



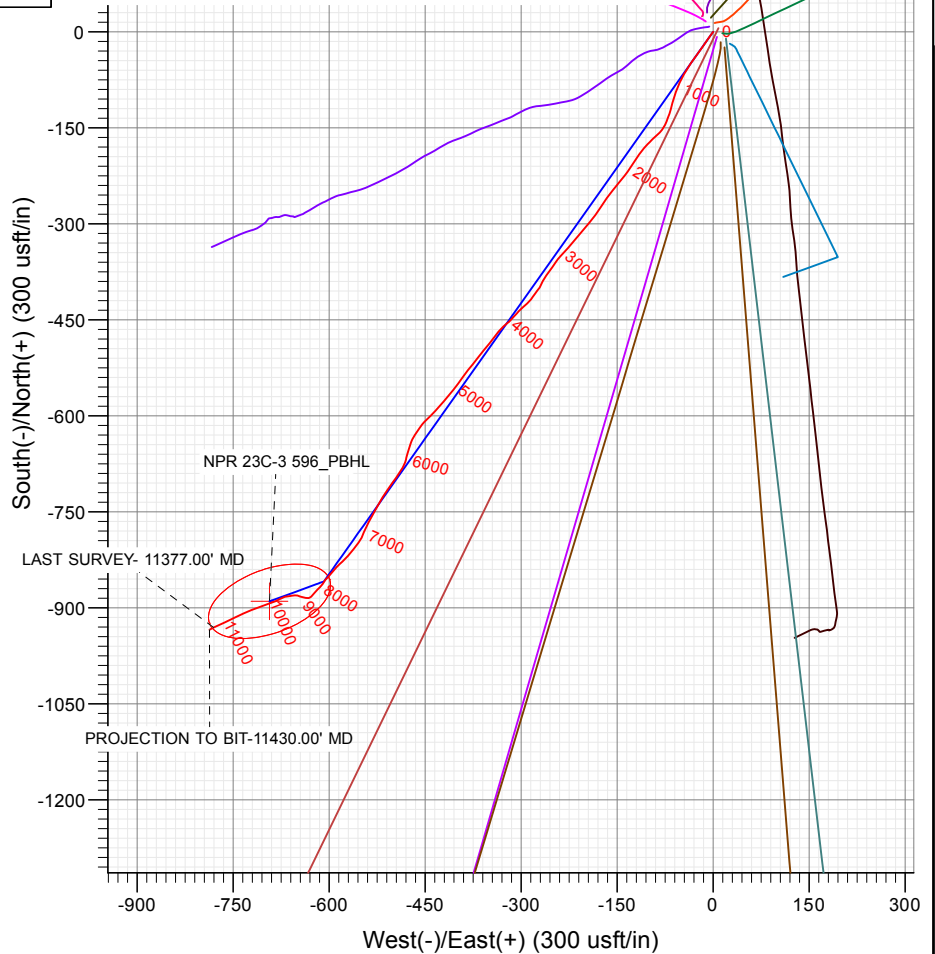
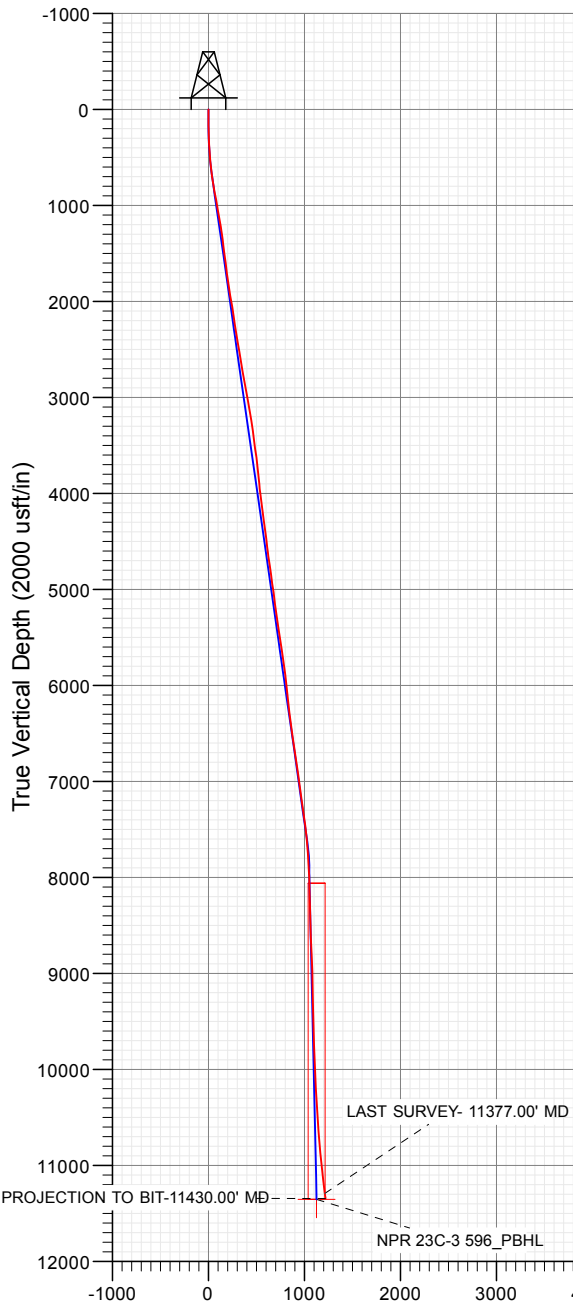
SECTION DETAILS

