



PHOENIX
TECHNOLOGY SERVICES

Legend Natural Gas iV, LP

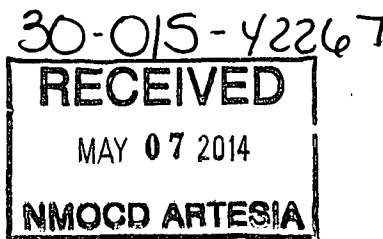
Eddy County, NM (Nad27)

Sec 31 T24S R 28E

Buckshot State Com 4H

Wellbore #1

Plan: Plan#1 041014 Option 1



Standard Planning Report

10 April, 2014



PHOENIX
TECHNOLOGY SERVICES

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	-N/S	-E/W	Dip	TFace	VSeal	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		Begin 1°/100' Build
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00		Hold 8.00° Inc.
3	3000.00	8.00	260.00	2997.40	-8.68	-54.91	1.00	260.00	-2.84		Begin 1°/100' Drop
4	6537.02	8.00	260.00	6500.00	-95.16	-538.69	0.00	0.00	-27.93		Begin Vertical Hold
5	7337.02	0.00	0.00	7297.40	-104.84	-594.60	1.00	180.00	-30.77		KOP 12°/100' Build
6	7472.17	0.00	0.00	7432.55	-104.84	-594.60	0.00	0.00	-30.77		
7	8218.00	89.50	359.96	7910.00	-368.45	-594.97	12.00	359.96	438.96	BHL Buckshot State Com 4H LP, Hold 89.5° Inc	
8	9992.46	89.50	359.96	7925.48	-2142.85	-596.34	0.00	0.00	2200.00	Begin 2°/100' Build	
9	10025.58	90.16	359.96	7925.58	-2176.05	-596.36	2.00	0.00	2232.37	Hold 90.16° Inc	
10	12668.63	90.16	359.96	7918.00	-4819.00	-598.40	0.00	0.00	4856.01	BHL Buckshot State Com 4H TD at 12668.63	

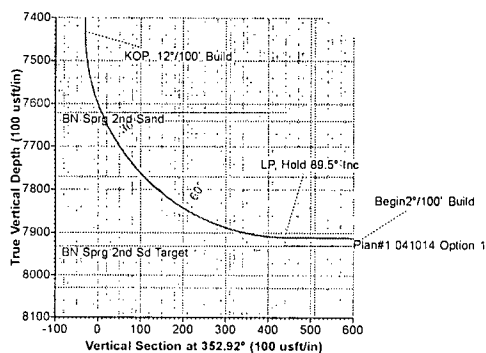
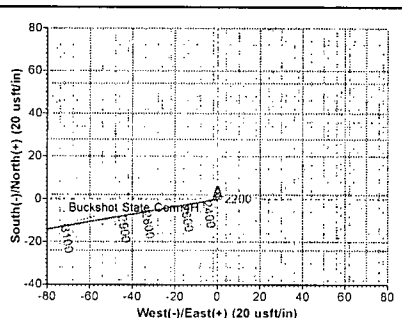
DESIGN TARGET DETAILS

Name	TVD	-N/S	-E/W	North	East	Latitude	Longitude	Shape
BHL Buckshot State Com 4H	7918.00	-4819.00	-598.40	429337.20	564973.80	32° 10' 48.68529 N	104° 7' 23.97112 W	Point
T1 Buckshot State Com 4H	7925.48	-2142.85	-596.34	426661.05	564975.88	32° 10' 22.20202 N	104° 7' 24.00793 W	Point

- plan hits target center
- plan misses target center by 0.01 usft at 9992.47 usft MD (7925.48 TVD, 2142.85 N, -596.34 E)

