

Permit Information:

Well Name: Gem 36 State Com No. 702Y

Location:

SL: 220' FNL & 310' FEL, Section 36, T-25-S, R-32-E, Lea Co., N.M.

BHL: 230' FSL & 990' FEL, Section 36, T-25-S, R-32-E, Lea Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
14.75"	0 - 900'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0-10,600'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
6.75"	0'-10,500'	5.5"	23#	HCP-110	JFE	1.125	1.25	1.60
6.75"	10,500' - 17,035'	5"	23.2#	P-110	JFE	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
900'	300	13.5	1.73	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
10,600'	792	9.5	2.74	Lead: LiteCRETE + 0.10% D013 + 0.02 gps D047 + 0.20% D065 + 0.05% D208 + 22.00 pps D229 (TOC @ Surface)
	373	13.5	1.52	Tail: Class H + 47.00 pps D909 + 37.00 pps D035-CF + 0.02 gps D047 + 0.20% D065 + 10.00% D154 + 0.40% D-800
17,035'	685	14.5	1.38	25:75 Class H + 3.0% Salt + 0.6% CPT-12 + 0.2% CPT-35 + 5 pps MagOx + 0.15% CPT-51 + 0.5% CPT-20 (TOC @ 10,100')

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - 900'	Fresh - Gel	8.6-8.8	28-34	N/c
900' - 10,600'	Oil Base	8.7-9.4	58-68	N/c - 6
10,600' - 11,863'	Oil Base	8.7-9.4	58-68	N/c - 6
11,863' - 17,035' Lateral	Oil Base	9.0-9.5	58-68	N/c - 6

