



Scientific Drilling

US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
AGGREGATE STATE 37C-16HZ PAD
AGGREGATE 37C-16HZ**

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

24 July, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well AGGREGATE 37C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4925' & KB 17' @ 4942.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4925' & KB 17' @ 4942.00ft (ASSUMED)
Site:	AGGREGATE STATE 37C-16HZ PAD	North Reference:	True
Well:	AGGREGATE 37C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	AGGREGATE STATE 37C-16HZ PAD, NESE SEC 9 T2N R66W				
Site Position:	Northing:	1,299,017.05 usft	Latitude:	40.1519300	
From:	Lat/Long	Easting:	3,202,309.16 usft	Longitude:	-104.7762430
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.47 °

Well	AGGREGATE 37C-16HZ, 2389' FSL 940' FEL					
Well Position	+N/-S	-0.02 ft	Northing:	1,299,017.28 usft	Latitude:	40.1519300
	+E/-W	30.19 ft	Easting:	3,202,339.35 usft	Longitude:	-104.7761350
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,925.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2013/07/24	8.59	66.77	52,708

Design	PLAN #1 PRELIMINARY			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,864.04	0.00	0.00	6,864.04	0.00	0.00	0.00	0.00	0.00	0.00	
7,764.44	90.04	180.10	7,437.00	-573.36	-1.05	10.00	10.00	0.00	180.10	
14,853.73	90.04	180.10	7,432.00	-7,662.63	-13.98	0.00	0.00	0.00	0.00	PBHL_AGGREGATE

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Well:	AGGREGATE 37C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	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	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	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	0.00	0.00
400.00	0.00	0.00	400.00	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	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
892.00	0.00	0.00	892.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
942.00	0.00	0.00	942.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,019.00	0.00	0.00	4,019.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parkman										
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,426.00	0.00	0.00	4,426.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sussex										
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,864.04	0.00	0.00	6,864.04	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 10.00									
6,900.00	3.60	180.10	6,899.98	-1.13	0.00	1.13	10.00	10.00	0.00
7,000.00	13.60	180.10	6,998.73	-16.06	-0.03	16.06	10.00	10.00	0.00
7,088.71	22.47	180.10	7,083.00	-43.49	-0.08	43.49	10.00	10.00	0.00
Sharon Springs									
7,100.00	23.60	180.10	7,093.39	-47.90	-0.09	47.90	10.00	10.00	0.00
7,169.23	30.52	180.10	7,155.00	-79.38	-0.14	79.38	10.00	10.00	0.00
Niobrara A									
7,199.91	33.59	180.10	7,181.00	-95.66	-0.17	95.66	10.00	10.00	0.00
Niobrara B									
7,200.00	33.60	180.10	7,181.08	-95.71	-0.17	95.71	10.00	10.00	0.00
7,300.00	43.60	180.10	7,259.13	-158.01	-0.29	158.01	10.00	10.00	0.00
7,316.62	45.26	180.10	7,271.00	-169.64	-0.31	169.64	10.00	10.00	0.00
Niobrara C									
7,400.00	53.60	180.10	7,325.19	-232.92	-0.42	232.92	10.00	10.00	0.00
7,500.00	63.60	180.10	7,377.23	-318.16	-0.58	318.16	10.00	10.00	0.00
7,590.78	72.67	180.10	7,411.00	-402.32	-0.73	402.32	10.00	10.00	0.00
Fort Hays									
7,600.00	73.60	180.10	7,413.68	-411.15	-0.75	411.15	10.00	10.00	0.00
7,688.31	82.43	180.10	7,432.00	-497.44	-0.91	497.44	10.00	10.00	0.00
Codell									
7,700.00	83.60	180.10	7,433.42	-509.05	-0.93	509.05	10.00	10.00	0.00
7,764.44	90.04	180.10	7,437.00	-573.36	-1.05	573.36	10.00	10.00	0.00
Start 7089.29 hold at 7764.44 MD - 7" (1818 FSL 936 FEL)									
7,800.00	90.04	180.10	7,436.97	-608.92	-1.11	608.92	0.00	0.00	0.00
7,900.00	90.04	180.10	7,436.90	-708.92	-1.29	708.92	0.00	0.00	0.00
8,000.00	90.04	180.10	7,436.83	-808.92	-1.48	808.92	0.00	0.00	0.00
8,100.00	90.04	180.10	7,436.76	-908.92	-1.66	908.92	0.00	0.00	0.00
8,200.00	90.04	180.10	7,436.69	-1,008.92	-1.84	1,008.92	0.00	0.00	0.00

