

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Simonson/Schaefer 7J-403**

Surface Location: Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

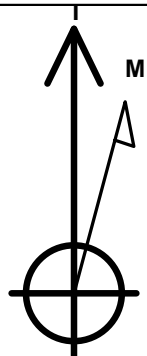
Ground Elevation: 4891.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429286.88	3186848.34	40.509850	-104.828020	

RKB Ensign 32 - 15' WELL @ 4906.0ft (RKB Ensign 32 - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FSL & 1470'FWL	7281.0	-5089.5	264.2	Point



Azimuths to True North  
Magnetic North: 8.75°

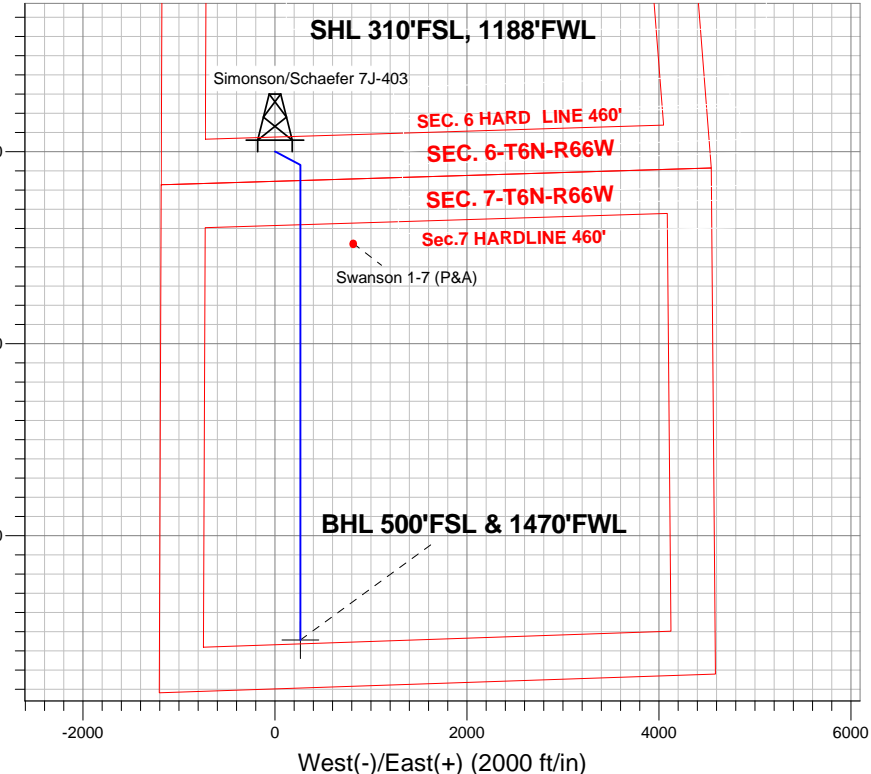
Magnetic Field  
Strength: 53058.7snT  
Dip Angle: 67.09°  
Date: 8/14/2012  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6532.2	6552.1	KOP #2
7306.0	7873.1	End of Build

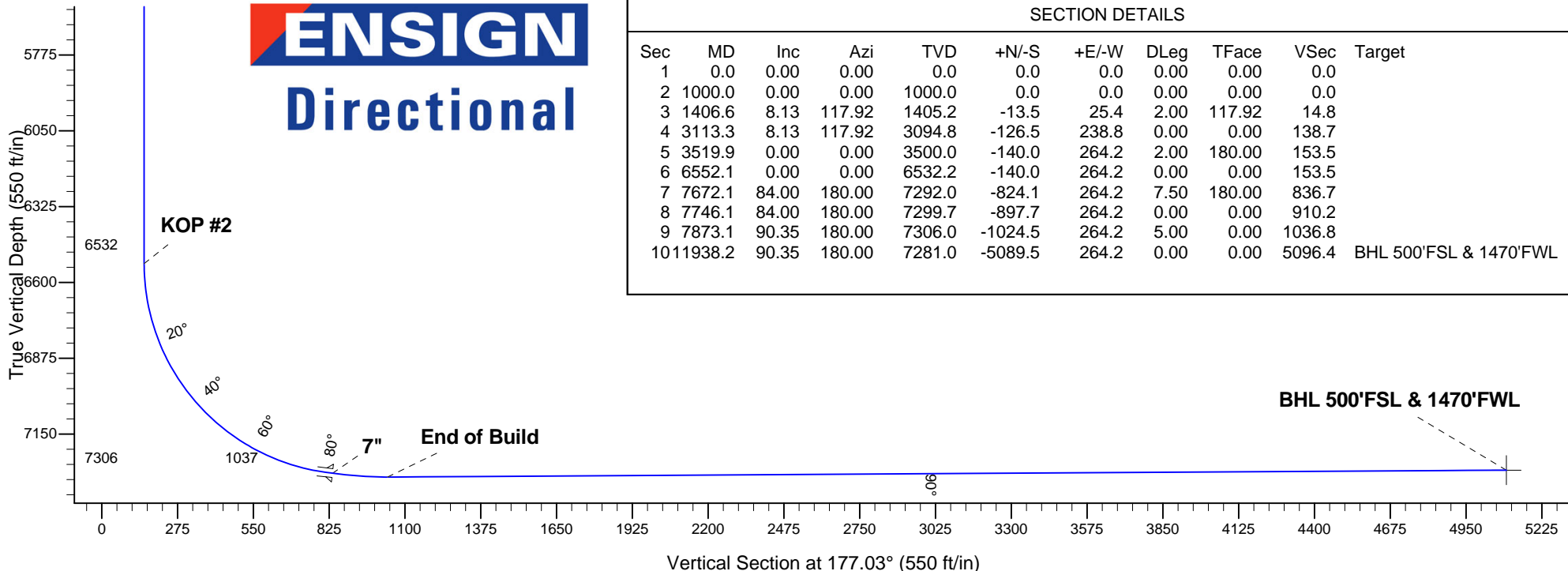
Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W  
Simonson/Schaefer 7J-403  
Plan #1 (8-9-12)  
8:01, August 14 2012

South(-)/North(+) (2000 ft/in)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1406.6	8.13	117.92	1405.2	-13.5	25.4	2.00	117.92	14.8	
4	3113.3	8.13	117.92	3094.8	-126.5	238.8	0.00	0.00	138.7	
5	3519.9	0.00	0.00	3500.0	-140.0	264.2	2.00	180.00	153.5	
6	6552.1	0.00	0.00	6532.2	-140.0	264.2	0.00	0.00	153.5	
7	7672.1	84.00	180.00	7292.0	-824.1	264.2	7.50	180.00	836.7	
8	7746.1	84.00	180.00	7299.7	-897.7	264.2	0.00	0.00	910.2	
9	7873.1	90.35	180.00	7306.0	-1024.5	264.2	5.00	0.00	1036.8	
10	11938.2	90.35	180.00	7281.0	-5089.5	264.2	0.00	0.00	5096.4	BHL 500'FSL & 1470'FWL





## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T6N-R66W**

**Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W**

**Simonson/Schaefer 7J-403**

**Wellbore #1**

**Plan: Plan #1 (8-9-12)**

## **Standard Planning Report**

**14 August, 2012**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

<b>Project</b>	SEC.6-T6N-R66W, 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						Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W											
Site Position:						Northing:			1,429,286.44 ft			Latitude:			40.509850		
From:			Lat/Long			Easting:			3,186,789.95 ft			Longitude:			-104.828230		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.43 °		

Well	Simonson/Schaefer 7J-403					
Well Position	+N-S	0.0 ft	Northing:	1,429,286.88 ft	Latitude:	40.509850
	+E-W	58.4 ft	Easting:	3,186,848.34 ft	Longitude:	-104.828020
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,891.0 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	8/14/2012	8.75	67.09	53,059

<b>Design</b>	Plan #1 (8-9-12)				
<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	177.03	

<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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,406.6	8.13	117.92	1,405.2	-13.5	25.4	2.00	2.00	0.00	117.92	
3,113.3	8.13	117.92	3,094.8	-126.5	238.8	0.00	0.00	0.00	0.00	
3,519.9	0.00	0.00	3,500.0	-140.0	264.2	2.00	-2.00	0.00	180.00	
6,552.1	0.00	0.00	6,532.2	-140.0	264.2	0.00	0.00	0.00	0.00	
7,672.1	84.00	180.00	7,292.0	-824.1	264.2	7.50	7.50	0.00	180.00	
7,746.1	84.00	180.00	7,299.7	-897.7	264.2	0.00	0.00	0.00	0.00	
7,873.1	90.35	180.00	7,306.0	-1,024.5	264.2	5.00	5.00	0.00	0.00	
11,938.2	90.35	180.00	7,281.0	-5,089.5	264.2	0.00	0.00	0.00	0.00	BHL 500'FSL & 147

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

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
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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,040.0	0.80	117.92	1,040.0	-0.1	0.2	0.1	2.00	2.00	0.00
1,080.0	1.60	117.92	1,080.0	-0.5	1.0	0.6	2.00	2.00	0.00
1,120.0	2.40	117.92	1,120.0	-1.2	2.2	1.3	2.00	2.00	0.00
1,160.0	3.20	117.92	1,159.9	-2.1	3.9	2.3	2.00	2.00	0.00
1,200.0	4.00	117.92	1,199.8	-3.3	6.2	3.6	2.00	2.00	0.00
1,240.0	4.80	117.92	1,239.7	-4.7	8.9	5.2	2.00	2.00	0.00
1,280.0	5.60	117.92	1,279.6	-6.4	12.1	7.0	2.00	2.00	0.00
1,320.0	6.40	117.92	1,319.3	-8.4	15.8	9.2	2.00	2.00	0.00
1,360.0	7.20	117.92	1,359.1	-10.6	20.0	11.6	2.00	2.00	0.00
1,400.0	8.00	117.92	1,398.7	-13.1	24.6	14.3	2.00	2.00	0.00
1,406.6	8.13	117.92	1,405.2	-13.5	25.4	14.8	2.00	2.00	0.00
1,440.0	8.13	117.92	1,438.3	-15.7	29.6	17.2	0.00	0.00	0.00
1,480.0	8.13	117.92	1,477.9	-18.3	34.6	20.1	0.00	0.00	0.00
1,520.0	8.13	117.92	1,517.5	-21.0	39.6	23.0	0.00	0.00	0.00
1,560.0	8.13	117.92	1,557.1	-23.6	44.6	25.9	0.00	0.00	0.00
1,600.0	8.13	117.92	1,596.7	-26.3	49.6	28.8	0.00	0.00	0.00
1,640.0	8.13	117.92	1,636.3	-28.9	54.6	31.7	0.00	0.00	0.00
1,680.0	8.13	117.92	1,675.9	-31.6	59.6	34.6	0.00	0.00	0.00
1,720.0	8.13	117.92	1,715.5	-34.2	64.6	37.5	0.00	0.00	0.00
1,760.0	8.13	117.92	1,755.1	-36.9	69.6	40.5	0.00	0.00	0.00
1,800.0	8.13	117.92	1,794.7	-39.5	74.6	43.4	0.00	0.00	0.00
1,840.0	8.13	117.92	1,834.3	-42.2	79.6	46.3	0.00	0.00	0.00
1,880.0	8.13	117.92	1,873.9	-44.8	84.6	49.2	0.00	0.00	0.00
1,920.0	8.13	117.92	1,913.5	-47.5	89.6	52.1	0.00	0.00	0.00
1,960.0	8.13	117.92	1,953.1	-50.1	94.6	55.0	0.00	0.00	0.00

