

OCD - HOBBS
07/23/2019
RECEIVED

NORTHERN DELAWARE BASIN

**LEA COUNTY, NM
BULLDOG
VALOR STATE COM #801H**

OWB

Plan: PWP1

Standard Survey Report

22 July, 2019

Survey Report

Company: NORTHERN DELAWARE BASIN	Local Co-ordinate Reference: Well VALOR STATE COM #801H
Project: LEA COUNTY, NM	TVD Reference: RKB=3329+30 @ 3359.0usft (Precision 106)
Site: BULLDOG	MD Reference: RKB=3329+30 @ 3359.0usft (Precision 106)
Well: VALOR STATE COM #801H	North Reference: Grid
Wellbore: OWB	Survey Calculation Method: Minimum Curvature
Design: PWP1	Database: EDM_Users

Project LEA COUNTY, NM	
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 BULLDOG		
Site Position:	Northing: 398,637.10 usft	Latitude: 32° 5' 36.820 N
From: Map	Easting: 741,887.40 usft	Longitude: 103° 33' 8.116 W
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.42 °

Well VALOR STATE COM #801H		
Well Position +N/-S 0.0 usft	Northing: 398,669.00 usft	Latitude: 32° 5' 36.782 N
+E/-W 0.0 usft	Easting: 746,776.60 usft	Longitude: 103° 32' 11.282 W
Position Uncertainty 3.0 usft	Wellhead Elevation: usft	Ground Level: 3,329.0 usft

Wellbore OWB					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	11/7/2018	6.81	59.91	47,706.49919931

Design PWP1					
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	176.62	

Survey Tool Program		Date 7/22/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,487.8	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
12,487.8	20,593.1	PWP1 (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

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	

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
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
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

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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)
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
Start Build 2.00									
5,600.0	2.00	66.09	5,600.0	0.7	1.6	-0.6	2.00	2.00	0.00
5,666.7	3.33	66.09	5,666.6	2.0	4.4	-1.7	2.00	2.00	0.00
Start 6821.2 hold at 5666.7 MD									
5,700.0	3.33	66.09	5,699.8	2.7	6.2	-2.4	0.00	0.00	0.00
