

# PETROLEUM DEVELOPMENT CORP Weld County CO

## Well Name: Simonsen 1Q-241

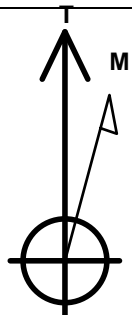
Surface Location: Simonsen NENW-12 Pad Sec.12-T6N-R67W  
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4879.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1428710.91	3182423.00	40.508360	-104.843950	
		RKB Ensign 32 - 15'	WELL @ 4894.0ft (RKB Ensign 32 - 15')			

### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
HARDLINE BHL 460'FNL (6)	1.0	5027.5	600.0	1433742.53	3182985.77	40.522160	-104.841792	Polygon
SECTIONLINE 210'N OF SHL (6)	1.0	210.0	600.0	1428925.33	3183021.41	40.508936	-104.841792	Polygon
BHL 500'FNL & 2450'FWL	7154.0	4987.5	442.0	1433701.41	3182828.12	40.522050	-104.842360	Point



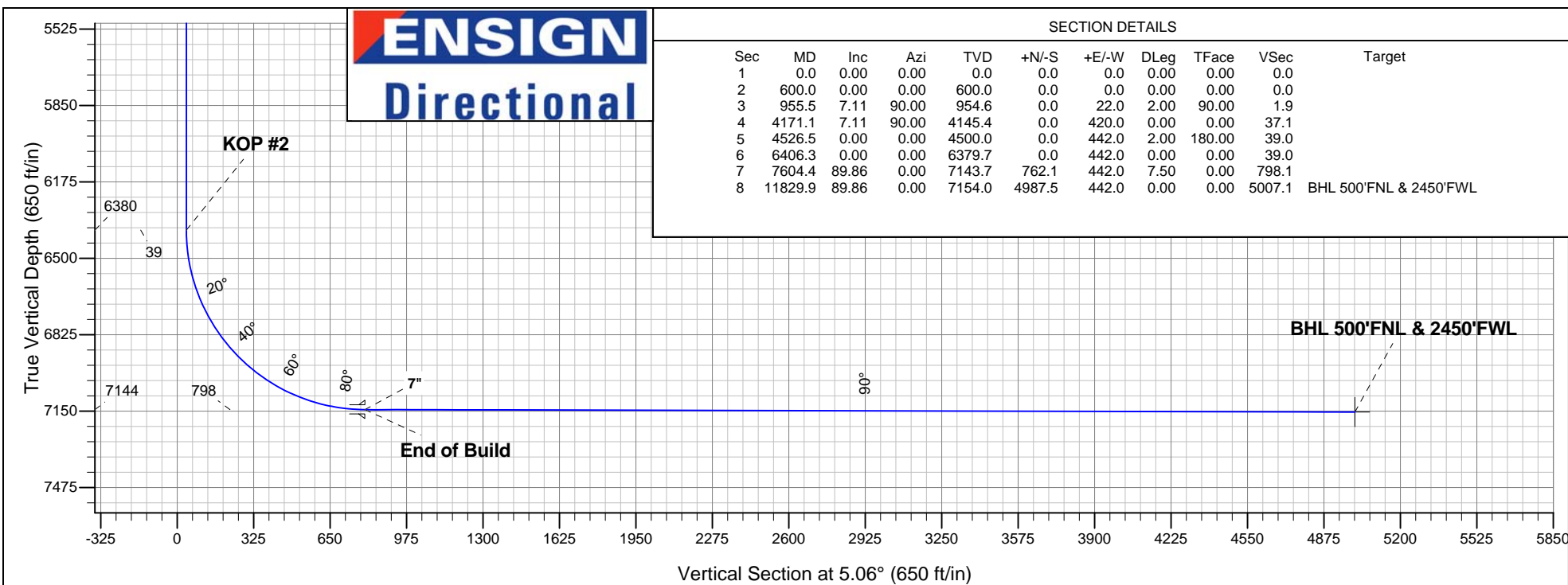
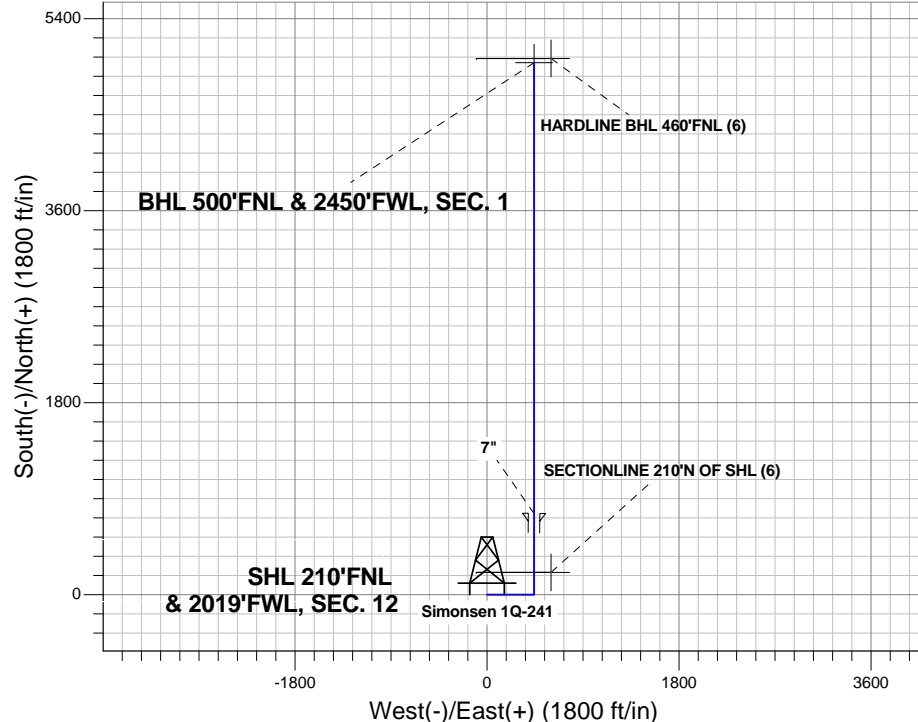
Azimuths to True North  
Magnetic North: 8.78°

Magnetic Field  
Strength: 53075.9snT  
Dip Angle: 67.09°  
Date: 6/7/2012  
Model: IGRF2010

### ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	KOP #1
6379.8	6406.3	KOP #2
7143.7	7604.4	End of Build

Simonsen NENW-12 Pad Sec.12-T6N-R67W  
Simonsen 1Q-241  
Plan #1 (6-6-12)  
11:22, June 19 2012





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.12-T6N-R67W**

**Simonsen NENW-12 Pad Sec.12-T6N-R67W**

**Simonsen 1Q-241**

**Wellbore #1**

**Plan: Plan #1 (6-6-12)**

## **Standard Planning Report**

**19 June, 2012**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

<b>Project</b>	SEC.12-T6N-R67W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Simonsen NENW-12 Pad Sec.12-T6N-R67W											
Site Position:						Northing:			1,428,710.69 ft			Latitude:			40.508360		
From:			Lat/Long			Easting:			3,182,392.41 ft			Longitude:			-104.844060		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.42 °		

Well	Simonsen 1Q-241					
Well Position	+N-S	0.0 ft	Northing:	1,428,710.91 ft	Latitude:	40.508360
	+E-W	30.6 ft	Easting:	3,182,423.00 ft	Longitude:	-104.843950
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,879.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/7/2012	8.78	67.09	53,076

<b>Design</b>	Plan #1 (6-6-12)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	5.06