DEC 15 2015

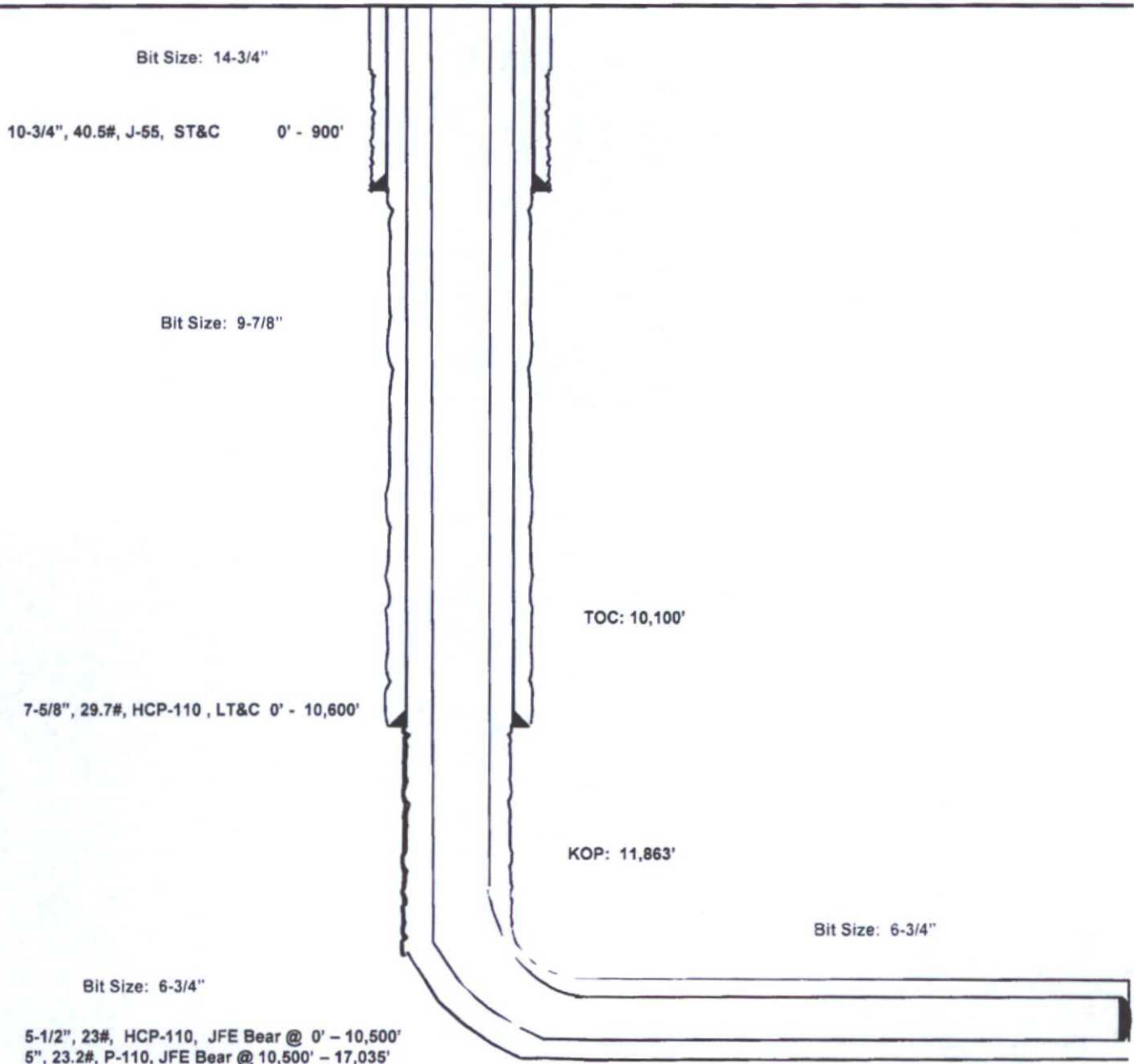
Gem 36 State Com #702Y

Lea County, New Mexico
Proposed Wellbore

220' FNL
310' FEL
Section 36
T-25-S, R-32-E

API: 30-025-*****

KB: 3,457'
GL: 3,432'



Lateral: 17,035' MD, 12,305' TVD

BH Location: 230' FSL & 990' FEL
Section 36
T-25-S, R-32-E



Lea County, NM (NAD 27 NME)

Gem 36 State Com #702Y

Precision #612

Plan #0.1

PROJECT DETAILS: Lea County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: #702Y

Ground Level: 3432.0
KB = 25 @ 3487.5m (Precision #612)
Northing: 386497.00 Easting: 720789.00 Latitude: 32° 5' 36.881 N Longitude: 102° 27' 13.808 W

Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.77°

Magnetic Field
Strength: 48023.3nT
Dip Angle: 58.95°
Date: 10/28/2016
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction: Add 0.77°