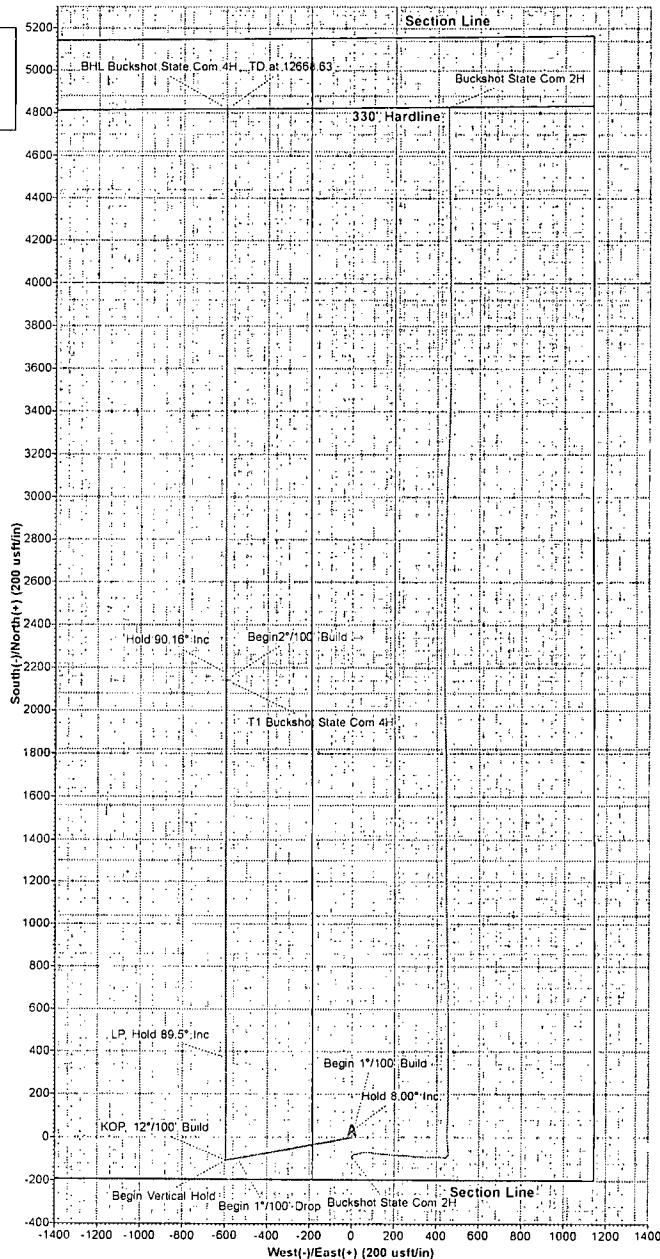
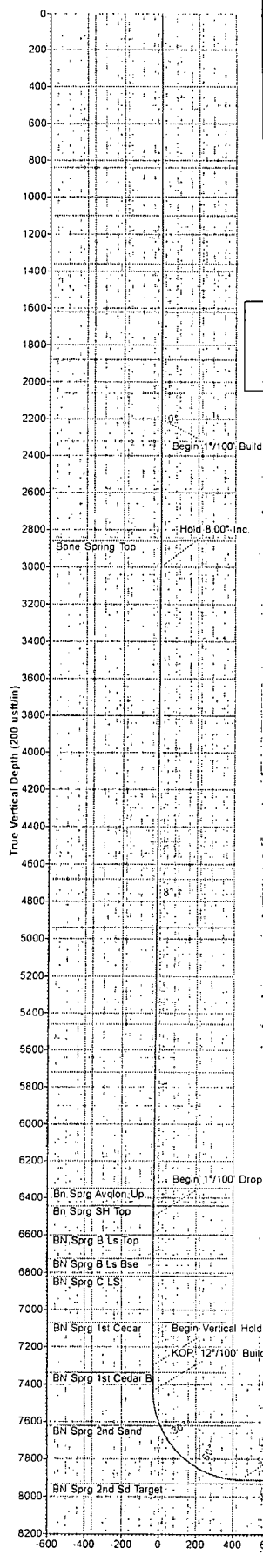
WELL DETAILS

-N/S	-E/W	North	Ground Level	3051.00	Latitude	Longitude
-0.00	0.00	424518.20	565572.20	32° 10' 0.98395 N	104° 7' 17.11867 W	



FORMATION TOP DETAILS

TVDPth	MDPath	Formation	DipAngle	DipDir
2860.01	2861.48	Bone Spring Top	-0.20	352.92
6349.09	6384.63	BN Sprg Avignon Up.	-0.20	352.92
6443.10	6479.56	BN Sprg SH Top	-0.20	352.92
6598.10	6638.86	BN Sprg B Ls Top	-0.20	352.92
6725.10	6763.76	BN Sprg B Ls Bse	-0.20	352.92
6819.10	6858.16	BN Sprg C Ls	-0.20	352.92
7067.11	7106.66	BN Sprg 1st Cedar	-0.20	352.92
7335.11	7375.72	BN Sprg 1st Cedar B	-0.20	352.92
7620.97	7665.86	BN Sprg 2nd Sand	-0.20	352.92
7923.94	9814.94	BN Sprg 2nd Sd Target	-0.20	352.92



Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well Buckshot State Com 4H
Company:	Legend Natural Gas IV, LP	TVD Reference:	WELL @ 3076.00usft (TBD)
Project:	Eddy County, NM (Nad27)	MD Reference:	WELL @ 3076.00usft (TBD)
Site:	Sec 31 T24S R 28E	North Reference:	Grid
Well:	Buckshot State Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan#1 041014 Option 1		

Project:	Eddy County, NM (Nad27)		
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: Sec 31 T24S R 28E					
Site Position:		Northing:	424,518.20 usft	Latitude:	32° 10' 0.98395 N
From:	Map	Easting:	565,572.20 usft	Longitude:	104° 7' 17.11867 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.11

Well:	Buckshot State Com 4H					
Well Position	+N/-S	0.00 usft	Northing:	424,518.20 usft	Latitude:	32° 10' 0.98395 N
	+E/-W	0.00 usft	Easting:	565,572.20 usft	Longitude:	104° 7' 17.11867 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,051.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	4/10/2014	7.49	59.97	48,243

Design:	Plan#1 041014 Option 1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	352.92

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	8.00	260.00	2,997.40	-9.68	-54.91	1.00	1.00	0.00	260.00	
6,537.02	8.00	260.00	6,500.00	-95.16	-539.69	0.00	0.00	0.00	0.00	
7,337.02	0.00	0.00	7,297.40	-104.84	-594.60	1.00	-1.00	0.00	180.00	
7,472.17	0.00	0.00	7,432.55	-104.84	-594.60	0.00	0.00	0.00	0.00	
8,218.00	89.50	359.96	7,910.00	368.45	-594.97	12.00	12.00	0.00	359.96	BHL Buckshot State C
9,992.46	89.50	359.96	7,925.48	2,142.85	-596.34	0.00	0.00	0.00	0.00	
10,025.68	90.16	359.96	7,925.58	2,176.06	-596.36	2.00	2.00	0.00	0.00	
12,668.63	90.16	359.96	7,918.00	4,819.00	-598.40	0.00	0.00	0.00	0.00	BHL Buckshot State C

Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well Buckshot State Com 4H
Company:	Legend Natural Gas iv, LP	TVD Reference:	WELL @ 3076.00usft (TBD)
Project:	Eddy County, NM (Nad27)	MD Reference:	WELL @ 3076.00usft (TBD)
Site:	Sec 31 T24S R 28E	North Reference:	Grid
Well:	Buckshot State Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan#1 041014 Option 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin 1°/100° Build									
2,300.00	1.00	260.00	2,299.99	-0.15	-0.86	-0.04	1.00	1.00	0.00
2,400.00	2.00	260.00	2,399.96	-0.61	-3.44	-0.18	1.00	1.00	0.00
2,500.00	3.00	260.00	2,499.86	-1.36	-7.73	-0.40	1.00	1.00	0.00
2,600.00	4.00	260.00	2,599.68	-2.42	-13.74	-0.71	1.00	1.00	0.00
2,700.00	5.00	260.00	2,699.37	-3.79	-21.47	-1.11	1.00	1.00	0.00
2,800.00	6.00	260.00	2,798.90	-5.45	-30.91	-1.60	1.00	1.00	0.00
2,861.48	6.61	260.00	2,860.01	-6.62	-37.56	-1.94	1.00	1.00	0.00
Bone Spring Top									
2,900.00	7.00	260.00	2,898.26	-7.42	-42.06	-2.18	1.00	1.00	0.00
3,000.00	8.00	260.00	2,997.40	-9.68	-54.91	-2.84	1.00	1.00	0.00
Hold 8.00° Inc.									
3,100.00	8.00	260.00	3,096.43	-12.10	-68.62	-3.55	0.00	0.00	0.00
3,200.00	8.00	260.00	3,195.46	-14.52	-82.32	-4.26	0.00	0.00	0.00
3,300.00	8.00	260.00	3,294.48	-16.93	-96.03	-4.97	0.00	0.00	0.00
3,400.00	8.00	260.00	3,393.51	-19.35	-109.74	-5.68	0.00	0.00	0.00
3,500.00	8.00	260.00	3,492.54	-21.77	-123.44	-6.39	0.00	0.00	0.00
3,600.00	8.00	260.00	3,591.56	-24.18	-137.15	-7.10	0.00	0.00	0.00
3,700.00	8.00	260.00	3,690.59	-26.60	-150.85	-7.81	0.00	0.00	0.00
3,800.00	8.00	260.00	3,789.62	-29.02	-164.56	-8.52	0.00	0.00	0.00
3,900.00	8.00	260.00	3,888.64	-31.43	-178.27	-9.23	0.00	0.00	0.00
4,000.00	8.00	260.00	3,987.67	-33.85	-191.97	-9.94	0.00	0.00	0.00
4,100.00	8.00	260.00	4,086.70	-36.27	-205.68	-10.64	0.00	0.00	0.00
4,200.00	8.00	260.00	4,185.72	-38.68	-219.38	-11.35	0.00	0.00	0.00
4,300.00	8.00	260.00	4,284.75	-41.10	-233.09	-12.06	0.00	0.00	0.00
4,400.00	8.00	260.00	4,383.78	-43.52	-246.79	-12.77	0.00	0.00	0.00
4,500.00	8.00	260.00	4,482.81	-45.93	-260.50	-13.48	0.00	0.00	0.00
4,600.00	8.00	260.00	4,581.83	-48.35	-274.21	-14.19	0.00	0.00	0.00
4,700.00	8.00	260.00	4,680.86	-50.77	-287.91	-14.90	0.00	0.00	0.00
4,800.00	8.00	260.00	4,779.89	-53.18	-301.62	-15.61	0.00	0.00	0.00