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<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

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)
2,000.0	8.13	117.92	1,992.7	-52.8	99.6	57.9	0.00	0.00	0.00
2,040.0	8.13	117.92	2,032.3	-55.4	104.6	60.8	0.00	0.00	0.00
2,080.0	8.13	117.92	2,071.9	-58.1	109.6	63.7	0.00	0.00	0.00
2,120.0	8.13	117.92	2,111.5	-60.7	114.6	66.6	0.00	0.00	0.00
2,160.0	8.13	117.92	2,151.1	-63.4	119.6	69.5	0.00	0.00	0.00
2,200.0	8.13	117.92	2,190.7	-66.0	124.6	72.4	0.00	0.00	0.00
2,240.0	8.13	117.92	2,230.3	-68.7	129.6	75.3	0.00	0.00	0.00
2,280.0	8.13	117.92	2,269.9	-71.3	134.6	78.2	0.00	0.00	0.00
2,320.0	8.13	117.92	2,309.5	-74.0	139.6	81.1	0.00	0.00	0.00
2,360.0	8.13	117.92	2,349.1	-76.6	144.6	84.0	0.00	0.00	0.00
2,400.0	8.13	117.92	2,388.6	-79.3	149.6	86.9	0.00	0.00	0.00
2,440.0	8.13	117.92	2,428.2	-81.9	154.6	89.8	0.00	0.00	0.00
2,480.0	8.13	117.92	2,467.8	-84.6	159.6	92.7	0.00	0.00	0.00
2,520.0	8.13	117.92	2,507.4	-87.2	164.6	95.6	0.00	0.00	0.00
2,560.0	8.13	117.92	2,547.0	-89.9	169.6	98.5	0.00	0.00	0.00
2,600.0	8.13	117.92	2,586.6	-92.5	174.6	101.4	0.00	0.00	0.00
2,640.0	8.13	117.92	2,626.2	-95.2	179.6	104.4	0.00	0.00	0.00
2,680.0	8.13	117.92	2,665.8	-97.8	184.6	107.3	0.00	0.00	0.00
2,720.0	8.13	117.92	2,705.4	-100.5	189.6	110.2	0.00	0.00	0.00
2,760.0	8.13	117.92	2,745.0	-103.1	194.6	113.1	0.00	0.00	0.00
2,800.0	8.13	117.92	2,784.6	-105.8	199.6	116.0	0.00	0.00	0.00
2,840.0	8.13	117.92	2,824.2	-108.4	204.6	118.9	0.00	0.00	0.00
2,880.0	8.13	117.92	2,863.8	-111.1	209.6	121.8	0.00	0.00	0.00
2,920.0	8.13	117.92	2,903.4	-113.7	214.6	124.7	0.00	0.00	0.00
2,960.0	8.13	117.92	2,943.0	-116.4	219.6	127.6	0.00	0.00	0.00
3,000.0	8.13	117.92	2,982.6	-119.0	224.6	130.5	0.00	0.00	0.00
3,040.0	8.13	117.92	3,022.2	-121.7	229.6	133.4	0.00	0.00	0.00
3,080.0	8.13	117.92	3,061.8	-124.3	234.6	136.3	0.00	0.00	0.00
3,113.3	8.13	117.92	3,094.8	-126.5	238.8	138.7	0.00	0.00	0.00
3,120.0	8.00	117.92	3,101.4	-127.0	239.6	139.2	2.00	-2.00	0.00
3,160.0	7.20	117.92	3,141.1	-129.4	244.3	141.9	2.00	-2.00	0.00
3,200.0	6.40	117.92	3,180.8	-131.6	248.4	144.3	2.00	-2.00	0.00
3,240.0	5.60	117.92	3,220.6	-133.6	252.1	146.5	2.00	-2.00	0.00
3,280.0	4.80	117.92	3,260.4	-135.3	255.3	148.4	2.00	-2.00	0.00
3,320.0	4.00	117.92	3,300.3	-136.7	258.0	149.9	2.00	-2.00	0.00
3,360.0	3.20	117.92	3,340.2	-137.9	260.3	151.2	2.00	-2.00	0.00
3,400.0	2.40	117.92	3,380.2	-138.8	262.0	152.2	2.00	-2.00	0.00
3,440.0	1.60	117.92	3,420.1	-139.5	263.2	152.9	2.00	-2.00	0.00
3,480.0	0.80	117.92	3,460.1	-139.9	264.0	153.4	2.00	-2.00	0.00
3,519.9	0.00	0.00	3,500.0	-140.0	264.2	153.5	2.00	-2.00	0.00
3,520.0	0.00	0.00	3,500.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,560.0	0.00	0.00	3,540.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,600.0	0.00	0.00	3,580.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,640.0	0.00	0.00	3,620.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,680.0	0.00	0.00	3,660.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,720.0	0.00	0.00	3,700.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,760.0	0.00	0.00	3,740.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,800.0	0.00	0.00	3,780.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,840.0	0.00	0.00	3,820.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,880.0	0.00	0.00	3,860.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,920.0	0.00	0.00	3,900.1	-140.0	264.2	153.5	0.00	0.00	0.00
3,960.0	0.00	0.00	3,940.1	-140.0	264.2	153.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

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)
4,000.0	0.00	0.00	3,980.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,040.0	0.00	0.00	4,020.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,080.0	0.00	0.00	4,060.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,120.0	0.00	0.00	4,100.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,160.0	0.00	0.00	4,140.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,200.0	0.00	0.00	4,180.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,240.0	0.00	0.00	4,220.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,280.0	0.00	0.00	4,260.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,320.0	0.00	0.00	4,300.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,360.0	0.00	0.00	4,340.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,400.0	0.00	0.00	4,380.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,440.0	0.00	0.00	4,420.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,480.0	0.00	0.00	4,460.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,520.0	0.00	0.00	4,500.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,560.0	0.00	0.00	4,540.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,600.0	0.00	0.00	4,580.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,640.0	0.00	0.00	4,620.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,680.0	0.00	0.00	4,660.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,720.0	0.00	0.00	4,700.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,760.0	0.00	0.00	4,740.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,800.0	0.00	0.00	4,780.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,840.0	0.00	0.00	4,820.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,880.0	0.00	0.00	4,860.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,920.0	0.00	0.00	4,900.1	-140.0	264.2	153.5	0.00	0.00	0.00
4,960.0	0.00	0.00	4,940.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,980.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,040.0	0.00	0.00	5,020.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,080.0	0.00	0.00	5,060.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,120.0	0.00	0.00	5,100.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,160.0	0.00	0.00	5,140.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,180.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,240.0	0.00	0.00	5,220.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,280.0	0.00	0.00	5,260.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,320.0	0.00	0.00	5,300.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,360.0	0.00	0.00	5,340.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,380.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,440.0	0.00	0.00	5,420.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,480.0	0.00	0.00	5,460.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,520.0	0.00	0.00	5,500.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,560.0	0.00	0.00	5,540.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,580.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,620.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,660.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,700.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,740.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,780.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,820.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,860.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,900.1	-140.0	264.2	153.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,940.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,980.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,040.0	0.00	0.00	6,020.1	-140.0	264.2	153.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

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)
6,080.0	0.00	0.00	6,060.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,100.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,140.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,180.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,220.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,260.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,300.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,340.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,380.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,420.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,460.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,500.1	-140.0	264.2	153.5	0.00	0.00	0.00
6,552.1	0.00	0.00	6,532.2	-140.0	264.2	153.5	0.00	0.00	0.00
<b>KOP #2</b>									
6,560.0	0.59	180.00	6,540.1	-140.0	264.2	153.5	7.50	7.50	0.00
6,600.0	3.59	180.00	6,580.1	-141.5	264.2	155.0	7.50	7.50	0.00
6,640.0	6.59	180.00	6,619.9	-145.1	264.2	158.6	7.50	7.50	0.00
6,680.0	9.59	180.00	6,659.5	-150.7	264.2	164.2	7.50	7.50	0.00
6,720.0	12.59	180.00	6,698.8	-158.4	264.2	171.9	7.50	7.50	0.00
6,760.0	15.59	180.00	6,737.6	-168.1	264.2	181.6	7.50	7.50	0.00
6,800.0	18.59	180.00	6,775.8	-179.9	264.2	193.3	7.50	7.50	0.00
6,840.0	21.59	180.00	6,813.3	-193.6	264.2	207.0	7.50	7.50	0.00
6,880.0	24.59	180.00	6,850.1	-209.3	264.2	222.7	7.50	7.50	0.00
6,920.0	27.59	180.00	6,886.1	-226.9	264.2	240.3	7.50	7.50	0.00
6,960.0	30.59	180.00	6,921.0	-246.3	264.2	259.7	7.50	7.50	0.00
7,000.0	33.59	180.00	6,954.9	-267.6	264.2	280.9	7.50	7.50	0.00
7,040.0	36.59	180.00	6,987.6	-290.6	264.2	303.9	7.50	7.50	0.00
7,080.0	39.59	180.00	7,019.1	-315.2	264.2	328.5	7.50	7.50	0.00
7,120.0	42.59	180.00	7,049.2	-341.5	264.2	354.8	7.50	7.50	0.00
7,160.0	45.59	180.00	7,078.0	-369.4	264.2	382.6	7.50	7.50	0.00
7,200.0	48.59	180.00	7,105.2	-398.7	264.2	411.8	7.50	7.50	0.00
7,240.0	51.59	180.00	7,130.9	-429.3	264.2	442.5	7.50	7.50	0.00
7,280.0	54.59	180.00	7,154.9	-461.3	264.2	474.4	7.50	7.50	0.00
7,320.0	57.59	180.00	7,177.2	-494.5	264.2	507.5	7.50	7.50	0.00
7,360.0	60.59	180.00	7,197.7	-528.8	264.2	541.8	7.50	7.50	0.00
7,400.0	63.59	180.00	7,216.4	-564.2	264.2	577.1	7.50	7.50	0.00
7,440.0	66.59	180.00	7,233.3	-600.4	264.2	613.3	7.50	7.50	0.00
7,480.0	69.59	180.00	7,248.2	-637.6	264.2	650.4	7.50	7.50	0.00
7,520.0	72.59	180.00	7,261.2	-675.4	264.2	688.2	7.50	7.50	0.00
7,560.0	75.59	180.00	7,272.1	-713.9	264.2	726.6	7.50	7.50	0.00
7,600.0	78.59	180.00	7,281.1	-752.8	264.2	765.5	7.50	7.50	0.00
7,640.0	81.59	180.00	7,288.0	-792.2	264.2	804.9	7.50	7.50	0.00
7,672.1	84.00	180.00	7,292.0	-824.1	264.2	836.7	7.50	7.50	0.00
<b>7"</b>									
7,680.0	84.00	180.00	7,292.8	-831.9	264.2	844.5	0.00	0.00	0.00
7,720.0	84.00	180.00	7,297.0	-871.7	264.2	884.2	0.00	0.00	0.00
7,746.1	84.00	180.00	7,299.7	-897.7	264.2	910.2	0.00	0.00	0.00
7,760.0	84.69	180.00	7,301.1	-911.5	264.2	924.0	5.00	5.00	0.00
7,800.0	86.69	180.00	7,304.1	-951.4	264.2	963.8	5.00	5.00	0.00
7,840.0	88.69	180.00	7,305.7	-991.4	264.2	1,003.7	5.00	5.00	0.00
7,873.1	90.35	180.00	7,306.0	-1,024.5	264.2	1,036.8	5.00	5.00	0.00
<b>End of Build</b>									



