PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Spaur 10T-201**

Surface Location: Spaur 4N67W10LQ Pad Sec.10-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4830.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1360170.97	3173449.36	40.320400	-104.877950	

RKB - 13' WELL @ 4843.0ft (RKB - 13')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (10T-201)	1.0	2495.4	1709.0	Rectangle (Sides: L3934.8 W100.0)
SHL 299'FSL & 2393'FWL	1.0	0.0	0.0	Point
BHL 500'FNL & 1161'FEL	7005.0	4462.8	1709.0	Point

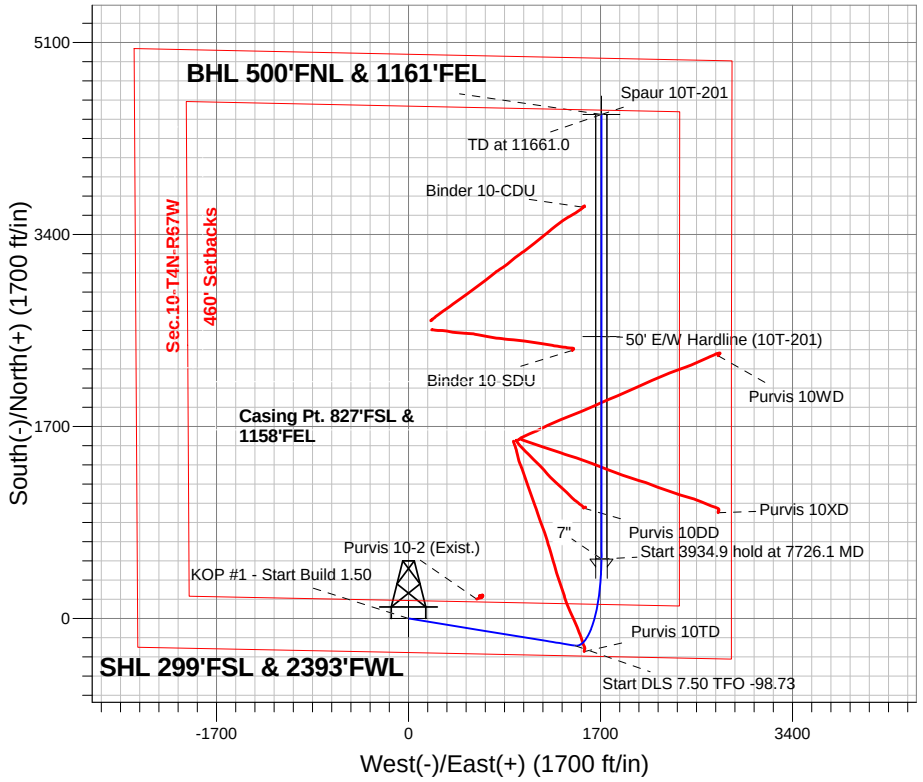
Azimuths to True North
Magnetic North: 8.38°

Magnetic Field
Strength: 52656.2snT
Dip Angle: 66.83°
Date: 6/16/2015
Model: IGRF2010

ANNOTATIONS

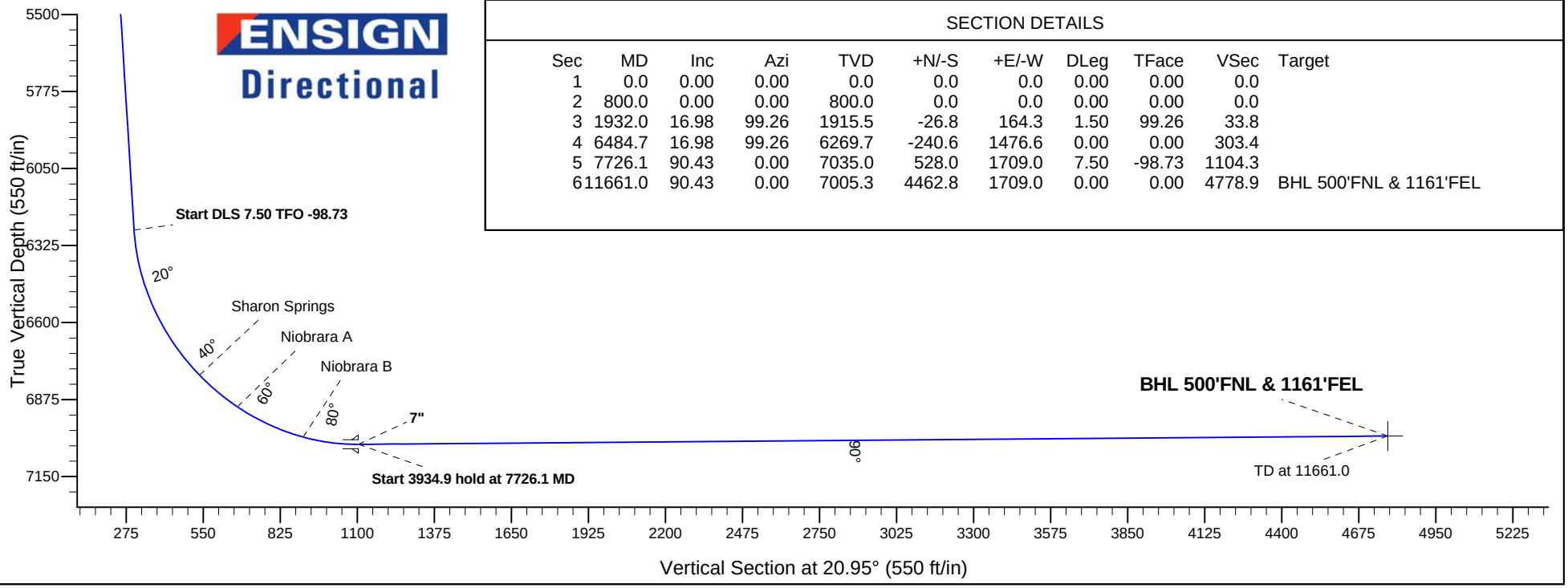
TVD	MD	Annotation
800.0	800.0	KOP #1 - Start Build 1.50
6269.7	6484.7	Start DLS 7.50 TFO -98.73
7035.0	7726.1	Start 3934.9 hold at 7726.1 MD
7005.3	11661.0	TD at 11661.0

