	0.00	0.00	0.00
9,000.0	5.60	236.84	8,967.5	-365.9	-560.1	-284.0	0.00	0.00	0.00
9,100.0	5.60	236.84	9,067.0	-371.3	-568.3	-288.1	0.00	0.00	0.00
9,200.0	5.60	236.84	9,166.6	-376.6	-576.5	-292.3	0.00	0.00	0.00
9,300.0	5.60	236.84	9,266.1	-381.9	-584.6	-296.4	0.00	0.00	0.00
9,400.0	5.60	236.84	9,365.6	-387.3	-592.8	-300.5	0.00	0.00	0.00
9,500.0	5.60	236.84	9,465.1	-392.6	-600.9	-304.7	0.00	0.00	0.00
9,600.0	5.60	236.84	9,564.7	-397.9	-609.1	-308.8	0.00	0.00	0.00
9,630.1	5.60	236.84	9,594.6	-399.5	-611.6	-310.1	0.00	0.00	0.00
9,700.0	4.20	236.84	9,664.3	-402.8	-616.6	-312.6	2.00	-2.00	0.00
9,800.0	2.20	236.84	9,764.1	-405.8	-621.2	-315.0	2.00	-2.00	0.00
9,909.9	0.00	0.00	9,874.0	-407.0	-623.0	-315.9	2.00	-2.00	0.00
9,950.0	4.01	359.51	9,914.0	-405.6	-623.0	-314.5	10.00	10.00	0.00
10,000.0	9.01	359.51	9,963.7	-399.9	-623.1	-308.9	10.00	10.00	0.00
10,050.0	14.01	359.51	10,012.7	-390.0	-623.1	-299.0	10.00	10.00	0.00
10,100.0	19.01	359.51	10,060.6	-375.8	-623.3	-284.9	10.00	10.00	0.00
10,150.0	24.01	359.51	10,107.1	-357.4	-623.4	-266.7	10.00	10.00	0.00
10,200.0	29.01	359.51	10,151.8	-335.1	-623.6	-244.6	10.00	10.00	0.00