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
955.5	7.11	90.00	954.6	0.0	22.0	2.00	2.00	0.00	90.00	
4,171.1	7.11	90.00	4,145.4	0.0	420.0	0.00	0.00	0.00	0.00	
4,526.5	0.00	0.00	4,500.0	0.0	442.0	2.00	-2.00	0.00	180.00	
6,406.3	0.00	0.00	6,379.7	0.0	442.0	0.00	0.00	0.00	0.00	
7,604.4	89.86	0.00	7,143.7	762.1	442.0	7.50	7.50	0.00	0.00	
11,829.9	89.86	0.00	7,154.0	4,987.5	442.0	0.00	0.00	0.00	0.00	BHL 500'FNL & 245°

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

### 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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>HARDLINE BHL 460'FNL (6) - SECTIONLINE 210'N OF SHL (6)</b>									
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
<b>KOP #1</b>									
640.0	0.80	90.00	640.0	0.0	0.3	0.0	2.00	2.00	0.00
680.0	1.60	90.00	680.0	0.0	1.1	0.1	2.00	2.00	0.00
720.0	2.40	90.00	720.0	0.0	2.5	0.2	2.00	2.00	0.00
760.0	3.20	90.00	759.9	0.0	4.5	0.4	2.00	2.00	0.00
800.0	4.00	90.00	799.8	0.0	7.0	0.6	2.00	2.00	0.00
840.0	4.80	90.00	839.7	0.0	10.0	0.9	2.00	2.00	0.00
880.0	5.60	90.00	879.6	0.0	13.7	1.2	2.00	2.00	0.00
920.0	6.40	90.00	919.3	0.0	17.9	1.6	2.00	2.00	0.00
955.5	7.11	90.00	954.6	0.0	22.0	1.9	2.00	2.00	0.00
960.0	7.11	90.00	959.1	0.0	22.6	2.0	0.00	0.00	0.00
1,000.0	7.11	90.00	998.7	0.0	27.5	2.4	0.00	0.00	0.00
1,040.0	7.11	90.00	1,038.4	0.0	32.5	2.9	0.00	0.00	0.00
1,080.0	7.11	90.00	1,078.1	0.0	37.4	3.3	0.00	0.00	0.00
1,120.0	7.11	90.00	1,117.8	0.0	42.4	3.7	0.00	0.00	0.00
1,160.0	7.11	90.00	1,157.5	0.0	47.3	4.2	0.00	0.00	0.00
1,200.0	7.11	90.00	1,197.2	0.0	52.3	4.6	0.00	0.00	0.00
1,240.0	7.11	90.00	1,236.9	0.0	57.2	5.1	0.00	0.00	0.00
1,280.0	7.11	90.00	1,276.6	0.0	62.2	5.5	0.00	0.00	0.00
1,320.0	7.11	90.00	1,316.3	0.0	67.1	5.9	0.00	0.00	0.00
1,360.0	7.11	90.00	1,356.0	0.0	72.1	6.4	0.00	0.00	0.00
1,400.0	7.11	90.00	1,395.7	0.0	77.0	6.8	0.00	0.00	0.00
1,440.0	7.11	90.00	1,435.4	0.0	82.0	7.2	0.00	0.00	0.00
1,480.0	7.11	90.00	1,475.1	0.0	86.9	7.7	0.00	0.00	0.00
1,520.0	7.11	90.00	1,514.7	0.0	91.9	8.1	0.00	0.00	0.00
1,560.0	7.11	90.00	1,554.4	0.0	96.8	8.6	0.00	0.00	0.00
1,600.0	7.11	90.00	1,594.1	0.0	101.8	9.0	0.00	0.00	0.00
1,640.0	7.11	90.00	1,633.8	0.0	106.8	9.4	0.00	0.00	0.00
1,680.0	7.11	90.00	1,673.5	0.0	111.7	9.9	0.00	0.00	0.00
1,720.0	7.11	90.00	1,713.2	0.0	116.7	10.3	0.00	0.00	0.00
1,760.0	7.11	90.00	1,752.9	0.0	121.6	10.7	0.00	0.00	0.00
1,800.0	7.11	90.00	1,792.6	0.0	126.6	11.2	0.00	0.00	0.00
1,840.0	7.11	90.00	1,832.3	0.0	131.5	11.6	0.00	0.00	0.00
1,880.0	7.11	90.00	1,872.0	0.0	136.5	12.0	0.00	0.00	0.00
1,920.0	7.11	90.00	1,911.7	0.0	141.4	12.5	0.00	0.00	0.00

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<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

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)
1,960.0	7.11	90.00	1,951.4	0.0	146.4	12.9	0.00	0.00	0.00
2,000.0	7.11	90.00	1,991.1	0.0	151.3	13.4	0.00	0.00	0.00
2,040.0	7.11	90.00	2,030.7	0.0	156.3	13.8	0.00	0.00	0.00
2,080.0	7.11	90.00	2,070.4	0.0	161.2	14.2	0.00	0.00	0.00
2,120.0	7.11	90.00	2,110.1	0.0	166.2	14.7	0.00	0.00	0.00
2,160.0	7.11	90.00	2,149.8	0.0	171.1	15.1	0.00	0.00	0.00
2,200.0	7.11	90.00	2,189.5	0.0	176.1	15.5	0.00	0.00	0.00
2,240.0	7.11	90.00	2,229.2	0.0	181.0	16.0	0.00	0.00	0.00
2,280.0	7.11	90.00	2,268.9	0.0	186.0	16.4	0.00	0.00	0.00
2,320.0	7.11	90.00	2,308.6	0.0	190.9	16.9	0.00	0.00	0.00
2,360.0	7.11	90.00	2,348.3	0.0	195.9	17.3	0.00	0.00	0.00
2,400.0	7.11	90.00	2,388.0	0.0	200.8	17.7	0.00	0.00	0.00
2,440.0	7.11	90.00	2,427.7	0.0	205.8	18.2	0.00	0.00	0.00
2,480.0	7.11	90.00	2,467.4	0.0	210.7	18.6	0.00	0.00	0.00
2,520.0	7.11	90.00	2,507.1	0.0	215.7	19.0	0.00	0.00	0.00
2,560.0	7.11	90.00	2,546.8	0.0	220.6	19.5	0.00	0.00	0.00
2,600.0	7.11	90.00	2,586.4	0.0	225.6	19.9	0.00	0.00	0.00
2,640.0	7.11	90.00	2,626.1	0.0	230.5	20.4	0.00	0.00	0.00
2,680.0	7.11	90.00	2,665.8	0.0	235.5	20.8	0.00	0.00	0.00
2,720.0	7.11	90.00	2,705.5	0.0	240.4	21.2	0.00	0.00	0.00
2,760.0	7.11	90.00	2,745.2	0.0	245.4	21.7	0.00	0.00	0.00
2,800.0	7.11	90.00	2,784.9	0.0	250.3	22.1	0.00	0.00	0.00
2,840.0	7.11	90.00	2,824.6	0.0	255.3	22.5	0.00	0.00	0.00
2,880.0	7.11	90.00	2,864.3	0.0	260.2	23.0	0.00	0.00	0.00
2,920.0	7.11	90.00	2,904.0	0.0	265.2	23.4	0.00	0.00	0.00
2,960.0	7.11	90.00	2,943.7	0.0	270.1	23.8	0.00	0.00	0.00
3,000.0	7.11	90.00	2,983.4	0.0	275.1	24.3	0.00	0.00	0.00
3,040.0	7.11	90.00	3,023.1	0.0	280.0	24.7	0.00	0.00	0.00
3,080.0	7.11	90.00	3,062.8	0.0	285.0	25.2	0.00	0.00	0.00
3,120.0	7.11	90.00	3,102.4	0.0	289.9	25.6	0.00	0.00	0.00
3,160.0	7.11	90.00	3,142.1	0.0	294.9	26.0	0.00	0.00	0.00
3,200.0	7.11	90.00	3,181.8	0.0	299.8	26.5	0.00	0.00	0.00
3,240.0	7.11	90.00	3,221.5	0.0	304.8	26.9	0.00	0.00	0.00
3,280.0	7.11	90.00	3,261.2	0.0	309.7	27.3	0.00	0.00	0.00
3,320.0	7.11	90.00	3,300.9	0.0	314.7	27.8	0.00	0.00	0.00
3,360.0	7.11	90.00	3,340.6	0.0	319.6	28.2	0.00	0.00	0.00
3,400.0	7.11	90.00	3,380.3	0.0	324.6	28.7	0.00	0.00	0.00
3,440.0	7.11	90.00	3,420.0	0.0	329.5	29.1	0.00	0.00	0.00
3,480.0	7.11	90.00	3,459.7	0.0	334.5	29.5	0.00	0.00	0.00
3,520.0	7.11	90.00	3,499.4	0.0	339.4	30.0	0.00	0.00	0.00
3,560.0	7.11	90.00	3,539.1	0.0	344.4	30.4	0.00	0.00	0.00
3,600.0	7.11	90.00	3,578.8	0.0	349.3	30.8	0.00	0.00	0.00
3,640.0	7.11	90.00	3,618.4	0.0	354.3	31.3	0.00	0.00	0.00
3,680.0	7.11	90.00	3,658.1	0.0	359.2	31.7	0.00	0.00	0.00
3,720.0	7.11	90.00	3,697.8	0.0	364.2	32.2	0.00	0.00	0.00
3,760.0	7.11	90.00	3,737.5	0.0	369.1	32.6	0.00	0.00	0.00
3,800.0	7.11	90.00	3,777.2	0.0	374.1	33.0	0.00	0.00	0.00
3,840.0	7.11	90.00	3,816.9	0.0	379.0	33.5	0.00	0.00	0.00
3,880.0	7.11	90.00	3,856.6	0.0	384.0	33.9	0.00	0.00	0.00
3,920.0	7.11	90.00	3,896.3	0.0	388.9	34.3	0.00	0.00	0.00
3,960.0	7.11	90.00	3,936.0	0.0	393.9	34.8	0.00	0.00	0.00
4,000.0	7.11	90.00	3,975.7	0.0	398.8	35.2	0.00	0.00	0.00
4,040.0	7.11	90.00	4,015.4	0.0	403.8	35.6	0.00	0.00	0.00

