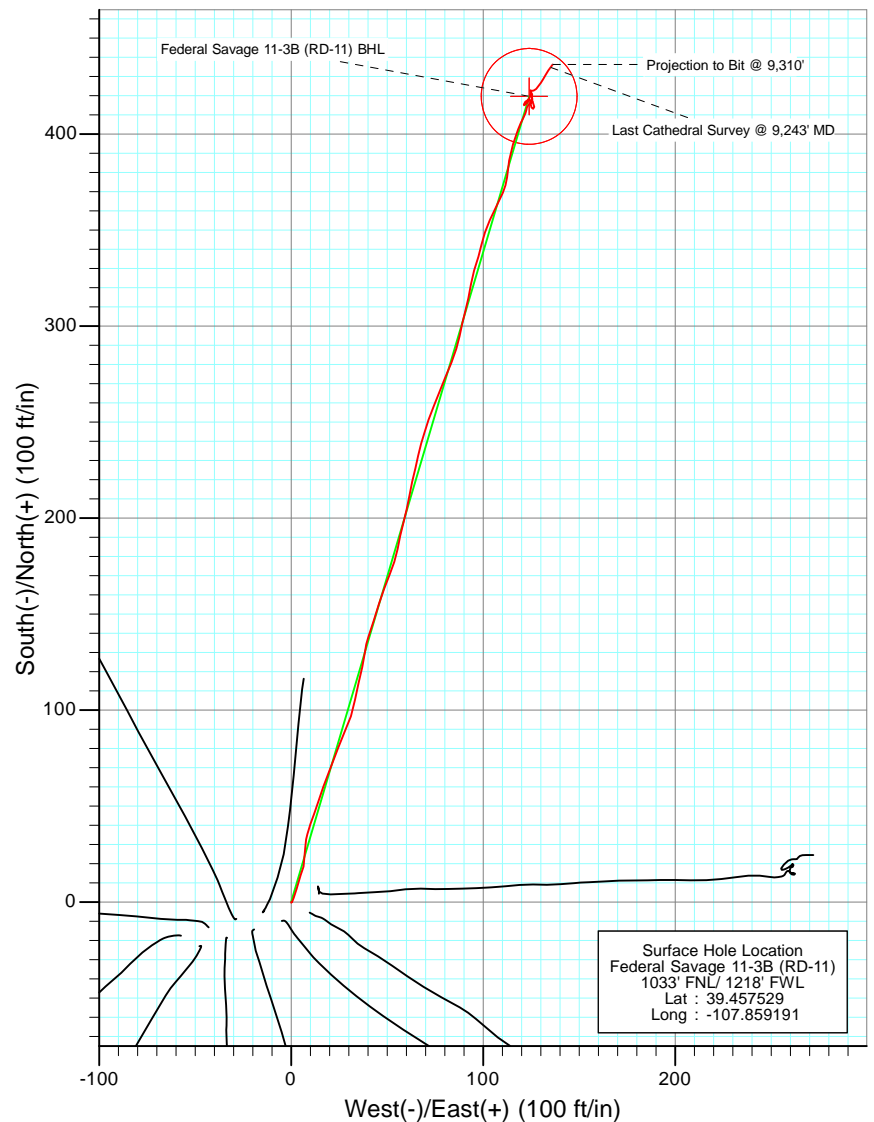
