

Denver Division- Colorado

DJ - Hereford Ranch

Dutch Lake 19-27H

Dutch Lake 19-27H

Original Wellbore

Plan: APD Directional Plan

Standard Planning Report

21 March, 2011

EOG Resources Inc

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Site Dutch Lake 19-27H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 4710.00ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 4710.00ft (TBD)
Site:	Dutch Lake 19-27H	North Reference:	True
Well:	Dutch Lake 19-27H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD Directional Plan		

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	Dutch Lake 19-27H		
Site Position:		Northing:	409,974.86 ft
From:	Lat/Long	Easting:	2,333,736.92 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	40° 27' 9.389 N
		Longitude:	104° 18' 2.779 W
		Grid Convergence:	0.77 deg

Well	Dutch Lake 19-27H		
Well Position	+N/-S	0.00 ft	Northing: 409,974.86 ft
	+E/-W	0.00 ft	Easting: 2,333,736.92 ft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	40° 27' 9.389 N
		Longitude:	104° 18' 2.779 W
		Ground Level:	4,688.00 ft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (deg)	Dip Angle (deg)	Field Strength (nT)
	IGRF200510	3/21/2011	8.61	67.19	53,255

Design	APD Directional Plan			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (deg)
	0.00	0.00	0.00	334.98

Plan Sections										
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)	TFO (deg)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,847.53	0.00	0.00	5,847.53	0.00	0.00	0.00	0.00	0.00	0.00	
6,597.54	90.00	334.98	6,325.00	432.64	-201.97	12.00	12.00	0.00	334.98	
10,695.74	90.00	334.98	6,325.00	4,146.13	-1,935.54	0.00	0.00	0.00	0.00	Dutch Lake 19-27H

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Well:	Dutch Lake 19-27H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD Directional Plan		

Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	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
100.00	0.00	0.00	100.00	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
300.00	0.00	0.00	300.00	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
500.00	0.00	0.00	500.00	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
700.00	0.00	0.00	700.00	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
9-5/8"									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	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
1,200.00	0.00	0.00	1,200.00	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
1,400.00	0.00	0.00	1,400.00	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
1,600.00	0.00	0.00	1,600.00	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
1,800.00	0.00	0.00	1,800.00	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
2,000.00	0.00	0.00	2,000.00	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
2,200.00	0.00	0.00	2,200.00	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
2,400.00	0.00	0.00	2,400.00	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
2,600.00	0.00	0.00	2,600.00	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
2,800.00	0.00	0.00	2,800.00	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
3,000.00	0.00	0.00	3,000.00	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
3,200.00	0.00	0.00	3,200.00	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
3,400.00	0.00	0.00	3,400.00	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
3,600.00	0.00	0.00	3,600.00	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
3,800.00	0.00	0.00	3,800.00	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
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	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
4,300.00	0.00	0.00	4,300.00	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
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
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

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Well:	Dutch Lake 19-27H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD Directional Plan		

Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)
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
5,847.53	0.00	0.00	5,847.53	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	6.30	334.98	5,899.89	2.61	-1.22	2.88	12.00	12.00	0.00
6,000.00	18.30	334.98	5,997.42	21.87	-10.21	24.14	12.00	12.00	0.00
6,100.00	30.30	334.98	6,088.40	59.09	-27.58	65.21	12.00	12.00	0.00
6,200.00	42.30	334.98	6,168.85	112.63	-52.58	124.29	12.00	12.00	0.00
6,300.00	54.30	334.98	6,235.26	180.15	-84.10	198.82	12.00	12.00	0.00
6,400.00	66.30	334.98	6,284.72	258.71	-120.78	285.52	12.00	12.00	0.00
6,500.00	78.30	334.98	6,315.07	344.88	-161.00	380.61	12.00	12.00	0.00
6,597.54	90.00	334.98	6,325.00	432.65	-201.97	477.47	12.00	12.00	0.00
7"									
6,600.00	90.00	334.98	6,325.00	434.88	-203.01	479.93	0.00	0.00	0.00
6,700.00	90.00	334.98	6,325.00	525.49	-245.32	579.93	0.00	0.00	0.00
6,800.00	90.00	334.98	6,325.00	616.10	-287.62	679.93	0.00	0.00	0.00
6,900.00	90.00	334.98	6,325.00	706.71	-329.92	779.93	0.00	0.00	0.00
7,000.00	90.00	334.98	6,325.00	797.33	-372.22	879.93	0.00	0.00	0.00
7,100.00	90.00	334.98	6,325.00	887.94	-414.52	979.93	0.00	0.00	0.00
7,200.00	90.00	334.98	6,325.00	978.55	-456.82	1,079.93	0.00	0.00	0.00
7,300.00	90.00	334.98	6,325.00	1,069.17	-499.12	1,179.93	0.00	0.00	0.00
7,400.00	90.00	334.98	6,325.00	1,159.78	-541.42	1,279.93	0.00	0.00	0.00
7,500.00	90.00	334.98	6,325.00	1,250.39	-583.72	1,379.93	0.00	0.00	0.00
7,600.00	90.00	334.98	6,325.00	1,341.00	-626.02	1,479.93	0.00	0.00	0.00
7,700.00	90.00	334.98	6,325.00	1,431.62	-668.32	1,579.93	0.00	0.00	0.00
7,800.00	90.00	334.98	6,325.00	1,522.23	-710.62	1,679.93	0.00	0.00	0.00
7,900.00	90.00	334.98	6,325.00	1,612.84	-752.92	1,779.93	0.00	0.00	0.00
8,000.00	90.00	334.98	6,325.00	1,703.45	-795.23	1,879.93	0.00	0.00	0.00
8,100.00	90.00	334.98	6,325.00	1,794.07	-837.53	1,979.93	0.00	0.00	0.00
8,200.00	90.00	334.98	6,325.00	1,884.68	-879.83	2,079.93	0.00	0.00	0.00
8,300.00	90.00	334.98	6,325.00	1,975.29	-922.13	2,179.93	0.00	0.00	0.00
8,400.00	90.00	334.98	6,325.00	2,065.90	-964.43	2,279.93	0.00	0.00	0.00
8,500.00	90.00	334.98	6,325.00	2,156.52	-1,006.73	2,379.93	0.00	0.00	0.00
8,600.00	90.00	334.98	6,325.00	2,247.13	-1,049.03	2,479.93	0.00	0.00	0.00
8,700.00	90.00	334.98	6,325.00	2,337.74	-1,091.33	2,579.93	0.00	0.00	0.00
8,800.00	90.00	334.98	6,325.00	2,428.35	-1,133.63	2,679.93	0.00	0.00	0.00
8,900.00	90.00	334.98	6,325.00	2,518.97	-1,175.93	2,779.93	0.00	0.00	0.00
9,000.00	90.00	334.98	6,325.00	2,609.58	-1,218.23	2,879.93	0.00	0.00	0.00
9,100.00	90.00	334.98	6,325.00	2,700.19	-1,260.53	2,979.93	0.00	0.00	0.00
9,200.00	90.00	334.98	6,325.00	2,790.80	-1,302.84	3,079.93	0.00	0.00	0.00
9,300.00	90.00	334.98	6,325.00	2,881.42	-1,345.14	3,179.93	0.00	0.00	0.00
9,400.00	90.00	334.98	6,325.00	2,972.03	-1,387.44	3,279.93	0.00	0.00	0.00
9,500.00	90.00	334.98	6,325.00	3,062.64	-1,429.74	3,379.93	0.00	0.00	0.00
9,600.00	90.00	334.98	6,325.00	3,153.25	-1,472.04	3,479.93	0.00	0.00	0.00
9,700.00	90.00	334.98	6,325.00	3,243.87	-1,514.34	3,579.93	0.00	0.00	0.00
9,800.00	90.00	334.98	6,325.00	3,334.48	-1,556.64	3,679.93	0.00	0.00	0.00
9,900.00	90.00	334.98	6,325.00	3,425.09	-1,598.94	3,779.93	0.00	0.00	0.00
10,000.00	90.00	334.98	6,325.00	3,515.71	-1,641.24	3,879.93	0.00	0.00	0.00
10,100.00	90.00	334.98	6,325.00	3,606.32	-1,683.54	3,979.93	0.00	0.00	0.00

EOG Resources Inc

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Site Dutch Lake 19-27H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 4710.00ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 4710.00ft (TBD)
Site:	Dutch Lake 19-27H	North Reference:	True
Well:	Dutch Lake 19-27H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	APD Directional Plan		

Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)
10,200.00	90.00	334.98	6,325.00	3,696.93	-1,725.84	4,079.93	0.00	0.00	0.00
10,300.00	90.00	334.98	6,325.00	3,787.54	-1,768.14	4,179.93	0.00	0.00	0.00
10,400.00	90.00	334.98	6,325.00	3,878.16	-1,810.44	4,279.93	0.00	0.00	0.00
10,500.00	90.00	334.98	6,325.00	3,968.77	-1,852.75	4,379.93	0.00	0.00	0.00
10,600.00	90.00	334.98	6,325.00	4,059.38	-1,895.05	4,479.93	0.00	0.00	0.00
10,695.74	90.00	334.98	6,325.00	4,146.13	-1,935.54	4,575.67	0.00	0.00	0.00
Dutch Lake 19-27H (BHL)									

Targets

Target Name	Dip Angle (deg)	Dip Dir. (deg)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Dutch Lake 19-27H (E	0.00	0.00	6,325.00	4,146.13	-1,935.54	414,094.43	2,331,745.49	40° 27' 50.360 N	104° 18' 27.821 W
- plan hits target center									
- Point									

