

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Simonson/Schaefer 7E-423**

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

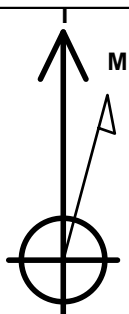
Ground Elevation: 4891.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429286.43	3186789.95	40.509850	-104.828230	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
DRILL TARGET BHL 500'FSL & 764'FWL	7292.0	-5118.7	-382.9	Point
PERMIT BHL 500'FSL & 624'FWL	7292.0	-5118.7	-522.9	Point
WP 1	7296.7	-2977.0	-522.9	Point



Azimuths to True North
Magnetic North: 8.75°

Magnetic Field
Strength: 53059.0nT
Dip Angle: 67.09°
Date: 8/13/2012
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6527.3	6566.5	KOP #2
7301.0	7883.0	End of Build

Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W
Simonson/Schaefer 7E-423
Plan #2 (8-15-12)
10:55, August 15 2012

SHL 310'FSL, 1128'FWL

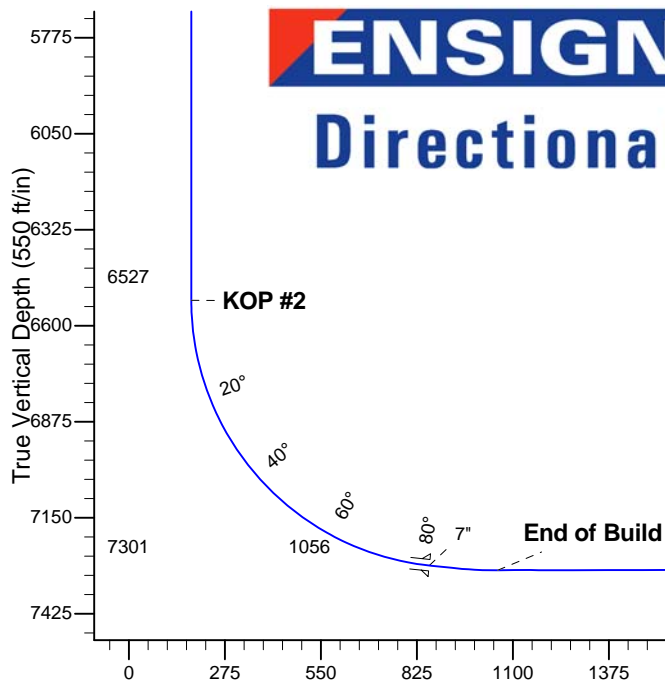
South(-)/North(+) (2000 ft/in)

Simonson/Schaefer 7E-423
SEC. 6 HARDLINE 460'
SEC. 6-T6N-R66W
SEC. 7-T6N-R66W
SEC.7 HARDLINE 460'

Hergert 1 (P&A)
DRILL TARGET BHL 500'FSL & 764'FWL
PERMIT BHL 500'FSL & 624'FWL

West(-)/East(+) (2000 ft/in)

ENSIGN
Directional



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	1431.4	8.63	255.01	1429.7	-8.4	-31.3	2.00	255.01	10.7	
4	4607.8	8.63	255.01	4570.3	-131.6	-491.6	0.00	0.00	167.9	
5	5039.2	0.00	0.00	5000.0	-140.0	-522.9	2.00	180.00	178.6	
6	6566.5	0.00	0.00	6527.3	-140.0	-522.9	0.00	0.00	178.6	
7	7686.5	84.00	180.00	7287.0	-824.1	-522.9	7.50	180.00	860.8	
8	7760.5	84.00	180.00	7294.8	-897.7	-522.9	0.00	0.00	934.2	
9	7883.0	90.13	180.00	7301.0	-1020.0	-522.9	5.00	0.00	1056.2	
10	9840.0	90.13	180.00	7296.7	-2977.0	-522.9	0.00	0.00	3007.7	WP 1
11	9968.5	90.13	176.14	7296.4	-3105.4	-518.6	3.00	-90.02	3135.4	
12	11986.4	90.13	176.14	7292.0	-5118.7	-382.9	0.00	0.00	5133.0	DRILL TARGET BHL 500'FSL & 764'FWL

DRILL TARGET BHL 500'FSL & 764'FWL

WP 1

PERMIT BHL 500'FSL & 624'FWL

Vertical Section at 184.28° (550 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T6N-R66W

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

Simonson/Schaefer 7E-423

Wellbore #1

Plan: Plan #2 (8-15-12)

Standard Planning Report

15 August, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

Project	SEC.6-T6N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	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 7E-423					
Well Position	+N-S	0.0 ft	Northing:	1,429,286.43 ft	Latitude:	40.509850
	+E-W	0.0 ft	Easting:	3,186,789.95 ft	Longitude:	-104.828230
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,891.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/13/2012	8.75	67.09	53,059

Design	Plan #2 (8-15-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	184.28

Plan Sections										
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	
1,431.4	8.63	255.01	1,429.7	-8.4	-31.3	2.00	2.00	0.00	255.01	
4,607.8	8.63	255.01	4,570.3	-131.6	-491.6	0.00	0.00	0.00	0.00	
5,039.2	0.00	0.00	5,000.0	-140.0	-522.9	2.00	-2.00	0.00	180.00	
6,566.5	0.00	0.00	6,527.3	-140.0	-522.9	0.00	0.00	0.00	0.00	
7,686.5	84.00	180.00	7,287.0	-824.1	-522.9	7.50	7.50	0.00	180.00	
7,760.5	84.00	180.00	7,294.8	-897.7	-522.9	0.00	0.00	0.00	0.00	
7,883.0	90.13	180.00	7,301.0	-1,020.0	-522.9	5.00	5.00	0.00	0.00	
9,840.0	90.13	180.00	7,296.7	-2,977.0	-522.9	0.00	0.00	0.00	0.00	WP 1
9,968.5	90.13	176.14	7,296.4	-3,105.4	-518.6	3.00	0.00	-3.00	-90.02	
11,986.4	90.13	176.14	7,292.0	-5,118.7	-382.9	0.00	0.00	0.00	0.00	DRILL TARGET B-

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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
KOP #1									
1,040.0	0.80	255.01	1,040.0	-0.1	-0.3	0.1	2.00	2.00	0.00
1,080.0	1.60	255.01	1,080.0	-0.3	-1.1	0.4	2.00	2.00	0.00
1,120.0	2.40	255.01	1,120.0	-0.6	-2.4	0.8	2.00	2.00	0.00
1,160.0	3.20	255.01	1,159.9	-1.2	-4.3	1.5	2.00	2.00	0.00
1,200.0	4.00	255.01	1,199.8	-1.8	-6.7	2.3	2.00	2.00	0.00
1,240.0	4.80	255.01	1,239.7	-2.6	-9.7	3.3	2.00	2.00	0.00
1,280.0	5.60	255.01	1,279.6	-3.5	-13.2	4.5	2.00	2.00	0.00
1,320.0	6.40	255.01	1,319.3	-4.6	-17.2	5.9	2.00	2.00	0.00
1,360.0	7.20	255.01	1,359.1	-5.8	-21.8	7.5	2.00	2.00	0.00
1,400.0	8.00	255.01	1,398.7	-7.2	-26.9	9.2	2.00	2.00	0.00
1,431.4	8.63	255.01	1,429.7	-8.4	-31.3	10.7	2.00	2.00	0.00
1,440.0	8.63	255.01	1,438.3	-8.7	-32.6	11.1	0.00	0.00	0.00
1,480.0	8.63	255.01	1,477.8	-10.3	-38.4	13.1	0.00	0.00	0.00
1,520.0	8.63	255.01	1,517.4	-11.8	-44.2	15.1	0.00	0.00	0.00
1,560.0	8.63	255.01	1,556.9	-13.4	-50.0	17.1	0.00	0.00	0.00
1,600.0	8.63	255.01	1,596.5	-14.9	-55.7	19.0	0.00	0.00	0.00
1,640.0	8.63	255.01	1,636.0	-16.5	-61.5	21.0	0.00	0.00	0.00
1,680.0	8.63	255.01	1,675.6	-18.0	-67.3	23.0	0.00	0.00	0.00
1,720.0	8.63	255.01	1,715.1	-19.6	-73.1	25.0	0.00	0.00	0.00
1,760.0	8.63	255.01	1,754.7	-21.1	-78.9	27.0	0.00	0.00	0.00
1,800.0	8.63	255.01	1,794.2	-22.7	-84.7	28.9	0.00	0.00	0.00
1,840.0	8.63	255.01	1,833.7	-24.2	-90.5	30.9	0.00	0.00	0.00
1,880.0	8.63	255.01	1,873.3	-25.8	-96.3	32.9	0.00	0.00	0.00
1,920.0	8.63	255.01	1,912.8	-27.3	-102.1	34.9	0.00	0.00	0.00
1,960.0	8.63	255.01	1,952.4	-28.9	-107.9	36.9	0.00	0.00	0.00

