

Conoco Phillips Company

Arapahoe County, Colorado

Sec. 14-T4S-R65W

Prosper Farms 4-65 13-14 1H

Plan A (Lateral)

Plan: Rev A1 (Lateral)

Sperry Drilling Services

Proposal Report

16 December, 2013

Well Coordinates: 1,682,895.51 N, 3,242,064.33 E (39° 42' 18.73" N, 104° 38' 22.76" W)

Ground Level: 5,691.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Prosper Farms 4-65 13-14 1H

KB 24 ft @ 5715.00usft (H&P 280)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Arapahoe County, Colorado
Site: Sec. 14-T4S-R65W
Well: Prosper Farms 4-65 13-14 1H
Wellbore: Plan A (Lateral)
Plan: Rev A1 (Lateral)

Conoco Phillips Company



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	
3	2415.00	2.30	0.00	2414.97	2.31	0.00	2.00	0.00	0.03	
4	6903.65	2.30	0.00	6900.00	182.45	0.00	0.00	0.00	2.27	
5	7018.65	0.00	0.00	7014.97	184.75	0.00	2.00	180.00	2.30	
6	7249.77	0.00	0.00	7246.09	184.75	0.00	0.00	0.00	2.30	
7	8156.84	90.71	90.77	7819.00	176.98	579.97	10.00	90.77	582.13	
8	14723.79	90.71	90.77	7738.00	89.03	7145.84	0.00	0.00	7146.40	Prosper Farms 4-65 13-14 1H_RevA1(Lateral)_BHL Tgt

Plan: Rev A1 (Lateral) (Prosper Farms 4-65 13-14 1H/Plan A (Lateral))