Database: Compass 5000 GCR DB
Company: Legend Natural Gas IV, LP
Project: Eddy County, NM (Nad27)
Site: Sec 31 T24S R 28E
Well: Buckshot State Com 4H
Wellbore: Wellbore #1
Design: Plan#1 041014 Option 1

Local Co-ordinate Reference: Well Buckshot State Com 4H
TVD Reference: WELL @ 3076.00usft (TBD)
MD Reference: WELL @ 3076.00usft (TBD)
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)
4,900.00	8.00	260.00	4,878.91	-55.60	-315.32	-16.32	0.00	0.00	0.00
5,000.00	8.00	260.00	4,977.94	-58.02	-329.03	-17.03	0.00	0.00	0.00
5,100.00	8.00	260.00	5,076.97	-60.43	-342.74	-17.74	0.00	0.00	0.00
5,200.00	8.00	260.00	5,175.99	-62.85	-356.44	-18.45	0.00	0.00	0.00
5,300.00	8.00	260.00	5,275.02	-65.27	-370.15	-19.16	0.00	0.00	0.00
5,400.00	8.00	260.00	5,374.05	-67.68	-383.85	-19.87	0.00	0.00	0.00
5,500.00	8.00	260.00	5,473.07	-70.10	-397.56	-20.58	0.00	0.00	0.00
5,600.00	8.00	260.00	5,572.10	-72.52	-411.27	-21.28	0.00	0.00	0.00
5,700.00	8.00	260.00	5,671.13	-74.93	-424.97	-21.99	0.00	0.00	0.00
5,800.00	8.00	260.00	5,770.15	-77.35	-438.68	-22.70	0.00	0.00	0.00
5,900.00	8.00	260.00	5,869.18	-79.77	-452.38	-23.41	0.00	0.00	0.00
6,000.00	8.00	260.00	5,968.21	-82.18	-466.09	-24.12	0.00	0.00	0.00
6,100.00	8.00	260.00	6,067.23	-84.60	-479.79	-24.83	0.00	0.00	0.00
6,200.00	8.00	260.00	6,166.26	-87.02	-493.50	-25.54	0.00	0.00	0.00
6,300.00	8.00	260.00	6,265.29	-89.43	-507.21	-26.25	0.00	0.00	0.00
6,364.63	8.00	260.00	6,349.09	-91.48	-518.81	-26.85	0.00	0.00	0.00
Bn Sprg Avqlon Up.									
6,400.00	8.00	260.00	6,364.31	-91.85	-520.91	-26.96	0.00	0.00	0.00
6,479.56	8.00	260.00	6,443.10	-93.77	-531.82	-27.52	0.00	0.00	0.00
Bn Sprg SH Top									
6,500.00	8.00	260.00	6,463.34	-94.27	-534.62	-27.67	0.00	0.00	0.00
6,537.02	8.00	260.00	6,500.00	-95.16	-539.69	-27.93	0.00	0.00	0.00
Begin 1°/100' Drop									
6,600.00	7.37	260.00	6,562.42	-96.62	-547.99	-28.36	1.00	-1.00	0.00
6,636.98	7.00	260.00	6,599.10	-97.43	-552.54	-28.60	1.00	-1.00	0.00
BN Sprg B Ls Top									
6,700.00	6.37	260.00	6,661.70	-98.70	-559.77	-28.97	1.00	-1.00	0.00
6,763.76	5.73	260.00	6,725.10	-99.87	-566.39	-29.31	1.00	-1.00	0.00
BN Sprg B Ls Bse									
6,800.00	5.37	260.00	6,761.17	-100.48	-569.84	-29.49	1.00	-1.00	0.00
6,858.16	4.79	260.00	6,819.10	-101.37	-574.91	-29.75	1.00	-1.00	0.00
BN Sprg C LS									
6,900.00	4.37	260.00	6,860.81	-101.95	-578.20	-29.92	1.00	-1.00	0.00
7,000.00	3.37	260.00	6,960.58	-103.12	-584.85	-30.27	1.00	-1.00	0.00
7,100.00	2.37	260.00	7,060.45	-103.99	-589.78	-30.52	1.00	-1.00	0.00
7,106.66	2.30	260.00	7,067.11	-104.04	-590.05	-30.54	1.00	-1.00	0.00
BN Sprg 1st Cedar									
7,200.00	1.37	260.00	7,160.40	-104.56	-592.99	-30.69	1.00	-1.00	0.00
7,300.00	0.37	260.00	7,260.38	-104.82	-594.49	-30.77	1.00	-1.00	0.00
7,337.02	0.00	0.00	7,297.40	-104.84	-594.60	-30.77	1.00	-1.00	270.13
Begin Vertical Hold									
7,375.72	0.00	0.00	7,336.11	-104.84	-594.60	-30.77	0.00	0.00	0.00
BN Sprg 1st Cedar B									
7,400.00	0.00	0.00	7,360.38	-104.84	-594.60	-30.77	0.00	0.00	0.00
7,472.17	0.00	0.00	7,432.55	-104.84	-594.60	-30.77	0.00	0.00	0.00
KOP, 12°/100' Build									
7,500.00	3.34	359.96	7,460.37	-104.03	-594.61	-29.97	12.00	12.00	0.00
7,600.00	15.34	359.96	7,558.86	-87.83	-594.62	-13.89	12.00	12.00	0.00
7,665.86	23.24	359.96	7,620.97	-66.09	-594.63	7.69	12.00	12.00	0.00
BN Sprg 2nd Sand									
7,700.00	27.34	359.96	7,651.84	-51.51	-594.65	22.16	12.00	12.00	0.00
7,800.00	39.34	359.96	7,735.23	3.35	-594.69	76.61	12.00	12.00	0.00
7,900.00	51.34	359.96	7,805.39	74.35	-594.74	147.07	12.00	12.00	0.00