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

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)
7,880.0	90.35	180.00	7,305.9	-1,031.4	264.2	1,043.7	0.03	0.03	0.00
7,920.0	90.35	180.00	7,305.7	-1,071.4	264.2	1,083.6	0.00	0.00	0.00
7,960.0	90.35	180.00	7,305.4	-1,111.4	264.2	1,123.6	0.00	0.00	0.00
8,000.0	90.35	180.00	7,305.2	-1,151.4	264.2	1,163.5	0.00	0.00	0.00
8,040.0	90.35	180.00	7,304.9	-1,191.4	264.2	1,203.5	0.00	0.00	0.00
8,080.0	90.35	180.00	7,304.7	-1,231.4	264.2	1,243.4	0.00	0.00	0.00
8,120.0	90.35	180.00	7,304.5	-1,271.4	264.2	1,283.3	0.00	0.00	0.00
8,160.0	90.35	180.00	7,304.2	-1,311.4	264.2	1,323.3	0.00	0.00	0.00
8,200.0	90.35	180.00	7,304.0	-1,351.4	264.2	1,363.2	0.00	0.00	0.00
8,240.0	90.35	180.00	7,303.7	-1,391.4	264.2	1,403.2	0.00	0.00	0.00
8,280.0	90.35	180.00	7,303.5	-1,431.4	264.2	1,443.1	0.00	0.00	0.00
8,320.0	90.35	180.00	7,303.2	-1,471.4	264.2	1,483.1	0.00	0.00	0.00
8,360.0	90.35	180.00	7,303.0	-1,511.4	264.2	1,523.0	0.00	0.00	0.00
8,400.0	90.35	180.00	7,302.7	-1,551.4	264.2	1,563.0	0.00	0.00	0.00
8,440.0	90.35	180.00	7,302.5	-1,591.4	264.2	1,602.9	0.00	0.00	0.00
8,480.0	90.35	180.00	7,302.2	-1,631.4	264.2	1,642.9	0.00	0.00	0.00
8,520.0	90.35	180.00	7,302.0	-1,671.3	264.2	1,682.8	0.00	0.00	0.00
8,560.0	90.35	180.00	7,301.8	-1,711.3	264.2	1,722.7	0.00	0.00	0.00
8,600.0	90.35	180.00	7,301.5	-1,751.3	264.2	1,762.7	0.00	0.00	0.00
8,640.0	90.35	180.00	7,301.3	-1,791.3	264.2	1,802.6	0.00	0.00	0.00
8,680.0	90.35	180.00	7,301.0	-1,831.3	264.2	1,842.6	0.00	0.00	0.00
8,720.0	90.35	180.00	7,300.8	-1,871.3	264.2	1,882.5	0.00	0.00	0.00
8,760.0	90.35	180.00	7,300.5	-1,911.3	264.2	1,922.5	0.00	0.00	0.00
8,800.0	90.35	180.00	7,300.3	-1,951.3	264.2	1,962.4	0.00	0.00	0.00
8,840.0	90.35	180.00	7,300.0	-1,991.3	264.2	2,002.4	0.00	0.00	0.00
8,880.0	90.35	180.00	7,299.8	-2,031.3	264.2	2,042.3	0.00	0.00	0.00
8,920.0	90.35	180.00	7,299.5	-2,071.3	264.2	2,082.3	0.00	0.00	0.00
8,960.0	90.35	180.00	7,299.3	-2,111.3	264.2	2,122.2	0.00	0.00	0.00
9,000.0	90.35	180.00	7,299.0	-2,151.3	264.2	2,162.1	0.00	0.00	0.00
9,040.0	90.35	180.00	7,298.8	-2,191.3	264.2	2,202.1	0.00	0.00	0.00
9,080.0	90.35	180.00	7,298.6	-2,231.3	264.2	2,242.0	0.00	0.00	0.00
9,120.0	90.35	180.00	7,298.3	-2,271.3	264.2	2,282.0	0.00	0.00	0.00
9,160.0	90.35	180.00	7,298.1	-2,311.3	264.2	2,321.9	0.00	0.00	0.00
9,200.0	90.35	180.00	7,297.8	-2,351.3	264.2	2,361.9	0.00	0.00	0.00
9,240.0	90.35	180.00	7,297.6	-2,391.3	264.2	2,401.8	0.00	0.00	0.00
9,280.0	90.35	180.00	7,297.3	-2,431.3	264.2	2,441.8	0.00	0.00	0.00
9,320.0	90.35	180.00	7,297.1	-2,471.3	264.2	2,481.7	0.00	0.00	0.00
9,360.0	90.35	180.00	7,296.8	-2,511.3	264.2	2,521.7	0.00	0.00	0.00
9,400.0	90.35	180.00	7,296.6	-2,551.3	264.2	2,561.6	0.00	0.00	0.00
9,440.0	90.35	180.00	7,296.3	-2,591.3	264.2	2,601.5	0.00	0.00	0.00
9,480.0	90.35	180.00	7,296.1	-2,631.3	264.2	2,641.5	0.00	0.00	0.00
9,520.0	90.35	180.00	7,295.9	-2,671.3	264.2	2,681.4	0.00	0.00	0.00
9,560.0	90.35	180.00	7,295.6	-2,711.3	264.2	2,721.4	0.00	0.00	0.00
9,600.0	90.35	180.00	7,295.4	-2,751.3	264.2	2,761.3	0.00	0.00	0.00
9,640.0	90.35	180.00	7,295.1	-2,791.3	264.2	2,801.3	0.00	0.00	0.00
9,680.0	90.35	180.00	7,294.9	-2,831.3	264.2	2,841.2	0.00	0.00	0.00
9,720.0	90.35	180.00	7,294.6	-2,871.3	264.2	2,881.2	0.00	0.00	0.00
9,760.0	90.35	180.00	7,294.4	-2,911.3	264.2	2,921.1	0.00	0.00	0.00
9,800.0	90.35	180.00	7,294.1	-2,951.3	264.2	2,961.1	0.00	0.00	0.00
9,840.0	90.35	180.00	7,293.9	-2,991.3	264.2	3,001.0	0.00	0.00	0.00
9,880.0	90.35	180.00	7,293.6	-3,031.3	264.2	3,040.9	0.00	0.00	0.00
9,920.0	90.35	180.00	7,293.4	-3,071.3	264.2	3,080.9	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

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)
9,960.0	90.35	180.00	7,293.2	-3,111.3	264.2	3,120.8	0.00	0.00	0.00
10,000.0	90.35	180.00	7,292.9	-3,151.3	264.2	3,160.8	0.00	0.00	0.00
10,040.0	90.35	180.00	7,292.7	-3,191.3	264.2	3,200.7	0.00	0.00	0.00
10,080.0	90.35	180.00	7,292.4	-3,231.3	264.2	3,240.7	0.00	0.00	0.00
10,120.0	90.35	180.00	7,292.2	-3,271.3	264.2	3,280.6	0.00	0.00	0.00
10,160.0	90.35	180.00	7,291.9	-3,311.3	264.2	3,320.6	0.00	0.00	0.00
10,200.0	90.35	180.00	7,291.7	-3,351.3	264.2	3,360.5	0.00	0.00	0.00
10,240.0	90.35	180.00	7,291.4	-3,391.3	264.2	3,400.5	0.00	0.00	0.00
10,280.0	90.35	180.00	7,291.2	-3,431.3	264.2	3,440.4	0.00	0.00	0.00
10,320.0	90.35	180.00	7,290.9	-3,471.3	264.2	3,480.3	0.00	0.00	0.00
10,360.0	90.35	180.00	7,290.7	-3,511.3	264.2	3,520.3	0.00	0.00	0.00
10,400.0	90.35	180.00	7,290.4	-3,551.3	264.2	3,560.2	0.00	0.00	0.00
10,440.0	90.35	180.00	7,290.2	-3,591.3	264.2	3,600.2	0.00	0.00	0.00
10,480.0	90.35	180.00	7,290.0	-3,631.3	264.2	3,640.1	0.00	0.00	0.00
10,520.0	90.35	180.00	7,289.7	-3,671.3	264.2	3,680.1	0.00	0.00	0.00
10,560.0	90.35	180.00	7,289.5	-3,711.3	264.2	3,720.0	0.00	0.00	0.00
10,600.0	90.35	180.00	7,289.2	-3,751.3	264.2	3,760.0	0.00	0.00	0.00
10,640.0	90.35	180.00	7,289.0	-3,791.3	264.2	3,799.9	0.00	0.00	0.00
10,680.0	90.35	180.00	7,288.7	-3,831.3	264.2	3,839.9	0.00	0.00	0.00
10,720.0	90.35	180.00	7,288.5	-3,871.3	264.2	3,879.8	0.00	0.00	0.00
10,760.0	90.35	180.00	7,288.2	-3,911.3	264.2	3,919.7	0.00	0.00	0.00
10,800.0	90.35	180.00	7,288.0	-3,951.3	264.2	3,959.7	0.00	0.00	0.00
10,840.0	90.35	180.00	7,287.7	-3,991.3	264.2	3,999.6	0.00	0.00	0.00
10,880.0	90.35	180.00	7,287.5	-4,031.3	264.2	4,039.6	0.00	0.00	0.00
10,920.0	90.35	180.00	7,287.3	-4,071.3	264.2	4,079.5	0.00	0.00	0.00
10,960.0	90.35	180.00	7,287.0	-4,111.3	264.2	4,119.5	0.00	0.00	0.00
11,000.0	90.35	180.00	7,286.8	-4,151.3	264.2	4,159.4	0.00	0.00	0.00
11,040.0	90.35	180.00	7,286.5	-4,191.3	264.2	4,199.4	0.00	0.00	0.00
11,080.0	90.35	180.00	7,286.3	-4,231.3	264.2	4,239.3	0.00	0.00	0.00
11,120.0	90.35	180.00	7,286.0	-4,271.3	264.2	4,279.3	0.00	0.00	0.00
11,160.0	90.35	180.00	7,285.8	-4,311.3	264.2	4,319.2	0.00	0.00	0.00
11,200.0	90.35	180.00	7,285.5	-4,351.3	264.2	4,359.1	0.00	0.00	0.00
11,240.0	90.35	180.00	7,285.3	-4,391.3	264.2	4,399.1	0.00	0.00	0.00
11,280.0	90.35	180.00	7,285.0	-4,431.3	264.2	4,439.0	0.00	0.00	0.00
11,320.0	90.35	180.00	7,284.8	-4,471.3	264.2	4,479.0	0.00	0.00	0.00
11,360.0	90.35	180.00	7,284.6	-4,511.3	264.2	4,518.9	0.00	0.00	0.00
11,400.0	90.35	180.00	7,284.3	-4,551.3	264.2	4,558.9	0.00	0.00	0.00
11,440.0	90.35	180.00	7,284.1	-4,591.3	264.2	4,598.8	0.00	0.00	0.00
11,480.0	90.35	180.00	7,283.8	-4,631.3	264.2	4,638.8	0.00	0.00	0.00
11,520.0	90.35	180.00	7,283.6	-4,671.3	264.2	4,678.7	0.00	0.00	0.00
11,560.0	90.35	180.00	7,283.3	-4,711.3	264.2	4,718.7	0.00	0.00	0.00
11,600.0	90.35	180.00	7,283.1	-4,751.3	264.2	4,758.6	0.00	0.00	0.00
11,640.0	90.35	180.00	7,282.8	-4,791.3	264.2	4,798.5	0.00	0.00	0.00
11,680.0	90.35	180.00	7,282.6	-4,831.3	264.2	4,838.5	0.00	0.00	0.00
11,720.0	90.35	180.00	7,282.3	-4,871.3	264.2	4,878.4	0.00	0.00	0.00
11,760.0	90.35	180.00	7,282.1	-4,911.3	264.2	4,918.4	0.00	0.00	0.00
11,800.0	90.35	180.00	7,281.8	-4,951.3	264.2	4,958.3	0.00	0.00	0.00
11,840.0	90.35	180.00	7,281.6	-4,991.3	264.2	4,998.3	0.00	0.00	0.00
11,880.0	90.35	180.00	7,281.4	-5,031.3	264.2	5,038.2	0.00	0.00	0.00
11,920.0	90.35	180.00	7,281.1	-5,071.3	264.2	5,078.2	0.00	0.00	0.00
11,938.2	90.35	180.00	7,281.0	-5,089.5	264.2	5,096.4	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Project:</b>	SEC.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-9-12)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,672.1	7,292.0	7"	7	7-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.0	1,000.0	0.0	0.0	KOP #1	
6,552.1	6,532.2	-140.0	264.2	KOP #2	
7,873.1	7,306.0	-1,024.5	264.2	End of Build	