Created By: Kansa B. Becker

Date: 9:24, December 16 2013

Checked: _____

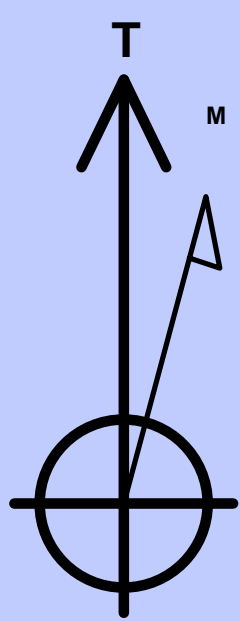
Date: _____

Reviewed: _____

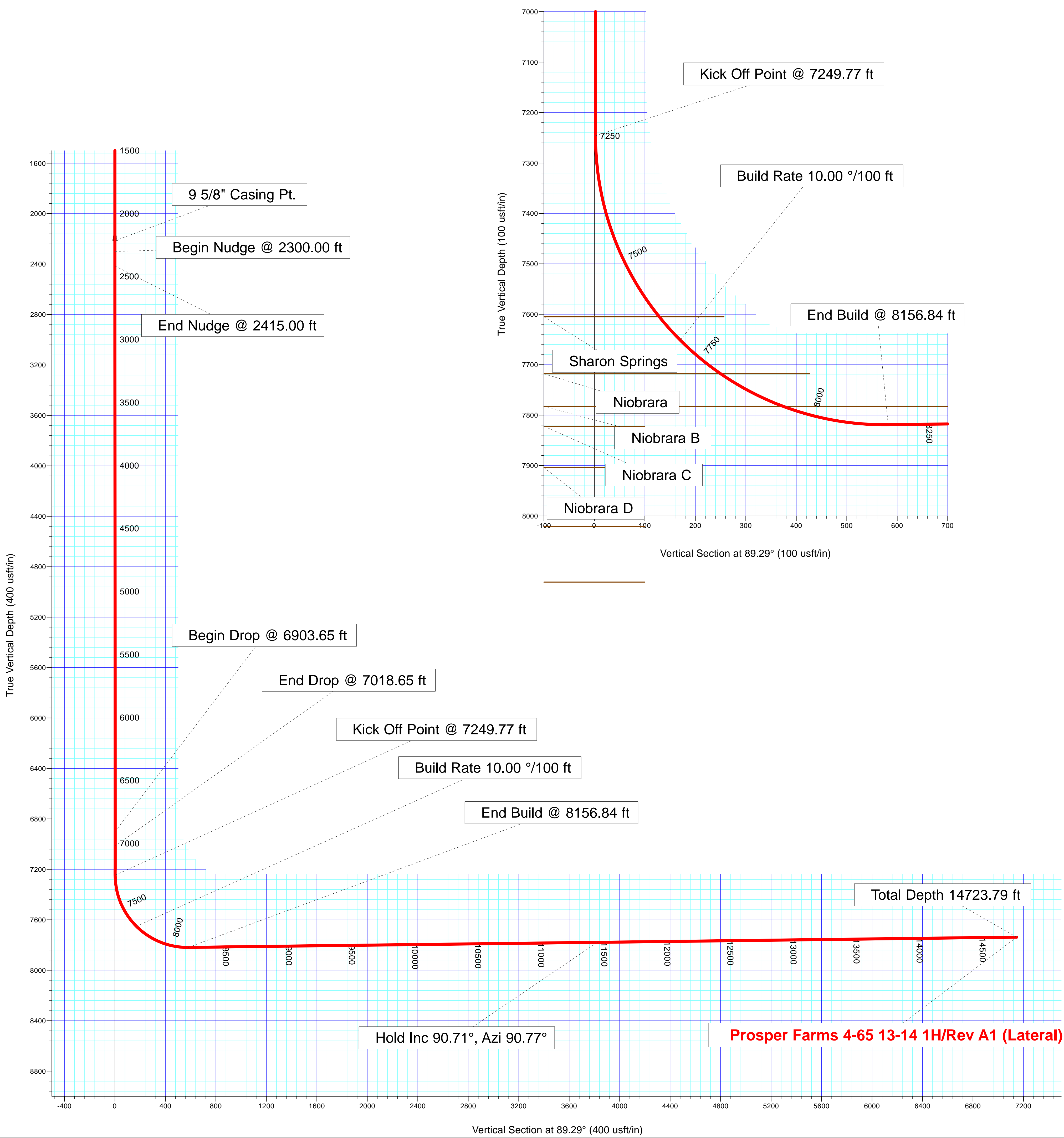
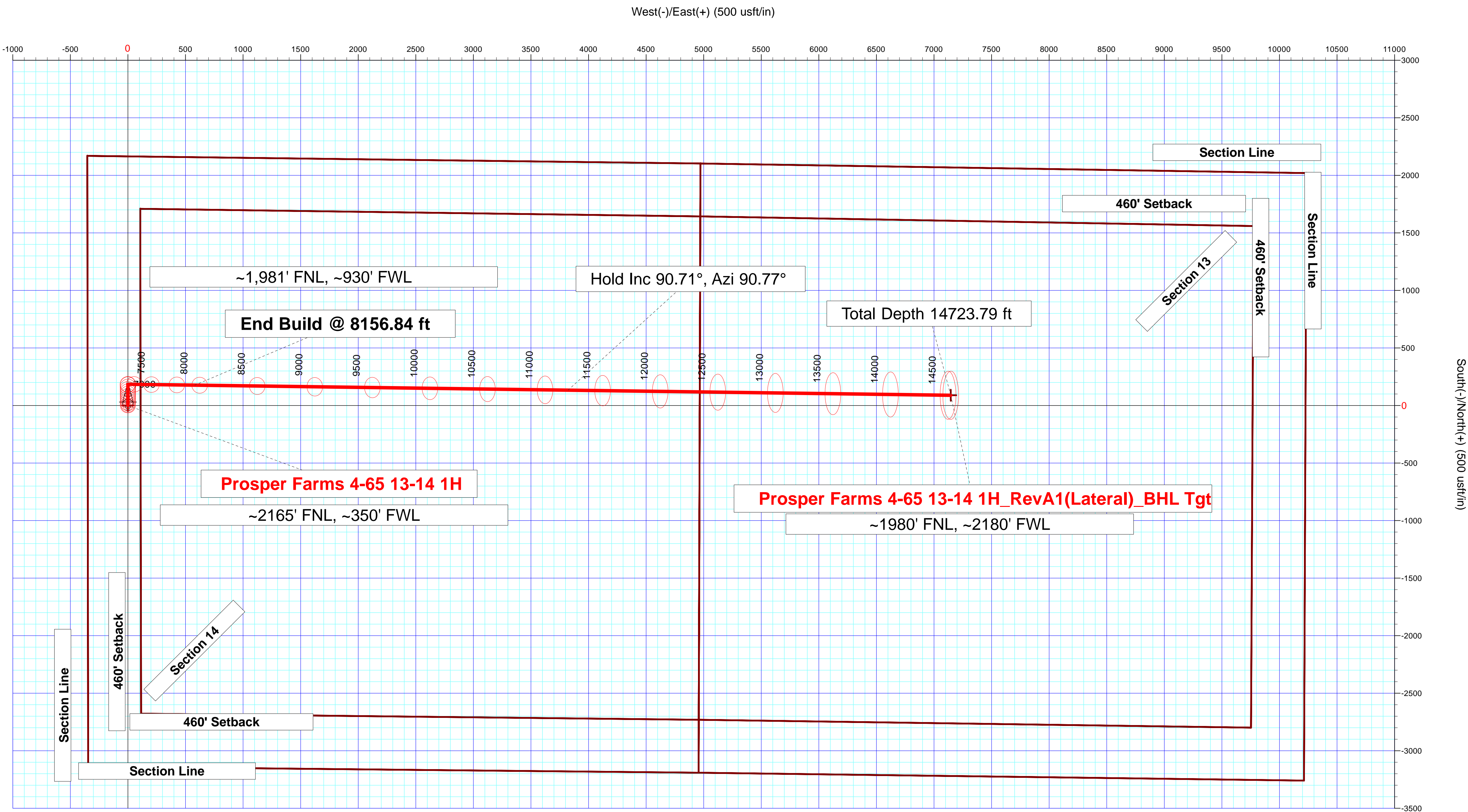
Date: _____