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	175.00	0.00	0.00	175.00	0.00	0.00	0.00	0.00	0.00	
3	275.00	3.00	215.31	274.95	-2.14	-1.51	3.00	215.31	2.61	
4	455.00	3.00	215.31	454.71	-9.82	-6.96	0.00	0.00	12.03	
5	626.64	8.15	215.31	625.48	-23.43	-16.59	3.00	0.00	28.68	
6	7711.98	8.15	215.31	7639.27	-843.05	-597.07	0.00	0.00	1031.99	
7	7983.62	0.00	0.00	7910.00	-858.78	-608.22	3.00	180.00	1051.25	
8	8059.67	1.52	250.00	7986.04	-859.13	-609.17	2.00	250.00	1052.11	
9	11429.82	1.52	250.00	11355.00	-889.72	-693.22	0.00	0.00	1127.90	NPR 23C-3 596_PBHL

OH NPR 23C-3 596 GL+KB @ 8381.00usft (Original Well Elev) Ground Level @ 8331.00 NAD 1982 - Western US Well NPR 23C-3 596, True North									
Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD	
User	No Target (Freehand)	217.92	Slot		0.00	0.00	TVD		
Name	NPR 23C-3 596_PBHL	11355.00			+N/-S	+E/-W	Latitude	Longitude	
					-889.72	-693.22	39.645175	-108.149941	

Project: Garfield County, CO (UTM 12N)
Site: S3-T5S R96W NPR A03 596 PAD (H&P330)
Well: NPR 23C-3 596

Wellbore: OH
Design: OH



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3100.00	3126.40	WASATCH.MBL (TVD)
5506.00	5556.95	WASATCH_G_ZONE.MBL (TVD)
5806.00	5860.01	FORT UNION.MBL (TVD)
7766.00	7839.49	OHIO CREEK.MBL (TVD)
8010.00	8083.64	WILLIAMS FORK.MBL (TVD)
8060.00	8133.66	TOP GAS.MBL (TVD)
10655.00	10729.57	CAMEO.MBL (TVD)
11205.00	11279.77	ROLLINS.MBL (TVD)
11355.00	11429.82	TD.MBL (TVD)



Azimuths to True North
Magnetic North: 9.58°

Magnetic Field
Strength: 51353.3nT
Dip Angle: 65.87°
Date: 12/31/2018
Model: HDGM_FILE

Vertical Section at 217.92° (2000 usft/in)

WELL DETAILS: NPR 23C-3 596

8331.00			
+N/-S	+E/-W	Northing	Easting
0.00	0.00	14410494.20	2443442.00
		Latitude	Longitude
		39.647617	-108.147480

CATHEDRAL



Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 23C-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 23C-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	USA EDM 5000 Multi Users DB

Project	Garfield County, CO (UTM 12N)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		
Map Zone:	Zone 12N (114 W to 108 W)		

Site		S3-T5S R96W NPR A03 596 PAD (H&P330)			
Site Position:		Northing:	14,410,524.00 usft	Latitude:	39.647700
From:	Map	Easting:	2,443,431.60 usft	Longitude:	-108.147513
Position Uncertainty:	3.28 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.82 °