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Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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	8.63	255.01	1,991.9	-30.4	-113.7	38.8	0.00	0.00	0.00
2,040.0	8.63	255.01	2,031.5	-32.0	-119.5	40.8	0.00	0.00	0.00
2,080.0	8.63	255.01	2,071.0	-33.5	-125.3	42.8	0.00	0.00	0.00
2,120.0	8.63	255.01	2,110.6	-35.1	-131.1	44.8	0.00	0.00	0.00
2,160.0	8.63	255.01	2,150.1	-36.7	-136.9	46.8	0.00	0.00	0.00
2,200.0	8.63	255.01	2,189.7	-38.2	-142.7	48.7	0.00	0.00	0.00
2,240.0	8.63	255.01	2,229.2	-39.8	-148.5	50.7	0.00	0.00	0.00
2,280.0	8.63	255.01	2,268.8	-41.3	-154.3	52.7	0.00	0.00	0.00
2,320.0	8.63	255.01	2,308.3	-42.9	-160.1	54.7	0.00	0.00	0.00
2,360.0	8.63	255.01	2,347.9	-44.4	-165.9	56.7	0.00	0.00	0.00
2,400.0	8.63	255.01	2,387.4	-46.0	-171.7	58.6	0.00	0.00	0.00
2,440.0	8.63	255.01	2,427.0	-47.5	-177.5	60.6	0.00	0.00	0.00
2,480.0	8.63	255.01	2,466.5	-49.1	-183.3	62.6	0.00	0.00	0.00
2,520.0	8.63	255.01	2,506.1	-50.6	-189.1	64.6	0.00	0.00	0.00
2,560.0	8.63	255.01	2,545.6	-52.2	-194.9	66.6	0.00	0.00	0.00
2,600.0	8.63	255.01	2,585.1	-53.7	-200.6	68.5	0.00	0.00	0.00
2,640.0	8.63	255.01	2,624.7	-55.3	-206.4	70.5	0.00	0.00	0.00
2,680.0	8.63	255.01	2,664.2	-56.8	-212.2	72.5	0.00	0.00	0.00
2,720.0	8.63	255.01	2,703.8	-58.4	-218.0	74.5	0.00	0.00	0.00
2,760.0	8.63	255.01	2,743.3	-59.9	-223.8	76.5	0.00	0.00	0.00
2,800.0	8.63	255.01	2,782.9	-61.5	-229.6	78.4	0.00	0.00	0.00
2,840.0	8.63	255.01	2,822.4	-63.0	-235.4	80.4	0.00	0.00	0.00
2,880.0	8.63	255.01	2,862.0	-64.6	-241.2	82.4	0.00	0.00	0.00
2,920.0	8.63	255.01	2,901.5	-66.1	-247.0	84.4	0.00	0.00	0.00
2,960.0	8.63	255.01	2,941.1	-67.7	-252.8	86.4	0.00	0.00	0.00
3,000.0	8.63	255.01	2,980.6	-69.2	-258.6	88.3	0.00	0.00	0.00
3,040.0	8.63	255.01	3,020.2	-70.8	-264.4	90.3	0.00	0.00	0.00
3,080.0	8.63	255.01	3,059.7	-72.3	-270.2	92.3	0.00	0.00	0.00
3,120.0	8.63	255.01	3,099.3	-73.9	-276.0	94.3	0.00	0.00	0.00
3,160.0	8.63	255.01	3,138.8	-75.4	-281.8	96.3	0.00	0.00	0.00
3,200.0	8.63	255.01	3,178.4	-77.0	-287.6	98.2	0.00	0.00	0.00
3,240.0	8.63	255.01	3,217.9	-78.6	-293.4	100.2	0.00	0.00	0.00
3,280.0	8.63	255.01	3,257.5	-80.1	-299.2	102.2	0.00	0.00	0.00
3,320.0	8.63	255.01	3,297.0	-81.7	-305.0	104.2	0.00	0.00	0.00
3,360.0	8.63	255.01	3,336.5	-83.2	-310.8	106.2	0.00	0.00	0.00
3,400.0	8.63	255.01	3,376.1	-84.8	-316.6	108.1	0.00	0.00	0.00
3,440.0	8.63	255.01	3,415.6	-86.3	-322.4	110.1	0.00	0.00	0.00
3,480.0	8.63	255.01	3,455.2	-87.9	-328.2	112.1	0.00	0.00	0.00
3,520.0	8.63	255.01	3,494.7	-89.4	-334.0	114.1	0.00	0.00	0.00
3,560.0	8.63	255.01	3,534.3	-91.0	-339.8	116.1	0.00	0.00	0.00
3,600.0	8.63	255.01	3,573.8	-92.5	-345.6	118.0	0.00	0.00	0.00
3,640.0	8.63	255.01	3,613.4	-94.1	-351.3	120.0	0.00	0.00	0.00
3,680.0	8.63	255.01	3,652.9	-95.6	-357.1	122.0	0.00	0.00	0.00
3,720.0	8.63	255.01	3,692.5	-97.2	-362.9	124.0	0.00	0.00	0.00
3,760.0	8.63	255.01	3,732.0	-98.7	-368.7	126.0	0.00	0.00	0.00
3,800.0	8.63	255.01	3,771.6	-100.3	-374.5	127.9	0.00	0.00	0.00
3,840.0	8.63	255.01	3,811.1	-101.8	-380.3	129.9	0.00	0.00	0.00
3,880.0	8.63	255.01	3,850.7	-103.4	-386.1	131.9	0.00	0.00	0.00
3,920.0	8.63	255.01	3,890.2	-104.9	-391.9	133.9	0.00	0.00	0.00
3,960.0	8.63	255.01	3,929.8	-106.5	-397.7	135.9	0.00	0.00	0.00
4,000.0	8.63	255.01	3,969.3	-108.0	-403.5	137.8	0.00	0.00	0.00
4,040.0	8.63	255.01	4,008.9	-109.6	-409.3	139.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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	8.63	255.01	4,048.4	-111.1	-415.1	141.8	0.00	0.00	0.00
4,120.0	8.63	255.01	4,088.0	-112.7	-420.9	143.8	0.00	0.00	0.00
4,160.0	8.63	255.01	4,127.5	-114.2	-426.7	145.8	0.00	0.00	0.00
4,200.0	8.63	255.01	4,167.0	-115.8	-432.5	147.7	0.00	0.00	0.00
4,240.0	8.63	255.01	4,206.6	-117.3	-438.3	149.7	0.00	0.00	0.00
4,280.0	8.63	255.01	4,246.1	-118.9	-444.1	151.7	0.00	0.00	0.00
4,320.0	8.63	255.01	4,285.7	-120.4	-449.9	153.7	0.00	0.00	0.00
4,360.0	8.63	255.01	4,325.2	-122.0	-455.7	155.7	0.00	0.00	0.00
4,400.0	8.63	255.01	4,364.8	-123.6	-461.5	157.6	0.00	0.00	0.00
4,440.0	8.63	255.01	4,404.3	-125.1	-467.3	159.6	0.00	0.00	0.00
4,480.0	8.63	255.01	4,443.9	-126.7	-473.1	161.6	0.00	0.00	0.00
4,520.0	8.63	255.01	4,483.4	-128.2	-478.9	163.6	0.00	0.00	0.00
4,560.0	8.63	255.01	4,523.0	-129.8	-484.7	165.6	0.00	0.00	0.00
4,600.0	8.63	255.01	4,562.5	-131.3	-490.5	167.5	0.00	0.00	0.00
4,607.8	8.63	255.01	4,570.3	-131.6	-491.6	167.9	0.00	0.00	0.00
4,640.0	7.98	255.01	4,602.1	-132.8	-496.1	169.5	2.00	-2.00	0.00
4,680.0	7.18	255.01	4,641.7	-134.2	-501.2	171.2	2.00	-2.00	0.00
4,720.0	6.38	255.01	4,681.5	-135.4	-505.7	172.8	2.00	-2.00	0.00
4,760.0	5.58	255.01	4,721.2	-136.5	-509.8	174.1	2.00	-2.00	0.00
4,800.0	4.78	255.01	4,761.1	-137.4	-513.3	175.3	2.00	-2.00	0.00
4,840.0	3.98	255.01	4,801.0	-138.2	-516.2	176.3	2.00	-2.00	0.00
4,880.0	3.18	255.01	4,840.9	-138.9	-518.6	177.2	2.00	-2.00	0.00
4,920.0	2.38	255.01	4,880.8	-139.4	-520.5	177.8	2.00	-2.00	0.00
4,960.0	1.58	255.01	4,920.8	-139.7	-521.8	178.3	2.00	-2.00	0.00
5,000.0	0.78	255.01	4,960.8	-139.9	-522.6	178.5	2.00	-2.00	0.00
5,039.2	0.00	0.00	5,000.0	-140.0	-522.9	178.6	2.00	-2.00	0.00
5,040.0	0.00	0.00	5,000.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,080.0	0.00	0.00	5,040.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,120.0	0.00	0.00	5,080.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,160.0	0.00	0.00	5,120.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,160.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,240.0	0.00	0.00	5,200.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,280.0	0.00	0.00	5,240.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,320.0	0.00	0.00	5,280.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,360.0	0.00	0.00	5,320.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,360.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,440.0	0.00	0.00	5,400.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,480.0	0.00	0.00	5,440.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,520.0	0.00	0.00	5,480.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,560.0	0.00	0.00	5,520.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,560.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,640.0	0.00	0.00	5,600.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,680.0	0.00	0.00	5,640.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,720.0	0.00	0.00	5,680.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,760.0	0.00	0.00	5,720.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,760.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,840.0	0.00	0.00	5,800.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,880.0	0.00	0.00	5,840.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,920.0	0.00	0.00	5,880.8	-140.0	-522.9	178.6	0.00	0.00	0.00
5,960.0	0.00	0.00	5,920.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,960.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,040.0	0.00	0.00	6,000.8	-140.0	-522.9	178.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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	6,040.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,120.0	0.00	0.00	6,080.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,160.0	0.00	0.00	6,120.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,160.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,200.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,240.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,280.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,320.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,360.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,400.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,440.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,480.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,520.8	-140.0	-522.9	178.6	0.00	0.00	0.00
6,566.5	0.00	0.00	6,527.3	-140.0	-522.9	178.6	0.00	0.00	0.00
KOP #2									
6,600.0	2.52	180.00	6,560.8	-140.7	-522.9	179.3	7.51	7.51	0.00
6,640.0	5.52	180.00	6,600.7	-143.5	-522.9	182.1	7.50	7.50	0.00
6,680.0	8.52	180.00	6,640.4	-148.4	-522.9	187.0	7.50	7.50	0.00
6,720.0	11.52	180.00	6,679.8	-155.4	-522.9	193.9	7.50	7.50	0.00
6,760.0	14.52	180.00	6,718.7	-164.4	-522.9	202.9	7.50	7.50	0.00
6,800.0	17.52	180.00	6,757.2	-175.4	-522.9	213.9	7.50	7.50	0.00
6,840.0	20.52	180.00	6,795.0	-188.4	-522.9	226.9	7.50	7.50	0.00
6,880.0	23.52	180.00	6,832.1	-203.4	-522.9	241.9	7.50	7.50	0.00
6,920.0	26.52	180.00	6,868.3	-220.4	-522.9	258.7	7.50	7.50	0.00
6,960.0	29.52	180.00	6,903.6	-239.1	-522.9	277.5	7.50	7.50	0.00
7,000.0	32.52	180.00	6,937.9	-259.7	-522.9	298.0	7.50	7.50	0.00
7,040.0	35.52	180.00	6,971.1	-282.1	-522.9	320.3	7.50	7.50	0.00
7,080.0	38.52	180.00	7,003.0	-306.2	-522.9	344.4	7.50	7.50	0.00
7,120.0	41.52	180.00	7,033.6	-331.9	-522.9	370.0	7.50	7.50	0.00
7,160.0	44.52	180.00	7,062.9	-359.2	-522.9	397.2	7.50	7.50	0.00
