

Project: Weld County, CO (UTM-NAD83)
Site: 3N-67W-12 DB FARMS 40-12HZ
Well: DB Farms 12-2HZ
Wellbore: Wellbore #1
Design: Plan 5



DESIGN TARGET DETAILS

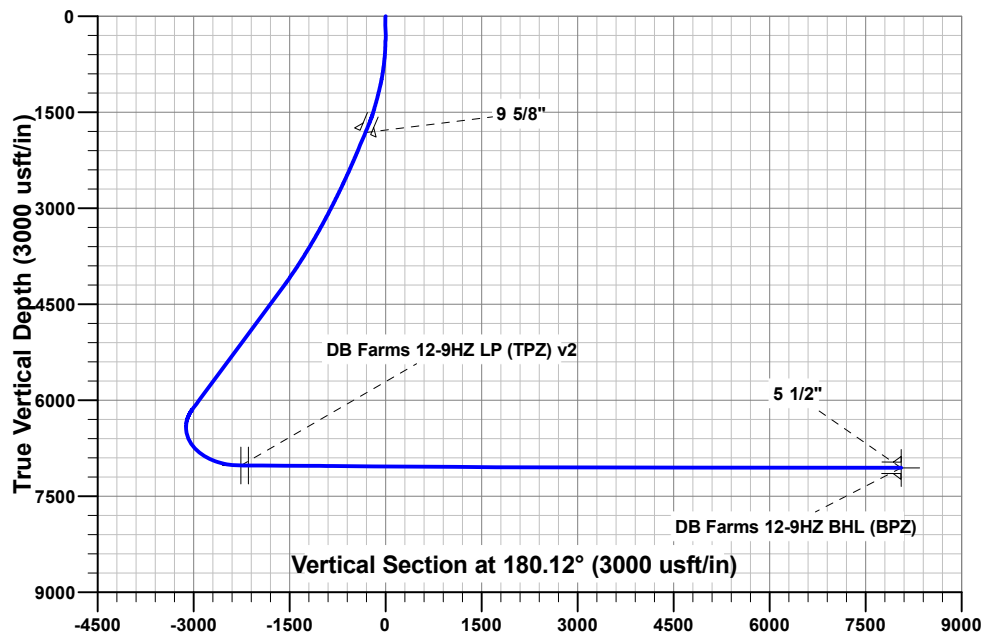
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
DB Farms 12-9HZ BHL (BPZ)	7059.00	-8049.57	-3556.96	14606203.95	1684074.80	40.2181315	-104.8436077
DB Farms 12-9HZ LP (TPZ)	7021.00	2150.00	-3600.00	14616403.42	1684012.31	40.2461403	-104.8437672

CASING DETAILS

TVD	MD	Name	Size
1820.00	1863.50	9 5/8"	9-5/8
7059.00	19889.86	5 1/2"	5-1/2

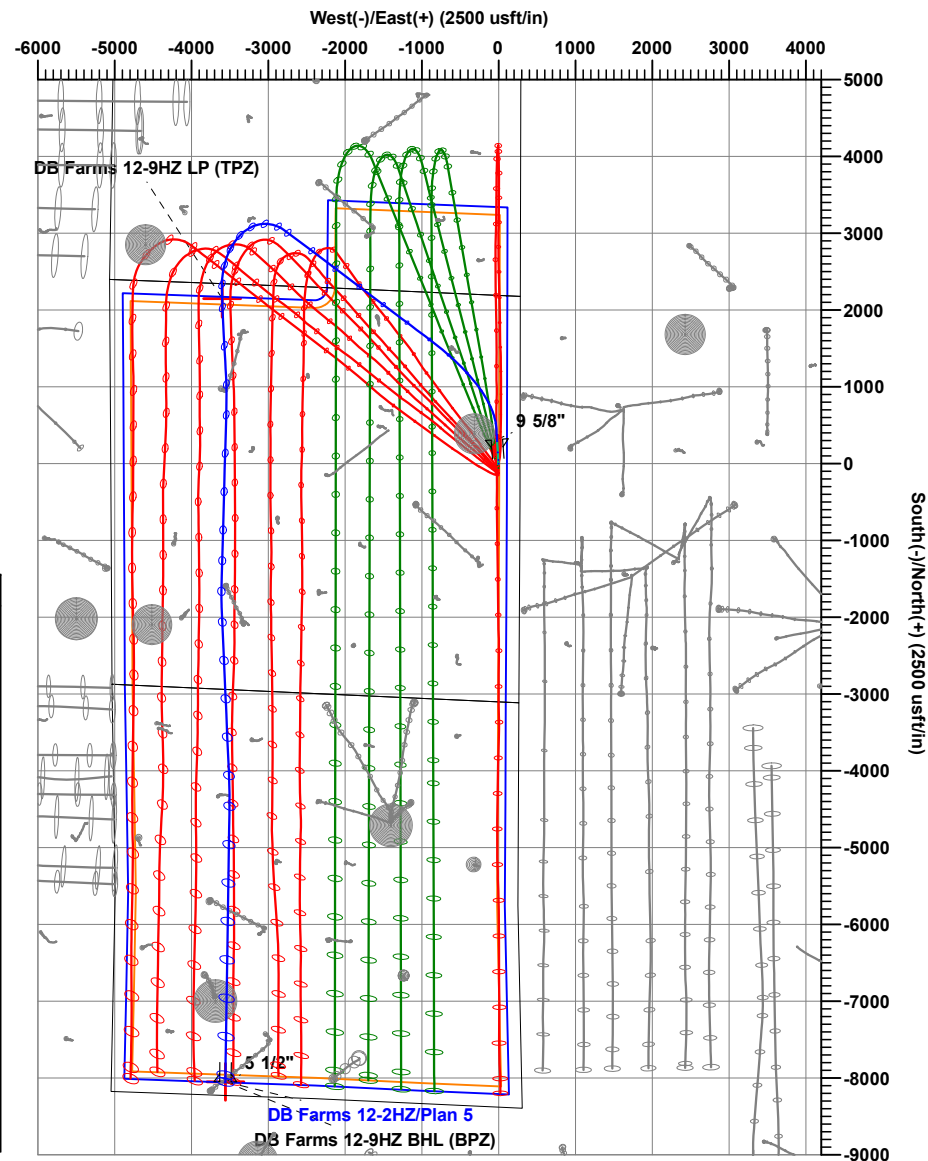
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3776.00	4135.92	Parkman
4216.00	4771.04	Sussex
4743.00	5607.96	Shannon
6907.00	9024.74	SSPG
6958.00	9161.59	NBRR
7016.00	9446.14	NBRR B CHK
7021.00	9685.01	Landing Target (Heel)
7048.00	13460.70	Intermediate Target
7059.00	19889.86	Bottom Hole (Toe)



ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSeD	Departure	Annotation
1862.00	22.64	355.89	1818.62	313.80	-20.33	-313.76	0.00	Tie On
1927.00	22.64	355.89	1878.61	338.76	-22.12	-338.71	25.02	Hold
2027.00	22.64	355.89	1970.90	377.15	-24.88	-377.10	63.52	Start DLS 1.50 TFO 91.90
2132.45	22.64	0.00	2068.24	417.70	-26.33	-417.64	104.10	Start DLS 1.50 TFO -73.03
4829.77	51.00	307.00	4253.27	1617.91	-900.00	-1616.02	1634.89	Hold
7845.77	51.00	307.00	6151.30	3028.49	-2771.90	-3022.67	3978.76	KOP @ 7845.77' MD, 7° DLS
9532.76	89.59	179.29	7019.91	2302.23	-3601.89	-2294.68	5367.23	Hold
9685.01	89.59	179.29	7021.00	2150.00	-3600.00	-2142.46	5519.47	Start DLS 2.00 TFO -89.96
9799.37	89.59	177.00	7021.82	2035.71	-3596.30	-2028.17	5633.82	Hold
10799.37	89.59	177.00	7028.98	1037.11	-3543.96	-1029.68	6633.80	Start DLS 2.00 TFO 90.01
11027.92	89.59	181.57	7030.61	808.64	-3541.11	-801.22	6862.34	Hold
12814.32	89.59	181.57	7043.38	-977.05	-3590.09	984.57	8648.70	Hold
13479.99	89.59	181.57	7048.14	-1642.45	-3608.34	1650.00	9314.35	Start DLS 2.00 TFO -85.66
13684.13	89.90	177.50	7049.05	-1846.54	-3606.69	1854.09	9518.49	Hold
16031.65	89.90	177.50	7053.14	-4191.82	-3504.29	4199.15	1866.01	Start DLS 2.00 TFO 89.78
16199.41	89.91	180.86	7053.42	-4359.54	-3501.88	4366.86	12033.77	Hold
19889.86	89.91	180.86	7059.00	-8049.57	-3556.96	8057.00	15724.21	TD at 19889.86' MD



Occidental Petroleum

Weld County, CO (UTM-NAD83)

3N-67W-12 DB FARMS 40-12HZ

DB Farms 12-2HZ

Wellbore #1

Plan: Plan 5

Standard Planning Report

20 July, 2022

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well DB Farms 12-2HZ
Company:	Occidental Petroleum	TVD Reference:	GE 4793' + KB 20' @ 4813.00usft
Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Project	Weld County, CO (UTM-NAD83)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		3N-67W-12 DB FARMS 40-12HZ			
Site Position:		Northing:	14,614,275.12 usft	Latitude:	40.2402777
From:	Map	Easting:	1,687,616.45 usft	Longitude:	-104.8308657
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well		DB Farms 12-2HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,614,260.28 usft	Latitude:	40.2402370
	+E/-W	0.00 usft	Easting:	1,687,616.40 usft	Longitude:	-104.8308660
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,793.00 usft
Grid Convergence:		0.11 °				

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2022	7/20/2022	7.93	66.47	51,783.30000000

Design	Plan 5				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	1,862.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.12	

Plan Survey Tool Program	Date	7/20/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	97.00	1,862.00	Survey #1 (Wellbore #1)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination	
2	1,862.00	19,889.86	Plan 5 (Wellbore #1)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

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Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

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
1,862.00	22.64	355.89	1,818.62	313.80	-20.33	0.00	0.00	0.00	0.00	
1,927.00	22.64	355.89	1,878.61	338.76	-22.12	0.00	0.00	0.00	0.00	
2,027.00	22.64	355.89	1,970.90	377.15	-24.88	0.00	0.00	0.00	0.00	
2,132.45	22.64	0.00	2,068.24	417.70	-26.33	1.50	0.00	3.90	91.90	
4,829.77	51.00	307.00	4,253.27	1,617.91	-900.00	1.50	1.05	-1.96	-73.03	
7,845.77	51.00	307.00	6,151.30	3,028.49	-2,771.90	0.00	0.00	0.00	0.00	
9,532.76	89.59	179.29	7,019.91	2,302.23	-3,601.89	7.00	2.29	-7.57	-116.27	
9,685.01	89.59	179.29	7,021.00	2,150.00	-3,600.00	0.00	0.00	0.00	0.00	DB Farms 12-9HZ LP
9,799.37	89.59	177.00	7,021.82	2,035.71	-3,596.30	2.00	0.00	-2.00	-89.96	
10,799.37	89.59	177.00	7,028.98	1,037.11	-3,543.96	0.00	0.00	0.00	0.00	
11,027.92	89.59	181.57	7,030.61	808.64	-3,541.11	2.00	0.00	2.00	90.01	
12,814.32	89.59	181.57	7,043.38	-977.05	-3,590.09	0.00	0.00	0.00	0.00	
13,479.99	89.59	181.57	7,048.14	-1,642.45	-3,608.34	0.00	0.00	0.00	0.00	
13,684.13	89.90	177.50	7,049.05	-1,846.54	-3,606.69	2.00	0.15	-1.99	-85.66	
16,031.65	89.90	177.50	7,053.14	-4,191.82	-3,504.29	0.00	0.00	0.00	0.00	
16,199.41	89.91	180.86	7,053.42	-4,359.54	-3,501.88	2.00	0.01	2.00	89.78	
19,889.86	89.91	180.86	7,059.00	-8,049.57	-3,556.96	0.00	0.00	0.00	0.00	DB Farms 12-9HZ BH