Well	NPR 23C-3 596					
Well Position	+N/-S	0.00 usft	Northing:	14,410,494.20 usft	Latitude:	39.647617
	+E/-W	0.00 usft	Easting:	2,443,442.00 usft	Longitude:	-108.147480
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	8,331.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	12/31/2018	9.58	65.87	51,353.30000000

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	217.92	

Survey Program	Date	1/11/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
176.00	2,927.00	Survey #1 (OH)	INC+TREND	Inclinometer + known azi trend	
3,099.00	11,430.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
176.00	1.19	214.63	175.99	-1.50	-1.04	1.82	0.68	0.68	
206.00	1.71	220.25	205.98	-2.10	-1.50	2.58	1.79	1.73	
298.00	2.42	214.98	297.92	-4.74	-3.51	5.89	0.80	0.77	
481.00	3.65	213.40	480.66	-12.77	-8.93	15.56	0.67	0.67	
572.00	5.67	213.14	571.35	-18.95	-12.98	22.93	2.22	2.22	
667.00	7.60	217.09	665.71	-27.89	-19.33	33.89	2.09	2.03	
760.00	8.92	216.39	757.74	-38.60	-27.32	47.24	1.42	1.42	
854.00	10.64	215.95	850.38	-51.50	-36.74	63.20	1.83	1.83	
949.00	10.99	207.95	943.69	-66.60	-46.13	80.89	1.62	0.37	
1,043.00	10.06	201.01	1,036.11	-82.18	-53.28	97.57	1.67	-0.99	
1,137.00	10.02	200.92	1,128.67	-97.48	-59.14	113.24	0.05	-0.04	