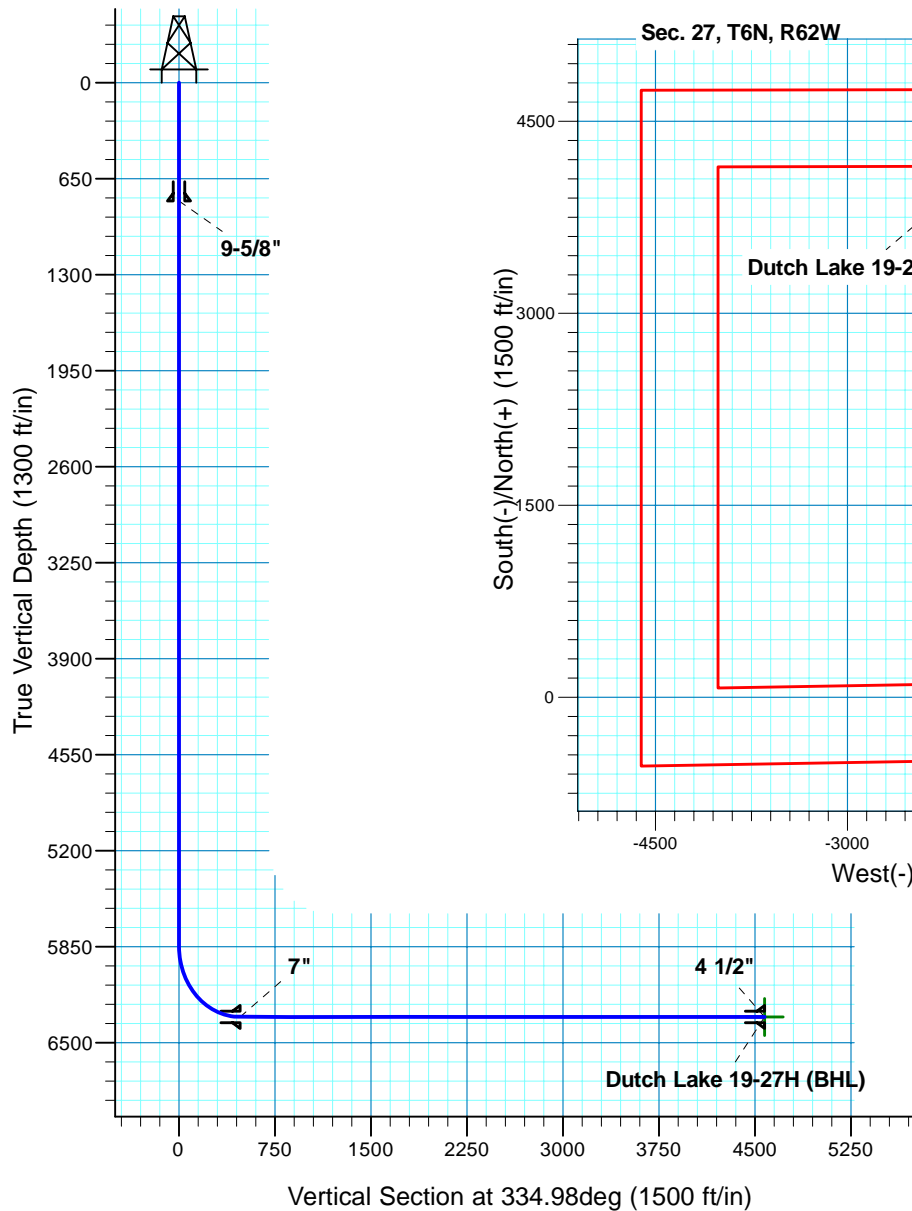
Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
800.00	800.00	9-5/8"	9-5/8	13-1/2
6,597.54	6,325.00	7"	7	8-3/4
10,695.74	6,325.00	4 1/2"	4-1/2	6

Dutch Lake 19-27H
Section 27 T6N R62W
Weld County, CO

Surface Location

NAD 1927 (NADCON CONUS) Colorado North 501
Ground Elevation: 4688.00 RIG @ 4710.00ft (TBD)
Northing Easting Latitude Longitude
409974.86 2333736.92 40° 27' 9.389 N 104° 18' 2.779 W



T M
Azimuths to True North
Magnetic North: 8.61°
Magnetic Field
Strength: 53254.6snT
Dip Angle: 67.19°
Date: 3/21/2011
Model: IGRF200510

Project: DJ - Hereford Ranch
Site: Dutch Lake 19-27H
Well: Dutch Lake 19-27H
Plan: APD Directional Plan

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5847.53	0.00	0.00	5847.53	0.00	0.00	0.00	0.00	0.00	
3	6597.54	90.00	334.98	6325.00	432.64	-201.97	12.00	334.98	477.47	
4	10695.74	90.00	334.98	6325.00	4146.13	-1935.54	0.00	0.00	4575.67	Dutch Lake 19-27H (BHL)

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Dutch Lake 19-27H (BHL)	6325.00	4146.13	-1935.54	414094.43	2331745.49	40° 27' 50.360 N	104° 18' 27.821 W	Point