Planning Report

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Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.00	0.59	294.17	97.00	0.20	-0.46	-0.20	0.61	0.61	0.00
188.00	0.77	242.92	187.99	0.12	-1.43	-0.11	0.67	0.20	-56.32
277.00	0.44	193.73	276.99	-0.49	-2.04	0.49	0.66	-0.37	-55.27
369.00	0.86	31.21	368.99	-0.24	-1.77	0.24	1.40	0.46	-176.65
459.00	2.34	9.00	458.95	2.15	-1.13	-2.15	1.75	1.64	-24.68
549.00	3.51	356.89	548.83	6.72	-0.99	-6.72	1.46	1.30	-13.46
639.00	4.84	355.81	638.59	13.26	-1.42	-13.25	1.48	1.48	-1.20
729.00	6.47	358.62	728.15	22.11	-1.82	-22.11	1.84	1.81	3.12
819.00	7.92	358.68	817.44	33.38	-2.08	-33.38	1.61	1.61	0.07
909.00	9.43	355.20	906.41	46.93	-2.84	-46.92	1.78	1.68	-3.87
999.00	10.98	353.91	994.98	62.80	-4.37	-62.79	1.74	1.72	-1.43
1,089.00	12.66	355.07	1,083.07	81.15	-6.13	-81.14	1.89	1.87	1.29
1,179.00	13.58	356.18	1,170.72	101.52	-7.68	-101.50	1.06	1.02	1.23
1,269.00	14.60	357.54	1,258.01	123.40	-8.87	-123.38	1.19	1.13	1.51
1,359.00	15.53	357.42	1,344.92	146.76	-9.90	-146.74	1.03	1.03	-0.13
1,449.00	15.92	356.86	1,431.55	171.13	-11.12	-171.10	0.46	0.43	-0.62
1,539.00	17.21	355.68	1,517.81	196.73	-12.80	-196.70	1.48	1.43	-1.31
1,629.00	20.76	356.21	1,602.90	225.93	-14.85	-225.90	3.95	3.94	0.59
1,719.00	22.67	356.54	1,686.51	259.16	-16.95	-259.12	2.13	2.12	0.37
1,809.00	22.36	356.64	1,769.65	293.56	-19.00	-293.52	0.35	-0.34	0.11
1,862.00	22.64	355.89	1,818.62	313.80	-20.33	-313.76	0.76	0.53	-1.42
Tie On									
1,863.50	22.64	355.89	1,820.00	314.38	-20.37	-314.33	0.00	0.00	0.00
9 5/8"									
1,900.00	22.64	355.89	1,853.69	328.39	-21.38	-328.35	0.00	0.00	0.00
1,927.00	22.64	355.89	1,878.61	338.76	-22.12	-338.71	0.00	0.00	0.00
Hold									
2,000.00	22.64	355.89	1,945.98	366.79	-24.13	-366.74	0.00	0.00	0.00
2,027.00	22.64	355.89	1,970.90	377.15	-24.88	-377.10	0.00	0.00	0.00
Start DLS 1.50 TFO 91.90									
2,100.00	22.63	358.74	2,038.28	405.21	-26.20	-405.15	1.50	-0.02	3.90
2,132.45	22.64	0.00	2,068.24	417.70	-26.33	-417.64	1.50	0.03	3.90
Start DLS 1.50 TFO -73.03									
2,200.00	22.96	357.51	2,130.51	443.86	-26.91	-443.80	1.50	0.47	-3.68
2,300.00	23.49	353.96	2,222.41	483.16	-29.85	-483.10	1.50	0.54	-3.55
2,400.00	24.10	350.57	2,313.91	523.13	-35.29	-523.05	1.50	0.61	-3.39
2,500.00	24.79	347.34	2,404.95	563.72	-43.23	-563.63	1.50	0.68	-3.23
2,600.00	25.54	344.28	2,495.47	604.92	-53.67	-604.81	1.50	0.75	-3.06
2,700.00	26.34	341.39	2,585.39	646.70	-66.59	-646.56	1.50	0.81	-2.89
2,800.00	27.21	338.67	2,674.67	689.03	-81.98	-688.86	1.50	0.86	-2.72
2,900.00	28.12	336.11	2,763.24	731.88	-99.84	-731.67	1.50	0.91	-2.56
3,000.00	29.08	333.70	2,851.04	775.21	-120.16	-774.96	1.50	0.96	-2.41
3,100.00	30.08	331.43	2,938.01	819.01	-142.91	-818.71	1.50	1.00	-2.27
3,200.00	31.11	329.30	3,024.09	863.24	-168.09	-862.88	1.50	1.04	-2.13
3,300.00	32.18	327.29	3,109.22	907.86	-195.68	-907.45	1.50	1.07	-2.01
3,400.00	33.28	325.40	3,193.34	952.86	-225.65	-952.38	1.50	1.10	-1.89
3,500.00	34.41	323.62	3,276.40	998.19	-257.99	-997.65	1.50	1.13	-1.78
3,600.00	35.56	321.94	3,358.33	1,043.83	-292.67	-1,043.22	1.50	1.15	-1.68
3,700.00	36.73	320.35	3,439.09	1,089.75	-329.68	-1,089.06	1.50	1.17	-1.59
3,800.00	37.92	318.85	3,518.61	1,135.91	-368.98	-1,135.14	1.50	1.19	-1.50
3,900.00	39.13	317.42	3,596.84	1,182.29	-410.55	-1,181.43	1.50	1.21	-1.42
4,000.00	40.36	316.07	3,673.73	1,228.85	-454.37	-1,227.89	1.50	1.23	-1.35
4,100.00	41.60	314.79	3,749.23	1,275.55	-500.39	-1,274.50	1.50	1.24	-1.28

