



Project: Lea County, NM (Nad 83)
Site: Sec15,T24S,R36E
Well: Brahman State 24-35 15 #601H
Wellbore: Wellbore #1
Design: Plan #1
Latitude: 32° 13' 26.661 N
Longitude: 103° 21' 46.371 W
Ground Level: 3363.0
OKB @ 3363.0usft (OKB)



PROJECT DETAILS: Lea County, NM (Nad 83)

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

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Brahman State 24-35 15 #601H, Grid North
Vertical (TVD) Reference: OKB @ 3363.0usft (OKB)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: OKB @ 3363.0usft (OKB)
Calculation Method: Minimum Curvature

WELL DETAILS: Brahman State 24-35 15 #601H

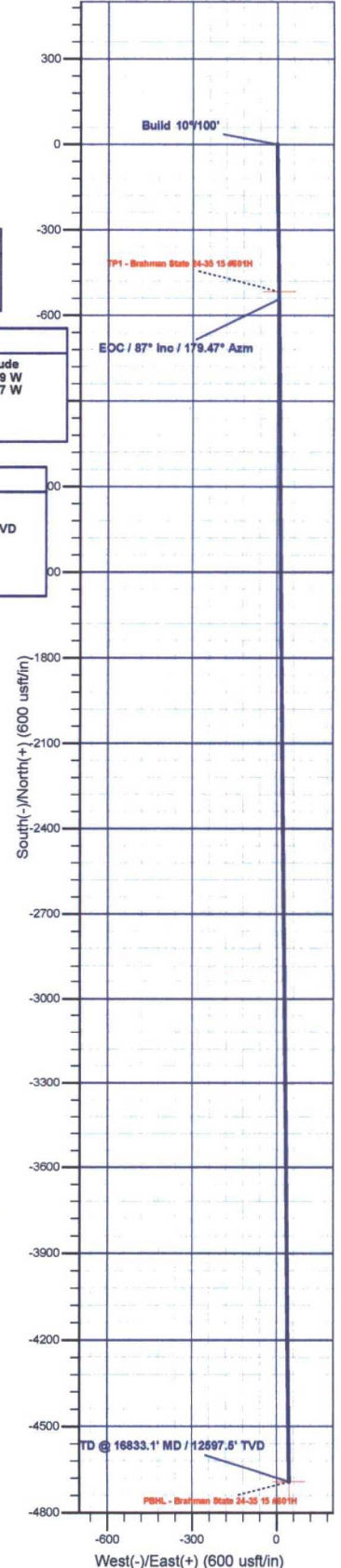
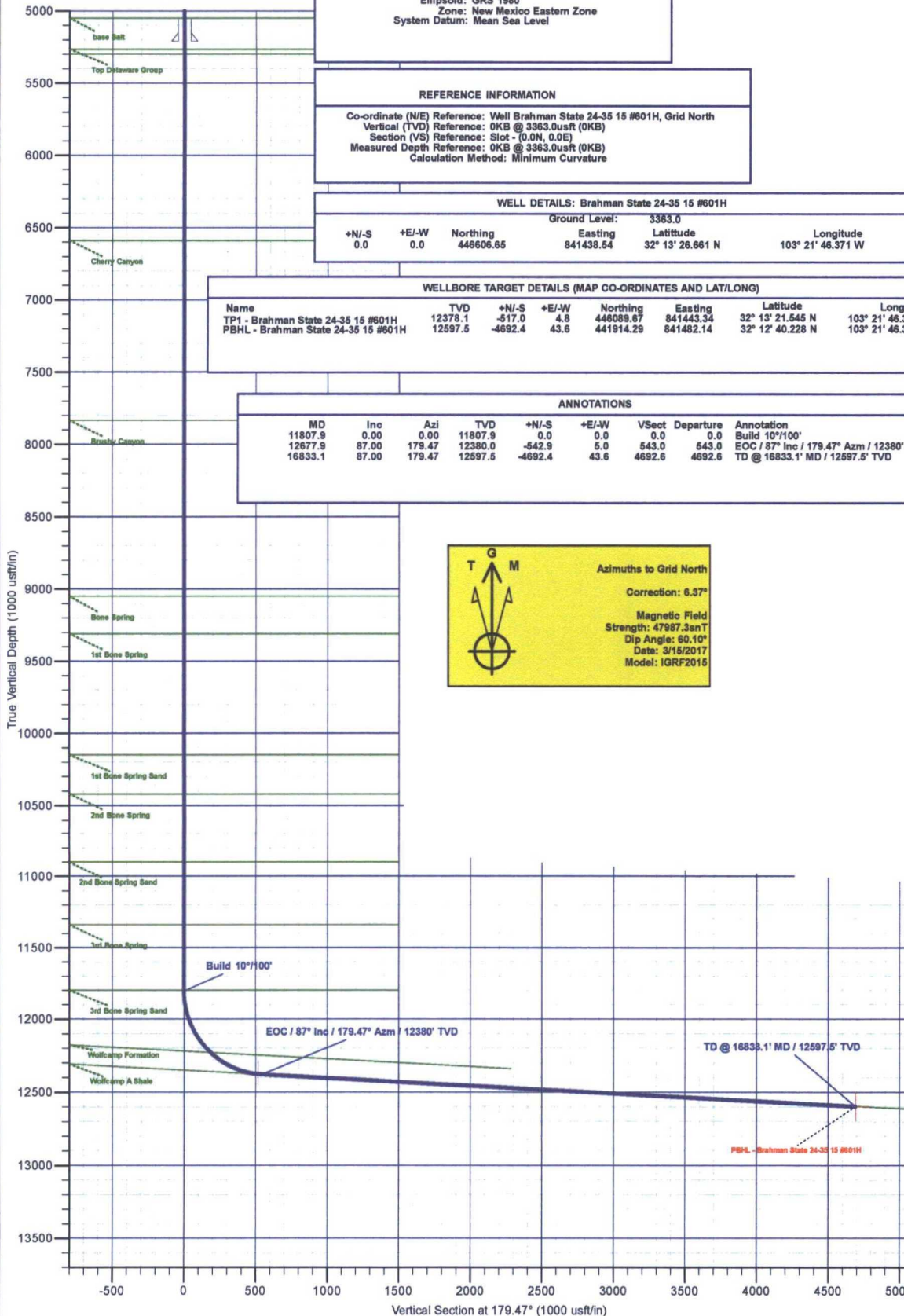
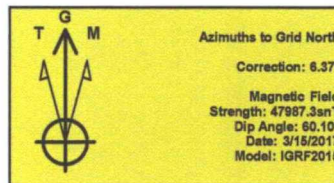
Ground Level: 3363.0
+N/-S 0.0 +E/-W 0.0 Northing 44606.65 Easting 841438.54 Latitude 32° 13' 26.661 N Longitude 103° 21' 46.371 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
TP1 - Brahman State 24-35 15 #601H	12378.1	-517.0	4.8	446088.67	841443.34	32° 13' 21.545 N	103° 21' 46.369 W
PBHL - Brahman State 24-35 15 #601H	12597.5	-4692.4	43.6	441914.29	841482.14	32° 12' 40.228 N	103° 21' 46.357 W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
11807.9	0.00	0.00	11807.9	0.0	0.0	0.0	0.0	Build 10°/100'
12677.9	87.00	179.47	12380.0	-542.9	5.0	543.0	543.0	EOC / 87° Inc / 179.47° Azm / 12380' TVD
16833.1	87.00	179.47	12597.5	-4692.4	43.6	4692.6	4692.6	TD @ 16833.1' MD / 12597.5' TVD



