

Nearburg Producing Co.

Laguna 23 Federal Com, Well No. 1H
Lea County, New Mexico
Quote No.: 020912050

Aim
Directional Services, LLC

SITE DETAILS: Laguna 23 Federal Com #1H

Site Centre Northing: 565511.20
Easting: 746730.10

Positional Uncertainty: 0.0
Convergence: 0.45
Local North: Grd

PROJECT DETAILS: Lea County, New Mexico

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

Formation Tops:

Rusler: 1578' KBTVD
Salt: 11953' KBTVD
Base Salt: 3428' KBTVD
Yates: 3503' KBTVD
Captain Reef: 3623' KBTVD
Delaware: 5153' KBTVD
Bone Spring: 8378' KBTVD
1st Bone Spring Sand: 9578' KBTVD
2nd Bone Spring Sand: 10178' KBTVD
3rd Bone Spring Sand: 10928' KBTVD
Wolfcamp Marker: 11128' KBTVD



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.99°

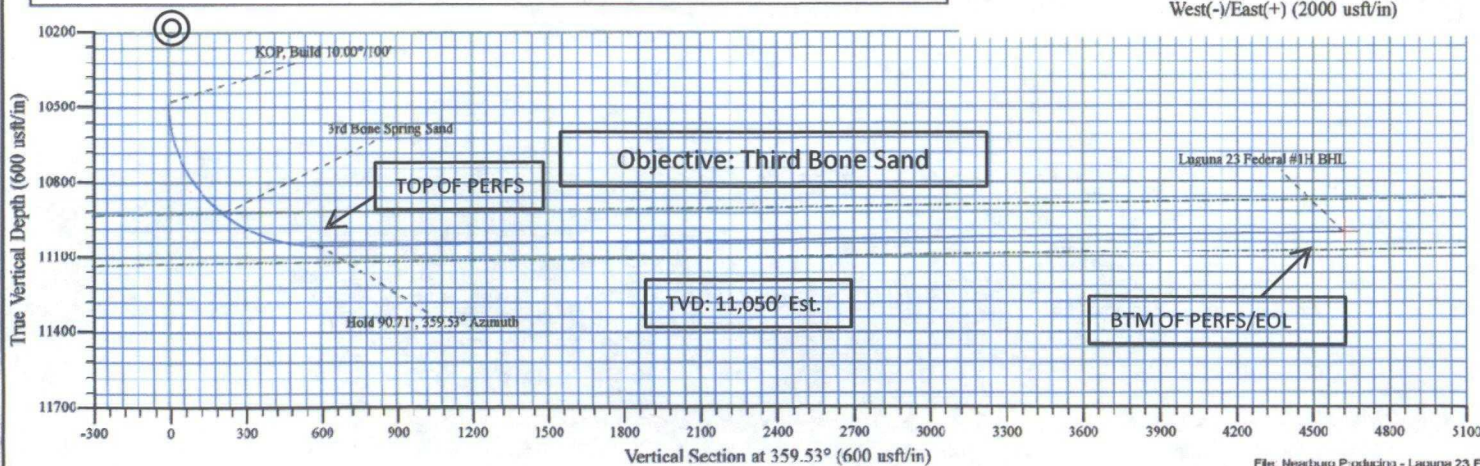
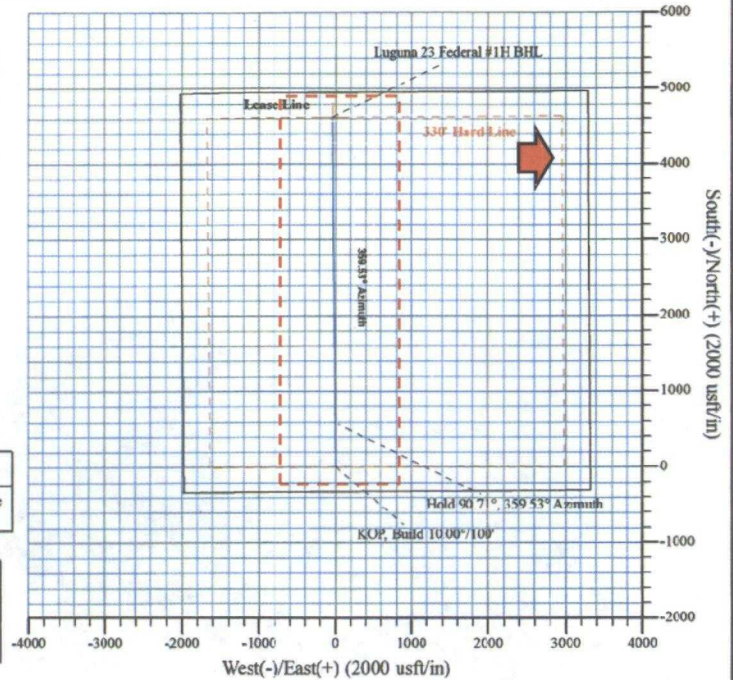
Magnetic Field
Strength: 48654.2nT
Dip Angle: 60.45°
Date: 1/16/2013
Model: WMM_2010

