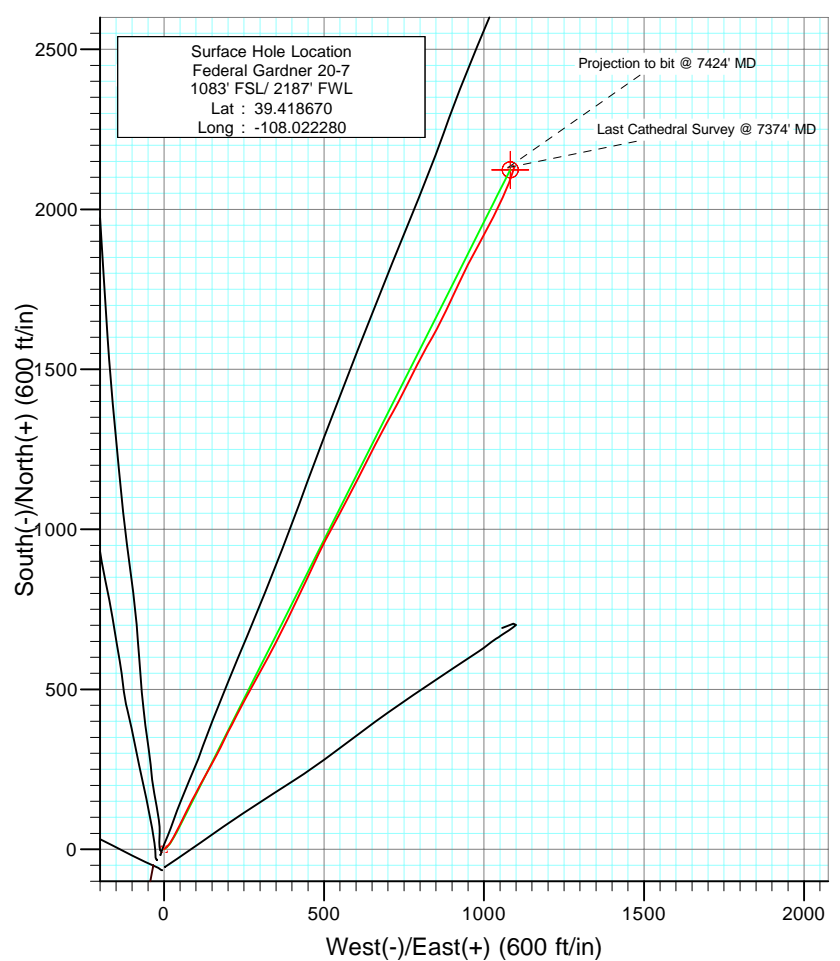