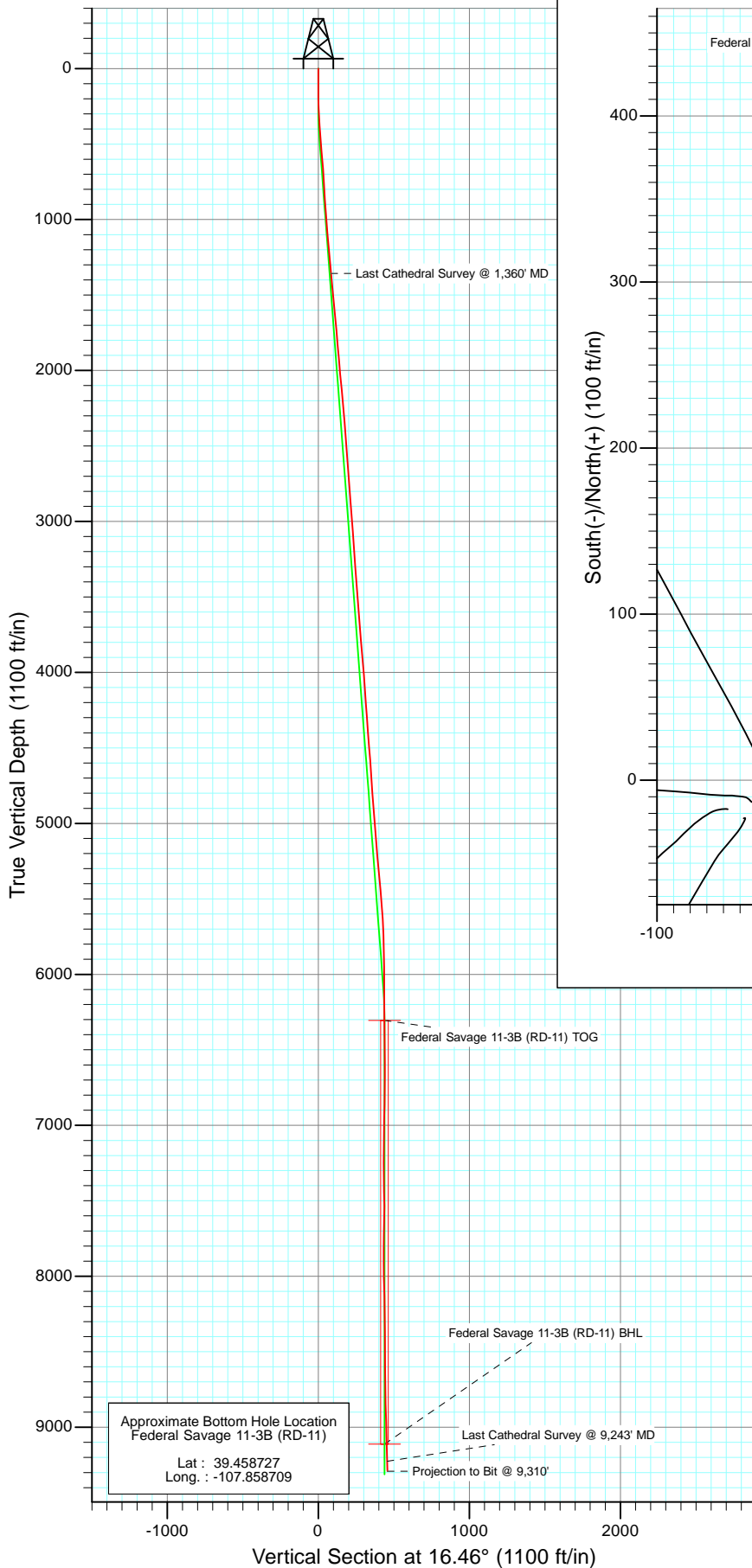