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<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

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)
4,080.0	7.11	90.00	4,055.1	0.0	408.8	36.1	0.00	0.00	0.00
4,120.0	7.11	90.00	4,094.8	0.0	413.7	36.5	0.00	0.00	0.00
4,160.0	7.11	90.00	4,134.4	0.0	418.7	37.0	0.00	0.00	0.00
4,171.1	7.11	90.00	4,145.4	0.0	420.0	37.1	0.00	0.00	0.00
4,200.0	6.53	90.00	4,174.2	0.0	423.5	37.4	2.00	-2.00	0.00
4,240.0	5.73	90.00	4,213.9	0.0	427.7	37.8	2.00	-2.00	0.00
4,280.0	4.93	90.00	4,253.8	0.0	431.4	38.1	2.00	-2.00	0.00
4,320.0	4.13	90.00	4,293.6	0.0	434.6	38.4	2.00	-2.00	0.00
4,360.0	3.33	90.00	4,333.5	0.0	437.2	38.6	2.00	-2.00	0.00
4,400.0	2.53	90.00	4,373.5	0.0	439.3	38.8	2.00	-2.00	0.00
4,440.0	1.73	90.00	4,413.5	0.0	440.7	38.9	2.00	-2.00	0.00
4,480.0	0.93	90.00	4,453.5	0.0	441.7	39.0	2.00	-2.00	0.00
4,520.0	0.13	90.00	4,493.5	0.0	442.0	39.0	2.00	-2.00	0.00
4,526.5	0.00	0.00	4,500.0	0.0	442.0	39.0	2.00	-2.00	0.00
4,560.0	0.00	0.00	4,533.5	0.0	442.0	39.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,573.5	0.0	442.0	39.0	0.00	0.00	0.00
4,640.0	0.00	0.00	4,613.5	0.0	442.0	39.0	0.00	0.00	0.00
4,680.0	0.00	0.00	4,653.5	0.0	442.0	39.0	0.00	0.00	0.00
4,720.0	0.00	0.00	4,693.5	0.0	442.0	39.0	0.00	0.00	0.00
4,760.0	0.00	0.00	4,733.5	0.0	442.0	39.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,773.5	0.0	442.0	39.0	0.00	0.00	0.00
4,840.0	0.00	0.00	4,813.5	0.0	442.0	39.0	0.00	0.00	0.00
4,880.0	0.00	0.00	4,853.5	0.0	442.0	39.0	0.00	0.00	0.00
4,920.0	0.00	0.00	4,893.5	0.0	442.0	39.0	0.00	0.00	0.00
4,960.0	0.00	0.00	4,933.5	0.0	442.0	39.0	0.00	0.00	0.00
5,000.0	0.00	0.00	4,973.5	0.0	442.0	39.0	0.00	0.00	0.00
5,040.0	0.00	0.00	5,013.5	0.0	442.0	39.0	0.00	0.00	0.00
5,080.0	0.00	0.00	5,053.5	0.0	442.0	39.0	0.00	0.00	0.00
5,120.0	0.00	0.00	5,093.5	0.0	442.0	39.0	0.00	0.00	0.00
5,160.0	0.00	0.00	5,133.5	0.0	442.0	39.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,173.5	0.0	442.0	39.0	0.00	0.00	0.00
5,240.0	0.00	0.00	5,213.5	0.0	442.0	39.0	0.00	0.00	0.00
5,280.0	0.00	0.00	5,253.5	0.0	442.0	39.0	0.00	0.00	0.00
5,320.0	0.00	0.00	5,293.5	0.0	442.0	39.0	0.00	0.00	0.00
5,360.0	0.00	0.00	5,333.5	0.0	442.0	39.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,373.5	0.0	442.0	39.0	0.00	0.00	0.00
5,440.0	0.00	0.00	5,413.5	0.0	442.0	39.0	0.00	0.00	0.00
5,480.0	0.00	0.00	5,453.5	0.0	442.0	39.0	0.00	0.00	0.00
5,520.0	0.00	0.00	5,493.5	0.0	442.0	39.0	0.00	0.00	0.00
5,560.0	0.00	0.00	5,533.5	0.0	442.0	39.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,573.5	0.0	442.0	39.0	0.00	0.00	0.00
5,640.0	0.00	0.00	5,613.5	0.0	442.0	39.0	0.00	0.00	0.00
5,680.0	0.00	0.00	5,653.5	0.0	442.0	39.0	0.00	0.00	0.00
5,720.0	0.00	0.00	5,693.5	0.0	442.0	39.0	0.00	0.00	0.00
5,760.0	0.00	0.00	5,733.5	0.0	442.0	39.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,773.5	0.0	442.0	39.0	0.00	0.00	0.00
5,840.0	0.00	0.00	5,813.5	0.0	442.0	39.0	0.00	0.00	0.00
5,880.0	0.00	0.00	5,853.5	0.0	442.0	39.0	0.00	0.00	0.00
5,920.0	0.00	0.00	5,893.5	0.0	442.0	39.0	0.00	0.00	0.00
5,960.0	0.00	0.00	5,933.5	0.0	442.0	39.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,973.5	0.0	442.0	39.0	0.00	0.00	0.00
6,040.0	0.00	0.00	6,013.5	0.0	442.0	39.0	0.00	0.00	0.00
6,080.0	0.00	0.00	6,053.5	0.0	442.0	39.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