7,200.0	47.51	180.00	7,090.6	-388.0	-522.9	425.9	7.50	7.50	0.00
7,240.0	50.51	180.00	7,116.9	-418.2	-522.9	456.0	7.50	7.50	0.00
7,280.0	53.51	180.00	7,141.5	-449.7	-522.9	487.4	7.50	7.50	0.00
7,320.0	56.51	180.00	7,164.4	-482.5	-522.9	520.1	7.50	7.50	0.00
7,360.0	59.51	180.00	7,185.6	-516.4	-522.9	554.0	7.50	7.50	0.00
7,400.0	62.51	180.00	7,205.0	-551.4	-522.9	588.8	7.50	7.50	0.00
7,440.0	65.51	180.00	7,222.5	-587.3	-522.9	624.7	7.50	7.50	0.00
7,480.0	68.51	180.00	7,238.1	-624.1	-522.9	661.4	7.50	7.50	0.00
7,520.0	71.51	180.00	7,251.8	-661.7	-522.9	698.9	7.50	7.50	0.00
7,560.0	74.51	180.00	7,263.5	-700.0	-522.9	737.0	7.50	7.50	0.00
7,600.0	77.51	180.00	7,273.1	-738.8	-522.9	775.7	7.50	7.50	0.00
7,640.0	80.51	180.00	7,280.8	-778.1	-522.9	814.9	7.50	7.50	0.00
7,680.0	83.51	180.00	7,286.3	-817.7	-522.9	854.4	7.50	7.50	0.00
7,686.5	84.00	180.00	7,287.0	-824.1	-522.9	860.8	7.46	7.46	0.00
7"									
7,720.0	84.00	180.00	7,290.5	-857.4	-522.9	894.1	0.00	0.00	0.00
7,760.0	84.00	180.00	7,294.7	-897.2	-522.9	933.7	0.00	0.00	0.00
7,760.5	84.00	180.00	7,294.8	-897.7	-522.9	934.2	0.00	0.00	0.00
7,800.0	85.98	180.00	7,298.2	-937.1	-522.9	973.5	5.00	5.00	0.00
7,840.0	87.98	180.00	7,300.3	-977.0	-522.9	1,013.3	5.00	5.00	0.00
7,880.0	89.98	180.00	7,301.0	-1,017.0	-522.9	1,053.2	5.00	5.00	0.00
7,883.0	90.13	180.00	7,301.0	-1,020.0	-522.9	1,056.2	5.00	5.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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)
End of Build									
7,920.0	90.13	180.00	7,301.0	-1,057.0	-522.9	1,093.1	0.00	0.00	0.00
7,960.0	90.13	180.00	7,300.9	-1,097.0	-522.9	1,132.9	0.00	0.00	0.00
8,000.0	90.13	180.00	7,300.8	-1,137.0	-522.9	1,172.8	0.00	0.00	0.00
8,040.0	90.13	180.00	7,300.7	-1,177.0	-522.9	1,212.7	0.00	0.00	0.00
8,080.0	90.13	180.00	7,300.6	-1,217.0	-522.9	1,252.6	0.00	0.00	0.00
8,120.0	90.13	180.00	7,300.5	-1,257.0	-522.9	1,292.5	0.00	0.00	0.00
8,160.0	90.13	180.00	7,300.4	-1,297.0	-522.9	1,332.4	0.00	0.00	0.00
8,200.0	90.13	180.00	7,300.3	-1,337.0	-522.9	1,372.3	0.00	0.00	0.00
8,240.0	90.13	180.00	7,300.2	-1,377.0	-522.9	1,412.2	0.00	0.00	0.00
8,280.0	90.13	180.00	7,300.2	-1,417.0	-522.9	1,452.1	0.00	0.00	0.00
8,320.0	90.13	180.00	7,300.1	-1,457.0	-522.9	1,491.9	0.00	0.00	0.00
8,360.0	90.13	180.00	7,300.0	-1,497.0	-522.9	1,531.8	0.00	0.00	0.00
8,400.0	90.13	180.00	7,299.9	-1,537.0	-522.9	1,571.7	0.00	0.00	0.00
8,440.0	90.13	180.00	7,299.8	-1,577.0	-522.9	1,611.6	0.00	0.00	0.00
8,480.0	90.13	180.00	7,299.7	-1,617.0	-522.9	1,651.5	0.00	0.00	0.00
8,520.0	90.13	180.00	7,299.6	-1,657.0	-522.9	1,691.4	0.00	0.00	0.00
8,560.0	90.13	180.00	7,299.5	-1,697.0	-522.9	1,731.3	0.00	0.00	0.00
8,600.0	90.13	180.00	7,299.4	-1,737.0	-522.9	1,771.2	0.00	0.00	0.00
8,640.0	90.13	180.00	7,299.4	-1,777.0	-522.9	1,811.1	0.00	0.00	0.00
8,680.0	90.13	180.00	7,299.3	-1,817.0	-522.9	1,850.9	0.00	0.00	0.00
8,720.0	90.13	180.00	7,299.2	-1,857.0	-522.9	1,890.8	0.00	0.00	0.00
8,760.0	90.13	180.00	7,299.1	-1,897.0	-522.9	1,930.7	0.00	0.00	0.00
8,800.0	90.13	180.00	7,299.0	-1,937.0	-522.9	1,970.6	0.00	0.00	0.00
8,840.0	90.13	180.00	7,298.9	-1,977.0	-522.9	2,010.5	0.00	0.00	0.00
8,880.0	90.13	180.00	7,298.8	-2,017.0	-522.9	2,050.4	0.00	0.00	0.00
8,920.0	90.13	180.00	7,298.7	-2,057.0	-522.9	2,090.3	0.00	0.00	0.00
8,960.0	90.13	180.00	7,298.7	-2,097.0	-522.9	2,130.2	0.00	0.00	0.00
9,000.0	90.13	180.00	7,298.6	-2,137.0	-522.9	2,170.0	0.00	0.00	0.00
9,040.0	90.13	180.00	7,298.5	-2,177.0	-522.9	2,209.9	0.00	0.00	0.00
9,080.0	90.13	180.00	7,298.4	-2,217.0	-522.9	2,249.8	0.00	0.00	0.00
9,120.0	90.13	180.00	7,298.3	-2,257.0	-522.9	2,289.7	0.00	0.00	0.00
9,160.0	90.13	180.00	7,298.2	-2,297.0	-522.9	2,329.6	0.00	0.00	0.00
9,200.0	90.13	180.00	7,298.1	-2,337.0	-522.9	2,369.5	0.00	0.00	0.00
9,240.0	90.13	180.00	7,298.0	-2,377.0	-522.9	2,409.4	0.00	0.00	0.00
9,280.0	90.13	180.00	7,297.9	-2,417.0	-522.9	2,449.3	0.00	0.00	0.00
9,320.0	90.13	180.00	7,297.9	-2,457.0	-522.9	2,489.2	0.00	0.00	0.00
9,360.0	90.13	180.00	7,297.8	-2,497.0	-522.9	2,529.0	0.00	0.00	0.00
9,400.0	90.13	180.00	7,297.7	-2,537.0	-522.9	2,568.9	0.00	0.00	0.00
9,440.0	90.13	180.00	7,297.6	-2,577.0	-522.9	2,608.8	0.00	0.00	0.00
9,480.0	90.13	180.00	7,297.5	-2,617.0	-522.9	2,648.7	0.00	0.00	0.00
9,520.0	90.13	180.00	7,297.4	-2,657.0	-522.9	2,688.6	0.00	0.00	0.00
9,560.0	90.13	180.00	7,297.3	-2,697.0	-522.9	2,728.5	0.00	0.00	0.00
9,600.0	90.13	180.00	7,297.2	-2,737.0	-522.9	2,768.4	0.00	0.00	0.00
9,640.0	90.13	180.00	7,297.1	-2,777.0	-522.9	2,808.3	0.00	0.00	0.00
9,680.0	90.13	180.00	7,297.1	-2,817.0	-522.9	2,848.2	0.00	0.00	0.00
9,720.0	90.13	180.00	7,297.0	-2,857.0	-522.9	2,888.0	0.00	0.00	0.00
9,760.0	90.13	180.00	7,296.9	-2,897.0	-522.9	2,927.9	0.00	0.00	0.00
9,800.0	90.13	180.00	7,296.8	-2,937.0	-522.9	2,967.8	0.00	0.00	0.00
9,840.0	90.13	180.00	7,296.7	-2,977.0	-522.9	3,007.7	0.00	0.00	0.00
WP 1									
9,880.0	90.13	178.80	7,296.6	-3,017.0	-522.5	3,047.6	3.00	0.00	-3.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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)
9,920.0	90.13	177.60	7,296.5	-3,057.0	-521.2	3,087.3	3.00	0.00	-3.00
9,960.0	90.13	176.40	7,296.4	-3,096.9	-519.1	3,127.0	3.00	0.00	-3.00
9,968.5	90.13	176.14	7,296.4	-3,105.4	-518.6	3,135.4	3.00	0.00	-3.00
10,000.0	90.13	176.14	7,296.3	-3,136.8	-516.5	3,166.6	0.00	0.00	0.00
10,040.0	90.13	176.14	7,296.3	-3,176.7	-513.8	3,206.2	0.00	0.00	0.00
10,080.0	90.13	176.14	7,296.2	-3,216.6	-511.1	3,245.8	0.00	0.00	0.00
10,120.0	90.13	176.14	7,296.1	-3,256.6	-508.4	3,285.4	0.00	0.00	0.00
10,160.0	90.13	176.14	7,296.0	-3,296.5	-505.7	3,325.0	0.00	0.00	0.00
10,200.0	90.13	176.14	7,295.9	-3,336.4	-503.0	3,364.6	0.00	0.00	0.00
10,240.0	90.13	176.14	7,295.8	-3,376.3	-500.3	3,404.2	0.00	0.00	0.00
10,280.0	90.13	176.14	7,295.7	-3,416.2	-497.6	3,443.8	0.00	0.00	0.00
10,320.0	90.13	176.14	7,295.6	-3,456.1	-494.9	3,483.4	0.00	0.00	0.00
10,360.0	90.13	176.14	7,295.6	-3,496.0	-492.3	3,523.0	0.00	0.00	0.00
10,400.0	90.13	176.14	7,295.5	-3,535.9	-489.6	3,562.6	0.00	0.00	0.00
10,440.0	90.13	176.14	7,295.4	-3,575.8	-486.9	3,602.2	0.00	0.00	0.00
10,480.0	90.13	176.14	7,295.3	-3,615.7	-484.2	3,641.8	0.00	0.00	0.00
10,520.0	90.13	176.14	7,295.2	-3,655.6	-481.5	3,681.4	0.00	0.00	0.00
10,560.0	90.13	176.14	7,295.1	-3,695.6	-478.8	3,721.0	0.00	0.00	0.00
10,600.0	90.13	176.14	7,295.0	-3,735.5	-476.1	3,760.6	0.00	0.00	0.00
10,640.0	90.13	176.14	7,294.9	-3,775.4	-473.4	3,800.2	0.00	0.00	0.00
10,680.0	90.13	176.14	7,294.9	-3,815.3	-470.7	3,839.8	0.00	0.00	0.00
10,720.0	90.13	176.14	7,294.8	-3,855.2	-468.0	3,879.4	0.00	0.00	0.00
10,760.0	90.13	176.14	7,294.7	-3,895.1	-465.4	3,919.0	0.00	0.00	0.00
10,800.0	90.13	176.14	7,294.6	-3,935.0	-462.7	3,958.6	0.00	0.00	0.00
10,840.0	90.13	176.14	7,294.5	-3,974.9	-460.0	3,998.2	0.00	0.00	0.00
10,880.0	90.13	176.14	7,294.4	-4,014.8	-457.3	4,037.8	0.00	0.00	0.00
10,920.0	90.13	176.14	7,294.3	-4,054.7	-454.6	4,077.4	0.00	0.00	0.00
10,960.0	90.13	176.14	7,294.2	-4,094.7	-451.9	4,117.0	0.00	0.00	0.00
11,000.0	90.13	176.14	7,294.2	-4,134.6	-449.2	4,156.6	0.00	0.00	0.00
11,040.0	90.13	176.14	7,294.1	-4,174.5	-446.5	4,196.1	0.00	0.00	0.00
11,080.0	90.13	176.14	7,294.0	-4,214.4	-443.8	4,235.7	0.00	0.00	0.00
11,120.0	90.13	176.14	7,293.9	-4,254.3	-441.2	4,275.3	0.00	0.00	0.00
11,160.0	90.13	176.14	7,293.8	-4,294.2	-438.5	4,314.9	0.00	0.00	0.00
11,200.0	90.13	176.14	7,293.7	-4,334.1	-435.8	4,354.5	0.00	0.00	0.00
11,240.0	90.13	176.14	7,293.6	-4,374.0	-433.1	4,394.1	0.00	0.00	0.00
11,280.0	90.13	176.14	7,293.5	-4,413.9	-430.4	4,433.7	0.00	0.00	0.00
11,320.0	90.13	176.14	7,293.5	-4,453.8	-427.7	4,473.3	0.00	0.00	0.00
11,360.0	90.13	176.14	7,293.4	-4,493.7	-425.0	4,512.9	0.00	0.00	0.00
11,400.0	90.13	176.14	7,293.3	-4,533.7	-422.3	4,552.5	0.00	0.00	0.00
11,440.0	90.13	176.14	7,293.2	-4,573.6	-419.6	4,592.1	0.00	0.00	0.00
11,480.0	90.13	176.14	7,293.1	-4,613.5	-416.9	4,631.7	0.00	0.00	0.00
11,520.0	90.13	176.14	7,293.0	-4,653.4	-414.3	4,671.3	0.00	0.00	0.00
11,560.0	90.13	176.14	7,292.9	-4,693.3	-411.6	4,710.9	0.00	0.00	0.00
11,600.0	90.13	176.14	7,292.8	-4,733.2	-408.9	4,750.5	0.00	0.00	0.00
11,640.0	90.13	176.14	7,292.8	-4,773.1	-406.2	4,790.1	0.00	0.00	0.00
11,680.0	90.13	176.14	7,292.7	-4,813.0	-403.5	4,829.7	0.00	0.00	0.00
11,720.0	90.13	176.14	7,292.6	-4,852.9	-400.8	4,869.3	0.00	0.00	0.00
11,760.0	90.13	176.14	7,292.5	-4,892.8	-398.1	4,908.9	0.00	0.00	0.00
11,800.0	90.13	176.14	7,292.4	-4,932.7	-395.4	4,948.5	0.00	0.00	0.00
11,840.0	90.13	176.14	7,292.3	-4,972.7	-392.7	4,988.1	0.00	0.00	0.00
11,880.0	90.13	176.14	7,292.2	-5,012.6	-390.1	5,027.7	0.00	0.00	0.00
11,920.0	90.13	176.14	7,292.1	-5,052.5	-387.4	5,067.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Project:	SEC.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	North Reference:	True
Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