Project: S. Piceance (Parachute)
 Site: NWNW S11-T7S-R94W (RD-11)
 Well: Federal Savage 11-3B (RD-11)
 Wellbore: DD
 Design: FINAL



Azimuths to True North
 Magnetic North: 10.26°

Magnetic Field
 Strength: 52224.9snT
 Dip Angle: 65.73°
 Date: 8/22/2011
 Model: IGRF2010

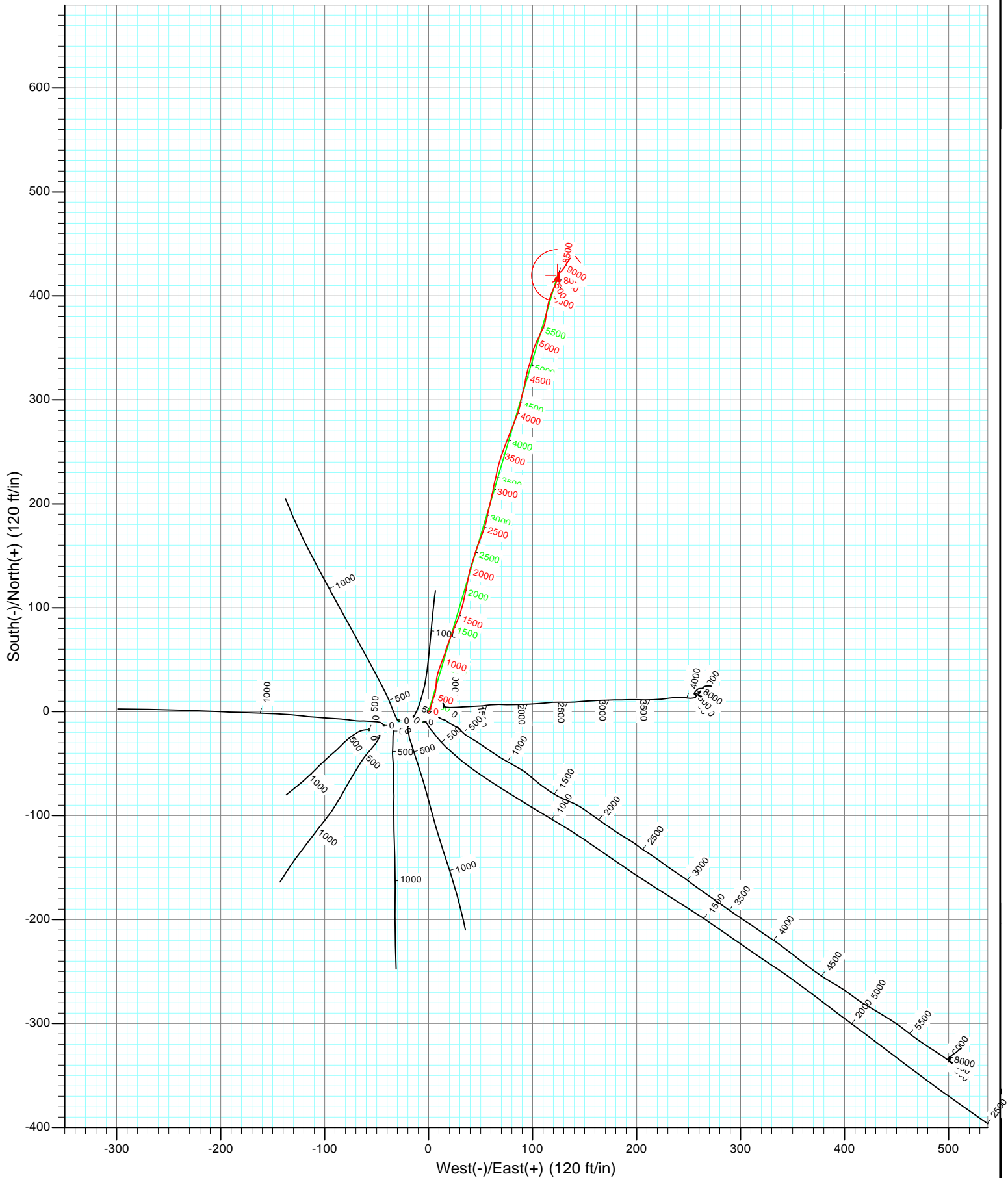
DESIGN DETAILS: DD

115342/ID 7559 (SH); BH 115375/ID 106755 (MH); SC
 KB @ 6406.0ft (Nabors M1)

Target	Azimuth	Origin	N/S	E/W	From TVD
Federal Savage 11-3B (RD-11) BHL	6.46	Slot	0.0	0.0	0.0