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Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,135.92	42.05	314.34	3,776.00	1,292.36	-517.45	-1,291.27	1.50	1.25	-1.24
Parkman									
4,200.00	42.85	313.57	3,823.28	1,322.38	-548.59	-1,321.22	1.50	1.26	-1.21
4,300.00	44.12	312.40	3,895.84	1,369.28	-598.94	-1,368.03	1.50	1.27	-1.17
4,400.00	45.40	311.28	3,966.85	1,416.25	-651.40	-1,414.88	1.50	1.28	-1.11
4,500.00	46.69	310.22	4,036.26	1,463.23	-705.93	-1,461.75	1.50	1.29	-1.07
4,600.00	47.98	309.20	4,104.03	1,510.20	-762.50	-1,508.60	1.50	1.30	-1.02
4,700.00	49.29	308.22	4,170.11	1,557.13	-821.07	-1,555.40	1.50	1.31	-0.98
4,771.04	50.23	307.54	4,216.00	1,590.42	-863.87	-1,588.61	1.50	1.31	-0.95
Sussex									
4,800.00	50.61	307.27	4,234.46	1,603.98	-881.60	-1,602.13	1.50	1.32	-0.93
4,829.77	51.00	307.00	4,253.27	1,617.91	-900.00	-1,616.02	1.50	1.32	-0.92
Hold									
4,900.00	51.00	307.00	4,297.47	1,650.75	-943.58	-1,648.77	0.00	0.00	0.00
5,000.00	51.00	307.00	4,360.40	1,697.52	-1,005.65	-1,695.41	0.00	0.00	0.00
5,100.00	51.00	307.00	4,423.33	1,744.29	-1,067.72	-1,742.05	0.00	0.00	0.00
5,200.00	51.00	307.00	4,486.26	1,791.06	-1,129.78	-1,788.69	0.00	0.00	0.00
5,300.00	51.00	307.00	4,549.19	1,837.83	-1,191.85	-1,835.33	0.00	0.00	0.00
5,400.00	51.00	307.00	4,612.13	1,884.60	-1,253.91	-1,881.97	0.00	0.00	0.00
5,500.00	51.00	307.00	4,675.06	1,931.37	-1,315.98	-1,928.61	0.00	0.00	0.00
5,600.00	51.00	307.00	4,737.99	1,978.14	-1,378.04	-1,975.25	0.00	0.00	0.00
5,607.96	51.00	307.00	4,743.00	1,981.87	-1,382.98	-1,978.96	0.00	0.00	0.00
Shannon									
5,700.00	51.00	307.00	4,800.92	2,024.91	-1,440.11	-2,021.89	0.00	0.00	0.00
5,800.00	51.00	307.00	4,863.85	2,071.68	-1,502.18	-2,068.53	0.00	0.00	0.00
5,900.00	51.00	307.00	4,926.79	2,118.45	-1,564.24	-2,115.17	0.00	0.00	0.00
6,000.00	51.00	307.00	4,989.72	2,165.22	-1,626.31	-2,161.81	0.00	0.00	0.00
6,100.00	51.00	307.00	5,052.65	2,211.99	-1,688.37	-2,208.45	0.00	0.00	0.00
6,200.00	51.00	307.00	5,115.58	2,258.76	-1,750.44	-2,255.09	0.00	0.00	0.00
6,300.00	51.00	307.00	5,178.51	2,305.53	-1,812.50	-2,301.73	0.00	0.00	0.00
6,400.00	51.00	307.00	5,241.45	2,352.30	-1,874.57	-2,348.37	0.00	0.00	0.00
6,500.00	51.00	307.00	5,304.38	2,399.07	-1,936.64	-2,395.01	0.00	0.00	0.00
6,600.00	51.00	307.00	5,367.31	2,445.84	-1,998.70	-2,441.65	0.00	0.00	0.00
6,700.00	51.00	307.00	5,430.24	2,492.61	-2,060.77	-2,488.29	0.00	0.00	0.00
6,800.00	51.00	307.00	5,493.18	2,539.38	-2,122.83	-2,534.93	0.00	0.00	0.00
6,900.00	51.00	307.00	5,556.11	2,586.15	-2,184.90	-2,581.57	0.00	0.00	0.00
7,000.00	51.00	307.00	5,619.04	2,632.92	-2,246.96	-2,628.21	0.00	0.00	0.00
7,100.00	51.00	307.00	5,681.97	2,679.69	-2,309.03	-2,674.85	0.00	0.00	0.00
7,200.00	51.00	307.00	5,744.90	2,726.46	-2,371.09	-2,721.49	0.00	0.00	0.00
7,300.00	51.00	307.00	5,807.84	2,773.23	-2,433.16	-2,768.13	0.00	0.00	0.00
7,400.00	51.00	307.00	5,870.77	2,820.00	-2,495.23	-2,814.77	0.00	0.00	0.00
7,500.00	51.00	307.00	5,933.70	2,866.77	-2,557.29	-2,861.41	0.00	0.00	0.00
7,600.00	51.00	307.00	5,996.63	2,913.54	-2,619.36	-2,908.05	0.00	0.00	0.00
7,700.00	51.00	307.00	6,059.56	2,960.31	-2,681.42	-2,954.69	0.00	0.00	0.00
7,800.00	51.00	307.00	6,122.50	3,007.08	-2,743.49	-3,001.33	0.00	0.00	0.00
7,845.77	51.00	307.00	6,151.30	3,028.49	-2,771.90	-3,022.67	0.00	0.00	0.00
KOP @ 7845.77' MD, 7° DLS									
7,850.00	50.87	306.66	6,153.97	3,030.45	-2,774.52	-3,024.64	7.00	-3.09	-8.09
7,900.00	49.40	302.52	6,186.02	3,052.24	-2,806.10	-3,046.36	7.00	-2.93	-8.28
7,950.00	48.09	298.20	6,219.00	3,071.25	-2,838.51	-3,065.29	7.00	-2.62	-8.63
8,000.00	46.95	293.71	6,252.77	3,087.39	-2,871.65	-3,081.37	7.00	-2.29	-8.97
8,050.00	45.99	289.07	6,287.22	3,100.61	-2,905.38	-3,094.52	7.00	-1.92	-9.29
8,100.00	45.22	284.29	6,322.21	3,110.87	-2,939.58	-3,104.71	7.00	-1.53	-9.56