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Well:	AGGREGATE 37C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.00	90.04	180.10	7,436.62	-1,108.92	-2.02	1,108.92	0.00	0.00	0.00
8,400.00	90.04	180.10	7,436.55	-1,208.92	-2.21	1,208.92	0.00	0.00	0.00
8,500.00	90.04	180.10	7,436.48	-1,308.92	-2.39	1,308.92	0.00	0.00	0.00
8,600.00	90.04	180.10	7,436.41	-1,408.92	-2.57	1,408.92	0.00	0.00	0.00
8,700.00	90.04	180.10	7,436.34	-1,508.92	-2.75	1,508.92	0.00	0.00	0.00
8,800.00	90.04	180.10	7,436.27	-1,608.91	-2.94	1,608.91	0.00	0.00	0.00
8,900.00	90.04	180.10	7,436.20	-1,708.91	-3.12	1,708.91	0.00	0.00	0.00
9,000.00	90.04	180.10	7,436.13	-1,808.91	-3.30	1,808.91	0.00	0.00	0.00
9,100.00	90.04	180.10	7,436.06	-1,908.91	-3.48	1,908.91	0.00	0.00	0.00
9,200.00	90.04	180.10	7,435.99	-2,008.91	-3.67	2,008.91	0.00	0.00	0.00
9,300.00	90.04	180.10	7,435.92	-2,108.91	-3.85	2,108.91	0.00	0.00	0.00
9,400.00	90.04	180.10	7,435.84	-2,208.91	-4.03	2,208.91	0.00	0.00	0.00
9,500.00	90.04	180.10	7,435.77	-2,308.91	-4.21	2,308.91	0.00	0.00	0.00
9,600.00	90.04	180.10	7,435.70	-2,408.91	-4.40	2,408.91	0.00	0.00	0.00
9,700.00	90.04	180.10	7,435.63	-2,508.91	-4.58	2,508.91	0.00	0.00	0.00
9,800.00	90.04	180.10	7,435.56	-2,608.91	-4.76	2,608.91	0.00	0.00	0.00
9,900.00	90.04	180.10	7,435.49	-2,708.91	-4.94	2,708.91	0.00	0.00	0.00
10,000.00	90.04	180.10	7,435.42	-2,808.91	-5.12	2,808.91	0.00	0.00	0.00
10,100.00	90.04	180.10	7,435.35	-2,908.91	-5.31	2,908.91	0.00	0.00	0.00
10,200.00	90.04	180.10	7,435.28	-3,008.91	-5.49	3,008.91	0.00	0.00	0.00
10,300.00	90.04	180.10	7,435.21	-3,108.91	-5.67	3,108.91	0.00	0.00	0.00
10,400.00	90.04	180.10	7,435.14	-3,208.91	-5.85	3,208.91	0.00	0.00	0.00
10,500.00	90.04	180.10	7,435.07	-3,308.91	-6.04	3,308.91	0.00	0.00	0.00
10,600.00	90.04	180.10	7,435.00	-3,408.91	-6.22	3,408.91	0.00	0.00	0.00
10,700.00	90.04	180.10	7,434.93	-3,508.91	-6.40	3,508.91	0.00	0.00	0.00
10,800.00	90.04	180.10	7,434.86	-3,608.91	-6.58	3,608.91	0.00	0.00	0.00
10,900.00	90.04	180.10	7,434.79	-3,708.91	-6.77	3,708.91	0.00	0.00	0.00
11,000.00	90.04	180.10	7,434.72	-3,808.91	-6.95	3,808.91	0.00	0.00	0.00
11,100.00	90.04	180.10	7,434.65	-3,908.91	-7.13	3,908.91	0.00	0.00	0.00
11,200.00	90.04	180.10	7,434.58	-4,008.91	-7.31	4,008.91	0.00	0.00	0.00
11,300.00	90.04	180.10	7,434.51	-4,108.91	-7.50	4,108.91	0.00	0.00	0.00
11,400.00	90.04	180.10	7,434.43	-4,208.91	-7.68	4,208.91	0.00	0.00	0.00
11,500.00	90.04	180.10	7,434.36	-4,308.91	-7.86	4,308.91	0.00	0.00	0.00
11,600.00	90.04	180.10	7,434.29	-4,408.91	-8.04	4,408.91	0.00	0.00	0.00
11,700.00	90.04	180.10	7,434.22	-4,508.91	-8.23	4,508.91	0.00	0.00	0.00
11,800.00	90.04	180.10	7,434.15	-4,608.91	-8.41	4,608.91	0.00	0.00	0.00
11,900.00	90.04	180.10	7,434.08	-4,708.91	-8.59	4,708.91	0.00	0.00	0.00
12,000.00	90.04	180.10	7,434.01	-4,808.91	-8.77	4,808.91	0.00	0.00	0.00
12,100.00	90.04	180.10	7,433.94	-4,908.91	-8.96	4,908.91	0.00	0.00	0.00
12,200.00	90.04	180.10	7,433.87	-5,008.91	-9.14	5,008.91	0.00	0.00	0.00
12,300.00	90.04	180.10	7,433.80	-5,108.91	-9.32	5,108.91	0.00	0.00	0.00
12,400.00	90.04	180.10	7,433.73	-5,208.91	-9.50	5,208.91	0.00	0.00	0.00
12,500.00	90.04	180.10	7,433.66	-5,308.91	-9.69	5,308.91	0.00	0.00	0.00
12,600.00	90.04	180.10	7,433.59	-5,408.91	-9.87	5,408.91	0.00	0.00	0.00