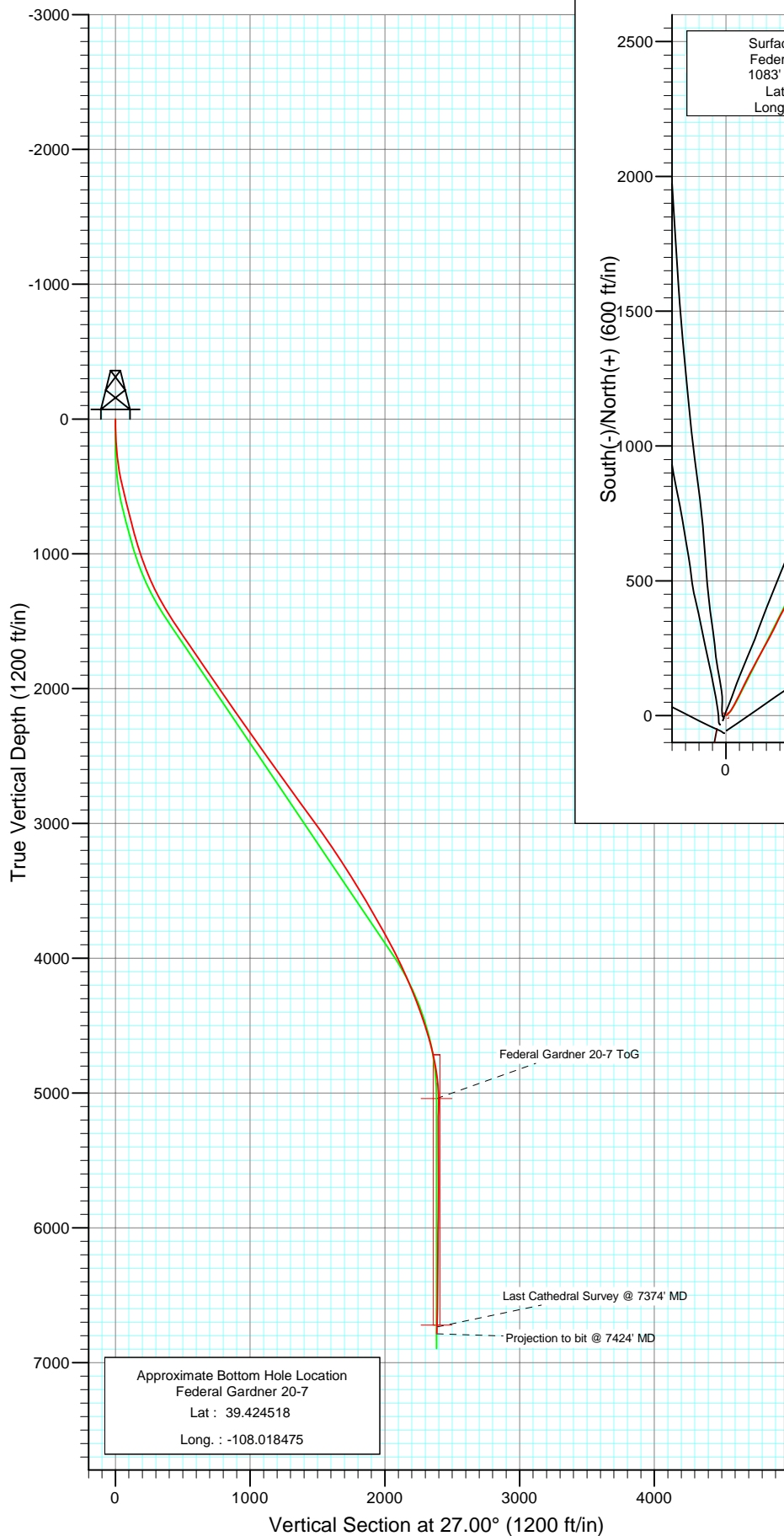