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)
6,120.0	0.00	0.00	6,093.5	0.0	442.0	39.0	0.00	0.00	0.00
6,160.0	0.00	0.00	6,133.5	0.0	442.0	39.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,173.5	0.0	442.0	39.0	0.00	0.00	0.00
6,240.0	0.00	0.00	6,213.5	0.0	442.0	39.0	0.00	0.00	0.00
6,280.0	0.00	0.00	6,253.5	0.0	442.0	39.0	0.00	0.00	0.00
6,320.0	0.00	0.00	6,293.5	0.0	442.0	39.0	0.00	0.00	0.00
6,360.0	0.00	0.00	6,333.5	0.0	442.0	39.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,373.5	0.0	442.0	39.0	0.00	0.00	0.00
6,406.3	0.00	0.00	6,379.8	0.0	442.0	39.0	0.00	0.00	0.00
<b>KOP #2</b>									
6,440.0	2.53	0.00	6,413.4	0.7	442.0	39.8	7.50	7.50	0.00
6,480.0	5.53	0.00	6,453.3	3.6	442.0	42.6	7.50	7.50	0.00
6,520.0	8.53	0.00	6,493.0	8.4	442.0	47.4	7.50	7.50	0.00
6,560.0	11.53	0.00	6,532.4	15.4	442.0	54.4	7.50	7.50	0.00
6,600.0	14.53	0.00	6,571.4	24.4	442.0	63.4	7.50	7.50	0.00
6,640.0	17.53	0.00	6,609.8	35.5	442.0	74.4	7.50	7.50	0.00
6,680.0	20.53	0.00	6,647.6	48.5	442.0	87.4	7.50	7.50	0.00
6,720.0	23.53	0.00	6,684.7	63.5	442.0	102.3	7.50	7.50	0.00
6,760.0	26.53	0.00	6,720.9	80.4	442.0	119.1	7.50	7.50	0.00
6,800.0	29.53	0.00	6,756.3	99.2	442.0	137.9	7.50	7.50	0.00
6,840.0	32.53	0.00	6,790.5	119.8	442.0	158.4	7.50	7.50	0.00
6,880.0	35.53	0.00	6,823.7	142.2	442.0	180.7	7.50	7.50	0.00
6,920.0	38.53	0.00	6,855.6	166.3	442.0	204.7	7.50	7.50	0.00
6,960.0	41.53	0.00	6,886.2	192.0	442.0	230.3	7.50	7.50	0.00
7,000.0	44.53	0.00	6,915.5	219.3	442.0	257.5	7.50	7.50	0.00
7,040.0	47.53	0.00	6,943.2	248.1	442.0	286.2	7.50	7.50	0.00
7,080.0	50.53	0.00	6,969.5	278.3	442.0	316.3	7.50	7.50	0.00
7,120.0	53.53	0.00	6,994.1	309.8	442.0	347.7	7.50	7.50	0.00
7,160.0	56.53	0.00	7,017.0	342.6	442.0	380.3	7.50	7.50	0.00
7,200.0	59.53	0.00	7,038.2	376.5	442.0	414.1	7.50	7.50	0.00
7,240.0	62.53	0.00	7,057.5	411.5	442.0	449.0	7.50	7.50	0.00
7,280.0	65.53	0.00	7,075.1	447.5	442.0	484.8	7.50	7.50	0.00
7,320.0	68.53	0.00	7,090.7	484.3	442.0	521.5	7.50	7.50	0.00
7,360.0	71.53	0.00	7,104.3	521.9	442.0	558.9	7.50	7.50	0.00
7,400.0	74.53	0.00	7,116.0	560.2	442.0	597.0	7.50	7.50	0.00
7,440.0	77.53	0.00	7,125.7	599.0	442.0	635.7	7.50	7.50	0.00
7,480.0	80.53	0.00	7,133.3	638.2	442.0	674.8	7.50	7.50	0.00
7,520.0	83.53	0.00	7,138.8	677.8	442.0	714.2	7.50	7.50	0.00
7,560.0	86.53	0.00	7,142.3	717.7	442.0	753.9	7.50	7.50	0.00
7,600.0	89.53	0.00	7,143.7	757.7	442.0	793.7	7.50	7.50	0.00
7,604.4	89.86	0.00	7,143.7	762.1	442.0	798.1	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,640.0	89.86	0.00	7,143.8	797.7	442.0	833.6	0.00	0.00	0.00
7,680.0	89.86	0.00	7,143.9	837.7	442.0	873.4	0.00	0.00	0.00
7,720.0	89.86	0.00	7,144.0	877.7	442.0	913.3	0.00	0.00	0.00
7,760.0	89.86	0.00	7,144.1	917.7	442.0	953.1	0.00	0.00	0.00
7,800.0	89.86	0.00	7,144.2	957.7	442.0	992.9	0.00	0.00	0.00
7,840.0	89.86	0.00	7,144.3	997.7	442.0	1,032.8	0.00	0.00	0.00
7,880.0	89.86	0.00	7,144.3	1,037.7	442.0	1,072.6	0.00	0.00	0.00
7,920.0	89.86	0.00	7,144.4	1,077.7	442.0	1,112.5	0.00	0.00	0.00
7,960.0	89.86	0.00	7,144.5	1,117.7	442.0	1,152.3	0.00	0.00	0.00
8,000.0	89.86	0.00	7,144.6	1,157.7	442.0	1,192.2	0.00	0.00	0.00
8,040.0	89.86	0.00	7,144.7	1,197.7	442.0	1,232.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