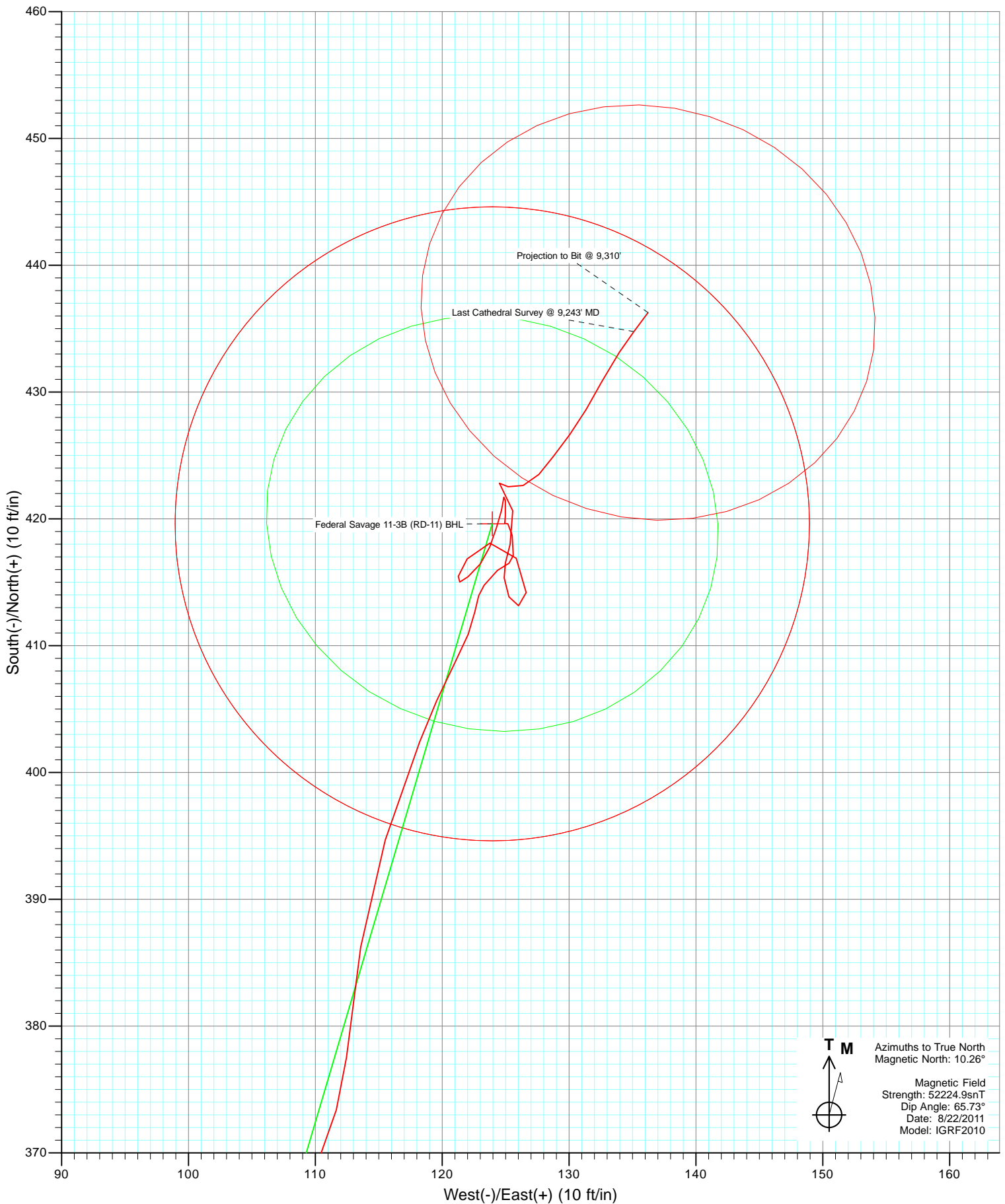


Project: S. Piceance (Parachute)
Site: NWNW S11-T7S-R94W (RD-11)
Well: Federal Savage 11-3B (RD-11)
Wellbore: DD
Design: FINAL





Project: S. Piceance (Parachute)
Site: NWNW S11-T7S-R94W (RD-11)
Well: Federal Savage 11-3B (RD-11)
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Savage 11-3B (RD-11)
Project:	S. Piceance (Parachute)	TVD Reference:	KB @ 6406.0ft (Nabors M1)
Site:	NWNW S11-T7S-R94W (RD-11)	MD Reference:	KB @ 6406.0ft (Nabors M1)
Well:	Federal Savage 11-3B (RD-11)	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		NWNW S11-T7S-R94W (RD-11)			
Site Position:		Northing:	1,600,170.34 ft	Latitude:	39.457481
From:	Lat/Long	Easting:	2,333,893.08 ft	Longitude:	-107.859394
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.49 °

Well	Federal Savage 11-3B (RD-11)					
Well Position	+N/-S	0.0 ft	Northing:	1,600,186.32 ft	Latitude:	39.457529
	+E/-W	0.0 ft	Easting:	2,333,950.83 ft	Longitude:	-107.859191
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,384.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/22/2011	10.26	65.73	52,225