To convert a Magnetic Direction to a True Direction: Add 7.14° East
To convert a True Direction to a Grid Direction: Subtract 0.38°

SECTION DETAILS

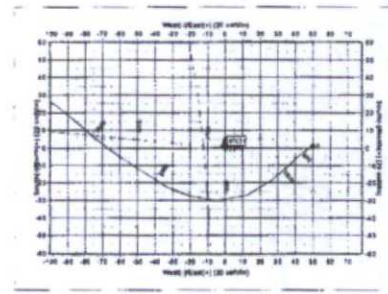
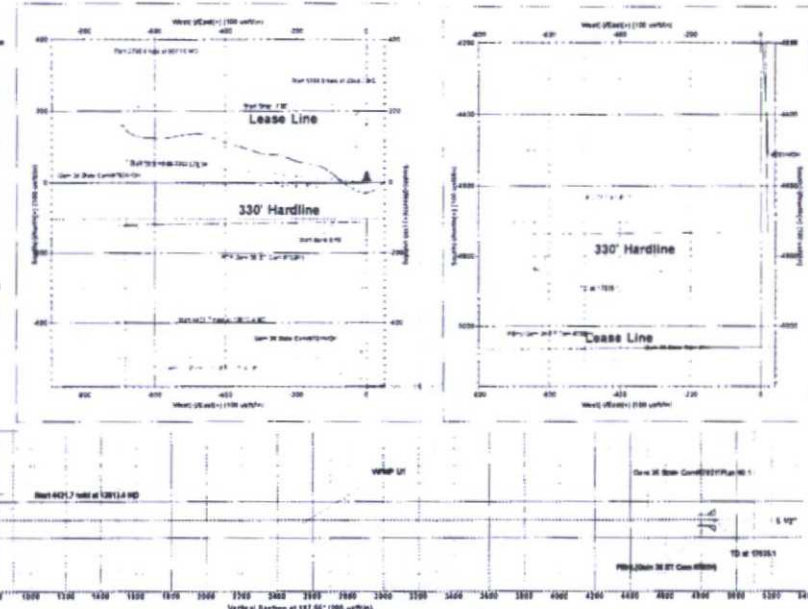
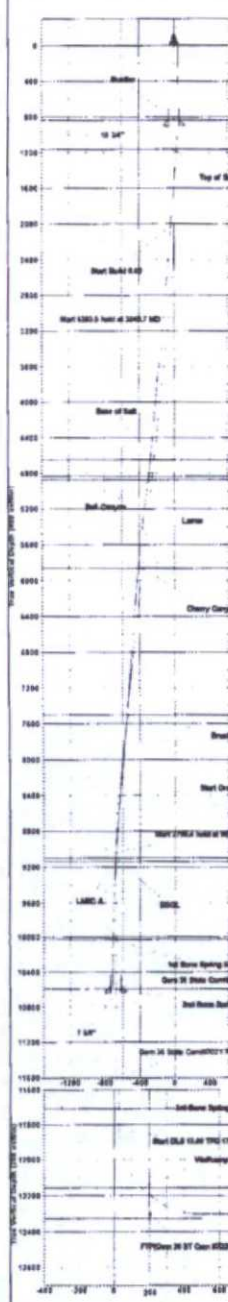
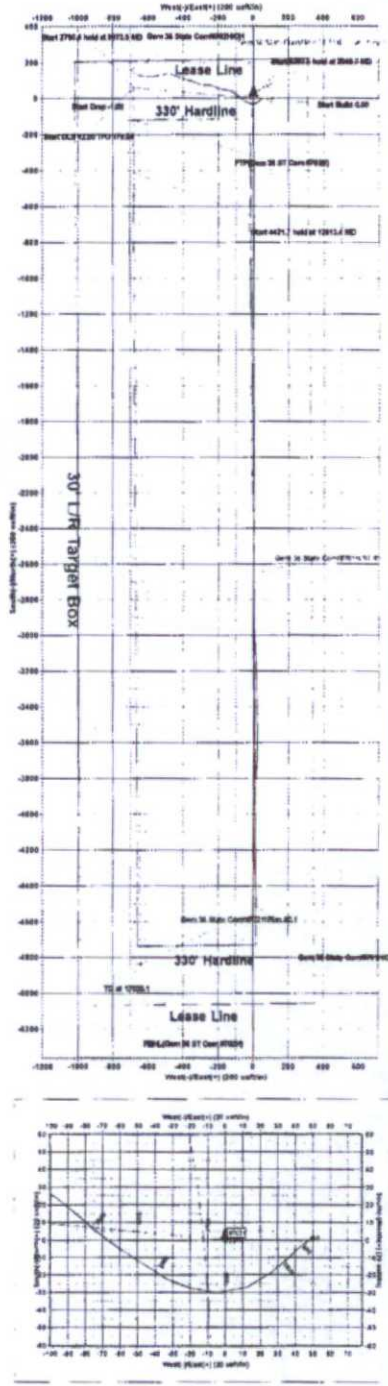
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSecl	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	3049.7	6.30	275.29	3047.6	5.3	-57.4	0.80	275.29	2.3	
4	8443.2	6.30	275.29	8408.5	59.8	-646.6	0.00	0.00	25.8	
5	9073.0	0.00	0.00	9037.1	63.0	-681.0	1.00	180.00	27.2	
6	11863.4	0.00	0.00	11827.5	63.0	-681.0	0.00	0.00	27.2	
7	12613.4	90.00	179.54	12305.0	-414.4	-677.2	12.00	179.54	500.0	
8	17035.1	90.00	179.54	12305.0	-4835.0	-642.0	0.00	0.00	4878.4	PBHL(Gem 36 ST Com #702H)