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)
11,960.0	90.13	176.14	7,292.1	-5,092.4	-384.7	5,106.9	0.00	0.00	0.00
11,976.9	90.13	176.14	7,292.0	-5,109.3	-383.5	5,123.6	0.00	0.00	0.00
PERMIT BHL 500'FSL & 624'FWL									
11,986.4	90.13	176.14	7,292.0	-5,118.7	-382.9	5,133.0	0.00	0.00	0.00
DRILL TARGET BHL 500'FSL & 764'FWL									

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
DRILL TARGET BHL	- plan hits target center	0.00	0.00	7,292.0	-5,118.7	-382.9	1,424,165.16	3,186,445.85	40.495800 -104.829607
- Point									
PERMIT BHL 500'FSL	- plan misses target center by 139.7ft at 11976.9ft MD (7292.0 TVD, -5109.3 N, -383.5 E)	0.00	0.00	7,292.0	-5,118.7	-522.9	1,424,164.14	3,186,305.88	40.495800 -104.830110
- Point									
WP 1	- plan hits target center	0.00	0.00	7,296.7	-2,977.0	-522.9	1,426,305.66	3,186,289.63	40.501679 -104.830110
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,686.5	7,287.0	7"		7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,566.5	6,527.3	-140.0	-522.9	KOP #2
7,883.0	7,301.0	-1,020.0	-522.9	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T6N-R66W

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

Simonson/Schaefer 7E-423

Wellbore #1

Plan #2 (8-15-12)

Anticollision Report

15 August, 2012



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (8-15-12)		
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	8/15/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,986.4	Plan #2 (8-15-12) (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						
Hergert 1 (P&A) - Wellbore #1 - Wellbore #1	11,792.1	7,288.4	156.2	53.0	1.513	CC, ES
Hergert 1 (P&A) - Wellbore #1 - Wellbore #1	11,800.0	7,288.4	156.4	53.0	1.513	SF
Simonson/Schaefer 7E-203 - Wellbore #1 - Plan #1 (8-9-	166.3	167.3	30.6	30.1	58.241	CC
Simonson/Schaefer 7E-203 - Wellbore #1 - Plan #1 (8-9-	200.0	201.0	30.6	29.9	45.220	ES
Simonson/Schaefer 7E-203 - Wellbore #1 - Plan #1 (8-9-	11,986.4	11,964.8	592.6	402.7	3.120	SF
Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1 (8-9-	1,000.0	1,000.0	30.6	26.3	7.162	CC, ES
Simonson/Schaefer 7J-243 - Wellbore #1 - Plan #1 (8-9-	11,986.4	11,889.9	328.2	155.3	1.899	SF