Spaur 4N67W10LQ Pad Sec.10-T4N-R67W
Spaur 10T-201
Plan #1 (6-11-15)



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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1932.0	16.98	99.26	1915.5	-26.8	164.3	1.50	99.26	33.8	
4	6484.7	16.98	99.26	6269.7	-240.6	1476.6	0.00	0.00	303.4	
5	7726.1	90.43	0.00	7035.0	528.0	1709.0	7.50	-98.73	1104.3	
6	11661.0	90.43	0.00	7005.3	4462.8	1709.0	0.00	0.00	4778.9	BHL 500'FNL & 1161'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W
Spaur 4N67W10LQ Pad Sec.10-T4N-R67W
Spaur 10T-201

Wellbore #1

Plan: Plan #1 (6-11-15)

Standard Planning Report

16 June, 2015

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Project:	SEC.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**North Reference:**	True
Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-11-15)		

Project SEC.10-T4N-R67W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Spaur 4N67W10LQ Pad Sec.10-T4N-R67W

Site Position:		**Northing:**	1,360,247.47 ft	**Latitude:**	40.320610
From:	Lat/Long	**Easting:**	3,173,448.83 ft	**Longitude:**	-104.877950
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.40 °

Well Spaur 10T-201

Well Position	**+N/-S**	-76.5 ft	**Northing:**	1,360,170.97 ft	**Latitude:**	40.320400
	+E/-W	0.0 ft	**Easting:**	3,173,449.36 ft	**Longitude:**	-104.877950
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,830.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/16/2015	8.38	66.83	52,656

Design Plan #1 (6-11-15)

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	20.95

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,932.0	16.98	99.26	1,915.5	-26.8	164.3	1.50	1.50	0.00	99.26	
6,484.7	16.98	99.26	6,269.7	-240.6	1,476.6	0.00	0.00	0.00	0.00	
7,726.1	90.43	0.00	7,035.0	528.0	1,709.0	7.50	5.92	-8.00	-98.73	
11,661.0	90.43	0.00	7,005.3	4,462.8	1,709.0	0.00	0.00	0.00	0.00	BHL 500'FNL & 116

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Project:	SEC.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**North Reference:**	True
Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-11-15)		

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
100.0	0.00	0.00	100.0	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
300.0	0.00	0.00	300.0	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
500.0	0.00	0.00	500.0	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
700.0	0.00	0.00	700.0	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
KOP #1 - Start Build 1.50									
900.0	1.50	99.26	900.0	-0.2	1.3	0.3	1.50	1.50	0.00
1,000.0	3.00	99.26	999.9	-0.8	5.2	1.1	1.50	1.50	0.00
1,100.0	4.50	99.26	1,099.7	-1.9	11.6	2.4	1.50	1.50	0.00
1,200.0	6.00	99.26	1,199.3	-3.4	20.7	4.2	1.50	1.50	0.00
1,300.0	7.50	99.26	1,298.6	-5.3	32.3	6.6	1.50	1.50	0.00
1,400.0	9.00	99.26	1,397.5	-7.6	46.4	9.5	1.50	1.50	0.00
1,500.0	10.50	99.26	1,496.1	-10.3	63.1	13.0	1.50	1.50	0.00
1,600.0	12.00	99.26	1,594.2	-13.4	82.4	16.9	1.50	1.50	0.00
1,700.0	13.50	99.26	1,691.7	-17.0	104.2	21.4	1.50	1.50	0.00
1,800.0	15.00	99.26	1,788.6	-20.9	128.5	26.4	1.50	1.50	0.00
1,900.0	16.50	99.26	1,884.9	-25.3	155.2	31.9	1.50	1.50	0.00
1,932.0	16.98	99.26	1,915.5	-26.8	164.3	33.8	1.50	1.50	0.00
2,000.0	16.98	99.26	1,980.5	-30.0	183.9	37.8	0.00	0.00	0.00
2,100.0	16.98	99.26	2,076.2	-34.7	212.8	43.7	0.00	0.00	0.00
2,200.0	16.98	99.26	2,171.8	-39.4	241.6	49.6	0.00	0.00	0.00
2,300.0	16.98	99.26	2,267.5	-44.1	270.4	55.6	0.00	0.00	0.00
2,400.0	16.98	99.26	2,363.1	-48.8	299.2	61.5	0.00	0.00	0.00
2,500.0	16.98	99.26	2,458.7	-53.5	328.1	67.4	0.00	0.00	0.00
2,600.0	16.98	99.26	2,554.4	-58.2	356.9	73.3	0.00	0.00	0.00
2,700.0	16.98	99.26	2,650.0	-62.9	385.7	79.2	0.00	0.00	0.00
2,800.0	16.98	99.26	2,745.7	-67.6	414.5	85.2	0.00	0.00	0.00
2,900.0	16.98	99.26	2,841.3	-72.2	443.4	91.1	0.00	0.00	0.00
3,000.0	16.98	99.26	2,936.9	-76.9	472.2	97.0	0.00	0.00	0.00
3,100.0	16.98	99.26	3,032.6	-81.6	501.0	102.9	0.00	0.00	0.00
3,200.0	16.98	99.26	3,128.2	-86.3	529.8	108.8	0.00	0.00	0.00
3,300.0	16.98	99.26	3,223.9	-91.0	558.6	114.8	0.00	0.00	0.00
3,400.0	16.98	99.26	3,319.5	-95.7	587.5	120.7	0.00	0.00	0.00
3,500.0	16.98	99.26	3,415.2	-100.4	616.3	126.6	0.00	0.00	0.00
3,600.0	16.98	99.26	3,510.8	-105.1	645.1	132.5	0.00	0.00	0.00
3,651.5	16.98	99.26	3,560.0	-107.5	659.9	135.6	0.00	0.00	0.00
Parkman									
3,700.0	16.98	99.26	3,606.4	-109.8	673.9	138.5	0.00	0.00	0.00
3,800.0	16.98	99.26	3,702.1	-114.5	702.8	144.4	0.00	0.00	0.00
3,900.0	16.98	99.26	3,797.7	-119.2	731.6	150.3	0.00	0.00	0.00
4,000.0	16.98	99.26	3,893.4	-123.9	760.4	156.2	0.00	0.00	0.00
4,100.0	16.98	99.26	3,989.0	-128.6	789.2	162.1	0.00	0.00	0.00
4,200.0	16.98	99.26	4,084.6	-133.3	818.1	168.1	0.00	0.00	0.00
4,216.1	16.98	99.26	4,100.0	-134.1	822.7	169.0	0.00	0.00	0.00
Sussex									
4,300.0	16.98	99.26	4,180.3	-138.0	846.9	174.0	0.00	0.00	0.00
4,400.0	16.98	99.26	4,275.9	-142.7	875.7	179.9	0.00	0.00	0.00
4,500.0	16.98	99.26	4,371.6	-147.4	904.5	185.8	0.00	0.00	0.00
4,600.0	16.98	99.26	4,467.2	-152.1	933.3	191.7	0.00	0.00	0.00

