



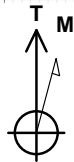
Petroleum Development Corporation

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	7867.0	91.20	178.70	6840.3	-1070.5	-423.8	0.00	0.00	1070.5	
2	7957.0	88.86	180.05	6840.3	-1160.5	-422.8	3.00	150.00	1160.5	
3	8057.0	88.86	180.05	6842.3	-1260.5	-422.9	0.00	0.00	1260.5	
4	8137.3	90.40	179.59	6842.8	-1340.8	-422.7	2.00	-16.73	1340.8	
5	11401.2	90.40	179.59	6820.0	-4604.6	-399.2	0.00	0.00	4604.6	BECKER RANCH 5E-223 PBHL

Project: Weld County  
Site: S5-T3N-R64W  
Well: BECKER RANCH 5E-223  
Wellbore: SIDETRACK  
Design: PLAN #2

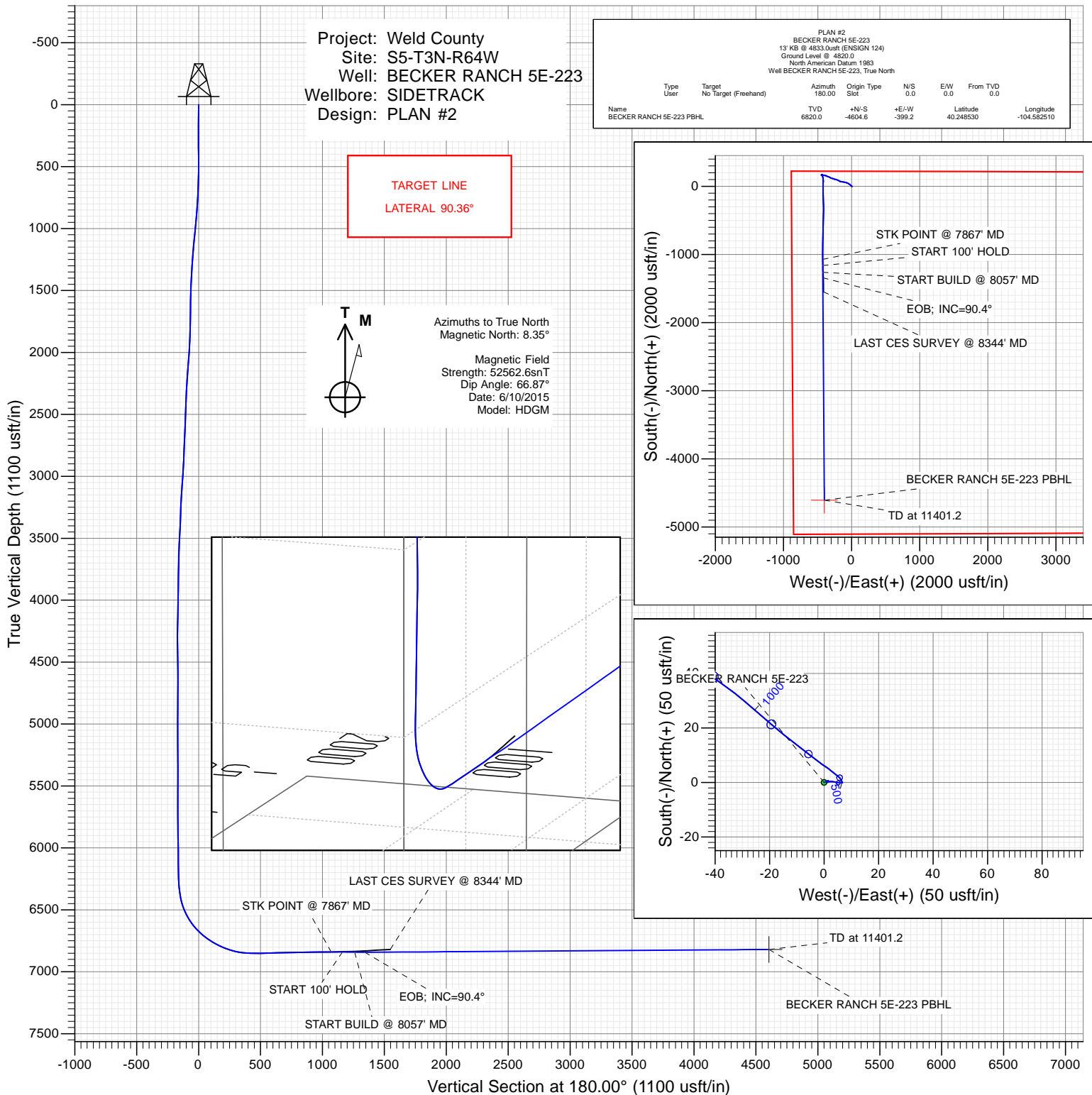
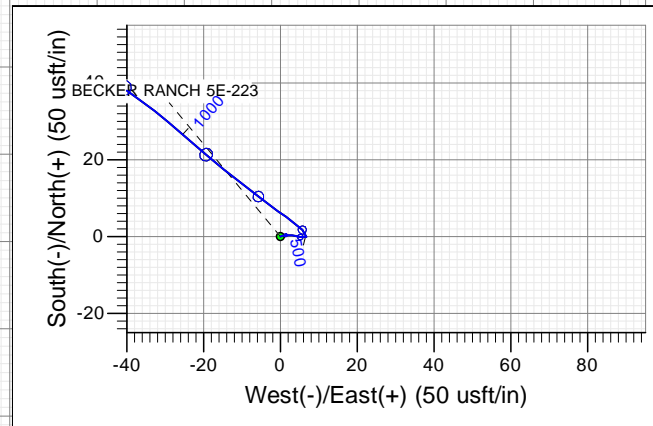
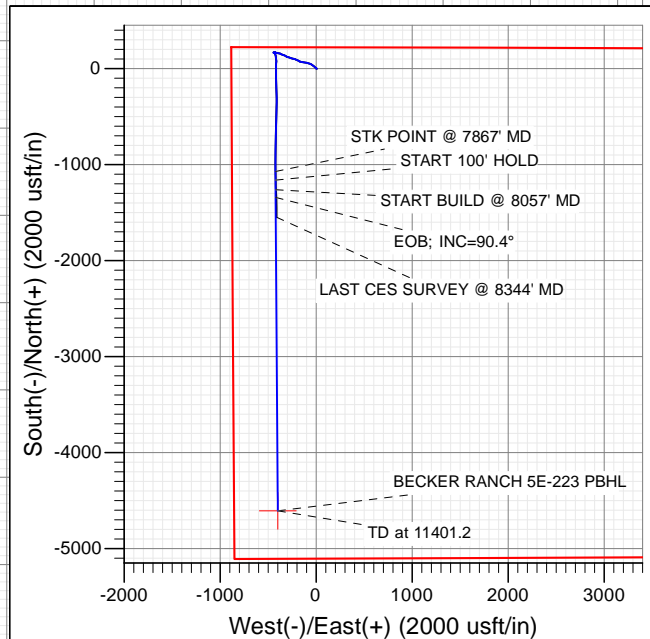
TARGET LINE  
LATERAL 90.36°



