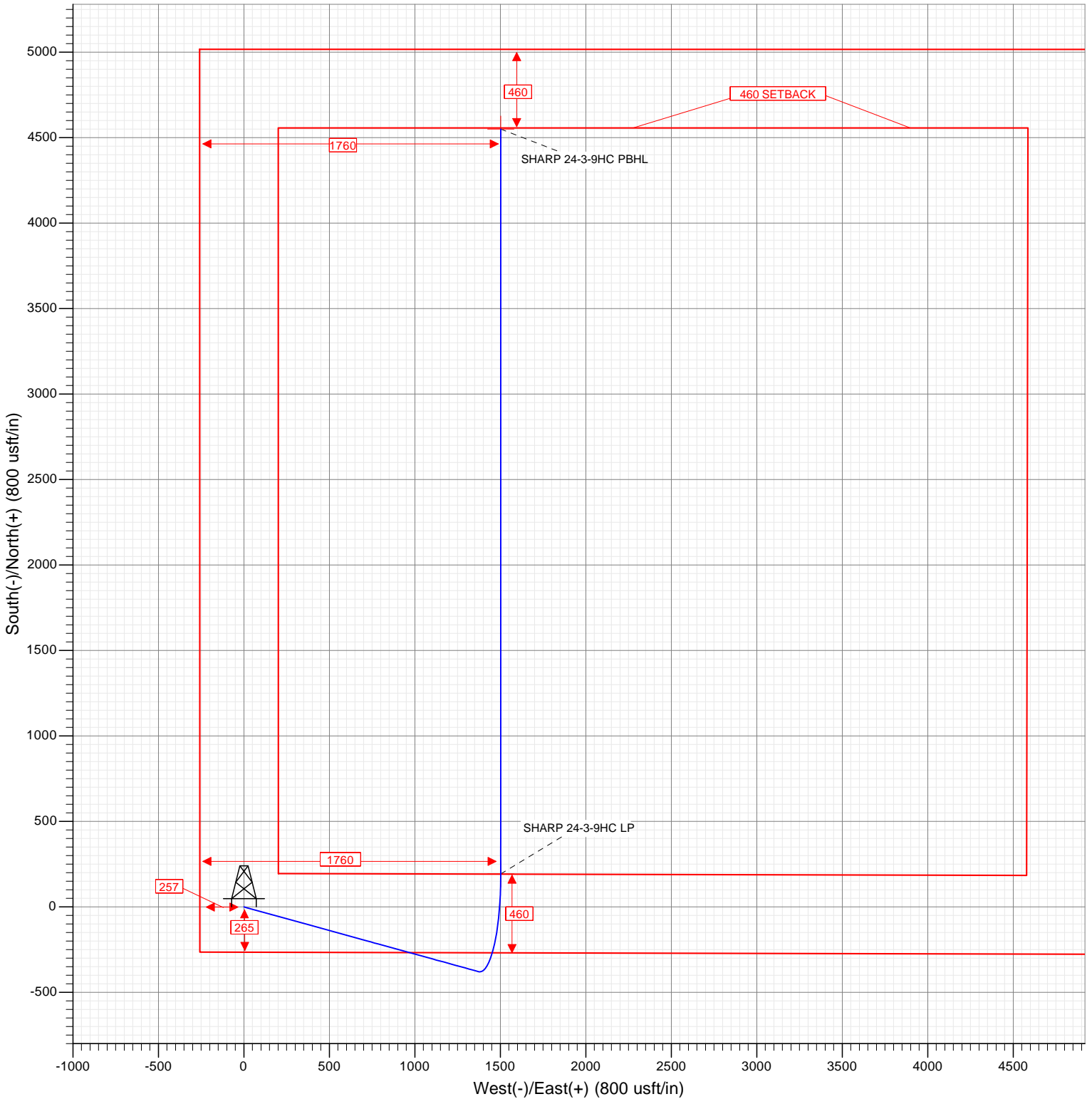




SECTION DETAILS

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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1138.43	12.77	105.42	1133.16	-18.84	68.29	2.00	105.42	-18.84	
4	7264.09	12.77	105.42	7107.34	-378.86	1373.41	0.00	0.00	-378.86	
5	8197.79	90.00	360.00	7700.00	193.11	1502.84	10.00	-105.06	193.11	SHARP 24-3-9HC LP
6	12554.49	90.00	360.00	7700.00	4549.81	1502.58	0.00	0.00	4549.81	SHARP 24-3-9HC PBHL