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Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-11-15)		

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)
4,700.0	16.98	99.26	4,562.8	-156.8	962.2	197.7	0.00	0.00	0.00
4,755.6	16.98	99.26	4,616.0	-159.4	978.2	201.0	0.00	0.00	0.00
Shannon									
4,800.0	16.98	99.26	4,658.5	-161.5	991.0	203.6	0.00	0.00	0.00
4,900.0	16.98	99.26	4,754.1	-166.2	1,019.8	209.5	0.00	0.00	0.00
5,000.0	16.98	99.26	4,849.8	-170.9	1,048.6	215.4	0.00	0.00	0.00
5,100.0	16.98	99.26	4,945.4	-175.6	1,077.5	221.4	0.00	0.00	0.00
5,200.0	16.98	99.26	5,041.0	-180.3	1,106.3	227.3	0.00	0.00	0.00
5,300.0	16.98	99.26	5,136.7	-185.0	1,135.1	233.2	0.00	0.00	0.00
5,400.0	16.98	99.26	5,232.3	-189.7	1,163.9	239.1	0.00	0.00	0.00
5,500.0	16.98	99.26	5,328.0	-194.4	1,192.8	245.0	0.00	0.00	0.00
5,600.0	16.98	99.26	5,423.6	-199.1	1,221.6	251.0	0.00	0.00	0.00
5,700.0	16.98	99.26	5,519.2	-203.8	1,250.4	256.9	0.00	0.00	0.00
5,800.0	16.98	99.26	5,614.9	-208.5	1,279.2	262.8	0.00	0.00	0.00
5,900.0	16.98	99.26	5,710.5	-213.2	1,308.1	268.7	0.00	0.00	0.00
6,000.0	16.98	99.26	5,806.2	-217.9	1,336.9	274.7	0.00	0.00	0.00
6,100.0	16.98	99.26	5,901.8	-222.6	1,365.7	280.6	0.00	0.00	0.00
6,200.0	16.98	99.26	5,997.5	-227.2	1,394.5	286.5	0.00	0.00	0.00
6,300.0	16.98	99.26	6,093.1	-231.9	1,423.3	292.4	0.00	0.00	0.00
6,400.0	16.98	99.26	6,188.7	-236.6	1,452.2	298.3	0.00	0.00	0.00
6,484.7	16.98	99.26	6,269.7	-240.6	1,476.6	303.4	0.00	0.00	0.00
Start DLS 7.50 TFO -98.73									
6,500.0	16.84	95.33	6,284.4	-241.2	1,481.0	304.4	7.51	-0.90	-25.64
6,600.0	17.79	70.14	6,380.0	-237.3	1,509.8	318.3	7.50	0.94	-25.19
6,700.0	21.41	50.39	6,474.3	-220.5	1,538.3	344.2	7.50	3.62	-19.75
6,800.0	26.64	37.08	6,565.7	-190.9	1,565.9	381.7	7.50	5.23	-13.31
6,900.0	32.71	28.13	6,652.5	-149.2	1,592.2	430.1	7.50	6.07	-8.95
7,000.0	39.23	21.80	6,733.5	-95.9	1,616.7	488.6	7.50	6.52	-6.33
7,073.1	44.16	18.22	6,788.0	-50.2	1,633.3	537.2	7.50	6.75	-4.91
Sharon Springs									
7,100.0	46.01	17.05	6,807.0	-32.1	1,639.0	556.2	7.50	6.85	-4.32
7,200.0	52.94	13.29	6,872.0	41.3	1,658.8	631.8	7.50	6.94	-3.76
7,250.2	56.45	11.66	6,901.0	81.3	1,667.6	672.3	7.46	6.98	-3.24
Niobrara A									
7,300.0	59.98	10.16	6,927.2	122.8	1,675.6	713.9	7.54	7.09	-3.01
7,400.0	67.08	7.46	6,971.8	211.2	1,689.3	801.4	7.50	7.10	-2.71
7,500.0	74.22	5.02	7,004.9	305.0	1,699.5	892.6	7.50	7.14	-2.44
7,515.7	75.34	4.65	7,009.0	320.0	1,700.7	907.1	7.50	7.16	-2.33
Niobrara B									
7,600.0	81.38	2.75	7,026.0	402.4	1,706.0	985.9	7.50	7.17	-2.26
7,700.0	88.56	0.57	7,034.8	501.9	1,708.9	1,079.9	7.50	7.18	-2.18
7,726.1	90.43	0.00	7,035.0	528.0	1,709.0	1,104.3	7.50	7.18	-2.16
Start 3934.9 hold at 7726.1 MD - 7"									
7,800.0	90.43	0.00	7,034.4	601.9	1,709.0	1,173.3	0.00	0.00	0.00
7,900.0	90.43	0.00	7,033.7	701.9	1,709.0	1,266.7	0.00	0.00	0.00
8,000.0	90.43	0.00	7,032.9	801.9	1,709.0	1,360.1	0.00	0.00	0.00
8,100.0	90.43	0.00	7,032.2	901.9	1,709.0	1,453.4	0.00	0.00	0.00
8,200.0	90.43	0.00	7,031.4	1,001.9	1,709.0	1,546.8	0.00	0.00	0.00
8,300.0	90.43	0.00	7,030.7	1,101.9	1,709.0	1,640.2	0.00	0.00	0.00
8,400.0	90.43	0.00	7,029.9	1,201.9	1,709.0	1,733.6	0.00	0.00	0.00
8,500.0	90.43	0.00	7,029.2	1,301.9	1,709.0	1,827.0	0.00	0.00	0.00
8,600.0	90.43	0.00	7,028.4	1,401.9	1,709.0	1,920.4	0.00	0.00	0.00

