

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Simonson/Schaefer 7M-243**

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

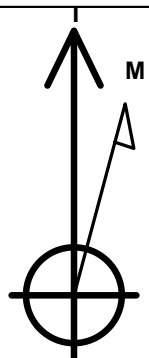
Ground Elevation: 4891.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429290.75	3186878.90	40.509860	-104.827910	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FSL & 2335'FWL	7106.0	-5064.0	1098.6	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
200.0	200.0	KOP #1
6412.4	6532.4	KOP #2
7176.3	7745.1	End of Build

Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W
Simonson/Schaefer 7M-243
Plan #2 (8-15-12)
13:16, August 15 2012

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

SHL 310'FSL, 1218'FWL

Simonson/Schaefer 7M-243

SEC. 6 HARDLINE 460'

SEC. 6-T6N-R66W

SEC. 7-T6N-R66W

SEC.7 HARDLINE 460'

Swanson 1-7 (P&A)

BHL 500'FSL & 2335'FWL

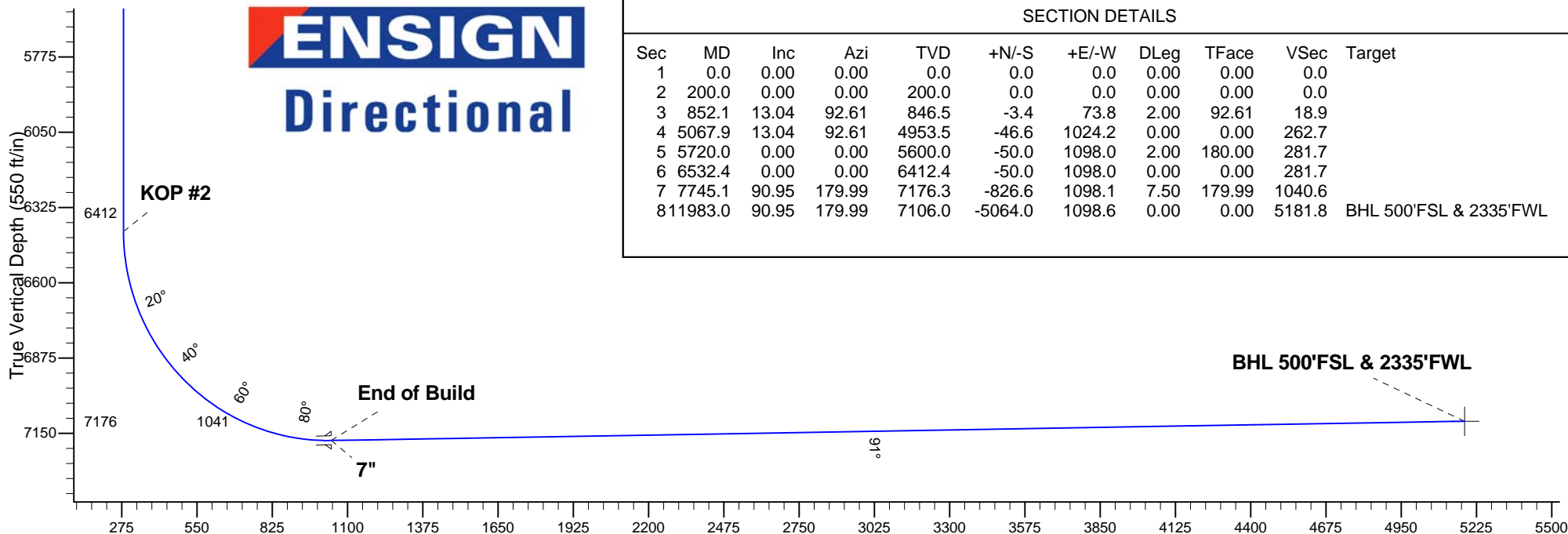
West(-)/East(+) (2000 ft/in)

West(-)/East(+) (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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	852.1	13.04	92.61	846.5	-3.4	73.8	2.00	92.61	18.9	
4	5067.9	13.04	92.61	4953.5	-46.6	1024.2	0.00	0.00	262.7	
5	5720.0	0.00	0.00	5600.0	-50.0	1098.0	2.00	180.00	281.7	
6	6532.4	0.00	0.00	6412.4	-50.0	1098.0	0.00	0.00	281.7	
7	7745.1	90.95	179.99	7176.3	-826.6	1098.1	7.50	179.99	1040.6	
8	11983.0	90.95	179.99	7106.0	-5064.0	1098.6	0.00	0.00	5181.8	BHL 500'FSL & 2335'FWL



Vertical Section at 167.76° (550 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T6N-R66W

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

Simonson/Schaefer 7M-243

Wellbore #1

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

Standard Planning Report

15 August, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7M-243
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 7M-243	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 7M-243					
Well Position	+N-S	3.6 ft	Northing:	1,429,290.75 ft	Latitude:	40.509860
	+E-W	89.0 ft	Easting:	3,186,878.90 ft	Longitude:	-104.827910
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	8/14/2012	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	167.76

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
852.1	13.04	92.61	846.5	-3.4	73.8	2.00	2.00	0.00	92.61	
5,067.9	13.04	92.61	4,953.5	-46.6	1,024.2	0.00	0.00	0.00	0.00	
5,720.0	0.00	0.00	5,600.0	-50.0	1,098.0	2.00	-2.00	0.00	180.00	
6,532.4	0.00	0.00	6,412.4	-50.0	1,098.0	0.00	0.00	0.00	0.00	
7,745.1	90.95	179.99	7,176.3	-826.6	1,098.1	7.50	7.50	0.00	179.99	
11,983.0	90.95	179.99	7,106.0	-5,064.0	1,098.6	0.00	0.00	0.00	0.00	BHL 500'FSL & 233