Project: S. Piceance
Site: SESW Sec20-T7S-R95W (PN-20-7-95)
Well: Federal Gardner 20-7
Wellbore: Final
Design: DD



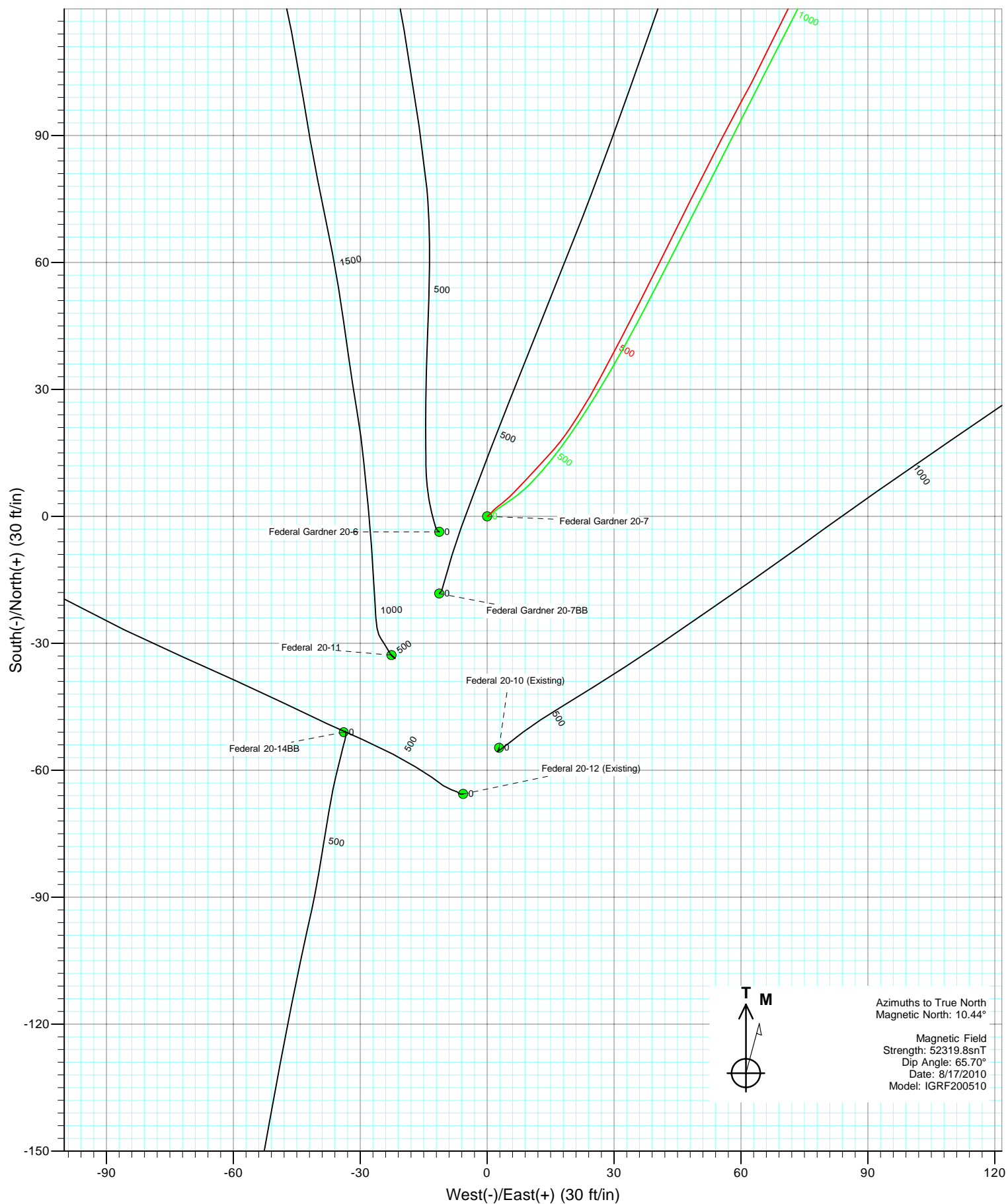
Azimuths to True North
Magnetic North: 10.44°

Magnetic Field
Strength: 52319.8snT
Dip Angle: 65.70°
Date: 8/17/2010
Model: IGRF200510