5,800.0	3.33	66.09	5,799.7	5.1	11.5	-4.4	0.00	0.00	0.00
5,900.0	3.33	66.09	5,899.5	7.5	16.8	-6.5	0.00	0.00	0.00
6,000.0	3.33	66.09	5,999.3	9.8	22.1	-8.5	0.00	0.00	0.00
6,100.0	3.33	66.09	6,099.2	12.2	27.5	-10.5	0.00	0.00	0.00
6,200.0	3.33	66.09	6,199.0	14.5	32.8	-12.6	0.00	0.00	0.00
6,300.0	3.33	66.09	6,298.8	16.9	38.1	-14.6	0.00	0.00	0.00
6,400.0	3.33	66.09	6,398.7	19.2	43.4	-16.7	0.00	0.00	0.00
6,500.0	3.33	66.09	6,498.5	21.6	48.7	-18.7	0.00	0.00	0.00
6,600.0	3.33	66.09	6,598.3	24.0	54.0	-20.7	0.00	0.00	0.00
6,700.0	3.33	66.09	6,698.2	26.3	59.4	-22.8	0.00	0.00	0.00
6,800.0	3.33	66.09	6,798.0	28.7	64.7	-24.8	0.00	0.00	0.00
6,900.0	3.33	66.09	6,897.8	31.0	70.0	-26.8	0.00	0.00	0.00
7,000.0	3.33	66.09	6,997.7	33.4	75.3	-28.9	0.00	0.00	0.00
7,100.0	3.33	66.09	7,097.5	35.7	80.6	-30.9	0.00	0.00	0.00
7,200.0	3.33	66.09	7,197.3	38.1	85.9	-33.0	0.00	0.00	0.00
7,300.0	3.33	66.09	7,297.1	40.5	91.2	-35.0	0.00	0.00	0.00
7,400.0	3.33	66.09	7,397.0	42.8	96.6	-37.0	0.00	0.00	0.00
7,500.0	3.33	66.09	7,496.8	45.2	101.9	-39.1	0.00	0.00	0.00
7,600.0	3.33	66.09	7,596.6	47.5	107.2	-41.1	0.00	0.00	0.00
7,700.0	3.33	66.09	7,696.5	49.9	112.5	-43.2	0.00	0.00	0.00
7,800.0	3.33	66.09	7,796.3	52.2	117.8	-45.2	0.00	0.00	0.00
7,900.0	3.33	66.09	7,896.1	54.6	123.1	-47.2	0.00	0.00	0.00
8,000.0	3.33	66.09	7,996.0	56.9	128.5	-49.3	0.00	0.00	0.00
8,100.0	3.33	66.09	8,095.8	59.3	133.8	-51.3	0.00	0.00	0.00
8,200.0	3.33	66.09	8,195.6	61.7	139.1	-53.4	0.00	0.00	0.00
8,300.0	3.33	66.09	8,295.5	64.0	144.4	-55.4	0.00	0.00	0.00
8,400.0	3.33	66.09	8,395.3	66.4	149.7	-57.4	0.00	0.00	0.00
8,500.0	3.33	66.09	8,495.1	68.7	155.0	-59.5	0.00	0.00	0.00
8,600.0	3.33	66.09	8,594.9	71.1	160.3	-61.5	0.00	0.00	0.00
8,700.0	3.33	66.09	8,694.8	73.4	165.7	-63.6	0.00	0.00	0.00
8,800.0	3.33	66.09	8,794.6	75.8	171.0	-65.6	0.00	0.00	0.00
8,900.0	3.33	66.09	8,894.4	78.2	176.3	-67.6	0.00	0.00	0.00
9,000.0	3.33	66.09	8,994.3	80.5	181.6	-69.7	0.00	0.00	0.00
9,100.0	3.33	66.09	9,094.1	82.9	186.9	-71.7	0.00	0.00	0.00
9,200.0	3.33	66.09	9,193.9	85.2	192.2	-73.7	0.00	0.00	0.00
9,300.0	3.33	66.09	9,293.8	87.6	197.6	-75.8	0.00	0.00	0.00