CASING DETAILS

TVD	MD	Name	Size
800.0	800.0	10 3/4"	10-3/4
10830	10869.9	7 5/8"	7-5/8
13306	13335.1	6 1/2"	6-1/2

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
PTP(Gem 36 ST Com #702H)	11308.0	+118.0	-430.0	386578.00	720689.00
PBHL(Gem 36 ST Com #702H)	12305.0	-4835.0	-642.0	385681.00	720127.00
TGTR(Gem 36 ST Com #702H)	12370.0	-1411.3	-689.8	387085.70	720099.61
TGTR(Gem 36 ST Com #702H)	12370.0	-2928.3	-637.4	386666.70	720111.65





EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Gem 36 State Com

#702Y

OH

Plan: Plan #0.1

Standard Planning Report

16 November, 2015



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Gem 36 State Com
Well: #702Y
Wellbore: OH
Design: Plan #0.1

Local Co-ordinate Reference: Well #702Y
TVD Reference: KB = 25 @ 3457.0usft (Precision #612)
MD Reference: KB = 25 @ 3457.0usft (Precision #612)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Gem 36 State Com				
Site Position:		Northing:	393,654.00 usft	Latitude:	32° 4' 48.974 N
From:	Map	Easting:	720,486.00 usft	Longitude:	103° 37' 17.267 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	#702Y					
Well Position	+N/-S	4,843.0 usft	Northing:	398,497.00 usft	Latitude:	32° 5' 36.881 N
	+E/-W	283.0 usft	Easting:	720,769.00 usft	Longitude:	103° 37' 13.606 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,432.0 usft

Wellbore	OH				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/28/2015	7.14	59.96	48,023

Design	Plan #0.1				
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Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	187.56	

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	
3,049.7	6.30	275.29	3,047.6	5.3	-57.4	0.60	0.60	0.00	275.29	
8,443.2	6.30	275.29	8,408.5	59.8	-646.6	0.00	0.00	0.00	0.00	
9,073.0	0.00	0.00	9,037.1	63.0	-681.0	1.00	-1.00	0.00	180.00	
11,863.4	0.00	0.00	11,827.5	63.0	-681.0	0.00	0.00	0.00	0.00	
12,613.4	90.00	179.54	12,305.0	-414.4	-677.2	12.00	12.00	23.94	179.54	
17,035.1	90.00	179.54	12,305.0	-4,836.0	-642.0	0.00	0.00	0.00	0.00	PBHL(Gem 36 ST Co)



EOG Resources, Inc.