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Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-11-15)		

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)
8,700.0	90.43	0.00	7,027.7	1,501.9	1,709.0	2,013.7	0.00	0.00	0.00
8,800.0	90.43	0.00	7,026.9	1,601.9	1,709.0	2,107.1	0.00	0.00	0.00
8,900.0	90.43	0.00	7,026.1	1,701.9	1,709.0	2,200.5	0.00	0.00	0.00
9,000.0	90.43	0.00	7,025.4	1,801.9	1,709.0	2,293.9	0.00	0.00	0.00
9,100.0	90.43	0.00	7,024.6	1,901.9	1,709.0	2,387.3	0.00	0.00	0.00
9,200.0	90.43	0.00	7,023.9	2,001.9	1,709.0	2,480.7	0.00	0.00	0.00
9,300.0	90.43	0.00	7,023.1	2,101.9	1,709.0	2,574.0	0.00	0.00	0.00
9,400.0	90.43	0.00	7,022.4	2,201.9	1,709.0	2,667.4	0.00	0.00	0.00
9,500.0	90.43	0.00	7,021.6	2,301.9	1,709.0	2,760.8	0.00	0.00	0.00
9,600.0	90.43	0.00	7,020.9	2,401.9	1,709.0	2,854.2	0.00	0.00	0.00
9,700.0	90.43	0.00	7,020.1	2,501.8	1,709.0	2,947.6	0.00	0.00	0.00
9,800.0	90.43	0.00	7,019.3	2,601.8	1,709.0	3,041.0	0.00	0.00	0.00
9,900.0	90.43	0.00	7,018.6	2,701.8	1,709.0	3,134.4	0.00	0.00	0.00
10,000.0	90.43	0.00	7,017.8	2,801.8	1,709.0	3,227.7	0.00	0.00	0.00
10,100.0	90.43	0.00	7,017.1	2,901.8	1,709.0	3,321.1	0.00	0.00	0.00
10,200.0	90.43	0.00	7,016.3	3,001.8	1,709.0	3,414.5	0.00	0.00	0.00
10,300.0	90.43	0.00	7,015.6	3,101.8	1,709.0	3,507.9	0.00	0.00	0.00
10,400.0	90.43	0.00	7,014.8	3,201.8	1,709.0	3,601.3	0.00	0.00	0.00
10,500.0	90.43	0.00	7,014.1	3,301.8	1,709.0	3,694.7	0.00	0.00	0.00
10,600.0	90.43	0.00	7,013.3	3,401.8	1,709.0	3,788.0	0.00	0.00	0.00
10,700.0	90.43	0.00	7,012.6	3,501.8	1,709.0	3,881.4	0.00	0.00	0.00
10,800.0	90.43	0.00	7,011.8	3,601.8	1,709.0	3,974.8	0.00	0.00	0.00
10,900.0	90.43	0.00	7,011.0	3,701.8	1,709.0	4,068.2	0.00	0.00	0.00
11,000.0	90.43	0.00	7,010.3	3,801.8	1,709.0	4,161.6	0.00	0.00	0.00
11,100.0	90.43	0.00	7,009.5	3,901.8	1,709.0	4,255.0	0.00	0.00	0.00
11,200.0	90.43	0.00	7,008.8	4,001.8	1,709.0	4,348.3	0.00	0.00	0.00
11,300.0	90.43	0.00	7,008.0	4,101.8	1,709.0	4,441.7	0.00	0.00	0.00
11,400.0	90.43	0.00	7,007.3	4,201.8	1,709.0	4,535.1	0.00	0.00	0.00
11,500.0	90.43	0.00	7,006.5	4,301.8	1,709.0	4,628.5	0.00	0.00	0.00
11,600.0	90.43	0.00	7,005.8	4,401.8	1,709.0	4,721.9	0.00	0.00	0.00
11,661.0	90.43	0.00	7,005.3	4,462.8	1,709.0	4,778.8	0.00	0.00	0.00
TD at 11661.0									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 500'FNL & 1161'	0.00	0.00	7,005.0	4,462.8	1,709.0	1,364,645.48	3,175,126.98	40.332650	-104.871820
- plan misses target center by 0.3ft at 11661.0ft MD (7005.3 TVD, 4462.8 N, 1709.0 E)									
- Point									
SHL 299'FSL & 2393'I	0.00	0.00	1.0	0.0	0.0	1,360,170.97	3,173,449.36	40.320400	-104.877950
- plan hits target center									
- Point									
50' E/W Hardline (10T	0.00	0.00	1.0	2,495.4	1,709.0	1,362,678.18	3,175,140.74	40.327250	-104.871821
- plan misses target center by 3024.5ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W3,934.8 H100.0 D0.0)									

