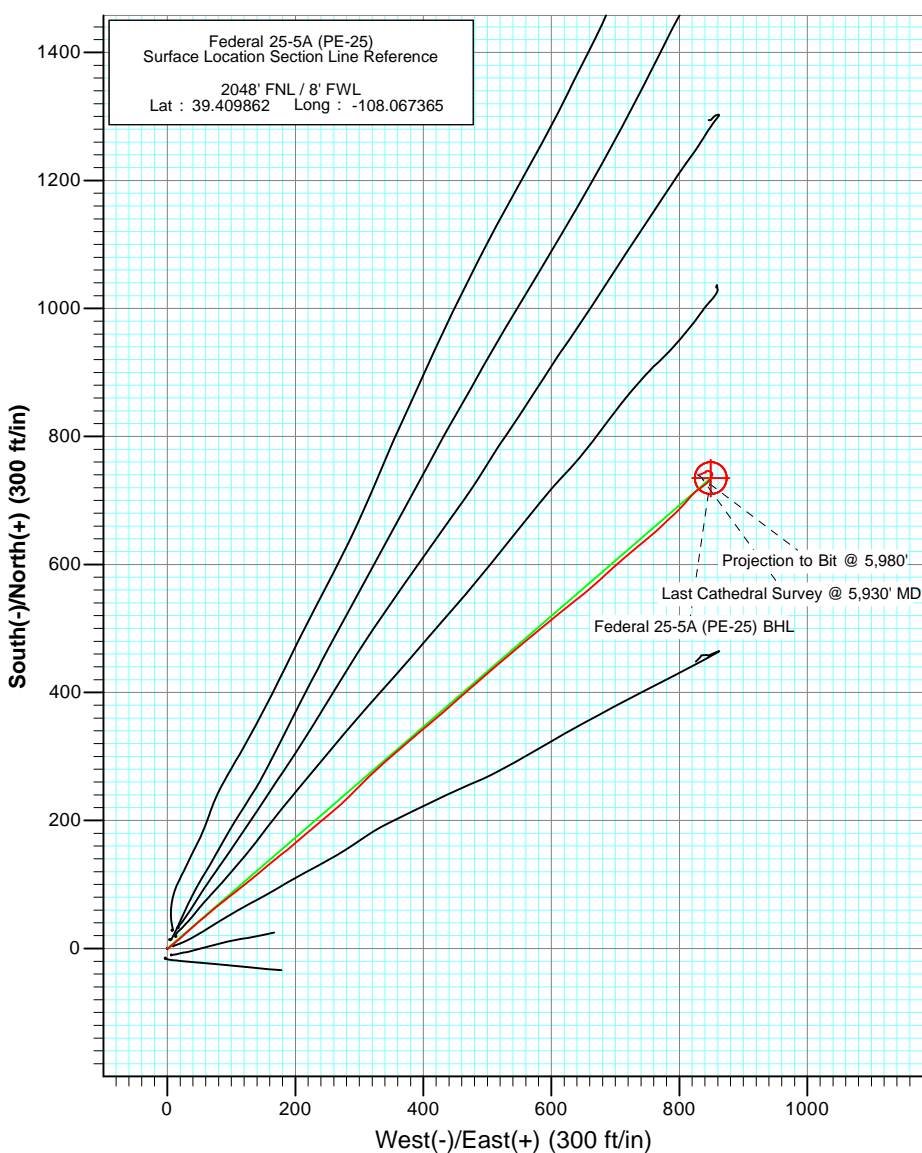