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Hergert 1 (P&A) - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 ft
Survey Program: 7300-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
10,900.0	7,294.4	7,290.4	7,290.4	79.0	8.2	90.72	-4,935.4	-551.8	905.7	819.6	86.13	10.516	
11,000.0	7,294.2	7,290.2	7,290.2	80.9	8.2	90.64	-4,935.4	-551.8	807.4	719.4	88.04	9.171	
11,100.0	7,293.9	7,289.9	7,289.9	82.7	8.2	90.56	-4,935.4	-551.8	709.6	619.6	89.95	7.888	
11,200.0	7,293.7	7,289.7	7,289.7	84.6	8.2	90.48	-4,935.4	-551.8	612.4	520.5	91.87	6.666	
11,300.0	7,293.5	7,289.5	7,289.5	86.5	8.2	90.40	-4,935.4	-551.8	516.3	422.6	93.79	5.506	
11,400.0	7,293.3	7,289.3	7,289.3	88.4	8.2	90.31	-4,935.4	-551.8	422.1	326.4	95.70	4.411	
11,500.0	7,293.1	7,289.1	7,289.1	90.3	8.2	90.23	-4,935.4	-551.8	331.3	233.7	97.62	3.393	
11,600.0	7,292.8	7,288.8	7,288.8	92.2	8.2	90.15	-4,935.4	-551.8	247.6	148.1	99.54	2.488	
11,700.0	7,292.6	7,288.6	7,288.6	94.1	8.2	90.07	-4,935.4	-551.8	181.3	79.9	101.47	1.787	
11,792.1	7,292.4	7,288.4	7,288.4	95.9	8.2	90.00	-4,935.4	-551.8	156.2	53.0	103.24	1.513 CC, ES	
11,800.0	7,292.4	7,288.4	7,288.4	96.0	8.2	89.99	-4,935.4	-551.8	156.4	53.0	103.39	1.513 SF	
11,900.0	7,292.2	7,288.2	7,288.2	97.9	8.2	89.91	-4,935.4	-551.8	189.8	84.5	105.31	1.802	
11,986.4	7,292.0	7,288.0	7,288.0	99.6	8.2	89.84	-4,935.4	-551.8	249.2	142.3	106.98	2.330	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	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		
0.0	0.0	1.0	1.0	0.0	0.0	-89.99	0.0	-30.6	30.6	30.6	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-89.99	0.0	-30.6	30.6	30.4	0.23	134.739		
166.3	166.3	167.3	167.3	0.3	0.3	-89.99	0.0	-30.6	30.6	30.1	0.53	58.241 CC		
200.0	200.0	201.0	201.0	0.3	0.3	-89.99	0.0	-30.6	30.6	29.9	0.68	45.220 ES		
300.0	300.0	300.0	300.0	0.6	0.6	-90.16	-0.1	-32.3	32.3	31.2	1.11	29.056		
400.0	400.0	398.6	398.4	0.8	0.8	-90.57	-0.4	-37.5	37.5	36.0	1.56	24.115		
500.0	500.0	496.8	496.2	1.0	1.0	-91.04	-0.8	-45.9	46.2	44.1	2.03	22.789		
600.0	600.0	594.3	593.0	1.2	1.3	-91.46	-1.5	-57.6	58.2	55.7	2.53	23.029		
700.0	700.0	690.9	688.5	1.5	1.6	-91.81	-2.3	-72.5	73.6	70.5	3.07	23.995		
800.0	800.0	786.8	782.7	1.7	2.0	-92.07	-3.3	-90.3	92.2	88.6	3.65	25.285		
900.0	900.0	884.8	878.8	1.9	2.4	-92.26	-4.3	-109.8	112.1	107.8	4.27	26.274		
1,000.0	1,000.0	982.8	974.8	2.1	2.8	-92.39	-5.4	-129.2	131.9	127.0	4.89	26.961		
1,100.0	1,100.0	1,081.1	1,071.2	2.3	3.2	12.57	-6.4	-148.7	150.1	145.3	4.77	31.435		
1,200.0	1,199.8	1,180.0	1,168.1	2.5	3.7	12.81	-7.5	-168.3	164.9	159.7	5.21	31.635		
1,300.0	1,299.5	1,279.4	1,265.5	2.8	4.1	13.28	-8.6	-188.0	176.4	170.7	5.66	31.161		
1,400.0	1,398.7	1,379.0	1,363.1	3.0	4.5	13.95	-9.7	-207.7	184.4	178.3	6.12	30.149		
1,431.4	1,429.7	1,410.3	1,393.8	3.1	4.7	14.20	-10.0	-213.9	186.3	180.0	6.26	29.742		
1,500.0	1,497.6	1,478.8	1,461.0	3.3	5.0	14.79	-10.8	-227.5	190.0	183.4	6.59	28.808		
1,600.0	1,596.5	1,578.6	1,558.8	3.5	5.4	15.61	-11.8	-247.3	195.4	188.3	7.09	27.577		
1,700.0	1,695.3	1,678.4	1,656.6	3.8	5.9	16.39	-12.9	-267.0	200.8	193.3	7.59	26.479		
1,800.0	1,794.2	1,778.2	1,754.4	4.2	6.3	17.12	-14.0	-286.8	206.3	198.2	8.09	25.497		
1,900.0	1,893.1	1,878.1	1,852.3	4.5	6.7	17.82	-15.1	-306.6	211.9	203.2	8.61	24.614		
2,000.0	1,991.9	1,977.9	1,950.1	4.8	7.2	18.48	-16.2	-326.4	217.4	208.3	9.13	23.817		
2,100.0	2,090.8	2,077.7	2,047.9	5.1	7.6	19.11	-17.2	-346.1	223.0	213.3	9.66	23.094		
2,200.0	2,189.7	2,177.5	2,145.8	5.5	8.1	19.70	-18.3	-365.9	228.6	218.4	10.19	22.436		
2,300.0	2,288.5	2,277.3	2,243.6	5.8	8.5	20.27	-19.4	-385.7	234.2	223.5	10.73	21.835		
2,400.0	2,387.4	2,377.1	2,341.4	6.2	9.0	20.81	-20.5	-405.5	239.8	228.6	11.27	21.284		
2,500.0	2,486.3	2,477.0	2,439.3	6.5	9.4	21.33	-21.6	-425.3	245.5	233.7	11.82	20.777		
2,600.0	2,585.1	2,576.8	2,537.1	6.9	9.9	21.82	-22.6	-445.0	251.2	238.8	12.37	20.310		
2,700.0	2,684.0	2,676.6	2,634.9	7.2	10.3	22.29	-23.7	-464.8	256.9	244.0	12.92	19.878		
2,800.0	2,782.9	2,776.4	2,732.7	7.6	10.7	22.74	-24.8	-484.6	262.6	249.1	13.48	19.478		
2,900.0	2,881.8	2,876.2	2,830.6	7.9	11.2	23.18	-25.9	-504.4	268.4	254.3	14.05	19.106		
3,000.0	2,980.6	2,976.0	2,928.4	8.3	11.6	23.59	-27.0	-524.2	274.1	259.5	14.61	18.759		
3,100.0	3,079.5	3,075.8	3,026.2	8.6	12.1	23.99	-28.0	-543.9	279.9	264.7	15.18	18.435		
3,200.0	3,178.4	3,175.7	3,124.1	9.0	12.5	24.37	-29.1	-563.7	285.6	269.9	15.75	18.132		
3,300.0	3,277.2	3,275.5	3,221.9	9.3	13.0	24.73	-30.2	-583.5	291.4	275.1	16.33	17.848		
3,400.0	3,376.1	3,375.3	3,319.7	9.7	13.4	25.08	-31.3	-603.3	297.2	280.3	16.91	17.582		
3,500.0	3,475.0	3,475.1	3,417.6	10.1	13.9	25.42	-32.4	-623.1	303.0	285.6	17.49	17.331		
3,600.0	3,573.8	3,574.9	3,515.4	10.4	14.3	25.75	-33.5	-642.8	308.9	290.8	18.07	17.095		
3,700.0	3,672.7	3,674.7	3,613.2	10.8	14.8	26.06	-34.5	-662.6	314.7	296.0	18.65	16.872		
3,800.0	3,771.6	3,774.6	3,711.0	11.1	15.2	26.36	-35.6	-682.4	320.5	301.3	19.24	16.661		
3,900.0	3,870.4	3,874.4	3,808.9	11.5	15.7	26.65	-36.7	-702.2	326.4	306.6	19.83	16.461		
4,000.0	3,969.3	3,974.2	3,906.7	11.9	16.1	26.93	-37.8	-721.9	332.2	311.8	20.42	16.272		
4,100.0	4,068.2	4,074.0	4,004.5	12.2	16.6	27.20	-38.9	-741.7	338.1	317.1	21.01	16.093		
4,200.0	4,167.0	4,173.8	4,102.4	12.6	17.0	27.47	-39.9	-761.5	344.0	322.4	21.60	15.922		