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Laguna 23 Federal #1H BHL	11003.0	4620.0	-38.3	570131.20	746691.80	32° 33' 53.450 N	103° 31' 57.371 W	Point

SECTION DETAILS

Sec	MD	Inc	Az	TVD	+N/-S	+E/-W	Dleg	IFace	VFace	Target	Annotation
1	10480.0	0.00	0.00	10480.0	0.0	0.0	0.00	0.00	0.0	0.0	KOP, Build 10.00°/100
2	11387.1	90.71	359.53	11052.9	580.0	-4.8	10.00	359.53	580.0	0.0	Hold 90.71°, 359.53° Azimuth
3	15427.5	90.71	359.53	11003.0	4620.0	-38.3	0.00	0.00	4620.2	0.0	PBHL - Lateral



Drawn By: ALR
Date Created: 01/16/13
Date Revised: 01/16/13

File: Nearburg Producing - Laguna 23 Federal Com #1H Lateral 1r1.wpc

Aim Directional Services, LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #1H
Company:	Nearburg Producing Company	TVD Reference:	WELL @ 3703.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3703.0usft (Original Well Elev)
Site:	Laguna 23 Federal Com #1H	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	#1H		
Design:	Lateral 1r1		

Project	Lea County, New Mexico		
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	Laguna 23 Federal Com #1H		
Site Position:		Northing:	565,511.20 usft
From:	Map	Easting:	746,730.10 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 33' 7.732 N
		Longitude:	103° 31' 57.330 W
		Grid Convergence:	0.43 °

Well	#1H		
Well Position	+N/-S	0.0 usft	Northing: 565,511.20 usft
	+E/-W	0.0 usft	Easting: 746,730.10 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 33' 7.732 N
			Longitude: 103° 31' 57.330 W
			Ground Level: 3,683.0 usft

Wellbore	#1H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	1/16/2013	7.42	60.45	48,654

Design	Lateral 1r1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	10,480.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.53

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
10,480.0	0.00	0.00	10,480.0	0.0	0.0	0.00	0.00	0.00	0.00	
11,387.1	90.71	359.53	11,052.9	580.0	-4.8	10.00	10.00	-0.05	359.53	
15,427.5	90.71	359.53	11,003.0	4,620.0	-38.3	0.00	0.00	0.00	0.00	Luguna 23 Federal

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Project:	Lea County, New Mexico	MD Reference:	WELL @ 3703.0usft (Original Well Elev)
Site:	Laguna 23 Federal Com #1H	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	#1H		
Design:	Lateral 1r1		