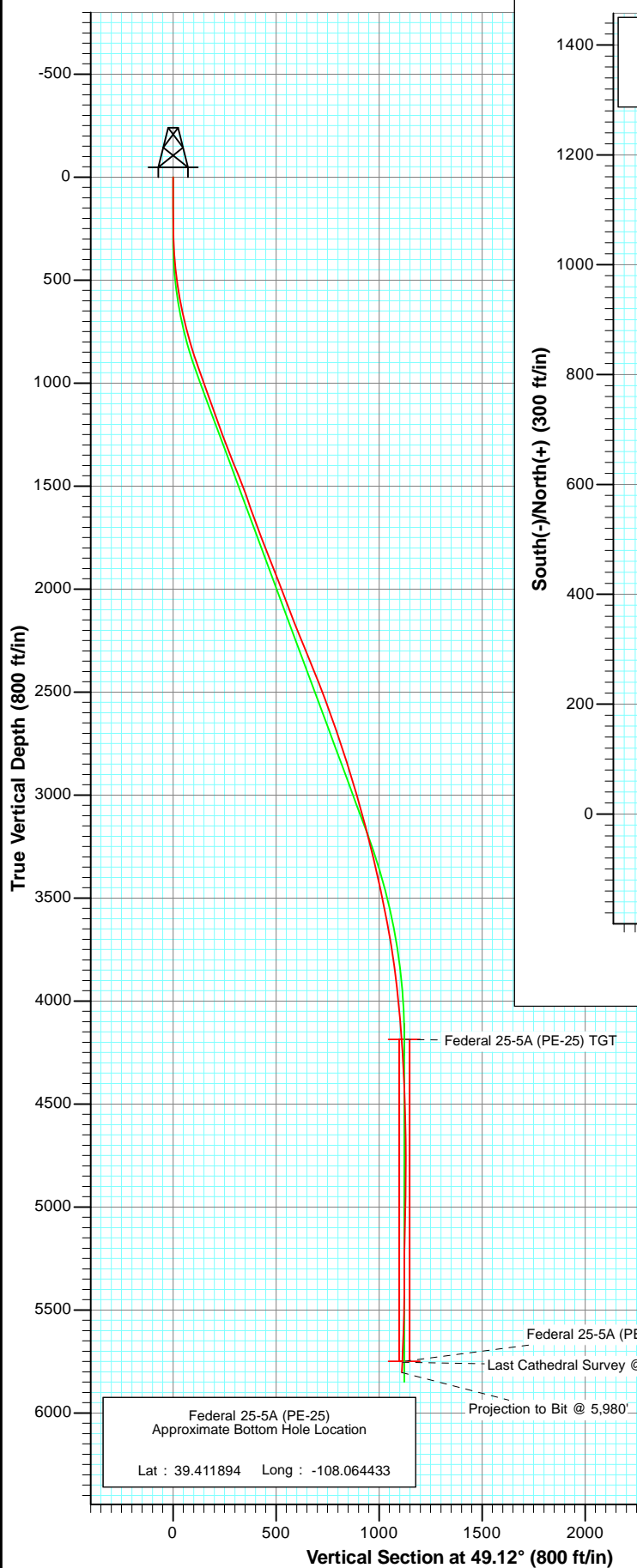