Approved: _____

Date: _____



Azimuths to True North
Magnetic Field
Magnetic North: 8.44°
Strength: 52420.4snT
Dip Angle: 66.41°
Date: 12/31/2013
Model: BGGM2013



Plan Report for Prosper Farms 4-65 13-14 1H - Rev A1 (Lateral)

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)	Toolface Azimuth (°)
0.00	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	0.00
200.00	0.00	0.00	200.00	0.00	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	0.00
400.00	0.00	0.00	400.00	0.00	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	0.00
600.00	0.00	0.00	600.00	0.00	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	0.00
800.00	0.00	0.00	800.00	0.00	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	0.00
1,000.00	0.00	0.00	1,000.00	0.00	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	0.00
1,200.00	0.00	0.00	1,200.00	0.00	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	0.00
1,400.00	0.00	0.00	1,400.00	0.00	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	0.00
1,600.00	0.00	0.00	1,600.00	0.00	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	0.00
1,785.00	0.00	0.00	1,785.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
1,800.00	0.00	0.00	1,800.00	0.00	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	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,015.00	0.00	0.00	2,015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Shale										
2,100.00	0.00	0.00	2,100.00	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	0.00
2,215.00	0.00	0.00	2,215.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9 5/8" Casing Pt.										
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2300.00 ft										
2,400.00	2.00	0.00	2,399.98	1.75	0.00	0.02	2.00	2.00	0.00	0.00
2,415.00	2.30	0.00	2,414.97	2.31	0.00	0.03	2.00	2.00	0.00	0.00
End Nudge @ 2415.00 ft										
2,500.00	2.30	0.00	2,499.90	5.72	0.00	0.07	0.00	0.00	0.00	0.00
2,600.00	2.30	0.00	2,599.82	9.73	0.00	0.12	0.00	0.00	0.00	0.00
2,700.00	2.30	0.00	2,699.74	13.75	0.00	0.17	0.00	0.00	0.00	0.00
2,800.00	2.30	0.00	2,799.66	17.76	0.00	0.22	0.00	0.00	0.00	0.00
2,900.00	2.30	0.00	2,899.58	21.77	0.00	0.27	0.00	0.00	0.00	0.00
3,000.00	2.30	0.00	2,999.50	25.78	0.00	0.32	0.00	0.00	0.00	0.00
3,100.00	2.30	0.00	3,099.42	29.80	0.00	0.37	0.00	0.00	0.00	0.00
3,200.00	2.30	0.00	3,199.34	33.81	0.00	0.42	0.00	0.00	0.00	0.00
3,300.00	2.30	0.00	3,299.26	37.82	0.00	0.47	0.00	0.00	0.00	0.00
3,400.00	2.30	0.00	3,399.18	41.84	0.00	0.52	0.00	0.00	0.00	0.00
3,500.00	2.30	0.00	3,499.10	45.85	0.00	0.57	0.00	0.00	0.00	0.00
3,600.00	2.30	0.00	3,599.01	49.86	0.00	0.62	0.00	0.00	0.00	0.00
3,700.00	2.30	0.00	3,698.93	53.88	0.00	0.67	0.00	0.00	0.00	0.00
3,800.00	2.30	0.00	3,798.85	57.89	0.00	0.72	0.00	0.00	0.00	0.00
3,900.00	2.30	0.00	3,898.77	61.90	0.00	0.77	0.00	0.00	0.00	0.00
4,000.00	2.30	0.00	3,998.69	65.92	0.00	0.82	0.00	0.00	0.00	0.00
4,100.00	2.30	0.00	4,098.61	69.93	0.00	0.87	0.00	0.00	0.00	0.00
4,200.00	2.30	0.00	4,198.53	73.94	0.00	0.92	0.00	0.00	0.00	0.00
4,300.00	2.30	0.00	4,298.45	77.96	0.00	0.97	0.00	0.00	0.00	0.00
4,400.00	2.30	0.00	4,398.37	81.97	0.00	1.02	0.00	0.00	0.00	0.00
4,500.00	2.30	0.00	4,498.29	85.98	0.00	1.07	0.00	0.00	0.00	0.00
4,600.00	2.30	0.00	4,598.21	90.00	0.00	1.12	0.00	0.00	0.00	0.00
4,700.00	2.30	0.00	4,698.13	94.01	0.00	1.17	0.00	0.00	0.00	0.00
4,800.00	2.30	0.00	4,798.05	98.02	0.00	1.22	0.00	0.00	0.00	0.00

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A1 (Lateral)