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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 7M-243	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
KOP #1									
240.0	0.80	92.61	240.0	0.0	0.3	0.1	2.00	2.00	0.00
280.0	1.60	92.61	280.0	-0.1	1.1	0.3	2.00	2.00	0.00
320.0	2.40	92.61	320.0	-0.1	2.5	0.6	2.00	2.00	0.00
360.0	3.20	92.61	359.9	-0.2	4.5	1.1	2.00	2.00	0.00
400.0	4.00	92.61	399.8	-0.3	7.0	1.8	2.00	2.00	0.00
440.0	4.80	92.61	439.7	-0.5	10.0	2.6	2.00	2.00	0.00
480.0	5.60	92.61	479.6	-0.6	13.7	3.5	2.00	2.00	0.00
520.0	6.40	92.61	519.3	-0.8	17.8	4.6	2.00	2.00	0.00
560.0	7.20	92.61	559.1	-1.0	22.6	5.8	2.00	2.00	0.00
600.0	8.00	92.61	598.7	-1.3	27.9	7.1	2.00	2.00	0.00
640.0	8.80	92.61	638.3	-1.5	33.7	8.6	2.00	2.00	0.00
680.0	9.60	92.61	677.8	-1.8	40.1	10.3	2.00	2.00	0.00
720.0	10.40	92.61	717.1	-2.1	47.0	12.1	2.00	2.00	0.00
760.0	11.20	92.61	756.4	-2.5	54.5	14.0	2.00	2.00	0.00
800.0	12.00	92.61	795.6	-2.8	62.5	16.0	2.00	2.00	0.00
840.0	12.80	92.61	834.7	-3.2	71.1	18.2	2.00	2.00	0.00
852.1	13.04	92.61	846.5	-3.4	73.8	18.9	2.00	2.00	0.00
880.0	13.04	92.61	873.7	-3.6	80.1	20.5	0.00	0.00	0.00
920.0	13.04	92.61	912.6	-4.1	89.1	22.9	0.00	0.00	0.00
960.0	13.04	92.61	951.6	-4.5	98.1	25.2	0.00	0.00	0.00
1,000.0	13.04	92.61	990.6	-4.9	107.2	27.5	0.00	0.00	0.00
1,040.0	13.04	92.61	1,029.5	-5.3	116.2	29.8	0.00	0.00	0.00
1,080.0	13.04	92.61	1,068.5	-5.7	125.2	32.1	0.00	0.00	0.00
1,120.0	13.04	92.61	1,107.5	-6.1	134.2	34.4	0.00	0.00	0.00
1,160.0	13.04	92.61	1,146.4	-6.5	143.2	36.7	0.00	0.00	0.00
1,200.0	13.04	92.61	1,185.4	-6.9	152.2	39.1	0.00	0.00	0.00
1,240.0	13.04	92.61	1,224.4	-7.3	161.3	41.4	0.00	0.00	0.00
1,280.0	13.04	92.61	1,263.3	-7.8	170.3	43.7	0.00	0.00	0.00
1,320.0	13.04	92.61	1,302.3	-8.2	179.3	46.0	0.00	0.00	0.00
1,360.0	13.04	92.61	1,341.3	-8.6	188.3	48.3	0.00	0.00	0.00
1,400.0	13.04	92.61	1,380.3	-9.0	197.3	50.6	0.00	0.00	0.00
1,440.0	13.04	92.61	1,419.2	-9.4	206.4	52.9	0.00	0.00	0.00
1,480.0	13.04	92.61	1,458.2	-9.8	215.4	55.2	0.00	0.00	0.00
1,520.0	13.04	92.61	1,497.2	-10.2	224.4	57.6	0.00	0.00	0.00
1,560.0	13.04	92.61	1,536.1	-10.6	233.4	59.9	0.00	0.00	0.00
1,600.0	13.04	92.61	1,575.1	-11.0	242.4	62.2	0.00	0.00	0.00
1,640.0	13.04	92.61	1,614.1	-11.4	251.4	64.5	0.00	0.00	0.00
1,680.0	13.04	92.61	1,653.0	-11.9	260.5	66.8	0.00	0.00	0.00
1,720.0	13.04	92.61	1,692.0	-12.3	269.5	69.1	0.00	0.00	0.00
1,760.0	13.04	92.61	1,731.0	-12.7	278.5	71.4	0.00	0.00	0.00
1,800.0	13.04	92.61	1,769.9	-13.1	287.5	73.7	0.00	0.00	0.00
1,840.0	13.04	92.61	1,808.9	-13.5	296.5	76.1	0.00	0.00	0.00
1,880.0	13.04	92.61	1,847.9	-13.9	305.5	78.4	0.00	0.00	0.00
1,920.0	13.04	92.61	1,886.8	-14.3	314.6	80.7	0.00	0.00	0.00
1,960.0	13.04	92.61	1,925.8	-14.7	323.6	83.0	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 7M-243	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	13.04	92.61	1,964.8	-15.1	332.6	85.3	0.00	0.00	0.00
2,040.0	13.04	92.61	2,003.7	-15.6	341.6	87.6	0.00	0.00	0.00
2,080.0	13.04	92.61	2,042.7	-16.0	350.6	89.9	0.00	0.00	0.00
2,120.0	13.04	92.61	2,081.7	-16.4	359.6	92.3	0.00	0.00	0.00
2,160.0	13.04	92.61	2,120.6	-16.8	368.7	94.6	0.00	0.00	0.00
2,200.0	13.04	92.61	2,159.6	-17.2	377.7	96.9	0.00	0.00	0.00
2,240.0	13.04	92.61	2,198.6	-17.6	386.7	99.2	0.00	0.00	0.00
2,280.0	13.04	92.61	2,237.6	-18.0	395.7	101.5	0.00	0.00	0.00
2,320.0	13.04	92.61	2,276.5	-18.4	404.7	103.8	0.00	0.00	0.00
2,360.0	13.04	92.61	2,315.5	-18.8	413.7	106.1	0.00	0.00	0.00
2,400.0	13.04	92.61	2,354.5	-19.3	422.8	108.4	0.00	0.00	0.00
2,440.0	13.04	92.61	2,393.4	-19.7	431.8	110.8	0.00	0.00	0.00
2,480.0	13.04	92.61	2,432.4	-20.1	440.8	113.1	0.00	0.00	0.00
2,520.0	13.04	92.61	2,471.4	-20.5	449.8	115.4	0.00	0.00	0.00
2,560.0	13.04	92.61	2,510.3	-20.9	458.8	117.7	0.00	0.00	0.00
2,600.0	13.04	92.61	2,549.3	-21.3	467.8	120.0	0.00	0.00	0.00
2,640.0	13.04	92.61	2,588.3	-21.7	476.9	122.3	0.00	0.00	0.00
2,680.0	13.04	92.61	2,627.2	-22.1	485.9	124.6	0.00	0.00	0.00
2,720.0	13.04	92.61	2,666.2	-22.5	494.9	126.9	0.00	0.00	0.00
2,760.0	13.04	92.61	2,705.2	-22.9	503.9	129.3	0.00	0.00	0.00
2,800.0	13.04	92.61	2,744.1	-23.4	512.9	131.6	0.00	0.00	0.00
2,840.0	13.04	92.61	2,783.1	-23.8	522.0	133.9	0.00	0.00	0.00
2,880.0	13.04	92.61	2,822.1	-24.2	531.0	136.2	0.00	0.00	0.00
2,920.0	13.04	92.61	2,861.0	-24.6	540.0	138.5	0.00	0.00	0.00
2,960.0	13.04	92.61	2,900.0	-25.0	549.0	140.8	0.00	0.00	0.00
3,000.0	13.04	92.61	2,939.0	-25.4	558.0	143.1	0.00	0.00	0.00
3,040.0	13.04	92.61	2,977.9	-25.8	567.0	145.5	0.00	0.00	0.00
3,080.0	13.04	92.61	3,016.9	-26.2	576.1	147.8	0.00	0.00	0.00
3,120.0	13.04	92.61	3,055.9	-26.6	585.1	150.1	0.00	0.00	0.00
3,160.0	13.04	92.61	3,094.9	-27.1	594.1	152.4	0.00	0.00	0.00
3,200.0	13.04	92.61	3,133.8	-27.5	603.1	154.7	0.00	0.00	0.00
3,240.0	13.04	92.61	3,172.8	-27.9	612.1	157.0	0.00	0.00	0.00
3,280.0	13.04	92.61	3,211.8	-28.3	621.1	159.3	0.00	0.00	0.00
3,320.0	13.04	92.61	3,250.7	-28.7	630.2	161.6	0.00	0.00	0.00
3,360.0	13.04	92.61	3,289.7	-29.1	639.2	164.0	0.00	0.00	0.00
3,400.0	13.04	92.61	3,328.7	-29.5	648.2	166.3	0.00	0.00	0.00
3,440.0	13.04	92.61	3,367.6	-29.9	657.2	168.6	0.00	0.00	0.00
3,480.0	13.04	92.61	3,406.6	-30.3	666.2	170.9	0.00	0.00	0.00
3,520.0	13.04	92.61	3,445.6	-30.7	675.2	173.2	0.00	0.00	0.00
3,560.0	13.04	92.61	3,484.5	-31.2	684.3	175.5	0.00	0.00	0.00
3,600.0	13.04	92.61	3,523.5	-31.6	693.3	177.8	0.00	0.00	0.00
3,640.0	13.04	92.61	3,562.5	-32.0	702.3	180.1	0.00	0.00	0.00
3,680.0	13.04	92.61	3,601.4	-32.4	711.3	182.5	0.00	0.00	0.00
3,720.0	13.04	92.61	3,640.4	-32.8	720.3	184.8	0.00	0.00	0.00
3,760.0	13.04	92.61	3,679.4	-33.2	729.3	187.1	0.00	0.00	0.00
3,800.0	13.04	92.61	3,718.3	-33.6	738.4	189.4	0.00	0.00	0.00
3,840.0	13.04	92.61	3,757.3	-34.0	747.4	191.7	0.00	0.00	0.00
3,880.0	13.04	92.61	3,796.3	-34.4	756.4	194.0	0.00	0.00	0.00
3,920.0	13.04	92.61	3,835.2	-34.9	765.4	196.3	0.00	0.00	0.00
3,960.0	13.04	92.61	3,874.2	-35.3	774.4	198.7	0.00	0.00	0.00
4,000.0	13.04	92.61	3,913.2	-35.7	783.4	201.0	0.00	0.00	0.00
4,040.0	13.04	92.61	3,952.2	-36.1	792.5	203.3	0.00	0.00	0.00