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Project:	SEC.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**North Reference:**	True
Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-11-15)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,726.1	7,035.0	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,651.5	3,560.0	Parkman		0.00	
4,216.1	4,100.0	Sussex		0.00	
4,755.6	4,616.0	Shannon		0.00	
7,073.1	6,788.0	Sharon Springs		0.00	
7,250.2	6,901.0	Niobrara A		0.00	
7,515.7	7,009.0	Niobrara B		0.00	
	7,083.0	Niobrara C		0.00	
	7,204.0	Fort Hays		0.00	
	7,223.0	Codell		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
800.0	800.0	0.0	0.0	KOP #1 - Start Build 1.50
6,484.7	6,269.7	-26.8	164.3	Start DLS 7.50 TFO -98.73
7,726.1	7,035.0	-240.6	1,476.6	Start 3934.9 hold at 7726.1 MD
11,661.0	7,005.3	528.0	1,709.0	TD at 11661.0

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W
Spaur 4N67W10LQ Pad Sec.10-T4N-R67W
Spaur 10T-201

Wellbore #1
Plan #1 (6-11-15)

Anticollision Report

16 June, 2015

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (6-11-15)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**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** 6/16/2015

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,661.0	Plan #1 (6-11-15) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Binder 10-NDU Pad Sec.10-T4N-R67W						
Binder 10-CDU - Wellbore #1 - Wellbore #1	10,843.6	7,275.6	160.0	62.2	1.637	CC, ES, SF
Binder 10-SDU - Wellbore #1 - Wellbore #1	9,576.2	7,143.9	255.9	189.1	3.835	CC, ES
Binder 10-SDU - Wellbore #1 - Wellbore #1	9,600.0	7,143.4	257.0	189.8	3.829	SF
Existing Wells Sec.10-T4N-R67W						
Purvis 10-2 (Exist.) - Wellbore #1 - Wellbore #1	3,398.4	3,295.4	282.2	261.6	13.718	CC
Purvis 10-2 (Exist.) - Wellbore #1 - Wellbore #1	3,400.0	3,296.8	282.2	261.6	13.711	ES
Purvis 10-2 (Exist.) - Wellbore #1 - Wellbore #1	3,600.0	3,489.4	288.3	266.5	13.201	SF
Purvis 10TD Pad Sec. 10-T4N-R67W						
Purvis 10DD - Wellbore #1 - Wellbore #1	8,177.7	7,101.5	157.2	111.2	3.419	CC, ES, SF
Purvis 10TD - Wellbore #1 - Wellbore #1	6,677.8	6,785.0	49.5	1.7	1.036	Level 2, CC, ES, SF
Purvis 10WD - Wellbore #1 - Wellbore #1						Out of range
Purvis 10XD - Wellbore #1 - Wellbore #1						Out of range
Spaur 4N67W10LQ Pad Sec.10-T4N-R67W						
Spaur 10Q-321 - Wellbore #1 - Plan #3 (6-11-15)	800.0	799.0	47.4	44.0	14.177	CC
Spaur 10Q-321 - Wellbore #1 - Plan #3 (6-11-15)	900.0	899.0	47.6	43.8	12.606	ES
Spaur 10Q-321 - Wellbore #1 - Plan #3 (6-11-15)	1,200.0	1,198.3	54.8	49.7	10.784	SF
Spaur 10Q-401 - Wellbore #1 - Plan #2 (6-11-15)	800.0	799.0	62.0	58.7	18.561	CC
Spaur 10Q-401 - Wellbore #1 - Plan #2 (6-11-15)	900.0	899.0	62.2	58.4	16.470	ES
Spaur 10Q-401 - Wellbore #1 - Plan #2 (6-11-15)	1,300.0	1,297.6	73.4	67.8	13.251	SF
Spaur 10T-241 - Wellbore #1 - Plan #2 (6-11-15)	800.0	800.0	29.1	25.8	8.719	CC
Spaur 10T-241 - Wellbore #1 - Plan #2 (6-11-15)	900.0	900.0	29.4	25.6	7.780	ES
Spaur 10T-241 - Wellbore #1 - Plan #2 (6-11-15)	11,661.0	11,539.5	599.8	424.3	3.418	SF
Spaur 10T-301 - Wellbore #1 - Plan #2 (6-11-15)	800.0	800.0	14.6	11.2	4.359	CC
Spaur 10T-301 - Wellbore #1 - Plan #2 (6-11-15)	900.0	900.0	14.8	11.1	3.928	ES
Spaur 10T-301 - Wellbore #1 - Plan #2 (6-11-15)	11,661.0	11,699.2	327.7	153.3	1.879	SF
Spaur 10T-321 - Wellbore #1 - Plan #1 (6-11-15)	366.3	367.3	29.1	27.7	20.892	CC
Spaur 10T-321 - Wellbore #1 - Plan #1 (6-11-15)	500.0	500.9	29.3	27.3	14.767	ES
Spaur 10T-321 - Wellbore #1 - Plan #1 (6-11-15)	11,661.0	11,807.7	513.5	341.5	2.985	SF
Spaur 10T-421 - Wellbore #1 - Plan #1 (6-11-15)	566.3	567.3	14.8	12.5	6.467	CC
Spaur 10T-421 - Wellbore #1 - Plan #1 (6-11-15)	600.0	601.0	14.8	12.4	6.067	ES
Spaur 10T-421 - Wellbore #1 - Plan #1 (6-11-15)	11,661.0	11,885.0	356.3	227.5	2.766	SF
Spaur 10Y-241 - Wellbore #1 - Plan #1 (6-11-15)	166.3	167.3	43.7	43.2	88.144	CC
Spaur 10Y-241 - Wellbore #1 - Plan #1 (6-11-15)	300.0	300.8	43.9	42.8	40.456	ES
Spaur 10Y-241 - Wellbore #1 - Plan #1 (6-11-15)	11,661.0	12,054.6	856.0	678.1	4.810	SF