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well DB Farms 12-2HZ
Company:	Occidental Petroleum	TVD Reference:	GE 4793' + KB 20' @ 4813.00usft
Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,150.00	44.66	279.40	6,357.61	3,118.13	-2,974.13	-3,111.89	7.00	-1.13	-9.78	
8,200.00	44.31	274.43	6,393.29	3,122.34	-3,008.88	-3,116.04	7.00	-0.70	-9.94	
8,250.00	44.18	269.41	6,429.12	3,123.52	-3,043.73	-3,117.13	7.00	-0.27	-10.03	
8,300.00	44.26	264.40	6,464.97	3,121.63	-3,078.52	-3,115.18	7.00	0.17	-10.04	
8,350.00	44.57	259.41	6,500.69	3,116.70	-3,113.15	-3,110.18	7.00	0.61	-9.97	
8,400.00	45.09	254.50	6,536.16	3,108.75	-3,147.46	-3,102.15	7.00	1.04	-9.82	
8,450.00	45.81	249.70	6,571.25	3,097.80	-3,181.35	-3,091.13	7.00	1.45	-9.61	
8,500.00	46.73	245.02	6,605.82	3,083.88	-3,214.67	-3,077.14	7.00	1.84	-9.35	
8,550.00	47.84	240.50	6,639.75	3,067.07	-3,247.31	-3,060.26	7.00	2.21	-9.04	
8,600.00	49.12	236.15	6,672.90	3,047.41	-3,279.15	-3,040.54	7.00	2.55	-8.71	
8,650.00	50.55	231.97	6,705.16	3,024.98	-3,310.06	-3,018.04	7.00	2.87	-8.36	
8,700.00	52.13	227.97	6,736.40	2,999.87	-3,339.94	-2,992.87	7.00	3.15	-8.00	
8,750.00	53.83	224.14	6,766.51	2,972.16	-3,368.66	-2,965.10	7.00	3.41	-7.66	
8,800.00	55.66	220.48	6,795.38	2,941.97	-3,396.13	-2,934.85	7.00	3.65	-7.32	
8,850.00	57.58	216.98	6,822.89	2,909.40	-3,422.23	-2,902.23	7.00	3.85	-7.00	
8,900.00	59.60	213.63	6,848.95	2,874.58	-3,446.88	-2,867.35	7.00	4.04	-6.70	
8,950.00	61.71	210.42	6,873.46	2,837.63	-3,469.98	-2,830.36	7.00	4.20	-6.42	
9,000.00	63.88	207.34	6,896.32	2,798.70	-3,491.44	-2,791.38	7.00	4.35	-6.17	
9,024.74	64.98	205.85	6,907.00	2,778.74	-3,501.43	-2,771.40	7.00	4.44	-6.00	
SSPG										
9,050.00	66.12	204.37	6,917.46	2,757.92	-3,511.19	-2,750.56	7.00	4.50	-5.89	
9,100.00	68.41	201.50	6,936.78	2,715.46	-3,529.14	-2,708.06	7.00	4.58	-5.74	
9,150.00	70.75	198.72	6,954.23	2,671.46	-3,545.24	-2,664.03	7.00	4.68	-5.56	
9,161.59	71.30	198.09	6,958.00	2,661.06	-3,548.71	-2,653.62	7.00	4.73	-5.45	
NBRR										
9,200.00	73.13	196.02	6,969.73	2,626.10	-3,559.43	-2,618.64	7.00	4.77	-5.38	
9,250.00	75.54	193.39	6,983.23	2,579.54	-3,571.64	-2,572.06	7.00	4.83	-5.26	
9,300.00	77.99	190.82	6,994.68	2,531.96	-3,581.84	-2,524.45	7.00	4.89	-5.15	
9,350.00	80.46	188.29	7,004.03	2,483.53	-3,589.99	-2,476.00	7.00	4.93	-5.06	
9,400.00	82.94	185.80	7,011.25	2,434.43	-3,596.05	-2,426.90	7.00	4.97	-4.98	
9,446.14	85.24	183.52	7,016.00	2,388.69	-3,599.78	-2,381.15	7.00	4.99	-4.93	
NBRR B CHK										
9,450.00	85.44	183.33	7,016.31	2,384.86	-3,600.01	-2,377.31	7.00	5.00	-4.91	
9,500.00	87.94	180.89	7,019.20	2,334.98	-3,601.84	-2,327.43	7.00	5.01	-4.90	
9,532.76	89.59	179.29	7,019.91	2,302.23	-3,601.89	-2,294.68	7.00	5.02	-4.88	
Hold										
9,567.16	89.59	179.29	7,020.15	2,267.83	-3,601.47	-2,260.28	0.00	0.00	0.00	
DB Farms 12-9HZ LP (TPZ) v2										
9,600.00	89.59	179.29	7,020.39	2,235.00	-3,601.06	-2,227.45	0.00	0.00	0.00	
9,685.01	89.59	179.29	7,021.00	2,150.00	-3,600.00	-2,142.46	0.00	0.00	0.00	
Start DLS 2.00 TFO -89.96 - Landing Target (Heel) - DB Farms 12-9HZ LP (TPZ)										
9,700.00	89.59	178.99	7,021.11	2,135.01	-3,599.77	-2,127.46	2.00	0.00	-2.00	
9,799.37	89.59	177.00	7,021.82	2,035.71	-3,596.30	-2,028.17	2.00	0.00	-2.00	
Hold										
9,900.00	89.59	177.00	7,022.54	1,935.22	-3,591.03	-1,927.69	0.00	0.00	0.00	
10,000.00	89.59	177.00	7,023.26	1,835.36	-3,585.80	-1,827.84	0.00	0.00	0.00	
10,100.00	89.59	177.00	7,023.97	1,735.50	-3,580.56	-1,727.99	0.00	0.00	0.00	
10,200.00	89.59	177.00	7,024.69	1,635.64	-3,575.33	-1,628.14	0.00	0.00	0.00	
10,300.00	89.59	177.00	7,025.40	1,535.78	-3,570.10	-1,528.30	0.00	0.00	0.00	
10,400.00	89.59	177.00	7,026.12	1,435.92	-3,564.86	-1,428.45	0.00	0.00	0.00	
10,500.00	89.59	177.00	7,026.83	1,336.06	-3,559.63	-1,328.60	0.00	0.00	0.00	
10,600.00	89.59	177.00	7,027.55	1,236.19	-3,554.40	-1,228.75	0.00	0.00	0.00	
10,700.00	89.59	177.00	7,028.27	1,136.33	-3,549.16	-1,128.90	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well DB Farms 12-2HZ
Company:	Occidental Petroleum	TVD Reference:	GE 4793' + KB 20' @ 4813.00usft
Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,799.37	89.59	177.00	7,028.98	1,037.11	-3,543.96	-1,029.68	0.00	0.00	0.00