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)	Toolface Azimuth (°)
4,900.00	2.30	0.00	4,897.97	102.04	0.00	1.27	0.00	0.00	0.00	0.00
5,000.00	2.30	0.00	4,997.89	106.05	0.00	1.32	0.00	0.00	0.00	0.00
5,100.00	2.30	0.00	5,097.81	110.06	0.00	1.37	0.00	0.00	0.00	0.00
5,200.00	2.30	0.00	5,197.73	114.07	0.00	1.42	0.00	0.00	0.00	0.00
5,300.00	2.30	0.00	5,297.64	118.09	0.00	1.47	0.00	0.00	0.00	0.00
5,400.00	2.30	0.00	5,397.56	122.10	0.00	1.52	0.00	0.00	0.00	0.00
5,500.00	2.30	0.00	5,497.48	126.11	0.00	1.57	0.00	0.00	0.00	0.00
5,600.00	2.30	0.00	5,597.40	130.13	0.00	1.62	0.00	0.00	0.00	0.00
5,700.00	2.30	0.00	5,697.32	134.14	0.00	1.67	0.00	0.00	0.00	0.00
5,800.00	2.30	0.00	5,797.24	138.15	0.00	1.72	0.00	0.00	0.00	0.00
5,900.00	2.30	0.00	5,897.16	142.17	0.00	1.77	0.00	0.00	0.00	0.00
6,000.00	2.30	0.00	5,997.08	146.18	0.00	1.82	0.00	0.00	0.00	0.00
6,100.00	2.30	0.00	6,097.00	150.19	0.00	1.87	0.00	0.00	0.00	0.00
6,200.00	2.30	0.00	6,196.92	154.21	0.00	1.92	0.00	0.00	0.00	0.00
6,300.00	2.30	0.00	6,296.84	158.22	0.00	1.97	0.00	0.00	0.00	0.00
6,400.00	2.30	0.00	6,396.76	162.23	0.00	2.02	0.00	0.00	0.00	0.00
6,500.00	2.30	0.00	6,496.68	166.25	0.00	2.07	0.00	0.00	0.00	0.00
6,600.00	2.30	0.00	6,596.60	170.26	0.00	2.12	0.00	0.00	0.00	0.00
6,700.00	2.30	0.00	6,696.52	174.27	0.00	2.17	0.00	0.00	0.00	0.00
6,800.00	2.30	0.00	6,796.44	178.29	0.00	2.22	0.00	0.00	0.00	0.00
6,900.00	2.30	0.00	6,896.36	182.30	0.00	2.27	0.00	0.00	0.00	0.00
6,903.65	2.30	0.00	6,900.00	182.45	0.00	2.27	0.00	0.00	0.00	0.00
Begin Drop @ 6903.65 ft										
7,000.00	0.37	0.00	6,996.32	184.69	0.00	2.30	2.00	-2.00	0.00	180.00
7,018.65	0.00	0.00	7,014.97	184.75	0.00	2.30	2.00	-2.00	0.00	-180.00
End Drop @ 7018.65 ft										
7,100.00	0.00	0.00	7,096.32	184.75	0.00	2.30	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,196.32	184.75	0.00	2.30	0.00	0.00	0.00	0.00
7,249.77	0.00	0.00	7,246.09	184.75	0.00	2.30	0.00	0.00	0.00	0.00
Kick Off Point @ 7249.77 ft										
7,300.00	5.02	90.77	7,296.26	184.72	2.20	4.50	10.00	10.00	0.00	90.77
7,400.00	15.02	90.77	7,394.61	184.49	19.58	21.88	10.00	10.00	0.00	0.00
7,500.00	25.02	90.77	7,488.44	184.03	53.78	56.06	10.00	10.00	0.00	0.00
7,600.00	35.02	90.77	7,574.92	183.36	103.74	106.02	10.00	10.00	0.00	0.00
7,637.63	38.79	90.77	7,605.00	183.06	126.33	128.60	10.00	10.00	0.00	0.00
Sharon Springs										
7,700.00	45.02	90.77	7,651.40	182.50	167.96	170.23	10.00	10.00	0.00	0.00
Build Rate 10.00 °/100 ft										
7,800.00	55.02	90.77	7,715.56	181.48	244.49	246.73	10.00	10.00	0.00	0.00
7,804.27	55.45	90.77	7,718.00	181.43	248.00	250.24	10.00	10.00	0.00	0.00
Niobrara										
7,900.00	65.02	90.77	7,765.46	180.32	331.00	333.22	10.00	10.00	0.00	0.00
7,945.44	69.57	90.77	7,783.00	179.76	372.90	375.11	10.00	10.00	0.00	0.00
Niobrara B										
8,000.00	75.02	90.77	7,799.58	179.06	424.85	427.05	10.00	10.00	0.00	0.00
8,100.00	85.02	90.77	7,816.89	177.74	523.21	525.38	10.00	10.00	0.00	0.00
8,156.84	90.71	90.77	7,819.00	176.98	579.97	582.13	10.00	10.00	0.00	0.00
End Build @ 8156.84 ft										
8,200.00	90.71	90.77	7,818.47	176.41	623.13	625.28	0.00	0.00	0.00	0.00
8,300.00	90.71	90.77	7,817.24	175.07	723.11	725.24	0.00	0.00	0.00	0.00
8,400.00	90.71	90.77	7,816.00	173.73	823.10	825.20	0.00	0.00	0.00	0.00
8,500.00	90.71	90.77	7,814.77	172.39	923.08	925.16	0.00	0.00	0.00	0.00
8,600.00	90.71	90.77	7,813.54	171.05	1,023.06	1,025.12	0.00	0.00	0.00	0.00
8,700.00	90.71	90.77	7,812.30	169.71	1,123.05	1,125.07	0.00	0.00	0.00	0.00
8,800.00	90.71	90.77	7,811.07	168.37	1,223.03	1,225.03	0.00	0.00	0.00	0.00
8,900.00	90.71	90.77	7,809.84	167.03	1,323.01	1,324.99	0.00	0.00	0.00	0.00
9,000.00	90.71	90.77	7,808.60	165.69	1,423.00	1,424.95	0.00	0.00	0.00	0.00
9,100.00	90.71	90.77	7,807.37	164.35	1,522.98	1,524.91	0.00	0.00	0.00	0.00
9,200.00	90.71	90.77	7,806.14	163.01	1,622.96	1,624.87	0.00	0.00	0.00	0.00