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Well:	Simonson/Schaefer 7M-243	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	13.04	92.61	3,991.1	-36.5	801.5	205.6	0.00	0.00	0.00
4,120.0	13.04	92.61	4,030.1	-36.9	810.5	207.9	0.00	0.00	0.00
4,160.0	13.04	92.61	4,069.1	-37.3	819.5	210.2	0.00	0.00	0.00
4,200.0	13.04	92.61	4,108.0	-37.7	828.5	212.5	0.00	0.00	0.00
4,240.0	13.04	92.61	4,147.0	-38.1	837.6	214.8	0.00	0.00	0.00
4,280.0	13.04	92.61	4,186.0	-38.6	846.6	217.2	0.00	0.00	0.00
4,320.0	13.04	92.61	4,224.9	-39.0	855.6	219.5	0.00	0.00	0.00
4,360.0	13.04	92.61	4,263.9	-39.4	864.6	221.8	0.00	0.00	0.00
4,400.0	13.04	92.61	4,302.9	-39.8	873.6	224.1	0.00	0.00	0.00
4,440.0	13.04	92.61	4,341.8	-40.2	882.6	226.4	0.00	0.00	0.00
4,480.0	13.04	92.61	4,380.8	-40.6	891.7	228.7	0.00	0.00	0.00
4,520.0	13.04	92.61	4,419.8	-41.0	900.7	231.0	0.00	0.00	0.00
4,560.0	13.04	92.61	4,458.7	-41.4	909.7	233.3	0.00	0.00	0.00
4,600.0	13.04	92.61	4,497.7	-41.8	918.7	235.7	0.00	0.00	0.00
4,640.0	13.04	92.61	4,536.7	-42.2	927.7	238.0	0.00	0.00	0.00
4,680.0	13.04	92.61	4,575.6	-42.7	936.7	240.3	0.00	0.00	0.00
4,720.0	13.04	92.61	4,614.6	-43.1	945.8	242.6	0.00	0.00	0.00
4,760.0	13.04	92.61	4,653.6	-43.5	954.8	244.9	0.00	0.00	0.00
4,800.0	13.04	92.61	4,692.5	-43.9	963.8	247.2	0.00	0.00	0.00
4,840.0	13.04	92.61	4,731.5	-44.3	972.8	249.5	0.00	0.00	0.00
4,880.0	13.04	92.61	4,770.5	-44.7	981.8	251.9	0.00	0.00	0.00
4,920.0	13.04	92.61	4,809.5	-45.1	990.8	254.2	0.00	0.00	0.00
4,960.0	13.04	92.61	4,848.4	-45.5	999.9	256.5	0.00	0.00	0.00
5,000.0	13.04	92.61	4,887.4	-45.9	1,008.9	258.8	0.00	0.00	0.00
5,040.0	13.04	92.61	4,926.4	-46.4	1,017.9	261.1	0.00	0.00	0.00
5,067.9	13.04	92.61	4,953.5	-46.6	1,024.2	262.7	0.00	0.00	0.00
5,080.0	12.80	92.61	4,965.3	-46.8	1,026.9	263.4	2.00	-2.00	0.00
5,120.0	12.00	92.61	5,004.4	-47.2	1,035.5	265.6	2.00	-2.00	0.00
5,160.0	11.20	92.61	5,043.6	-47.5	1,043.5	267.7	2.00	-2.00	0.00
5,200.0	10.40	92.61	5,082.9	-47.9	1,051.0	269.6	2.00	-2.00	0.00
5,240.0	9.60	92.61	5,122.3	-48.2	1,057.9	271.4	2.00	-2.00	0.00
5,280.0	8.80	92.61	5,161.8	-48.5	1,064.3	273.0	2.00	-2.00	0.00
5,320.0	8.00	92.61	5,201.3	-48.7	1,070.2	274.5	2.00	-2.00	0.00
5,360.0	7.20	92.61	5,241.0	-49.0	1,075.4	275.9	2.00	-2.00	0.00
5,400.0	6.40	92.61	5,280.7	-49.2	1,080.2	277.1	2.00	-2.00	0.00
5,440.0	5.60	92.61	5,320.5	-49.4	1,084.3	278.1	2.00	-2.00	0.00
5,480.0	4.80	92.61	5,360.3	-49.5	1,088.0	279.1	2.00	-2.00	0.00
5,520.0	4.00	92.61	5,400.2	-49.7	1,091.0	279.9	2.00	-2.00	0.00
5,560.0	3.20	92.61	5,440.1	-49.8	1,093.5	280.5	2.00	-2.00	0.00
5,600.0	2.40	92.61	5,480.1	-49.9	1,095.5	281.0	2.00	-2.00	0.00
5,640.0	1.60	92.61	5,520.0	-49.9	1,096.9	281.4	2.00	-2.00	0.00
5,680.0	0.80	92.61	5,560.0	-50.0	1,097.7	281.6	2.00	-2.00	0.00
5,720.0	0.00	0.00	5,600.0	-50.0	1,098.0	281.7	2.00	-2.00	0.00
5,760.0	0.00	0.00	5,640.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,680.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
5,840.0	0.00	0.00	5,720.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
5,880.0	0.00	0.00	5,760.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
5,920.0	0.00	0.00	5,800.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
5,960.0	0.00	0.00	5,840.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,880.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,040.0	0.00	0.00	5,920.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,080.0	0.00	0.00	5,960.0	-50.0	1,098.0	281.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7M-243
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 7M-243	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)
6,120.0	0.00	0.00	6,000.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,160.0	0.00	0.00	6,040.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,080.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,240.0	0.00	0.00	6,120.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,280.0	0.00	0.00	6,160.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,320.0	0.00	0.00	6,200.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,360.0	0.00	0.00	6,240.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,280.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,440.0	0.00	0.00	6,320.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,480.0	0.00	0.00	6,360.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,520.0	0.00	0.00	6,400.0	-50.0	1,098.0	281.7	0.00	0.00	0.00
6,532.4	0.00	0.00	6,412.4	-50.0	1,098.0	281.7	0.00	0.00	0.00
KOP #2									
6,560.0	2.07	179.99	6,440.0	-50.5	1,098.0	282.1	7.50	7.50	0.00
6,600.0	5.07	179.99	6,479.9	-53.0	1,098.0	284.6	7.50	7.50	0.00
6,640.0	8.07	179.99	6,519.7	-57.6	1,098.0	289.0	7.50	7.50	0.00
6,680.0	11.07	179.99	6,559.1	-64.2	1,098.0	295.5	7.50	7.50	0.00
6,720.0	14.07	179.99	6,598.1	-72.9	1,098.0	304.0	7.50	7.50	0.00
6,760.0	17.07	179.99	6,636.7	-83.7	1,098.0	314.5	7.50	7.50	0.00
6,800.0	20.07	179.99	6,674.6	-96.4	1,098.0	327.0	7.50	7.50	0.00
6,840.0	23.07	179.99	6,711.8	-111.1	1,098.0	341.4	7.50	7.50	0.00
6,880.0	26.07	179.99	6,748.2	-127.7	1,098.0	357.6	7.50	7.50	0.00
6,920.0	29.07	179.99	6,783.6	-146.2	1,098.0	375.7	7.50	7.50	0.00
6,960.0	32.07	179.99	6,818.0	-166.6	1,098.0	395.6	7.50	7.50	0.00
7,000.0	35.07	179.99	6,851.4	-188.7	1,098.0	417.2	7.50	7.50	0.00
7,040.0	38.07	179.99	6,883.5	-212.5	1,098.0	440.5	7.50	7.50	0.00
7,080.0	41.07	179.99	6,914.3	-238.0	1,098.0	465.4	7.50	7.50	0.00
7,120.0	44.07	179.99	6,943.8	-265.1	1,098.0	491.8	7.50	7.50	0.00
7,160.0	47.07	179.99	6,971.8	-293.6	1,098.0	519.7	7.50	7.50	0.00
7,200.0	50.07	179.99	6,998.2	-323.6	1,098.0	549.0	7.50	7.50	0.00
7,240.0	53.07	179.99	7,023.1	-354.9	1,098.0	579.7	7.50	7.50	0.00
7,280.0	56.07	179.99	7,046.3	-387.5	1,098.0	611.5	7.50	7.50	0.00
7,320.0	59.07	179.99	7,067.7	-421.3	1,098.0	644.5	7.50	7.50	0.00
7,360.0	62.07	179.99	7,087.4	-456.1	1,098.0	678.5	7.50	7.50	0.00
7,400.0	65.07	179.99	7,105.2	-491.9	1,098.1	713.5	7.50	7.50	0.00
7,440.0	68.07	179.99	7,121.1	-528.6	1,098.1	749.4	7.50	7.50	0.00
7,480.0	71.07	179.99	7,135.1	-566.1	1,098.1	786.0	7.50	7.50	0.00
7,520.0	74.07	179.99	7,147.0	-604.3	1,098.1	823.3	7.50	7.50	0.00
7,560.0	77.07	179.99	7,157.0	-643.0	1,098.1	861.2	7.50	7.50	0.00
7,600.0	80.07	179.99	7,164.9	-682.2	1,098.1	899.5	7.50	7.50	0.00
7,640.0	83.07	179.99	7,170.8	-721.8	1,098.1	938.2	7.50	7.50	0.00
7,680.0	86.07	179.99	7,174.6	-761.6	1,098.1	977.1	7.50	7.50	0.00
7,720.0	89.07	179.99	7,176.3	-801.5	1,098.1	1,016.1	7.50	7.50	0.00
7,745.1	90.95	179.99	7,176.3	-826.6	1,098.1	1,040.7	7.49	7.49	0.00
End of Build - 7"									
7,760.0	90.95	179.99	7,176.0	-841.5	1,098.1	1,055.2	0.00	0.00	0.00
7,800.0	90.95	179.99	7,175.4	-881.5	1,098.1	1,094.3	0.00	0.00	0.00
7,840.0	90.95	179.99	7,174.7	-921.5	1,098.1	1,133.4	0.00	0.00	0.00
7,880.0	90.95	179.99	7,174.0	-961.5	1,098.1	1,172.5	0.00	0.00	0.00
7,920.0	90.95	179.99	7,173.4	-1,001.5	1,098.1	1,211.6	0.00	0.00	0.00
7,960.0	90.95	179.99	7,172.7	-1,041.5	1,098.1	1,250.6	0.00	0.00	0.00
8,000.0	90.95	179.99	7,172.0	-1,081.5	1,098.1	1,289.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7M-243
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 7M-243	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)