Planning Report

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Site: Gem 36 State Com
Well: #702Y
Wellbore: OH
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MD Reference: KB = 25 @ 3457.0usft (Precision #612)
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
837.0	0.00	0.00	837.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
10 3/4"									
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
1,168.0	0.00	0.00	1,168.0	0.0	0.0	0.0	0.00	0.00	0.00
Top of Salt									
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	0.60	275.29	2,100.0	0.0	-0.5	0.0	0.60	0.60	0.00
2,200.0	1.20	275.29	2,200.0	0.2	-2.1	0.1	0.60	0.60	0.00
2,300.0	1.80	275.29	2,300.0	0.4	-4.7	0.2	0.60	0.60	0.00
2,400.0	2.40	275.29	2,399.9	0.8	-8.3	0.3	0.60	0.60	0.00
2,500.0	3.00	275.29	2,499.8	1.2	-13.0	0.5	0.60	0.60	0.00
2,600.0	3.60	275.29	2,599.6	1.7	-18.8	0.7	0.60	0.60	0.00
2,700.0	4.20	275.29	2,699.4	2.4	-25.5	1.0	0.60	0.60	0.00
2,800.0	4.80	275.29	2,799.1	3.1	-33.3	1.3	0.60	0.60	0.00
2,900.0	5.40	275.29	2,898.7	3.9	-42.2	1.7	0.60	0.60	0.00
3,000.0	6.00	275.29	2,998.2	4.8	-52.1	2.1	0.60	0.60	0.00
3,049.7	6.30	275.29	3,047.6	5.3	-57.4	2.3	0.60	0.60	0.00
3,100.0	6.30	275.29	3,097.6	5.8	-62.9	2.5	0.00	0.00	0.00
3,200.0	6.30	275.29	3,197.0	6.8	-73.8	2.9	0.00	0.00	0.00
3,300.0	6.30	275.29	3,296.4	7.8	-84.7	3.4	0.00	0.00	0.00
3,400.0	6.30	275.29	3,395.8	8.8	-95.7	3.8	0.00	0.00	0.00
3,500.0	6.30	275.29	3,495.2	9.9	-106.6	4.3	0.00	0.00	0.00
3,600.0	6.30	275.29	3,594.6	10.9	-117.5	4.7	0.00	0.00	0.00
3,700.0	6.30	275.29	3,694.0	11.9	-128.4	5.1	0.00	0.00	0.00
3,800.0	6.30	275.29	3,793.4	12.9	-139.4	5.6	0.00	0.00	0.00
3,900.0	6.30	275.29	3,892.8	13.9	-150.3	6.0	0.00	0.00	0.00
4,000.0	6.30	275.29	3,992.2	14.9	-161.2	6.4	0.00	0.00	0.00
4,100.0	6.30	275.29	4,091.5	15.9	-172.1	6.9	0.00	0.00	0.00
4,200.0	6.30	275.29	4,190.9	16.9	-183.0	7.3	0.00	0.00	0.00
4,300.0	6.30	275.29	4,290.3	17.9	-194.0	7.7	0.00	0.00	0.00
4,400.0	6.30	275.29	4,389.7	19.0	-204.9	8.2	0.00	0.00	0.00
4,500.0	6.30	275.29	4,489.1	20.0	-215.8	8.6	0.00	0.00	0.00
4,600.0	6.30	275.29	4,588.5	21.0	-226.7	9.0	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
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 Project: Lea County, NM (NAD 27 NME)
 Site: Gem 36 State Corn
 Well: #702Y
 Wellbore: OH
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 MD Reference: KB = 25 @ 3457.0usft (Precision #612)
 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)
4,663.9	6.30	275.29	4,652.0	21.6	-233.7	9.3	0.00	0.00	0.00
Base of Salt									
4,700.0	6.30	275.29	4,687.9	22.0	-237.7	9.5	0.00	0.00	0.00
4,800.0	6.30	275.29	4,787.3	23.0	-248.6	9.9	0.00	0.00	0.00
4,848.0	6.30	275.29	4,835.0	23.5	-253.8	10.1	0.00	0.00	0.00
Lamar									
4,886.2	6.30	275.29	4,873.0	23.9	-258.0	10.3	0.00	0.00	0.00
Bell Canyon									
4,900.0	6.30	275.29	4,886.7	24.0	-259.5	10.3	0.00	0.00	0.00
5,000.0	6.30	275.29	4,986.1	25.0	-270.4	10.8	0.00	0.00	0.00
5,100.0	6.30	275.29	5,085.5	26.0	-281.4	11.2	0.00	0.00	0.00
5,200.0	6.30	275.29	5,184.9	27.0	-292.3	11.7	0.00	0.00	0.00
5,300.0	6.30	275.29	5,284.3	28.1	-303.2	12.1	0.00	0.00	0.00
5,400.0	6.30	275.29	5,383.7	29.1	-314.1	12.5	0.00	0.00	0.00
5,500.0	6.30	275.29	5,483.1	30.1	-325.1	13.0	0.00	0.00	0.00
5,600.0	6.30	275.29	5,582.5	31.1	-336.0	13.4	0.00	0.00	0.00
5,700.0	6.30	275.29	5,681.9	32.1	-346.9	13.8	0.00	0.00	0.00
5,800.0	6.30	275.29	5,781.3	33.1	-357.8	14.3	0.00	0.00	0.00
5,883.2	6.30	275.29	5,864.0	33.9	-366.9	14.6	0.00	0.00	0.00
Cherry Canyon									
5,900.0	6.30	275.29	5,880.7	34.1	-368.8	14.7	0.00	0.00	0.00
6,000.0	6.30	275.29	5,980.1	35.1	-379.7	15.1	0.00	0.00	0.00
6,100.0	6.30	275.29	6,079.5	36.1	-390.6	15.6	0.00	0.00	0.00
6,200.0	6.30	275.29	6,178.9	37.1	-401.5	16.0	0.00	0.00	0.00
6,300.0	6.30	275.29	6,278.3	38.2	-412.4	16.4	0.00	0.00	0.00
6,400.0	6.30	275.29	6,377.7	39.2	-423.4	16.9	0.00	0.00	0.00
6,500.0	6.30	275.29	6,477.1	40.2	-434.3	17.3	0.00	0.00	0.00
6,600.0	6.30	275.29	6,576.5	41.2	-445.2	17.8	0.00	0.00	0.00
6,700.0	6.30	275.29	6,675.9	42.2	-456.1	18.2	0.00	0.00	0.00
6,800.0	6.30	275.29	6,775.3	43.2	-467.1	18.6	0.00	0.00	0.00
6,900.0	6.30	275.29	6,874.6	44.2	-478.0	19.1	0.00	0.00	0.00
7,000.0	6.30	275.29	6,974.0	45.2	-488.9	19.5	0.00	0.00	0.00
7,100.0	6.30	275.29	7,073.4	46.2	-499.8	19.9	0.00	0.00	0.00
7,200.0	6.30	275.29	7,172.8	47.3	-510.8	20.4	0.00	0.00	0.00
7,300.0	6.30	275.29	7,272.2	48.3	-521.7	20.8	0.00	0.00	0.00
7,400.0	6.30	275.29	7,371.6	49.3	-532.6	21.2	0.00	0.00	0.00
7,500.0	6.30	275.29	7,471.0	50.3	-543.5	21.7	0.00	0.00	0.00
7,534.2	6.30	275.29	7,505.0	50.6	-547.3	21.8	0.00	0.00	0.00
Brushy Canyon									
7,600.0	6.30	275.29	7,570.4	51.3	-554.5	22.1	0.00	0.00	0.00
7,700.0	6.30	275.29	7,669.8	52.3	-565.4	22.5	0.00	0.00	0.00
7,800.0	6.30	275.29	7,769.2	53.3	-576.3	23.0	0.00	0.00	0.00
7,900.0	6.30	275.29	7,868.6	54.3	-587.2	23.4	0.00	0.00	0.00
8,000.0	6.30	275.29	7,968.0	55.3	-598.1	23.9	0.00	0.00	0.00
8,100.0	6.30	275.29	8,067.4	56.3	-609.1	24.3	0.00	0.00	0.00
8,200.0	6.30	275.29	8,166.8	57.4	-620.0	24.7	0.00	0.00	0.00
8,300.0	6.30	275.29	8,266.2	58.4	-630.9	25.2	0.00	0.00	0.00
8,400.0	6.30	275.29	8,365.6	59.4	-641.8	25.6	0.00	0.00	0.00
8,443.2	6.30	275.29	8,408.5	59.8	-646.6	25.8	0.00	0.00	0.00
8,500.0	5.73	275.29	8,465.0	60.4	-652.5	26.0	1.00	-1.00	0.00
8,600.0	4.73	275.29	8,564.6	61.2	-661.6	26.4	1.00	-1.00	0.00
8,700.0	3.73	275.29	8,664.3	61.9	-668.9	26.7	1.00	-1.00	0.00
8,800.0	2.73	275.29	8,764.2	62.4	-674.5	26.9	1.00	-1.00	0.00
8,900.0	1.73	275.29	8,864.1	62.8	-678.4	27.1	1.00	-1.00	0.00