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A1 (Lateral)

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)	Toolface Azimuth (°)
9,300.00	90.71	90.77	7,804.90	161.67	1,722.95	1,724.83	0.00	0.00	0.00	0.00
9,400.00	90.71	90.77	7,803.67	160.34	1,822.93	1,824.79	0.00	0.00	0.00	0.00
9,500.00	90.71	90.77	7,802.44	159.00	1,922.92	1,924.75	0.00	0.00	0.00	0.00
9,600.00	90.71	90.77	7,801.20	157.66	2,022.90	2,024.71	0.00	0.00	0.00	0.00
9,700.00	90.71	90.77	7,799.97	156.32	2,122.88	2,124.66	0.00	0.00	0.00	0.00
9,800.00	90.71	90.77	7,798.74	154.98	2,222.87	2,224.62	0.00	0.00	0.00	0.00
9,900.00	90.71	90.77	7,797.50	153.64	2,322.85	2,324.58	0.00	0.00	0.00	0.00
10,000.00	90.71	90.77	7,796.27	152.30	2,422.83	2,424.54	0.00	0.00	0.00	0.00
10,100.00	90.71	90.77	7,795.04	150.96	2,522.82	2,524.50	0.00	0.00	0.00	0.00
10,200.00	90.71	90.77	7,793.80	149.62	2,622.80	2,624.46	0.00	0.00	0.00	0.00
10,300.00	90.71	90.77	7,792.57	148.28	2,722.78	2,724.42	0.00	0.00	0.00	0.00
10,400.00	90.71	90.77	7,791.33	146.94	2,822.77	2,824.38	0.00	0.00	0.00	0.00
10,500.00	90.71	90.77	7,790.10	145.60	2,922.75	2,924.34	0.00	0.00	0.00	0.00
10,600.00	90.71	90.77	7,788.87	144.26	3,022.73	3,024.30	0.00	0.00	0.00	0.00
10,700.00	90.71	90.77	7,787.63	142.92	3,122.72	3,124.25	0.00	0.00	0.00	0.00
10,800.00	90.71	90.77	7,786.40	141.59	3,222.70	3,224.21	0.00	0.00	0.00	0.00
10,900.00	90.71	90.77	7,785.17	140.25	3,322.68	3,324.17	0.00	0.00	0.00	0.00
11,000.00	90.71	90.77	7,783.93	138.91	3,422.67	3,424.13	0.00	0.00	0.00	0.00
11,100.00	90.71	90.77	7,782.70	137.57	3,522.65	3,524.09	0.00	0.00	0.00	0.00
11,200.00	90.71	90.77	7,781.47	136.23	3,622.63	3,624.05	0.00	0.00	0.00	0.00
11,300.00	90.71	90.77	7,780.23	134.89	3,722.62	3,724.01	0.00	0.00	0.00	0.00
11,400.00	90.71	90.77	7,779.00	133.55	3,822.60	3,823.97	0.00	0.00	0.00	0.00
Hold Inc 90.71°, Azi 90.77°										
11,500.00	90.71	90.77	7,777.77	132.21	3,922.58	3,923.93	0.00	0.00	0.00	0.00
11,600.00	90.71	90.77	7,776.53	130.87	4,022.57	4,023.89	0.00	0.00	0.00	0.00
11,700.00	90.71	90.77	7,775.30	129.53	4,122.55	4,123.84	0.00	0.00	0.00	0.00
11,800.00	90.71	90.77	7,774.07	128.19	4,222.53	4,223.80	0.00	0.00	0.00	0.00
11,900.00	90.71	90.77	7,772.83	126.85	4,322.52	4,323.76	0.00	0.00	0.00	0.00
