



Denver Division- Colorado

DJ - Hereford Ranch

Garden Creek 9-16H

Garden Creek 9-16H

Original Wellbore

Plan: APD

Standard Planning Report

12 January, 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Garden Creek 9-16H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 5167.0ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5167.0ft (TBD)
Site:	Garden Creek 9-16H	North Reference:	True
Well:	Garden Creek 9-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

Project	DJ - Hereford Ranch, Weld County		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado North 501		

Site		Garden Creek 9-16H			
Site Position:		Northing:	578,958.13 ft	Latitude:	40° 54' 59.962 N
From:	Lat/Long	Easting:	2,326,772.23 ft	Longitude:	104° 19' 3.720 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.76 °

Well	Garden Creek 9-16H					
Well Position	+N/-S	0.0 ft	Northing:	578,958.13 ft	Latitude:	40° 54' 59.962 N
	+E/-W	0.0 ft	Easting:	2,326,772.23 ft	Longitude:	104° 19' 3.720 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,150.0 ft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/8/2010	8.82	67.60	53,614

Design	APD			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	321.35

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,547.5	0.00	0.00	6,547.5	0.0	0.0	0.00	0.00	0.00	0.00	
7,297.5	90.00	321.35	7,025.0	372.9	-298.2	12.00	12.00	0.00	321.35	
12,405.4	90.00	321.35	7,025.0	4,362.2	-3,488.0	0.00	0.00	0.00	0.00	Garden Creek 9-16H

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Well:	Garden Creek 9-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

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Site:	Garden Creek 9-16H	North Reference:	True
Well:	Garden Creek 9-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

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)
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,547.5	0.00	0.00	6,547.5	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	6.30	321.35	6,599.9	2.2	-1.8	2.9	12.00	12.00	0.00
6,700.0	18.30	321.35	6,697.4	18.9	-15.1	24.1	12.00	12.00	0.00
6,800.0	30.30	321.35	6,788.4	50.9	-40.7	65.2	12.00	12.00	0.00
6,900.0	42.30	321.35	6,868.8	97.1	-77.6	124.3	12.00	12.00	0.00
7,000.0	54.30	321.35	6,935.3	155.3	-124.2	198.8	12.00	12.00	0.00
7,100.0	66.30	321.35	6,984.7	223.0	-178.3	285.5	12.00	12.00	0.00
7,200.0	78.30	321.35	7,015.1	297.3	-237.7	380.6	12.00	12.00	0.00
7,297.5	90.00	321.35	7,025.0	372.9	-298.2	477.4	12.00	12.00	0.00
7"									
7,300.0	90.00	321.35	7,025.0	374.8	-299.7	479.9	0.17	0.17	0.00
7,400.0	90.00	321.35	7,025.0	452.9	-362.2	579.9	0.00	0.00	0.00
7,500.0	90.00	321.35	7,025.0	531.0	-424.6	679.9	0.00	0.00	0.00
7,600.0	90.00	321.35	7,025.0	609.1	-487.1	779.9	0.00	0.00	0.00
7,700.0	90.00	321.35	7,025.0	687.2	-549.5	879.9	0.00	0.00	0.00
7,800.0	90.00	321.35	7,025.0	765.3	-612.0	979.9	0.00	0.00	0.00
7,900.0	90.00	321.35	7,025.0	843.4	-674.4	1,079.9	0.00	0.00	0.00
8,000.0	90.00	321.35	7,025.0	921.5	-736.9	1,179.9	0.00	0.00	0.00
8,100.0	90.00	321.35	7,025.0	999.7	-799.3	1,279.9	0.00	0.00	0.00
8,200.0	90.00	321.35	7,025.0	1,077.8	-861.8	1,379.9	0.00	0.00	0.00
8,300.0	90.00	321.35	7,025.0	1,155.9	-924.2	1,479.9	0.00	0.00	0.00
8,400.0	90.00	321.35	7,025.0	1,234.0	-986.7	1,579.9	0.00	0.00	0.00
8,500.0	90.00	321.35	7,025.0	1,312.1	-1,049.1	1,679.9	0.00	0.00	0.00
8,600.0	90.00	321.35	7,025.0	1,390.2	-1,111.6	1,779.9	0.00	0.00	0.00
8,700.0	90.00	321.35	7,025.0	1,468.3	-1,174.0	1,879.9	0.00	0.00	0.00
8,800.0	90.00	321.35	7,025.0	1,546.4	-1,236.5	1,979.9	0.00	0.00	0.00
8,900.0	90.00	321.35	7,025.0	1,624.5	-1,298.9	2,079.9	0.00	0.00	0.00
9,000.0	90.00	321.35	7,025.0	1,702.6	-1,361.4	2,179.9	0.00	0.00	0.00
9,100.0	90.00	321.35	7,025.0	1,780.7	-1,423.8	2,279.9	0.00	0.00	0.00
9,200.0	90.00	321.35	7,025.0	1,858.8	-1,486.3	2,379.9	0.00	0.00	0.00
9,300.0	90.00	321.35	7,025.0	1,936.9	-1,548.7	2,479.9	0.00	0.00	0.00
9,400.0	90.00	321.35	7,025.0	2,015.0	-1,611.2	2,579.9	0.00	0.00	0.00
9,500.0	90.00	321.35	7,025.0	2,093.1	-1,673.6	2,679.9	0.00	0.00	0.00
9,600.0	90.00	321.35	7,025.0	2,171.2	-1,736.1	2,779.9	0.00	0.00	0.00
9,700.0	90.00	321.35	7,025.0	2,249.3	-1,798.5	2,879.9	0.00	0.00	0.00
9,800.0	90.00	321.35	7,025.0	2,327.4	-1,861.0	2,979.9	0.00	0.00	0.00
9,900.0	90.00	321.35	7,025.0	2,405.5	-1,923.4	3,079.9	0.00	0.00	0.00
10,000.0	90.00	321.35	7,025.0	2,483.6	-1,985.9	3,179.9	0.00	0.00	0.00
10,100.0	90.00	321.35	7,025.0	2,561.7	-2,048.3	3,279.9	0.00	0.00	0.00
10,200.0	90.00	321.35	7,025.0	2,639.8	-2,110.8	3,379.9	0.00	0.00	0.00