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Wellbore: OH
Design: Plan #0.1

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Survey Calculation Method: Minimum Curvature

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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)
9,000.0	0.73	275.29	8,964.1	63.0	-680.5	27.1	1.00	-1.00	0.00
9,073.0	0.00	0.00	9,037.1	63.0	-681.0	27.2	1.00	-1.00	0.00
9,100.0	0.00	0.00	9,064.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,135.9	0.00	0.00	9,100.0	63.0	-681.0	27.2	0.00	0.00	0.00
BSGL									
9,176.9	0.00	0.00	9,141.0	63.0	-681.0	27.2	0.00	0.00	0.00
LNRD A									
9,200.0	0.00	0.00	9,164.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,300.0	0.00	0.00	9,264.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,400.0	0.00	0.00	9,364.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,500.0	0.00	0.00	9,464.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,600.0	0.00	0.00	9,564.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,700.0	0.00	0.00	9,664.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,800.0	0.00	0.00	9,764.1	63.0	-681.0	27.2	0.00	0.00	0.00
9,900.0	0.00	0.00	9,864.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,000.0	0.00	0.00	9,964.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,067.9	0.00	0.00	10,032.0	63.0	-681.0	27.2	0.00	0.00	0.00
1st Bone Spring Sand									
10,100.0	0.00	0.00	10,064.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,200.0	0.00	0.00	10,164.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,300.0	0.00	0.00	10,264.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,400.0	0.00	0.00	10,364.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,500.0	0.00	0.00	10,464.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,600.0	0.00	0.00	10,564.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,623.9	0.00	0.00	10,588.0	63.0	-681.0	27.2	0.00	0.00	0.00
2nd Bone Spring Sand									
10,665.9	0.00	0.00	10,630.0	63.0	-681.0	27.2	0.00	0.00	0.00
7 5/8"									
10,700.0	0.00	0.00	10,664.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,800.0	0.00	0.00	10,764.1	63.0	-681.0	27.2	0.00	0.00	0.00
10,900.0	0.00	0.00	10,864.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,000.0	0.00	0.00	10,964.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,100.0	0.00	0.00	11,064.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,200.0	0.00	0.00	11,164.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,300.0	0.00	0.00	11,264.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,400.0	0.00	0.00	11,364.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,500.0	0.00	0.00	11,464.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,600.0	0.00	0.00	11,564.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,700.0	0.00	0.00	11,664.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,747.9	0.00	0.00	11,712.0	63.0	-681.0	27.2	0.00	0.00	0.00
3rd Bone Spring Sand									
11,800.0	0.00	0.00	11,764.1	63.0	-681.0	27.2	0.00	0.00	0.00
11,863.4	0.00	0.00	11,827.5	63.0	-681.0	27.2	0.00	0.00	0.00
11,875.0	1.39	179.54	11,839.1	62.9	-681.0	27.3	12.00	12.00	0.00
11,900.0	4.39	179.54	11,864.0	61.6	-681.0	28.5	12.00	12.00	0.00
11,925.0	7.39	179.54	11,888.9	59.0	-681.0	31.1	12.00	12.00	0.00
11,950.0	10.39	179.54	11,913.6	55.2	-680.9	34.9	12.00	12.00	0.00
11,975.0	13.39	179.54	11,938.1	50.0	-680.9	40.0	12.00	12.00	0.00
12,000.0	16.39	179.54	11,962.2	43.6	-680.8	46.4	12.00	12.00	0.00
12,025.0	19.39	179.54	11,986.0	35.9	-680.8	54.0	12.00	12.00	0.00
12,050.0	22.39	179.54	12,009.4	27.0	-680.7	62.8	12.00	12.00	0.00
12,075.0	25.39	179.54	12,032.2	16.9	-680.6	72.8	12.00	12.00	0.00
12,100.0	28.39	179.54	12,054.5	5.6	-680.5	84.0	12.00	12.00	0.00