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)
8,080.0	89.86	0.00	7,144.8	1,237.7	442.0	1,271.9	0.00	0.00	0.00
8,120.0	89.86	0.00	7,144.9	1,277.7	442.0	1,311.7	0.00	0.00	0.00
8,160.0	89.86	0.00	7,145.0	1,317.7	442.0	1,351.5	0.00	0.00	0.00
8,200.0	89.86	0.00	7,145.1	1,357.7	442.0	1,391.4	0.00	0.00	0.00
8,240.0	89.86	0.00	7,145.2	1,397.7	442.0	1,431.2	0.00	0.00	0.00
8,280.0	89.86	0.00	7,145.3	1,437.7	442.0	1,471.1	0.00	0.00	0.00
8,320.0	89.86	0.00	7,145.4	1,477.7	442.0	1,510.9	0.00	0.00	0.00
8,360.0	89.86	0.00	7,145.5	1,517.7	442.0	1,550.8	0.00	0.00	0.00
8,400.0	89.86	0.00	7,145.6	1,557.7	442.0	1,590.6	0.00	0.00	0.00
8,440.0	89.86	0.00	7,145.7	1,597.7	442.0	1,630.4	0.00	0.00	0.00
8,480.0	89.86	0.00	7,145.8	1,637.7	442.0	1,670.3	0.00	0.00	0.00
8,520.0	89.86	0.00	7,145.9	1,677.7	442.0	1,710.1	0.00	0.00	0.00
8,560.0	89.86	0.00	7,146.0	1,717.7	442.0	1,750.0	0.00	0.00	0.00
8,600.0	89.86	0.00	7,146.1	1,757.7	442.0	1,789.8	0.00	0.00	0.00
8,640.0	89.86	0.00	7,146.2	1,797.7	442.0	1,829.7	0.00	0.00	0.00
8,680.0	89.86	0.00	7,146.3	1,837.7	442.0	1,869.5	0.00	0.00	0.00
8,720.0	89.86	0.00	7,146.4	1,877.7	442.0	1,909.4	0.00	0.00	0.00
8,760.0	89.86	0.00	7,146.5	1,917.7	442.0	1,949.2	0.00	0.00	0.00
8,800.0	89.86	0.00	7,146.6	1,957.7	442.0	1,989.0	0.00	0.00	0.00
8,840.0	89.86	0.00	7,146.7	1,997.7	442.0	2,028.9	0.00	0.00	0.00
8,880.0	89.86	0.00	7,146.8	2,037.7	442.0	2,068.7	0.00	0.00	0.00
8,920.0	89.86	0.00	7,146.9	2,077.7	442.0	2,108.6	0.00	0.00	0.00
8,960.0	89.86	0.00	7,147.0	2,117.7	442.0	2,148.4	0.00	0.00	0.00
9,000.0	89.86	0.00	7,147.1	2,157.7	442.0	2,188.3	0.00	0.00	0.00
9,040.0	89.86	0.00	7,147.2	2,197.7	442.0	2,228.1	0.00	0.00	0.00
9,080.0	89.86	0.00	7,147.3	2,237.7	442.0	2,267.9	0.00	0.00	0.00
9,120.0	89.86	0.00	7,147.4	2,277.7	442.0	2,307.8	0.00	0.00	0.00
9,160.0	89.86	0.00	7,147.5	2,317.7	442.0	2,347.6	0.00	0.00	0.00
9,200.0	89.86	0.00	7,147.6	2,357.7	442.0	2,387.5	0.00	0.00	0.00
9,240.0	89.86	0.00	7,147.7	2,397.7	442.0	2,427.3	0.00	0.00	0.00
9,280.0	89.86	0.00	7,147.8	2,437.7	442.0	2,467.2	0.00	0.00	0.00
9,320.0	89.86	0.00	7,147.9	2,477.7	442.0	2,507.0	0.00	0.00	0.00
9,360.0	89.86	0.00	7,148.0	2,517.7	442.0	2,546.9	0.00	0.00	0.00
9,400.0	89.86	0.00	7,148.1	2,557.7	442.0	2,586.7	0.00	0.00	0.00
9,440.0	89.86	0.00	7,148.2	2,597.7	442.0	2,626.5	0.00	0.00	0.00
9,480.0	89.86	0.00	7,148.3	2,637.7	442.0	2,666.4	0.00	0.00	0.00
9,520.0	89.86	0.00	7,148.4	2,677.7	442.0	2,706.2	0.00	0.00	0.00
9,560.0	89.86	0.00	7,148.5	2,717.7	442.0	2,746.1	0.00	0.00	0.00
9,600.0	89.86	0.00	7,148.6	2,757.7	442.0	2,785.9	0.00	0.00	0.00
9,640.0	89.86	0.00	7,148.6	2,797.7	442.0	2,825.8	0.00	0.00	0.00
9,680.0	89.86	0.00	7,148.7	2,837.7	442.0	2,865.6	0.00	0.00	0.00
9,720.0	89.86	0.00	7,148.8	2,877.7	442.0	2,905.4	0.00	0.00	0.00
9,760.0	89.86	0.00	7,148.9	2,917.7	442.0	2,945.3	0.00	0.00	0.00
9,800.0	89.86	0.00	7,149.0	2,957.7	442.0	2,985.1	0.00	0.00	0.00
9,840.0	89.86	0.00	7,149.1	2,997.7	442.0	3,025.0	0.00	0.00	0.00
9,880.0	89.86	0.00	7,149.2	3,037.7	442.0	3,064.8	0.00	0.00	0.00
9,920.0	89.86	0.00	7,149.3	3,077.7	442.0	3,104.7	0.00	0.00	0.00
9,960.0	89.86	0.00	7,149.4	3,117.7	442.0	3,144.5	0.00	0.00	0.00
10,000.0	89.86	0.00	7,149.5	3,157.7	442.0	3,184.4	0.00	0.00	0.00
10,040.0	89.86	0.00	7,149.6	3,197.7	442.0	3,224.2	0.00	0.00	0.00
10,080.0	89.86	0.00	7,149.7	3,237.7	442.0	3,264.0	0.00	0.00	0.00
10,120.0	89.86	0.00	7,149.8	3,277.7	442.0	3,303.9	0.00	0.00	0.00
10,160.0	89.86	0.00	7,149.9	3,317.7	442.0	3,343.7	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

## 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)
10,200.0	89.86	0.00	7,150.0	3,357.7	442.0	3,383.6	0.00	0.00	0.00
10,240.0	89.86	0.00	7,150.1	3,397.7	442.0	3,423.4	0.00	0.00	0.00
10,280.0	89.86	0.00	7,150.2	3,437.7	442.0	3,463.3	0.00	0.00	0.00
10,320.0	89.86	0.00	7,150.3	3,477.7	442.0	3,503.1	0.00	0.00	0.00
10,360.0	89.86	0.00	7,150.4	3,517.7	442.0	3,542.9	0.00	0.00	0.00
10,400.0	89.86	0.00	7,150.5	3,557.7	442.0	3,582.8	0.00	0.00	0.00
10,440.0	89.86	0.00	7,150.6	3,597.7	442.0	3,622.6	0.00	0.00	0.00
10,480.0	89.86	0.00	7,150.7	3,637.7	442.0	3,662.5	0.00	0.00	0.00
10,520.0	89.86	0.00	7,150.8	3,677.7	442.0	3,702.3	0.00	0.00	0.00
10,560.0	89.86	0.00	7,150.9	3,717.7	442.0	3,742.2	0.00	0.00	0.00
10,600.0	89.86	0.00	7,151.0	3,757.7	442.0	3,782.0	0.00	0.00	0.00
10,640.0	89.86	0.00	7,151.1	3,797.7	442.0	3,821.9	0.00	0.00	0.00
10,680.0	89.86	0.00	7,151.2	3,837.7	442.0	3,861.7	0.00	0.00	0.00
10,720.0	89.86	0.00	7,151.3	3,877.7	442.0	3,901.5	0.00	0.00	0.00
10,760.0	89.86	0.00	7,151.4	3,917.7	442.0	3,941.4	0.00	0.00	0.00
10,800.0	89.86	0.00	7,151.5	3,957.7	442.0	3,981.2	0.00	0.00	0.00
10,840.0	89.86	0.00	7,151.6	3,997.7	442.0	4,021.1	0.00	0.00	0.00
10,880.0	89.86	0.00	7,151.7	4,037.7	442.0	4,060.9	0.00	0.00	0.00
10,920.0	89.86	0.00	7,151.8	4,077.7	442.0	4,100.8	0.00	0.00	0.00
10,960.0	89.86	0.00	7,151.9	4,117.7	442.0	4,140.6	0.00	0.00	0.00
11,000.0	89.86	0.00	7,152.0	4,157.7	442.0	4,180.4	0.00	0.00	0.00
11,040.0	89.86	0.00	7,152.1	4,197.7	442.0	4,220.3	0.00	0.00	0.00
11,080.0	89.86	0.00	7,152.2	4,237.7	442.0	4,260.1	0.00	0.00	0.00
11,120.0	89.86	0.00	7,152.3	4,277.7	442.0	4,300.0	0.00	0.00	0.00
11,160.0	89.86	0.00	7,152.4	4,317.7	442.0	4,339.8	0.00	0.00	0.00
11,200.0	89.86	0.00	7,152.5	4,357.7	442.0	4,379.7	0.00	0.00	0.00
11,240.0	89.86	0.00	7,152.6	4,397.7	442.0	4,419.5	0.00	0.00	0.00
11,280.0	89.86	0.00	7,152.7	4,437.7	442.0	4,459.3	0.00	0.00	0.00
11,320.0	89.86	0.00	7,152.8	4,477.7	442.0	4,499.2	0.00	0.00	0.00
11,360.0	89.86	0.00	7,152.9	4,517.7	442.0	4,539.0	0.00	0.00	0.00
11,400.0	89.86	0.00	7,152.9	4,557.7	442.0	4,578.9	0.00	0.00	0.00
11,440.0	89.86	0.00	7,153.0	4,597.7	442.0	4,618.7	0.00	0.00	0.00
11,480.0	89.86	0.00	7,153.1	4,637.7	442.0	4,658.6	0.00	0.00	0.00
11,520.0	89.86	0.00	7,153.2	4,677.7	442.0	4,698.4	0.00	0.00	0.00
11,560.0	89.86	0.00	7,153.3	4,717.7	442.0	4,738.3	0.00	0.00	0.00
11,600.0	89.86	0.00	7,153.4	4,757.7	442.0	4,778.1	0.00	0.00	0.00
11,640.0	89.86	0.00	7,153.5	4,797.7	442.0	4,817.9	0.00	0.00	0.00
11,680.0	89.86	0.00	7,153.6	4,837.7	442.0	4,857.8	0.00	0.00	0.00
11,720.0	89.86	0.00	7,153.7	4,877.7	442.0	4,897.6	0.00	0.00	0.00
11,760.0	89.86	0.00	7,153.8	4,917.6	442.0	4,937.5	0.00	0.00	0.00
11,800.0	89.86	0.00	7,153.9	4,957.6	442.0	4,977.3	0.00	0.00	0.00
11,829.9	89.86	0.00	7,154.0	4,987.5	442.0	5,007.1	0.00	0.00	0.00
<b>BHL 500'FNL &amp; 2450'FWL</b>									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-6-12)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
HARDLINE BHL 460'f	0.00	0.00	1.0	5,027.5	600.0	1,433,742.53	3,182,985.77	40.522160	-104.841792
- plan misses target center by 5063.2ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,433,742.53	3,182,985.77		
Point 2			1.0	0.0	-700.0	1,433,737.35	3,182,285.81		
BHL 500'FNL & 2450'	0.00	0.00	7,154.0	4,987.5	442.0	1,433,701.41	3,182,828.12	40.522050	-104.842360
- plan hits target center									
- Point									
SECTIONLINE 210'N	0.00	0.00	1.0	210.0	600.0	1,428,925.33	3,183,021.41	40.508936	-104.841792
- plan misses target center by 635.7ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,428,925.33	3,183,021.41		
Point 2			1.0	0.0	-700.0	1,428,920.15	3,182,321.45		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,604.4	7,143.7	7"	7	7-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
600.0	600.0	0.0	0.0	KOP #1	
6,406.3	6,379.8	0.0	442.0	KOP #2	
7,604.4	7,143.7	762.1	442.0	End of Build	