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 23C-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 23C-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,232.00	10.24	194.15	1,222.20	-113.39	-64.16	128.87	1.27	0.23	
1,325.00	8.44	198.81	1,313.96	-127.87	-68.38	142.89	2.10	-1.94	
1,420.00	7.38	201.97	1,408.06	-140.12	-72.91	155.34	1.21	-1.12	
1,514.00	6.90	211.64	1,501.33	-150.53	-78.13	166.76	1.37	-0.51	
1,609.00	7.16	228.16	1,595.63	-159.34	-85.53	178.26	2.14	0.27	
1,703.00	7.91	227.11	1,688.81	-167.65	-94.64	190.41	0.81	0.80	
1,797.00	8.53	221.22	1,781.85	-177.29	-103.97	203.76	1.11	0.66	
1,891.00	8.83	217.27	1,874.77	-188.28	-112.93	217.93	0.71	0.32	
1,985.00	9.49	214.01	1,967.58	-200.44	-121.64	232.88	0.89	0.70	
2,079.00	9.14	212.78	2,060.34	-213.15	-130.01	248.04	0.43	-0.37	
2,172.00	8.75	218.94	2,152.21	-224.86	-138.46	262.47	1.11	-0.42	
2,267.00	8.75	220.17	2,246.10	-236.00	-147.66	276.92	0.20	0.00	
2,361.00	9.10	217.88	2,338.96	-247.33	-156.84	291.50	0.53	0.37	
2,455.00	9.67	216.39	2,431.70	-259.55	-166.09	306.82	0.66	0.61	
2,550.00	9.89	212.43	2,525.32	-272.86	-175.19	322.92	0.74	0.23	
2,644.00	9.58	215.86	2,617.97	-286.02	-184.11	338.77	0.70	-0.33	
2,739.00	8.97	220.17	2,711.73	-298.08	-193.51	354.07	0.97	-0.64	
2,833.00	9.67	219.90	2,804.49	-309.74	-203.31	369.28	0.75	0.74	
2,927.00	10.28	219.38	2,897.07	-322.28	-213.69	385.56	0.66	0.65	
3,099.00	11.07	223.42	3,066.09	-346.14	-234.78	417.34	0.63	0.46	
3,194.00	9.58	215.24	3,159.56	-359.22	-245.61	434.32	2.20	-1.57	
3,288.00	9.62	216.30	3,252.24	-371.94	-254.77	449.98	0.19	0.04	
3,382.00	7.52	211.20	3,345.19	-383.53	-262.61	463.94	2.37	-2.23	
3,476.00	7.21	205.31	3,438.41	-394.12	-268.32	475.81	0.87	-0.33	
3,571.00	7.69	219.11	3,532.62	-404.44	-274.88	487.98	1.94	0.51	
3,666.00	6.94	212.17	3,626.85	-414.24	-281.94	500.05	1.22	-0.79	
3,760.00	6.33	227.81	3,720.22	-422.52	-288.81	510.80	2.02	-0.65	
3,854.00	6.33	227.90	3,813.65	-429.48	-296.49	521.01	0.01	0.00	
3,948.00	5.67	223.77	3,907.14	-436.31	-303.55	530.74	0.84	-0.70	
4,043.00	7.16	220.69	4,001.54	-444.18	-310.66	541.32	1.61	1.57	
4,137.00	7.47	227.37	4,094.77	-452.76	-318.97	553.20	0.96	0.33	
4,232.00	7.08	229.92	4,189.01	-460.72	-327.99	565.02	0.53	-0.41	
4,326.00	8.13	219.46	4,282.19	-469.58	-336.65	577.33	1.84	1.12	
4,421.00	7.65	214.10	4,376.29	-480.00	-344.47	590.35	0.92	-0.51	
4,515.00	7.08	219.99	4,469.51	-489.62	-351.70	602.38	1.01	-0.61	
4,610.00	6.55	221.13	4,563.84	-498.19	-359.02	613.64	0.58	-0.56	
4,704.00	8.31	216.83	4,657.05	-507.66	-366.62	625.79	1.96	1.87	
4,799.00	8.26	218.50	4,751.06	-518.50	-374.99	639.48	0.26	-0.05	
4,893.00	7.91	219.81	4,844.12	-528.75	-383.33	652.69	0.42	-0.37	
4,988.00	8.04	213.93	4,938.21	-539.29	-391.22	665.86	0.87	0.14	
5,082.00	7.56	216.65	5,031.34	-549.70	-398.58	678.60	0.64	-0.51	
5,177.00	7.34	218.67	5,125.54	-559.45	-406.11	690.91	0.36	-0.23	
5,271.00	6.77	221.66	5,218.82	-568.28	-413.54	702.44	0.72	-0.61	
5,365.00	8.57	217.79	5,311.98	-577.96	-421.52	714.98	1.99	1.91	
5,459.00	9.19	223.51	5,404.85	-588.93	-430.98	729.45	1.15	0.66	
5,554.00	8.70	224.30	5,498.70	-599.58	-441.22	744.14	0.53	-0.52	
5,649.00	8.83	225.35	5,592.59	-609.85	-451.42	758.51	0.22	0.14	
5,743.00	8.04	210.94	5,685.58	-620.56	-459.94	772.19	2.39	-0.84	
5,837.00	8.09	214.01	5,778.65	-631.68	-467.02	785.32	0.46	0.05	
5,932.00	7.91	198.55	5,872.74	-643.42	-472.83	798.16	2.27	-0.19	
6,022.00	7.12	197.14	5,961.97	-654.62	-476.45	809.21	0.90	-0.88	
6,120.00	6.11	194.06	6,059.31	-665.48	-479.51	819.66	1.09	-1.03	
6,215.00	6.06	199.86	6,153.78	-675.10	-482.44	829.05	0.65	-0.05	