Database: Compass 5000 GCR DB
Company: Legend Natural Gas IV, LP
Project: Eddy County, NM (Nad27)
Site: Sec 31 T24S R 28E
Well: Buckshot State Com 4H
Wellbore: Wellbore #1
Design: Plan#1 041014 Option 1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Buckshot State Com 4H
 WELL @ 3076.00usft (TBD)
 WELL @ 3076.00usft (TBD)
 Grid
 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)
8,000.00	63.34	359.96	7,859.26	158.38	-594.81	230.47	12.00	12.00	0.00
8,100.00	75.34	359.96	7,894.47	251.78	-594.88	323.17	12.00	12.00	0.00
8,200.00	87.34	359.96	7,909.50	350.46	-594.96	421.10	12.00	12.00	0.00
8,218.00	89.50	359.96	7,910.00	368.45	-594.97	438.96	12.00	12.00	0.00
LP, Hold 89.5° Inc									
8,300.00	89.50	359.96	7,910.72	450.45	-595.03	520.34	0.00	0.00	0.00
8,400.00	89.50	359.96	7,911.59	550.44	-595.11	619.58	0.00	0.00	0.00
8,500.00	89.50	359.96	7,912.46	650.44	-595.19	718.83	0.00	0.00	0.00
8,600.00	89.50	359.96	7,913.33	750.44	-595.26	818.07	0.00	0.00	0.00
8,700.00	89.50	359.96	7,914.21	850.43	-595.34	917.31	0.00	0.00	0.00
8,800.00	89.50	359.96	7,915.08	950.43	-595.42	1,016.56	0.00	0.00	0.00
8,900.00	89.50	359.96	7,915.95	1,050.42	-595.50	1,115.80	0.00	0.00	0.00
9,000.00	89.50	359.96	7,916.82	1,150.42	-595.57	1,215.04	0.00	0.00	0.00
9,100.00	89.50	359.96	7,917.70	1,250.42	-595.65	1,314.29	0.00	0.00	0.00
9,200.00	89.50	359.96	7,918.57	1,350.41	-595.73	1,413.53	0.00	0.00	0.00
9,300.00	89.50	359.96	7,919.44	1,450.41	-595.80	1,512.77	0.00	0.00	0.00
9,400.00	89.50	359.96	7,920.31	1,550.41	-595.88	1,612.02	0.00	0.00	0.00
9,500.00	89.50	359.96	7,921.19	1,650.40	-595.96	1,711.26	0.00	0.00	0.00
9,600.00	89.50	359.96	7,922.06	1,750.40	-596.03	1,810.51	0.00	0.00	0.00
9,700.00	89.50	359.96	7,922.93	1,850.39	-596.11	1,909.75	0.00	0.00	0.00
9,800.00	89.50	359.96	7,923.81	1,950.39	-596.19	2,008.99	0.00	0.00	0.00
9,814.94	89.50	359.96	7,923.94	1,965.33	-596.20	2,023.82	0.00	0.00	0.00
BN Sprg 2nd Sd Target									
9,900.00	89.50	359.96	7,924.68	2,050.39	-596.27	2,108.24	0.00	0.00	0.00