# Planning Report

Database: EDM 5000.14  
 Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Kestrel 26 Fed Com  
 Well: #311H  
 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #311H  
 TVD Reference: KB = 25' @ 3453.0usft  
 MD Reference: KB = 25' @ 3453.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,250.0	34.01	359.51	10,194.5	-309.0	-623.8	-218.7	10.00	10.00	0.00
10,300.0	39.01	359.51	10,234.6	-279.3	-624.1	-189.2	10.00	10.00	0.00
10,350.0	44.01	359.51	10,272.1	-246.2	-624.4	-156.4	10.00	10.00	0.00
10,400.0	49.01	359.51	10,306.5	-209.9	-624.7	-120.5	10.00	10.00	0.00
10,450.0	54.01	359.51	10,337.6	-170.8	-625.0	-81.7	10.00	10.00	0.00
10,500.0	59.01	359.51	10,365.2	-129.1	-625.4	-40.3	10.00	10.00	0.00
10,550.0	64.01	359.51	10,389.0	-85.2	-625.8	3.2	10.00	10.00	0.00
10,600.0	69.01	359.51	10,408.9	-39.3	-626.2	48.6	10.00	10.00	0.00
10,650.0	74.01	359.51	10,424.8	8.1	-626.6	95.6	10.00	10.00	0.00
10,700.0	79.01	359.51	10,436.4	56.7	-627.0	143.8	10.00	10.00	0.00
10,750.0	84.01	359.51	10,443.8	106.1	-627.4	192.8	10.00	10.00	0.00
10,800.0	89.01	359.51	10,446.9	156.0	-627.8	242.3	10.00	10.00	0.00
10,809.9	90.00	359.51	10,447.0	165.9	-627.9	252.1	10.00	10.00	0.00
10,900.0	90.00	359.51	10,447.0	256.0	-628.7	341.4	0.00	0.00	0.00
11,000.0	90.00	359.51	10,447.0	356.0	-629.5	440.6	0.00	0.00	0.00
11,100.0	90.00	359.51	10,447.0	456.0	-630.4	539.7	0.00	0.00	0.00
11,200.0	90.00	359.51	10,447.0	556.0	-631.3	638.8	0.00	0.00	0.00
11,300.0	90.00	359.51	10,447.0	656.0	-632.1	738.0	0.00	0.00	0.00
11,400.0	90.00	359.51	10,447.0	756.0	-633.0	837.1	0.00	0.00	0.00
11,500.0	90.00	359.51	10,447.0	856.0	-633.8	936.2	0.00	0.00	0.00
11,600.0	90.00	359.51	10,447.0	956.0	-634.7	1,035.4	0.00	0.00	0.00
11,700.0	90.00	359.51	10,447.0	1,056.0	-635.6	1,134.5	0.00	0.00	0.00
11,800.0	90.00	359.51	10,447.0	1,156.0	-636.4	1,233.6	0.00	0.00	0.00
11,900.0	90.00	359.51	10,447.0	1,256.0	-637.3	1,332.8	0.00	0.00	0.00
12,000.0	90.00	359.51	10,447.0	1,356.0	-638.1	1,431.9	0.00	0.00	0.00
12,100.0	90.00	359.51	10,447.0	1,456.0	-639.0	1,531.0	0.00	0.00	0.00
12,200.0	90.00	359.51	10,447.0	1,556.0	-639.8	1,630.2	0.00	0.00	0.00
12,300.0	90.00	359.51	10,447.0	1,656.0	-640.7	1,729.3	0.00	0.00	0.00
12,400.0	90.00	359.51	10,447.0	1,755.9	-641.6	1,828.4	0.00	0.00	0.00
12,500.0	90.00	359.51	10,447.0	1,855.9	-642.4	1,927.6	0.00	0.00	0.00
12,600.0	90.00	359.51	10,447.0	1,955.9	-643.3	2,026.7	0.00	0.00	0.00
12,700.0	90.00	359.51	10,447.0	2,055.9	-644.1	2,125.8	0.00	0.00	0.00
12,800.0	90.00	359.51	10,447.0	2,155.9	-645.0	2,225.0	0.00	0.00	0.00
12,900.0	90.00	359.51	10,447.0	2,255.9	-645.8	2,324.1	0.00	0.00	0.00
13,000.0	90.00	359.51	10,447.0	2,355.9	-646.7	2,423.2	0.00	0.00	0.00
13,100.0	90.00	359.51	10,447.0	2,455.9	-647.6	2,522.4	0.00	0.00	0.00
13,200.0	90.00	359.51	10,447.0	2,555.9	-648.4	2,621.5	0.00	0.00	0.00
13,300.0	90.00	359.51	10,447.0	2,655.9	-649.3	2,720.6	0.00	0.00	0.00
13,400.0	90.00	359.51	10,447.0	2,755.9	-650.1	2,819.8	0.00	0.00	0.00
13,500.0	90.00	359.51	10,447.0	2,855.9	-651.0	2,918.9	0.00	0.00	0.00
13,600.0	90.00	359.51	10,447.0	2,955.9	-651.8	3,018.0	0.00	0.00	0.00
13,700.0	90.00	359.51	10,447.0	3,055.9	-652.7	3,117.2	0.00	0.00	0.00
13,800.0	90.00	359.51	10,447.0	3,155.9	-653.6	3,216.3	0.00	0.00	0.00
13,900.0	90.00	359.51	10,447.0	3,255.9	-654.4	3,315.4	0.00	0.00	0.00
14,000.0	90.00	359.51	10,447.0	3,355.9	-655.3	3,414.6	0.00	0.00	0.00
14,100.0	90.00	359.51	10,447.0	3,455.9	-656.1	3,513.7	0.00	0.00	0.00
14,200.0	90.00	359.51	10,447.0	3,555.9	-657.0	3,612.8	0.00	0.00	0.00
14,300.0	90.00	359.51	10,447.0	3,655.9	-657.9	3,712.0	0.00	0.00	0.00
14,400.0	90.00	359.51	10,447.0	3,755.9	-658.7	3,811.1	0.00	0.00	0.00
14,500.0	90.00	359.51	10,447.0	3,855.9	-659.6	3,910.2	0.00	0.00	0.00
14,600.0	90.00	359.51	10,447.0	3,955.9	-660.4	4,009.4	0.00	0.00	0.00
14,700.0	90.00	359.51	10,447.0	4,055.9	-661.3	4,108.5	0.00	0.00	0.00
14,800.0	90.00	359.51	10,447.0	4,155.9	-662.1	4,207.6	0.00	0.00	0.00
14,900.0	90.00	359.51	10,447.0	4,255.9	-663.0	4,306.8	0.00	0.00	0.00

Database: EDM 5000.14  
 Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Kestrel 26 Fed Com  
 Well: #311H  
 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #311H  
 TVD Reference: KB = 25' @ 3453.0usft  
 MD Reference: KB = 25' @ 3453.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

#### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.0	90.00	359.51	10,447.0	4,355.9	-663.9	4,405.9	0.00	0.00	0.00
15,100.0	90.00	359.51	10,447.0	4,455.8	-664.7	4,505.0	0.00	0.00	0.00
15,200.0	90.00	359.51	10,447.0	4,555.8	-665.6	4,604.2	0.00	0.00	0.00
15,300.0	90.00	359.51	10,447.0	4,655.8	-666.4	4,703.3	0.00	0.00	0.00
15,366.2	90.00	359.51	10,447.0	4,722.0	-667.0	4,768.9	0.00	0.00	0.00

#### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
KOP (Kestrel 26 Fed #3)	0.00	0.00	9,874.0	-407.0	-623.0	430,856.00	815,178.00	32.1814038°N	103.4482111°W
- plan hits target center									
- Point									
PBHL (Kestrel 26 Fed #3)	0.00	0.00	10,447.0	4,722.0	-667.0	435,985.00	815,134.00	32.1955024°N	103.4482169°W
- plan hits target center									
- Point									
FTP (Kestrel 26 Fed #31)	0.00	0.00	10,447.0	-357.0	-623.0	430,906.00	815,178.00	32.1815413°N	103.4482097°W
- plan misses target center by 202.9usft at 10390.0usft MD (10299.8 TVD, -217.4 N, -624.6 E)									
- Point									



Lea County, NM (NAD 83 NME)

Kestrel 26 Fed Com

#311H

Plan #0.1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level



Azimuth to Grid North  
True North: 0.40°  
Magnetic North: 8.17°  
Magnetic: Field  
Surveyed: 17000-0000  
Dip Angle: 90.01°  
Date: 02/05/19  
Model: NGR2019

To convert a Magnetic Direction to a Grid Direction, Add 8.17°  
To convert a Magnetic Direction to a True Direction, Add 8.64° East  
To convert a True Direction to a Grid Direction, Subtract 0.47°