WELL DETAILS: SHARP 24-3-9HC

		Ground Level: 5019.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1223149.63	3183422.32	39.944070	-104.845810

CATHEDRAL





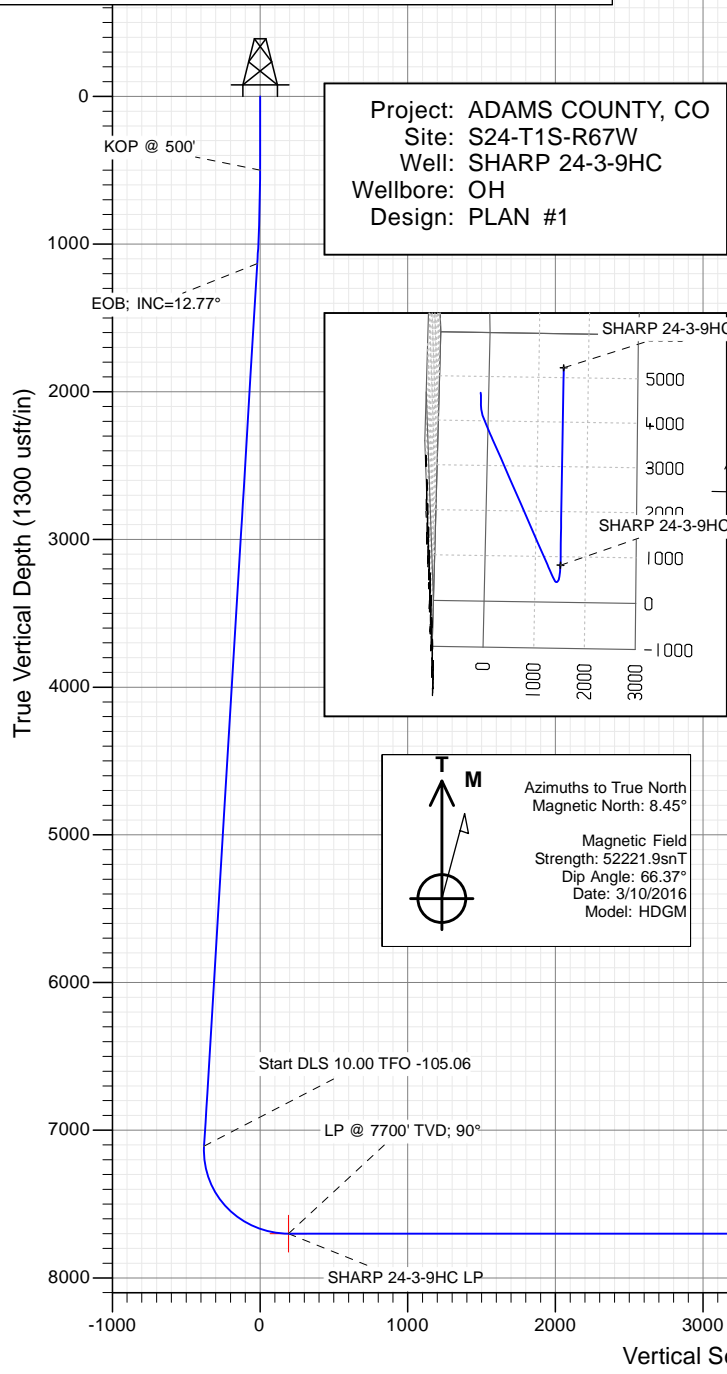
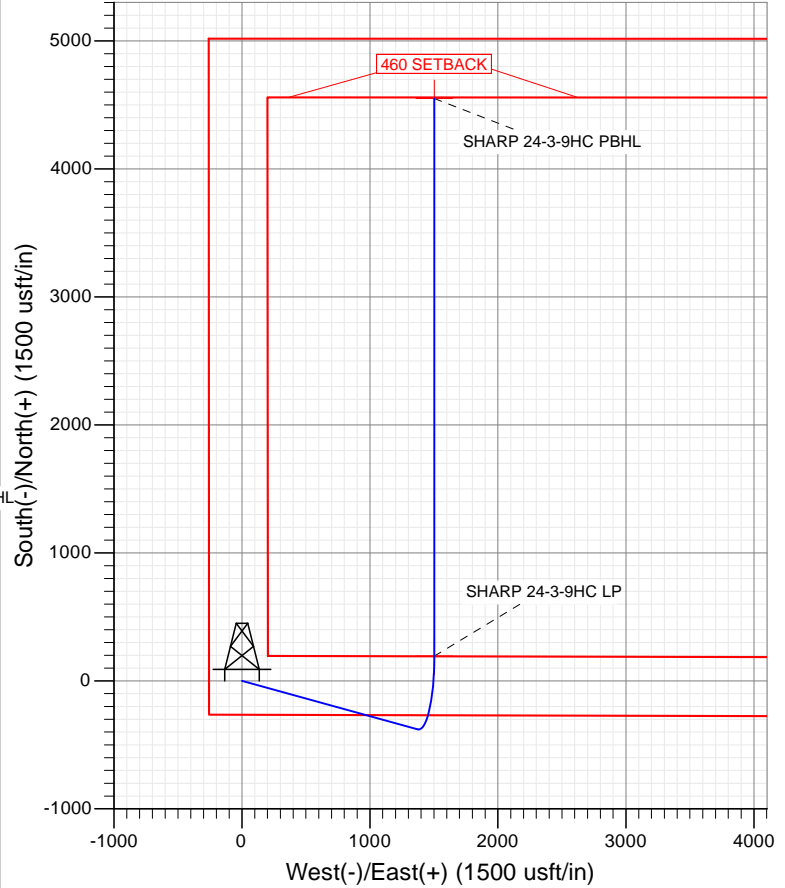
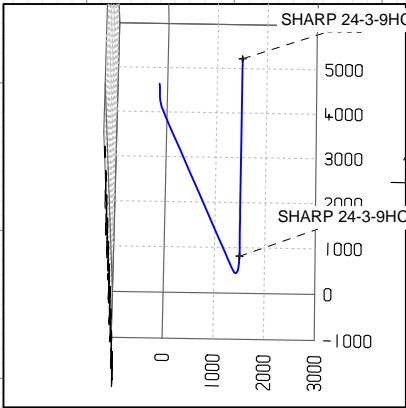
SECTION DETAILS