DESIGN DETAILS: DD
Job #105333: KR

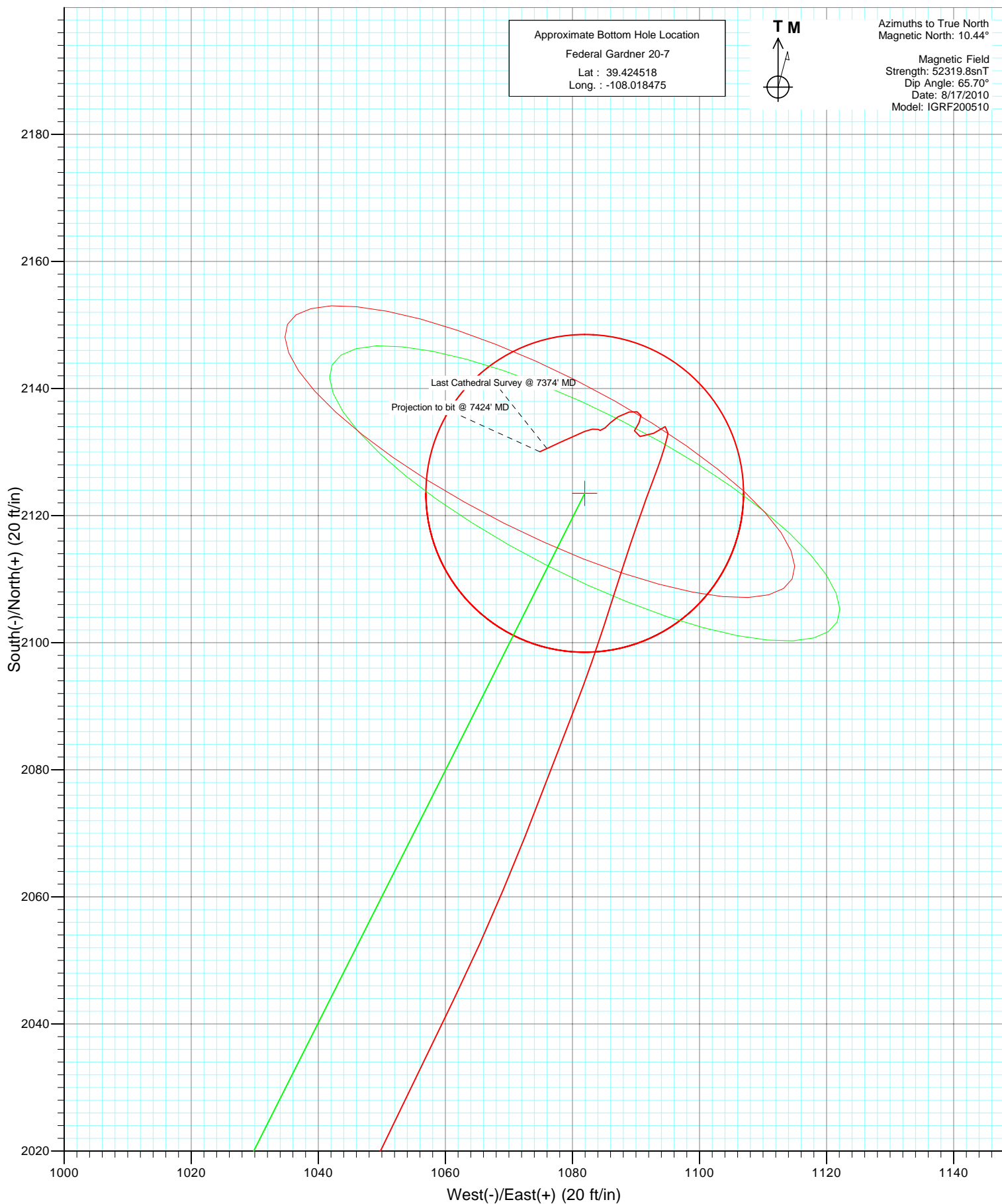
KBE 2 @ 5804.0ft (Nabors M11)

Target	Azimuth	Origin	N/S	E/W	From TVD
Federal Gardner 20-7 BHL	27.00	Slot	0.0	0.0	0.0





Project: S. Piceance
Site: SESW Sec20-T7S-R95W (PN-20-7-95)
Well: Federal Gardner 20-7
Wellbore: Final
Design: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Gardner 20-7
Project:	S. Piceance	TVD Reference:	KBE 2 @ 5804.0ft (Nabors M11)
Site:	SESW Sec20-T7S-R95W (PN-20-7-95)	MD Reference:	KBE 2 @ 5804.0ft (Nabors M11)
Well:	Federal Gardner 20-7	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US Multi Users DB

Project	S. Piceance, 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		SESW Sec20-T7S-R95W (PN-20-7-95)			
Site Position:		Northing:	1,587,275.03 ft	Latitude:	39.418670
From:	Lat/Long	Easting:	2,287,525.50 ft	Longitude:	-108.022280
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.59 °

Well	Federal Gardner 20-7					
Well Position	+N/-S	0.0 ft	Northing:	1,587,275.02 ft	Latitude:	39.418670
	+E/-W	0.0 ft	Easting:	2,287,525.50 ft	Longitude:	-108.022280
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,782.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/17/2010	10.44	65.70	52,320