12,000.00	90.71	90.77	7,771.60	125.51	4,422.50	4,423.72	0.00	0.00	0.00	0.00
12,100.00	90.71	90.77	7,770.36	124.17	4,522.48	4,523.68	0.00	0.00	0.00	0.00
12,200.00	90.71	90.77	7,769.13	122.84	4,622.47	4,623.64	0.00	0.00	0.00	0.00
12,300.00	90.71	90.77	7,767.90	121.50	4,722.45	4,723.60	0.00	0.00	0.00	0.00
12,400.00	90.71	90.77	7,766.66	120.16	4,822.43	4,823.56	0.00	0.00	0.00	0.00
12,500.00	90.71	90.77	7,765.43	118.82	4,922.42	4,923.52	0.00	0.00	0.00	0.00
12,600.00	90.71	90.77	7,764.20	117.48	5,022.40	5,023.47	0.00	0.00	0.00	0.00
12,700.00	90.71	90.77	7,762.96	116.14	5,122.38	5,123.43	0.00	0.00	0.00	0.00
12,800.00	90.71	90.77	7,761.73	114.80	5,222.37	5,223.39	0.00	0.00	0.00	0.00
12,900.00	90.71	90.77	7,760.50	113.46	5,322.35	5,323.35	0.00	0.00	0.00	0.00
13,000.00	90.71	90.77	7,759.26	112.12	5,422.33	5,423.31	0.00	0.00	0.00	0.00
13,100.00	90.71	90.77	7,758.03	110.78	5,522.32	5,523.27	0.00	0.00	0.00	0.00
13,200.00	90.71	90.77	7,756.80	109.44	5,622.30	5,623.23	0.00	0.00	0.00	0.00
13,300.00	90.71	90.77	7,755.56	108.10	5,722.29	5,723.19	0.00	0.00	0.00	0.00
13,400.00	90.71	90.77	7,754.33	106.76	5,822.27	5,823.15	0.00	0.00	0.00	0.00
13,500.00	90.71	90.77	7,753.10	105.42	5,922.25	5,923.11	0.00	0.00	0.00	0.00
13,600.00	90.71	90.77	7,751.86	104.09	6,022.24	6,023.06	0.00	0.00	0.00	0.00
13,700.00	90.71	90.77	7,750.63	102.75	6,122.22	6,123.02	0.00	0.00	0.00	0.00
13,800.00	90.71	90.77	7,749.40	101.41	6,222.20	6,222.98	0.00	0.00	0.00	0.00
13,900.00	90.71	90.77	7,748.16	100.07	6,322.19	6,322.94	0.00	0.00	0.00	0.00
14,000.00	90.71	90.77	7,746.93	98.73	6,422.17	6,422.90	0.00	0.00	0.00	0.00
14,100.00	90.71	90.77	7,745.69	97.39	6,522.15	6,522.86	0.00	0.00	0.00	0.00
14,200.00	90.71	90.77	7,744.46	96.05	6,622.14	6,622.82	0.00	0.00	0.00	0.00
14,300.00	90.71	90.77	7,743.23	94.71	6,722.12	6,722.78	0.00	0.00	0.00	0.00
14,400.00	90.71	90.77	7,741.99	93.37	6,822.10	6,822.74	0.00	0.00	0.00	0.00
14,500.00	90.71	90.77	7,740.76	92.03	6,922.09	6,922.70	0.00	0.00	0.00	0.00
14,600.00	90.71	90.77	7,739.53	90.69	7,022.07	7,022.65	0.00	0.00	0.00	0.00
14,700.00	90.71	90.77	7,738.29	89.35	7,122.05	7,122.61	0.00	0.00	0.00	0.00
14,723.79	90.71	90.77	7,738.00	89.03	7,145.84	7,146.40	0.00	0.00	0.00	0.00
Total Depth 14723.79 ft										