#### WELL DETAILS: #311H

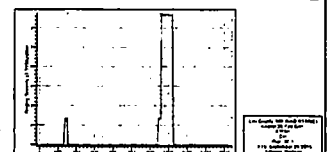
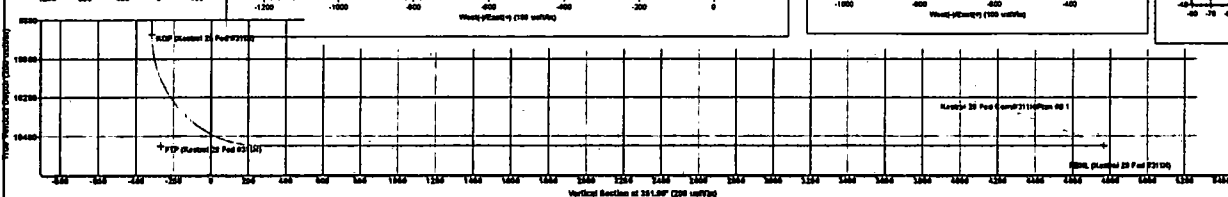
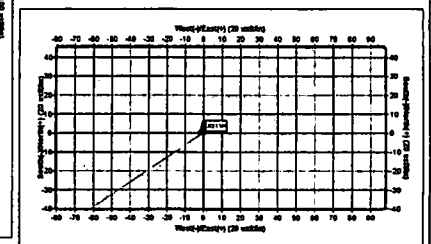
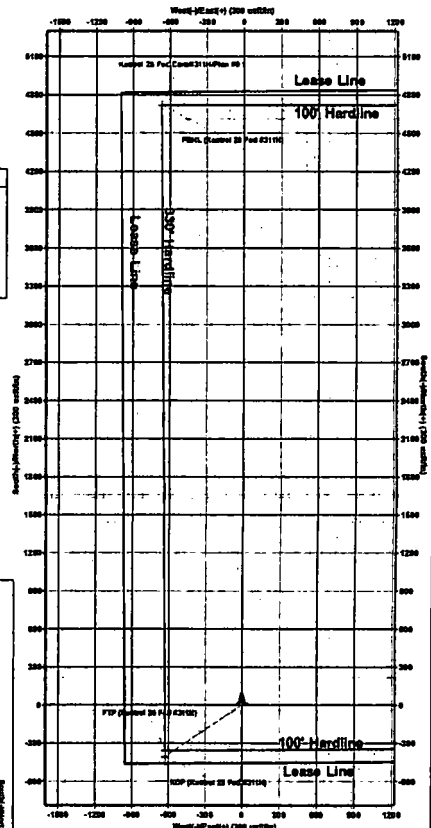
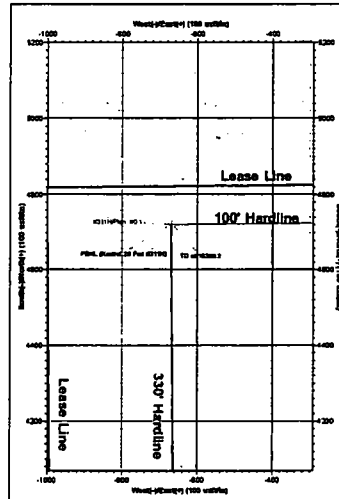
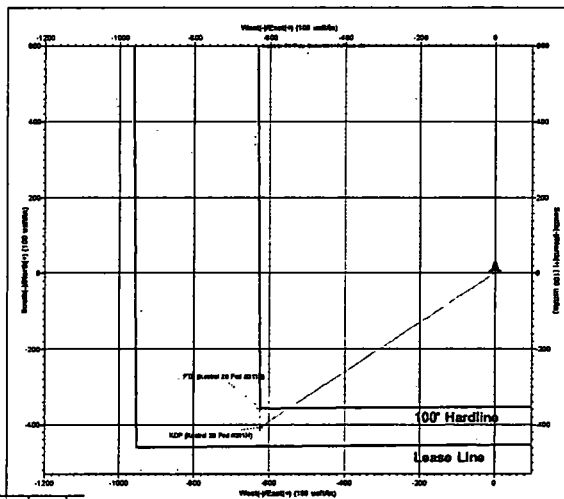
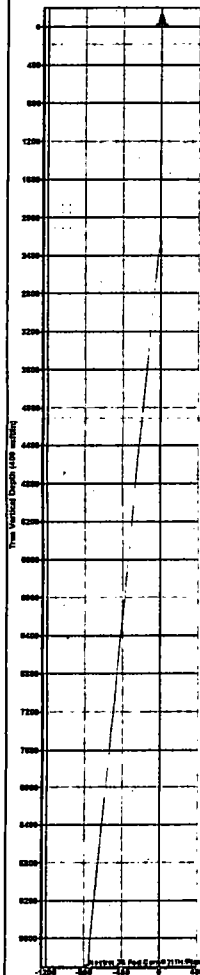
KB = 25' @ 3453 Depth  
Northing: 431293.00  
Easting: 616801.00  
Longitude: 103.4481507°W  
Slat

#### SECTION DETAILS

MD	Inc	Act	TYD	+N-S	+E-W	Dleg	TFace	Vbect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
2279.0	5.00	236.84	2279.4	-7.8	-11.4	2.00	236.84	-5.6	
9030.1	5.00	236.84	9204.6	-308.5	-911.6	0.00	0.00	-310.1	
9909.0	0.00	0.00	9974.0	-487.0	-823.0	3.00	180.00	-319.0	KOP (Kestrel 26 Fed #311H)
10899.0	90.00	359.51	10447.0	165.9	-627.9	10.00	359.51	262.1	PSHL (Kestrel 26 Fed #311H)
15369.2	90.00	359.51	10447.0	4722.0	-687.0	0.00	0.00	4768.9	

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TYD	+N-S	+E-W	Northing	Easting	Shape
KOP (Kestrel 26 Fed #311H)	8974.0	-487.0	-823.0	430858.00	616578.00	Point
FTP (Kestrel 26 Fed #311H)	10447.0	-387.0	-623.0	430808.00	616173.00	Point
PSHL (Kestrel 26 Fed #311H)	10447.0	4722.0	-687.0	430885.00	616134.00	Point



# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>EOG RESOURCES INCORPORATED</b>
<b>LEASE NO.:</b>	<b>NMNM123533</b>
<b>WELL NAME &amp; NO.:</b>	<b>KESTREL 26 FED 311H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>453' FSL &amp; 956' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>100' FNL &amp; 330' FWL</b>
<b>LOCATION:</b>	<b>Section 26, T. 24 S., R 34 E., NMPM</b>
<b>COUNTY:</b>	<b>Lea County, New Mexico</b>

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> 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 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 **1,130** 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 at least 1/3 fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

#### **C. PRESSURE CONTROL**

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

2. 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 **3000 (3M) 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 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 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.