Project: S. Piceance (Parachute)
Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-5A (PE-25)
Wellbore: DD
Plan: FINAL



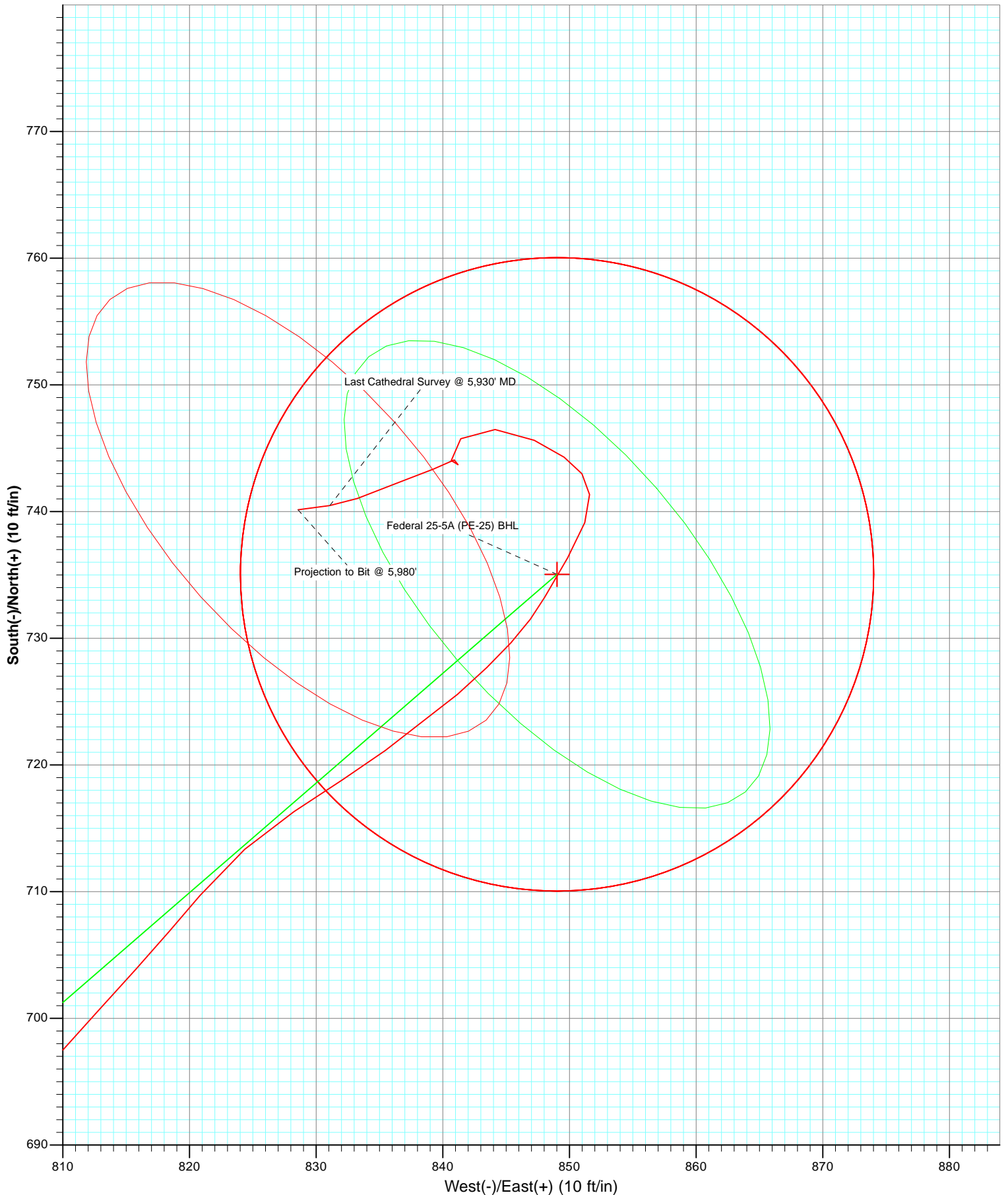
Azimuths to True North
Magnetic North: 10.32°

Magnetic Field
Strength: 52208.7snT
Dip Angle: 65.66°
Date: 9/10/2011
Model: IGRF200510

DD Federal 25-5A (PE-25) 115392/110455 (SH); 115470/112555 (MH) SC						
KBE @ 5419.0ft (Patterson 330) North American Datum 1983 Well Federal 25-5A (PE-25), True North						
Type Target	Target Federal 25-5A (PE-25) BHL	Azimuth 49.12	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name Federal 25-5A (PE-25) TGT	TVD 4187.0	+N/-S 735.0	+E/-W 849.0	Latitude 39.411880	Longitude -108.064360	
Federal 25-5A (PE-25) BHL	5749.0	735.0	849.0	39.411880	-108.064360	