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.12-T6N-R67W**

**Simonsen NENW-12 Pad Sec.12-T6N-R67W**

**Simonsen 1Q-241**

**Wellbore #1**

**Plan #1 (6-6-12)**

## **Anticollision Report**

**19 June, 2012**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Project:</b>	SEC.12-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (6-6-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (6-6-12)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	6/8/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,829.9	Plan #1 (6-6-12) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Simonsen NENW-12 Pad Sec.12-T6N-R67W						
Simonsen 1L-421 - Wellbore #1 - Plan #1 (6-7-12)	600.0	601.0	30.6	28.1	12.361	CC, ES
Simonsen 1L-421 - Wellbore #1 - Plan #1 (6-7-12)	11,829.9	11,961.0	767.6	577.5	4.040	SF

Offset Design Survey Program: 0-MWD													Simonsen NENW-12 Pad Sec.12-T6N-R67W - Simonsen 1L-421 - Wellbore #1 - Plan #1 (6-7-12)		Offset Site Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	0.0	-30.6	30.6	30.6	0.00	N/A				
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-30.6	30.6	30.4	0.23	134.742				
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-30.6	30.6	29.9	0.68	45.212				
300.0	300.0	301.0	301.0	0.6	0.6	-90.00	0.0	-30.6	30.6	29.5	1.13	27.164				
400.0	400.0	401.0	401.0	0.8	0.8	-90.00	0.0	-30.6	30.6	29.0	1.58	19.414				
500.0	500.0	501.0	501.0	1.0	1.0	-90.00	0.0	-30.6	30.6	28.6	2.03	15.104				
600.0	600.0	601.0	601.0	1.2	1.2	-90.00	0.0	-30.6	30.6	28.1	2.47	12.361 CC, ES				
700.0	700.0	701.0	701.0	1.4	1.5	-180.00	0.0	-30.6	32.3	29.4	2.91	11.103				
800.0	799.8	800.8	800.8	1.7	1.7	-180.00	0.0	-30.6	37.6	34.2	3.34	11.243				
900.0	899.5	900.5	900.5	1.9	1.9	-180.00	0.0	-30.6	46.3	42.5	3.77	12.265				
1,000.0	998.7	999.7	999.7	2.1	2.1	-180.00	0.0	-30.6	58.1	53.9	4.21	13.812				
1,100.0	1,098.0	1,099.0	1,099.0	2.4	2.4	-180.00	0.0	-30.6	70.5	65.9	4.65	15.166				
1,200.0	1,197.2	1,198.2	1,198.2	2.7	2.6	-180.00	0.0	-30.6	82.9	77.8	5.09	16.272				
1,300.0	1,296.4	1,297.4	1,297.4	3.0	2.8	-180.00	0.0	-30.6	95.3	89.7	5.54	17.191				
1,400.0	1,395.7	1,396.7	1,396.7	3.3	3.0	-180.00	0.0	-30.6	107.6	101.6	5.99	17.965				
1,500.0	1,494.9	1,495.9	1,495.9	3.6	3.2	-180.00	0.0	-30.6	120.0	113.6	6.44	18.625				
1,600.0	1,594.1	1,595.1	1,595.1	3.9	3.5	-180.00	0.0	-30.6	132.4	125.5	6.90	19.195				
1,700.0	1,693.4	1,689.8	1,689.8	4.2	3.7	-180.00	0.0	-32.0	146.2	138.9	7.33	19.948				
1,800.0	1,792.6	1,783.3	1,783.2	4.5	3.9	-180.00	0.0	-36.4	163.3	155.6	7.76	21.058				
1,900.0	1,891.8	1,875.6	1,875.2	4.8	4.1	-180.00	0.0	-43.8	183.6	175.4	8.18	22.442				
2,000.0	1,991.1	1,966.6	1,965.6	5.2	4.3	-180.00	0.0	-54.0	207.0	198.4	8.61	24.052				
2,100.0	2,090.3	2,061.2	2,059.3	5.5	4.5	-180.00	0.0	-66.9	232.8	223.7	9.04	25.747				
2,200.0	2,189.5	2,157.8	2,155.0	5.8	4.7	-180.00	0.0	-80.1	258.7	249.2	9.47	27.304				
2,300.0	2,288.8	2,254.4	2,250.7	6.1	5.0	-180.00	0.0	-93.4	284.5	274.6	9.91	28.715				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Project:</b>	SEC.12-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (6-6-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Simonsen NENW-12 Pad Sec.12-T6N-R67W - Simonsen 1L-421 - Wellbore #1 - Plan #1 (6-7-12)													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,400.0	2,388.0	2,351.0	2,346.3	6.4	5.3	-180.00	0.0	-106.7	310.4	300.1	10.35	29.995	
2,500.0	2,487.2	2,447.6	2,442.0	6.7	5.5	-180.00	0.0	-119.9	336.3	325.5	10.79	31.168	
2,600.0	2,586.4	2,544.1	2,537.7	7.1	5.8	-180.00	0.0	-133.2	362.2	351.0	11.23	32.240	
2,700.0	2,685.7	2,640.7	2,633.4	7.4	6.1	-180.00	0.0	-146.5	388.1	376.4	11.68	33.225	
2,800.0	2,784.9	2,737.3	2,729.0	7.7	6.4	-180.00	0.0	-159.7	414.0	401.9	12.13	34.132	
2,900.0	2,884.1	2,833.9	2,824.7	8.0	6.7	-180.00	0.0	-173.0	439.9	427.3	12.58	34.970	
3,000.0	2,983.4	2,930.5	2,920.4	8.3	7.0	-180.00	0.0	-186.3	465.8	452.7	13.03	35.745	
3,100.0	3,082.6	3,027.1	3,016.1	8.7	7.3	-180.00	0.0	-199.6	491.7	478.2	13.48	36.465	
3,200.0	3,181.8	3,123.7	3,111.7	9.0	7.6	-180.00	0.0	-212.8	517.6	503.6	13.94	37.135	
3,300.0	3,281.1	3,220.3	3,207.4	9.3	7.9	-180.00	0.0	-226.1	543.5	529.1	14.39	37.759	
3,400.0	3,380.3	3,316.9	3,303.1	9.6	8.2	-180.00	0.0	-239.4	569.3	554.5	14.85	38.343	
3,500.0	3,479.5	3,413.5	3,398.8	10.0	8.5	-180.00	0.0	-252.6	595.2	579.9	15.31	38.889	
3,600.0	3,578.8	3,510.0	3,494.4	10.3	8.8	-180.00	0.0	-265.9	621.1	605.4	15.76	39.402	
