

Denver Division- Colorado

DJ - Hereford Ranch

Dutch Lake 09-11H

Dutch Lake 09-11H

Original Wellbore

Plan: APD Directional Plan

Standard Planning Report

23 February, 2011

EOG Resources Inc

Planning Report

Database:	EDM	Local Co-ordinate Reference:	Site Dutch Lake 09-11H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 4740.00ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 4740.00ft (TBD)
Site:	Dutch Lake 09-11H	North Reference:	True
Well:	Dutch Lake 09-11H	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 09-11H		
Site Position:		Northing:	425,752.22 ft
From:	Lat/Long	Easting:	2,336,100.32 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	40° 29' 44.970 N
		Longitude:	104° 17' 29.429 W
		Grid Convergence:	0.78 deg

Well	Dutch Lake 09-11H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	40° 29' 44.970 N
		Longitude:	104° 17' 29.429 W
		Ground Level:	4,718.00 ft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (deg)	Dip Angle (deg)	Field Strength (nT)
	IGRF200510	2/23/2011	8.61	67.23	53,285

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	343.70

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	
5,946.53	0.00	0.00	5,946.53	0.00	0.00	0.00	0.00	0.00	0.00	
6,696.54	90.00	343.70	6,424.00	458.27	-134.03	12.00	12.00	0.00	343.70	
10,608.36	90.00	343.70	6,424.00	4,212.80	-1,232.16	0.00	0.00	0.00	0.00	Dutch Lake 09-11H

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Site:	Dutch Lake 09-11H	North Reference:	True
Well:	Dutch Lake 09-11H	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 09-11H	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
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,946.53	0.00	0.00	5,946.53	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	6.42	343.70	5,999.89	2.87	-0.84	2.99	12.00	12.00	0.00
6,100.00	18.42	343.70	6,097.37	23.47	-6.86	24.45	12.00	12.00	0.00
6,200.00	30.42	343.70	6,188.26	63.07	-18.45	65.71	12.00	12.00	0.00
6,300.00	42.42	343.70	6,268.59	119.94	-35.08	124.97	12.00	12.00	0.00
6,400.00	54.42	343.70	6,334.84	191.60	-56.04	199.63	12.00	12.00	0.00
6,500.00	66.42	343.70	6,384.12	274.92	-80.41	286.43	12.00	12.00	0.00
6,600.00	78.42	343.70	6,414.27	366.24	-107.12	381.59	12.00	12.00	0.00
6,696.54	90.00	343.70	6,424.00	458.27	-134.04	477.47	12.00	12.00	0.00
7"									
6,700.00	90.00	343.70	6,424.00	461.59	-135.01	480.93	0.00	0.00	0.00
6,800.00	90.00	343.70	6,424.00	557.57	-163.08	580.93	0.00	0.00	0.00