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Well:	VALOR STATE COM #801H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
9,400.0	3.33	66.09	9,393.6	89.9	202.9	-77.8	0.00	0.00	0.00
9,500.0	3.33	66.09	9,493.4	92.3	208.2	-79.9	0.00	0.00	0.00
9,600.0	3.33	66.09	9,593.3	94.7	213.5	-81.9	0.00	0.00	0.00
9,700.0	3.33	66.09	9,693.1	97.0	218.8	-83.9	0.00	0.00	0.00
9,800.0	3.33	66.09	9,792.9	99.4	224.1	-86.0	0.00	0.00	0.00
9,900.0	3.33	66.09	9,892.7	101.7	229.4	-88.0	0.00	0.00	0.00
10,000.0	3.33	66.09	9,992.6	104.1	234.8	-90.1	0.00	0.00	0.00
10,100.0	3.33	66.09	10,092.4	106.4	240.1	-92.1	0.00	0.00	0.00
10,200.0	3.33	66.09	10,192.2	108.8	245.4	-94.1	0.00	0.00	0.00
10,300.0	3.33	66.09	10,292.1	111.1	250.7	-96.2	0.00	0.00	0.00
10,400.0	3.33	66.09	10,391.9	113.5	256.0	-98.2	0.00	0.00	0.00
10,500.0	3.33	66.09	10,491.7	115.9	261.3	-100.3	0.00	0.00	0.00
10,600.0	3.33	66.09	10,591.6	118.2	266.7	-102.3	0.00	0.00	0.00
10,700.0	3.33	66.09	10,691.4	120.6	272.0	-104.3	0.00	0.00	0.00
10,800.0	3.33	66.09	10,791.2	122.9	277.3	-106.4	0.00	0.00	0.00
10,900.0	3.33	66.09	10,891.1	125.3	282.6	-108.4	0.00	0.00	0.00
11,000.0	3.33	66.09	10,990.9	127.6	287.9	-110.5	0.00	0.00	0.00
11,100.0	3.33	66.09	11,090.7	130.0	293.2	-112.5	0.00	0.00	0.00
11,200.0	3.33	66.09	11,190.5	132.4	298.5	-114.5	0.00	0.00	0.00
11,300.0	3.33	66.09	11,290.4	134.7	303.9	-116.6	0.00	0.00	0.00
11,400.0	3.33	66.09	11,390.2	137.1	309.2	-118.6	0.00	0.00	0.00
11,500.0	3.33	66.09	11,490.0	139.4	314.5	-120.6	0.00	0.00	0.00
11,600.0	3.33	66.09	11,589.9	141.8	319.8	-122.7	0.00	0.00	0.00
11,700.0	3.33	66.09	11,689.7	144.1	325.1	-124.7	0.00	0.00	0.00
11,800.0	3.33	66.09	11,789.5	146.5	330.4	-126.8	0.00	0.00	0.00
11,900.0	3.33	66.09	11,889.4	148.8	335.8	-128.8	0.00	0.00	0.00
12,000.0	3.33	66.09	11,989.2	151.2	341.1	-130.8	0.00	0.00	0.00
12,100.0	3.33	66.09	12,089.0	153.6	346.4	-132.9	0.00	0.00	0.00
12,200.0	3.33	66.09	12,188.9	155.9	351.7	-134.9	0.00	0.00	0.00
12,300.0	3.33	66.09	12,288.7	158.3	357.0	-137.0	0.00	0.00	0.00
12,400.0	3.33	66.09	12,388.5	160.6	362.3	-139.0	0.00	0.00	0.00
12,487.8	3.33	66.09	12,476.2	162.7	367.0	-140.8	0.00	0.00	0.00
Start DLS 12.00 TFO 113.45									
12,500.0	3.06	92.05	12,488.3	162.8	367.6	-140.9	12.00	-2.24	213.40
12,600.0	12.51	165.64	12,587.5	152.2	373.0	-130.0	12.00	9.45	73.59
12,700.0	24.31	172.79	12,682.2	121.2	378.3	-98.7	12.00	11.81	7.15
12,800.0	36.24	175.40	12,768.4	71.1	383.3	-48.4	12.00	11.93	2.61
12,900.0	48.21	176.84	12,842.3	4.2	387.7	18.7	12.00	11.96	1.44
13,000.0	60.18	177.82	12,900.7	-76.7	391.4	99.6	12.00	11.97	0.98
13,100.0	72.16	178.59	12,941.0	-167.9	394.3	190.9	12.00	11.98	0.77
13,200.0	84.14	179.27	12,961.5	-265.6	396.1	288.5	12.00	11.98	0.67
13,246.9	89.77	179.57	12,964.0	-312.5	396.5	335.3	12.00	11.98	0.64
Start 7346.2 hold at 13246.9 MD									