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Site:	Garden Creek 9-16H	North Reference:	True
Well:	Garden Creek 9-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD		

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)
10,300.0	90.00	321.35	7,025.0	2,717.9	-2,173.2	3,479.9	0.00	0.00	0.00
10,400.0	90.00	321.35	7,025.0	2,796.0	-2,235.7	3,579.9	0.00	0.00	0.00
10,500.0	90.00	321.35	7,025.0	2,874.1	-2,298.1	3,679.9	0.00	0.00	0.00
10,600.0	90.00	321.35	7,025.0	2,952.2	-2,360.6	3,779.9	0.00	0.00	0.00
10,700.0	90.00	321.35	7,025.0	3,030.3	-2,423.0	3,879.9	0.00	0.00	0.00
10,800.0	90.00	321.35	7,025.0	3,108.4	-2,485.5	3,979.9	0.00	0.00	0.00
10,900.0	90.00	321.35	7,025.0	3,186.5	-2,547.9	4,079.9	0.00	0.00	0.00
11,000.0	90.00	321.35	7,025.0	3,264.6	-2,610.4	4,179.9	0.00	0.00	0.00
11,100.0	90.00	321.35	7,025.0	3,342.7	-2,672.8	4,279.9	0.00	0.00	0.00
11,200.0	90.00	321.35	7,025.0	3,420.8	-2,735.3	4,379.9	0.00	0.00	0.00
11,300.0	90.00	321.35	7,025.0	3,498.9	-2,797.7	4,479.9	0.00	0.00	0.00
11,400.0	90.00	321.35	7,025.0	3,577.0	-2,860.2	4,579.9	0.00	0.00	0.00
11,500.0	90.00	321.35	7,025.0	3,655.1	-2,922.6	4,679.9	0.00	0.00	0.00
11,600.0	90.00	321.35	7,025.0	3,733.2	-2,985.1	4,779.9	0.00	0.00	0.00
11,700.0	90.00	321.35	7,025.0	3,811.3	-3,047.5	4,879.9	0.00	0.00	0.00
11,800.0	90.00	321.35	7,025.0	3,889.4	-3,110.0	4,979.9	0.00	0.00	0.00
11,900.0	90.00	321.35	7,025.0	3,967.5	-3,172.4	5,079.9	0.00	0.00	0.00
12,000.0	90.00	321.35	7,025.0	4,045.6	-3,234.9	5,179.9	0.00	0.00	0.00
12,100.0	90.00	321.35	7,025.0	4,123.7	-3,297.3	5,279.9	0.00	0.00	0.00
12,200.0	90.00	321.35	7,025.0	4,201.8	-3,359.8	5,379.9	0.00	0.00	0.00
12,300.0	90.00	321.35	7,025.0	4,279.9	-3,422.2	5,479.9	0.00	0.00	0.00
12,400.0	90.00	321.35	7,025.0	4,358.0	-3,484.7	5,579.9	0.00	0.00	0.00
12,405.4	90.00	321.35	7,025.0	4,362.2	-3,488.0	5,585.3	0.00	0.00	0.00
Garden Creek 9-16H (BHL)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,200.0	1,200.0	9 5/8"	9-5/8	12-1/4	
7,297.5	7,025.0	7"	7	8-3/4	
12,405.4	7,025.0	4 1/2"	4-1/2	6-1/4	