Start DLS 2.00 TFO 90.01									
10,900.00	89.59	179.01	7,029.70	936.54	-3,540.46	-929.12	2.00	0.00	2.00
11,000.00	89.59	181.01	7,030.41	836.55	-3,540.48	-829.13	2.00	0.00	2.00
11,027.92	89.59	181.57	7,030.61	808.64	-3,541.11	-801.22	2.00	0.00	2.00
Hold									
11,100.00	89.59	181.57	7,031.13	736.59	-3,543.09	-729.16	0.00	0.00	0.00
11,200.00	89.59	181.57	7,031.84	636.63	-3,545.83	-629.20	0.00	0.00	0.00
11,300.00	89.59	181.57	7,032.56	536.67	-3,548.57	-529.23	0.00	0.00	0.00
11,400.00	89.59	181.57	7,033.27	436.71	-3,551.31	-429.27	0.00	0.00	0.00
11,500.00	89.59	181.57	7,033.99	336.75	-3,554.06	-329.30	0.00	0.00	0.00
11,600.00	89.59	181.57	7,034.70	236.79	-3,556.80	-229.34	0.00	0.00	0.00
11,700.00	89.59	181.57	7,035.42	136.83	-3,559.54	-129.37	0.00	0.00	0.00
11,800.00	89.59	181.57	7,036.13	36.87	-3,562.28	-29.41	0.00	0.00	0.00
11,900.00	89.59	181.57	7,036.84	-63.09	-3,565.02	70.56	0.00	0.00	0.00
12,000.00	89.59	181.57	7,037.56	-163.05	-3,567.76	170.52	0.00	0.00	0.00
12,100.00	89.59	181.57	7,038.27	-263.01	-3,570.51	270.49	0.00	0.00	0.00
12,200.00	89.59	181.57	7,038.99	-362.97	-3,573.25	370.46	0.00	0.00	0.00
12,300.00	89.59	181.57	7,039.70	-462.93	-3,575.99	470.42	0.00	0.00	0.00
12,400.00	89.59	181.57	7,040.42	-562.89	-3,578.73	570.39	0.00	0.00	0.00
12,500.00	89.59	181.57	7,041.13	-662.85	-3,581.47	670.35	0.00	0.00	0.00
12,600.00	89.59	181.57	7,041.85	-762.81	-3,584.21	770.32	0.00	0.00	0.00
12,700.00	89.59	181.57	7,042.56	-862.77	-3,586.96	870.28	0.00	0.00	0.00
12,800.00	89.59	181.57	7,043.28	-962.73	-3,589.70	970.25	0.00	0.00	0.00
12,814.32	89.59	181.57	7,043.38	-977.05	-3,590.09	984.57	0.00	0.00	0.00
Hold									
12,900.00	89.59	181.57	7,043.99	-1,062.69	-3,592.44	1,070.21	0.00	0.00	0.00
13,000.00	89.59	181.57	7,044.71	-1,162.65	-3,595.18	1,170.18	0.00	0.00	0.00
13,100.00	89.59	181.57	7,045.42	-1,262.61	-3,597.92	1,270.14	0.00	0.00	0.00
13,200.00	89.59	181.57	7,046.14	-1,362.57	-3,600.66	1,370.11	0.00	0.00	0.00
13,300.00	89.59	181.57	7,046.85	-1,462.53	-3,603.41	1,470.07	0.00	0.00	0.00
13,400.00	89.59	181.57	7,047.57	-1,562.49	-3,606.15	1,570.04	0.00	0.00	0.00
13,460.70	89.59	181.57	7,048.00	-1,623.16	-3,607.81	1,630.72	0.00	0.00	0.00
Intermediate Target									
13,479.99	89.59	181.57	7,048.14	-1,642.45	-3,608.34	1,650.00	0.00	0.00	0.00
Start DLS 2.00 TFO -85.66									
13,500.00	89.62	181.17	7,048.28	-1,662.45	-3,608.82	1,670.01	2.00	0.15	-1.99
13,600.00	89.77	179.18	7,048.81	-1,762.45	-3,609.12	1,770.00	2.00	0.15	-1.99
13,684.13	89.90	177.50	7,049.05	-1,846.54	-3,606.69	1,854.09	2.00	0.15	-1.99
Hold									
13,700.00	89.90	177.50	7,049.07	-1,862.39	-3,605.99	1,869.94	0.00	0.00	0.00
13,800.00	89.90	177.50	7,049.25	-1,962.30	-3,601.63	1,969.83	0.00	0.00	0.00
13,900.00	89.90	177.50	7,049.42	-2,062.20	-3,597.27	2,069.73	0.00	0.00	0.00
14,000.00	89.90	177.50	7,049.60	-2,162.11	-3,592.91	2,169.63	0.00	0.00	0.00
14,100.00	89.90	177.50	7,049.77	-2,262.01	-3,588.55	2,269.52	0.00	0.00	0.00
14,200.00	89.90	177.50	7,049.95	-2,361.91	-3,584.18	2,369.42	0.00	0.00	0.00
14,300.00	89.90	177.50	7,050.12	-2,461.82	-3,579.82	2,469.31	0.00	0.00	0.00
14,400.00	89.90	177.50	7,050.30	-2,561.72	-3,575.46	2,569.21	0.00	0.00	0.00
14,500.00	89.90	177.50	7,050.47	-2,661.63	-3,571.10	2,669.10	0.00	0.00	0.00
14,600.00	89.90	177.50	7,050.64	-2,761.53	-3,566.74	2,769.00	0.00	0.00	0.00
14,700.00	89.90	177.50	7,050.82	-2,861.44	-3,562.37	2,868.89	0.00	0.00	0.00
14,800.00	89.90	177.50	7,050.99	-2,961.34	-3,558.01	2,968.79	0.00	0.00	0.00
14,900.00	89.90	177.50	7,051.17	-3,061.25	-3,553.65	3,068.68	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well DB Farms 12-2HZ
Company:	Occidental Petroleum	TVD Reference:	GE 4793' + KB 20' @ 4813.00usft
Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,000.00	89.90	177.50	7,051.34	-3,161.15	-3,549.29	3,168.58	0.00	0.00	0.00	
15,100.00	89.90	177.50	7,051.52	-3,261.06	-3,544.93	3,268.47	0.00	0.00	0.00	
15,200.00	89.90	177.50	7,051.69	-3,360.96	-3,540.56	3,368.37	0.00	0.00	0.00	
15,300.00	89.90	177.50	7,051.87	-3,460.87	-3,536.20	3,468.26	0.00	0.00	0.00	
15,400.00	89.90	177.50	7,052.04	-3,560.77	-3,531.84	3,568.16	0.00	0.00	0.00	