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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1138.43	12.77	105.42	1133.16	-18.84	68.29	2.00	105.42	-18.84	
4	7264.09	12.77	105.42	7107.34	-378.86	1373.41	0.00	0.00	-378.86	
5	8197.79	90.00	360.00	7700.00	193.11	1502.84	10.00	-105.06	193.11	SHARP 24-3-9HC LP
6	12554.49	90.00	360.00	7700.00	4549.81	1502.58	0.00	0.00	4549.81	SHARP 24-3-9HC PBHL

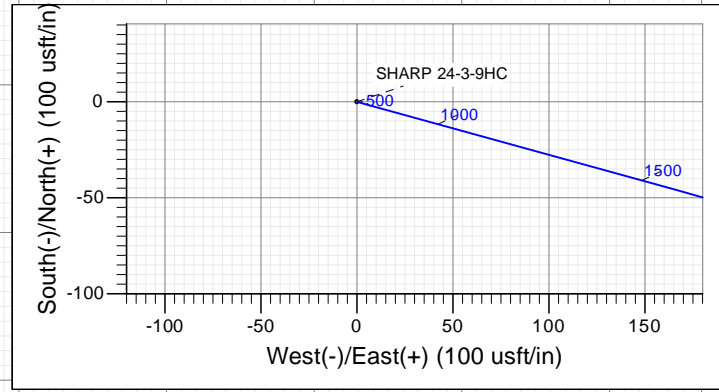
PLAN #1
 SHARP 24-3-9HC
 15" KB @ 5034.00usft
 Ground Level @ 5019.00
 North American Datum 1983
 Well SHARP 24-3-9HC, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD	+N/-S	+E/-W	Latitude	Longitude
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00	0.00					
Name												
SHARP 24-3-9HC LP								7700.00	193.11	1502.84	39.944600	-104.840450
SHARP 24-3-9HC PBHL								7700.00	4549.81	1502.58	39.956560	-104.840450

Project: ADAMS COUNTY, CO
 Site: S24-T1S-R67W
 Well: SHARP 24-3-9HC
 Wellbore: OH
 Design: PLAN #1



Azimuths to True North
 Magnetic North: 8.45°
 Magnetic Field
 Strength: 52221.9snT
 Dip Angle: 66.37°
 Date: 3/10/2016
 Model: HDGM