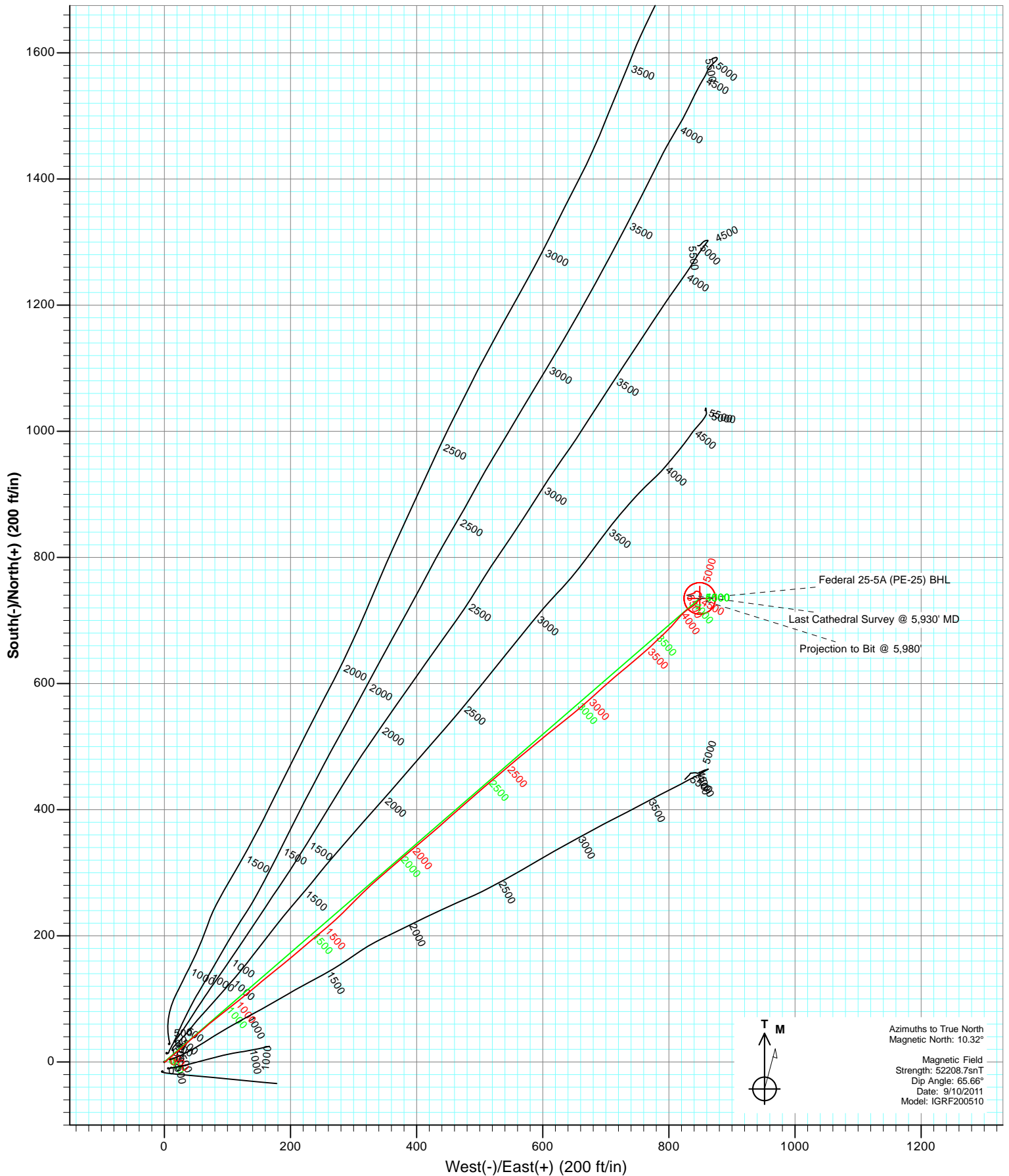


Project: S. Piceance (Parachute)
Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-5A (PE-25)
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Project: S. Piceance (Parachute)
Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-5A (PE-25)
Wellbore: DD
Plan: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 25-5A (PE-25)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5419.0ft (Patterson 330)
Site:	SWNW Sec 25-T7S-R96W (PE-25 Pad)	MD Reference:	KBE @ 5419.0ft (Patterson 330)
Well:	Federal 25-5A (PE-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Project	S. Piceance (Parachute), Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	SWNW Sec 25-T7S-R96W (PE-25 Pad)			
Site Position:		Northing:	1,584,438.30 ft	Latitude: 39.409900
From:	Lat/Long	Easting:	2,274,718.76 ft	Longitude: -108.067310
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.62 °

Well	Federal 25-5A (PE-25)			
Well Position	+N/-S	0.0 ft	Northing:	1,584,424.89 ft
	+E/-W	0.0 ft	Easting:	2,274,702.83 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level: 5,388.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/10/2011	10.32	65.66	52,209

Design	DD			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	49.12

Survey Program	Date	10/24/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.0	5,980.0	Survey #1 (DD)	MWD	Geolink MWD