8,040.0	90.95	179.99	7,171.4	-1,121.5	1,098.1	1,328.8	0.00	0.00	0.00
8,080.0	90.95	179.99	7,170.7	-1,161.5	1,098.1	1,367.9	0.00	0.00	0.00
8,120.0	90.95	179.99	7,170.0	-1,201.5	1,098.1	1,407.0	0.00	0.00	0.00
8,160.0	90.95	179.99	7,169.4	-1,241.5	1,098.1	1,446.1	0.00	0.00	0.00
8,200.0	90.95	179.99	7,168.7	-1,281.5	1,098.1	1,485.2	0.00	0.00	0.00
8,240.0	90.95	179.99	7,168.1	-1,321.5	1,098.2	1,524.3	0.00	0.00	0.00
8,280.0	90.95	179.99	7,167.4	-1,361.5	1,098.2	1,563.3	0.00	0.00	0.00
8,320.0	90.95	179.99	7,166.7	-1,401.5	1,098.2	1,602.4	0.00	0.00	0.00
8,360.0	90.95	179.99	7,166.1	-1,441.5	1,098.2	1,641.5	0.00	0.00	0.00
8,400.0	90.95	179.99	7,165.4	-1,481.5	1,098.2	1,680.6	0.00	0.00	0.00
8,440.0	90.95	179.99	7,164.7	-1,521.4	1,098.2	1,719.7	0.00	0.00	0.00
8,480.0	90.95	179.99	7,164.1	-1,561.4	1,098.2	1,758.8	0.00	0.00	0.00
8,520.0	90.95	179.99	7,163.4	-1,601.4	1,098.2	1,797.9	0.00	0.00	0.00
8,560.0	90.95	179.99	7,162.8	-1,641.4	1,098.2	1,836.9	0.00	0.00	0.00
8,600.0	90.95	179.99	7,162.1	-1,681.4	1,098.2	1,876.0	0.00	0.00	0.00
8,640.0	90.95	179.99	7,161.4	-1,721.4	1,098.2	1,915.1	0.00	0.00	0.00
8,680.0	90.95	179.99	7,160.8	-1,761.4	1,098.2	1,954.2	0.00	0.00	0.00
8,720.0	90.95	179.99	7,160.1	-1,801.4	1,098.2	1,993.3	0.00	0.00	0.00
8,760.0	90.95	179.99	7,159.4	-1,841.4	1,098.2	2,032.4	0.00	0.00	0.00
8,800.0	90.95	179.99	7,158.8	-1,881.4	1,098.2	2,071.5	0.00	0.00	0.00
8,840.0	90.95	179.99	7,158.1	-1,921.4	1,098.2	2,110.5	0.00	0.00	0.00
8,880.0	90.95	179.99	7,157.4	-1,961.4	1,098.2	2,149.6	0.00	0.00	0.00
8,920.0	90.95	179.99	7,156.8	-2,001.4	1,098.2	2,188.7	0.00	0.00	0.00
8,960.0	90.95	179.99	7,156.1	-2,041.4	1,098.2	2,227.8	0.00	0.00	0.00
9,000.0	90.95	179.99	7,155.5	-2,081.4	1,098.2	2,266.9	0.00	0.00	0.00
9,040.0	90.95	179.99	7,154.8	-2,121.4	1,098.2	2,306.0	0.00	0.00	0.00
9,080.0	90.95	179.99	7,154.1	-2,161.4	1,098.3	2,345.1	0.00	0.00	0.00
9,120.0	90.95	179.99	7,153.5	-2,201.4	1,098.3	2,384.2	0.00	0.00	0.00
9,160.0	90.95	179.99	7,152.8	-2,241.3	1,098.3	2,423.2	0.00	0.00	0.00
9,200.0	90.95	179.99	7,152.1	-2,281.3	1,098.3	2,462.3	0.00	0.00	0.00
9,240.0	90.95	179.99	7,151.5	-2,321.3	1,098.3	2,501.4	0.00	0.00	0.00
9,280.0	90.95	179.99	7,150.8	-2,361.3	1,098.3	2,540.5	0.00	0.00	0.00
9,320.0	90.95	179.99	7,150.2	-2,401.3	1,098.3	2,579.6	0.00	0.00	0.00
9,360.0	90.95	179.99	7,149.5	-2,441.3	1,098.3	2,618.7	0.00	0.00	0.00
9,400.0	90.95	179.99	7,148.8	-2,481.3	1,098.3	2,657.8	0.00	0.00	0.00
9,440.0	90.95	179.99	7,148.2	-2,521.3	1,098.3	2,696.8	0.00	0.00	0.00
9,480.0	90.95	179.99	7,147.5	-2,561.3	1,098.3	2,735.9	0.00	0.00	0.00
9,520.0	90.95	179.99	7,146.8	-2,601.3	1,098.3	2,775.0	0.00	0.00	0.00
9,560.0	90.95	179.99	7,146.2	-2,641.3	1,098.3	2,814.1	0.00	0.00	0.00
9,600.0	90.95	179.99	7,145.5	-2,681.3	1,098.3	2,853.2	0.00	0.00	0.00
9,640.0	90.95	179.99	7,144.8	-2,721.3	1,098.3	2,892.3	0.00	0.00	0.00
9,680.0	90.95	179.99	7,144.2	-2,761.3	1,098.3	2,931.4	0.00	0.00	0.00
9,720.0	90.95	179.99	7,143.5	-2,801.3	1,098.3	2,970.4	0.00	0.00	0.00
9,760.0	90.95	179.99	7,142.9	-2,841.3	1,098.3	3,009.5	0.00	0.00	0.00
9,800.0	90.95	179.99	7,142.2	-2,881.3	1,098.3	3,048.6	0.00	0.00	0.00
9,840.0	90.95	179.99	7,141.5	-2,921.3	1,098.3	3,087.7	0.00	0.00	0.00
9,880.0	90.95	179.99	7,140.9	-2,961.2	1,098.3	3,126.8	0.00	0.00	0.00
9,920.0	90.95	179.99	7,140.2	-3,001.2	1,098.4	3,165.9	0.00	0.00	0.00
9,960.0	90.95	179.99	7,139.5	-3,041.2	1,098.4	3,205.0	0.00	0.00	0.00
10,000.0	90.95	179.99	7,138.9	-3,081.2	1,098.4	3,244.1	0.00	0.00	0.00
10,040.0	90.95	179.99	7,138.2	-3,121.2	1,098.4	3,283.1	0.00	0.00	0.00
10,080.0	90.95	179.99	7,137.6	-3,161.2	1,098.4	3,322.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7M-243
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 7M-243	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)
10,120.0	90.95	179.99	7,136.9	-3,201.2	1,098.4	3,361.3	0.00	0.00	0.00
10,160.0	90.95	179.99	7,136.2	-3,241.2	1,098.4	3,400.4	0.00	0.00	0.00
10,200.0	90.95	179.99	7,135.6	-3,281.2	1,098.4	3,439.5	0.00	0.00	0.00
10,240.0	90.95	179.99	7,134.9	-3,321.2	1,098.4	3,478.6	0.00	0.00	0.00
10,280.0	90.95	179.99	7,134.2	-3,361.2	1,098.4	3,517.7	0.00	0.00	0.00
10,320.0	90.95	179.99	7,133.6	-3,401.2	1,098.4	3,556.7	0.00	0.00	0.00
10,360.0	90.95	179.99	7,132.9	-3,441.2	1,098.4	3,595.8	0.00	0.00	0.00
10,400.0	90.95	179.99	7,132.2	-3,481.2	1,098.4	3,634.9	0.00	0.00	0.00
10,440.0	90.95	179.99	7,131.6	-3,521.2	1,098.4	3,674.0	0.00	0.00	0.00
10,480.0	90.95	179.99	7,130.9	-3,561.2	1,098.4	3,713.1	0.00	0.00	0.00
10,520.0	90.95	179.99	7,130.3	-3,601.2	1,098.4	3,752.2	0.00	0.00	0.00
10,560.0	90.95	179.99	7,129.6	-3,641.2	1,098.4	3,791.3	0.00	0.00	0.00
10,600.0	90.95	179.99	7,128.9	-3,681.1	1,098.4	3,830.3	0.00	0.00	0.00
10,640.0	90.95	179.99	7,128.3	-3,721.1	1,098.4	3,869.4	0.00	0.00	0.00
10,680.0	90.95	179.99	7,127.6	-3,761.1	1,098.4	3,908.5	0.00	0.00	0.00
10,720.0	90.95	179.99	7,126.9	-3,801.1	1,098.4	3,947.6	0.00	0.00	0.00
10,760.0	90.95	179.99	7,126.3	-3,841.1	1,098.5	3,986.7	0.00	0.00	0.00
10,800.0	90.95	179.99	7,125.6	-3,881.1	1,098.5	4,025.8	0.00	0.00	0.00
10,840.0	90.95	179.99	7,125.0	-3,921.1	1,098.5	4,064.9	0.00	0.00	0.00
10,880.0	90.95	179.99	7,124.3	-3,961.1	1,098.5	4,103.9	0.00	0.00	0.00
10,920.0	90.95	179.99	7,123.6	-4,001.1	1,098.5	4,143.0	0.00	0.00	0.00
10,960.0	90.95	179.99	7,123.0	-4,041.1	1,098.5	4,182.1	0.00	0.00	0.00
11,000.0	90.95	179.99	7,122.3	-4,081.1	1,098.5	4,221.2	0.00	0.00	0.00
11,040.0	90.95	179.99	7,121.6	-4,121.1	1,098.5	4,260.3	0.00	0.00	0.00
11,080.0	90.95	179.99	7,121.0	-4,161.1	1,098.5	4,299.4	0.00	0.00	0.00
11,120.0	90.95	179.99	7,120.3	-4,201.1	1,098.5	4,338.5	0.00	0.00	0.00
11,160.0	90.95	179.99	7,119.6	-4,241.1	1,098.5	4,377.6	0.00	0.00	0.00
11,200.0	90.95	179.99	7,119.0	-4,281.1	1,098.5	4,416.6	0.00	0.00	0.00
11,240.0	90.95	179.99	7,118.3	-4,321.1	1,098.5	4,455.7	0.00	0.00	0.00
11,280.0	90.95	179.99	7,117.7	-4,361.1	1,098.5	4,494.8	0.00	0.00	0.00
11,320.0	90.95	179.99	7,117.0	-4,401.0	1,098.5	4,533.9	0.00	0.00	0.00
11,360.0	90.95	179.99	7,116.3	-4,441.0	1,098.5	4,573.0	0.00	0.00	0.00
11,400.0	90.95	179.99	7,115.7	-4,481.0	1,098.5	4,612.1	0.00	0.00	0.00
11,440.0	90.95	179.99	7,115.0	-4,521.0	1,098.5	4,651.2	0.00	0.00	0.00
11,480.0	90.95	179.99	7,114.3	-4,561.0	1,098.5	4,690.2	0.00	0.00	0.00
11,520.0	90.95	179.99	7,113.7	-4,601.0	1,098.5	4,729.3	0.00	0.00	0.00
11,560.0	90.95	179.99	7,113.0	-4,641.0	1,098.5	4,768.4	0.00	0.00	0.00
11,600.0	90.95	179.99	7,112.4	-4,681.0	1,098.6	4,807.5	0.00	0.00	0.00
11,640.0	90.95	179.99	7,111.7	-4,721.0	1,098.6	4,846.6	0.00	0.00	0.00
11,680.0	90.95	179.99	7,111.0	-4,761.0	1,098.6	4,885.7	0.00	0.00	0.00
11,720.0	90.95	179.99	7,110.4	-4,801.0	1,098.6	4,924.8	0.00	0.00	0.00
11,760.0	90.95	179.99	7,109.7	-4,841.0	1,098.6	4,963.8	0.00	0.00	0.00
11,800.0	90.95	179.99	7,109.0	-4,881.0	1,098.6	5,002.9	0.00	0.00	0.00
11,840.0	90.95	179.99	7,108.4	-4,921.0	1,098.6	5,042.0	0.00	0.00	0.00
11,880.0	90.95	179.99	7,107.7	-4,961.0	1,098.6	5,081.1	0.00	0.00	0.00
11,920.0	90.95	179.99	7,107.0	-5,001.0	1,098.6	5,120.2	0.00	0.00	0.00
11,960.0	90.95	179.99	7,106.4	-5,041.0	1,098.6	5,159.3	0.00	0.00	0.00
11,983.0	90.95	179.99	7,106.0	-5,064.0	1,098.6	5,181.8	0.00	0.00	0.00
BHL 500'FSL & 2335'FWL									