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T6N-R66W**

**Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W**

**Simonson/Schaefer 7J-403**

**Wellbore #1**

**Plan #1 (8-9-12)**

## **Anticollision Report**

**14 August, 2012**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1 (8-9-12)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/14/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,938.2	Plan #1 (8-9-12) (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						
Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W						
Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1 (8-9-	1,000.0	1,000.0	27.8	23.5	6.511	CC, ES
Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1 (8-9-	11,938.2	11,874.3	450.2	263.9	2.416	SF
Simonson/Schaefer 7M-243 - Wellbore #1 - Plan #1 (8-9-	200.0	200.0	30.8	30.1	45.683	CC, ES
Simonson/Schaefer 7M-243 - Wellbore #1 - Plan #1 (8-9-	11,938.2	11,970.3	883.0	688.2	4.533	SF
Swanson 1-7 (P&A) - Wellbore #1 - Wellbore #1	7,805.6	7,300.0	549.5	379.8	3.238	CC, ES, SF

<b>Offset Design</b>												
Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1												
Survey Program: 0-MWD												
Reference												
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-27.8	27.8			
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-27.8	27.8	27.6	0.22	123.715
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-27.8	27.8	27.1	0.67	41.238
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-27.8	27.8	26.7	1.12	24.743
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-27.8	27.8	26.2	1.57	17.674
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-27.8	27.8	25.8	2.02	13.746
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-27.8	27.8	25.3	2.47	11.247
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-27.8	27.8	24.9	2.92	9.517
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-27.8	27.8	24.4	3.37	8.248
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-27.8	27.8	24.0	3.82	7.277
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-27.8	27.8	23.5	4.27	6.511 CC, ES
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	153.66	0.0	-27.8	29.4	24.7	4.70	6.249
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	157.53	0.0	-27.8	34.1	29.0	5.11	6.681
1,300.0	1,299.5	1,299.5	1,299.5	2.7	2.8	161.99	0.0	-27.8	42.3	36.8	5.52	7.667
1,406.6	1,405.2	1,405.2	1,405.2	3.0	3.0	166.16	0.0	-27.8	54.9	49.0	5.96	9.222
1,500.0	1,497.7	1,497.7	1,497.7	3.2	3.3	168.83	0.0	-27.8	67.8	61.5	6.36	10.673
1,600.0	1,596.7	1,596.7	1,596.7	3.5	3.5	170.75	0.0	-27.8	81.8	75.0	6.79	12.043
1,700.0	1,695.7	1,695.7	1,695.7	3.8	3.7	172.11	0.0	-27.8	95.8	88.5	7.23	13.250
1,800.0	1,794.7	1,794.7	1,794.7	4.1	3.9	173.12	0.0	-27.8	109.8	102.1	7.67	14.318
1,900.0	1,893.7	1,893.7	1,893.7	4.4	4.1	173.90	0.0	-27.8	123.8	115.7	8.11	15.267
2,000.0	1,992.7	1,992.7	1,992.7	4.7	4.4	174.53	0.0	-27.8	137.9	129.4	8.56	16.115

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 Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1										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		
2,100.0	2,091.7	2,091.7	2,091.7	5.0	4.6	175.04	0.0	-27.8	152.0	143.0	9.01	16.876		
2,200.0	2,190.7	2,190.7	2,190.7	5.4	4.8	175.46	0.0	-27.8	166.1	156.6	9.46	17.562		
2,300.0	2,289.7	2,289.7	2,289.7	5.7	5.0	175.81	0.0	-27.8	180.2	170.3	9.91	18.184		
2,400.0	2,388.6	2,388.6	2,388.6	6.0	5.3	176.12	0.0	-27.8	194.3	184.0	10.36	18.750		
2,500.0	2,487.6	2,487.6	2,487.6	6.4	5.5	176.38	0.0	-27.8	208.4	197.6	10.82	19.267		
2,600.0	2,586.6	2,586.6	2,586.6	6.7	5.7	176.61	0.0	-27.8	222.5	211.3	11.27	19.740		
2,700.0	2,685.6	2,685.6	2,685.6	7.0	5.9	176.81	0.0	-27.8	236.7	224.9	11.73	20.176		
2,800.0	2,784.6	2,784.6	2,784.6	7.4	6.1	176.99	0.0	-27.8	250.8	238.6	12.19	20.577		
2,900.0	2,883.6	2,883.6	2,883.6	7.7	6.4	177.15	0.0	-27.8	264.9	252.3	12.65	20.949		
3,000.0	2,982.6	2,982.6	2,982.6	8.0	6.6	177.30	0.0	-27.8	279.0	265.9	13.10	21.294		
3,100.0	3,081.6	3,076.2	3,076.2	8.4	6.8	177.28	-0.4	-28.8	293.9	280.4	13.54	21.710		
3,113.3	3,094.8	3,088.5	3,088.5	8.4	6.8	177.24	-0.5	-29.1	296.1	282.5	13.60	21.777		
3,200.0	3,180.8	3,168.2	3,168.1	8.7	7.0	176.87	-1.8	-32.4	309.7	295.7	13.97	22.171		
3,300.0	3,280.3	3,259.9	3,259.5	8.9	7.1	176.09	-4.2	-38.8	324.3	309.9	14.37	22.574		
3,400.0	3,380.2	3,351.1	3,350.3	9.1	7.3	175.00	-7.7	-47.9	337.8	323.1	14.75	22.903		
3,500.0	3,480.1	3,446.0	3,444.2	9.3	7.5	173.60	-12.2	-59.8	350.0	334.9	15.13	23.140		
3,519.9	3,500.0	3,465.6	3,463.7	9.3	7.6	-68.78	-13.2	-62.3	352.2	337.0	15.20	23.163		
3,600.0	3,580.1	3,545.0	3,542.3	9.4	7.8	-69.96	-17.1	-72.6	360.5	345.0	15.53	23.207		
3,700.0	3,680.1	3,644.0	3,640.4	9.6	8.0	-71.35	-22.0	-85.4	371.1	355.1	15.95	23.262		
3,800.0	3,780.1	3,743.1	3,738.5	9.8	8.2	-72.67	-26.9	-98.2	381.9	365.5	16.38	23.320		
3,900.0	3,880.1	3,842.1	3,836.6	10.0	8.5	-73.92	-31.8	-111.0	392.9	376.1	16.80	23.380		
4,000.0	3,980.1	3,941.1	3,934.6	10.1	8.7	-75.09	-36.7	-123.8	404.1	386.8	17.24	23.443		
4,100.0	4,080.1	4,044.2	4,036.7	10.3	9.0	-76.24	-41.7	-136.9	415.3	397.6	17.68	23.491		
4,200.0	4,180.1	4,157.3	4,149.2	10.5	9.3	-77.17	-46.1	-148.3	424.1	406.0	18.13	23.590		
4,300.0	4,280.1	4,271.3	4,262.9	10.7	9.5	-77.74	-48.8	-155.5	429.8	411.2	18.58	23.130		
4,400.0	4,380.1	4,385.7	4,377.2	10.9	9.7	-77.97	-50.0	-158.4	432.1	413.1	19.01	22.726		
4,500.0	4,480.1	4,488.6	4,480.1	11.0	9.9	-77.98	-50.0	-158.5	432.2	412.8	19.42	22.250		
4,600.0	4,580.1	4,588.6	4,580.1	11.2	10.1	-77.98	-50.0	-158.5	432.2	412.4	19.85	21.777		
4,700.0	4,680.1	4,688.6	4,680.1	11.4	10.4	-77.98	-50.0	-158.5	432.2	411.9	20.27	21.319		
4,800.0	4,780.1	4,788.6	4,780.1	11.6	10.6	-77.98	-50.0	-158.5	432.2	411.5	20.70	20.880		
4,900.0	4,880.1	4,888.6	4,880.1	11.8	10.8	-77.98	-50.0	-158.5	432.2	411.1	21.13	20.457		
5,000.0	4,980.1	4,988.6	4,980.1	12.0	11.0	-77.98	-50.0	-158.5	432.2	410.6	21.56	20.051		
5,100.0	5,080.1	5,088.6	5,080.1	12.2	11.2	-77.98	-50.0	-158.5	432.2	410.2	21.98	19.659		
5,200.0	5,180.1	5,188.6	5,180.1	12.4	11.4	-77.98	-50.0	-158.5	432.2	409.8	22.42	19.282		
5,300.0	5,280.1	5,288.6	5,280.1	12.6	11.7	-77.98	-50.0	-158.5	432.2	409.4	22.85	18.918		
5,400.0	5,380.1	5,388.6	5,380.1	12.8	11.9	-77.98	-50.0	-158.5	432.2	408.9	23.28	18.567		
5,500.0	5,480.1	5,488.6	5,480.1	13.0	12.1	-77.98	-50.0	-158.5	432.2	408.5	23.71	18.229		
5,600.0	5,580.1	5,588.6	5,580.1	13.2	12.3	-77.98	-50.0	-158.5	432.2	408.1	24.14	17.902		
5,700.0	5,680.1	5,688.6	5,680.1	13.3	12.5	-77.98	-50.0	-158.5	432.2	407.6	24.58	17.586		
5,800.0	5,780.1	5,788.6	5,780.1	13.5	12.8	-77.98	-50.0	-158.5	432.2	407.2	25.01	17.281		
5,900.0	5,880.1	5,888.6	5,880.1	13.7	13.0	-77.98	-50.0	-158.5	432.2	406.8	25.44	16.986		
6,000.0	5,980.1	5,988.6	5,980.1	13.9	13.2	-77.98	-50.0	-158.5	432.2	406.3	25.88	16.700		
6,100.0	6,080.1	6,088.6	6,080.1	14.1	13.4	-77.98	-50.0	-158.5	432.2	405.9	26.32	16.424		
6,200.0	6,180.1	6,188.6	6,180.1	14.4	13.6	-77.98	-50.0	-158.5	432.2	405.4	26.75	16.156		
6,300.0	6,280.1	6,288.6	6,280.1	14.6	13.8	-77.98	-50.0	-158.5	432.2	405.0	27.19	15.897		
6,400.0	6,380.1	6,388.6	6,380.1	14.8	14.1	-77.98	-50.0	-158.5	432.2	404.6	27.63	15.645		
6,500.0	6,480.1	6,499.9	6,491.1	15.0	14.3	-78.83	-56.6	-158.5	431.0	403.0	28.07	15.357		
6,552.1	6,532.2	6,557.2	6,547.7	15.1	14.4	-80.10	-66.2	-158.5	429.4	401.1	28.30	15.172		
6,600.0	6,580.1	6,608.8	6,597.8	15.2	14.5	98.61	-78.5	-158.5	427.8	399.2	28.52	14.998		
6,650.0	6,629.8	6,661.9	6,648.3	15.3	14.6	97.23	-94.6	-158.5	426.3	397.5	28.76	14.823		