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	27.00

Survey Program	Date	9/30/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
81.0	7,424.0	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	
81.0	1.40	48.50	81.0	0.7	0.7	0.9	1.73	1.73	
111.0	2.00	40.30	111.0	1.3	1.4	1.8	2.15	2.00	
142.0	3.00	51.80	141.9	2.2	2.3	3.0	3.59	3.23	
172.0	3.60	52.20	171.9	3.3	3.7	4.6	2.00	2.00	
203.0	4.30	46.90	202.8	4.7	5.3	6.6	2.54	2.26	
233.0	5.20	43.80	232.7	6.4	7.1	8.9	3.12	3.00	
263.0	5.80	42.10	262.6	8.5	9.0	11.7	2.07	2.00	
294.0	6.80	43.50	293.4	11.0	11.4	15.0	3.26	3.23	
325.0	7.70	42.40	324.1	13.9	14.0	18.7	2.94	2.90	
356.0	8.90	39.60	354.8	17.3	16.9	23.1	4.08	3.87	
386.0	9.80	33.10	384.4	21.2	19.8	27.9	4.62	3.00	
417.0	10.80	31.80	414.9	25.9	22.8	33.4	3.31	3.23	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Gardner 20-7
Project:	S. Piceance	TVD Reference:	KBE 2 @ 5804.0ft (Nabors M11)
Site:	SESW Sec20-T7S-R95W (PN-20-7-95)	MD Reference:	KBE 2 @ 5804.0ft (Nabors M11)
Well:	Federal Gardner 20-7	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
447.0	11.60	28.60	444.4	30.9	25.7	39.2	3.38	2.67	
477.0	12.10	27.50	473.7	36.3	28.6	45.4	1.83	1.67	
570.0	14.00	27.20	564.3	55.0	38.3	66.4	2.04	2.04	
661.0	14.70	25.70	652.5	75.2	48.3	88.9	0.87	0.77	
752.0	14.60	28.70	740.5	95.7	58.8	111.9	0.84	-0.11	
783.0	14.40	28.00	770.5	102.5	62.5	119.7	0.86	-0.65	
875.0	14.90	24.60	859.5	123.3	72.8	142.9	1.08	0.54	
936.0	16.30	27.50	918.3	138.1	80.0	159.3	2.63	2.30	
999.0	17.70	27.20	978.5	154.4	88.5	177.8	2.23	2.22	
1,063.0	19.70	27.20	1,039.2	172.7	97.8	198.3	3.12	3.12	
1,127.0	21.20	28.80	1,099.1	192.4	108.4	220.6	2.50	2.34	
1,191.0	23.30	28.40	1,158.3	213.7	119.9	244.9	3.29	3.28	
1,255.0	24.60	29.20	1,216.8	236.5	132.5	270.8	2.09	2.03	
1,318.0	26.30	28.40	1,273.7	260.2	145.5	297.9	2.75	2.70	
1,382.0	28.10	28.70	1,330.6	285.9	159.5	327.1	2.82	2.81	
1,509.0	31.80	25.40	1,440.7	342.4	188.2	390.5	3.19	2.91	
1,605.0	34.60	28.00	1,521.0	389.3	211.9	443.0	3.27	2.92	
1,700.0	33.90	26.60	1,599.5	436.8	236.4	496.5	1.11	-0.74	
1,796.0	34.60	29.50	1,678.9	484.5	261.8	550.5	1.85	0.73	
1,891.0	34.30	28.70	1,757.2	531.4	287.9	604.2	0.57	-0.32	
1,987.0	33.40	28.60	1,836.9	578.3	313.6	657.7	0.94	-0.94	
2,083.0	34.60	27.30	1,916.5	625.8	338.7	711.3	1.46	1.25	
2,179.0	35.20	26.50	1,995.3	674.7	363.6	766.3	0.79	0.62	
