

30-015-30869

Nearburg Producing Co.

Eddy County, NM.
South Boyd 27 #10H
South Boyd 27 #10H
Lateral #1

Survey: MWD Survey #1

Standard Survey Report

13 February, 2008



Black Viper Energy
Survey Report



Company	Nearburg Producing Co.	Local Co-ordinate Reference	Well South Boyd 27 #10H
Project	Eddy County, NM	TVD Reference:	WELL @ 3449 00ft (Original Well Elev)
Site:	South Boyd 27 #10H	MD Reference:	WELL @ 3449 00ft (Original Well Elev)
Well:	South Boyd 27 #10H	North Reference:	Gnd
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 2003 14 1 0 Server DB

Project	Eddy 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	South Boyd 27 #10H				
Site Position		Northing	595,676 90 ft	Latitude:	32° 38' 15 159 N
From	Map	Easting	458,920 10 ft	Longitude:	104° 28' 0 429 W
Position Uncertainty	0 00 ft	Slot Radius:	"	Gnd Convergence:	-0 07 "

Well	South Boyd 27 #10H					
Well Position	+N/-S	0 00 ft	Northing	595,676 90 ft	Latitude.	32° 38' 15 159 N
	+E/-W	0 00 ft	Easting	458,920 10 ft	Longitude:	104° 28' 0 429 W
Position Uncertainty	0 00 ft	Wellhead Elevation.	ft	Ground Level:	0 00 ft	

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	09/20/2007	8 46	60 51	49,156

Design	Lateral #1				
Audit Notes:					
Version	1 0	Phase:	ACTUAL	Tie On Depth:	2,188 00
Vertical Section	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0 00	0 00	0 00	170 17	

Survey Program	Date 02/13/2008				
From	To	Survey (Wellbore)	Tool Name	Description	
(ft)	(ft)				
100 00	2,188 00	Gyro Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
2,251 00	4,128 00	MWD Survey #1 (Lateral #1)	MWD	MWD - Standard	

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	(°/100ft)
2,188 00	0 42	307 42	2,187 99	-0 61	-3 31	0 03	0 00	0 00	0 00
2,251 00	11 70	127 60	2,250 57	-4 38	1 58	4 58	19 24	17 90	-285 43
First MWD Survey									
2,262 00	13 90	124 90	2,261 30	-5 81	3 55	6 33	20 72	20 00	-24 55
2,272 00	15 90	117 30	2,270 96	-7 13	5 75	8 01	27 92	20 00	-76 00
2,282 00	15 70	118 00	2,280 58	-8 39	8 16	9 66	2 76	-2 00	7 00
2,291 00	18 60	140 20	2,289 19	-10 07	10 16	11 66	78 94	32 22	246 67
2,301 00	22 10	148 80	2,298 57	-12 90	12 16	14 79	45 95	35 00	86 00
2,311 00	25 20	151 40	2,307 73	-16 38	14 15	18 56	32 70	31 00	26 00
2,321 00	29 40	155 60	2,316 61	-20 49	16 18	22 95	46 18	42 00	42 00
2,331 00	34 20	154 30	2,325 11	-25 26	18 42	28 03	48 48	48 00	-13 00
2,341 00	37 60	157 30	2,333 21	-30 61	20 82	33 71	38 27	34 00	30 00