WELL DETAILS: SHARP 24-3-9HC

		Ground Level: 5019.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1223149.63	3183422.32	39.94470	-104.845810



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SHARP 24-3-9HC
Company:	Ward Petroleum	TVD Reference:	15' KB @ 5034.00usft
Project:	ADAMS COUNTY, CO	MD Reference:	15' KB @ 5034.00usft
Site:	S24-T1S-R67W	North Reference:	True
Well:	SHARP 24-3-9HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	ADAMS COUNTY, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	S24-T1S-R67W				
Site Position:		Northing:	1,223,149.64 usft	Latitude:	39.944070
From:	Lat/Long	Easting:	3,183,422.32 usft	Longitude:	-104.845810
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.42 °

Well	SHARP 24-3-9HC					
Well Position	+N/-S	0.00 usft	Northing:	1,223,149.63 usft	Latitude:	39.944070
	+E/-W	0.00 usft	Easting:	3,183,422.32 usft	Longitude:	-104.845810
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,019.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	3/10/2016	8.45	66.37	52,222

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	0.00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	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	
1,138.43	12.77	105.42	1,133.16	-18.84	68.29	2.00	2.00	0.00	105.42	
7,264.09	12.77	105.42	7,107.34	-378.86	1,373.41	0.00	0.00	0.00	0.00	
8,197.79	90.00	360.00	7,700.00	193.11	1,502.84	10.00	8.27	-11.29	-105.06	SHARP 24-3-9HC LP
12,554.49	90.00	360.00	7,700.00	4,549.81	1,502.58	0.00	0.00	0.00	0.00	SHARP 24-3-9HC PB