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.30	79.40	100.0	0.0	0.3	0.2	0.30	0.30	
141.0	0.40	76.30	141.0	0.1	0.5	0.4	0.25	0.24	
264.0	0.90	67.10	264.0	0.6	1.8	1.7	0.41	0.41	
295.0	1.60	67.30	295.0	0.8	2.4	2.4	2.26	2.26	
325.0	2.60	47.30	325.0	1.5	3.3	3.5	4.08	3.33	
356.0	3.50	44.90	355.9	2.6	4.5	5.1	2.93	2.90	
387.0	4.20	45.70	386.8	4.1	6.0	7.2	2.26	2.26	
417.0	5.10	53.40	416.8	5.6	7.8	9.6	3.64	3.00	
448.0	6.00	50.20	447.6	7.5	10.2	12.6	3.07	2.90	
479.0	6.80	48.00	478.4	9.8	12.8	16.1	2.70	2.58	
510.0	7.60	50.60	509.2	12.3	15.7	20.0	2.79	2.58	
540.0	8.60	48.90	538.9	15.0	19.0	24.2	3.43	3.33	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 25-5A (PE-25)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5419.0ft (Patterson 330)
Site:	SWNW Sec 25-T7S-R96W (PE-25 Pad)	MD Reference:	KBE @ 5419.0ft (Patterson 330)
Well:	Federal 25-5A (PE-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
571.0	9.60	49.40	569.5	18.2	22.7	29.1	3.24	3.23	
602.0	10.60	49.50	600.0	21.8	26.8	34.5	3.23	3.23	
663.0	12.40	46.10	659.8	29.9	35.8	46.7	3.15	2.95	
725.0	14.00	50.50	720.1	39.3	46.4	60.8	3.05	2.58	
756.0	14.50	49.50	750.2	44.2	52.2	68.4	1.80	1.61	
786.0	15.80	50.20	779.1	49.3	58.2	76.3	4.38	4.33	
817.0	16.70	48.60	808.9	54.9	64.8	85.0	3.24	2.90	
848.0	17.50	50.60	838.5	60.8	71.7	94.1	3.20	2.58	
879.0	18.10	50.70	868.0	66.9	79.1	103.5	1.94	1.94	
909.0	19.10	51.90	896.5	72.8	86.5	113.1	3.57	3.33	
940.0	19.40	53.00	925.7	79.1	94.6	123.3	1.52	0.97	
1,034.0	19.90	50.30	1,014.3	98.7	119.4	154.9	1.10	0.53	
1,095.0	19.80	50.80	1,071.6	111.8	135.4	175.6	0.32	-0.16	
1,169.0	19.50	49.70	1,141.3	127.8	154.6	200.5	0.64	-0.41	
1,264.0	19.70	52.10	1,230.8	147.8	179.3	232.3	0.87	0.21	
1,358.0	22.00	48.90	1,318.7	169.2	205.1	265.7	2.73	2.45	
1,453.0	22.30	50.40	1,406.7	192.3	232.4	301.6	0.67	0.32	
1,546.0	20.60	50.00	1,493.2	214.1	258.5	335.6	1.83	-1.83	
1,641.0	19.60	45.50	1,582.4	236.0	282.7	368.2	1.94	-1.05	
1,734.0	19.50	44.20	1,670.1	258.1	304.6	399.2	0.48	-0.11	
1,828.0	20.70	47.80	1,758.4	280.5	327.8	431.4	1.83	1.28	
1,922.0	22.00	49.20	1,845.9	303.2	353.5	465.7	1.49	1.38	
2,017.0	21.50	49.30	1,934.1	326.1	380.1	500.9	0.53	-0.53	
2,111.0	20.60	50.70	2,021.9	347.8	406.0	534.6	1.10	-0.96	
2,206.0	21.10	48.80	2,110.6	369.7	431.8	568.4	0.89	0.53	
2,300.0	22.30	48.50	2,198.0	392.7	457.9	603.2	1.28	1.28	
2,394.0	22.20	48.30	2,285.0	416.3	484.5	638.8	0.13	-0.11	
2,488.0	21.90	50.00	2,372.1	439.4	511.2	674.1	0.75	-0.32	
2,582.0	21.50	49.80	2,459.4	461.7	537.8	708.8	0.43	-0.43	
2,677.0	20.70	50.20	2,548.1	483.7	564.0	743.0	0.86	-0.84	
2,771.0	19.30	50.40	2,636.4	504.3	588.7	775.2	1.49	-1.49	
2,865.0	18.70	50.90	2,725.3	523.7	612.4	805.7	0.66	-0.64	
2,960.0	17.90	51.80	2,815.5	542.3	635.7	835.5	0.89	-0.84	
3,054.0	16.50	50.10	2,905.3	559.8	657.3	863.3	1.58	-1.49	
3,149.0	16.50	47.50	2,996.4	577.6	677.6	890.3	0.78	0.00	
3,243.0	14.80	47.50	3,086.9	594.7	696.3	915.6	1.81	-1.81	