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 23C-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 23C-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
6,309.00	7.16	212.87	6,247.16	-684.69	-487.30	839.60	1.97	1.17	
6,403.00	7.12	214.98	6,340.43	-694.38	-493.82	851.26	0.28	-0.04	
6,497.00	8.26	215.77	6,433.58	-704.63	-501.11	863.82	1.22	1.21	
6,592.00	8.44	214.89	6,527.57	-715.89	-509.09	877.61	0.23	0.19	
6,686.00	8.04	211.99	6,620.60	-727.12	-516.51	891.03	0.61	-0.43	
6,781.00	8.26	208.13	6,714.64	-738.78	-523.25	904.37	0.62	0.23	
6,875.00	8.04	209.09	6,807.70	-750.48	-529.63	917.51	0.28	-0.23	
6,969.00	8.31	209.88	6,900.74	-762.11	-536.21	930.74	0.31	0.29	
7,064.00	8.09	203.73	6,994.77	-774.18	-542.32	944.01	0.95	-0.23	
7,158.00	8.09	202.41	7,087.84	-786.35	-547.50	956.80	0.20	0.00	
7,252.00	8.13	216.91	7,180.91	-797.78	-554.02	969.82	2.17	0.04	
7,347.00	8.22	217.79	7,274.94	-808.52	-562.21	983.33	0.16	0.09	
7,441.00	7.60	221.05	7,368.05	-818.52	-570.41	996.25	0.81	-0.66	
7,536.00	7.69	227.46	7,462.20	-827.55	-579.22	1,008.80	0.90	0.09	
7,630.00	6.50	223.86	7,555.48	-835.64	-587.54	1,020.29	1.35	-1.27	
7,725.00	4.79	219.64	7,650.02	-842.58	-593.80	1,029.60	1.85	-1.80	
7,819.00	3.25	219.81	7,743.78	-847.64	-598.01	1,036.19	1.64	-1.64	
7,913.00	3.60	225.09	7,837.62	-851.77	-601.81	1,041.78	0.50	0.37	
8,008.00	3.12	222.36	7,932.45	-855.79	-605.66	1,047.32	0.53	-0.51	
8,102.00	2.24	207.95	8,026.35	-859.30	-608.25	1,051.68	1.17	-0.94	
8,197.00	1.49	212.87	8,121.30	-861.98	-609.79	1,054.74	0.81	-0.79	
8,291.00	1.32	217.88	8,215.27	-863.86	-611.11	1,057.04	0.22	-0.18	
8,480.00	1.63	224.39	8,404.21	-867.50	-614.33	1,061.89	0.19	0.16	
8,668.00	1.76	227.64	8,592.13	-871.36	-618.34	1,067.39	0.09	0.07	
8,857.00	2.55	215.24	8,780.99	-876.75	-622.91	1,074.45	0.48	0.42	
9,051.00	2.07	231.68	8,974.84	-882.44	-628.15	1,082.16	0.42	-0.25	
9,145.00	1.89	243.37	9,068.78	-884.19	-630.86	1,085.21	0.47	-0.19	
9,239.00	2.24	275.98	9,162.72	-884.70	-634.08	1,087.58	1.28	0.37	
9,333.00	3.21	279.32	9,256.61	-884.08	-638.50	1,089.82	1.05	1.03	
9,427.00	2.29	288.19	9,350.51	-883.07	-642.88	1,091.71	1.08	-0.98	
9,521.00	1.93	293.38	9,444.44	-881.85	-646.12	1,092.74	0.43	-0.38	
9,616.00	2.42	280.81	9,539.37	-880.84	-649.56	1,094.06	0.72	0.52	
9,710.00	2.64	271.23	9,633.28	-880.42	-653.67	1,096.26	0.51	0.23	
9,805.00	2.64	256.82	9,728.18	-880.87	-657.99	1,099.27	0.70	0.00	
9,899.00	2.81	265.08	9,822.08	-881.56	-662.39	1,102.52	0.45	0.18	
10,182.00	3.16	241.26	10,104.70	-885.91	-676.14	1,114.40	0.45	0.12	
10,464.00	4.66	251.02	10,386.04	-893.37	-693.79	1,131.13	0.58	0.53	
10,810.00	5.05	248.91	10,730.80	-903.42	-721.29	1,155.96	0.12	0.11	
11,092.00	6.68	243.55	11,011.32	-915.20	-747.56	1,181.39	0.61	0.58	
11,377.00	8.00	245.13	11,293.97	-930.92	-780.39	1,213.98	0.47	0.46	LAST SURVEY- 11377.00' MD
11,430.00	8.00	245.13	11,346.46	-934.02	-787.09	1,220.54	0.00	0.00	PROJECTION TO BIT-11430.00' MD

Survey Report

Company:	Caerus Oil & Gas	Local Co-ordinate Reference:	Well NPR 23C-3 596
Project:	Garfield County, CO (UTM 12N)	TVD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Site:	S3-T5S R96W NPR A03 596 PAD (H&P330)	MD Reference:	GL+KB @ 8361.00usft (Original Well Elev)
Well:	NPR 23C-3 596	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
NPR 23C-3 596_PBHL	0.00	0.00	11,355.00	-889.72	-693.22	14,409,582.90	2,442,777.40	39.645175	-108.149941
- actual wellpath misses target center by 103.97usft at 11424.01usft MD (11340.53 TVD, -933.67 N, -786.33 E)									
- Ellipse (radii L100.00 W50.00 on 250.00 azi)									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment	
11,377.00	11,293.97	-930.92	-780.39	LAST SURVEY- 11377.00' MD	
11,430.00	11,346.46	-934.02	-787.09	PROJECTION TO BIT-11430.00' MD	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------