15,500.00	89.90	177.50	7,052.22	-3,660.68	-3,527.48	3,668.06	0.00	0.00	0.00	
15,600.00	89.90	177.50	7,052.39	-3,760.58	-3,523.12	3,767.95	0.00	0.00	0.00	
15,700.00	89.90	177.50	7,052.56	-3,860.48	-3,518.76	3,867.85	0.00	0.00	0.00	
15,800.00	89.90	177.50	7,052.74	-3,960.39	-3,514.39	3,967.74	0.00	0.00	0.00	
15,900.00	89.90	177.50	7,052.91	-4,060.29	-3,510.03	4,067.64	0.00	0.00	0.00	
16,000.00	89.90	177.50	7,053.09	-4,160.20	-3,505.67	4,167.53	0.00	0.00	0.00	
16,031.65	89.90	177.50	7,053.14	-4,191.82	-3,504.29	4,199.15	0.00	0.00	0.00	
Start DLS 2.00 TFO 89.78										
16,100.00	89.91	178.87	7,053.26	-4,260.13	-3,502.12	4,267.46	2.00	0.01	2.00	
16,199.41	89.91	180.86	7,053.42	-4,359.54	-3,501.88	4,366.86	2.00	0.01	2.00	
Hold										
16,300.00	89.91	180.86	7,053.57	-4,460.12	-3,503.38	4,467.44	0.00	0.00	0.00	
16,400.00	89.91	180.86	7,053.72	-4,560.10	-3,504.87	4,567.44	0.00	0.00	0.00	
16,500.00	89.91	180.86	7,053.87	-4,660.09	-3,506.37	4,667.43	0.00	0.00	0.00	
16,600.00	89.91	180.86	7,054.02	-4,760.08	-3,507.86	4,767.42	0.00	0.00	0.00	
16,700.00	89.91	180.86	7,054.17	-4,860.07	-3,509.35	4,867.41	0.00	0.00	0.00	
16,800.00	89.91	180.86	7,054.33	-4,960.06	-3,510.84	4,967.40	0.00	0.00	0.00	
16,900.00	89.91	180.86	7,054.48	-5,060.05	-3,512.34	5,067.39	0.00	0.00	0.00	
17,000.00	89.91	180.86	7,054.63	-5,160.04	-3,513.83	5,167.39	0.00	0.00	0.00	
17,100.00	89.91	180.86	7,054.78	-5,260.03	-3,515.32	5,267.38	0.00	0.00	0.00	
17,200.00	89.91	180.86	7,054.93	-5,360.01	-3,516.81	5,367.37	0.00	0.00	0.00	
17,300.00	89.91	180.86	7,055.08	-5,460.00	-3,518.31	5,467.36	0.00	0.00	0.00	
17,400.00	89.91	180.86	7,055.23	-5,559.99	-3,519.80	5,567.35	0.00	0.00	0.00	
17,500.00	89.91	180.86	7,055.38	-5,659.98	-3,521.29	5,667.34	0.00	0.00	0.00	
17,600.00	89.91	180.86	7,055.54	-5,759.97	-3,522.78	5,767.34	0.00	0.00	0.00	
17,700.00	89.91	180.86	7,055.69	-5,859.96	-3,524.28	5,867.33	0.00	0.00	0.00	
17,800.00	89.91	180.86	7,055.84	-5,959.95	-3,525.77	5,967.32	0.00	0.00	0.00	
17,900.00	89.91	180.86	7,055.99	-6,059.94	-3,527.26	6,067.31	0.00	0.00	0.00	
18,000.00	89.91	180.86	7,056.14	-6,159.92	-3,528.75	6,167.30	0.00	0.00	0.00	
18,100.00	89.91	180.86	7,056.29	-6,259.91	-3,530.25	6,267.29	0.00	0.00	0.00	
18,200.00	89.91	180.86	7,056.44	-6,359.90	-3,531.74	6,367.29	0.00	0.00	0.00	
18,300.00	89.91	180.86	7,056.59	-6,459.89	-3,533.23	6,467.28	0.00	0.00	0.00	
18,400.00	89.91	180.86	7,056.75	-6,559.88	-3,534.72	6,567.27	0.00	0.00	0.00	
18,500.00	89.91	180.86	7,056.90	-6,659.87	-3,536.22	6,667.26	0.00	0.00	0.00	
18,600.00	89.91	180.86	7,057.05	-6,759.86	-3,537.71	6,767.25	0.00	0.00	0.00	
18,700.00	89.91	180.86	7,057.20	-6,859.85	-3,539.20	6,867.24	0.00	0.00	0.00	
18,800.00	89.91	180.86	7,057.35	-6,959.83	-3,540.69	6,967.23	0.00	0.00	0.00	
18,900.00	89.91	180.86	7,057.50	-7,059.82	-3,542.19	7,067.23	0.00	0.00	0.00	
19,000.00	89.91	180.86	7,057.65	-7,159.81	-3,543.68	7,167.22	0.00	0.00	0.00	
19,100.00	89.91	180.86	7,057.81	-7,259.80	-3,545.17	7,267.21	0.00	0.00	0.00	
19,200.00	89.91	180.86	7,057.96	-7,359.79	-3,546.66	7,367.20	0.00	0.00	0.00	
19,300.00	89.91	180.86	7,058.11	-7,459.78	-3,548.16	7,467.19	0.00	0.00	0.00	
19,400.00	89.91	180.86	7,058.26	-7,559.77	-3,549.65	7,567.18	0.00	0.00	0.00	
19,500.00	89.91	180.86	7,058.41	-7,659.76	-3,551.14	7,667.18	0.00	0.00	0.00	
19,600.00	89.91	180.86	7,058.56	-7,759.74	-3,552.63	7,767.17	0.00	0.00	0.00	
19,700.00	89.91	180.86	7,058.71	-7,859.73	-3,554.13	7,867.16	0.00	0.00	0.00	
19,800.00	89.91	180.86	7,058.86	-7,959.72	-3,555.62	7,967.15	0.00	0.00	0.00	
19,889.86	89.91	180.86	7,059.00	-8,049.57	-3,556.96	8,057.00	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well DB Farms 12-2HZ
Company:	Occidental Petroleum	TVD Reference:	GE 4793' + KB 20' @ 4813.00usft
Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD at 19889.86' MD - Bottom Hole (Toe) - DB Farms 12-9HZ BHL (BPZ)									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
DB Farms 12-9HZ LP (T - plan hits target center - Point	0.00	0.00	7,021.00	2,150.00	-3,600.00	14,616,403.41	1,684,012.31	40.2461403	-104.8437672
DB Farms 12-9HZ BHL (T - plan hits target center - Point	0.00	0.00	7,059.00	-8,049.57	-3,556.96	14,606,203.94	1,684,074.80	40.2181315	-104.8436077