Database:	Landmark	Local Co-ordinate Reference:	Well Simonson/Schaefer 7M-243
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 7M-243	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (8-15-12)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
BHL 500'FSL & 2335'I - plan hits target center - Point	0.00	0.00	7,106.0	-5,064.0	1,098.6	1,424,235.41	3,188,015.80	40.495960	-104.823960

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,745.1	7,176.3	7"	7	7-1/2	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,532.4	6,412.4	-50.0	1,098.0	KOP #2
7,745.1	7,176.3	-826.6	1,098.1	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T6N-R66W

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

Simonson/Schaefer 7M-243

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 7M-243
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 7M-243	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	11,983.0	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						
Simonson/Schaefer 7J-403 - Wellbore #1 - Plan #1 (8-9-	200.0	200.0	30.8	30.1	45.683	CC, ES
Simonson/Schaefer 7J-403 - Wellbore #1 - Plan #1 (8-9-	11,983.0	11,910.1	882.5	688.2	4.542	SF
Swanson 1-7 (P&A) - Wellbore #1 - Wellbore #1	7,879.1	7,171.0	315.0	146.6	1.870	CC, ES, SF

Offset Design Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W - Simonson/Schaefer 7J-403 - Wellbore #1 - Plan #1													
Survey Program: 0-MWD													
Reference	Offset	Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-96.79	-3.6	-30.6	30.8				
100.0	100.0	100.0	100.0	0.1	0.1	-96.79	-3.6	-30.6	30.8	30.6	0.22	137.048	
200.0	200.0	200.0	200.0	0.3	0.3	-96.79	-3.6	-30.6	30.8	30.1	0.67	45.683	CC, ES
300.0	300.0	300.0	300.0	0.6	0.6	171.10	-3.6	-30.6	32.5	31.4	1.12	29.060	
400.0	399.8	399.8	399.8	0.8	0.8	172.31	-3.6	-30.6	37.7	36.1	1.57	24.060	
500.0	499.5	499.5	499.5	1.0	1.0	173.74	-3.6	-30.6	46.4	44.3	2.02	22.930	
600.0	598.7	598.7	598.7	1.3	1.2	175.02	-3.6	-30.6	58.5	56.0	2.48	23.587	
700.0	697.5	697.5	697.5	1.6	1.5	176.05	-3.6	-30.6	74.1	71.1	2.94	25.199	
800.0	795.6	795.6	795.6	2.0	1.7	176.83	-3.6	-30.6	93.1	89.7	3.40	27.370	
852.1	846.5	846.5	846.5	2.3	1.8	177.17	-3.6	-30.6	104.4	100.8	3.64	28.649	
900.0	893.1	893.1	893.1	2.5	1.9	177.43	-3.6	-30.6	115.2	111.3	3.87	29.798	
1,000.0	990.6	990.6	990.6	2.9	2.1	177.85	-3.6	-30.6	137.8	133.4	4.33	31.784	
1,100.0	1,088.0	1,092.6	1,092.6	3.4	2.3	177.92	-4.3	-29.3	159.0	154.3	4.79	33.184	
1,200.0	1,185.4	1,196.3	1,196.1	3.9	2.5	177.41	-6.8	-24.6	177.2	172.0	5.24	33.819	
1,300.0	1,282.8	1,301.1	1,300.5	4.4	2.7	176.45	-11.0	-16.6	192.3	186.5	5.71	33.683	
1,400.0	1,380.3	1,406.6	1,405.3	4.9	3.0	175.10	-17.1	-5.1	204.2	198.0	6.20	32.924	
1,500.0	1,477.7	1,506.0	1,503.6	5.3	3.3	173.72	-23.7	7.3	214.6	207.9	6.71	31.997	
1,600.0	1,575.1	1,605.3	1,601.9	5.8	3.5	172.46	-30.3	19.7	225.2	217.9	7.23	31.134	
1,700.0	1,672.5	1,704.6	1,700.2	6.3	3.8	171.32	-36.9	32.1	235.8	228.0	7.77	30.344	
1,800.0	1,769.9	1,803.9	1,798.6	6.8	4.1	170.28	-43.4	44.5	246.5	238.2	8.32	29.620	
1,900.0	1,867.4	1,903.3	1,896.9	7.3	4.4	169.33	-50.0	56.9	257.3	248.5	8.89	28.958	
2,000.0	1,964.8	2,002.6	1,995.2	7.8	4.7	168.45	-56.6	69.3	268.2	258.8	9.46	28.350	