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SHARP 24-3-9HC
Company:	Ward Petroleum	TVD Reference:	15' KB @ 5034.00usft
Project:	ADAMS COUNTY, CO	MD Reference:	15' KB @ 5034.00usft
Site:	S24-T1S-R67W	North Reference:	True
Well:	SHARP 24-3-9HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
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	
200.00	0.00	0.00	200.00	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	
400.00	0.00	0.00	400.00	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	KOP @ 500'
600.00	2.00	105.42	599.98	-0.46	1.68	-0.46	2.00	2.00	
700.00	4.00	105.42	699.84	-1.86	6.73	-1.86	2.00	2.00	
800.00	6.00	105.42	799.45	-4.17	15.13	-4.17	2.00	2.00	
900.00	8.00	105.42	898.70	-7.41	26.88	-7.41	2.00	2.00	
1,000.00	10.00	105.42	997.47	-11.57	41.96	-11.57	2.00	2.00	
1,100.00	12.00	105.42	1,095.62	-16.65	60.35	-16.65	2.00	2.00	
1,138.43	12.77	105.42	1,133.16	-18.84	68.29	-18.84	2.00	2.00	EOB; INC=12.77°
1,200.00	12.77	105.42	1,193.21	-22.46	81.41	-22.46	0.00	0.00	
1,300.00	12.77	105.42	1,290.73	-28.34	102.72	-28.34	0.00	0.00	
1,400.00	12.77	105.42	1,388.26	-34.21	124.02	-34.21	0.00	0.00	
1,500.00	12.77	105.42	1,485.79	-40.09	145.33	-40.09	0.00	0.00	
1,600.00	12.77	105.42	1,583.31	-45.97	166.63	-45.97	0.00	0.00	
1,700.00	12.77	105.42	1,680.84	-51.84	187.94	-51.84	0.00	0.00	
1,800.00	12.77	105.42	1,778.37	-57.72	209.25	-57.72	0.00	0.00	
1,900.00	12.77	105.42	1,875.90	-63.60	230.55	-63.60	0.00	0.00	
2,000.00	12.77	105.42	1,973.42	-69.48	251.86	-69.48	0.00	0.00	
2,100.00	12.77	105.42	2,070.95	-75.35	273.16	-75.35	0.00	0.00	
2,200.00	12.77	105.42	2,168.48	-81.23	294.47	-81.23	0.00	0.00	
2,300.00	12.77	105.42	2,266.00	-87.11	315.77	-87.11	0.00	0.00	
2,400.00	12.77	105.42	2,363.53	-92.99	337.08	-92.99	0.00	0.00	
2,500.00	12.77	105.42	2,461.06	-98.86	358.39	-98.86	0.00	0.00	
2,600.00	12.77	105.42	2,558.58	-104.74	379.69	-104.74	0.00	0.00	
2,700.00	12.77	105.42	2,656.11	-110.62	401.00	-110.62	0.00	0.00	
2,800.00	12.77	105.42	2,753.64	-116.49	422.30	-116.49	0.00	0.00	
2,900.00	12.77	105.42	2,851.17	-122.37	443.61	-122.37	0.00	0.00	
3,000.00	12.77	105.42	2,948.69	-128.25	464.91	-128.25	0.00	0.00	
3,100.00	12.77	105.42	3,046.22	-134.13	486.22	-134.13	0.00	0.00	
3,200.00	12.77	105.42	3,143.75	-140.00	507.52	-140.00	0.00	0.00	
3,300.00	12.77	105.42	3,241.27	-145.88	528.83	-145.88	0.00	0.00	
3,400.00	12.77	105.42	3,338.80	-151.76	550.14	-151.76	0.00	0.00	
3,500.00	12.77	105.42	3,436.33	-157.63	571.44	-157.63	0.00	0.00	
3,600.00	12.77	105.42	3,533.86	-163.51	592.75	-163.51	0.00	0.00	
3,700.00	12.77	105.42	3,631.38	-169.39	614.05	-169.39	0.00	0.00	
3,800.00	12.77	105.42	3,728.91	-175.27	635.36	-175.27	0.00	0.00	
3,900.00	12.77	105.42	3,826.44	-181.14	656.66	-181.14	0.00	0.00	
4,000.00	12.77	105.42	3,923.96	-187.02	677.97	-187.02	0.00	0.00	
4,100.00	12.77	105.42	4,021.49	-192.90	699.28	-192.90	0.00	0.00	
4,200.00	12.77	105.42	4,119.02	-198.78	720.58	-198.78	0.00	0.00	
4,300.00	12.77	105.42	4,216.54	-204.65	741.89	-204.65	0.00	0.00	
4,400.00	12.77	105.42	4,314.07	-210.53	763.19	-210.53	0.00	0.00	
4,500.00	12.77	105.42	4,411.60	-216.41	784.50	-216.41	0.00	0.00	
4,600.00	12.77	105.42	4,509.13	-222.28	805.80	-222.28	0.00	0.00	
4,700.00	12.77	105.42	4,606.65	-228.16	827.11	-228.16	0.00	0.00	
4,800.00	12.77	105.42	4,704.18	-234.04	848.42	-234.04	0.00	0.00	