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12,125.0	31.39	179.54	12,076.2	-6.9	-680.4	96.3	12.00	12.00	0.00
12,150.0	34.39	179.54	12,097.2	-20.4	-680.3	109.8	12.00	12.00	0.00
12,175.0	37.39	179.54	12,117.4	-35.1	-680.2	124.3	12.00	12.00	0.00
12,200.0	40.39	179.54	12,136.9	-50.8	-680.1	139.8	12.00	12.00	0.00
12,225.0	43.39	179.54	12,155.5	-67.5	-680.0	156.4	12.00	12.00	0.00
12,227.1	43.64	179.54	12,157.0	-68.9	-679.9	157.8	12.00	12.00	0.00
Wolfcamp									
12,250.0	46.39	179.54	12,173.2	-85.1	-679.8	173.8	12.00	12.00	0.00
12,275.0	49.39	179.54	12,190.0	-103.7	-679.7	192.2	12.00	12.00	0.00
12,300.0	52.39	179.54	12,205.7	-123.1	-679.5	211.4	12.00	12.00	0.00
12,325.0	55.39	179.54	12,220.5	-143.2	-679.4	231.4	12.00	12.00	0.00
12,350.0	58.39	179.54	12,234.1	-164.2	-679.2	252.1	12.00	12.00	0.00
FTP(Gem 36 ST Com #702H)									
12,375.0	61.39	179.54	12,246.7	-185.8	-679.0	273.5	12.00	12.00	0.00
12,400.0	64.39	179.54	12,258.0	-208.1	-678.8	295.6	12.00	12.00	0.00
12,425.0	67.39	179.54	12,268.3	-230.9	-678.7	318.2	12.00	12.00	0.00
12,450.0	70.39	179.54	12,277.3	-254.2	-678.5	341.3	12.00	12.00	0.00
12,475.0	73.39	179.54	12,285.0	-278.0	-678.3	364.8	12.00	12.00	0.00
12,500.0	76.39	179.54	12,291.6	-302.1	-678.1	388.7	12.00	12.00	0.00
12,525.0	79.39	179.54	12,296.8	-326.5	-677.9	412.9	12.00	12.00	0.00
12,550.0	82.39	179.54	12,300.8	-351.2	-677.7	437.3	12.00	12.00	0.00
12,575.0	85.39	179.54	12,303.4	-376.1	-677.5	461.9	12.00	12.00	0.00
12,600.0	88.39	179.54	12,304.8	-401.0	-677.3	486.7	12.00	12.00	0.00
12,613.4	90.00	179.54	12,305.0	-414.4	-677.2	500.0	12.00	12.00	0.00
12,700.0	90.00	179.54	12,305.0	-501.0	-676.5	585.7	0.00	0.00	0.00
12,800.0	90.00	179.54	12,305.0	-601.0	-675.7	684.7	0.00	0.00	0.00
12,900.0	90.00	179.54	12,305.0	-701.0	-674.9	783.7	0.00	0.00	0.00
13,000.0	90.00	179.54	12,305.0	-801.0	-674.1	882.7	0.00	0.00	0.00
13,100.0	90.00	179.54	12,305.0	-901.0	-673.3	981.8	0.00	0.00	0.00
13,200.0	90.00	179.54	12,305.0	-1,001.0	-672.5	1,080.8	0.00	0.00	0.00
13,300.0	90.00	179.54	12,305.0	-1,101.0	-671.7	1,179.8	0.00	0.00	0.00
13,400.0	90.00	179.54	12,305.0	-1,201.0	-670.9	1,278.8	0.00	0.00	0.00
13,500.0	90.00	179.54	12,305.0	-1,301.0	-670.1	1,377.9	0.00	0.00	0.00
13,600.0	90.00	179.54	12,305.0	-1,401.0	-669.3	1,476.9	0.00	0.00	0.00
13,610.3	90.00	179.54	12,305.0	-1,411.3	-669.3	1,487.1	0.00	0.00	0.00
TGT#1(Gem 36 ST Com #702H)									
13,700.0	90.00	179.54	12,305.0	-1,501.0	-668.5	1,575.9	0.00	0.00	0.00
13,800.0	90.00	179.54	12,305.0	-1,601.0	-667.8	1,674.9	0.00	0.00	0.00
13,900.0	90.00	179.54	12,305.0	-1,701.0	-667.0	1,773.9	0.00	0.00	0.00
14,000.0	90.00	179.54	12,305.0	-1,801.0	-666.2	1,873.0	0.00	0.00	0.00
14,100.0	90.00	179.54	12,305.0	-1,901.0	-665.4	1,972.0	0.00	0.00	0.00
14,200.0	90.00	179.54	12,305.0	-2,001.0	-664.6	2,071.0	0.00	0.00	0.00
14,300.0	90.00	179.54	12,305.0	-2,101.0	-663.8	2,170.0	0.00	0.00	0.00
14,400.0	90.00	179.54	12,305.0	-2,201.0	-663.0	2,269.1	0.00	0.00	0.00
14,500.0	90.00	179.54	12,305.0	-2,301.0	-662.2	2,368.1	0.00	0.00	0.00
14,600.0	90.00	179.54	12,305.0	-2,401.0	-661.4	2,467.1	0.00	0.00	0.00
14,700.0	90.00	179.54	12,305.0	-2,500.9	-660.6	2,566.1	0.00	0.00	0.00
14,800.0	90.00	179.54	12,305.0	-2,600.9	-659.8	2,665.2	0.00	0.00	0.00
14,900.0	90.00	179.54	12,305.0	-2,700.9	-659.0	2,764.2	0.00	0.00	0.00
15,000.0	90.00	179.54	12,305.0	-2,800.9	-658.2	2,863.2	0.00	0.00	0.00
15,100.0	90.00	179.54	12,305.0	-2,900.9	-657.4	2,962.2	0.00	0.00	0.00
15,127.4	90.00	179.54	12,305.0	-2,928.3	-657.2	2,989.3	0.00	0.00	0.00
TGT#2(Gem 36 ST Com #702H)									