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 7M-243
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 7M-243	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:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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	2,062.2	2,101.9	2,093.6	8.3	5.0	167.64	-63.2	81.8	279.2	269.1	10.04	27.793		
2,200.0	2,159.6	2,201.2	2,191.9	8.8	5.4	166.89	-69.8	94.2	290.1	279.5	10.64	27.281		
2,300.0	2,257.0	2,300.6	2,290.2	9.3	5.7	166.20	-76.3	106.6	301.2	289.9	11.23	26.810		
2,400.0	2,354.5	2,399.9	2,388.5	9.7	6.0	165.55	-82.9	119.0	312.2	300.4	11.84	26.375		
2,500.0	2,451.9	2,499.2	2,486.9	10.2	6.4	164.95	-89.5	131.4	323.3	310.9	12.45	25.974		
2,600.0	2,549.3	2,598.5	2,585.2	10.7	6.7	164.39	-96.1	143.8	334.5	321.4	13.06	25.603		
2,700.0	2,646.7	2,697.9	2,683.5	11.2	7.0	163.87	-102.6	156.2	345.6	331.9	13.68	25.258		
2,800.0	2,744.1	2,797.2	2,781.9	11.7	7.4	163.38	-109.2	168.7	356.8	342.5	14.31	24.939		
2,900.0	2,841.6	2,896.5	2,880.2	12.2	7.7	162.91	-115.8	181.1	368.0	353.1	14.94	24.641		
3,000.0	2,939.0	2,995.9	2,978.5	12.7	8.0	162.48	-122.4	193.5	379.3	363.7	15.57	24.364		
3,100.0	3,036.4	3,095.2	3,076.8	13.2	8.4	162.07	-129.0	205.9	390.5	374.3	16.20	24.105		
3,200.0	3,133.8	3,187.0	3,167.8	13.7	8.7	161.81	-134.6	216.5	402.6	385.8	16.78	23.998		
3,300.0	3,231.2	3,276.6	3,257.0	14.2	8.9	161.83	-138.8	224.5	416.8	399.6	17.27	24.132		
3,400.0	3,328.7	3,365.6	3,345.8	14.7	9.0	162.10	-141.7	229.9	433.4	415.6	17.73	24.448		
3,500.0	3,426.1	3,453.7	3,433.8	15.2	9.2	162.60	-143.3	232.9	452.1	434.0	18.14	24.926		
3,600.0	3,523.5	3,543.4	3,523.5	15.7	9.4	163.28	-143.6	233.6	473.1	454.6	18.53	25.538		
3,700.0	3,620.9	3,640.8	3,620.9	16.2	9.5	164.03	-143.6	233.6	494.8	475.9	18.92	26.156		
3,800.0	3,718.3	3,738.2	3,718.3	16.6	9.7	164.72	-143.6	233.6	516.6	497.3	19.32	26.742		
3,900.0	3,815.8	3,835.6	3,815.8	17.1	9.9	165.35	-143.6	233.6	538.4	518.7	19.72	27.299		
4,000.0	3,913.2	3,933.1	3,913.2	17.6	10.0	165.93	-143.6	233.6	560.3	540.2	20.14	27.828		
4,100.0	4,010.6	4,030.5	4,010.6	18.1	10.2	166.47	-143.6	233.6	582.3	561.7	20.55	28.331		
4,200.0	4,108.0	4,127.9	4,108.0	18.6	10.4	166.97	-143.6	233.6	604.3	583.3	20.98	28.809		
4,300.0	4,205.4	4,225.3	4,205.4	19.1	10.5	167.44	-143.6	233.6	626.3	604.9	21.40	29.264		
4,400.0	4,302.9	4,322.8	4,302.9	19.6	10.7	167.87	-143.6	233.6	648.4	626.5	21.83	29.698		
4,500.0	4,400.3	4,420.2	4,400.3	20.1	10.9	168.28	-143.6	233.6	670.5	648.2	22.27	30.111		
4,600.0	4,497.7	4,517.6	4,497.7	20.6	11.1	168.65	-143.6	233.6	692.6	669.9	22.70	30.506		
4,700.0	4,595.1	4,615.0	4,595.1	21.1	11.3	169.01	-143.6	233.6	714.8	691.6	23.15	30.882		
4,800.0	4,692.5	4,712.4	4,692.5	21.6	11.4	169.34	-143.6	233.6	737.0	713.4	23.59	31.242		
4,900.0	4,790.0	4,809.9	4,790.0	22.1	11.6	169.66	-143.6	233.6	759.2	735.1	24.04	31.586		
5,000.0	4,887.4	4,907.3	4,887.4	22.6	11.8	169.96	-143.6	233.6	781.4	756.9	24.48	31.915		
5,067.9	4,953.5	4,973.4	4,953.5	22.9	11.9	170.15	-143.6	233.6	796.5	771.7	24.79	32.130		
5,100.0	4,984.9	5,004.7	4,984.9	23.0	12.0	170.26	-143.6	233.6	803.5	778.5	24.94	32.216		
5,200.0	5,082.9	5,102.8	5,082.9	23.4	12.2	170.56	-143.6	233.6	823.0	797.6	25.36	32.445		
5,300.0	5,181.5	5,201.4	5,181.5	23.7	12.4	170.79	-143.6	233.6	839.1	813.3	25.76	32.571		
5,400.0	5,280.7	5,300.6	5,280.7	23.9	12.6	170.97	-143.6	233.6	851.8	825.7	26.13	32.599		
5,500.0	5,380.2	5,400.1	5,380.2	24.1	12.8	171.10	-143.6	233.6	861.1	834.6	26.47	32.536		
5,600.0	5,480.1	5,499.9	5,480.1	24.3	13.0	171.18	-143.6	233.6	867.0	840.2	26.77	32.385		
5,700.0	5,580.0	5,599.9	5,580.0	24.4	13.2	171.21	-143.6	233.6	869.4	842.3	27.04	32.150		
5,720.0	5,600.0	5,619.9	5,600.0	24.4	13.2	-96.18	-143.6	233.6	869.4	842.4	27.09	32.092		
5,800.0	5,680.0	5,699.9	5,680.0	24.5	13.3	-96.18	-143.6	233.6	869.4	842.1	27.39	31.745		
5,900.0	5,780.0	5,799.9	5,780.0	24.6	13.5	-96.18	-143.6	233.6	869.4	841.7	27.76	31.319		
6,000.0	5,880.0	5,899.9	5,880.0	24.7	13.7	-96.18	-143.6	233.6	869.4	841.3	28.14	30.902		
6,100.0	5,980.0	5,999.9	5,980.0	24.8	13.9	-96.18	-143.6	233.6	869.4	840.9	28.51	30.494		
6,200.0	6,080.0	6,099.9	6,080.0	24.9	14.1	-96.18	-143.6	233.6	869.4	840.6	28.89	30.094		
6,300.0	6,180.0	6,199.9	6,180.0	25.1	14.4	-96.18	-143.6	233.6	869.4	840.2	29.27	29.703		
6,400.0	6,280.0	6,299.9	6,280.0	25.2	14.6	-96.18	-143.6	233.6	869.4	839.8	29.65	29.320		
6,500.0	6,380.0	6,399.9	6,380.0	25.3	14.8	-96.18	-143.6	233.6	869.4	839.4	30.04	28.946		
6,532.4	6,412.4	6,432.3	6,412.4	25.3	14.8	-96.18	-143.6	233.6	869.4	839.3	30.16	28.826		
6,550.0	6,430.0	6,449.9	6,430.0	25.3	14.9	83.84	-143.6	233.6	869.4	839.2	30.22	28.768		
6,600.0	6,479.9	6,499.8	6,479.9	25.4	15.0	84.04	-143.6	233.6	869.1	838.8	30.38	28.610		
6,650.0	6,529.6	6,549.4	6,529.6	25.5	15.1	84.48	-143.6	233.6	868.5	838.0	30.52	28.453		

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 7M-243
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 7M-243	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-403 - 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		
6,700.0	6,578.7	6,594.4	6,574.4	25.5	15.2	85.01	-144.8	233.6	867.8	837.1	30.67	28.299		
6,750.0	6,627.1	6,639.4	6,619.3	25.6	15.2	85.55	-148.6	233.6	867.1	836.3	30.82	28.134		
6,800.0	6,674.6	6,684.8	6,664.3	25.7	15.3	86.12	-155.1	233.6	866.4	835.5	31.00	27.952		
6,850.0	6,721.0	6,730.7	6,709.2	25.7	15.5	86.70	-164.4	233.6	865.9	834.7	31.20	27.752		
6,900.0	6,766.0	6,777.1	6,753.9	25.8	15.6	87.30	-176.5	233.6	865.4	834.0	31.43	27.531		
6,950.0	6,809.5	6,823.9	6,798.3	25.9	15.7	87.91	-191.5	233.6	865.0	833.3	31.70	27.288		
7,000.0	6,851.4	6,871.3	6,842.2	26.0	15.9	88.54	-209.4	233.6	864.7	832.7	32.00	27.019		
7,050.0	6,891.3	6,919.2	6,885.4	26.1	16.0	89.17	-230.2	233.6	864.5	832.2	32.35	26.723		
7,100.0	6,929.2	6,967.7	6,927.6	26.3	16.2	89.81	-253.9	233.6	864.4	831.7	32.75	26.396		
7,113.6	6,939.2	6,981.0	6,939.0	26.3	16.3	89.98	-260.9	233.6	864.4	831.5	32.87	26.298		
7,150.0	6,964.9	7,016.9	6,968.8	26.4	16.4	90.45	-280.7	233.6	864.4	831.2	33.20	26.035		
7,200.0	6,998.2	7,066.6	7,008.7	26.6	16.7	91.10	-310.5	233.6	864.6	830.9	33.72	25.638		
7,250.0	7,029.1	7,117.1	7,047.1	26.8	16.9	91.74	-343.2	233.6	864.8	830.5	34.31	25.203		
7,300.0	7,057.2	7,168.2	7,083.7	27.0	17.2	92.38	-378.9	233.6	865.2	830.2	34.99	24.730		
7,350.0	7,082.6	7,220.1	7,118.3	27.2	17.6	93.02	-417.5	233.6	865.7	829.9	35.74	24.220		
7,400.0	7,105.2	7,272.7	7,150.6	27.5	18.0	93.65	-459.0	233.6	866.3	829.7	36.59	23.674		
7,450.0	7,124.8	7,326.0	7,180.4	27.8	18.4	94.26	-503.2	233.6	866.9	829.4	37.54	23.095		
7,500.0	7,141.3	7,380.1	7,207.4	28.1	18.9	94.86	-550.1	233.6	867.7	829.1	38.58	22.489		
7,550.0	7,154.7	7,435.0	7,231.3	28.4	19.5	95.45	-599.5	233.6	868.5	828.8	39.73	21.862		
7,600.0	7,164.9	7,490.7	7,251.9	28.8	20.1	96.01	-651.2	233.6	869.4	828.4	40.97	21.219		
7,650.0	7,171.9	7,547.1	7,268.8	29.2	20.7	96.55	-705.1	233.6	870.3	828.0	42.31	20.569		
7,700.0	7,175.7	7,604.3	7,281.9	29.7	21.4	97.06	-760.7	233.6	871.2	827.5	43.74	19.917		
7,745.1	7,176.3	7,656.6	7,290.2	30.1	22.1	97.49	-812.3	233.6	872.1	827.0	45.11	19.334		
7,800.0	7,175.4	7,713.4	7,296.3	30.6	22.9	97.95	-868.8	233.6	873.0	826.4	46.60	18.734		
7,900.0	7,173.7	7,821.4	7,305.1	31.7	24.4	98.64	-976.4	233.6	874.4	825.0	49.49	17.669		
8,000.0	7,172.0	7,927.3	7,305.6	32.8	25.9	98.78	-1,082.3	233.6	874.8	822.3	52.50	16.664		
8,100.0	7,170.4	8,027.3	7,305.0	34.0	27.5	98.85	-1,182.3	233.6	874.9	819.4	55.52	15.759		
8,200.0	7,168.7	8,127.3	7,304.4	35.3	29.0	98.92	-1,282.3	233.6	875.1	816.5	58.63	14.925		
8,300.0	7,167.1	8,227.3	7,303.8	36.6	30.6	98.99	-1,382.3	233.6	875.3	813.5	61.82	14.158		
8,400.0	7,165.4	8,327.3	7,303.2	38.0	32.3	99.05	-1,482.3	233.6	875.5	810.4	65.08	13.453		
8,500.0	7,163.7	8,427.3	7,302.6	39.5	34.0	99.12	-1,582.3	233.6	875.6	807.3	68.39	12.804		
8,600.0	7,162.1	8,527.3	7,302.0	40.9	35.7	99.19	-1,682.3	233.6	875.8	804.1	71.75	12.207		
8,700.0	7,160.4	8,627.3	7,301.3	42.5	37.4	99.26	-1,782.3	233.6	876.0	800.9	75.15	11.657		
8,800.0	7,158.8	8,727.3	7,300.7	44.0	39.1	99.32	-1,882.3	233.6	876.2	797.6	78.58	11.150		
8,900.0	7,157.1	8,827.3	7,300.1	45.6	40.9	99.39	-1,982.3	233.6	876.4	794.3	82.05	10.681		
9,000.0	7,155.5	8,927.3	7,299.5	47.2	42.7	99.46	-2,082.3	233.6	876.5	791.0	85.54	10.247		
9,100.0	7,153.8	9,027.3	7,298.9	48.8	44.4	99.52	-2,182.2	233.6	876.7	787.7	89.05	9.845		
9,200.0	7,152.1	9,127.3	7,298.3	50.5	46.2	99.59	-2,282.2	233.6	876.9	784.3	92.59	9.471		
9,300.0	7,150.5	9,227.3	7,297.7	52.2	48.0	99.66	-2,382.2	233.6	877.1	780.9	96.14	9.123		
9,400.0	7,148.8	9,327.3	7,297.0	53.8	49.9	99.73	-2,482.2	233.6	877.3	777.6	99.71	8.798		
9,500.0	7,147.2	9,427.2	7,296.4	55.5	51.7	99.79	-2,582.2	233.6	877.5	774.2	103.30	8.494		
9,600.0	7,145.5	9,527.2	7,295.8	57.3	53.5	99.86	-2,682.2	233.6	877.7	770.8	106.90	8.210		
9,700.0	7,143.9	9,627.2	7,295.2	59.0	55.3	99.93	-2,782.2	233.6	877.8	767.3	110.51	7.944		
9,800.0	7,142.2	9,727.2	7,294.6	60.7	57.2	99.99	-2,882.2	233.6	878.0	763.9	114.12	7.694		
9,900.0	7,140.5	9,827.2	7,294.0	62.5	59.0	100.06	-2,982.2	233.6	878.2	760.5	117.75	7.458		
10,000.0	7,138.9	9,927.2	7,293.4	64.3	60.9	100.13	-3,082.2	233.6	878.4	757.0	121.39	7.236		
10,100.0	7,137.2	10,027.2	7,292.7	66.0	62.7	100.19	-3,182.2	233.6	878.6	753.6	125.03	7.027		
10,200.0	7,135.6	10,127.2	7,292.1	67.8	64.6	100.26	-3,282.2	233.6	878.8	750.1	128.68	6.829		
10,300.0	7,133.9	10,227.2	7,291.5	69.6	66.5	100.33	-3,382.2	233.6	879.0	746.7	132.34	6.642		
10,400.0	7,132.2	10,327.2	7,290.9	71.4	68.3	100.40	-3,482.2	233.6	879.2	743.2	136.00	6.465		