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A1 (Lateral)

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,300.00	2,300.00	0.00	0.00	Begin Nudge @ 2300.00 ft
2,415.00	2,414.97	2.31	0.00	End Nudge @ 2415.00 ft
6,903.65	6,900.00	182.45	0.00	Begin Drop @ 6903.65 ft
7,018.65	7,014.97	184.75	0.00	End Drop @ 7018.65 ft
7,249.77	7,246.09	184.75	0.00	Kick Off Point @ 7249.77 ft
7,700.00	7,651.40	182.50	167.96	Build Rate 10.00 °/100 ft
8,156.84	7,819.00	176.98	579.97	End Build @ 8156.84 ft
11,400.00	7,779.00	133.55	3,822.60	Hold Inc 90.71°, Azi 90.77°
14,723.79	7,738.00	89.03	7,145.84	Total Depth 14723.79 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
Target	Prosper Farms 4-65 13-14 1H_RevA1(Lateral)_BHL Tgt	89.29	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	2,215.00	Rev A1 (Lateral)	Assumed Vertical - 30 Inclinometer
2,215.00	14,723.79	Rev A1 (Lateral)	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,215.00	2,215.00	9 5/8" Casing Pt.	9-5/8	13-1/2

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,785.00	1,785.00	Fox Hills			
2,015.00	2,015.00	Pierre Shale			
2,215.00	2,215.00	Surface Casing			
7,637.63	7,605.00	Sharon Springs			
7,804.27	7,718.00	Niobrara			
7,945.44	7,783.00	Niobrara B			

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Prosper Farms 4-65 13-14 1H_SL	0.00	0.00	0.00	Polygon
Prosper Farms 4-65 13-14 1H_SB	0.00	0.00	0.00	Polygon
Prosper Farms 4-65 13-14 1H_RevA1(Lateral)_	7,738.00	89.03	7,145.84	Point

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A1 (Lateral)

Directional Difficulty Index

Average Dogleg over Survey:	0.65 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 8,156.84 usft
Net Tortosity applicable to Plans:	0.65 °/100usft	Directional Difficulty Index:	6.353

Audit Info

North Reference Sheet for Sec. 14-T4S-R65W - Prosper Farms 4-65 13-14 1H - Plan A (Lateral)

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference .
 Vertical Depths are relative to KB 24 ft @ 5715.00usft (H&P 280). Northing and Easting are relative to Prosper Farms 4-65 13-14 1H
 Coordinate System is US State Plane 1983, Colorado Central Zone using datum North American Datum 1983, ellipsoid GRS 1980
 Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:39° 45' 0.000 N°
 False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99999145

Grid Coordinates of Well: 1,682,895.51 usft N, 3,242,064.33 usft E
 Geographical Coordinates of Well: 39° 42' 18.73" N, 104° 38' 22.76" W
 Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,723.79usft
 the Bottom Hole Displacement is 7,146.40usft in the Direction of 89.29° (True).
 Magnetic Convergence at surface is: -7.90° (31 December 2013, , BGGM2013)