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning

Offset Design Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 10-CDU - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 458-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,900.0	7,018.6	7,292.7	6,975.0	61.6	34.2	-94.83	3,645.2	1,548.7	956.9	875.7	81.22	11.782	
10,000.0	7,017.8	7,290.9	6,973.2	63.2	34.2	-94.20	3,645.2	1,548.8	858.5	775.5	82.97	10.347	
10,100.0	7,017.1	7,289.1	6,971.5	64.8	34.2	-93.56	3,645.2	1,548.8	760.5	675.8	84.72	8.976	
10,200.0	7,016.3	7,287.3	6,969.7	66.5	34.2	-92.92	3,645.3	1,548.9	663.1	576.6	86.48	7.667	
10,300.0	7,015.6	7,285.5	6,967.8	68.1	34.2	-92.27	3,645.3	1,548.9	566.6	478.3	88.24	6.421	
10,400.0	7,014.8	7,283.7	6,966.0	69.8	34.2	-91.62	3,645.3	1,548.9	471.5	381.5	89.99	5.239	
10,500.0	7,014.1	7,281.9	6,964.2	71.5	34.2	-90.97	3,645.3	1,549.0	379.0	287.2	91.74	4.131	
10,600.0	7,013.3	7,280.1	6,962.4	73.2	34.2	-90.32	3,645.3	1,549.0	291.4	197.9	93.48	3.117	
10,700.0	7,012.6	7,278.2	6,960.6	74.9	34.2	-89.67	3,645.4	1,549.1	214.9	119.7	95.23	2.257	
10,800.0	7,011.8	7,276.4	6,958.7	76.7	34.2	-89.02	3,645.4	1,549.1	165.8	68.8	96.96	1.710	
10,843.6	7,011.5	7,275.6	6,958.0	77.4	34.2	-88.74	3,645.4	1,549.1	160.0	62.2	97.72	1.637	CC, ES, SF
10,900.0	7,011.0	7,274.6	6,956.9	78.4	34.2	-88.37	3,645.4	1,549.1	169.6	70.9	98.69	1.719	
11,000.0	7,010.3	7,272.8	6,955.1	80.2	34.2	-87.72	3,645.4	1,549.2	223.7	123.3	100.41	2.228	
11,100.0	7,009.5	7,271.0	6,953.3	81.9	34.2	-87.07	3,645.4	1,549.2	302.2	200.1	102.12	2.959	
11,200.0	7,008.8	7,269.2	6,951.5	83.7	34.2	-86.42	3,645.5	1,549.3	390.6	286.8	103.83	3.762	
11,300.0	7,008.0	7,267.3	6,949.7	85.4	34.2	-85.77	3,645.5	1,549.3	483.6	378.0	105.52	4.582	
11,400.0	7,007.3	7,265.5	6,947.8	87.2	34.2	-85.12	3,645.5	1,549.3	578.9	471.6	107.21	5.400	
11,500.0	7,006.5	7,263.7	6,946.0	89.0	34.2	-84.47	3,645.5	1,549.4	675.5	566.6	108.88	6.204	
11,600.0	7,005.8	7,261.9	6,944.2	90.8	34.2	-83.83	3,645.5	1,549.4	773.0	662.5	110.54	6.993	
11,661.0	7,005.3	7,260.8	6,943.1	91.9	34.2	-83.43	3,645.5	1,549.4	832.8	721.3	111.54	7.466	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 10-SDU - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 454-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,700.0	7,027.7	7,159.7	6,983.1	44.6	27.5	-92.70	2,377.9	1,453.0	912.7	860.3	52.43	17.406	
8,800.0	7,026.9	7,157.9	6,981.4	45.7	27.5	-92.31	2,377.9	1,453.0	817.2	763.2	53.99	15.137	
8,900.0	7,026.1	7,156.2	6,979.6	46.9	27.5	-91.92	2,377.9	1,453.0	722.9	667.4	55.56	13.011	
9,000.0	7,025.4	7,154.4	6,977.9	48.2	27.5	-91.53	2,378.0	1,453.1	630.4	573.2	57.17	11.028	
9,100.0	7,024.6	7,152.6	6,976.1	49.6	27.5	-91.13	2,378.0	1,453.1	540.6	481.8	58.79	9.195	
9,200.0	7,023.9	7,150.8	6,974.3	50.9	27.5	-90.73	2,378.0	1,453.1	455.0	394.5	60.43	7.529	
9,300.0	7,023.1	7,149.0	6,972.5	52.4	27.5	-90.32	2,378.0	1,453.1	376.5	314.4	62.08	6.065	
9,400.0	7,022.4	7,147.2	6,970.6	53.8	27.5	-89.91	2,378.0	1,453.2	310.7	246.9	63.75	4.873	
9,500.0	7,021.6	7,145.3	6,968.8	55.3	27.5	-89.49	2,378.1	1,453.2	267.0	201.6	65.43	4.080	
9,576.2	7,021.0	7,143.9	6,967.3	56.5	27.5	-89.17	2,378.1	1,453.2	255.9	189.1	66.72	3.835	CC, ES
9,600.0	7,020.9	7,143.4	6,966.9	56.8	27.5	-89.07	2,378.1	1,453.2	257.0	189.8	67.12	3.829	SF
9,700.0	7,020.1	7,141.5	6,965.0	58.4	27.5	-88.65	2,378.1	1,453.2	284.2	215.4	68.81	4.130	
9,800.0	7,019.3	7,139.6	6,963.1	60.0	27.5	-88.22	2,378.1	1,453.3	339.9	269.4	70.52	4.820	
9,900.0	7,018.6	7,137.7	6,961.2	61.6	27.5	-87.79	2,378.1	1,453.3	412.6	340.4	72.22	5.713	
10,000.0	7,017.8	7,135.7	6,959.2	63.2	27.5	-87.35	2,378.2	1,453.3	494.9	421.0	73.93	6.694	