2,274.0	35.30	27.50	2,072.9	723.6	388.5	821.1	0.62	0.11	
2,370.0	35.20	25.10	2,151.3	773.3	413.0	876.5	1.45	-0.10	
2,465.0	34.60	24.50	2,229.2	822.6	435.8	930.8	0.73	-0.63	
2,561.0	35.00	25.00	2,308.0	872.3	458.8	985.5	0.51	0.42	
2,657.0	35.20	25.80	2,386.5	922.2	482.4	1,040.7	0.52	0.21	
2,752.0	35.60	27.50	2,464.0	971.4	507.1	1,095.7	1.12	0.42	
2,848.0	35.10	29.00	2,542.3	1,020.3	533.4	1,151.3	1.04	-0.52	
2,944.0	35.60	26.80	2,620.6	1,069.4	559.4	1,206.8	1.42	0.52	
3,040.0	36.20	28.70	2,698.4	1,119.2	585.6	1,263.1	1.32	0.62	
3,135.0	36.00	26.70	2,775.1	1,168.8	611.6	1,319.0	1.26	-0.21	
3,231.0	35.90	26.00	2,852.8	1,219.3	636.6	1,375.4	0.44	-0.10	
3,327.0	36.20	28.70	2,930.5	1,269.4	662.6	1,431.9	1.68	0.31	
3,423.0	36.30	28.20	3,007.9	1,319.3	689.6	1,488.6	0.33	0.10	
3,518.0	35.00	28.80	3,085.1	1,368.0	716.0	1,544.0	1.42	-1.37	
3,614.0	34.00	27.10	3,164.2	1,416.0	741.5	1,598.3	1.45	-1.04	
3,709.0	33.90	26.50	3,243.0	1,463.4	765.5	1,651.4	0.37	-0.11	
3,805.0	32.90	27.10	3,323.1	1,510.5	789.3	1,704.2	1.10	-1.04	
3,901.0	32.30	29.20	3,404.0	1,556.2	813.7	1,755.9	1.33	-0.62	
3,996.0	31.00	30.10	3,484.9	1,599.5	838.3	1,805.7	1.46	-1.37	
4,092.0	30.10	25.50	3,567.6	1,642.6	861.1	1,854.5	2.61	-0.94	
4,188.0	30.00	25.80	3,650.7	1,685.9	881.9	1,902.5	0.19	-0.10	
4,283.0	29.80	25.70	3,733.0	1,728.6	902.5	1,949.9	0.22	-0.21	
4,378.0	29.60	25.60	3,815.5	1,771.0	922.8	1,996.9	0.22	-0.21	
4,474.0	28.10	25.00	3,899.6	1,812.9	942.6	2,043.2	1.59	-1.56	
4,570.0	26.60	28.30	3,984.9	1,852.3	962.4	2,087.3	2.22	-1.56	
4,666.0	25.00	29.40	4,071.3	1,888.9	982.5	2,129.1	1.74	-1.67	
4,761.0	23.10	29.80	4,158.1	1,922.6	1,001.7	2,167.8	2.01	-2.00	
4,857.0	22.00	24.80	4,246.7	1,955.2	1,018.6	2,204.5	2.30	-1.15	
4,953.0	21.10	26.20	4,336.0	1,987.1	1,033.7	2,239.8	1.08	-0.94	
5,048.0	19.40	25.90	4,425.1	2,016.6	1,048.2	2,272.7	1.79	-1.79	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Gardner 20-7
Project:	S. Piceance	TVD Reference:	KBE 2 @ 5804.0ft (Nabors M11)
Site:	SESW Sec20-T7S-R95W (PN-20-7-95)	MD Reference:	KBE 2 @ 5804.0ft (Nabors M11)
Well:	Federal Gardner 20-7	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
5,144.0	17.60	25.60	4,516.2	2,044.0	1,061.4	2,303.1	1.88	-1.87	
5,240.0	15.90	21.40	4,608.1	2,069.4	1,072.5	2,330.7	2.17	-1.77	
5,335.0	13.00	20.80	4,700.1	2,091.5	1,081.0	2,354.3	3.06	-3.05	