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 7M-243
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 7M-243	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-403 - 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 Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,500.0	7,130.6	10,427.2	7,290.3	73.2	70.2	100.46	-3,582.1	233.6	879.4	739.8	139.66	6.297	
10,600.0	7,128.9	10,527.2	7,289.7	75.0	72.1	100.53	-3,682.1	233.6	879.6	736.3	143.33	6.137	
10,700.0	7,127.3	10,627.2	7,289.1	76.8	73.9	100.60	-3,782.1	233.6	879.8	732.8	147.00	5.985	
10,800.0	7,125.6	10,727.2	7,288.4	78.6	75.8	100.66	-3,882.1	233.6	880.0	729.3	150.68	5.840	
10,900.0	7,124.0	10,827.2	7,287.8	80.5	77.7	100.73	-3,982.1	233.6	880.2	725.9	154.36	5.702	
11,000.0	7,122.3	10,927.2	7,287.2	82.3	79.6	100.80	-4,082.1	233.6	880.4	722.4	158.04	5.571	
11,100.0	7,120.6	11,027.2	7,286.6	84.1	81.5	100.86	-4,182.1	233.6	880.6	718.9	161.73	5.445	
11,200.0	7,119.0	11,127.2	7,286.0	86.0	83.4	100.93	-4,282.1	233.6	880.9	715.4	165.41	5.325	
11,300.0	7,117.3	11,227.1	7,285.4	87.8	85.2	100.99	-4,382.1	233.6	881.1	712.0	169.10	5.210	
11,400.0	7,115.7	11,327.1	7,284.8	89.6	87.1	101.06	-4,482.1	233.6	881.3	708.5	172.79	5.100	
11,500.0	7,114.0	11,427.1	7,284.1	91.5	89.0	101.13	-4,582.1	233.6	881.5	705.0	176.48	4.995	
11,600.0	7,112.4	11,527.1	7,283.5	93.3	90.9	101.19	-4,682.1	233.6	881.7	701.5	180.17	4.894	
11,700.0	7,110.7	11,627.1	7,282.9	95.2	92.8	101.26	-4,782.1	233.6	881.9	698.0	183.86	4.797	
11,800.0	7,109.0	11,727.1	7,282.3	97.0	94.7	101.33	-4,882.1	233.6	882.1	694.6	187.56	4.703	
11,900.0	7,107.4	11,827.1	7,281.7	98.9	96.6	101.39	-4,982.0	233.6	882.3	691.1	191.25	4.614	
11,983.0	7,106.0	11,910.1	7,281.2	100.4	98.2	101.45	-5,065.1	233.6	882.5	688.2	194.32	4.542 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7M-243
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 7M-243	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 - Swanson 1-7 (P&A) - Wellbore #1 - Wellbore #1		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			
2,500.0	2,451.9	2,448.9	2,448.9	10.2	49.0	68.16	-960.7	783.1	999.2	940.7	58.53	17.074			
2,600.0	2,549.3	2,546.3	2,546.3	10.7	50.9	69.34	-960.7	783.1	990.9	929.9	61.00	16.243			
2,700.0	2,646.7	2,643.7	2,643.7	11.2	52.9	70.54	-960.7	783.1	983.0	919.5	63.48	15.484			
2,800.0	2,744.1	2,741.1	2,741.1	11.7	54.8	71.77	-960.7	783.1	975.5	909.5	65.97	14.787			
2,900.0	2,841.6	2,838.6	2,838.6	12.2	56.8	73.00	-960.7	783.1	968.5	900.0	68.46	14.148			
3,000.0	2,939.0	2,936.0	2,936.0	12.7	58.7	74.26	-960.7	783.1	962.0	891.0	70.95	13.559			
3,100.0	3,036.4	3,033.4	3,033.4	13.2	60.7	75.53	-960.7	783.1	956.0	882.5	73.44	13.017			
3,200.0	3,133.8	3,130.8	3,130.8	13.7	62.6	76.81	-960.7	783.1	950.4	874.5	75.93	12.516			
3,300.0	3,231.2	3,228.2	3,228.2	14.2	64.6	78.11	-960.7	783.1	945.4	867.0	78.43	12.055			
3,400.0	3,328.7	3,325.7	3,325.7	14.7	66.5	79.42	-960.7	783.1	940.9	860.0	80.92	11.628			
3,500.0	3,426.1	3,423.1	3,423.1	15.2	68.5	80.75	-960.7	783.1	936.9	853.5	83.41	11.233			
3,600.0	3,523.5	3,520.5	3,520.5	15.7	70.4	82.08	-960.7	783.1	933.5	847.6	85.90	10.867			
3,700.0	3,620.9	3,617.9	3,617.9	16.2	72.4	83.42	-960.7	783.1	930.5	842.2	88.38	10.528			
3,800.0	3,718.3	3,715.3	3,715.3	16.6	74.3	84.77	-960.7	783.1	928.2	837.3	90.86	10.215			
3,900.0	3,815.8	3,812.8	3,812.8	17.1	76.3	86.12	-960.7	783.1	926.3	833.0	93.34	9.924			
4,000.0	3,913.2	3,910.2	3,910.2	17.6	78.2	87.48	-960.7	783.1	925.0	829.2	95.80	9.655			
4,100.0	4,010.6	4,007.6	4,007.6	18.1	80.2	88.84	-960.7	783.1	924.3	826.0	98.26	9.406			
4,184.8	4,093.2	4,090.2	4,090.2	18.5	81.8	90.00	-960.7	783.1	924.1	823.7	100.34	9.209			
4,200.0	4,108.0	4,105.0	4,105.0	18.6	82.1	90.21	-960.7	783.1	924.1	823.4	100.72	9.175			
4,300.0	4,205.4	4,202.4	4,202.4	19.1	84.0	91.57	-960.7	783.1	924.4	821.3	103.16	8.961			
4,400.0	4,302.9	4,299.9	4,299.9	19.6	86.0	92.93	-960.7	783.1	925.4	819.8	105.59	8.763			
4,500.0	4,400.3	4,397.3	4,397.3	20.1	87.9	94.29	-960.7	783.1	926.8	818.8	108.02	8.580			
4,600.0	4,497.7	4,494.7	4,494.7	20.6	89.9	95.64	-960.7	783.1	928.8	818.4	110.43	8.411			
4,700.0	4,595.1	4,592.1	4,592.1	21.1	91.8	96.99	-960.7	783.1	931.4	818.5	112.83	8.254			
4,800.0	4,692.5	4,689.5	4,689.5	21.6	93.8	98.33	-960.7	783.1	934.4	819.2	115.22	8.110			
4,900.0	4,790.0	4,787.0	4,787.0	22.1	95.7	99.66	-960.7	783.1	938.1	820.5	117.60	7.977			
5,000.0	4,887.4	4,884.4	4,884.4	22.6	97.7	100.98	-960.7	783.1	942.2	822.3	119.96	7.854			
5,067.9	4,953.5	4,950.5	4,950.5	22.9	99.0	101.86	-960.7	783.1	945.3	823.8	121.56	7.777			
5,100.0	4,984.9	4,981.9	4,981.9	23.0	99.6	102.30	-960.7	783.1	946.8	824.5	122.30	7.742			
5,200.0	5,082.9	5,079.9	5,079.9	23.4	101.6	103.53	-960.7	783.1	951.3	826.8	124.54	7.639			
5,300.0	5,181.5	5,178.5	5,178.5	23.7	103.6	104.55	-960.7	783.1	955.4	828.6	126.76	7.537			
5,400.0	5,280.7	5,277.7	5,277.7	23.9	105.6	105.35	-960.7	783.1	958.7	829.8	128.95	7.435			
5,500.0	5,380.2	5,377.2	5,377.2	24.1	107.5	105.94	-960.7	783.1	961.3	830.1	131.12	7.331			
5,600.0	5,480.1	5,477.1	5,477.1	24.3	109.5	106.31	-960.7	783.1	962.9	829.6	133.26	7.226			
5,700.0	5,580.0	5,577.0	5,577.0	24.4	111.5	106.46	-960.7	783.1	963.6	828.2	135.37	7.118			
5,720.0	5,600.0	5,597.0	5,597.0	24.4	111.9	-160.92	-960.7	783.1	963.6	827.8	135.79	7.097			
5,800.0	5,680.0	5,677.0	5,677.0	24.5	113.5	-160.92	-960.7	783.1	963.6	826.1	137.47	7.010			
5,900.0	5,780.0	5,777.0	5,777.0	24.6	115.5	-160.92	-960.7	783.1	963.6	824.0	139.58	6.904			
6,000.0	5,880.0	5,877.0	5,877.0	24.7	117.5	-160.92	-960.7	783.1	963.6	821.9	141.69	6.801			
6,100.0	5,980.0	5,977.0	5,977.0	24.8	119.5	-160.92	-960.7	783.1	963.6	819.8	143.80	6.701			
6,200.0	6,080.0	6,077.0	6,077.0	24.9	121.5	-160.92	-960.7	783.1	963.6	817.7	145.92	6.604			
6,300.0	6,180.0	6,177.0	6,177.0	25.1	123.5	-160.92	-960.7	783.1	963.6	815.6	148.03	6.509			
6,400.0	6,280.0	6,277.0	6,277.0	25.2	125.5	-160.92	-960.7	783.1	963.6	813.5	150.15	6.418			
6,500.0	6,380.0	6,377.0	6,377.0	25.3	127.5	-160.92	-960.7	783.1	963.6	811.3	152.27	6.328			
6,532.4	6,412.4	6,409.4	6,409.4	25.3	128.2	-160.92	-960.7	783.1	963.6	810.7	152.95	6.300			
6,550.0	6,430.0	6,427.0	6,427.0	25.3	128.5	19.09	-960.7	783.1	963.4	810.1	153.28	6.285			
6,600.0	6,479.9	6,476.9	6,476.9	25.4	129.5	19.21	-960.7	783.1	960.8	807.0	153.80	6.247			
6,650.0	6,529.6	6,526.6	6,526.6	25.5	130.5	19.47	-960.7	783.1	955.1	801.4	153.72	6.213			
6,700.0	6,578.7	6,575.7	6,575.7	25.5	131.5	19.89	-960.7	783.1	946.3	793.3	153.06	6.183			
6,750.0	6,627.1	6,624.1	6,624.1	25.6	132.5	20.46	-960.7	783.1	934.6	782.8	151.82	6.156			
6,800.0	6,674.6	6,671.6	6,671.6	25.7	133.4	21.21	-960.7	783.1	919.9	769.9	150.03	6.132			