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 Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<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							
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	
6,700.0	6,679.2	6,714.1	6,696.9	15.4	14.7	95.82	-113.8	-158.5	425.0	396.0	29.01	14.650		
6,750.0	6,727.9	6,765.5	6,743.3	15.5	14.9	94.40	-135.9	-158.5	424.0	394.7	29.29	14.476		
6,800.0	6,775.8	6,816.2	6,787.4	15.6	15.0	92.96	-160.7	-158.5	423.3	393.7	29.60	14.299		
6,850.0	6,822.6	6,866.1	6,829.2	15.8	15.2	91.51	-188.0	-158.5	422.9	392.9	29.95	14.119		
6,900.0	6,868.2	6,915.2	6,868.5	16.0	15.4	90.07	-217.5	-158.5	422.7	392.4	30.34	13.933		
6,902.4	6,870.3	6,917.5	6,870.3	16.0	15.4	90.00	-218.9	-158.5	422.7	392.4	30.36	13.924		
6,950.0	6,912.4	6,963.7	6,905.4	16.1	15.6	88.63	-248.9	-158.5	422.9	392.1	30.77	13.742		
7,000.0	6,954.9	7,011.6	6,939.8	16.3	15.8	87.21	-282.2	-158.5	423.3	392.0	31.25	13.546		
7,050.0	6,995.6	7,058.8	6,971.6	16.6	16.1	85.82	-317.1	-158.5	423.9	392.1	31.77	13.344		
7,100.0	7,034.3	7,105.5	7,000.8	16.8	16.4	84.45	-353.5	-158.5	424.8	392.5	32.34	13.137		
7,150.0	7,070.9	7,151.6	7,027.5	17.1	16.7	83.11	-391.1	-158.5	425.9	393.0	32.95	12.926		
7,200.0	7,105.2	7,197.2	7,051.6	17.5	17.1	81.81	-429.8	-158.5	427.2	393.6	33.61	12.712		
7,250.0	7,137.0	7,242.3	7,073.1	17.8	17.5	80.56	-469.5	-158.5	428.7	394.4	34.31	12.494		
7,300.0	7,166.2	7,287.0	7,092.1	18.2	17.9	79.35	-509.9	-158.5	430.4	395.3	35.06	12.276		
7,350.0	7,192.8	7,331.3	7,108.5	18.7	18.3	78.19	-551.0	-158.5	432.1	396.3	35.84	12.057		
7,400.0	7,216.4	7,375.2	7,122.4	19.1	18.8	77.09	-592.6	-158.5	434.0	397.3	36.66	11.839		
7,450.0	7,237.2	7,418.7	7,133.8	19.6	19.3	76.05	-634.6	-158.5	435.9	398.4	37.51	11.621		
7,500.0	7,254.9	7,461.9	7,142.8	20.2	19.8	75.07	-676.9	-158.5	437.8	399.4	38.39	11.404		
7,550.0	7,269.6	7,504.7	7,149.3	20.8	20.3	74.15	-719.2	-158.5	439.8	400.5	39.31	11.188		
7,600.0	7,281.1	7,550.0	7,153.6	21.4	20.9	73.25	-764.3	-158.5	441.7	401.4	40.28	10.966		
7,650.0	7,289.4	7,589.7	7,155.1	22.0	21.4	72.50	-803.9	-158.5	443.5	402.3	41.23	10.758		
7,672.1	7,292.0	7,608.9	7,155.1	22.3	21.7	72.17	-823.2	-158.5	444.3	402.7	41.67	10.663		
7,700.0	7,294.9	7,636.6	7,155.0	22.7	22.1	71.79	-850.9	-158.5	445.3	403.0	42.33	10.519		
7,746.1	7,299.7	7,682.4	7,154.6	23.3	22.7	71.17	-896.7	-158.5	446.9	403.5	43.42	10.292		
7,800.0	7,304.1	7,736.1	7,154.3	24.1	23.5	70.52	-950.4	-158.5	448.5	403.8	44.70	10.033		
7,873.1	7,306.0	7,809.2	7,153.8	25.1	24.6	70.20	-1,023.5	-158.5	449.3	402.7	46.60	9.641		
7,900.0	7,305.8	7,836.1	7,153.6	25.5	25.0	70.20	-1,050.3	-158.5	449.3	401.9	47.37	9.485		
8,000.0	7,305.2	7,936.1	7,152.9	27.0	26.5	70.19	-1,150.3	-158.5	449.3	399.0	50.28	8.937		
8,100.0	7,304.6	8,036.1	7,152.2	28.6	28.1	70.18	-1,250.3	-158.5	449.3	396.1	53.28	8.434		
8,200.0	7,304.0	8,136.1	7,151.6	30.2	29.7	70.17	-1,350.3	-158.5	449.4	393.0	56.35	7.974		
8,300.0	7,303.3	8,236.1	7,150.9	31.8	31.4	70.17	-1,450.3	-158.5	449.4	389.9	59.49	7.554		
8,400.0	7,302.7	8,336.1	7,150.2	33.5	33.1	70.16	-1,550.3	-158.5	449.4	386.7	62.69	7.169		
8,500.0	7,302.1	8,436.1	7,149.5	35.2	34.8	70.15	-1,650.3	-158.5	449.4	383.5	65.93	6.817		
8,600.0	7,301.5	8,536.1	7,148.8	36.9	36.5	70.14	-1,750.3	-158.5	449.5	380.2	69.21	6.494		
8,700.0	7,300.9	8,636.1	7,148.1	38.6	38.3	70.13	-1,850.3	-158.5	449.5	376.9	72.53	6.197		
8,800.0	7,300.3	8,736.1	7,147.5	40.4	40.1	70.13	-1,950.3	-158.5	449.5	373.6	75.88	5.924		
8,900.0	7,299.7	8,836.1	7,146.8	42.2	41.8	70.12	-2,050.3	-158.5	449.5	370.3	79.25	5.672		
9,000.0	7,299.0	8,936.1	7,146.1	44.0	43.6	70.11	-2,150.3	-158.5	449.5	366.9	82.65	5.439		
9,100.0	7,298.4	9,036.1	7,145.4	45.7	45.4	70.10	-2,250.3	-158.5	449.6	363.5	86.07	5.223		
9,200.0	7,297.8	9,136.1	7,144.7	47.5	47.3	70.09	-2,350.3	-158.5	449.6	360.1	89.50	5.023		
9,300.0	7,297.2	9,236.1	7,144.1	49.4	49.1	70.09	-2,450.3	-158.5	449.6	356.7	92.95	4.837		
9,400.0	7,296.6	9,336.1	7,143.4	51.2	50.9	70.08	-2,550.3	-158.5	449.6	353.2	96.42	4.663		
9,500.0	7,296.0	9,436.1	7,142.7	53.0	52.7	70.07	-2,650.3	-158.5	449.7	349.8	99.90	4.501		
9,600.0	7,295.4	9,536.1	7,142.0	54.8	54.6	70.06	-2,750.3	-158.5	449.7	346.3	103.39	4.350		
9,700.0	7,294.7	9,636.1	7,141.3	56.7	56.4	70.05	-2,850.3	-158.5	449.7	342.8	106.89	4.207		
9,800.0	7,294.1	9,736.1	7,140.7	58.5	58.3	70.05	-2,950.3	-158.5	449.7	339.3	110.39	4.074		
9,900.0	7,293.5	9,836.1	7,140.0	60.4	60.1	70.04	-3,050.3	-158.5	449.8	335.8	113.91	3.948		
10,000.0	7,292.9	9,936.1	7,139.3	62.2	62.0	70.03	-3,150.3	-158.5	449.8	332.3	117.44	3.830		
10,100.0	7,292.3	10,036.1	7,138.6	64.1	63.9	70.02	-3,250.3	-158.5	449.8	328.8	120.97	3.718		
10,200.0	7,291.7	10,136.1	7,137.9	66.0	65.7	70.01	-3,350.3	-158.5	449.8	325.3	124.51	3.613		
10,300.0	7,291.1	10,236.1	7,137.3	67.8	67.6	70.01	-3,450.3	-158.5	449.8	321.8	128.05	3.513		

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 Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore	Centre	Between	Between	Minimum	Separation	Warning		
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor			
10,400.0	7,290.4	10,336.1	7,136.6	69.7	69.5	70.00	-3,550.3	-158.5	449.9	318.3	131.60	3.419			
10,500.0	7,289.8	10,436.1	7,135.9	71.6	71.4	69.99	-3,650.3	-158.5	449.9	314.7	135.15	3.329			
10,600.0	7,289.2	10,536.1	7,135.2	73.4	73.2	69.98	-3,750.3	-158.5	449.9	311.2	138.71	3.244			
10,700.0	7,288.6	10,636.1	7,134.5	75.3	75.1	69.97	-3,850.3	-158.5	449.9	307.7	142.27	3.163			
10,800.0	7,288.0	10,736.1	7,133.9	77.2	77.0	69.97	-3,950.3	-158.5	450.0	304.1	145.84	3.085			
10,900.0	7,287.4	10,836.1	7,133.2	79.1	78.9	69.96	-4,050.3	-158.5	450.0	300.6	149.40	3.012			
11,000.0	7,286.8	10,936.1	7,132.5	81.0	80.8	69.95	-4,150.3	-158.5	450.0	297.0	152.98	2.942			
11,100.0	7,286.1	11,036.1	7,131.8	82.8	82.7	69.94	-4,250.3	-158.5	450.0	293.5	156.55	2.875			
11,200.0	7,285.5	11,136.1	7,131.1	84.7	84.6	69.94	-4,350.2	-158.5	450.1	289.9	160.13	2.811			
11,300.0	7,284.9	11,236.1	7,130.5	86.6	86.5	69.93	-4,450.2	-158.5	450.1	286.4	163.71	2.749			
11,400.0	7,284.3	11,336.1	7,129.8	88.5	88.3	69.92	-4,550.2	-158.5	450.1	282.8	167.29	2.691			
11,500.0	7,283.7	11,436.1	7,129.1	90.4	90.2	69.91	-4,650.2	-158.5	450.1	279.3	170.88	2.634			
11,600.0	7,283.1	11,536.1	7,128.4	92.3	92.1	69.90	-4,750.2	-158.5	450.2	275.7	174.46	2.580			
11,700.0	7,282.5	11,636.1	7,127.7	94.2	94.0	69.90	-4,850.2	-158.5	450.2	272.1	178.05	2.528			
11,800.0	7,281.8	11,736.1	7,127.0	96.1	95.9	69.89	-4,950.2	-158.5	450.2	268.6	181.64	2.478			
11,900.0	7,281.2	11,836.1	7,126.4	98.0	97.7	69.88	-5,050.2	-158.5	450.2	265.1	185.11	2.432			
11,938.2	7,281.0	11,874.3	7,126.1	98.7	98.3	69.88	-5,088.5	-158.5	450.2	263.9	186.35	2.416 SF			