4,900.00	12.77	105.42	4,801.71	-239.92	869.72	-239.92	0.00	0.00	
5,000.00	12.77	105.42	4,899.23	-245.79	891.03	-245.79	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SHARP 24-3-9HC
Company:	Ward Petroleum	TVD Reference:	15' KB @ 5034.00usft
Project:	ADAMS COUNTY, CO	MD Reference:	15' KB @ 5034.00usft
Site:	S24-T1S-R67W	North Reference:	True
Well:	SHARP 24-3-9HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,100.00	12.77	105.42	4,996.76	-251.67	912.33	-251.67	0.00	0.00	
5,200.00	12.77	105.42	5,094.29	-257.55	933.64	-257.55	0.00	0.00	
5,300.00	12.77	105.42	5,191.82	-263.43	954.94	-263.43	0.00	0.00	
5,400.00	12.77	105.42	5,289.34	-269.30	976.25	-269.30	0.00	0.00	
5,500.00	12.77	105.42	5,386.87	-275.18	997.56	-275.18	0.00	0.00	
5,600.00	12.77	105.42	5,484.40	-281.06	1,018.86	-281.06	0.00	0.00	
5,700.00	12.77	105.42	5,581.92	-286.93	1,040.17	-286.93	0.00	0.00	
5,800.00	12.77	105.42	5,679.45	-292.81	1,061.47	-292.81	0.00	0.00	
5,900.00	12.77	105.42	5,776.98	-298.69	1,082.78	-298.69	0.00	0.00	
6,000.00	12.77	105.42	5,874.50	-304.57	1,104.08	-304.57	0.00	0.00	
6,100.00	12.77	105.42	5,972.03	-310.44	1,125.39	-310.44	0.00	0.00	
6,200.00	12.77	105.42	6,069.56	-316.32	1,146.70	-316.32	0.00	0.00	
6,300.00	12.77	105.42	6,167.09	-322.20	1,168.00	-322.20	0.00	0.00	
6,400.00	12.77	105.42	6,264.61	-328.08	1,189.31	-328.08	0.00	0.00	
6,500.00	12.77	105.42	6,362.14	-333.95	1,210.61	-333.95	0.00	0.00	
6,600.00	12.77	105.42	6,459.67	-339.83	1,231.92	-339.83	0.00	0.00	
6,700.00	12.77	105.42	6,557.19	-345.71	1,253.22	-345.71	0.00	0.00	
6,800.00	12.77	105.42	6,654.72	-351.58	1,274.53	-351.58	0.00	0.00	
6,900.00	12.77	105.42	6,752.25	-357.46	1,295.83	-357.46	0.00	0.00	
7,000.00	12.77	105.42	6,849.78	-363.34	1,317.14	-363.34	0.00	0.00	
7,100.00	12.77	105.42	6,947.30	-369.22	1,338.45	-369.22	0.00	0.00	
7,200.00	12.77	105.42	7,044.83	-375.09	1,359.75	-375.09	0.00	0.00	
7,264.09	12.77	105.42	7,107.34	-378.86	1,373.41	-378.86	0.00	0.00	Start DLS 10.00 TFO -105.06
7,300.00	12.32	88.96	7,142.40	-379.85	1,381.07	-379.85	10.00	-1.24	
7,400.00	15.96	49.81	7,239.57	-370.76	1,402.29	-370.76	10.00	3.63	
7,500.00	23.54	30.09	7,333.71	-344.54	1,422.86	-344.54	10.00	7.59	
7,600.00	32.42	20.12	7,421.99	-301.98	1,442.14	-301.98	10.00	8.87	
7,700.00	41.76	14.16	7,501.70	-244.38	1,459.55	-244.38	10.00	9.34	
7,800.00	51.31	10.07	7,570.42	-173.49	1,474.56	-173.49	10.00	9.55	
7,900.00	60.97	6.96	7,626.08	-91.45	1,486.71	-91.45	10.00	9.66	
8,000.00	70.69	4.39	7,666.98	-0.78	1,495.64	-0.78	10.00	9.72	
8,100.00	80.45	2.10	7,691.87	95.79	1,501.07	95.79	10.00	9.75	
8,197.79	90.00	360.00	7,700.00	193.11	1,502.84	193.11	10.00	9.77	LP @ 7700' TVD; 90°
8,200.00	90.00	360.00	7,700.00	195.32	1,502.84	195.32	0.00	0.00	
8,300.00	90.00	360.00	7,700.00	295.32	1,502.84	295.32	0.00	0.00	
8,400.00	90.00	360.00	7,700.00	395.32	1,502.83	395.32	0.00	0.00	
8,500.00	90.00	360.00	7,700.00	495.32	1,502.82	495.32	0.00	0.00	
8,600.00	90.00	360.00	7,700.00	595.32	1,502.82	595.32	0.00	0.00	
8,700.00	90.00	360.00	7,700.00	695.32	1,502.81	695.32	0.00	0.00	
8,800.00	90.00	360.00	7,700.00	795.32	1,502.81	795.32	0.00	0.00	
8,900.00	90.00	360.00	7,700.00	895.32	1,502.80	895.32	0.00	0.00	
9,000.00	90.00	360.00	7,700.00	995.32	1,502.79	995.32	0.00	0.00	
9,100.00	90.00	360.00	7,700.00	1,095.32	1,502.79	1,095.32	0.00	0.00	
9,200.00	90.00	360.00	7,700.00	1,195.32	1,502.78	1,195.32	0.00	0.00	