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	16.46	

Survey Program	Date	9/21/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
112.0	1,360.0	Survey #1 (DD)	MWD	Geolink MWD	
1,455.0	9,310.0	Survey #2 (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		
112.0	0.30	168.90	112.0	-0.3	0.1	-0.3	0.27	0.27		
143.0	0.00	280.30	143.0	-0.4	0.1	-0.3	0.97	-0.97		
174.0	0.50	43.80	174.0	-0.3	0.2	-0.2	1.61	1.61		
204.0	1.10	36.60	204.0	0.1	0.4	0.2	2.02	2.00		
235.0	1.40	26.40	235.0	0.6	0.8	0.8	1.20	0.97		
266.0	2.10	20.00	266.0	1.5	1.1	1.8	2.34	2.26		
296.0	2.50	19.10	296.0	2.6	1.5	3.0	1.34	1.33		
326.0	3.00	17.00	325.9	4.0	2.0	4.4	1.70	1.67		
357.0	3.70	14.50	356.9	5.8	2.5	6.2	2.31	2.26		
388.0	4.20	14.60	387.8	7.8	3.0	8.4	1.61	1.61		
480.0	5.00	21.40	479.5	14.8	5.3	15.7	1.05	0.87		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Savage 11-3B (RD-11)
Project:	S. Piceance (Parachute)	TVD Reference:	KB @ 6406.0ft (Nabors M1)
Site:	NWNW S11-T7S-R94W (RD-11)	MD Reference:	KB @ 6406.0ft (Nabors M1)
Well:	Federal Savage 11-3B (RD-11)	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
572.0	4.70	1.70	571.2	22.3	6.9	23.4	1.83	-0.33	
664.0	4.30	6.70	662.9	29.5	7.4	30.4	0.61	-0.43	
755.0	3.30	13.40	753.7	35.4	8.4	36.4	1.20	-1.10	
847.0	3.50	20.90	845.5	40.6	10.0	41.8	0.53	0.22	
938.0	3.90	20.10	936.3	46.1	12.1	47.7	0.44	0.44	
1,032.0	4.60	18.30	1,030.1	52.7	14.4	54.6	0.76	0.74	
1,127.0	4.90	18.40	1,124.7	60.2	16.8	62.5	0.32	0.32	
1,223.0	5.70	21.90	1,220.3	68.5	19.9	71.3	0.90	0.83	
1,318.0	5.00	20.70	1,314.9	76.8	23.1	80.2	0.75	-0.74	
1,360.0	5.10	21.20	1,356.8	80.2	24.5	83.9	0.26	0.24	Last Cathedral Survey @ 1,360' MD
1,455.0	5.50	23.40	1,451.4	88.3	27.8	92.6	0.47	0.42	
1,550.0	5.50	19.50	1,545.9	96.8	31.1	101.6	0.39	0.00	
1,646.0	5.40	9.20	1,641.5	105.6	33.4	110.7	1.02	-0.10	
1,741.0	5.20	13.80	1,736.1	114.2	35.1	119.5	0.49	-0.21	
1,836.0	5.00	12.50	1,830.7	122.4	37.0	127.9	0.24	-0.21	
1,932.0	4.70	7.60	1,926.4	130.4	38.5	135.9	0.53	-0.31	
2,027.0	5.20	18.00	2,021.0	138.3	40.3	144.1	1.08	0.53	
2,122.0	5.40	18.60	2,115.6	146.7	43.1	152.9	0.22	0.21	
2,217.0	5.40	15.90	2,210.2	155.2	45.7	161.8	0.27	0.00	
2,313.0	4.70	21.50	2,305.8	163.2	48.4	170.2	0.89	-0.73	
2,408.0	4.60	22.70	2,400.5	170.3	51.3	177.9	0.15	-0.11	
2,504.0	4.10	17.20	2,496.2	177.2	53.8	185.2	0.68	-0.52	
2,600.0	4.20	10.30	2,592.0	183.9	55.4	192.1	0.53	0.10	
2,695.0	4.20	12.60	2,686.7	190.7	56.8	199.0	0.18	0.00	
2,790.0	4.20	14.10	2,781.5	197.5	58.4	206.0	0.12	0.00	
2,886.0	4.40	13.70	2,877.2	204.5	60.2	213.2	0.21	0.21	
2,981.0	4.60	8.90	2,971.9	211.8	61.6	220.6	0.45	0.21	