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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,353.00	42.20	161.70	2,342.41	-37.82	23.50	41.27	44.95	38.33	36.67
2,363.00	46.80	163.50	2,349.54	-44.51	25.59	48.22	47.70	46.00	18.00
2,373.00	51.90	164.50	2,356.06	-51.80	27.67	55.76	51.56	51.00	10.00
2,384.00	57.60	166.40	2,362.40	-60.49	29.93	64.71	53.70	51.82	17.27
2,394.00	62.90	167.50	2,367.36	-68.94	31.88	73.37	53.85	53.00	11.00
2,404.00	65.80	171.70	2,371.69	-77.81	33.51	82.38	47.68	29.00	42.00
2,416.00	70.50	175.10	2,376.16	-88.87	34.78	93.50	47.17	39.17	28.33
2,426.00	74.70	178.70	2,379.15	-98.39	35.29	102.97	54.25	42.00	36.00
2,447.00	83.70	173.70	2,383.08	-118.95	36.67	123.46	48.81	42.86	-23.81
2,478.00	88.40	181.80	2,385.22	-149.81	37.88	154.08	30.15	15.16	26.13
2,509.00	88.60	187.80	2,386.03	-180.68	35.29	184.05	19.36	0.65	19.35
2,572.00	87.50	166.80	2,388.18	-243.13	27.29	244.22	2.36	-1.75	-1.59
2,636.00	87.70	185.50	2,390.86	-306.71	20.44	305.70	2.05	0.31	-2.03
2,700.00	87.30	181.90	2,393.65	-370.50	16.31	367.85	5.65	-0.63	-5.63
2,763.00	84.70	181.10	2,398.05	-433.32	14.66	429.47	4.32	-4.13	-1.27
2,826.00	82.50	179.70	2,405.07	-495.92	14.22	491.07	4.13	-3.49	-2.22
2,889.00	82.10	179.70	2,413.51	-558.35	14.55	552.65	0.63	-0.63	0.00
2,952.00	84.00	179.70	2,421.13	-620.89	14.88	614.32	3.02	3.02	0.00
3,015.00	81.50	180.10	2,429.08	-683.38	14.99	675.91	4.02	-3.97	0.63
3,079.00	85.30	181.90	2,436.44	-746.93	13.88	738.34	6.56	5.94	2.81
3,142.00	86.00	181.10	2,441.22	-809.72	12.23	799.93	1.68	1.11	-1.27
3,205.00	87.70	180.40	2,444.68	-872.62	11.41	861.77	2.92	2.70	-1.11
3,269.00	89.60	180.70	2,446.18	-936.60	10.79	924.70	3.01	2.97	0.47
3,332.00	88.80	180.40	2,447.06	-999.59	10.19	986.66	1.36	-1.27	-0.48
3,395.00	88.40	179.40	2,448.60	-1,062.57	10.30	1,048.74	1.71	-0.63	-1.59
3,458.00	90.20	181.20	2,449.37	-1,125.56	9.97	1,110.75	4.04	2.86	2.86
3,521.00	90.90	181.00	2,448.77	-1,188.54	8.76	1,172.60	1.16	1.11	-0.32
3,585.00	91.90	180.70	2,447.20	-1,252.52	7.81	1,235.48	1.63	1.56	-0.47
3,647.00	90.20	181.00	2,446.07	-1,314.50	6.89	1,296.38	2.78	-2.74	0.48
3,710.00	91.00	181.70	2,445.41	-1,377.47	5.41	1,358.19	1.69	1.27	1.11
3,773.00	89.70	182.00	2,445.02	-1,440.44	3.37	1,419.89	2.12	-2.06	0.48
3,836.00	89.40	180.00	2,445.52	-1,503.42	2.27	1,481.76	3.21	-0.48	-3.17
3,900.00	88.60	177.80	2,446.64	-1,567.40	3.50	1,545.00	3.66	-1.25	-3.44
3,963.00	90.80	177.90	2,446.97	-1,630.35	5.87	1,607.44	3.50	3.49	0.16
4,027.00	91.50	177.00	2,445.68	-1,694.27	8.71	1,670.91	1.78	1.09	-1.41
4,084.00	89.60	177.20	2,445.13	-1,751.19	11.60	1,727.49	3.35	-3.33	0.35
Last MWD Survey									
4,125.28	88.21	179.94	2,460.00	-1,804.10	-1.50	1,777.38	7.44	-3.36	6.63
PBHL#2[SB27#10H]									
4,128.00	89.60	177.20	2,445.44	-1,795.14	13.75	1,771.15	112.88	51.02	-100.71
Proj To Bit									

