

# **Denver Division- Colorado**

**DJ - Hereford Ranch**

**Greasewood 09-19H**

**Greasewood 09-19H**

**Original Wellbore**

**Plan: APD Directional Plan**

## **Standard Planning Report**

**16 March, 2011**

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Greasewood 09-19H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Site:</b>	Greasewood 09-19H	<b>North Reference:</b>	True
<b>Well:</b>	Greasewood 09-19H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

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

<b>Site</b>	Greasewood 09-19H		
<b>Site Position:</b>		<b>Northing:</b>	419,864.76 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,345,160.03 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 28' 45.559 N
		<b>Longitude:</b>	104° 15' 33.239 W
		<b>Grid Convergence:</b>	0.80 deg

<b>Well</b>	Greasewood 09-19H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b> 419,864.76 ft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b> 2,345,160.03 ft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 28' 45.559 N
		<b>Longitude:</b>	104° 15' 33.239 W
		<b>Ground Level:</b>	4,671.00 ft

<b>Wellbore</b>	Original Wellbore				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (deg)</b>	<b>Dip Angle (deg)</b>	<b>Field Strength (nT)</b>
	IGRF200510	3/16/2011	8.59	67.22	53,274

<b>Design</b>	APD Directional Plan			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (deg)</b>
	0.00	0.00	0.00	153.78

<b>Plan Sections</b>										
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	
5,778.53	0.00	0.00	5,778.53	0.00	0.00	0.00	0.00	0.00	0.00	
6,528.54	90.00	153.78	6,256.00	-428.32	210.99	12.00	12.00	0.00	153.78	
10,638.68	90.00	153.78	6,256.00	-4,115.39	2,027.25	0.00	0.00	0.00	0.00	Greasewood 09-19H

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Greasewood 09-19H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Site:</b>	Greasewood 09-19H	<b>North Reference:</b>	True
<b>Well:</b>	Greasewood 09-19H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	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
<b>9-5/8"</b>									
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