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)
10,480.0	0.00	0.00	10,480.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP, Build 10.00°/100'									
10,500.0	2.00	359.53	10,500.0	0.3	0.0	0.3	10.00	10.00	0.00
10,550.0	7.00	359.53	10,549.8	4.3	0.0	4.3	10.00	10.00	0.00
10,600.0	12.00	359.53	10,599.1	12.5	-0.1	12.5	10.00	10.00	0.00
10,650.0	17.00	359.53	10,647.5	25.0	-0.2	25.0	10.00	10.00	0.00
10,700.0	22.00	359.53	10,694.6	41.7	-0.3	41.7	10.00	10.00	0.00
10,750.0	27.00	359.53	10,740.1	62.4	-0.5	62.4	10.00	10.00	0.00
10,800.0	32.00	359.53	10,783.6	87.1	-0.7	87.1	10.00	10.00	0.00
10,850.0	37.00	359.53	10,824.8	115.4	-1.0	115.4	10.00	10.00	0.00
10,900.0	42.00	359.53	10,863.4	147.2	-1.2	147.2	10.00	10.00	0.00
10,950.0	47.00	359.53	10,899.0	182.2	-1.5	182.2	10.00	10.00	0.00
10,990.2	51.02	359.53	10,925.4	212.5	-1.8	212.5	10.00	10.00	0.00
3rd Bone Spring Sand									
11,000.0	52.00	359.53	10,931.5	220.2	-1.8	220.2	10.00	10.00	0.00
11,050.0	57.00	359.53	10,960.5	260.9	-2.2	260.9	10.00	10.00	0.00
11,100.0	62.00	359.53	10,985.9	304.0	-2.5	304.0	10.00	10.00	0.00
11,150.0	67.00	359.53	11,007.4	349.1	-2.9	349.1	10.00	10.00	0.00
11,200.0	72.00	359.53	11,024.9	395.9	-3.3	395.9	10.00	10.00	0.00
11,250.0	77.00	359.53	11,038.3	444.1	-3.7	444.1	10.00	10.00	0.00
11,300.0	82.00	359.53	11,047.4	493.2	-4.1	493.2	10.00	10.00	0.00
11,350.0	87.00	359.53	11,052.2	543.0	-4.5	543.0	10.00	10.00	0.00
11,387.1	90.71	359.53	11,052.9	580.0	-4.8	580.1	9.99	9.99	0.00
Hold 90.71°, 359.53° Azimuth									
11,400.0	90.71	359.53	11,052.8	592.9	-4.9	593.0	0.00	0.00	0.00
11,500.0	90.71	359.53	11,051.5	692.9	-5.7	692.9	0.00	0.00	0.00
11,600.0	90.71	359.53	11,050.3	792.9	-6.6	792.9	0.00	0.00	0.00
11,700.0	90.71	359.53	11,049.0	892.9	-7.4	892.9	0.00	0.00	0.00
11,800.0	90.71	359.53	11,047.8	992.9	-8.2	992.9	0.00	0.00	0.00
11,900.0	90.71	359.53	11,046.6	1,092.9	-9.1	1,092.9	0.00	0.00	0.00
12,000.0	90.71	359.53	11,045.3	1,192.9	-9.9	1,192.9	0.00	0.00	0.00
12,100.0	90.71	359.53	11,044.1	1,292.9	-10.7	1,292.9	0.00	0.00	0.00
12,200.0	90.71	359.53	11,042.9	1,392.8	-11.5	1,392.9	0.00	0.00	0.00
12,300.0	90.71	359.53	11,041.6	1,492.8	-12.4	1,492.9	0.00	0.00	0.00
12,400.0	90.71	359.53	11,040.4	1,592.8	-13.2	1,592.9	0.00	0.00	0.00
12,500.0	90.71	359.53	11,039.2	1,692.8	-14.0	1,692.9	0.00	0.00	0.00
12,600.0	90.71	359.53	11,037.9	1,792.8	-14.9	1,792.9	0.00	0.00	0.00
12,700.0	90.71	359.53	11,036.7	1,892.8	-15.7	1,892.9	0.00	0.00	0.00
12,800.0	90.71	359.53	11,035.5	1,992.8	-16.5	1,992.8	0.00	0.00	0.00
12,900.0	90.71	359.53	11,034.2	2,092.8	-17.3	2,092.8	0.00	0.00	0.00
13,000.0	90.71	359.53	11,033.0	2,192.8	-18.2	2,192.8	0.00	0.00	0.00
13,100.0	90.71	359.53	11,031.8	2,292.7	-19.0	2,292.8	0.00	0.00	0.00
13,200.0	90.71	359.53	11,030.5	2,392.7	-19.8	2,392.8	0.00	0.00	0.00
13,300.0	90.71	359.53	11,029.3	2,492.7	-20.7	2,492.8	0.00	0.00	0.00
13,400.0	90.71	359.53	11,028.0	2,592.7	-21.5	2,592.8	0.00	0.00	0.00
13,500.0	90.71	359.53	11,026.8	2,692.7	-22.3	2,692.8	0.00	0.00	0.00
13,600.0	90.71	359.53	11,025.6	2,792.7	-23.2	2,792.8	0.00	0.00	0.00
13,700.0	90.71	359.53	11,024.3	2,892.7	-24.0	2,892.8	0.00	0.00	0.00
13,800.0	90.71	359.53	11,023.1	2,992.7	-24.8	2,992.8	0.00	0.00	0.00
13,900.0	90.71	359.53	11,021.9	3,092.7	-25.6	3,092.8	0.00	0.00	0.00
14,000.0	90.71	359.53	11,020.6	3,192.6	-26.5	3,192.8	0.00	0.00	0.00
14,100.0	90.71	359.53	11,019.4	3,292.6	-27.3	3,292.8	0.00	0.00	0.00
14,200.0	90.71	359.53	11,018.2	3,392.6	-28.1	3,392.7	0.00	0.00	0.00