6,900.00	90.00	343.70	6,424.00	653.55	-191.15	680.93	0.00	0.00	0.00
7,000.00	90.00	343.70	6,424.00	749.53	-219.22	780.93	0.00	0.00	0.00
7,100.00	90.00	343.70	6,424.00	845.51	-247.29	880.93	0.00	0.00	0.00
7,200.00	90.00	343.70	6,424.00	941.49	-275.37	980.93	0.00	0.00	0.00
7,300.00	90.00	343.70	6,424.00	1,037.47	-303.44	1,080.93	0.00	0.00	0.00
7,400.00	90.00	343.70	6,424.00	1,133.44	-331.51	1,180.93	0.00	0.00	0.00
7,500.00	90.00	343.70	6,424.00	1,229.42	-359.58	1,280.93	0.00	0.00	0.00
7,600.00	90.00	343.70	6,424.00	1,325.40	-387.65	1,380.93	0.00	0.00	0.00
7,700.00	90.00	343.70	6,424.00	1,421.38	-415.73	1,480.93	0.00	0.00	0.00
7,800.00	90.00	343.70	6,424.00	1,517.36	-443.80	1,580.93	0.00	0.00	0.00
7,900.00	90.00	343.70	6,424.00	1,613.34	-471.87	1,680.93	0.00	0.00	0.00
8,000.00	90.00	343.70	6,424.00	1,709.32	-499.94	1,780.93	0.00	0.00	0.00
8,100.00	90.00	343.70	6,424.00	1,805.30	-528.01	1,880.93	0.00	0.00	0.00
8,200.00	90.00	343.70	6,424.00	1,901.28	-556.09	1,980.93	0.00	0.00	0.00
8,300.00	90.00	343.70	6,424.00	1,997.26	-584.16	2,080.93	0.00	0.00	0.00
8,400.00	90.00	343.70	6,424.00	2,093.23	-612.23	2,180.93	0.00	0.00	0.00
8,500.00	90.00	343.70	6,424.00	2,189.21	-640.30	2,280.93	0.00	0.00	0.00
8,600.00	90.00	343.70	6,424.00	2,285.19	-668.37	2,380.93	0.00	0.00	0.00
8,700.00	90.00	343.70	6,424.00	2,381.17	-696.45	2,480.93	0.00	0.00	0.00
8,800.00	90.00	343.70	6,424.00	2,477.15	-724.52	2,580.93	0.00	0.00	0.00
8,900.00	90.00	343.70	6,424.00	2,573.13	-752.59	2,680.93	0.00	0.00	0.00
9,000.00	90.00	343.70	6,424.00	2,669.11	-780.66	2,780.93	0.00	0.00	0.00
9,100.00	90.00	343.70	6,424.00	2,765.09	-808.73	2,880.93	0.00	0.00	0.00
9,200.00	90.00	343.70	6,424.00	2,861.07	-836.81	2,980.93	0.00	0.00	0.00
9,300.00	90.00	343.70	6,424.00	2,957.05	-864.88	3,080.93	0.00	0.00	0.00
9,400.00	90.00	343.70	6,424.00	3,053.02	-892.95	3,180.93	0.00	0.00	0.00
9,500.00	90.00	343.70	6,424.00	3,149.00	-921.02	3,280.93	0.00	0.00	0.00
9,600.00	90.00	343.70	6,424.00	3,244.98	-949.09	3,380.93	0.00	0.00	0.00
9,700.00	90.00	343.70	6,424.00	3,340.96	-977.16	3,480.93	0.00	0.00	0.00
9,800.00	90.00	343.70	6,424.00	3,436.94	-1,005.24	3,580.93	0.00	0.00	0.00
9,900.00	90.00	343.70	6,424.00	3,532.92	-1,033.31	3,680.93	0.00	0.00	0.00
10,000.00	90.00	343.70	6,424.00	3,628.90	-1,061.38	3,780.93	0.00	0.00	0.00
10,100.00	90.00	343.70	6,424.00	3,724.88	-1,089.45	3,880.93	0.00	0.00	0.00