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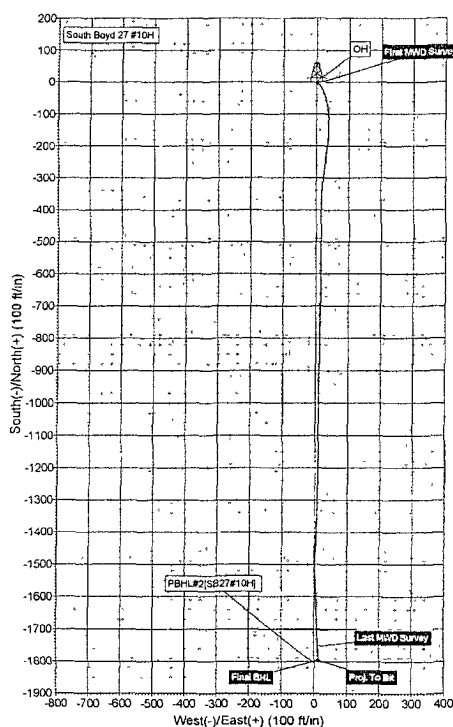
Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PBHL#2[SB27#10H]	0 00	360 00	2,460 00	-1,804 10	-1 50	593,872 80	458,918.60	32° 37' 57 307 N	104° 28' 0 420 W
- survey hits target									
- Point									
PBHL#1[SB27#10H]	0.00	360 00	2,370 00	-1,804 10	-1 50	593,872 80	458,918 60	32° 37' 57 307 N	104° 28' 0 420 W
- survey misses by 77 49ft at 4128 00ft MD (2445 44 TVD, -1795 14 N, 13 75 E)									
- Point									
Final BHL	0 00	2,445 44	-1,795.14	13 75	593,881 76	458,933 85	32° 37' 57 395 N	104° 28' 0 242 W	
- survey misses by 24 09ft at 4128 00ft MD (2460 05 TVD, -1806 82 N, -1 43 E)									
- Point									

Survey Annotations				
Measured	Vertical	Local Coordinates		Comment
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
2,251 00	2,250 57	-4 38	1 58	First MWD Survey
4,084 00	2,445 13	-1,751 19	11 60	Last MWD Survey
4,128 00	2,445 44	-1,795 14	13 75	Proj To Bit

Checked By _____ Approved By. _____ Date _____

NEARBURG PRODUCTION

Project Eddy County, NM
Site South Boyd 27 #10H
Well: South Boyd 27 #10H
Wellbore Lateral #1
Plan Final (South Boyd 27 #10H/Lateral #1)



ANNOTATIONS

TVD	MD	Annotation
2187.99	2188.00	Tie in
2203.21	2203.22	Top of Window
2209.99	2210.00	Base of Window
2214.98	2215.00	KOP - Build 27.51° / 100
2409.97	2521.22	EOC - Hold 88.21° Inc. 179.94° Az.

PROJECT DETAILS Eddy County NM

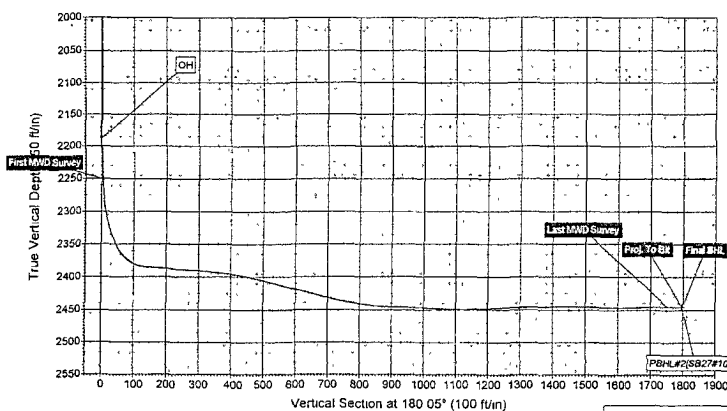
Geodetic System US State Plane 1627 (Exact solution)
Datum NAD 1983 (NADCON CONUS)
Eipsoid Clarke 1866
Zone New Mexico East 3001
System Datum Mean Sea Level



Azimuth to Grid North
True North 0.07°
Magnetic North 8.53°
Magnetic Field
Strength 49155 nT
Dip Angle 60.51°
Date 05/02/2007
Model IGRF200510

SECTION DETAILS

Sec	MD	Inc	Az	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	2188.00	0.42	307.42	2187.99	-0.61	-3.31	0.03	0.00	0.61	
2	2203.22	0.42	307.42	2203.21	-0.54	-3.40	0.02	0.00	0.54	
3	2210.00	3.42	180.00	2209.99	-0.72	-3.42	54.48	-132.65	0.73	
4	2215.00	3.42	180.00	2214.98	-1.02	-3.42	0.00	0.00	1.03	
5	2522.08	88.21	179.94	2410.00	-201.68	-3.22	27.81	-0.05	201.68	
6	4125.28	88.21	179.94	2460.00	-1904.10	-1.50	0.00	0.00	1804.10	PBHL#2(SB27#10H)



Plan: Final (South Boyd 27 #10H/Lateral #1)
Created By: L.D. Baker Date: February 12, 2008