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,863.50	1,820.00	9 5/8"	9-5/8	13-1/2	
19,889.86	7,059.00	5 1/2"	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,135.92	3,776.00	Parkman				
4,771.04	4,216.00	Sussex				
5,607.96	4,743.00	Shannon				
9,024.74	6,907.00	SSPG				
9,161.59	6,958.00	NBRR				
9,446.14	7,016.00	NBRR B CHK				
9,685.01	7,021.00	Landing Target (Heel)				
13,460.70	7,048.00	Intermediate Target				

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well DB Farms 12-2HZ
Company:	Occidental Petroleum	TVD Reference:	GE 4793' + KB 20' @ 4813.00usft
Project:	Weld County, CO (UTM-NAD83)	MD Reference:	GE 4793' + KB 20' @ 4813.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB Farms 12-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 5		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,862.00	1,818.62	313.80	-20.33	Tie On
1,927.00	1,878.61	338.76	-22.12	Hold
2,027.00	1,970.90	377.15	-24.88	Start DLS 1.50 TFO 91.90
2,132.45	2,068.24	417.70	-26.33	Start DLS 1.50 TFO -73.03
4,829.77	4,253.27	1,617.91	-900.00	Hold
7,845.77	6,151.30	3,028.49	-2,771.90	KOP @ 7845.77' MD, 7° DLS
9,532.76	7,019.91	2,302.23	-3,601.89	Hold
9,685.01	7,021.00	2,150.00	-3,600.00	Start DLS 2.00 TFO -89.96
9,799.37	7,021.82	2,035.71	-3,596.30	Hold
10,799.37	7,028.98	1,037.11	-3,543.96	Start DLS 2.00 TFO 90.01
11,027.92	7,030.61	808.64	-3,541.11	Hold
12,814.32	7,043.38	-977.05	-3,590.09	Hold
13,479.99	7,048.14	-1,642.45	-3,608.34	Start DLS 2.00 TFO -85.66
13,684.13	7,049.05	-1,846.54	-3,606.69	Hold
16,031.65	7,053.14	-4,191.82	-3,504.29	Start DLS 2.00 TFO 89.78
16,199.41	7,053.42	-4,359.54	-3,501.88	Hold
19,889.86	7,059.00	-8,049.57	-3,556.96	TD at 19889.86' MD