4,300.0	4,265.9	4,273.6	4,200.2	12.9	17.4	27.72	-41.0	-781.3	349.8	327.7	22.20	15.760		
4,400.0	4,364.8	4,373.4	4,298.0	13.3	17.9	27.96	-42.1	-801.1	355.7	332.9	22.79	15.606		
4,500.0	4,463.7	4,473.3	4,395.9	13.7	18.3	28.20	-43.2	-820.8	361.6	338.2	23.39	15.459		
4,607.8	4,570.3	4,580.9	4,501.4	14.1	18.8	28.45	-44.3	-842.2	368.0	343.9	24.04	15.307		
4,700.0	4,661.6	4,672.8	4,591.4	14.3	19.2	28.61	-45.3	-860.4	374.7	350.2	24.53	15.274		
4,800.0	4,761.1	4,772.3	4,688.9	14.6	19.7	28.56	-46.4	-880.1	385.0	360.0	24.97	15.415		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7E-203 - 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	4,860.9	4,879.9	4,794.5	14.8	20.1	28.30	-47.5	-900.7	397.7	372.3	25.35	15.690		
5,000.0	4,960.8	4,994.6	4,907.8	14.9	20.4	27.94	-48.5	-918.7	410.0	384.4	25.63	15.999		
5,039.2	5,000.0	5,039.8	4,952.6	15.0	20.5	-77.21	-48.8	-924.5	414.6	388.9	25.72	16.121		
5,100.0	5,060.8	5,110.1	5,022.5	15.1	20.7	-77.50	-49.3	-932.1	421.0	395.1	25.91	16.247		
5,200.0	5,160.8	5,226.4	5,138.5	15.2	20.9	-77.82	-49.7	-941.0	428.4	402.2	26.24	16.327		
5,300.0	5,260.8	5,343.3	5,255.3	15.4	21.1	-77.97	-50.0	-945.2	431.9	405.3	26.58	16.247		
5,400.0	5,360.8	5,449.8	5,361.8	15.5	21.2	-77.98	-50.0	-945.6	432.2	405.2	26.93	16.046		
5,500.0	5,460.8	5,549.8	5,461.8	15.7	21.3	-77.98	-50.0	-945.6	432.2	404.9	27.28	15.842		
5,600.0	5,560.8	5,649.8	5,561.8	15.8	21.4	-77.98	-50.0	-945.6	432.2	404.5	27.63	15.642		
5,700.0	5,660.8	5,749.8	5,661.8	16.0	21.6	-77.98	-50.0	-945.6	432.2	404.2	27.98	15.445		
5,800.0	5,760.8	5,849.8	5,761.8	16.2	21.7	-77.98	-50.0	-945.6	432.2	403.8	28.34	15.252		
5,900.0	5,860.8	5,949.8	5,861.8	16.3	21.8	-77.98	-50.0	-945.6	432.2	403.5	28.69	15.062		
6,000.0	5,960.8	6,049.8	5,961.8	16.5	21.9	-77.98	-50.0	-945.6	432.2	403.1	29.05	14.875		
6,100.0	6,060.8	6,149.8	6,061.8	16.6	22.1	-77.98	-50.0	-945.6	432.2	402.7	29.41	14.692		
6,200.0	6,160.8	6,249.8	6,161.8	16.8	22.2	-77.98	-50.0	-945.6	432.2	402.4	29.78	14.512		
6,300.0	6,260.8	6,349.8	6,261.8	17.0	22.3	-77.98	-50.0	-945.6	432.2	402.0	30.15	14.335		
6,400.0	6,360.8	6,449.8	6,361.8	17.2	22.4	-77.98	-50.0	-945.6	432.2	401.6	30.52	14.162		
6,500.0	6,460.8	6,561.1	6,472.8	17.3	22.6	-78.83	-56.5	-945.6	431.0	400.2	30.82	13.985		
6,566.5	6,527.3	6,634.0	6,544.5	17.4	22.7	-80.52	-69.5	-945.6	428.8	397.9	30.91	13.873		
6,600.0	6,560.8	6,669.9	6,579.3	17.5	22.7	98.49	-78.3	-945.6	427.6	396.7	30.94	13.823		
6,650.0	6,610.6	6,722.6	6,629.5	17.6	22.8	97.00	-94.3	-945.6	426.0	395.0	31.00	13.745		
6,700.0	6,660.1	6,774.5	6,677.8	17.7	22.9	95.49	-113.3	-945.6	424.7	393.7	31.09	13.662		
6,750.0	6,709.0	6,825.5	6,723.8	17.8	23.0	93.96	-135.2	-945.6	423.8	392.5	31.22	13.574		
6,800.0	6,757.2	6,875.7	6,767.6	17.9	23.1	92.41	-159.7	-945.6	423.1	391.7	31.39	13.480		
6,850.0	6,804.3	6,925.1	6,809.1	18.0	23.2	90.87	-186.6	-945.6	422.7	391.1	31.60	13.379		
6,878.3	6,830.5	6,952.8	6,831.5	18.1	23.3	90.00	-202.8	-945.6	422.7	391.0	31.73	13.320		
6,900.0	6,850.3	6,973.8	6,848.2	18.2	23.3	89.34	-215.6	-945.6	422.7	390.9	31.85	13.274		
6,950.0	6,894.9	7,021.8	6,884.8	18.3	23.4	87.81	-246.6	-945.6	423.0	390.9	32.14	13.162		
7,000.0	6,937.9	7,069.1	6,918.9	18.5	23.6	86.31	-279.3	-945.6	423.6	391.1	32.48	13.043		
7,050.0	6,979.2	7,115.7	6,950.5	18.7	23.7	84.83	-313.7	-945.6	424.5	391.6	32.86	12.917		
7,100.0	7,018.5	7,161.8	6,979.6	18.9	23.9	83.39	-349.4	-945.6	425.7	392.4	33.30	12.784		
7,150.0	7,055.7	7,207.4	7,006.2	19.1	24.1	81.99	-386.3	-945.6	427.1	393.3	33.78	12.641		
7,200.0	7,090.6	7,252.4	7,030.3	19.4	24.3	80.63	-424.3	-945.6	428.7	394.3	34.33	12.488		
7,250.0	7,123.2	7,296.9	7,051.9	19.7	24.5	79.32	-463.3	-945.6	430.4	395.5	34.93	12.322		
7,300.0	7,153.2	7,341.0	7,071.0	20.0	24.8	78.06	-503.0	-945.6	432.4	396.8	35.61	12.143		
7,350.0	7,180.5	7,384.6	7,087.6	20.4	25.1	76.86	-543.4	-945.6	434.4	398.1	36.36	11.950		
7,400.0	7,205.0	7,427.9	7,101.8	20.8	25.4	75.72	-584.2	-945.6	436.6	399.4	37.18	11.743		
7,450.0	7,226.6	7,470.8	7,113.5	21.2	25.7	74.64	-625.5	-945.6	438.8	400.7	38.08	11.523		
7,500.0	7,245.2	7,513.4	7,122.9	21.7	26.0	73.63	-667.0	-945.6	441.0	401.9	39.06	11.289		
7,550.0	7,260.7	7,555.6	7,129.9	22.2	26.4	72.69	-708.7	-945.6	443.2	403.0	40.13	11.044		
7,600.0	7,273.1	7,600.0	7,134.7	22.8	26.8	71.77	-752.8	-945.6	445.3	404.0	41.30	10.782		
7,650.0	7,282.4	7,639.4	7,136.8	23.3	27.1	71.01	-792.1	-945.6	447.4	404.9	42.51	10.523		
7,686.5	7,287.0	7,670.3	7,137.1	23.8	27.5	70.46	-823.0	-945.6	448.8	405.4	43.47	10.325		
7,700.0	7,288.4	7,683.8	7,137.0	24.0	27.6	70.28	-836.5	-945.6	449.3	405.6	43.78	10.264		
7,760.5	7,294.8	7,743.8	7,136.6	24.7	28.2	69.48	-896.6	-945.6	451.7	406.5	45.19	9.995		
7,800.0	7,298.2	7,783.2	7,136.3	25.2	28.7	68.98	-935.9	-945.6	453.0	406.7	46.31	9.782		
7,883.0	7,301.0	7,866.1	7,135.7	26.4	29.6	68.52	-1,018.8	-945.6	454.2	405.4	48.88	9.292		
7,900.0	7,301.0	7,883.1	7,135.6	26.6	29.8	68.51	-1,035.8	-945.6	454.3	404.9	49.35	9.205		
8,000.0	7,300.8	7,983.1	7,134.9	28.0	31.1	68.46	-1,135.8	-945.6	454.4	402.3	52.18	8.709		
8,100.0	7,300.6	8,083.1	7,134.2	29.5	32.4	68.40	-1,235.8	-945.6	454.6	399.5	55.10	8.251		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	Offset Datum