Azimuths to True North  
Magnetic North: 8.35°

Magnetic Field  
Strength: 52562.6snT  
Dip Angle: 66.87°  
Date: 6/10/2015  
Model: HDGM

PLAN #2						
BECKER RANCH 5E-223						
13 KB @ 4833.0usft (ENSGIN 124)						
Ground Level @ 4820.0						
North American Datum 1983						
Well BECKER RANCH 5E-223, True North						
Type	Target	Azimuth	Origin	N/S	E/W	From TVD
User	No Target (Freehand)	180.00	Slot	0.0	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude
BECKER RANCH 5E-223 PBHL		6820.0	-4604.6	-399.2	40.248530	-104.562510



#### WELL DETAILS: BECKER RANCH 5E-223

+N/-S	+E/-W	Northing	Ground Level:	4820.0	Latitude	Longitude
0.0	0.0	1339314.54	Easting	3256448.24	40.261170	-104.581080

CATHEDRAL



## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well BECKER RANCH 5E-223
<b>Company:</b>	Petroleum Development Corp.	<b>TVD Reference:</b>	13' KB @ 4833.0usft (ENSIGN 124)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	13' KB @ 4833.0usft (ENSIGN 124)
<b>Site:</b>	S5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	BECKER RANCH 5E-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	SIDETRACK		
<b>Design:</b>	PLAN #2		

<b>Project</b>	Weld County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		S5-T3N-R64W			
Site Position:		Northing:	1,339,314.55 usft	Latitude:	40.261170
From:	Lat/Long	Easting:	3,256,448.24 usft	Longitude:	-104.581080
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	BECKER RANCH 5E-223					
Well Position	+N/-S	0.0 usft	Northing:	1,339,314.54 usft	Latitude:	40.261170
	+E/-W	0.0 usft	Easting:	3,256,448.24 usft	Longitude:	-104.581080
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,820.0 usft

<b>Wellbore</b>	SIDETRACK				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	6/10/2015	8.35	66.87	52,563

Design	PLAN #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	7,867.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	180.00

<b>Plan Sections</b>										
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
7,867.0	91.20	178.70	6,840.3	-1,070.5	-423.8	0.00	0.00	0.00	0.00	
7,957.0	88.86	180.05	6,840.3	-1,160.5	-422.8	3.00	-2.60	1.50	150.00	
8,057.0	88.86	180.05	6,842.3	-1,260.5	-422.9	0.00	0.00	0.00	0.00	
8,137.3	90.40	179.59	6,842.8	-1,340.8	-422.7	2.00	1.92	-0.58	-16.73	
11,401.2	90.40	179.59	6,820.0	-4,604.6	-399.2	0.00	0.00	0.00	0.00	BECKER RANCH 5E-