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7M-243 - Wellbore #1 - Plan #1										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		
0.0	0.0	0.0	0.0	0.0	0.0	83.21	3.6	30.6	30.8					
100.0	100.0	100.0	100.0	0.1	0.1	83.21	3.6	30.6	30.8	30.6	0.22	137.048		
200.0	200.0	200.0	200.0	0.3	0.3	83.21	3.6	30.6	30.8	30.1	0.67	45.683 CC, ES		
300.0	300.0	298.9	298.9	0.6	0.5	83.70	3.6	32.3	32.5	31.4	1.11	29.258		
400.0	400.0	397.6	397.4	0.8	0.8	84.91	3.3	37.4	37.6	36.1	1.55	24.209		
500.0	500.0	495.8	495.3	1.0	1.0	86.32	2.9	45.8	46.2	44.1	2.02	22.884		
600.0	600.0	593.3	592.1	1.2	1.3	87.59	2.4	57.5	58.1	55.6	2.51	23.189		
700.0	700.0	689.9	687.5	1.5	1.6	88.62	1.7	72.3	73.4	70.4	3.03	24.261		
800.0	800.0	785.4	781.3	1.7	2.0	89.41	0.9	90.1	92.0	88.5	3.58	25.687		
900.0	900.0	880.7	874.3	1.9	2.4	90.01	0.0	110.9	113.8	109.6	4.18	27.220		
1,000.0	1,000.0	978.1	969.3	2.1	2.8	90.44	-1.0	132.8	136.3	131.5	4.81	28.364		
1,100.0	1,100.0	1,075.9	1,064.5	2.3	3.3	-27.27	-2.0	154.9	157.4	152.6	4.79	32.875		
1,200.0	1,199.8	1,174.2	1,160.3	2.5	3.8	-27.63	-3.0	177.0	175.4	170.1	5.23	33.562		
1,300.0	1,299.5	1,273.1	1,256.6	2.7	4.2	-28.41	-4.0	199.3	190.4	184.7	5.68	33.520		
1,406.6	1,405.2	1,378.7	1,359.5	3.0	4.7	-29.66	-5.1	223.1	203.1	196.9	6.19	32.826		
1,500.0	1,497.7	1,471.6	1,450.0	3.2	5.2	-30.97	-6.1	244.1	212.8	206.1	6.66	31.959		
1,600.0	1,596.7	1,570.9	1,546.7	3.5	5.7	-32.24	-7.1	266.4	223.3	216.1	7.18	31.105		
1,700.0	1,695.7	1,670.2	1,643.5	3.8	6.2	-33.40	-8.1	288.8	234.0	226.2	7.72	30.321		
1,800.0	1,794.7	1,769.5	1,740.3	4.1	6.7	-34.46	-9.1	311.2	244.7	236.4	8.27	29.603		
1,900.0	1,893.7	1,868.9	1,837.0	4.4	7.1	-35.43	-10.2	333.6	255.5	246.7	8.83	28.945		
2,000.0	1,992.7	1,968.2	1,933.8	4.7	7.6	-36.32	-11.2	356.0	266.3	256.9	9.40	28.341		
2,100.0	2,091.7	2,067.5	2,030.5	5.0	8.1	-37.14	-12.2	378.4	277.3	267.3	9.98	27.787		
2,200.0	2,190.7	2,166.8	2,127.3	5.4	8.6	-37.90	-13.2	400.8	288.2	277.7	10.57	27.277		
2,300.0	2,289.7	2,266.2	2,224.1	5.7	9.1	-38.60	-14.2	423.2	299.3	288.1	11.16	26.807		
2,400.0	2,388.6	2,365.5	2,320.8	6.0	9.6	-39.26	-15.3	445.6	310.3	298.5	11.77	26.374		
2,500.0	2,487.6	2,464.8	2,417.6	6.4	10.1	-39.86	-16.3	468.0	321.4	309.0	12.37	25.974		
2,600.0	2,586.6	2,564.1	2,514.4	6.7	10.6	-40.43	-17.3	490.4	332.5	319.6	12.99	25.604		
2,700.0	2,685.6	2,663.5	2,611.1	7.0	11.0	-40.96	-18.3	512.7	343.7	330.1	13.61	25.260		
2,800.0	2,784.6	2,762.8	2,707.9	7.4	11.5	-41.46	-19.3	535.1	354.9	340.7	14.23	24.941		
2,900.0	2,883.6	2,862.1	2,804.7	7.7	12.0	-41.92	-20.4	557.5	366.1	351.2	14.86	24.644		
3,000.0	2,982.6	2,961.5	2,901.4	8.0	12.5	-42.36	-21.4	579.9	377.3	361.9	15.49	24.367		
3,100.0	3,081.6	3,060.8	2,998.2	8.4	13.0	-42.78	-22.4	602.3	388.6	372.5	16.12	24.108		
3,113.3	3,094.8	3,074.0	3,011.1	8.4	13.1	-42.83	-22.5	605.3	390.1	373.9	16.20	24.075		
3,200.0	3,180.8	3,160.0	3,094.9	8.7	13.5	-43.19	-23.4	624.7	400.8	384.1	16.71	23.993		
3,300.0	3,280.3	3,258.9	3,191.2	8.9	14.0	-43.30	-24.4	647.0	415.5	398.3	17.20	24.157		
3,400.0	3,380.2	3,357.4	3,287.1	9.1	14.5	-43.14	-25.4	669.2	432.8	415.1	17.64	24.530		
3,500.0	3,480.1	3,455.2	3,382.5	9.3	14.9	-42.75	-26.4	691.2	452.6	434.6	18.03	25.101		
3,519.9	3,500.0	3,474.6	3,401.4	9.3	15.0	75.28	-26.6	695.6	456.8	438.7	18.10	25.236		
3,600.0	3,580.1	3,552.7	3,477.4	9.4	15.4	75.93	-27.4	713.2	474.1	455.7	18.41	25.761		
3,700.0	3,680.1	3,650.1	3,572.3	9.6	15.9	76.67	-28.4	735.2	495.9	477.1	18.79	26.385		
3,800.0	3,780.1	3,747.5	3,667.2	9.8	16.4	77.36	-29.4	757.1	517.6	498.4	19.19	26.977		
3,900.0	3,880.1	3,844.9	3,762.1	10.0	16.9	77.99	-30.4	779.1	539.5	519.9	19.59	27.538		
4,000.0	3,980.1	3,942.4	3,857.0	10.1	17.3	78.57	-31.4	801.0	561.4	541.4	20.00	28.072		
4,100.0	4,080.1	4,039.8	3,951.9	10.3	17.8	79.10	-32.4	823.0	583.3	562.9	20.41	28.579		
4,200.0	4,180.1	4,137.2	4,046.9	10.5	18.3	79.60	-33.4	845.0	605.3	584.5	20.83	29.061		
4,300.0	4,280.1	4,234.6	4,141.8	10.7	18.8	80.07	-34.4	866.9	627.3	606.1	21.25	29.519		
4,400.0	4,380.1	4,332.0	4,236.7	10.9	19.3	80.50	-35.4	888.9	649.4	627.7	21.68	29.956		
4,500.0	4,480.1	4,429.5	4,331.6	11.0	19.8	80.90	-36.4	910.9	671.5	649.4	22.11	30.372		
4,600.0	4,580.1	4,526.9	4,426.5	11.2	20.2	81.28	-37.4	932.8	693.7	671.1	22.54	30.769		
4,700.0	4,680.1	4,624.3	4,521.4	11.4	20.7	81.63	-38.4	954.8	715.8	692.8	22.98	31.148		
4,800.0	4,780.1	4,721.7	4,616.3	11.6	21.2	81.97	-39.4	976.7	738.0	714.6	23.42	31.509		