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Greasewood 09-19H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Site:</b>	Greasewood 09-19H	<b>North Reference:</b>	True
<b>Well:</b>	Greasewood 09-19H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	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
5,778.53	0.00	0.00	5,778.53	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	2.58	153.78	5,799.99	-0.43	0.21	0.48	12.00	12.00	0.00
5,900.00	14.58	153.78	5,898.69	-13.79	6.79	15.37	12.00	12.00	0.00
6,000.00	26.58	153.78	5,992.14	-45.25	22.29	50.45	12.00	12.00	0.00
6,100.00	38.58	153.78	6,076.26	-93.47	46.04	104.19	12.00	12.00	0.00
6,200.00	50.58	153.78	6,147.36	-156.31	77.00	174.25	12.00	12.00	0.00
6,300.00	62.58	153.78	6,202.34	-231.05	113.81	257.56	12.00	12.00	0.00
6,400.00	74.58	153.78	6,238.80	-314.40	154.87	350.48	12.00	12.00	0.00
6,500.00	86.58	153.78	6,255.15	-402.74	198.39	448.95	12.00	12.00	0.00
6,528.54	90.00	153.78	6,256.00	-428.32	210.99	477.47	12.00	12.00	0.00
7"									
6,600.00	90.00	153.78	6,256.00	-492.43	242.57	548.93	0.00	0.00	0.00
6,700.00	90.00	153.78	6,256.00	-582.13	286.76	648.93	0.00	0.00	0.00
6,800.00	90.00	153.78	6,256.00	-671.84	330.95	748.93	0.00	0.00	0.00
6,900.00	90.00	153.78	6,256.00	-761.55	375.14	848.93	0.00	0.00	0.00
7,000.00	90.00	153.78	6,256.00	-851.25	419.33	948.93	0.00	0.00	0.00
7,100.00	90.00	153.78	6,256.00	-940.96	463.52	1,048.93	0.00	0.00	0.00
7,200.00	90.00	153.78	6,256.00	-1,030.67	507.71	1,148.93	0.00	0.00	0.00
7,300.00	90.00	153.78	6,256.00	-1,120.37	551.90	1,248.93	0.00	0.00	0.00
7,400.00	90.00	153.78	6,256.00	-1,210.08	596.09	1,348.93	0.00	0.00	0.00
7,500.00	90.00	153.78	6,256.00	-1,299.79	640.28	1,448.93	0.00	0.00	0.00
7,600.00	90.00	153.78	6,256.00	-1,389.49	684.47	1,548.93	0.00	0.00	0.00
7,700.00	90.00	153.78	6,256.00	-1,479.20	728.66	1,648.93	0.00	0.00	0.00
7,800.00	90.00	153.78	6,256.00	-1,568.91	772.85	1,748.93	0.00	0.00	0.00
7,900.00	90.00	153.78	6,256.00	-1,658.61	817.04	1,848.93	0.00	0.00	0.00
8,000.00	90.00	153.78	6,256.00	-1,748.32	861.23	1,948.93	0.00	0.00	0.00
8,100.00	90.00	153.78	6,256.00	-1,838.03	905.42	2,048.93	0.00	0.00	0.00
8,200.00	90.00	153.78	6,256.00	-1,927.73	949.60	2,148.93	0.00	0.00	0.00
8,300.00	90.00	153.78	6,256.00	-2,017.44	993.79	2,248.93	0.00	0.00	0.00
8,400.00	90.00	153.78	6,256.00	-2,107.15	1,037.98	2,348.93	0.00	0.00	0.00
8,500.00	90.00	153.78	6,256.00	-2,196.85	1,082.17	2,448.93	0.00	0.00	0.00
8,600.00	90.00	153.78	6,256.00	-2,286.56	1,126.36	2,548.93	0.00	0.00	0.00
8,700.00	90.00	153.78	6,256.00	-2,376.27	1,170.55	2,648.93	0.00	0.00	0.00
8,800.00	90.00	153.78	6,256.00	-2,465.97	1,214.74	2,748.93	0.00	0.00	0.00
8,900.00	90.00	153.78	6,256.00	-2,555.68	1,258.93	2,848.93	0.00	0.00	0.00
9,000.00	90.00	153.78	6,256.00	-2,645.38	1,303.12	2,948.93	0.00	0.00	0.00
9,100.00	90.00	153.78	6,256.00	-2,735.09	1,347.31	3,048.93	0.00	0.00	0.00
9,200.00	90.00	153.78	6,256.00	-2,824.80	1,391.50	3,148.93	0.00	0.00	0.00
9,300.00	90.00	153.78	6,256.00	-2,914.50	1,435.69	3,248.93	0.00	0.00	0.00
9,400.00	90.00	153.78	6,256.00	-3,004.21	1,479.88	3,348.93	0.00	0.00	0.00
9,500.00	90.00	153.78	6,256.00	-3,093.92	1,524.07	3,448.93	0.00	0.00	0.00
9,600.00	90.00	153.78	6,256.00	-3,183.62	1,568.26	3,548.93	0.00	0.00	0.00
9,700.00	90.00	153.78	6,256.00	-3,273.33	1,612.45	3,648.93	0.00	0.00	0.00
9,800.00	90.00	153.78	6,256.00	-3,363.04	1,656.64	3,748.93	0.00	0.00	0.00
9,900.00	90.00	153.78	6,256.00	-3,452.74	1,700.83	3,848.93	0.00	0.00	0.00
10,000.00	90.00	153.78	6,256.00	-3,542.45	1,745.02	3,948.93	0.00	0.00	0.00
10,100.00	90.00	153.78	6,256.00	-3,632.16	1,789.21	4,048.93	0.00	0.00	0.00

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Greasewood 09-19H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4693.00ft (TBD)
<b>Site:</b>	Greasewood 09-19H	<b>North Reference:</b>	True
<b>Well:</b>	Greasewood 09-19H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	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	153.78	6,256.00	-3,721.86	1,833.40	4,148.93	0.00	0.00	0.00
10,300.00	90.00	153.78	6,256.00	-3,811.57	1,877.59	4,248.93	0.00	0.00	0.00
10,400.00	90.00	153.78	6,256.00	-3,901.28	1,921.78	4,348.93	0.00	0.00	0.00
10,500.00	90.00	153.78	6,256.00	-3,990.98	1,965.97	4,448.93	0.00	0.00	0.00
10,600.00	90.00	153.78	6,256.00	-4,080.69	2,010.16	4,548.93	0.00	0.00	0.00
10,638.68	90.00	153.78	6,256.00	-4,115.39	2,027.25	4,587.61	0.00	0.00	0.00
Greasewood 09-19H (BHL)									