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Project:	Lea County, New Mexico	MD Reference:	WELL @ 3703.0usft (Original Well Elev)
Site:	Laguna 23 Federal Com #1H	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	#1H		
Design:	Lateral 1r1		

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)
14,300.0	90.71	359.53	11,016.9	3,492.6	-29.0	3,492.7	0.00	0.00	0.00
14,400.0	90.71	359.53	11,015.7	3,592.6	-29.8	3,592.7	0.00	0.00	0.00
14,500.0	90.71	359.53	11,014.5	3,692.6	-30.6	3,692.7	0.00	0.00	0.00
14,600.0	90.71	359.53	11,013.2	3,792.6	-31.4	3,792.7	0.00	0.00	0.00
14,700.0	90.71	359.53	11,012.0	3,892.6	-32.3	3,892.7	0.00	0.00	0.00
14,800.0	90.71	359.53	11,010.8	3,992.6	-33.1	3,992.7	0.00	0.00	0.00
14,900.0	90.71	359.53	11,009.5	4,092.5	-33.9	4,092.7	0.00	0.00	0.00
15,000.0	90.71	359.53	11,008.3	4,192.5	-34.8	4,192.7	0.00	0.00	0.00
15,100.0	90.71	359.53	11,007.0	4,292.5	-35.6	4,292.7	0.00	0.00	0.00
15,200.0	90.71	359.53	11,005.8	4,392.5	-36.4	4,392.7	0.00	0.00	0.00
15,300.0	90.71	359.53	11,004.6	4,492.5	-37.2	4,492.7	0.00	0.00	0.00
15,400.0	90.71	359.53	11,003.3	4,592.5	-38.1	4,592.7	0.00	0.00	0.00
15,427.5	90.71	359.53	11,003.0	4,620.0	-38.3	4,620.1	0.00	0.00	0.00
PBHL - Lateral									

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									
Luguna 23 Federal #1	0.00	0.00	11,003.0	4,620.0	-38.3	570,131.20	746,691.80	32° 33' 53.450 N	103° 31' 57.371 W
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
10,990.2	10,925.4	3rd Bone Spring Sand		-0.71	359.53

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Comment
		+N/-S (usft)	+E/-W (usft)
10,480.0	10,480.0	0.0	0.0
11,387.1	11,052.9	580.0	-4.8
15,427.5	11,003.0	4,620.0	-38.3
KOP, Build 10.00°/100'			
Hold 90.71°, 359.53° Azimuth			
PBHL - Lateral			