3,076.0	4.40	13.90	3,066.6	219.1	63.1	228.0	0.46	-0.21	
3,171.0	4.10	14.40	3,161.3	225.9	64.8	235.0	0.32	-0.32	
3,266.0	4.00	8.90	3,256.1	232.5	66.2	241.7	0.42	-0.11	
3,362.0	3.90	18.90	3,351.9	238.9	67.7	248.3	0.72	-0.10	
3,457.0	3.60	14.80	3,446.7	244.8	69.5	254.5	0.42	-0.32	
3,552.0	4.40	20.30	3,541.4	251.1	71.6	261.1	0.93	0.84	
3,648.0	4.90	22.20	3,637.1	258.4	74.4	268.9	0.54	0.52	
3,742.0	4.90	20.80	3,730.8	265.8	77.3	276.9	0.13	0.00	
3,837.0	4.90	22.80	3,825.4	273.4	80.3	284.9	0.18	0.00	
3,932.0	5.00	21.40	3,920.1	281.0	83.4	293.1	0.17	0.11	
4,027.0	4.40	18.30	4,014.8	288.3	86.1	300.9	0.69	-0.63	
4,122.0	3.60	10.50	4,109.5	294.7	87.8	307.5	1.02	-0.84	
4,218.0	4.20	12.20	4,205.3	301.1	89.1	314.0	0.64	0.62	
4,313.0	4.20	15.70	4,300.1	307.8	90.7	320.9	0.27	0.00	
4,408.0	4.20	11.00	4,394.8	314.6	92.3	327.9	0.36	0.00	
4,504.0	4.40	9.40	4,490.5	321.7	93.6	335.0	0.24	0.21	
4,600.0	4.70	17.50	4,586.2	329.1	95.4	342.6	0.74	0.31	
4,695.0	4.20	15.90	4,680.9	336.1	97.5	350.0	0.54	-0.53	
4,790.0	3.70	12.40	4,775.7	342.5	99.1	356.5	0.58	-0.53	
4,886.0	4.20	19.20	4,871.5	348.8	101.0	363.1	0.71	0.52	
4,981.0	4.00	23.80	4,966.2	355.1	103.4	369.9	0.41	-0.21	
5,077.0	4.90	27.40	5,061.9	361.8	106.7	377.2	0.98	0.94	
5,172.0	5.20	23.40	5,156.6	369.4	110.3	385.5	0.49	0.32	
5,267.0	5.10	6.70	5,251.2	377.5	112.5	393.9	1.58	-0.11	
5,364.0	5.30	8.00	5,347.8	386.2	113.6	402.6	0.24	0.21	
5,458.0	5.30	17.80	5,441.4	394.7	115.5	411.2	0.96	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Savage 11-3B (RD-11)
Project:	S. Piceance (Parachute)	TVD Reference:	KB @ 6406.0ft (Nabors M1)
Site:	NWNW S11-T7S-R94W (RD-11)	MD Reference:	KB @ 6406.0ft (Nabors M1)
Well:	Federal Savage 11-3B (RD-11)	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
5,554.0	4.50	21.10	5,537.0	402.4	118.2	419.4	0.88	-0.83	
5,649.0	3.60	27.60	5,631.8	408.5	120.9	426.1	1.06	-0.95	
5,745.0	1.80	9.30	5,727.7	412.7	122.6	430.5	2.06	-1.88	
5,841.0	0.90	38.80	5,823.7	414.8	123.3	432.7	1.16	-0.94	
5,936.0	1.00	44.40	5,918.7	415.9	124.4	434.1	0.14	0.11	
6,032.0	0.40	94.40	6,014.6	416.5	125.3	434.9	0.84	-0.63	
6,122.0	0.80	1.50	6,104.6	417.1	125.6	435.6	1.01	0.44	
6,217.0	1.10	354.20	6,199.6	418.7	125.5	437.1	0.34	0.32	
6,313.0	0.30	274.60	6,295.6	419.6	125.2	437.9	1.13	-0.83	
6,409.0	0.00	14.70	6,391.6	419.6	124.9	437.8	0.31	-0.31	
6,505.0	0.70	5.60	6,487.6	420.2	125.0	438.4	0.73	0.73	
6,600.0	0.80	354.40	6,582.6	421.5	125.0	439.6	0.19	0.11	
6,696.0	0.50	186.40	6,678.6	421.7	124.9	439.8	1.35	-0.31	
6,791.0	0.80	192.90	6,773.6	420.7	124.7	438.7	0.32	0.32	
6,886.0	0.90	199.10	6,868.6	419.3	124.3	437.3	0.14	0.11	