12,700.00	90.04	180.10	7,433.52	-5,508.91	-10.05	5,508.91	0.00	0.00	0.00
12,800.00	90.04	180.10	7,433.45	-5,608.91	-10.23	5,608.91	0.00	0.00	0.00
12,900.00	90.04	180.10	7,433.38	-5,708.91	-10.42	5,708.91	0.00	0.00	0.00
13,000.00	90.04	180.10	7,433.31	-5,808.91	-10.60	5,808.91	0.00	0.00	0.00
13,100.00	90.04	180.10	7,433.24	-5,908.91	-10.78	5,908.91	0.00	0.00	0.00
13,200.00	90.04	180.10	7,433.17	-6,008.91	-10.96	6,008.91	0.00	0.00	0.00
13,300.00	90.04	180.10	7,433.10	-6,108.91	-11.15	6,108.91	0.00	0.00	0.00
13,400.00	90.04	180.10	7,433.02	-6,208.91	-11.33	6,208.91	0.00	0.00	0.00
13,500.00	90.04	180.10	7,432.95	-6,308.91	-11.51	6,308.91	0.00	0.00	0.00
13,600.00	90.04	180.10	7,432.88	-6,408.91	-11.69	6,408.91	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well AGGREGATE 37C-16HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4925' & KB 17' @ 4942.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4925' & KB 17' @ 4942.00ft (ASSUMED)
Site:	AGGREGATE STATE 37C-16HZ PAD	North Reference:	True
Well:	AGGREGATE 37C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,700.00	90.04	180.10	7,432.81	-6,508.91	-11.88	6,508.91	0.00	0.00	0.00
13,800.00	90.04	180.10	7,432.74	-6,608.91	-12.06	6,608.91	0.00	0.00	0.00
13,900.00	90.04	180.10	7,432.67	-6,708.91	-12.24	6,708.91	0.00	0.00	0.00
14,000.00	90.04	180.10	7,432.60	-6,808.91	-12.42	6,808.91	0.00	0.00	0.00
14,100.00	90.04	180.10	7,432.53	-6,908.90	-12.61	6,908.90	0.00	0.00	0.00
14,200.00	90.04	180.10	7,432.46	-7,008.90	-12.79	7,008.90	0.00	0.00	0.00
14,300.00	90.04	180.10	7,432.39	-7,108.90	-12.97	7,108.90	0.00	0.00	0.00
14,400.00	90.04	180.10	7,432.32	-7,208.90	-13.15	7,208.90	0.00	0.00	0.00
14,500.00	90.04	180.10	7,432.25	-7,308.90	-13.34	7,308.90	0.00	0.00	0.00
14,600.00	90.04	180.10	7,432.18	-7,408.90	-13.52	7,408.90	0.00	0.00	0.00
14,700.00	90.04	180.10	7,432.11	-7,508.90	-13.70	7,508.90	0.00	0.00	0.00
14,800.00	90.04	180.10	7,432.04	-7,608.90	-13.88	7,608.90	0.00	0.00	0.00
14,853.73	90.04	180.10	7,432.00	-7,662.63	-13.98	7,662.63	0.00	0.00	0.00
PBHL_AGGREGATE 37C-16HZ(1' FSL 940' FEL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_AGGREGATE 37 - hit/miss target - Shape - Point	0.00	0.00	7,432.00	-7,662.63	-13.98	1,291,354.81	3,202,387.92	40.1308950	-104.7761850

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
942.00	942.00	9 5/8"	9.625	12.250		
7,764.44	7,437.00	7" (1818 FSL 936 FEL)	7.000	7.500		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
892.00	892.00	Fox Hills Base				
4,019.00	4,019.00	Parkman				
4,426.00	4,426.00	Sussex				
7,088.71	7,083.00	Sharon Springs				
7,169.23	7,155.00	Niobrara A				
7,199.91	7,181.00	Niobrara B				
7,316.62	7,271.00	Niobrara C				
7,590.78	7,411.00	Fort Hays				
7,688.31	7,432.00	Codell				

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well AGGREGATE 37C-16HZ
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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4925' & KB 17' @ 4942.00ft (ASSUMED)
Site:	AGGREGATE STATE 37C-16HZ PAD	North Reference:	True
Well:	AGGREGATE 37C-16HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,864.04	6,864.04	0.00	0.00	Start Build 10.00
7,764.44	7,437.00	-573.36	-1.05	Start 7089.29 hold at 7764.44 MD
14,853.73	7,432.00	-7,662.63	-13.98	TD at 14853.73