Survey Report

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Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.0usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.0usft (Precision 106)
Well:	VALOR STATE COM #801H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
13,300.0	89.77	179.57	12,964.2	-365.5	396.9	388.3	0.00	0.00	0.00
13,400.0	89.77	179.57	12,964.7	-465.5	397.7	488.2	0.00	0.00	0.00
13,500.0	89.77	179.57	12,965.1	-565.5	398.5	588.0	0.00	0.00	0.00
13,600.0	89.77	179.57	12,965.5	-665.5	399.2	687.9	0.00	0.00	0.00
13,700.0	89.77	179.57	12,965.9	-765.5	400.0	787.8	0.00	0.00	0.00
13,800.0	89.77	179.57	12,966.3	-865.5	400.7	887.6	0.00	0.00	0.00
13,900.0	89.77	179.57	12,966.7	-965.5	401.5	987.5	0.00	0.00	0.00
14,000.0	89.77	179.57	12,967.1	-1,065.5	402.2	1,087.4	0.00	0.00	0.00
14,100.0	89.77	179.57	12,967.5	-1,165.5	403.0	1,187.2	0.00	0.00	0.00
14,200.0	89.77	179.57	12,967.9	-1,265.5	403.8	1,287.1	0.00	0.00	0.00
14,300.0	89.77	179.57	12,968.3	-1,365.5	404.5	1,387.0	0.00	0.00	0.00
14,400.0	89.77	179.57	12,968.7	-1,465.5	405.3	1,486.8	0.00	0.00	0.00
14,500.0	89.77	179.57	12,969.1	-1,565.5	406.0	1,586.7	0.00	0.00	0.00
14,600.0	89.77	179.57	12,969.5	-1,665.5	406.8	1,686.6	0.00	0.00	0.00
14,700.0	89.77	179.57	12,970.0	-1,765.5	407.5	1,786.4	0.00	0.00	0.00
14,800.0	89.77	179.57	12,970.4	-1,865.5	408.3	1,886.3	0.00	0.00	0.00
14,900.0	89.77	179.57	12,970.8	-1,965.5	409.0	1,986.2	0.00	0.00	0.00
15,000.0	89.77	179.57	12,971.2	-2,065.5	409.8	2,086.0	0.00	0.00	0.00
15,100.0	89.77	179.57	12,971.6	-2,165.5	410.6	2,185.9	0.00	0.00	0.00
15,200.0	89.77	179.57	12,972.0	-2,265.5	411.3	2,285.8	0.00	0.00	0.00
15,300.0	89.77	179.57	12,972.4	-2,365.5	412.1	2,385.6	0.00	0.00	0.00
15,400.0	89.77	179.57	12,972.8	-2,465.5	412.8	2,485.5	0.00	0.00	0.00
15,500.0	89.77	179.57	12,973.2	-2,565.5	413.6	2,585.4	0.00	0.00	0.00
15,600.0	89.77	179.57	12,973.6	-2,665.4	414.3	2,685.2	0.00	0.00	0.00
15,700.0	89.77	179.57	12,974.0	-2,765.4	415.1	2,785.1	0.00	0.00	0.00
15,800.0	89.77	179.57	12,974.4	-2,865.4	415.9	2,885.0	0.00	0.00	0.00
15,900.0	89.77	179.57	12,974.9	-2,965.4	416.6	2,984.8	0.00	0.00	0.00
16,000.0	89.77	179.57	12,975.3	-3,065.4	417.4	3,084.7	0.00	0.00	0.00
16,100.0	89.77	179.57	12,975.7	-3,165.4	418.1	3,184.6	0.00	0.00	0.00
16,200.0	89.77	179.57	12,976.1	-3,265.4	418.9	3,284.4	0.00	0.00	0.00
16,300.0	89.77	179.57	12,976.5	-3,365.4	419.6	3,384.3	0.00	0.00	0.00
16,400.0	89.77	179.57	12,976.9	-3,465.4	420.4	3,484.2	0.00	0.00	0.00
16,500.0	89.77	179.57	12,977.3	-3,565.4	421.1	3,584.0	0.00	0.00	0.00
16,600.0	89.77	179.57	12,977.7	-3,665.4	421.9	3,683.9	0.00	0.00	0.00
16,700.0	89.77	179.57	12,978.1	-3,765.4	422.7	3,783.8	0.00	0.00	0.00
16,800.0	89.77	179.57	12,978.5	-3,865.4	423.4	3,883.6	0.00	0.00	0.00
16,900.0	89.77	179.57	12,978.9	-3,965.4	424.2	3,983.5	0.00	0.00	0.00
17,000.0	89.77	179.57	12,979.3	-4,065.4	424.9	4,083.4	0.00	0.00	0.00
17,100.0	89.77	179.57	12,979.7	-4,165.4	425.7	4,183.2	0.00	0.00	0.00
17,200.0	89.77	179.57	12,980.2	-4,265.4	426.4	4,283.1	0.00	0.00	0.00
17,300.0	89.77	179.57	12,980.6	-4,365.4	427.2	4,383.0	0.00	0.00	0.00
17,400.0	89.77	179.57	12,981.0	-4,465.4	428.0	4,482.8	0.00	0.00	0.00
17,500.0	89.77	179.57	12,981.4	-4,565.4	428.7	4,582.7	0.00	0.00	0.00
17,600.0	89.77	179.57	12,981.8	-4,665.4	429.5	4,682.6	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #801H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.0usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.0usft (Precision 106)
Well:	VALOR STATE COM #801H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