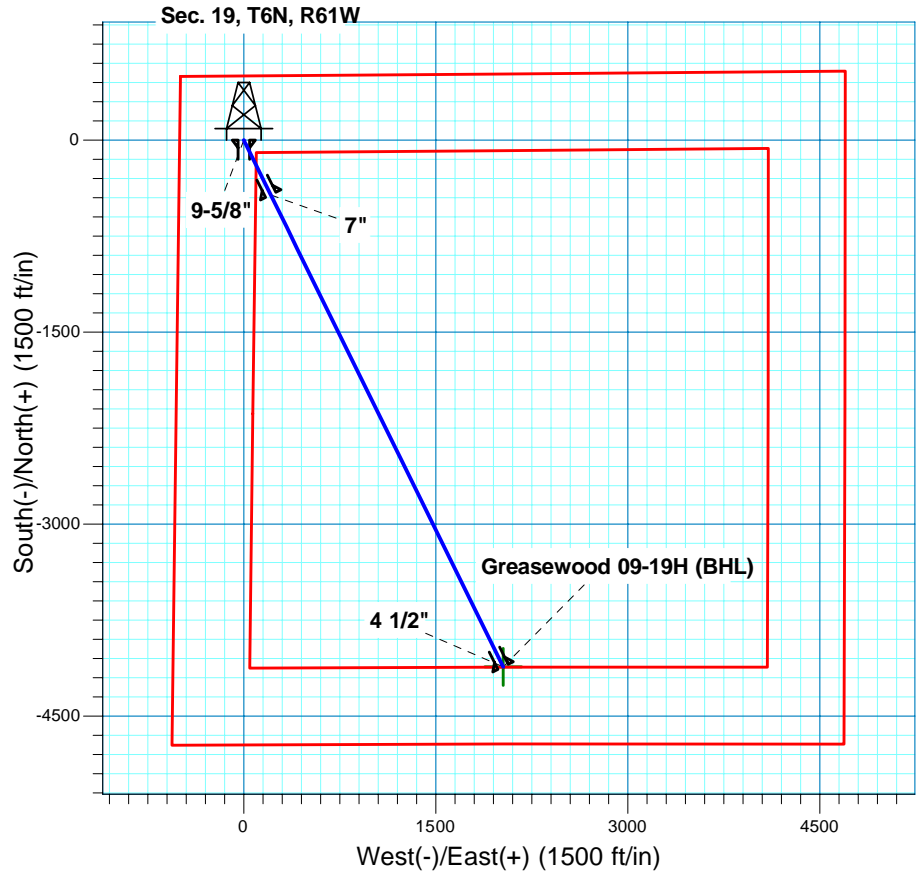
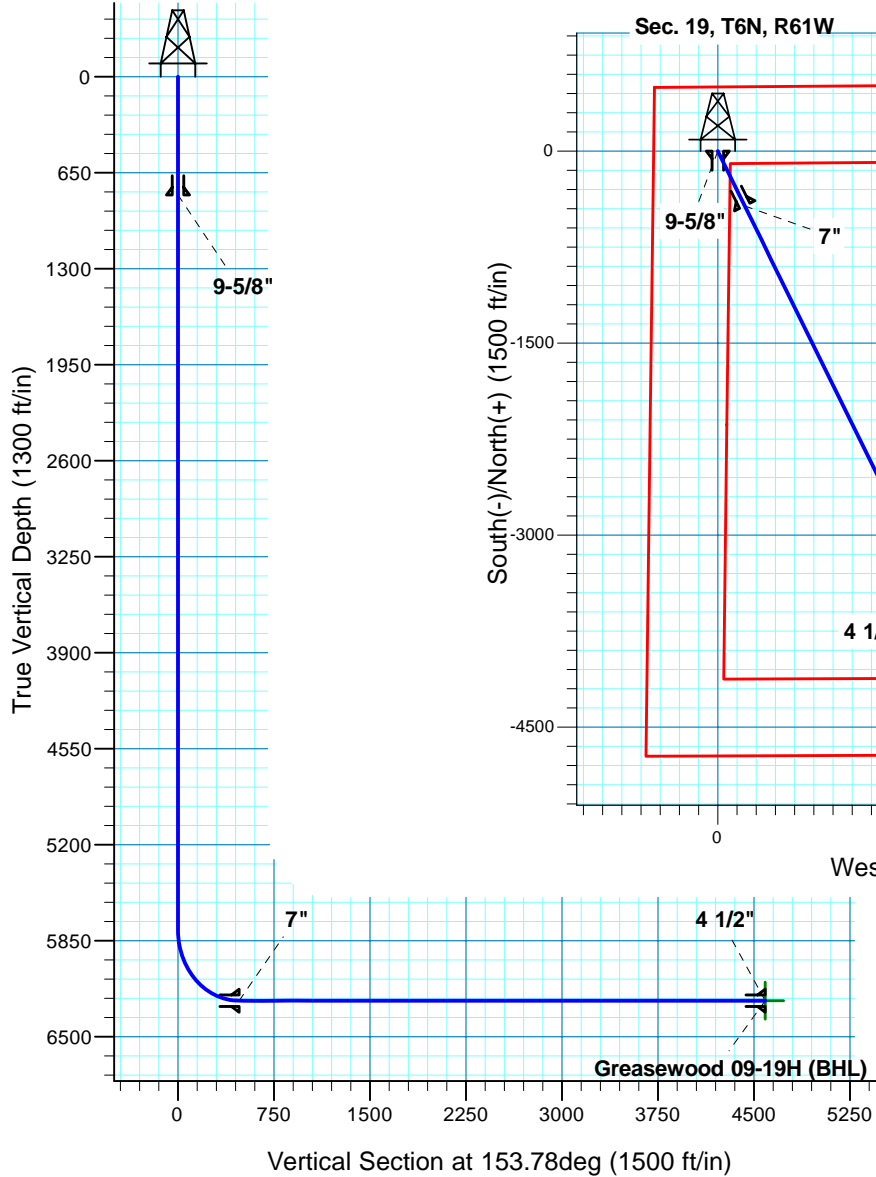
Targets									
Target Name	Dip Angle (deg)	Dip Dir. (deg)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Greasewood 09-19H (	0.00	0.00	6,256.00	-4,115.39	2,027.25	415,778.15	2,347,244.66	40° 28' 4.890 N	104° 15' 7.009 W
- plan 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	
6,528.54	6,256.00	7"	7	8-3/4	
10,638.68	6,256.00	4 1/2"	4-1/2	6	