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 7M-243
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 7M-243	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 - Swanson 1-7 (P&A) - Wellbore #1 - Wellbore #1										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	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)						
6,850.0	6,721.0	6,718.0	6,718.0	25.7	134.4	22.16	-960.7	783.1	902.4	754.6	147.73	6.108					
6,900.0	6,766.0	6,763.0	6,763.0	25.8	135.3	23.33	-960.7	783.1	882.1	737.1	145.02	6.083					
6,950.0	6,809.5	6,806.5	6,806.5	25.9	136.1	24.77	-960.7	783.1	859.2	717.2	141.99	6.051					
7,000.0	6,851.4	6,848.4	6,848.4	26.0	137.0	26.50	-960.7	783.1	833.8	695.0	138.80	6.007					
7,050.0	6,891.3	6,888.3	6,888.3	26.1	137.8	28.59	-960.7	783.1	806.0	670.4	135.67	5.941					
7,100.0	6,929.2	6,926.2	6,926.2	26.3	138.5	31.09	-960.7	783.1	776.1	643.2	132.90	5.840					
7,150.0	6,964.9	6,961.9	6,961.9	26.4	139.2	34.08	-960.7	783.1	744.3	613.4	130.84	5.689					
7,200.0	6,998.2	6,995.2	6,995.2	26.6	139.9	37.61	-960.7	783.1	710.7	580.8	129.92	5.470					
7,250.0	7,029.1	7,026.1	7,026.1	26.8	140.5	41.76	-960.7	783.1	675.6	545.1	130.55	5.175					
7,300.0	7,057.2	7,054.2	7,054.2	27.0	141.1	46.56	-960.7	783.1	639.4	506.4	133.01	4.807					
7,350.0	7,082.6	7,079.6	7,079.6	27.2	141.6	51.97	-960.7	783.1	602.3	465.1	137.25	4.388					
7,400.0	7,105.2	7,102.2	7,102.2	27.5	142.0	57.91	-960.7	783.1	564.8	421.9	142.85	3.954					
7,450.0	7,124.8	7,121.8	7,121.8	27.8	142.4	64.14	-960.7	783.1	527.2	378.2	148.99	3.539					
7,500.0	7,141.3	7,138.3	7,138.3	28.1	142.8	70.35	-960.7	783.1	490.2	335.4	154.74	3.168					
7,550.0	7,154.7	7,151.7	7,151.7	28.4	143.0	76.19	-960.7	783.1	454.3	294.9	159.41	2.850					
7,600.0	7,164.9	7,161.9	7,161.9	28.8	143.2	81.33	-960.7	783.1	420.5	257.8	162.70	2.584					
7,650.0	7,171.9	7,168.9	7,168.9	29.2	143.4	85.53	-960.7	783.1	389.4	224.7	164.77	2.364					
7,700.0	7,175.7	7,172.7	7,172.7	29.7	143.5	88.62	-960.7	783.1	362.4	196.4	166.00	2.183					
7,745.1	7,176.3	7,173.3	7,173.3	30.1	143.5	90.40	-960.7	783.1	342.4	175.6	166.72	2.054					
7,800.0	7,175.4	7,172.4	7,172.4	30.6	143.4	90.24	-960.7	783.1	324.8	157.4	167.42	1.940					
7,879.1	7,174.0	7,171.0	7,171.0	31.4	143.4	90.00	-960.7	783.1	315.0	146.6	168.48	1.870 CC, ES, SF					
7,900.0	7,173.7	7,170.7	7,170.7	31.7	143.4	89.94	-960.7	783.1	315.7	147.0	168.76	1.871					
8,000.0	7,172.0	7,169.0	7,169.0	32.8	143.4	89.64	-960.7	783.1	337.4	167.3	170.15	1.983					
8,100.0	7,170.4	7,167.4	7,167.4	34.0	143.3	89.33	-960.7	783.1	384.7	213.1	171.59	2.242					
8,200.0	7,168.7	7,165.7	7,165.7	35.3	143.3	89.03	-960.7	783.1	449.6	276.6	173.08	2.598					
8,300.0	7,167.1	7,164.1	7,164.1	36.6	143.3	88.73	-960.7	783.1	525.7	351.1	174.61	3.011					
8,400.0	7,165.4	7,162.4	7,162.4	38.0	143.2	88.43	-960.7	783.1	608.7	432.5	176.16	3.455					
8,500.0	7,163.7	7,160.7	7,160.7	39.5	143.2	88.13	-960.7	783.1	696.1	518.4	177.74	3.917					
8,600.0	7,162.1	7,159.1	7,159.1	40.9	143.2	87.83	-960.7	783.1	786.6	607.3	179.34	4.386					
8,700.0	7,160.4	7,157.4	7,157.4	42.5	143.1	87.53	-960.7	783.1	879.1	698.2	180.96	4.858					
8,800.0	7,158.8	7,155.8	7,155.8	44.0	143.1	87.23	-960.7	783.1	973.1	790.6	182.59	5.330					

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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 7M-243	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 7M-243
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 7M-243
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
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