43721



Energen Resources Corporation

Lea County, NM (Nad 83)

Sec15,T24S,R35E

Brahman State 24-35 15 #601H

Wellbore #1

Plan: Plan #1

QES Well Planning Report

01 March, 2017



Database:	EDM5002	Local Co-ordinate Reference:	Well Brahman State 24-35 15 #601H
Company:	Energen Resources Corporation	TVD Reference:	OKB @ 3363.0usft (OKB)
Project:	Lea County, NM (Nad 83)	MD Reference:	OKB @ 3363.0usft (OKB)
Site:	Sec15,T24S,R35E	North Reference:	Grid
Well:	Brahman State 24-35 15 #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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

Site		Sec15,T24S,R35E			
Site Position:		Northing:	446,606.65 usft	Latitude:	32° 13' 26.661 N
From:	Map	Easting:	841,438.54 usft	Longitude:	103° 21' 46.371 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well	Brahman State 24-35 15 #601H					
Well Position	+N/-S	0.0 usft	Northing:	446,606.65 usft	Latitude:	32° 13' 26.661 N
	+E/-W	0.0 usft	Easting:	841,438.54 usft	Longitude:	103° 21' 46.371 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,363.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/15/2017	6.88	60.10	47,987

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.47

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	
11,807.9	0.00	0.00	11,807.9	0.0	0.0	0.00	0.00	0.00	0.00	
12,677.9	87.00	179.47	12,380.0	-542.9	5.0	10.00	10.00	0.00	179.47	
16,833.1	87.00	179.47	12,597.5	-4,692.4	43.6	0.00	0.00	0.00	0.00	

Database:	EDM5002	Local Co-ordinate Reference:	Well Brahman State 24-35 15 #601H
Company:	Energen Resources Corporation	TVD Reference:	OKB @ 3363.0usft (OKB)
Project:	Lea County, NM (Nad 83)	MD Reference:	OKB @ 3363.0usft (OKB)
Site:	Sec15,T24S,R35E	North Reference:	Grid
Well:	Brahman State 24-35 15 #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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
Rustler									
775.0	0.00	0.00	775.0	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	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
base Salt									

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Wellbore:	Wellbore #1		
Design:	Plan #1		

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)
5,050.0	0.00	0.00	5,050.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4 1/2"									
5,210.0	0.00	0.00	5,210.0	0.0	0.0	0.0	0.00	0.00	0.00
Top Delaware Group									
5,265.0	0.00	0.00	5,265.0	0.0	0.0	0.0	0.00	0.00	0.00
Bell Canyon									
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Cherry Canyon									
6,590.0	0.00	0.00	6,590.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
Brushy Canyon									
7,835.0	0.00	0.00	7,835.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Bone Spring									
9,050.0	0.00	0.00	9,050.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00

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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)
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1st Bone Spring									
9,310.0	0.00	0.00	9,310.0	0.0	0.0	0.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1st Bone Spring Sand									
10,150.0	0.00	0.00	10,150.0	0.0	0.0	0.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00
10,300.0	0.00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0.00
10,400.0	0.00	0.00	10,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2nd Bone Spring									
10,420.0	0.00	0.00	10,420.0	0.0	0.0	0.0	0.00	0.00	0.00
10,500.0	0.00	0.00	10,500.0	0.0	0.0	0.0	0.00	0.00	0.00
10,600.0	0.00	0.00	10,600.0	0.0	0.0	0.0	0.00	0.00	0.00
10,700.0	0.00	0.00	10,700.0	0.0	0.0	0.0	0.00	0.00	0.00
10,800.0	0.00	0.00	10,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2nd Bone Spring Sand									
10,900.0	0.00	0.00	10,900.0	0.0	0.0	0.0	0.00	0.00	0.00
11,000.0	0.00	0.00	11,000.0	0.0	0.0	0.0	0.00	0.00	0.00
11,100.0	0.00	0.00	11,100.0	0.0	0.0	0.0	0.00	0.00	0.00
11,200.0	0.00	0.00	11,200.0	0.0	0.0	0.0	0.00	0.00	0.00
11,300.0	0.00	0.00	11,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3rd Bone Spring									
11,340.0	0.00	0.00	11,340.0	0.0	0.0	0.0	0.00	0.00	0.00
11,400.0	0.00	0.00	11,400.0	0.0	0.0	0.0	0.00	0.00	0.00
11,500.0	0.00	0.00	11,500.0	0.0	0.0	0.0	0.00	0.00	0.00
11,600.0	0.00	0.00	11,600.0	0.0	0.0	0.0	0.00	0.00	0.00
11,700.0	0.00	0.00	11,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3rd Bone Spring Sand									
11,800.0	0.00	0.00	11,800.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 10°/100'									
11,807.9	0.00	0.00	11,807.9	0.0	0.0	0.0	0.00	0.00	0.00
11,900.0	9.21	179.47	11,899.6	-7.4	0.1	7.4	10.00	10.00	0.00
12,000.0	19.21	179.47	11,996.4	-31.9	0.3	31.9	10.00	10.00	0.00
12,100.0	29.21	179.47	12,087.5	-72.9	0.7	72.9	10.00	10.00	0.00
12,200.0	39.21	179.47	12,170.1	-129.0	1.2	129.0	10.00	10.00	0.00
Wolfcamp Formation									
12,267.8	46.00	179.47	12,220.0	-174.9	1.6	174.9	10.00	10.00	0.00
12,300.0	49.21	179.47	12,241.7	-198.7	1.8	198.7	10.00	10.00	0.00
12,400.0	59.21	179.47	12,300.1	-279.7	2.6	279.7	10.00	10.00	0.00
12,500.0	69.21	179.47	12,343.5	-369.6	3.4	369.6	10.00	10.00	0.00
Wolfcamp A Shale									
12,519.1	71.12	179.47	12,350.0	-387.6	3.6	387.6	10.00	10.00	0.00
12,600.0	79.21	179.47	12,370.7	-465.7	4.3	465.7	10.00	10.00	0.00
EOC / 87° Inc / 179.47° Azm / 12380' TVD									