3,338.0	15.40	50.10	3,178.6	611.0	714.9	940.4	0.95	0.63	
3,432.0	14.10	50.20	3,269.5	626.3	733.3	964.3	1.38	-1.38	
3,526.0	12.00	49.60	3,361.1	640.0	749.5	985.5	2.24	-2.23	
3,620.0	11.60	49.20	3,453.1	652.5	764.1	1,004.8	0.43	-0.43	
3,715.0	12.30	45.70	3,546.0	665.8	778.6	1,024.4	1.06	0.74	
3,809.0	10.90	46.80	3,638.1	678.9	792.2	1,043.3	1.51	-1.49	
3,904.0	8.50	41.80	3,731.7	690.3	803.4	1,059.2	2.68	-2.53	
3,999.0	8.40	42.60	3,825.7	700.6	812.8	1,073.1	0.16	-0.11	
4,093.0	6.40	40.00	3,918.9	709.7	820.8	1,085.1	2.16	-2.13	
4,187.0	5.90	57.20	4,012.4	716.3	828.3	1,095.0	2.02	-0.53	
4,281.0	4.70	54.90	4,106.0	721.1	835.5	1,103.7	1.30	-1.28	
4,375.0	4.10	49.00	4,199.7	725.6	841.2	1,110.8	0.80	-0.64	
4,469.0	3.10	42.10	4,293.5	729.7	845.4	1,116.7	1.16	-1.06	
4,564.0	2.30	29.00	4,388.4	733.2	848.0	1,121.1	1.06	-0.84	
4,658.0	2.10	31.50	4,482.3	736.3	849.9	1,124.5	0.24	-0.21	
4,752.0	1.70	19.40	4,576.3	739.1	851.2	1,127.3	0.60	-0.43	
4,846.0	1.10	354.50	4,670.3	741.3	851.6	1,129.1	0.89	-0.64	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 25-5A (PE-25)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5419.0ft (Patterson 330)
Site:	SWNW Sec 25-T7S-R96W (PE-25 Pad)	MD Reference:	KBE @ 5419.0ft (Patterson 330)
Well:	Federal 25-5A (PE-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,940.0	1.10	325.50	4,764.2	743.0	851.0	1,129.7	0.59	0.00	
5,034.0	1.30	301.70	4,858.2	744.3	849.6	1,129.5	0.57	0.21	
5,128.0	2.00	298.00	4,952.2	745.6	847.2	1,128.6	0.75	0.74	
5,222.0	2.00	273.00	5,046.1	746.5	844.1	1,126.8	0.92	0.00	
5,317.0	1.60	232.70	5,141.1	745.8	841.4	1,124.3	1.36	-0.42	
5,411.0	1.20	162.60	5,235.1	744.0	840.7	1,122.6	1.75	-0.43	
5,505.0	0.80	20.30	5,329.1	743.7	841.2	1,122.8	2.02	-0.43	
5,599.0	0.70	245.50	5,423.0	744.1	840.9	1,122.8	1.47	-0.11	
5,693.0	1.50	246.90	5,517.0	743.4	839.3	1,121.1	0.85	0.85	
5,787.0	1.90	250.50	5,611.0	742.4	836.7	1,118.4	0.44	0.43	
5,882.0	2.50	247.50	5,705.9	741.0	833.3	1,115.0	0.64	0.63	
5,930.0	2.90	262.40	5,753.9	740.5	831.1	1,113.0	1.68	0.83	Last Cathedral Survey @ 5,930' MD
5,980.0	2.90	262.40	5,803.8	740.1	828.6	1,110.9	0.00	0.00	Projection to Bit @ 5,980'

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Federal 25-5A (PE-25) E	0.00	0.00	5,749.0	735.0	849.0	1,585,135.66	2,275,572.29	39.411880	-108.064360
- survey misses target center by 18.5ft at 5924.4ft MD (5748.3 TVD, 740.5 N, 831.4 E)									
- Circle (radius 25.0)									
Federal 25-5A (PE-25) T	0.00	0.00	4,187.0	735.0	849.0	1,585,135.66	2,275,572.29	39.411880	-108.064360
- survey misses target center by 13.2ft at 4363.3ft MD (4188.0 TVD, 725.0 N, 840.5 E)									
- Circle (radius 25.0)									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,930.0	5,753.9	740.5	831.1	Last Cathedral Survey @ 5,930' MD Projection to Bit @ 5,980'
5,980.0	5,803.8	740.1	828.6	

Checked By: _____ Approved By: _____ Date: _____