**Greasewood 09-19H**  
**Section 19 T6N R61W**  
**Weld County, CO**

Surface Location

NAD 1927 (NADCON CONUS) Colorado North 501  
 Ground Elevation: 4671.00 RIG @ 4693.00ft (TBD)  
 Northing Easting Latitude Longitude  
 419864.76 2345160.03 40° 28' 45.559 N 104° 15' 33.239 W



**T M**  
 Azimuths to True North  
 Magnetic North: 8.59°  
 Magnetic Field  
 Strength: 53274.3snT  
 Dip Angle: 67.22°  
 Date: 3/16/2011  
 Model: IGRF200510

Project: DJ - Hereford Ranch  
 Site: Greasewood 09-19H  
 Well: Greasewood 09-19H  
 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	5778.53	0.00	0.00	5778.53	0.00	0.00	0.00	0.00	0.00	
3	6528.54	90.00	153.78	6256.00	-428.32	210.99	12.00	153.78	477.47	
4	10638.68	90.00	153.78	6256.00	-4115.39	2027.25	0.00	0.00	4587.61	Greasewood 09-19H (BHL)

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Greasewood 09-19H (BHL)	6256.00	-4115.39	2027.25	415778.15	2347244.66	40° 28' 4.890 N	104° 15' 7.009 W	