9,992.46	89.50	359.96	7,925.48	2,142.84	-596.34	2,200.00	0.00	0.00	0.00
Begin 2°/100' Build									
10,000.00	89.65	359.96	7,925.54	2,150.38	-596.34	2,207.48	2.00	2.00	0.00
10,025.68	90.16	359.96	7,925.58	2,176.06	-596.36	2,232.97	2.00	2.00	0.00
Hold 90.16° Inc									
10,100.00	90.16	359.96	7,925.37	2,250.38	-596.42	2,306.73	0.00	0.00	0.00
10,200.00	90.16	359.96	7,925.08	2,350.38	-596.50	2,405.97	0.00	0.00	0.00
10,300.00	90.16	359.96	7,924.80	2,450.38	-596.57	2,505.22	0.00	0.00	0.00
10,400.00	90.16	359.96	7,924.51	2,550.38	-596.65	2,604.47	0.00	0.00	0.00
10,500.00	90.16	359.96	7,924.22	2,650.38	-596.73	2,703.71	0.00	0.00	0.00
10,600.00	90.16	359.96	7,923.93	2,750.38	-596.81	2,802.96	0.00	0.00	0.00
10,700.00	90.16	359.96	7,923.65	2,850.38	-596.88	2,902.21	0.00	0.00	0.00
10,800.00	90.16	359.96	7,923.36	2,950.38	-596.96	3,001.45	0.00	0.00	0.00
10,900.00	90.16	359.96	7,923.07	3,050.38	-597.04	3,100.70	0.00	0.00	0.00
11,000.00	90.16	359.96	7,922.79	3,150.38	-597.11	3,199.95	0.00	0.00	0.00
11,100.00	90.16	359.96	7,922.50	3,250.38	-597.19	3,299.20	0.00	0.00	0.00
11,200.00	90.16	359.96	7,922.21	3,350.38	-597.27	3,398.44	0.00	0.00	0.00
11,300.00	90.16	359.96	7,921.93	3,450.38	-597.35	3,497.69	0.00	0.00	0.00
11,400.00	90.16	359.96	7,921.64	3,550.38	-597.42	3,596.94	0.00	0.00	0.00
11,500.00	90.16	359.96	7,921.35	3,650.38	-597.50	3,696.18	0.00	0.00	0.00
11,600.00	90.16	359.96	7,921.07	3,750.38	-597.58	3,795.43	0.00	0.00	0.00
11,700.00	90.16	359.96	7,920.78	3,850.38	-597.65	3,894.68	0.00	0.00	0.00
11,800.00	90.16	359.96	7,920.49	3,950.37	-597.73	3,993.92	0.00	0.00	0.00
11,900.00	90.16	359.96	7,920.21	4,050.37	-597.81	4,093.17	0.00	0.00	0.00
12,000.00	90.16	359.96	7,919.92	4,150.37	-597.88	4,192.42	0.00	0.00	0.00
12,100.00	90.16	359.96	7,919.63	4,250.37	-597.96	4,291.66	0.00	0.00	0.00
12,200.00	90.16	359.96	7,919.34	4,350.37	-598.04	4,390.91	0.00	0.00	0.00
12,300.00	90.16	359.96	7,919.06	4,450.37	-598.12	4,490.16	0.00	0.00	0.00
12,400.00	90.16	359.96	7,918.77	4,550.37	-598.19	4,589.41	0.00	0.00	0.00