9,300.00	90.00	360.00	7,700.00	1,295.32	1,502.78	1,295.32	0.00	0.00	
9,400.00	90.00	360.00	7,700.00	1,395.32	1,502.77	1,395.32	0.00	0.00	
9,500.00	90.00	360.00	7,700.00	1,495.32	1,502.76	1,495.32	0.00	0.00	
9,600.00	90.00	360.00	7,700.00	1,595.32	1,502.76	1,595.32	0.00	0.00	
9,700.00	90.00	360.00	7,700.00	1,695.32	1,502.75	1,695.32	0.00	0.00	
9,800.00	90.00	360.00	7,700.00	1,795.32	1,502.75	1,795.32	0.00	0.00	
9,900.00	90.00	360.00	7,700.00	1,895.32	1,502.74	1,895.32	0.00	0.00	
10,000.00	90.00	360.00	7,700.00	1,995.32	1,502.73	1,995.32	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SHARP 24-3-9HC
Company:	Ward Petroleum	TVD Reference:	15' KB @ 5034.00usft
Project:	ADAMS COUNTY, CO	MD Reference:	15' KB @ 5034.00usft
Site:	S24-T1S-R67W	North Reference:	True
Well:	SHARP 24-3-9HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,100.00	90.00	360.00	7,700.00	2,095.32	1,502.73	2,095.32	0.00	0.00	
10,200.00	90.00	360.00	7,700.00	2,195.32	1,502.72	2,195.32	0.00	0.00	
10,300.00	90.00	360.00	7,700.00	2,295.32	1,502.72	2,295.32	0.00	0.00	
10,400.00	90.00	360.00	7,700.00	2,395.32	1,502.71	2,395.32	0.00	0.00	
10,500.00	90.00	360.00	7,700.00	2,495.32	1,502.70	2,495.32	0.00	0.00	
10,600.00	90.00	360.00	7,700.00	2,595.32	1,502.70	2,595.32	0.00	0.00	
10,700.00	90.00	360.00	7,700.00	2,695.32	1,502.69	2,695.32	0.00	0.00	
10,800.00	90.00	360.00	7,700.00	2,795.32	1,502.69	2,795.32	0.00	0.00	
10,900.00	90.00	360.00	7,700.00	2,895.32	1,502.68	2,895.32	0.00	0.00	
11,000.00	90.00	360.00	7,700.00	2,995.32	1,502.67	2,995.32	0.00	0.00	
11,100.00	90.00	360.00	7,700.00	3,095.32	1,502.67	3,095.32	0.00	0.00	
11,200.00	90.00	360.00	7,700.00	3,195.32	1,502.66	3,195.32	0.00	0.00	
11,300.00	90.00	360.00	7,700.00	3,295.32	1,502.66	3,295.32	0.00	0.00	
11,400.00	90.00	360.00	7,700.00	3,395.32	1,502.65	3,395.32	0.00	0.00	
11,500.00	90.00	360.00	7,700.00	3,495.32	1,502.64	3,495.32	0.00	0.00	
11,600.00	90.00	360.00	7,700.00	3,595.32	1,502.64	3,595.32	0.00	0.00	
11,700.00	90.00	360.00	7,700.00	3,695.32	1,502.63	3,695.32	0.00	0.00	
11,800.00	90.00	360.00	7,700.00	3,795.32	1,502.63	3,795.32	0.00	0.00	
11,900.00	90.00	360.00	7,700.00	3,895.32	1,502.62	3,895.32	0.00	0.00	
12,000.00	90.00	360.00	7,700.00	3,995.32	1,502.61	3,995.32	0.00	0.00	
12,100.00	90.00	360.00	7,700.00	4,095.32	1,502.61	4,095.32	0.00	0.00	
12,200.00	90.00	360.00	7,700.00	4,195.32	1,502.60	4,195.32	0.00	0.00	
12,300.00	90.00	360.00	7,700.00	4,295.32	1,502.60	4,295.32	0.00	0.00	
12,400.00	90.00	360.00	7,700.00	4,395.32	1,502.59	4,395.32	0.00	0.00	
12,500.00	90.00	360.00	7,700.00	4,495.32	1,502.58	4,495.32	0.00	0.00	
12,554.49	90.00	360.00	7,700.00	4,549.81	1,502.58	4,549.81	0.00	0.00	TD at 12554.49

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHARP 24-3-9HC LP - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,700.00	193.11	1,502.84	1,223,353.83	3,184,923.70	39.944600	-104.840450
SHARP 24-3-9HC PBHL - plan hits target center - Point	0.00	0.00	7,700.00	4,549.81	1,502.58	1,227,710.41	3,184,891.29	39.956560	-104.840450

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
500.00	500.00	0.00	0.00	KOP @ 500'	
1,138.43	1,133.16	-18.84	68.29	EOB; INC=12.77°	
7,264.09	7,107.34	-378.86	1,373.41	Start DLS 10.00 TFO -105.06	
8,197.79	7,700.00	193.11	1,502.84	LP @ 7700' TVD; 90°	
12,554.49	7,700.00	4,549.81	1,502.58	TD at 12554.49	