Offset Design		Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7E-203 - 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
8,200.0	7,300.3	8,183.1	7,133.5	31.0	33.8	68.35	-1,335.8	-945.6	454.8	396.7	58.10	7.828			
8,300.0	7,300.1	8,283.1	7,132.8	32.6	35.3	68.29	-1,435.8	-945.6	455.0	393.8	61.15	7.440			
8,400.0	7,299.9	8,383.1	7,132.1	34.2	36.8	68.23	-1,535.8	-945.6	455.1	390.9	64.27	7.082			
8,500.0	7,299.7	8,483.1	7,131.4	35.9	38.3	68.18	-1,635.8	-945.6	455.3	387.9	67.43	6.753			
8,600.0	7,299.4	8,583.1	7,130.7	37.6	39.9	68.12	-1,735.8	-945.6	455.5	384.9	70.63	6.450			
8,700.0	7,299.2	8,683.1	7,130.0	39.2	41.5	68.07	-1,835.8	-945.6	455.7	381.8	73.86	6.170			
8,800.0	7,299.0	8,783.1	7,129.3	41.0	43.1	68.01	-1,935.8	-945.6	455.9	378.7	77.12	5.911			
8,900.0	7,298.8	8,883.1	7,128.6	42.7	44.8	67.96	-2,035.8	-945.6	456.0	375.6	80.41	5.671			
9,000.0	7,298.6	8,983.1	7,127.9	44.4	46.4	67.90	-2,135.8	-945.6	456.2	372.5	83.72	5.449			
9,100.0	7,298.3	9,083.1	7,127.2	46.2	48.1	67.85	-2,235.8	-945.6	456.4	369.3	87.05	5.243			
9,200.0	7,298.1	9,183.1	7,126.5	48.0	49.8	67.79	-2,335.8	-945.6	456.6	366.2	90.40	5.051			
9,300.0	7,297.9	9,283.1	7,125.8	49.8	51.6	67.73	-2,435.8	-945.6	456.8	363.0	93.76	4.871			
9,400.0	7,297.7	9,383.1	7,125.1	51.6	53.3	67.68	-2,535.8	-945.6	456.9	359.8	97.14	4.704			
9,500.0	7,297.5	9,483.1	7,124.4	53.4	55.1	67.62	-2,635.8	-945.6	457.1	356.6	100.53	4.547			
9,600.0	7,297.2	9,583.1	7,123.7	55.2	56.8	67.57	-2,735.8	-945.6	457.3	353.4	103.92	4.400			
9,700.0	7,297.0	9,683.1	7,123.0	57.0	58.6	67.51	-2,835.8	-945.6	457.5	350.2	107.33	4.262			
9,800.0	7,296.8	9,783.1	7,122.3	58.8	60.4	67.46	-2,935.8	-945.6	457.7	346.9	110.74	4.133			
9,840.0	7,296.7	9,823.1	7,122.1	59.6	61.1	67.44	-2,975.8	-945.6	457.7	345.6	112.11	4.083			
9,900.0	7,296.6	9,883.1	7,121.6	60.6	62.2	67.43	-3,035.8	-945.6	458.7	345.3	113.46	4.043			
9,968.5	7,296.4	9,951.5	7,121.2	61.7	63.4	67.52	-3,104.2	-945.6	462.0	347.1	114.86	4.022			
10,000.0	7,296.3	9,982.9	7,120.9	62.2	64.0	67.60	-3,135.6	-945.6	464.0	348.0	115.97	4.001			
10,100.0	7,296.1	10,082.7	7,120.2	64.1	65.8	67.86	-3,235.4	-945.6	470.4	350.8	119.62	3.933			
10,200.0	7,295.9	10,182.5	7,119.6	65.9	67.6	68.11	-3,335.1	-945.6	476.8	353.5	123.27	3.868			
10,300.0	7,295.7	10,282.2	7,118.9	67.8	69.4	68.35	-3,434.9	-945.6	483.2	356.3	126.94	3.807			
10,400.0	7,295.5	10,382.0	7,118.2	69.6	71.2	68.59	-3,534.7	-945.6	489.7	359.1	130.62	3.749			
10,500.0	7,295.3	10,481.8	7,117.5	71.5	73.1	68.82	-3,634.4	-945.6	496.1	361.8	134.30	3.694			
10,600.0	7,295.0	10,581.6	7,116.8	73.3	74.9	69.05	-3,734.2	-945.6	502.6	364.6	138.00	3.642			
10,700.0	7,294.8	10,681.3	7,116.1	75.2	76.7	69.27	-3,834.0	-945.6	509.0	367.3	141.71	3.592			
10,800.0	7,294.6	10,781.1	7,115.4	77.1	78.6	69.48	-3,933.8	-945.6	515.5	370.1	145.42	3.545			
10,900.0	7,294.4	10,880.9	7,114.7	79.0	80.4	69.69	-4,033.5	-945.6	521.9	372.8	149.14	3.500			
11,000.0	7,294.2	10,980.6	7,114.0	80.9	82.3	69.90	-4,133.3	-945.6	528.4	375.6	152.87	3.457			
11,100.0	7,293.9	11,080.4	7,113.3	82.7	84.1	70.10	-4,233.1	-945.6	534.9	378.3	156.60	3.416			
11,200.0	7,293.7	11,180.2	7,112.6	84.6	86.0	70.29	-4,332.8	-945.6	541.4	381.1	160.35	3.376			
11,300.0	7,293.5	11,280.0	7,111.9	86.5	87.8	70.48	-4,432.6	-945.6	547.9	383.8	164.09	3.339			
11,400.0	7,293.3	11,379.7	7,111.2	88.4	89.7	70.66	-4,532.4	-945.6	554.4	386.6	167.84	3.303			
11,500.0	7,293.1	11,479.5	7,110.5	90.3	91.5	70.85	-4,632.1	-945.6	560.9	389.3	171.60	3.269			
11,600.0	7,292.8	11,579.3	7,109.8	92.2	93.4	71.02	-4,731.9	-945.6	567.4	392.1	175.36	3.236			
11,700.0	7,292.6	11,679.0	7,109.1	94.1	95.3	71.20	-4,831.7	-945.6	573.9	394.8	179.13	3.204			
11,800.0	7,292.4	11,778.8	7,108.4	96.0	97.1	71.37	-4,931.5	-945.6	580.5	397.6	182.90	3.174			
11,900.0	7,292.2	11,878.6	7,107.7	97.9	99.0	71.53	-5,031.2	-945.6	587.0	400.3	186.68	3.144			
11,986.4	7,292.0	11,964.8	7,107.1	99.6	100.6	71.67	-5,117.4	-945.6	592.6	402.7	189.94	3.120 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	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		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	30.6	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	30.6	30.6	30.4	0.22	136.086		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	30.6	30.6	29.9	0.67	45.362		
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	30.6	30.6	29.5	1.12	27.217		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	30.6	30.6	29.0	1.57	19.441		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	30.6	30.6	28.6	2.02	15.121		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	30.6	30.6	28.1	2.47	12.371		
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	30.6	30.6	27.7	2.92	10.468		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	30.6	30.6	27.2	3.37	9.072		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	30.6	30.6	26.8	3.82	8.005		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	30.6	30.6	26.3	4.27	7.162 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-165.80	0.0	30.6	32.3	27.6	4.70	6.865		
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	-167.75	0.0	30.6	37.4	32.3	5.12	7.305		
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	-170.03	0.0	30.6	45.9	40.4	5.53	8.304		
1,400.0	1,398.7	1,398.7	1,398.7	3.0	3.0	-172.08	0.0	30.6	58.0	52.0	5.94	9.752		
1,431.4	1,429.7	1,429.7	1,429.7	3.1	3.1	-172.64	0.0	30.6	62.5	56.4	6.07	10.285		
1,500.0	1,497.6	1,497.6	1,497.6	3.3	3.3	-173.68	0.0	30.6	72.7	66.3	6.37	11.413		
1,600.0	1,596.5	1,596.5	1,596.5	3.5	3.5	-174.76	0.0	30.6	87.6	80.8	6.80	12.875		
1,700.0	1,695.3	1,695.3	1,695.3	3.8	3.7	-175.53	0.0	30.6	102.6	95.3	7.24	14.157		
1,800.0	1,794.2	1,794.2	1,794.2	4.2	3.9	-176.10	0.0	30.6	117.5	109.8	7.69	15.286		
1,900.0	1,893.1	1,893.1	1,893.1	4.5	4.1	-176.54	0.0	30.6	132.5	124.4	8.13	16.287		
2,000.0	1,991.9	1,991.9	1,991.9	4.8	4.4	-176.89	0.0	30.6	147.5	138.9	8.58	17.180		
2,100.0	2,090.8	2,090.8	2,090.8	5.1	4.6	-177.18	0.0	30.6	162.5	153.4	9.03	17.981		
2,200.0	2,189.7	2,189.7	2,189.7	5.5	4.8	-177.42	0.0	30.6	177.4	167.9	9.49	18.702		
2,300.0	2,288.5	2,288.5	2,288.5	5.8	5.0	-177.62	0.0	30.6	192.4	182.5	9.94	19.354		
2,400.0	2,387.4	2,387.4	2,387.4	6.2	5.3	-177.79	0.0	30.6	207.4	197.0	10.40	19.947		
2,500.0	2,486.3	2,486.3	2,486.3	6.5	5.5	-177.94	0.0	30.6	222.4	211.5	10.86	20.488		
2,600.0	2,585.1	2,585.1	2,585.1	6.9	5.7	-178.07	0.0	30.6	237.4	226.1	11.31	20.984		
2,700.0	2,684.0	2,684.0	2,684.0	7.2	5.9	-178.18	0.0	30.6	252.4	240.6	11.77	21.440		
2,800.0	2,782.9	2,782.9	2,782.9	7.6	6.1	-178.29	0.0	30.6	267.4	255.1	12.23	21.860		
2,900.0	2,881.8	2,881.8	2,881.8	7.9	6.4	-178.38	0.0	30.6	282.4	269.7	12.69	22.248		
3,000.0	2,980.6	2,980.6	2,980.6	8.3	6.6	-178.46	0.0	30.6	297.4	284.2	13.15	22.608		
3,100.0	3,079.5	3,089.1	3,089.1	8.6	6.8	-178.51	-0.5	29.3	311.1	297.5	13.62	22.848		
3,200.0	3,178.4	3,200.8	3,200.7	9.0	7.0	-178.45	-2.5	24.0	321.2	307.1	14.07	22.831		
3,300.0	3,277.2	3,313.3	3,312.6	9.3	7.3	-178.30	-6.1	14.6	327.3	312.8	14.52	22.541		
3,400.0	3,376.1	3,422.8	3,421.3	9.7	7.5	-178.07	-11.1	1.6	329.7	314.7	14.98	22.016		
3,500.0	3,475.0	3,522.8	3,520.3	10.1	7.7	-177.83	-16.0	-11.3	331.0	315.6	15.42	21.471		
3,600.0	3,573.8	3,622.8	3,619.3	10.4	7.9	-177.59	-21.0	-24.2	332.3	316.4	15.86	20.954		
3,700.0	3,672.7	3,722.8	3,718.4	10.8	8.2	-177.35	-25.9	-37.2	333.6	317.3	16.31	20.459		
3,800.0	3,771.6	3,822.7	3,817.4	11.1	8.4	-177.12	-30.9	-50.1	334.9	318.2	16.76	19.987		
3,900.0	3,870.4	3,922.7	3,916.4	11.5	8.7	-176.88	-35.8	-63.0	336.3	319.0	17.21	19.537		
4,000.0	3,969.3	4,021.5	4,014.2	11.9	8.9	-176.65	-40.7	-75.8	337.6	319.9	17.66	19.112		
4,100.0	4,068.2	4,110.9	4,103.0	12.2	9.2	-176.50	-44.5	-85.7	340.8	322.7	18.10	18.831		
4,200.0	4,167.0	4,200.0	4,191.7	12.6	9.4	-176.42	-47.3	-93.1	347.2	328.6	18.54	18.730		
4,300.0	4,265.9	4,289.0	4,280.6	12.9	9.5	-176.42	-49.1	-97.8	356.5	337.6	18.97	18.797		
4,400.0	4,364.8	4,377.2	4,368.8	13.3	9.7	-176.49	-49.9	-100.0	368.9	349.6	19.39	19.030		
4,500.0	4,463.7	4,472.1	4,463.7	13.7	9.9	-176.61	-50.0	-100.1	383.7	363.9	19.82	19.358		
4,607.8	4,570.3	4,578.7	4,570.3	14.1	10.1	-176.75	-50.0	-100.1	399.9	379.6	20.32	19.683		
4,700.0	4,661.6	4,670.0	4,661.6	14.3	10.3	-176.86	-50.0	-100.1	412.2	391.5	20.75	19.865		
4,800.0	4,761.1	4,769.5	4,761.1	14.6	10.5	-176.95	-50.0	-100.1	422.3	401.1	21.18	19.939		
4,900.0	4,860.9	4,869.3	4,860.9	14.8	10.8	-177.00	-50.0	-100.1	428.9	407.3	21.58	19.875		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	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		
5,000.0	4,960.8	4,969.3	4,960.8	14.9	11.0	-177.03	-50.0	-100.1	432.0	410.0	21.95	19.679		
5,039.2	5,000.0	5,008.5	5,000.0	15.0	11.1	77.98	-50.0	-100.1	432.2	410.1	22.09	19.565		