5,399.0	11.20	17.40	4,762.7	2,104.1	1,085.4	2,367.6	3.02	-2.81	
5,463.0	9.40	18.60	4,825.6	2,115.0	1,089.0	2,378.9	2.83	-2.81	
5,526.0	7.20	20.30	4,888.0	2,123.6	1,092.0	2,387.9	3.51	-3.49	
5,590.0	4.30	18.50	4,951.6	2,129.6	1,094.1	2,394.3	4.54	-4.53	
5,652.0	2.10	8.30	5,013.5	2,133.0	1,095.0	2,397.6	3.65	-3.55	
5,716.0	1.10	258.10	5,077.5	2,134.0	1,094.6	2,398.4	4.20	-1.56	
5,812.0	1.50	228.00	5,173.5	2,133.0	1,092.8	2,396.6	0.81	0.42	
5,908.0	1.50	285.50	5,269.5	2,132.5	1,090.6	2,395.2	1.50	0.00	
6,003.0	0.80	31.60	5,364.5	2,133.4	1,089.8	2,395.6	1.98	-0.74	
6,099.0	0.90	27.80	5,460.5	2,134.6	1,090.5	2,397.0	0.12	0.10	
6,195.0	0.60	355.80	5,556.4	2,135.8	1,090.8	2,398.2	0.53	-0.31	
6,291.0	0.70	277.80	5,652.4	2,136.4	1,090.2	2,398.4	0.86	0.10	
6,387.0	0.80	258.30	5,748.4	2,136.3	1,088.9	2,397.8	0.28	0.10	
6,482.0	1.50	241.80	5,843.4	2,135.6	1,087.2	2,396.4	0.81	0.74	
6,578.0	0.40	192.90	5,939.4	2,134.7	1,086.0	2,395.0	1.33	-1.15	
6,674.0	1.10	237.00	6,035.4	2,133.8	1,085.2	2,393.9	0.89	0.73	
6,770.0	0.10	342.50	6,131.4	2,133.4	1,084.4	2,393.2	1.18	-1.04	
6,865.0	0.40	288.20	6,226.4	2,133.6	1,084.0	2,393.2	0.37	0.32	
6,961.0	0.70	260.90	6,322.4	2,133.6	1,083.1	2,392.8	0.41	0.31	
7,056.0	0.80	249.20	6,417.4	2,133.3	1,081.9	2,391.9	0.19	0.11	
7,152.0	1.10	242.20	6,513.4	2,132.6	1,080.5	2,390.7	0.33	0.31	
7,248.0	1.40	249.40	6,609.3	2,131.8	1,078.6	2,389.1	0.35	0.31	
7,280.0	1.20	242.80	6,641.3	2,131.5	1,077.9	2,388.5	0.78	-0.62	
7,374.0	1.40	246.40	6,735.3	2,130.6	1,076.0	2,386.8	0.23	0.21	
7,424.0	1.40	246.40	6,785.3	2,130.1	1,074.9	2,385.9	0.00	0.00	

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
Federal Gardner 20-7 BI		0.00	0.00	6,720.0	2,123.5	1,081.9	1,589,367.68	2,288,665.96	39.424500 -108.018450
- actual wellpath misses target center by 9.1ft at 7358.6ft MD (6720.0 TVD, 2130.7 N, 1076.3 E)									
- Circle (radius 25.0)									
Federal Gardner 20-7 Tc		0.00	0.00	5,040.0	2,123.5	1,081.9	1,589,367.68	2,288,665.96	39.424500 -108.018450
- actual wellpath misses target center by 16.6ft at 5678.4ft MD (5039.9 TVD, 2133.7 N, 1095.0 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,374.0	6,735.3	2,130.6	1,076.0	Last Cathedral Survey @ 7374' MD	
7,424.0	6,785.3	2,130.1	1,074.9	Projection to bit @ 7424' MD	

Checked By: _____ Approved By: _____ Date: _____