Database:	EDM5002	Local Co-ordinate Reference:	Well Brahman State 24-35 15 #601H
Company:	Energen Resources Corporation	TVD Reference:	OKB @ 3363.0usft (OKB)
Project:	Lea County, NM (Nad 83)	MD Reference:	OKB @ 3363.0usft (OKB)
Site:	Sec15,T24S,R35E	North Reference:	Grid
Well:	Brahman State 24-35 15 #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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)
12,677.9	87.00	179.47	12,380.0	-542.9	5.0	543.0	10.00	10.00	0.00
12,700.0	87.00	179.47	12,381.2	-565.1	5.3	565.1	0.00	0.00	0.00
12,800.0	87.00	179.47	12,386.4	-664.9	6.2	664.9	0.00	0.00	0.00
12,900.0	87.00	179.47	12,391.7	-764.8	7.1	764.8	0.00	0.00	0.00
13,000.0	87.00	179.47	12,396.9	-864.6	8.0	864.7	0.00	0.00	0.00
13,100.0	87.00	179.47	12,402.1	-964.5	9.0	964.5	0.00	0.00	0.00
13,200.0	87.00	179.47	12,407.4	-1,064.4	9.9	1,064.4	0.00	0.00	0.00
13,300.0	87.00	179.47	12,412.6	-1,164.2	10.8	1,164.3	0.00	0.00	0.00
13,400.0	87.00	179.47	12,417.8	-1,264.1	11.7	1,264.1	0.00	0.00	0.00
13,500.0	87.00	179.47	12,423.1	-1,363.9	12.7	1,364.0	0.00	0.00	0.00
13,600.0	87.00	179.47	12,428.3	-1,463.8	13.6	1,463.9	0.00	0.00	0.00
13,700.0	87.00	179.47	12,433.5	-1,563.6	14.5	1,563.7	0.00	0.00	0.00
13,800.0	87.00	179.47	12,438.8	-1,663.5	15.5	1,663.6	0.00	0.00	0.00
13,900.0	87.00	179.47	12,444.0	-1,763.4	16.4	1,763.4	0.00	0.00	0.00
14,000.0	87.00	179.47	12,449.2	-1,863.2	17.3	1,863.3	0.00	0.00	0.00
14,100.0	87.00	179.47	12,454.5	-1,963.1	18.2	1,963.2	0.00	0.00	0.00
14,200.0	87.00	179.47	12,459.7	-2,062.9	19.2	2,063.0	0.00	0.00	0.00
14,300.0	87.00	179.47	12,464.9	-2,162.8	20.1	2,162.9	0.00	0.00	0.00
14,400.0	87.00	179.47	12,470.2	-2,262.7	21.0	2,262.8	0.00	0.00	0.00
14,500.0	87.00	179.47	12,475.4	-2,362.5	22.0	2,362.6	0.00	0.00	0.00
14,600.0	87.00	179.47	12,480.6	-2,462.4	22.9	2,462.5	0.00	0.00	0.00
14,700.0	87.00	179.47	12,485.9	-2,562.2	23.8	2,562.3	0.00	0.00	0.00
14,800.0	87.00	179.47	12,491.1	-2,662.1	24.7	2,662.2	0.00	0.00	0.00
14,900.0	87.00	179.47	12,496.3	-2,762.0	25.7	2,762.1	0.00	0.00	0.00
15,000.0	87.00	179.47	12,501.6	-2,861.8	26.6	2,861.9	0.00	0.00	0.00
15,100.0	87.00	179.47	12,506.8	-2,961.7	27.5	2,961.8	0.00	0.00	0.00
15,200.0	87.00	179.47	12,512.0	-3,061.5	28.4	3,061.7	0.00	0.00	0.00
15,300.0	87.00	179.47	12,517.3	-3,161.4	29.4	3,161.5	0.00	0.00	0.00
15,400.0	87.00	179.47	12,522.5	-3,261.2	30.3	3,261.4	0.00	0.00	0.00
15,500.0	87.00	179.47	12,527.7	-3,361.1	31.2	3,361.2	0.00	0.00	0.00
15,600.0	87.00	179.47	12,533.0	-3,461.0	32.2	3,461.1	0.00	0.00	0.00
15,700.0	87.00	179.47	12,538.2	-3,560.8	33.1	3,561.0	0.00	0.00	0.00
15,800.0	87.00	179.47	12,543.4	-3,660.7	34.0	3,660.8	0.00	0.00	0.00
15,900.0	87.00	179.47	12,548.7	-3,760.5	34.9	3,760.7	0.00	0.00	0.00
16,000.0	87.00	179.47	12,553.9	-3,860.4	35.9	3,860.6	0.00	0.00	0.00
16,100.0	87.00	179.47	12,559.1	-3,960.3	36.8	3,960.4	0.00	0.00	0.00
16,200.0	87.00	179.47	12,564.4	-4,060.1	37.7	4,060.3	0.00	0.00	0.00
16,300.0	87.00	179.47	12,569.6	-4,160.0	38.7	4,160.2	0.00	0.00	0.00
16,400.0	87.00	179.47	12,574.8	-4,259.8	39.6	4,260.0	0.00	0.00	0.00
16,500.0	87.00	179.47	12,580.1	-4,359.7	40.5	4,359.9	0.00	0.00	0.00
16,600.0	87.00	179.47	12,585.3	-4,459.5	41.4	4,459.7	0.00	0.00	0.00
16,700.0	87.00	179.47	12,590.5	-4,559.4	42.4	4,559.6	0.00	0.00	0.00
16,800.0	87.00	179.47	12,595.8	-4,659.3	43.3	4,659.5	0.00	0.00	0.00
TD @ 16833.1' MD / 12597.5' TVD									
16,833.1	87.00	179.47	12,597.5	-4,692.4	43.6	4,692.6	0.00	0.00	0.00