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 Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7M-243 - Wellbore #1 - Plan #1										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		
4,900.0	4,880.1	4,819.1	4,711.2	11.8	21.7	82.28	-40.4	998.7	760.2	736.4	23.86	31.855		
5,000.0	4,980.1	4,916.6	4,806.1	12.0	22.2	82.58	-41.4	1,020.7	782.4	758.1	24.31	32.186		
5,100.0	5,080.1	5,014.0	4,901.0	12.2	22.6	82.86	-42.4	1,042.6	804.7	779.9	24.76	32.503		
5,200.0	5,180.1	5,128.7	5,013.0	12.4	23.1	83.16	-43.6	1,067.9	826.5	801.3	25.22	32.767		
5,300.0	5,280.1	5,266.9	5,148.8	12.6	23.6	83.44	-44.7	1,092.9	844.4	818.7	25.69	32.872		
5,400.0	5,380.1	5,407.1	5,287.8	12.8	23.9	83.64	-45.6	1,111.5	857.6	831.4	26.14	32.803		
5,500.0	5,480.1	5,548.9	5,429.1	13.0	24.2	83.77	-46.1	1,123.5	865.9	839.3	26.58	32.574		
5,600.0	5,580.1	5,691.6	5,571.6	13.2	24.4	83.82	-46.4	1,128.4	869.3	842.3	27.01	32.188		
5,700.0	5,680.1	5,800.1	5,680.1	13.3	24.5	83.82	-46.4	1,128.6	869.4	842.1	27.39	31.743		
5,800.0	5,780.1	5,900.1	5,780.1	13.5	24.6	83.82	-46.4	1,128.6	869.4	841.7	27.76	31.318		
5,900.0	5,880.1	6,000.1	5,880.1	13.7	24.7	83.82	-46.4	1,128.6	869.4	841.3	28.14	30.901		
6,000.0	5,980.1	6,100.1	5,980.1	13.9	24.8	83.82	-46.4	1,128.6	869.4	840.9	28.51	30.493		
6,100.0	6,080.1	6,200.1	6,080.1	14.1	24.9	83.82	-46.4	1,128.6	869.4	840.6	28.89	30.093		
6,200.0	6,180.1	6,300.1	6,180.1	14.4	25.1	83.82	-46.4	1,128.6	869.4	840.2	29.27	29.702		
6,300.0	6,280.1	6,400.1	6,280.1	14.6	25.2	83.82	-46.4	1,128.6	869.4	839.8	29.65	29.319		
6,400.0	6,380.1	6,500.1	6,380.1	14.8	25.3	83.82	-46.4	1,128.6	869.4	839.4	30.04	28.945		
6,500.0	6,480.1	6,610.9	6,490.7	15.0	25.4	84.17	-51.8	1,128.6	868.9	838.5	30.42	28.563		
6,552.1	6,532.2	6,668.7	6,547.8	15.1	25.5	84.77	-60.8	1,128.6	868.1	837.5	30.60	28.367		
6,600.0	6,580.1	6,720.9	6,598.6	15.2	25.5	-94.62	-72.7	1,128.6	867.3	836.6	30.76	28.199		
6,650.0	6,629.8	6,774.5	6,649.8	15.3	25.6	-93.97	-88.4	1,128.6	866.6	835.6	30.93	28.015		
6,700.0	6,679.2	6,827.3	6,699.1	15.4	25.7	-93.30	-107.4	1,128.6	865.9	834.8	31.13	27.815		
6,750.0	6,727.9	6,879.3	6,746.2	15.5	25.8	-92.62	-129.4	1,128.6	865.3	834.0	31.36	27.597		
6,800.0	6,775.8	6,930.6	6,791.1	15.6	25.9	-91.94	-154.1	1,128.6	864.9	833.3	31.61	27.361		
6,850.0	6,822.6	6,981.0	6,833.5	15.8	26.0	-91.25	-181.4	1,128.6	864.6	832.7	31.90	27.103		
6,900.0	6,868.2	7,030.8	6,873.6	16.0	26.1	-90.57	-211.0	1,128.6	864.5	832.2	32.23	26.823		
6,939.7	6,903.4	7,069.9	6,903.6	16.1	26.2	-90.02	-236.0	1,128.6	864.4	831.9	32.52	26.580		
6,950.0	6,912.4	7,079.9	6,911.1	16.1	26.2	-89.88	-242.6	1,128.6	864.4	831.8	32.60	26.517		
7,000.0	6,954.9	7,128.3	6,946.0	16.3	26.4	-89.20	-276.2	1,128.6	864.5	831.5	33.02	26.183		
7,050.0	6,995.6	7,176.1	6,978.4	16.6	26.5	-88.53	-311.4	1,128.6	864.7	831.2	33.49	25.820		
7,100.0	7,034.3	7,223.4	7,008.1	16.8	26.7	-87.86	-348.1	1,128.6	865.1	831.0	34.02	25.428		
7,150.0	7,070.9	7,270.0	7,035.2	17.1	26.9	-87.21	-386.0	1,128.6	865.5	830.9	34.61	25.005		
7,200.0	7,105.2	7,316.2	7,059.6	17.5	27.1	-86.58	-425.2	1,128.6	866.0	830.8	35.27	24.553		
7,250.0	7,137.0	7,361.8	7,081.4	17.8	27.3	-85.95	-465.3	1,128.6	866.7	830.7	36.00	24.074		
7,300.0	7,166.2	7,407.0	7,100.6	18.2	27.6	-85.35	-506.1	1,128.6	867.4	830.6	36.80	23.569		
7,350.0	7,192.8	7,450.0	7,116.6	18.7	27.8	-84.79	-546.1	1,128.6	868.2	830.5	37.66	23.052		
7,400.0	7,216.4	7,496.1	7,131.3	19.1	28.1	-84.21	-589.8	1,128.7	869.0	830.4	38.63	22.497		
7,450.0	7,237.2	7,540.1	7,142.7	19.6	28.4	-83.67	-632.2	1,128.7	869.9	830.2	39.65	21.937		
7,500.0	7,254.9	7,583.7	7,151.7	20.2	28.8	-83.16	-674.9	1,128.7	870.8	830.1	40.75	21.369		
7,550.0	7,269.6	7,627.0	7,158.2	20.8	29.1	-82.68	-717.7	1,128.7	871.7	829.8	41.92	20.797		
7,600.0	7,281.1	7,670.0	7,162.2	21.4	29.5	-82.22	-760.5	1,128.7	872.6	829.5	43.14	20.227		
7,650.0	7,289.4	7,712.7	7,163.8	22.0	29.9	-81.80	-803.2	1,128.7	873.6	829.1	44.43	19.663		
7,672.1	7,292.0	7,731.8	7,163.7	22.3	30.1	-81.62	-822.2	1,128.7	873.9	828.9	45.01	19.415		
7,700.0	7,294.9	7,759.5	7,163.3	22.7	30.3	-81.41	-849.9	1,128.7	874.4	828.7	45.74	19.116		
7,746.1	7,299.7	7,805.2	7,162.7	23.3	30.8	-81.06	-895.7	1,128.7	875.3	828.3	46.96	18.638		
7,800.0	7,304.1	7,858.9	7,162.0	24.1	31.3	-80.69	-949.4	1,128.7	876.1	827.5	48.56	18.043		
7,873.1	7,306.0	7,932.0	7,161.0	25.1	32.2	-80.48	-1,022.4	1,128.7	876.6	825.8	50.81	17.254		
7,900.0	7,305.8	7,958.8	7,160.6	25.5	32.5	-80.47	-1,049.3	1,128.7	876.6	825.0	51.59	16.992		
8,000.0	7,305.2	8,058.8	7,159.2	27.0	33.6	-80.42	-1,149.3	1,128.7	876.8	822.2	54.58	16.063		
8,100.0	7,304.6	8,158.8	7,157.9	28.6	34.9	-80.37	-1,249.3	1,128.7	876.9	819.2	57.67	15.206		
8,200.0	7,304.0	8,258.8	7,156.5	30.2	36.2	-80.32	-1,349.2	1,128.7	877.0	816.2	60.83	14.418		