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)
17,700.0	89.77	179.57	12,982.2	-4,765.4	430.2	4,782.4	0.00	0.00	0.00
17,800.0	89.77	179.57	12,982.6	-4,865.4	431.0	4,882.3	0.00	0.00	0.00
17,900.0	89.77	179.57	12,983.0	-4,965.4	431.7	4,982.2	0.00	0.00	0.00
18,000.0	89.77	179.57	12,983.4	-5,065.4	432.5	5,082.0	0.00	0.00	0.00
18,100.0	89.77	179.57	12,983.8	-5,165.4	433.2	5,181.9	0.00	0.00	0.00
18,200.0	89.77	179.57	12,984.2	-5,265.4	434.0	5,281.8	0.00	0.00	0.00
18,300.0	89.77	179.57	12,984.6	-5,365.3	434.8	5,381.6	0.00	0.00	0.00
18,400.0	89.77	179.57	12,985.1	-5,465.3	435.5	5,481.5	0.00	0.00	0.00
18,500.0	89.77	179.57	12,985.5	-5,565.3	436.3	5,581.4	0.00	0.00	0.00
18,600.0	89.77	179.57	12,985.9	-5,665.3	437.0	5,681.2	0.00	0.00	0.00
18,700.0	89.77	179.57	12,986.3	-5,765.3	437.8	5,781.1	0.00	0.00	0.00
18,800.0	89.77	179.57	12,986.7	-5,865.3	438.5	5,881.0	0.00	0.00	0.00
18,900.0	89.77	179.57	12,987.1	-5,965.3	439.3	5,980.8	0.00	0.00	0.00
19,000.0	89.77	179.57	12,987.5	-6,065.3	440.1	6,080.7	0.00	0.00	0.00
19,100.0	89.77	179.57	12,987.9	-6,165.3	440.8	6,180.6	0.00	0.00	0.00
19,200.0	89.77	179.57	12,988.3	-6,265.3	441.6	6,280.4	0.00	0.00	0.00
19,300.0	89.77	179.57	12,988.7	-6,365.3	442.3	6,380.3	0.00	0.00	0.00
19,400.0	89.77	179.57	12,989.1	-6,465.3	443.1	6,480.2	0.00	0.00	0.00
19,500.0	89.77	179.57	12,989.5	-6,565.3	443.8	6,580.0	0.00	0.00	0.00
19,600.0	89.77	179.57	12,989.9	-6,665.3	444.6	6,679.9	0.00	0.00	0.00
19,700.0	89.77	179.57	12,990.4	-6,765.3	445.3	6,779.8	0.00	0.00	0.00
19,800.0	89.77	179.57	12,990.8	-6,865.3	446.1	6,879.6	0.00	0.00	0.00
19,900.0	89.77	179.57	12,991.2	-6,965.3	446.9	6,979.5	0.00	0.00	0.00
20,000.0	89.77	179.57	12,991.6	-7,065.3	447.6	7,079.4	0.00	0.00	0.00
20,100.0	89.77	179.57	12,992.0	-7,165.3	448.4	7,179.3	0.00	0.00	0.00
20,200.0	89.77	179.57	12,992.4	-7,265.3	449.1	7,279.1	0.00	0.00	0.00
20,300.0	89.77	179.57	12,992.8	-7,365.3	449.9	7,379.0	0.00	0.00	0.00
20,400.0	89.77	179.57	12,993.2	-7,465.3	450.6	7,478.9	0.00	0.00	0.00
20,500.0	89.77	179.57	12,993.6	-7,565.3	451.4	7,578.7	0.00	0.00	0.00
20,593.1	89.77	179.57	12,994.0	-7,658.4	452.1	7,671.7	0.00	0.00	0.00