Database:	EDM5002	Local Co-ordinate Reference:	Well Brahman State 24-35 15 #601H
Company:	Energen Resources Corporation	TVD Reference:	OKB @ 3363.0usft (OKB)
Project:	Lea County, NM (Nad 83)	MD Reference:	OKB @ 3363.0usft (OKB)
Site:	Sec15,T24S,R35E	North Reference:	Grid
Well:	Brahman State 24-35 15 #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
TP1 - Brahman State 24	0.00	0.00	12,378.1	-517.0	4.8	446,089.67	841,443.34	32° 13' 21.545 N	103° 21' 46.369 W
- plan hits target center									
- Point									
PBHL - Brahman State 2	0.00	0.00	12,597.5	-4,692.4	43.6	441,914.29	841,482.14	32° 12' 40.228 N	103° 21' 46.357 W
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(usft)	(usft)		(")	(")
5,210.0	5,210.0	4 1/2"	4-1/2	7-7/8

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
775.0	775.0	Rustler			
5,050.0	5,050.0	base Salt			
5,265.0	5,265.0	Top Delaware Group			
5,300.0	5,300.0	Bell Canyon			
6,590.0	6,590.0	Cherry Canyon			
7,835.0	7,835.0	Brushy Canyon			
9,050.0	9,050.0	Bone Spring			
9,310.0	9,310.0	1st Bone Spring			
10,150.0	10,150.0	1st Bone Spring Sand			
10,420.0	10,420.0	2nd Bone Spring			
10,900.0	10,900.0	2nd Bone Spring Sand			
11,340.0	11,340.0	3rd Bone Spring			
11,800.0	11,800.0	3rd Bone Spring Sand			
12,267.8	12,220.0	Wolfcamp Formation		0.00	0.00
12,519.1	12,350.0	Wolfcamp A Shale		0.00	0.00

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S	+E/-W	
		(usft)	(usft)	
11,807.9	11,807.9	0.0	0.0	Build 10°/100'
12,677.9	12,380.0	-542.9	5.0	EOC / 87° Inc / 179.47° Azm / 12380' TVD
16,833.1	12,597.5	-4,692.4	43.6	TD @ 16833.1' MD / 12597.5' TVD