10,100.0	7,017.1	7,133.8	6,957.2	64.8	27.5	-86.91	2,378.2	1,453.4	582.8	507.2	75.65	7.705	
10,200.0	7,016.3	7,131.8	6,955.3	66.5	27.5	-86.47	2,378.2	1,453.4	674.1	596.7	77.36	8.714	
10,300.0	7,015.6	7,129.8	6,953.2	68.1	27.5	-86.02	2,378.2	1,453.4	767.5	688.4	79.08	9.706	
10,400.0	7,014.8	7,127.7	6,951.2	69.8	27.5	-85.56	2,378.3	1,453.4	862.4	781.6	80.79	10.675	
10,500.0	7,014.1	7,125.7	6,949.2	71.5	27.5	-85.11	2,378.3	1,453.5	958.4	875.9	82.50	11.616	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Purvis 10-2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	72.35	207.7	652.5	685.1				
100.0	100.0	75.0	75.0	0.1	0.1	72.35	207.7	652.7	685.0	684.8	0.20	3,470.686	
200.0	200.0	173.5	173.5	0.3	0.3	72.35	207.9	653.4	685.7	685.1	0.65	1,058.273	
300.0	300.0	274.9	274.9	0.5	0.6	72.37	207.9	654.2	686.5	685.3	1.14	602.492	
400.0	400.0	375.6	375.6	0.8	0.8	72.40	207.7	654.8	687.0	685.4	1.61	427.311	
500.0	500.0	477.3	477.3	1.0	1.1	72.50	206.7	655.6	687.4	685.3	2.05	334.654	
600.0	600.0	575.0	575.0	1.2	1.3	72.59	205.8	656.2	687.7	685.2	2.50	274.786	
700.0	700.0	674.8	674.8	1.4	1.5	72.68	205.0	657.2	688.4	685.4	2.98	231.058	
800.0	800.0	776.9	776.9	1.7	1.8	72.72	204.7	657.8	688.9	685.4	3.46	198.836	
900.0	900.0	876.4	876.4	1.9	2.0	-26.55	204.3	658.2	688.0	684.1	3.93	175.259	
1,000.0	999.9	973.6	973.5	2.1	2.3	-26.68	204.1	658.8	685.1	680.7	4.38	156.577	
1,100.0	1,099.7	1,078.2	1,078.2	2.3	2.6	-26.91	203.4	659.7	679.8	675.0	4.83	140.809	
1,200.0	1,199.3	1,178.7	1,178.6	2.5	2.8	-27.22	202.4	659.9	671.6	666.3	5.26	127.794	
1,300.0	1,298.6	1,277.6	1,277.6	2.8	3.0	-27.67	201.3	660.2	661.1	655.4	5.69	116.090	
1,400.0	1,397.5	1,375.3	1,375.2	3.1	3.2	-28.30	201.0	660.4	648.5	642.3	6.16	105.335	
1,500.0	1,496.1	1,477.9	1,477.8	3.4	3.5	-29.10	200.3	660.7	633.6	626.9	6.63	95.568	
1,600.0	1,594.2	1,577.6	1,577.6	3.7	3.6	-30.04	199.2	660.4	615.9	608.8	7.04	87.503	
1,700.0	1,691.7	1,680.8	1,680.7	4.1	3.8	-31.27	198.3	659.5	595.7	588.3	7.44	80.082	
1,800.0	1,788.6	1,778.8	1,778.7	4.5	3.9	-32.63	196.6	658.2	572.8	564.9	7.89	72.610	
1,900.0	1,884.9	1,872.0	1,871.9	5.0	4.1	-34.22	195.1	657.0	548.1	539.8	8.38	65.428	
2,000.0	1,980.5	1,967.7	1,967.6	5.6	4.2	-36.02	194.2	656.0	522.6	513.7	8.92	58.598	
2,100.0	2,076.2	2,064.8	2,064.7	6.1	4.4	-38.00	193.4	654.5	497.2	487.7	9.50	52.325	
2,200.0	2,171.8	2,159.4	2,159.2	6.7	4.5	-40.07	192.2	653.1	472.3	462.1	10.14	46.559	
2,300.0	2,267.5	2,252.2	2,252.1	7.3	4.7	-42.26	190.8	652.3	448.3	437.5	10.85	41.318	
2,400.0	2,363.1	2,348.2	2,348.0	7.9	4.9	-44.68	189.1	652.1	425.6	413.9	11.63	36.606	
2,500.0	2,458.7	2,445.4	2,445.2	8.4	5.2	-47.44	187.3	651.3	403.1	390.6	12.45	32.383	
2,600.0	2,554.4	2,540.3	2,540.1	9.0	5.4	-50.43	185.4	650.5	381.6	368.3	13.30	28.686	
2,700.0	2,650.0	2,635.7	2,635.4	9.6	5.6	-53.80	183.9	649.7	361.4	347.2	14.20	25.448	
2,800.0	2,745.7	2,731.0	2,730.7	10.2	5.8	-57.59	182.6	648.5	342.5	327.4	15.13	22.646	
2,900.0	2,841.3	2,824.3	2,824.0	10.8	6.0	-61.86	182.3	646.8	325.9	309.8	16.04	20.312	
3,000.0	2,936.9	2,919.7	2,919.4	11.4	6.1	-66.68	182.3	645.0	311.6	294.6	16.98	18.353	
3,100.0	3,032.6	3,014.9	3,014.6	12.1	6.2	-71.84	182.1	643.3	299.7	281.8	17.93	16.718	
3,200.0	3,128.2	3,110.2	3,109.9	12.7	6.4	-77.36	182.0	641.6	290.7	271.8	18.87	15.400	
3,300.0	3,223.9	3,205.9	3,205.6	13.3	6.6	-83.12	181.5	640.0	284.5	264.7	19.78	14.378	
3,398.4	3,318.0	3,295.4	3,295.1	13.9	6.7	-88.65	181.7	638.7	282.2	261.6	20.57	13.718	CC
3,400.0	3,319.5	3,296.8	3,296.5	13.9	6.7	-88.74	181.7	638.7	282.2	261.6	20.58	13.711	ES
3,500.0	3,415.2	3,392.7	3,392.3	14.5	6.8	-94.67	182.6	637.4	283.8	262.6	21.25	13.355	