3,700.0	3,678.0	3,606.6	3,590.1	10.6	9.1	-180.00	0.0	-279.2	647.0	630.8	16.22	39.883	
3,800.0	3,777.2	3,727.8	3,710.3	10.9	9.5	-180.00	0.0	-293.9	671.4	654.7	16.71	40.176	
3,900.0	3,876.4	3,856.3	3,838.4	11.2	9.7	-180.00	0.0	-304.0	691.6	674.4	17.19	40.223	
4,000.0	3,975.7	3,987.0	3,969.0	11.6	10.0	-180.00	0.0	-308.4	707.3	689.6	17.68	40.014	
4,100.0	4,074.9	4,093.8	4,075.9	11.9	10.2	-180.00	0.0	-308.6	719.8	701.7	18.12	39.720	
4,200.0	4,174.2	4,193.1	4,175.2	12.2	10.4	-180.00	0.0	-308.6	732.0	713.5	18.58	39.402	
4,300.0	4,273.7	4,292.6	4,274.7	12.4	10.5	-180.00	0.0	-308.6	741.7	722.7	19.02	38.998	
4,400.0	4,373.5	4,392.4	4,374.5	12.6	10.7	-180.00	0.0	-308.6	747.8	728.4	19.43	38.481	
4,500.0	4,473.5	4,492.4	4,474.5	12.8	10.9	-180.00	0.0	-308.6	750.5	730.7	19.82	37.858	
4,600.0	4,573.5	4,592.4	4,574.5	12.9	11.1	-90.00	0.0	-308.6	750.6	730.4	20.22	37.118	
4,700.0	4,673.5	4,692.4	4,674.5	13.1	11.3	-90.00	0.0	-308.6	750.6	730.0	20.63	36.382	
4,800.0	4,773.5	4,792.4	4,774.5	13.2	11.5	-90.00	0.0	-308.6	750.6	729.6	21.04	35.671	
4,900.0	4,873.5	4,892.4	4,874.5	13.4	11.7	-90.00	0.0	-308.6	750.6	729.2	21.46	34.985	
5,000.0	4,973.5	4,992.4	4,974.5	13.6	11.9	-90.00	0.0	-308.6	750.6	728.8	21.87	34.323	
5,100.0	5,073.5	5,092.4	5,074.5	13.8	12.1	-90.00	0.0	-308.6	750.6	728.4	22.29	33.684	
5,200.0	5,173.5	5,192.4	5,174.5	13.9	12.3	-90.00	0.0	-308.6	750.6	727.9	22.70	33.065	
5,300.0	5,273.5	5,292.4	5,274.5	14.1	12.5	-90.00	0.0	-308.6	750.6	727.5	23.12	32.468	
5,400.0	5,373.5	5,392.4	5,374.5	14.3	12.7	-90.00	0.0	-308.6	750.6	727.1	23.54	31.890	
5,500.0	5,473.5	5,492.4	5,474.5	14.4	12.9	-90.00	0.0	-308.6	750.6	726.7	23.96	31.331	
5,600.0	5,573.5	5,592.4	5,574.5	14.6	13.1	-90.00	0.0	-308.6	750.6	726.3	24.38	30.790	
5,700.0	5,673.5	5,692.4	5,674.5	14.8	13.3	-90.00	0.0	-308.6	750.6	725.8	24.80	30.266	
5,800.0	5,773.5	5,792.4	5,774.5	15.0	13.5	-90.00	0.0	-308.6	750.6	725.4	25.22	29.758	
5,900.0	5,873.5	5,892.4	5,874.5	15.2	13.7	-90.00	0.0	-308.6	750.6	725.0	25.65	29.266	
6,000.0	5,973.5	5,992.4	5,974.5	15.3	13.9	-90.00	0.0	-308.6	750.6	724.6	26.07	28.790	
6,100.0	6,073.5	6,092.4	6,074.5	15.5	14.1	-90.00	0.0	-308.6	750.6	724.1	26.50	28.327	
6,200.0	6,173.5	6,192.4	6,174.5	15.7	14.3	-90.00	0.0	-308.6	750.6	723.7	26.93	27.879	
6,300.0	6,273.5	6,292.4	6,274.5	15.9	14.5	-90.00	0.0	-308.6	750.6	723.3	27.35	27.443	
6,400.0	6,373.5	6,392.4	6,374.5	16.1	14.8	-90.00	0.0	-308.6	750.6	722.9	27.78	27.021	
6,431.7	6,405.1	6,424.0	6,406.1	16.1	14.8	-90.05	0.0	-308.6	750.6	722.7	27.92	26.890	
6,500.0	6,473.2	6,492.1	6,474.2	16.3	15.0	-90.43	0.0	-308.6	750.7	722.5	28.21	26.612	
6,600.0	6,571.4	6,591.8	6,573.8	16.4	15.2	-91.72	1.5	-308.6	751.0	722.4	28.64	26.225	
6,700.0	6,666.3	6,684.3	6,675.4	16.6	15.4	-93.14	14.7	-308.6	751.8	722.7	29.08	25.856	
6,800.0	6,756.3	6,779.7	6,777.0	16.8	15.6	-94.51	42.3	-308.6	753.1	723.5	29.55	25.482	
6,900.0	6,839.8	6,907.9	6,876.4	17.1	15.9	-95.83	85.0	-308.6	754.7	724.5	30.11	25.061	
7,000.0	6,915.5	7,019.1	6,971.2	17.4	16.2	-97.05	142.9	-308.6	756.5	725.7	30.83	24.539	
7,100.0	6,982.0	7,133.2	7,058.6	17.8	16.5	-98.15	216.0	-308.6	758.5	726.7	31.77	23.871	
7,200.0	7,038.2	7,250.0	7,135.9	18.3	17.1	-99.11	303.5	-308.6	760.4	727.3	33.02	23.026	
7,300.0	7,083.1	7,369.2	7,200.0	19.0	17.8	-99.89	403.8	-308.6	762.1	727.4	34.65	21.995	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Project:</b>	SEC.12-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (6-6-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,400.0	7,116.0	7,490.4	7,248.4	19.9	18.9	-100.48	514.8	-308.6	763.4	726.7	36.66	20.823		
7,500.0	7,136.3	7,613.1	7,279.0	20.9	20.1	-100.84	633.4	-308.6	764.3	725.2	39.06	19.568		
7,600.0	7,143.7	7,722.6	7,292.1	22.1	21.4	-101.12	742.2	-308.6	765.1	723.6	41.59	18.399		
7,700.0	7,143.9	7,835.3	7,299.8	23.4	22.9	-101.66	854.6	-308.6	766.5	722.2	44.31	17.298		
7,800.0	7,144.2	7,937.8	7,300.3	24.8	24.3	-101.68	957.1	-308.6	766.5	719.4	47.12	16.267		
7,900.0	7,144.4	8,037.8	7,300.7	26.2	25.8	-101.69	1,057.1	-308.6	766.5	716.5	50.02	15.324		
8,000.0	7,144.6	8,137.8	7,301.1	27.7	27.3	-101.70	1,157.1	-308.6	766.6	713.5	53.04	14.453		
8,100.0	7,144.9	8,237.8	7,301.4	29.3	28.8	-101.71	1,257.1	-308.6	766.6	710.4	56.14	13.654		
8,200.0	7,145.1	8,337.8	7,301.8	30.8	30.4	-101.72	1,357.1	-308.6	766.6	707.3	59.33	12.921		
8,300.0	7,145.4	8,437.8	7,302.2	32.5	32.1	-101.72	1,457.1	-308.6	766.6	704.1	62.58	12.251		
8,400.0	7,145.6	8,537.8	7,302.5	34.1	33.7	-101.73	1,557.1	-308.6	766.7	700.8	65.89	11.636		