5,100.0	5,060.8	5,069.3	5,060.8	15.1	11.2	77.98	-50.0	-100.1	432.2	409.9	22.34	19.346		
5,200.0	5,160.8	5,169.3	5,160.8	15.2	11.4	77.98	-50.0	-100.1	432.2	409.5	22.76	18.995		
5,300.0	5,260.8	5,269.3	5,260.8	15.4	11.6	77.98	-50.0	-100.1	432.2	409.1	23.17	18.655		
5,400.0	5,360.8	5,369.3	5,360.8	15.5	11.8	77.98	-50.0	-100.1	432.2	408.7	23.59	18.326		
5,500.0	5,460.8	5,469.3	5,460.8	15.7	12.1	77.98	-50.0	-100.1	432.2	408.2	24.00	18.008		
5,600.0	5,560.8	5,569.3	5,560.8	15.8	12.3	77.98	-50.0	-100.1	432.2	407.8	24.42	17.700		
5,700.0	5,660.8	5,669.3	5,660.8	16.0	12.5	77.98	-50.0	-100.1	432.2	407.4	24.84	17.401		
5,800.0	5,760.8	5,769.3	5,760.8	16.2	12.7	77.98	-50.0	-100.1	432.2	407.0	25.26	17.112		
5,900.0	5,860.8	5,869.3	5,860.8	16.3	12.9	77.98	-50.0	-100.1	432.2	406.6	25.68	16.831		
6,000.0	5,960.8	5,969.3	5,960.8	16.5	13.1	77.98	-50.0	-100.1	432.2	406.1	26.10	16.559		
6,100.0	6,060.8	6,069.3	6,060.8	16.6	13.4	77.98	-50.0	-100.1	432.2	405.7	26.53	16.295		
6,200.0	6,160.8	6,169.3	6,160.8	16.8	13.6	77.98	-50.0	-100.1	432.2	405.3	26.95	16.039		
6,300.0	6,260.8	6,269.3	6,260.8	17.0	13.8	77.98	-50.0	-100.1	432.2	404.9	27.37	15.790		
6,400.0	6,360.8	6,369.3	6,360.8	17.2	14.0	77.98	-50.0	-100.1	432.2	404.4	27.80	15.549		
6,500.0	6,460.8	6,478.3	6,469.7	17.3	14.2	78.51	-54.0	-100.1	431.5	403.3	28.23	15.287		
6,566.5	6,527.3	6,551.8	6,542.4	17.4	14.4	79.95	-65.1	-100.1	429.6	401.1	28.51	15.067		
6,600.0	6,560.8	6,588.2	6,577.8	17.5	14.5	-99.17	-73.1	-100.1	428.5	399.8	28.67	14.944		
6,650.0	6,610.6	6,641.7	6,629.2	17.6	14.6	-97.84	-88.0	-100.1	426.9	398.0	28.91	14.767		
6,700.0	6,660.1	6,694.3	6,678.6	17.7	14.7	-96.48	-106.1	-100.1	425.6	396.4	29.17	14.590		
6,750.0	6,709.0	6,746.2	6,726.0	17.8	14.8	-95.10	-127.2	-100.1	424.5	395.1	29.46	14.412		
6,800.0	6,757.2	6,797.3	6,771.1	17.9	15.0	-93.70	-151.1	-100.1	423.7	393.9	29.77	14.230		
6,850.0	6,804.3	6,847.6	6,813.9	18.0	15.1	-92.29	-177.6	-100.1	423.1	393.0	30.13	14.042		
6,900.0	6,850.3	6,897.2	6,854.3	18.2	15.3	-90.88	-206.4	-100.1	422.8	392.3	30.54	13.847		
6,931.3	6,878.4	6,927.9	6,878.4	18.3	15.4	-90.00	-225.5	-100.1	422.8	392.0	30.82	13.718		
6,950.0	6,894.9	6,946.2	6,892.3	18.3	15.5	-89.47	-237.3	-100.1	422.8	391.8	30.99	13.644		
7,000.0	6,937.9	6,994.5	6,927.7	18.5	15.7	-88.08	-270.1	-100.1	423.0	391.5	31.49	13.435		
7,050.0	6,979.2	7,042.1	6,960.6	18.7	16.0	-86.70	-304.6	-100.1	423.5	391.5	32.03	13.221		
7,100.0	7,018.5	7,089.2	6,990.9	18.9	16.3	-85.35	-340.6	-100.1	424.2	391.6	32.63	13.002		
7,150.0	7,055.7	7,135.8	7,018.6	19.1	16.6	-84.02	-378.0	-100.1	425.2	391.9	33.26	12.782		
7,200.0	7,090.6	7,181.8	7,043.7	19.4	17.0	-82.73	-416.6	-100.1	426.3	392.4	33.94	12.561		
7,250.0	7,123.2	7,227.3	7,066.2	19.7	17.3	-81.48	-456.1	-100.1	427.7	393.0	34.65	12.343		
7,300.0	7,153.2	7,272.4	7,086.1	20.0	17.7	-80.27	-496.5	-100.1	429.1	393.8	35.39	12.126		
7,350.0	7,180.5	7,317.0	7,103.5	20.4	18.2	-79.11	-537.7	-100.1	430.8	394.6	36.15	11.914		
7,400.0	7,205.0	7,361.2	7,118.3	20.8	18.7	-78.00	-579.4	-100.1	432.5	395.5	36.94	11.707		
7,450.0	7,226.6	7,405.1	7,130.5	21.2	19.1	-76.95	-621.5	-100.1	434.3	396.5	37.75	11.504		
7,500.0	7,245.2	7,450.0	7,140.6	21.7	19.7	-75.93	-665.2	-100.1	436.1	397.5	38.59	11.302		
7,550.0	7,260.7	7,491.8	7,147.6	22.2	20.2	-75.02	-706.4	-100.1	437.9	398.5	39.41	11.111		
7,600.0	7,273.1	7,534.7	7,152.4	22.8	20.7	-74.14	-749.1	-100.1	439.8	399.5	40.27	10.922		
7,650.0	7,282.4	7,577.4	7,154.9	23.3	21.3	-73.33	-791.7	-100.1	441.6	400.5	41.13	10.735		
7,686.5	7,287.0	7,608.9	7,155.1	23.8	21.7	-72.77	-823.2	-100.1	442.9	401.1	41.78	10.601		
7,700.0	7,288.4	7,622.4	7,155.0	24.0	21.9	-72.59	-836.6	-100.1	443.3	401.2	42.09	10.531		
7,760.5	7,294.8	7,682.5	7,154.6	24.7	22.7	-71.77	-896.7	-100.1	445.4	401.9	43.52	10.234		
7,800.0	7,298.2	7,721.8	7,154.4	25.2	23.3	-71.26	-936.1	-100.1	446.6	402.2	44.37	10.064		
7,883.0	7,301.0	7,804.8	7,153.8	26.4	24.5	-70.80	-1,019.0	-100.1	447.7	401.3	46.34	9.660		
7,900.0	7,301.0	7,821.7	7,153.7	26.6	24.8	-70.79	-1,036.0	-100.1	447.7	400.9	46.82	9.561		
8,000.0	7,300.8	7,921.7	7,153.0	28.0	26.3	-70.73	-1,136.0	-100.1	447.8	398.2	49.70	9.011		
8,100.0	7,300.6	8,021.7	7,152.3	29.5	27.9	-70.68	-1,236.0	-100.1	448.0	395.3	52.67	8.506		
8,200.0	7,300.3	8,121.7	7,151.6	31.0	29.5	-70.62	-1,336.0	-100.1	448.2	392.4	55.71	8.044		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	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	
8,300.0	7,300.1	8,221.7	7,151.0	32.6	31.2	-70.57	-1,436.0	-100.1	448.3	389.5	58.83	7.621	
8,400.0	7,299.9	8,321.7	7,150.3	34.2	32.8	-70.51	-1,536.0	-100.1	448.5	386.5	62.00	7.233	
8,500.0	7,299.7	8,421.7	7,149.6	35.9	34.6	-70.46	-1,636.0	-100.1	448.6	383.4	65.22	6.879	
8,600.0	7,299.4	8,521.7	7,148.9	37.6	36.3	-70.40	-1,736.0	-100.1	448.8	380.3	68.48	6.554	
8,700.0	7,299.2	8,621.7	7,148.2	39.2	38.0	-70.35	-1,836.0	-100.1	448.9	377.2	71.77	6.255	
8,800.0	7,299.0	8,721.7	7,147.6	41.0	39.8	-70.29	-1,936.0	-100.1	449.1	374.0	75.09	5.980	
8,900.0	7,298.8	8,821.7	7,146.9	42.7	41.6	-70.24	-2,036.0	-100.1	449.2	370.8	78.44	5.727	
9,000.0	7,298.6	8,921.7	7,146.2	44.4	43.4	-70.18	-2,136.0	-100.1	449.4	367.6	81.81	5.493	
9,100.0	7,298.3	9,021.7	7,145.5	46.2	45.2	-70.13	-2,236.0	-100.1	449.5	364.3	85.20	5.276	
9,200.0	7,298.1	9,121.7	7,144.8	48.0	47.0	-70.07	-2,336.0	-100.1	449.7	361.1	88.61	5.075	
9,300.0	7,297.9	9,221.7	7,144.2	49.8	48.8	-70.02	-2,435.9	-100.1	449.9	357.8	92.03	4.888	
9,400.0	7,297.7	9,321.7	7,143.5	51.6	50.6	-69.96	-2,535.9	-100.1	450.0	354.5	95.47	4.714	
9,500.0	7,297.5	9,421.7	7,142.8	53.4	52.5	-69.91	-2,635.9	-100.1	450.2	351.3	98.91	4.551	
9,600.0	7,297.2	9,521.7	7,142.1	55.2	54.3	-69.85	-2,735.9	-100.1	450.3	348.0	102.37	4.399	
9,700.0	7,297.0	9,621.7	7,141.4	57.0	56.2	-69.80	-2,835.9	-100.1	450.5	344.6	105.84	4.256	
9,800.0	7,296.8	9,721.7	7,140.8	58.8	58.0	-69.74	-2,935.9	-100.1	450.6	341.3	109.31	4.123	
9,840.0	7,296.7	9,761.7	7,140.5	59.6	58.8	-69.72	-2,975.9	-100.1	450.7	340.0	110.70	4.071	
9,900.0	7,296.6	9,821.7	7,140.1	60.6	59.9	-69.64	-3,035.9	-100.1	449.9	337.6	112.31	4.006	
9,968.5	7,296.4	9,890.1	7,139.6	61.7	61.1	-69.43	-3,104.3	-100.1	446.9	333.0	113.86	3.925	
10,000.0	7,296.3	9,921.6	7,139.4	62.2	61.7	-69.31	-3,135.8	-100.1	444.9	330.1	114.86	3.874	
10,100.0	7,296.1	10,021.3	7,138.7	64.1	63.6	-68.95	-3,235.5	-100.1	438.8	320.7	118.14	3.714	
10,200.0	7,295.9	10,121.1	7,138.0	65.9	65.5	-68.57	-3,335.3	-100.1	432.7	311.3	121.39	3.565	
10,300.0	7,295.7	10,220.9	7,137.4	67.8	67.3	-68.18	-3,435.1	-100.1	426.6	302.0	124.63	3.423	
10,400.0	7,295.5	10,320.6	7,136.7	69.6	69.2	-67.78	-3,534.8	-100.1	420.6	292.7	127.84	3.290	
10,500.0	7,295.3	10,420.4	7,136.0	71.5	71.1	-67.37	-3,634.6	-100.1	414.5	283.5	131.02	3.164	
10,600.0	7,295.0	10,520.2	7,135.3	73.3	72.9	-66.95	-3,734.4	-100.1	408.5	274.3	134.18	3.045	
10,700.0	7,294.8	10,620.0	7,134.6	75.2	74.8	-66.51	-3,834.1	-100.1	402.5	265.2	137.30	2.932	
10,800.0	7,294.6	10,719.7	7,134.0	77.1	76.7	-66.07	-3,933.9	-100.1	396.5	256.1	140.39	2.824	
10,900.0	7,294.4	10,819.5	7,133.3	79.0	78.6	-65.60	-4,033.7	-100.1	390.6	247.1	143.45	2.723	
11,000.0	7,294.2	10,919.3	7,132.6	80.9	80.5	-65.13	-4,133.5	-100.1	384.7	238.2	146.46	2.626	
11,100.0	7,293.9	11,019.1	7,131.9	82.7	82.3	-64.64	-4,233.2	-100.1	378.8	229.3	149.43	2.535	
11,200.0	7,293.7	11,118.8	7,131.2	84.6	84.2	-64.13	-4,333.0	-100.1	372.9	220.5	152.36	2.447	
11,300.0	7,293.5	11,218.6	7,130.6	86.5	86.1	-63.61	-4,432.8	-100.1	367.1	211.8	155.24	2.365	
11,400.0	7,293.3	11,318.4	7,129.9	88.4	88.0	-63.07	-4,532.5	-100.1	361.3	203.2	158.06	2.286	
11,500.0	7,293.1	11,418.1	7,129.2	90.3	89.9	-62.51	-4,632.3	-100.1	355.5	194.7	160.82	2.210	
11,600.0	7,292.8	11,517.9	7,128.5	92.2	91.8	-61.94	-4,732.1	-100.1	349.8	186.2	163.53	2.139	
11,700.0	7,292.6	11,617.7	7,127.9	94.1	93.7	-61.34	-4,831.9	-100.1	344.0	177.9	166.16	2.071	
11,800.0	7,292.4	11,717.5	7,127.2	96.0	95.6	-60.73	-4,931.6	-100.1	338.4	169.7	168.73	2.005	
11,900.0	7,292.2	11,817.2	7,126.5	97.9	97.4	-60.09	-5,031.4	-100.1	332.8	161.6	171.16	1.944	
11,986.4	7,292.0	11,889.9	7,126.0	99.6	98.5	-59.62	-5,104.1	-100.1	328.2	155.3	172.88	1.899 SF	

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Reference Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Simonson/Schaefer 7E-423	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (8-15-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4906.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Simonson/Schaefer 7E-423
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°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
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