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 Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7M-243 - Wellbore #1 - Plan #1									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			
8,300.0	7,303.3	8,358.8	7,155.2	31.8	37.6	-80.27	-1,449.2	1,128.8	877.2	813.1	64.06	13.692			
8,400.0	7,302.7	8,458.8	7,153.8	33.5	39.0	-80.23	-1,549.2	1,128.8	877.3	809.9	67.35	13.025			
8,500.0	7,302.1	8,558.8	7,152.4	35.2	40.5	-80.18	-1,649.2	1,128.8	877.4	806.7	70.69	12.412			
8,600.0	7,301.5	8,658.8	7,151.1	36.9	42.0	-80.13	-1,749.2	1,128.8	877.6	803.5	74.08	11.847			
8,700.0	7,300.9	8,758.8	7,149.7	38.6	43.6	-80.08	-1,849.2	1,128.8	877.7	800.2	77.50	11.326			
8,800.0	7,300.3	8,858.8	7,148.4	40.4	45.1	-80.03	-1,949.2	1,128.8	877.9	796.9	80.95	10.844			
8,900.0	7,299.7	8,958.8	7,147.0	42.2	46.7	-79.99	-2,049.2	1,128.8	878.0	793.6	84.43	10.399			
9,000.0	7,299.0	9,058.8	7,145.6	44.0	48.4	-79.94	-2,149.1	1,128.8	878.1	790.2	87.94	9.986			
9,100.0	7,298.4	9,158.8	7,144.3	45.7	50.0	-79.89	-2,249.1	1,128.8	878.3	786.8	91.47	9.602			
9,200.0	7,297.8	9,258.8	7,142.9	47.5	51.7	-79.84	-2,349.1	1,128.9	878.4	783.4	95.01	9.245			
9,300.0	7,297.2	9,358.8	7,141.6	49.4	53.3	-79.79	-2,449.1	1,128.9	878.6	780.0	98.58	8.912			
9,400.0	7,296.6	9,458.8	7,140.2	51.2	55.0	-79.75	-2,549.1	1,128.9	878.7	776.6	102.16	8.602			
9,500.0	7,296.0	9,558.8	7,138.8	53.0	56.8	-79.70	-2,649.1	1,128.9	878.9	773.1	105.75	8.311			
9,600.0	7,295.4	9,658.8	7,137.5	54.8	58.5	-79.65	-2,749.1	1,128.9	879.0	769.6	109.35	8.038			
9,700.0	7,294.7	9,758.8	7,136.1	56.7	60.2	-79.60	-2,849.1	1,128.9	879.1	766.2	112.97	7.782			
9,800.0	7,294.1	9,858.8	7,134.7	58.5	62.0	-79.56	-2,949.1	1,128.9	879.3	762.7	116.59	7.541			
9,900.0	7,293.5	9,958.8	7,133.4	60.4	63.7	-79.51	-3,049.0	1,128.9	879.4	759.2	120.23	7.315			
10,000.0	7,292.9	10,058.8	7,132.0	62.2	65.5	-79.46	-3,149.0	1,129.0	879.6	755.7	123.87	7.101			
10,100.0	7,292.3	10,158.8	7,130.7	64.1	67.3	-79.41	-3,249.0	1,129.0	879.7	752.2	127.52	6.899			
10,200.0	7,291.7	10,258.8	7,129.3	66.0	69.1	-79.36	-3,349.0	1,129.0	879.9	748.7	131.17	6.708			
10,300.0	7,291.1	10,358.8	7,127.9	67.8	70.9	-79.32	-3,449.0	1,129.0	880.0	745.2	134.83	6.527			
10,400.0	7,290.4	10,458.8	7,126.6	69.7	72.7	-79.27	-3,549.0	1,129.0	880.2	741.7	138.50	6.355			
10,500.0	7,289.8	10,558.8	7,125.2	71.6	74.5	-79.22	-3,649.0	1,129.0	880.3	738.2	142.17	6.192			
10,600.0	7,289.2	10,658.8	7,123.9	73.4	76.3	-79.17	-3,749.0	1,129.0	880.5	734.6	145.85	6.037			
10,700.0	7,288.6	10,758.8	7,122.5	75.3	78.1	-79.13	-3,848.9	1,129.0	880.6	731.1	149.52	5.890			
10,800.0	7,288.0	10,858.8	7,121.1	77.2	79.9	-79.08	-3,948.9	1,129.1	880.8	727.6	153.21	5.749			
10,900.0	7,287.4	10,958.8	7,119.8	79.1	81.8	-79.03	-4,048.9	1,129.1	880.9	724.1	156.89	5.615			
11,000.0	7,286.8	11,058.8	7,118.4	81.0	83.6	-78.98	-4,148.9	1,129.1	881.1	720.5	160.58	5.487			
11,100.0	7,286.1	11,158.8	7,117.0	82.8	85.4	-78.94	-4,248.9	1,129.1	881.3	717.0	164.27	5.365			
11,200.0	7,285.5	11,258.8	7,115.7	84.7	87.3	-78.89	-4,348.9	1,129.1	881.4	713.4	167.96	5.248			
11,300.0	7,284.9	11,358.8	7,114.3	86.6	89.1	-78.84	-4,448.9	1,129.1	881.6	709.9	171.66	5.136			
11,400.0	7,284.3	11,458.8	7,113.0	88.5	90.9	-78.79	-4,548.9	1,129.1	881.7	706.4	175.36	5.028			
11,500.0	7,283.7	11,558.8	7,111.6	90.4	92.8	-78.75	-4,648.8	1,129.1	881.9	702.8	179.05	4.925			
11,600.0	7,283.1	11,658.8	7,110.2	92.3	94.7	-78.70	-4,748.8	1,129.1	882.0	699.3	182.76	4.826			
11,700.0	7,282.5	11,758.8	7,108.9	94.2	96.5	-78.65	-4,848.8	1,129.2	882.2	695.7	186.46	4.731			
11,800.0	7,281.8	11,858.8	7,107.5	96.1	98.4	-78.60	-4,948.8	1,129.2	882.3	692.2	190.16	4.640			
11,900.0	7,281.2	11,958.8	7,106.2	98.0	100.2	-78.56	-5,048.8	1,129.2	882.5	688.6	193.86	4.552			
11,938.2	7,281.0	11,970.3	7,106.0	98.7	100.4	-78.55	-5,060.4	1,129.2	883.0	688.2	194.79	4.533 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													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		
3,300.0	3,280.3	3,277.3	3,277.3	8.9	65.5	28.00	-957.1	813.7	992.1	919.1	73.00	13.590		
3,400.0	3,380.2	3,377.2	3,377.2	9.1	67.5	28.11	-957.1	813.7	986.8	911.5	75.30	13.106		
3,500.0	3,480.1	3,477.1	3,477.1	9.3	69.5	28.16	-957.1	813.7	984.7	907.2	77.52	12.702		
3,519.9	3,500.0	3,497.0	3,497.0	9.3	69.9	146.08	-957.1	813.7	984.6	906.7	77.95	12.631		
3,600.0	3,580.1	3,577.1	3,577.1	9.4	71.5	146.08	-957.1	813.7	984.6	904.9	79.71	12.353		
3,700.0	3,680.1	3,677.1	3,677.1	9.6	73.5	146.08	-957.1	813.7	984.6	902.7	81.90	12.022		
3,800.0	3,780.1	3,777.1	3,777.1	9.8	75.5	146.08	-957.1	813.7	984.6	900.5	84.09	11.709		
3,900.0	3,880.1	3,877.1	3,877.1	10.0	77.5	146.08	-957.1	813.7	984.6	898.3	86.29	11.411		
4,000.0	3,980.1	3,977.1	3,977.1	10.1	79.5	146.08	-957.1	813.7	984.6	896.1	88.49	11.127		
4,100.0	4,080.1	4,077.1	4,077.1	10.3	81.5	146.08	-957.1	813.7	984.6	893.9	90.69	10.857		
4,200.0	4,180.1	4,177.1	4,177.1	10.5	83.5	146.08	-957.1	813.7	984.6	891.7	92.89	10.600		
4,300.0	4,280.1	4,277.1	4,277.1	10.7	85.5	146.08	-957.1	813.7	984.6	889.5	95.09	10.355		
4,400.0	4,380.1	4,377.1	4,377.1	10.9	87.5	146.08	-957.1	813.7	984.6	887.3	97.29	10.120		
4,500.0	4,480.1	4,477.1	4,477.1	11.0	89.5	146.08	-957.1	813.7	984.6	885.1	99.49	9.896		
4,600.0	4,580.1	4,577.1	4,577.1	11.2	91.5	146.08	-957.1	813.7	984.6	882.9	101.70	9.682		
4,700.0	4,680.1	4,677.1	4,677.1	11.4	93.5	146.08	-957.1	813.7	984.6	880.7	103.90	9.476		
4,800.0	4,780.1	4,777.1	4,777.1	11.6	95.5	146.08	-957.1	813.7	984.6	878.5	106.11	9.279		
4,900.0	4,880.1	4,877.1	4,877.1	11.8	97.5	146.08	-957.1	813.7	984.6	876.3	108.32	9.090		
5,000.0	4,980.1	4,977.1	4,977.1	12.0	99.5	146.08	-957.1	813.7	984.6	874.1	110.52	8.909		
5,100.0	5,080.1	5,077.1	5,077.1	12.2	101.5	146.08	-957.1	813.7	984.6	871.9	112.73	8.734		
5,200.0	5,180.1	5,177.1	5,177.1	12.4	103.5	146.08	-957.1	813.7	984.6	869.7	114.94	8.566		
5,300.0	5,280.1	5,277.1	5,277.1	12.6	105.5	146.08	-957.1	813.7	984.6	867.5	117.15	8.405		
5,400.0	5,380.1	5,377.1	5,377.1	12.8	107.5	146.08	-957.1	813.7	984.6	865.3	119.36	8.249		
5,500.0	5,480.1	5,477.1	5,477.1	13.0	109.5	146.08	-957.1	813.7	984.6	863.1	121.57	8.099		
5,600.0	5,580.1	5,577.1	5,577.1	13.2	111.5	146.08	-957.1	813.7	984.6	860.8	123.78	7.955		
5,700.0	5,680.1	5,677.1	5,677.1	13.3	113.5	146.08	-957.1	813.7	984.6	858.6	125.99	7.815		
5,800.0	5,780.1	5,777.1	5,777.1	13.5	115.5	146.08	-957.1	813.7	984.6	856.4	128.20	7.680		
5,900.0	5,880.1	5,877.1	5,877.1	13.7	117.5	146.08	-957.1	813.7	984.6	854.2	130.41	7.550		
6,000.0	5,980.1	5,977.1	5,977.1	13.9	119.5	146.08	-957.1	813.7	984.6	852.0	132.63	7.424		
6,100.0	6,080.1	6,077.1	6,077.1	14.1	121.5	146.08	-957.1	813.7	984.6	849.8	134.84	7.302		
6,200.0	6,180.1	6,177.1	6,177.1	14.4	123.5	146.08	-957.1	813.7	984.6	847.6	137.05	7.184		
6,300.0	6,280.1	6,277.1	6,277.1	14.6	125.5	146.08	-957.1	813.7	984.6	845.4	139.27	7.070		
6,400.0	6,380.1	6,377.1	6,377.1	14.8	127.5	146.08	-957.1	813.7	984.6	843.1	141.48	6.959		
6,500.0	6,480.1	6,477.1	6,477.1	15.0	129.5	146.08	-957.1	813.7	984.6	840.9	143.70	6.852		
6,552.1	6,532.2	6,529.2	6,529.2	15.1	130.6	146.08	-957.1	813.7	984.6	839.8	144.85	6.798		
6,600.0	6,580.1	6,577.1	6,577.1	15.2	131.5	-34.02	-957.1	813.7	983.4	837.6	145.73	6.748		
6,650.0	6,629.8	6,626.8	6,626.8	15.3	132.5	-34.34	-957.1	813.7	979.4	833.2	146.22	6.698		
6,700.0	6,679.2	6,676.2	6,676.2	15.4	133.5	-34.89	-957.1	813.7	972.8	826.5	146.29	6.650		
6,750.0	6,727.9	6,724.9	6,724.9	15.5	134.5	-35.68	-957.1	813.7	963.6	817.6	145.98	6.601		
6,800.0	6,775.8	6,772.8	6,772.8	15.6	135.5	-36.72	-957.1	813.7	951.8	806.5	145.34	6.549		
6,850.0	6,822.6	6,819.6	6,819.6	15.8	136.4	-38.02	-957.1	813.7	937.6	793.1	144.45	6.490		
6,900.0	6,868.2	6,865.2	6,865.2	16.0	137.3	-39.61	-957.1	813.7	921.0	777.6	143.45	6.421		
6,950.0	6,912.4	6,909.4	6,909.4	16.1	138.2	-41.51	-957.1	813.7	902.3	759.9	142.46	6.334		
7,000.0	6,954.9	6,951.9	6,951.9	16.3	139.0	-43.73	-957.1	813.7	881.6	740.0	141.66	6.223		
7,050.0	6,995.6	6,992.6	6,992.6	16.6	139.9	-46.30	-957.1	813.7	859.1	717.9	141.26	6.082		
7,100.0	7,034.3	7,031.3	7,031.3	16.8	140.6	-49.22	-957.1	813.7	835.1	693.6	141.45	5.904		
7,150.0	7,070.9	7,067.9	7,067.9	17.1	141.4	-52.49	-957.1	813.7	809.7	667.4	142.38	5.687		
7,200.0	7,105.2	7,102.2	7,102.2	17.5	142.0	-56.09	-957.1	813.7	783.4	639.3	144.12	5.436		
7,250.0	7,137.0	7,134.0	7,134.0	17.8	142.7	-59.97	-957.1	813.7	756.4	609.7	146.65	5.158		
7,300.0	7,166.2	7,163.2	7,163.2	18.2	143.3	-64.05	-957.1	813.7	729.1	579.3	149.77	4.868		
7,350.0	7,192.8	7,189.8	7,189.8	18.7	143.8	-68.22	-957.1	813.7	702.0	548.8	153.22	4.582		

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 Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Swanson 1-7 (P&A) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 7300-UNKNOWN														
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	
7,400.0	7,216.4	7,213.4	7,213.4	19.1	144.3	-72.36	-957.1	813.7	675.5	518.8	156.66	4.312		
7,450.0	7,237.2	7,234.2	7,234.2	19.6	144.7	-76.31	-957.1	813.7	650.1	490.3	159.79	4.068		
7,500.0	7,254.9	7,251.9	7,251.9	20.2	145.0	-79.95	-957.1	813.7	626.3	463.9	162.42	3.856		
7,550.0	7,269.6	7,266.6	7,266.6	20.8	145.3	-83.14	-957.1	813.7	604.9	440.4	164.48	3.677		
7,600.0	7,281.1	7,278.1	7,278.1	21.4	145.6	-85.80	-957.1	813.7	586.2	420.2	166.02	3.531		
7,650.0	7,289.4	7,286.4	7,286.4	22.0	145.7	-87.85	-957.1	813.7	570.9	403.7	167.15	3.415		
7,672.1	7,292.0	7,289.0	7,289.0	22.3	145.8	-88.55	-957.1	813.7	565.3	397.8	167.56	3.374		
7,700.0	7,294.9	7,291.9	7,291.9	22.7	145.8	-88.85	-957.1	813.7	559.4	391.4	168.02	3.330		
7,746.1	7,299.7	7,296.7	7,296.7	23.3	145.9	-89.35	-957.1	813.7	552.7	383.9	168.78	3.274		
7,800.0	7,304.1	7,300.0	7,300.0	24.1	146.0	-89.85	-957.1	813.7	549.5	379.9	169.62	3.239		
7,805.6	7,304.4	7,300.0	7,300.0	24.2	146.0	-89.85	-957.1	813.7	549.5	379.8	169.71	3.238	CC, ES, SF	
7,873.1	7,306.0	7,300.0	7,300.0	25.1	146.0	-89.65	-957.1	813.7	553.6	382.9	170.70	3.243		
7,900.0	7,305.8	7,300.0	7,300.0	25.5	146.0	-89.65	-957.1	813.7	557.5	386.4	171.10	3.258		
8,000.0	7,305.2	7,300.0	7,300.0	27.0	146.0	-89.65	-957.1	813.7	582.8	410.2	172.64	3.376		
8,100.0	7,304.6	7,300.0	7,300.0	28.6	146.0	-89.65	-957.1	813.7	623.3	449.1	174.22	3.578		
8,200.0	7,304.0	7,300.0	7,300.0	30.2	146.0	-89.65	-957.1	813.7	676.3	500.5	175.84	3.846		
8,300.0	7,303.3	7,300.0	7,300.0	31.8	146.0	-89.65	-957.1	813.7	739.1	561.6	177.50	4.164		
8,400.0	7,302.7	7,299.7	7,299.7	33.5	146.0	-89.62	-957.1	813.7	809.4	630.2	179.18	4.517		
8,500.0	7,302.1	7,299.1	7,299.1	35.2	146.0	-89.56	-957.1	813.7	885.4	704.5	180.87	4.895		
8,600.0	7,301.5	7,298.5	7,298.5	36.9	146.0	-89.49	-957.1	813.7	965.8	783.2	182.59	5.290		

Reference Depths are relative to WELL @ 4906.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Simonson/Schaefer 7J-403  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.43°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Reference Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Simonson/Schaefer 7J-403	<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 (8-9-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4906.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Simonson/Schaefer 7J-403  
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: 0.43°