Database: Compass 5000 GCR DB
 Company: Legend Natural Gas IV, LP
 Project: Eddy County, NM (Nad27)
 Site: Sec 31 T24S R 28E
 Well: Buckshot State Com 4H
 Wellbore: Wellbore #1
 Design: Plan#1 041014 Option 1

Local Co-ordinate Reference: Well Buckshot State Com 4H
 TVD Reference: WELL @ 3076.00usft (TBD)
 MD Reference: WELL @ 3076.00usft (TBD)
 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)
12,500.00	90.16	359.96	7,918.48	4,650.37	-598.27	4,688.65	0.00	0.00	0.00
12,600.00	90.16	359.96	7,918.20	4,750.37	-598.35	4,787.90	0.00	0.00	0.00
12,668.63	90.16	359.96	7,918.00	4,819.00	-598.40	4,856.01	0.00	0.00	0.00
TD at 12668.63									

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									
BHL Buckshot State Cor	0.00	0.00	7,918.00	4,819.00	-598.40	429,337.20	564,973.80	32° 10' 48.68629 N	104° 7' 23.97112 W
- plan hits target center									
- Point									
T1 Buckshot State Com	0.00	0.00	7,925.48	2,142.85	-596.34	426,661.05	564,975.86	32° 10' 22.20202 N	104° 7' 24.00793 W
- plan misses target center by 0.01usft at 9992.47usft MD (7925.48 TVD, 2142.85 N, -596.34 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,861.48	2,860.01	Bone Spring Top		-0.20	352.92
6,384.63	6,349.09	Bn Sprg Avqlon Up.		-0.20	352.92
6,479.56	6,443.10	Bn Sprg SH Top		-0.20	352.92
6,636.98	6,599.10	BN Sprg B Ls Top		-0.20	352.92
6,763.76	6,725.10	BN Sprg B Ls Bse		-0.20	352.92
6,858.16	6,819.10	BN Sprg C LS		-0.20	352.92
7,106.66	7,067.11	BN Sprg 1st Cedar		-0.20	352.92
7,375.72	7,336.11	BN Sprg 1st Cedar B		-0.20	352.92
7,665.86	7,620.97	BN Sprg 2nd Sand		-0.20	352.92
9,814.94	7,923.94	BN Sprg 2nd Sd Target		-0.20	352.92

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,200.00	2,200.00	0.00	0.00	Begin 1°/100' Build
3,000.00	2,997.40	-9.68	-54.91	Hold 8.00° Inc.
6,537.02	6,500.00	-95.16	-539.69	Begin 1°/100' Drop
7,337.02	7,297.40	-104.84	-594.60	Begin Vertical Hold
7,472.17	7,432.55	-104.84	-594.60	KOP, 12°/100' Build
8,218.00	7,910.00	368.45	-594.97	LP, Hold 89.5° Inc
9,992.46	7,925.48	2,142.84	-596.34	Begin2°/100' Build
10,025.68	7,925.58	2,176.06	-596.36	Hold 90.16° Inc
12,668.63	7,918.00	4,819.00	-598.40	TD at 12668.63