6,982.0	1.00	199.30	6,964.6	417.8	123.8	435.7	0.10	0.10	
7,077.0	0.90	220.30	7,059.6	416.4	123.0	434.2	0.38	-0.11	
7,171.0	0.80	227.10	7,153.6	415.4	122.0	433.0	0.15	-0.11	
7,266.0	0.20	283.60	7,248.6	415.0	121.4	432.4	0.75	-0.63	
7,362.0	0.50	6.00	7,344.6	415.5	121.3	432.8	0.53	0.31	
7,457.0	1.40	34.60	7,439.6	416.8	122.0	434.3	1.04	0.95	
7,552.0	1.40	75.70	7,534.5	418.1	123.8	436.0	1.03	0.00	
7,648.0	2.10	147.60	7,630.5	416.9	125.8	435.5	2.22	0.73	
7,743.0	1.50	186.70	7,725.5	414.2	126.6	433.1	1.40	-0.63	
7,838.0	0.60	293.90	7,820.4	413.2	126.0	431.9	1.87	-0.95	
7,934.0	0.70	328.10	7,916.4	413.9	125.3	432.4	0.41	0.10	
8,029.0	1.20	356.70	8,011.4	415.3	124.9	433.7	0.71	0.53	
8,124.0	2.10	17.10	8,106.4	418.0	125.4	436.4	1.12	0.95	
8,220.0	1.20	342.20	8,202.4	420.6	125.6	439.0	1.36	-0.94	
8,315.0	1.00	325.60	8,297.3	422.3	124.8	440.3	0.39	-0.21	
8,411.0	0.30	125.60	8,393.3	422.8	124.5	440.8	1.34	-0.73	
8,507.0	0.60	105.80	8,489.3	422.5	125.2	440.7	0.35	0.31	
8,602.0	0.90	71.50	8,584.3	422.6	126.4	441.1	0.55	0.32	
8,697.0	1.00	39.60	8,679.3	423.5	127.6	442.3	0.56	0.11	
8,793.0	1.20	38.00	8,775.3	424.9	128.8	444.0	0.21	0.21	
8,888.0	1.40	35.60	8,870.3	426.7	130.1	446.0	0.22	0.21	
8,984.0	1.40	30.70	8,966.2	428.6	131.4	448.3	0.12	0.00	
9,079.0	1.60	28.20	9,061.2	430.8	132.6	450.7	0.22	0.21	
9,174.0	1.70	33.40	9,156.2	433.1	134.0	453.4	0.19	0.11	
9,243.0	1.60	36.80	9,225.1	434.8	135.1	455.2	0.20	-0.14	Last Cathedral Survey @ 9,243' MD
9,310.0	1.60	36.80	9,292.1	436.3	136.2	457.0	0.00	0.00	Projection to Bit @ 9,310'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal Savage 11-3B (RD-11)
Project:	S. Piceance (Parachute)	TVD Reference:	KB @ 6406.0ft (Nabors M1)
Site:	NWNW S11-T7S-R94W (RD-11)	MD Reference:	KB @ 6406.0ft (Nabors M1)
Well:	Federal Savage 11-3B (RD-11)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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									
Federal Savage 11-3B (I	0.00	0.00	9,112.0	419.6	124.0	1,600,602.57	2,334,085.64	39.458681	-107.858752
- actual wellpath misses target center by 15.5ft at 9129.4ft MD (9111.6 TVD, 432.0 N, 133.3 E)									
- Circle (radius 25.0)									
Federal Savage 11-3B (I	0.00	0.00	6,305.0	419.6	124.0	1,600,602.57	2,334,085.64	39.458681	-107.858752
- actual wellpath misses target center by 1.2ft at 6322.4ft MD (6305.0 TVD, 419.6 N, 125.1 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,360.0	1,356.8	80.2	24.5	Last Cathedral Survey @ 1,360' MD
9,243.0	9,225.1	434.8	135.1	Last Cathedral Survey @ 9,243' MD
9,310.0	9,292.1	436.3	136.2	Projection to Bit @ 9,310'

Checked By: _____ Approved By: _____ Date: _____