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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)
15,200.0	90.00	179.54	12,305.0	-3,000.9	-656.6	3,061.2	0.00	0.00	0.00
15,300.0	90.00	179.54	12,305.0	-3,100.9	-655.8	3,160.3	0.00	0.00	0.00
15,400.0	90.00	179.54	12,305.0	-3,200.9	-655.0	3,259.3	0.00	0.00	0.00
15,500.0	90.00	179.54	12,305.0	-3,300.9	-654.2	3,358.3	0.00	0.00	0.00
15,600.0	90.00	179.54	12,305.0	-3,400.9	-653.4	3,457.3	0.00	0.00	0.00
15,700.0	90.00	179.54	12,305.0	-3,500.9	-652.6	3,556.4	0.00	0.00	0.00
15,800.0	90.00	179.54	12,305.0	-3,600.9	-651.8	3,655.4	0.00	0.00	0.00
15,900.0	90.00	179.54	12,305.0	-3,700.9	-651.0	3,754.4	0.00	0.00	0.00
16,000.0	90.00	179.54	12,305.0	-3,800.9	-650.2	3,853.4	0.00	0.00	0.00
16,100.0	90.00	179.54	12,305.0	-3,900.9	-649.4	3,952.4	0.00	0.00	0.00
16,200.0	90.00	179.54	12,305.0	-4,000.9	-648.6	4,051.5	0.00	0.00	0.00
16,300.0	90.00	179.54	12,305.0	-4,100.9	-647.9	4,150.5	0.00	0.00	0.00
16,400.0	90.00	179.54	12,305.0	-4,200.9	-647.1	4,249.5	0.00	0.00	0.00
16,500.0	90.00	179.54	12,305.0	-4,300.9	-646.3	4,348.5	0.00	0.00	0.00
16,600.0	90.00	179.54	12,305.0	-4,400.9	-645.5	4,447.6	0.00	0.00	0.00
16,700.0	90.00	179.54	12,305.0	-4,500.9	-644.7	4,546.6	0.00	0.00	0.00
16,800.0	90.00	179.54	12,305.0	-4,600.9	-643.9	4,645.6	0.00	0.00	0.00
16,900.0	90.00	179.54	12,305.0	-4,700.9	-643.1	4,744.6	0.00	0.00	0.00
17,000.0	90.00	179.54	12,305.0	-4,800.9	-642.3	4,843.6	0.00	0.00	0.00
17,035.1	90.00	179.54	12,305.0	-4,836.0	-642.0	4,878.4	0.00	0.00	0.00

5 1/2" - PBHL(Gem 36 ST Com #702H)

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									
FTP(Gem 36 ST Com #:	0.00	0.00	12,305.0	-119.0	-680.0	398,378.00	720,089.00	32° 5' 35.748 N	103° 37' 21.520 W
- plan misses target center by 84.1usft at 12350.0usft MD (12234.1 TVD, -164.2 N, -679.2 E)									
- Point									
PBHL(Gem 36 ST Com	90.00	179.54	12,305.0	-4,836.0	-642.0	393,661.00	720,127.00	32° 4' 49.067 N	103° 37' 21.439 W
- plan hits target center									
- Rectangle (sides W60.0 H0.0 D4,717.7)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
900.0	900.0	10 3/4"	10-3/4	12-1/4
10,665.9	10,630.0	7 5/8"	7-5/8	8-3/4
17,035.1	12,305.0	5 1/2"	5-1/2	6-3/4



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Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
837.0	837.0	Rustler			
1,188.0	1,168.0	Top of Salt			
4,663.9	4,652.0	Base of Salt			
4,848.0	4,835.0	Lamar			
4,886.2	4,873.0	Bell Canyon			
5,883.2	5,864.0	Cherry Canyon			
7,534.2	7,505.0	Brushy Canyon			
9,135.9	9,100.0	BSGL			
9,176.9	9,141.0	LNRD A			
10,067.9	10,032.0	1st Bone Spring Sand			
10,623.9	10,588.0	2nd Bone Spring Sand			
11,747.9	11,712.0	3rd Bone Spring Sand			
12,227.1	12,157.0	Wolfcamp			