8,500.0	7,145.9	8,637.8	7,302.9	35.8	35.4	-101.74	1,657.1	-308.6	766.7	697.4	69.24	11.073		
8,600.0	7,146.1	8,737.8	7,303.3	37.5	37.1	-101.75	1,757.1	-308.6	766.7	694.1	72.64	10.555		
8,700.0	7,146.4	8,837.8	7,303.6	39.2	38.9	-101.76	1,857.1	-308.6	766.7	690.7	76.07	10.079		
8,800.0	7,146.6	8,937.8	7,304.0	41.0	40.6	-101.77	1,957.1	-308.6	766.8	687.2	79.53	9.641		
8,900.0	7,146.8	9,037.8	7,304.3	42.8	42.4	-101.78	2,057.1	-308.6	766.8	683.8	83.02	9.236		
9,000.0	7,147.1	9,137.8	7,304.7	44.5	44.2	-101.79	2,157.1	-308.6	766.8	680.3	86.54	8.861		
9,100.0	7,147.3	9,237.8	7,305.1	46.3	46.0	-101.79	2,257.1	-308.6	766.8	676.8	90.07	8.513		
9,200.0	7,147.6	9,337.8	7,305.4	48.1	47.8	-101.80	2,357.1	-308.6	766.9	673.2	93.63	8.190		
9,300.0	7,147.8	9,437.8	7,305.8	49.9	49.6	-101.81	2,457.1	-308.6	766.9	669.7	97.20	7.890		
9,400.0	7,148.1	9,537.8	7,306.2	51.7	51.4	-101.82	2,557.1	-308.6	766.9	666.1	100.79	7.609		
9,500.0	7,148.3	9,637.8	7,306.5	53.5	53.2	-101.83	2,657.1	-308.6	766.9	662.6	104.38	7.347		
9,600.0	7,148.6	9,737.8	7,306.9	55.4	55.1	-101.84	2,757.1	-308.6	767.0	659.0	108.00	7.102		
9,700.0	7,148.8	9,837.8	7,307.3	57.2	56.9	-101.85	2,857.1	-308.6	767.0	655.4	111.62	6.872		
9,800.0	7,149.0	9,937.8	7,307.6	59.1	58.7	-101.86	2,957.1	-308.6	767.0	651.8	115.25	6.655		
9,900.0	7,149.3	10,037.8	7,308.0	60.9	60.6	-101.87	3,057.1	-308.6	767.0	648.1	118.89	6.452		
10,000.0	7,149.5	10,137.8	7,308.4	62.7	62.5	-101.87	3,157.1	-308.6	767.1	644.5	122.54	6.260		
10,100.0	7,149.8	10,237.8	7,308.7	64.6	64.3	-101.88	3,257.1	-308.6	767.1	640.9	126.19	6.079		
10,200.0	7,150.0	10,337.8	7,309.1	66.5	66.2	-101.89	3,357.1	-308.6	767.1	637.3	129.85	5.907		
10,300.0	7,150.3	10,437.8	7,309.4	68.3	68.0	-101.90	3,457.1	-308.6	767.1	633.6	133.52	5.745		
10,400.0	7,150.5	10,537.8	7,309.8	70.2	69.9	-101.91	3,557.1	-308.6	767.2	630.0	137.20	5.592		
10,500.0	7,150.8	10,637.8	7,310.2	72.1	71.8	-101.92	3,657.1	-308.6	767.2	626.3	140.87	5.446		
10,600.0	7,151.0	10,737.8	7,310.5	73.9	73.7	-101.93	3,757.1	-308.6	767.2	622.7	144.56	5.307		
10,700.0	7,151.2	10,837.8	7,310.9	75.8	75.5	-101.94	3,857.1	-308.6	767.2	619.0	148.25	5.175		
10,800.0	7,151.5	10,937.8	7,311.3	77.7	77.4	-101.94	3,957.1	-308.6	767.3	615.3	151.94	5.050		
10,900.0	7,151.7	11,037.8	7,311.6	79.6	79.3	-101.95	4,057.1	-308.6	767.3	611.7	155.63	4.930		
11,000.0	7,152.0	11,137.8	7,312.0	81.4	81.2	-101.96	4,157.1	-308.6	767.3	608.0	159.33	4.816		
11,100.0	7,152.2	11,237.8	7,312.4	83.3	83.1	-101.97	4,257.1	-308.6	767.3	604.3	163.03	4.707		
11,200.0	7,152.5	11,337.8	7,312.7	85.2	84.9	-101.98	4,357.1	-308.6	767.4	600.6	166.74	4.602		
11,300.0	7,152.7	11,437.8	7,313.1	87.1	86.8	-101.99	4,457.1	-308.6	767.4	596.9	170.45	4.502		
11,400.0	7,152.9	11,537.8	7,313.5	89.0	88.7	-102.00	4,557.1	-308.6	767.4	593.3	174.16	4.406		
11,500.0	7,153.2	11,637.8	7,313.8	90.9	90.6	-102.01	4,657.1	-308.6	767.4	589.6	177.87	4.315		
11,600.0	7,153.4	11,737.8	7,314.2	92.8	92.5	-102.01	4,757.1	-308.6	767.5	585.9	181.58	4.226		
11,700.0	7,153.7	11,837.8	7,314.6	94.7	94.4	-102.02	4,857.1	-308.6	767.5	582.2	185.30	4.142		
11,800.0	7,153.9	11,937.8	7,314.9	96.5	96.3	-102.03	4,957.1	-308.6	767.5	578.5	189.02	4.060		
11,810.8	7,154.0	11,948.6	7,315.0	96.8	96.5	-102.03	4,967.9	-308.6	767.5	578.1	189.42	4.052		
11,829.9	7,154.0	11,961.0	7,315.0	97.1	96.7	-102.03	4,980.3	-308.6	767.6	577.5	190.01	4.040 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
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<b>Reference Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (6-6-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4894.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Simonsen 1Q-241  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.42°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonsen 1Q-241
<b>Project:</b>	SEC.12-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonsen NENW-12 Pad Sec.12-T6N-R67W	<b>MD Reference:</b>	WELL @ 4894.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonsen 1Q-241	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (6-6-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4894.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Simonsen 1Q-241  
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Central Meridian is -105.500000 °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
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