EOG Resources Inc

Planning Report

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Company:	Denver Division- Colorado	TVD Reference:	RIG @ 4740.00ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 4740.00ft (TBD)
Site:	Dutch Lake 09-11H	North Reference:	True
Well:	Dutch Lake 09-11H	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	343.70	6,424.00	3,820.86	-1,117.52	3,980.93	0.00	0.00	0.00
10,300.00	90.00	343.70	6,424.00	3,916.84	-1,145.60	4,080.93	0.00	0.00	0.00
10,400.00	90.00	343.70	6,424.00	4,012.81	-1,173.67	4,180.93	0.00	0.00	0.00
10,500.00	90.00	343.70	6,424.00	4,108.79	-1,201.74	4,280.93	0.00	0.00	0.00
10,600.00	90.00	343.70	6,424.00	4,204.77	-1,229.81	4,380.93	0.00	0.00	0.00
10,608.36	90.00	343.70	6,424.00	4,212.80	-1,232.16	4,389.29	0.00	0.00	0.00
4 1/2" - Dutch Lake 09-11H (BHL)									

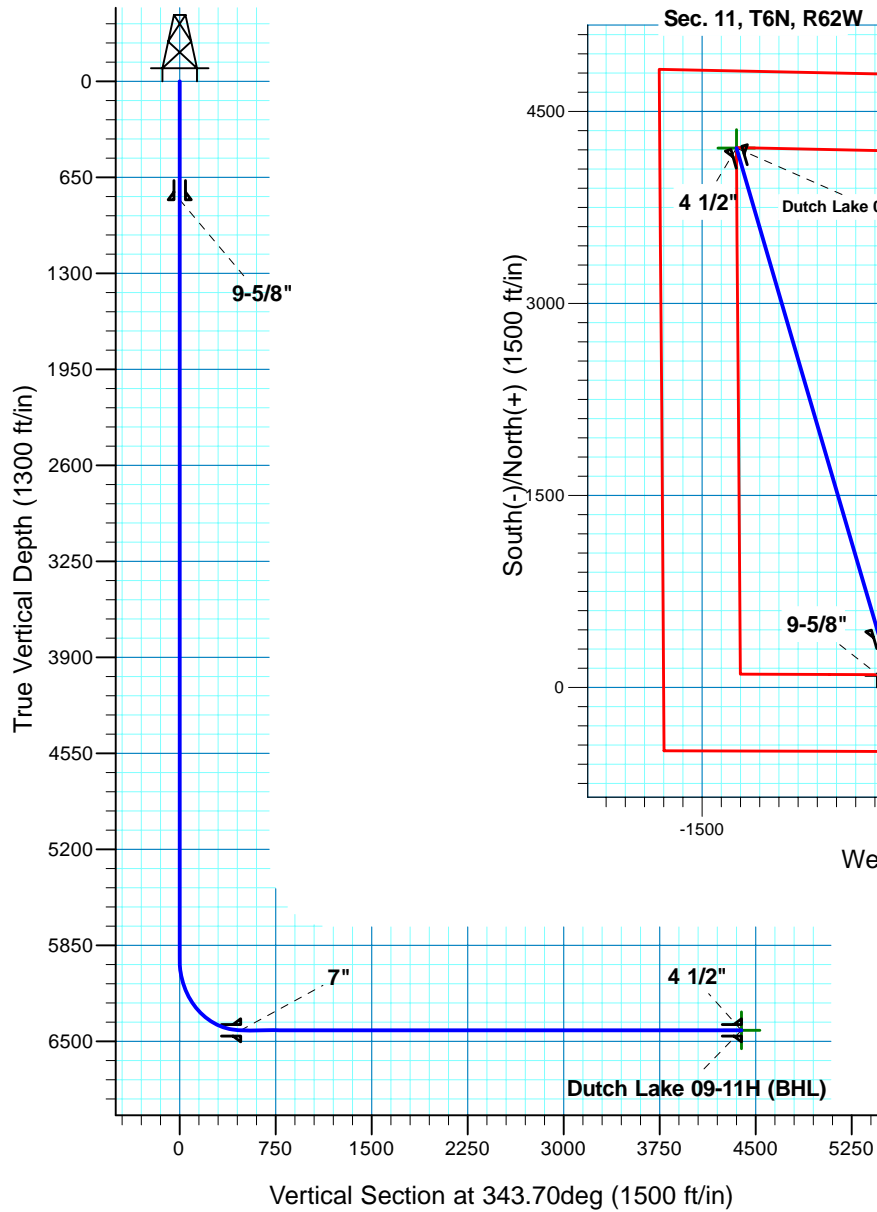
Targets									
Target Name	Dip Angle (deg)	Dip Dir. (deg)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Dutch Lake 09-11H (E	0.00	0.00	6,424.00	4,212.80	-1,232.16	429,947.83	2,334,810.86	40° 30' 26.600 N	104° 17' 45.380 W
- 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	
6,696.54	6,424.00	7"	7	8-3/4	
10,608.36	6,424.00	4 1/2"	4-1/2	6	

Dutch Lake 09-11H
Section 11 T6N R62W
Weld County, CO

Surface Location

NAD 1927 (NADCON CONUS) Colorado North 501
Ground Elevation: 4718.00 RIG @ 4740.00ft (TBD)
Northing Easting Latitude Longitude
425752.22 2336100.32 40° 29' 44.970 N 104° 17' 29.429 W



T M
Azimuths to True North
Magnetic North: 8.61°
Magnetic Field
Strength: 53285.3snT
Dip Angle: 67.23°
Date: 2/23/2011
Model: IGRF200510

Project: DJ - Hereford Ranch
Site: Dutch Lake 09-11H
Well: Dutch Lake 09-11H
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	5946.53	0.00	0.00	5946.53	0.00	0.00	0.00	0.00	0.00	
3	6696.54	90.00	343.70	6424.00	458.27	-134.03	12.00	343.70	477.47	
4	10608.36	90.00	343.70	6424.00	4212.80	-1232.16	0.00	0.00	4389.29	Dutch Lake 09-11H (BHL)

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Dutch Lake 09-11H (BHL)	6424.00	4212.80	-1232.16	429947.83	2334810.86	40° 30' 26.600 N	104° 17' 45.380 W	Point