TD at 20593.1

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #801H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.0usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.0usft (Precision 106)
Well:	VALOR STATE COM #801H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (VALOR ST CO - hit/miss target - Shape	0.00	0.00	12,964.0	112.7	394.2	398,781.70	747,170.80	32° 5' 37.868 N	103° 32' 6.690 W
- plan misses target center by 163.2usft at 12900.0usft MD (12842.3 TVD, 4.2 N, 387.7 E)									
- Point									
LTP (VALOR ST CO - plan misses target center by 43.1usft at 20500.0usft MD (12993.6 TVD, -7565.3 N, 451.4 E) - Point	0.00	0.00	12,994.0	-7,608.4	451.8	391,060.60	747,228.40	32° 4' 21.459 N	103° 32' 6.685 W
PBHL (VALOR ST CO - plan hits target center - Rectangle (sides W100.0 H7,821.0 D20.0)	-0.23	359.57	12,994.0	-7,658.4	452.1	391,010.60	747,228.70	32° 4' 20.964 N	103° 32' 6.686 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5500	5500	0	0	Start Build 2.00
5667	5667	2	4	Start 6821.2 hold at 5666.7 MD
12,488	12,476	163	367	Start DLS 12.00 TFO 113.45
13,247	12,964	-312	397	Start 7346.2 hold at 13246.9 MD
20,593	12,994	-7658	452	TD at 20593.1

Checked By: _____	Approved By: _____	Date: _____
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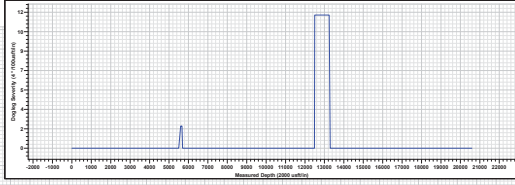
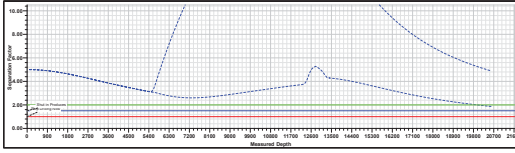
Project: LEA COUNTY, NM
 SRe: BULLDOG
 Well: VALOR ST COM #801H
 Wellbore: OWB
 Design: PUPP
 CL: 3329.0
 RKB=3329+30 @ 3359.0uoft (Precision 106)

WELL DETAILS: VALOR STATE COM #801H

+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.0	0.0	39659.0	74876.60	32° 5' 35.782 N	103° 32' 11.352 W

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
FTP (VALOR ST COM #801H)	12964.0	112.7	394.2	396781.70	747179.89	32° 5' 37.888 N	103° 32' 6.890 W
LTP (VALOR ST COM #801H)	12964.0	-7688.4	451.8	391063.60	747228.40	32° 4' 21.459 N	103° 32' 6.890 W
PEHL (VALOR ST COM #801H)	12964.0	-7688.4	452.1	391010.60	747228.70	32° 4' 20.964 N	103° 32' 6.886 W



SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
5500.0	0.00	0.00	5500.0	0.0	0.0	0.00	0.00	0.0	Start 6821.2 hold at 5500.7 MD
5666.7	3.33	66.09	5666.6	2.0	4.4	2.00	66.09	-1.7	Start DLS 12.00 TFO 113.45
12457.8	3.33	66.09	12476.2	162.7	367.0	0.00	0.00	-140.8	Start 7346.2 hold at 12466.9 MD
13246.9	89.77	179.57	12964.0	-312.5	396.5	12.00	113.45	335.3	TD at 20593.1
20593.1	89.77	179.57	12964.0	-7688.4	452.1	0.00	0.00	7671.7	

ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation
5500.0	0.00	0.00	5500.0	0.0	0.0	0.0	0.0	Start Build 2.00
5666.7	3.33	66.09	5666.6	2.0	4.4	-1.7	4.8	Start 6821.2 hold at 5666.7 MD
12457.8	3.33	66.09	12476.2	162.7	367.0	-140.8	491.4	Start DLS 12.00 TFO 113.45
13246.9	89.77	179.57	12964.0	-312.5	396.5	335.3	886.3	Start 7346.2 hold at 12466.9 MD
20593.1	89.77	179.57	12964.0	-7688.4	452.1	7671.7	8226.4	TD at 20593.1