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well BECKER RANCH 5E-223
<b>Company:</b>	Petroleum Development Corp.	<b>TVD Reference:</b>	13' KB @ 4833.0usft (ENSIGN 124)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	13' KB @ 4833.0usft (ENSIGN 124)
<b>Site:</b>	S5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	BECKER RANCH 5E-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	SIDETRACK		
<b>Design:</b>	PLAN #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
7,867.0	91.20	178.70	6,840.3	-1,070.5	-423.8	1,070.5	0.00	0.00	STK POINT @ 7867' MD
7,900.0	90.34	179.19	6,839.9	-1,103.5	-423.2	1,103.5	3.00	-2.60	
7,957.0	88.86	180.05	6,840.3	-1,160.5	-422.8	1,160.5	3.00	-2.60	START 100' HOLD
8,000.0	88.86	180.05	6,841.1	-1,203.5	-422.9	1,203.5	0.00	0.00	
8,057.0	88.86	180.05	6,842.3	-1,260.5	-422.9	1,260.5	0.00	0.00	START BUILD @ 8057' MD
8,100.0	89.69	179.80	6,842.8	-1,303.5	-422.9	1,303.5	2.00	1.92	
8,137.3	90.40	179.59	6,842.8	-1,340.8	-422.7	1,340.8	2.00	1.92	EOB; INC=90.4°
8,200.0	90.40	179.59	6,842.3	-1,403.5	-422.2	1,403.5	0.00	0.00	
8,300.0	90.40	179.59	6,841.6	-1,503.5	-421.5	1,503.5	0.00	0.00	
8,400.0	90.40	179.59	6,840.9	-1,603.5	-420.8	1,603.5	0.00	0.00	
8,500.0	90.40	179.59	6,840.3	-1,703.5	-420.1	1,703.5	0.00	0.00	
8,600.0	90.40	179.59	6,839.6	-1,803.5	-419.3	1,803.5	0.00	0.00	
8,700.0	90.40	179.59	6,838.9	-1,903.5	-418.6	1,903.5	0.00	0.00	
8,800.0	90.40	179.59	6,838.2	-2,003.5	-417.9	2,003.5	0.00	0.00	
8,900.0	90.40	179.59	6,837.5	-2,103.5	-417.2	2,103.5	0.00	0.00	
9,000.0	90.40	179.59	6,836.8	-2,203.5	-416.5	2,203.5	0.00	0.00	
9,100.0	90.40	179.59	6,836.1	-2,303.4	-415.7	2,303.4	0.00	0.00	
9,200.0	90.40	179.59	6,835.4	-2,403.4	-415.0	2,403.4	0.00	0.00	
9,300.0	90.40	179.59	6,834.7	-2,503.4	-414.3	2,503.4	0.00	0.00	
9,400.0	90.40	179.59	6,834.0	-2,603.4	-413.6	2,603.4	0.00	0.00	
9,500.0	90.40	179.59	6,833.3	-2,703.4	-412.9	2,703.4	0.00	0.00	
9,600.0	90.40	179.59	6,832.6	-2,803.4	-412.1	2,803.4	0.00	0.00	
9,700.0	90.40	179.59	6,831.9	-2,903.4	-411.4	2,903.4	0.00	0.00	
9,800.0	90.40	179.59	6,831.2	-3,003.4	-410.7	3,003.4	0.00	0.00	
9,900.0	90.40	179.59	6,830.5	-3,103.4	-410.0	3,103.4	0.00	0.00	
10,000.0	90.40	179.59	6,829.8	-3,203.4	-409.2	3,203.4	0.00	0.00	
10,100.0	90.40	179.59	6,829.1	-3,303.4	-408.5	3,303.4	0.00	0.00	
10,200.0	90.40	179.59	6,828.4	-3,403.4	-407.8	3,403.4	0.00	0.00	
10,300.0	90.40	179.59	6,827.7	-3,503.4	-407.1	3,503.4	0.00	0.00	
10,400.0	90.40	179.59	6,827.0	-3,603.4	-406.4	3,603.4	0.00	0.00	
10,500.0	90.40	179.59	6,826.3	-3,703.4	-405.6	3,703.4	0.00	0.00	
10,600.0	90.40	179.59	6,825.6	-3,803.4	-404.9	3,803.4	0.00	0.00	
10,700.0	90.40	179.59	6,824.9	-3,903.4	-404.2	3,903.4	0.00	0.00	
10,800.0	90.40	179.59	6,824.2	-4,003.4	-403.5	4,003.4	0.00	0.00	
10,900.0	90.40	179.59	6,823.5	-4,103.4	-402.8	4,103.4	0.00	0.00	
11,000.0	90.40	179.59	6,822.8	-4,203.3	-402.0	4,203.3	0.00	0.00	
11,100.0	90.40	179.59	6,822.1	-4,303.3	-401.3	4,303.3	0.00	0.00	
11,200.0	90.40	179.59	6,821.4	-4,403.3	-400.6	4,403.3	0.00	0.00	
11,300.0	90.40	179.59	6,820.7	-4,503.3	-399.9	4,503.3	0.00	0.00	
11,400.0	90.40	179.59	6,820.0	-4,603.3	-399.2	4,603.3	0.00	0.00	
11,401.2	90.40	179.59	6,820.0	-4,604.6	-399.2	4,604.6	0.00	0.00	TD at 11401.2

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
BECKER RANCH 5E-22	0.00	0.00	6,820.0	-4,604.6	-399.2	1,334,706.08	3,256,096.82	40.248530	-104.582510
- plan hits target center									
- Point									

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well BECKER RANCH 5E-223
<b>Company:</b>	Petroleum Development Corp.	<b>TVD Reference:</b>	13' KB @ 4833.0usft (ENSIGN 124)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	13' KB @ 4833.0usft (ENSIGN 124)
<b>Site:</b>	S5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	BECKER RANCH 5E-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	SIDETRACK		
<b>Design:</b>	PLAN #2		

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,867.0	6,840.3	-1,070.5	-423.8	STK POINT @ 7867' MD
7,957.0	6,840.3	-1,160.5	-422.8	START 100' HOLD
8,057.0	6,842.3	-1,260.5	-422.9	START BUILD @ 8057' MD
8,137.3	6,842.8	-1,340.8	-422.7	EOB; INC=90.4°
11,401.2	6,820.0	-4,604.6	-399.2	TD at 11401.2