3,600.0	3,510.8	3,489.4	3,489.0	15.1	6.9	-100.55	183.1	636.0	288.3	266.5	21.84	13.201	SF
3,700.0	3,606.4	3,584.6	3,584.2	15.7	7.1	-106.15	183.2	634.5	295.7	273.4	22.34	13.234	
3,800.0	3,702.1	3,677.9	3,677.5	16.4	7.2	-111.28	183.8	633.4	306.3	283.5	22.73	13.474	
3,900.0	3,797.7	3,774.2	3,773.8	17.0	7.3	-116.09	184.8	632.8	319.7	296.7	23.00	13.897	
4,000.0	3,893.4	3,868.4	3,868.0	17.6	7.4	-120.34	185.7	632.7	335.0	311.7	23.22	14.427	
4,100.0	3,989.0	3,965.5	3,965.0	18.2	7.5	-124.30	187.1	632.8	352.4	329.0	23.39	15.065	
4,200.0	4,084.6	4,062.3	4,061.9	18.8	7.6	-127.92	187.7	632.9	370.6	347.1	23.54	15.746	
4,300.0	4,180.3	4,155.2	4,154.8	19.5	7.6	-131.07	188.5	632.9	390.4	366.7	23.70	16.471	
4,400.0	4,275.9	4,248.0	4,247.6	20.1	7.7	-133.92	190.0	632.5	412.2	388.3	23.87	17.265	
4,500.0	4,371.6	4,344.4	4,343.9	20.7	7.9	-136.55	192.0	632.2	435.1	411.1	24.05	18.091	
4,600.0	4,467.2	4,441.3	4,440.8	21.3	8.0	-138.97	193.3	632.0	458.4	434.2	24.24	18.915	
4,700.0	4,562.8	4,537.0	4,536.5	21.9	8.1	-141.08	195.0	632.1	482.4	458.0	24.44	19.735	
4,800.0	4,658.5	4,633.4	4,632.9	22.6	8.2	-143.02	196.3	632.2	506.8	482.1	24.66	20.549	
4,900.0	4,754.1	4,728.7	4,728.2	23.2	8.4	-144.78	197.7	632.2	531.7	506.8	24.90	21.353	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Purvis 10-2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,849.8	4,824.6	4,824.0	23.8	8.5	-146.36	199.2	632.5	556.9	531.8	25.15	22.139	
5,100.0	4,945.4	4,918.8	4,918.3	24.4	8.6	-147.80	200.7	632.6	582.7	557.3	25.43	22.914	
5,200.0	5,041.0	5,014.2	5,013.7	25.1	8.8	-149.16	202.0	632.4	608.9	583.2	25.72	23.678	
5,300.0	5,136.7	5,111.2	5,110.7	25.7	9.0	-150.45	203.2	632.1	635.4	609.3	26.02	24.421	
5,400.0	5,232.3	5,210.4	5,209.9	26.3	9.1	-151.70	203.7	632.0	661.6	635.2	26.33	25.131	
5,500.0	5,328.0	5,300.0	5,299.4	26.9	9.3	-152.75	204.3	631.6	688.4	661.8	26.66	25.825	
5,600.0	5,423.6	5,400.3	5,399.8	27.5	9.5	-153.85	205.1	631.0	715.6	688.6	27.00	26.500	
5,700.0	5,519.2	5,498.6	5,498.0	28.2	9.7	-154.89	204.9	630.6	742.4	715.0	27.36	27.138	
5,800.0	5,614.9	5,599.4	5,598.8	28.8	9.9	-155.93	203.9	630.3	768.8	741.1	27.69	27.761	
5,900.0	5,710.5	5,703.4	5,702.8	29.4	10.0	-156.95	202.1	630.7	794.7	766.6	28.02	28.356	
6,000.0	5,806.2	5,797.6	5,797.0	30.0	10.2	-157.83	200.1	631.2	820.3	791.9	28.36	28.922	
6,100.0	5,901.8	5,900.0	5,899.4	30.7	10.4	-158.75	197.5	632.1	845.6	816.9	28.70	29.459	
6,200.0	5,997.5	5,988.3	5,987.6	31.3	10.5	-159.48	195.4	632.9	871.1	842.1	29.06	29.978	
6,300.0	6,093.1	6,096.9	6,096.2	31.9	10.7	-160.31	193.2	633.9	897.0	867.5	29.43	30.480	
6,400.0	6,188.7	6,181.5	6,180.7	32.5	10.9	-160.92	191.3	634.9	922.6	892.8	29.80	30.960	
6,500.0	6,284.4	6,266.3	6,265.6	33.2	11.1	-157.48	189.7	634.9	949.5	919.3	30.27	31.368	
6,600.0	6,380.0	6,360.9	6,360.1	33.7	11.3	-132.85	188.0	634.0	973.7	942.6	31.03	31.381	
6,700.0	6,474.3	6,456.5	6,455.7	34.1	11.4	-114.64	186.4	633.5	992.1	960.6	31.47	31.524	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Purvis 10TD Pad Sec. 10-T4N-R67W - Purvis 10DD - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 156-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,200.0	6,872.0	6,950.2	6,843.1	35.9	20.9	-30.94	980.8	1,553.7	945.4	910.9	34.52	27.390	
7,300.0	6,927.2	7,004.1	6,896.9	36.2	21.0	-33.80	980.3	1,552.9	866.2	835.1	31.14	27.818	
7,400.0	6,971.8	7,046.8	6,939.7	36.4	21.1	-39.43	980.0	1,552.3	780.8	751.7	29.10	26.830	
7,500.0	7,004.9	7,078.8	6,971.7	36.7	21.1	-49.37	979.8	1,552.0	690.7	660.8	29.91	23.091	
7,600.0	7,026.0	7,099.3	6,992.1	37.0	21.1	-65.40	979.6	1,551.8	597.5	562.9	34.57	17.285	
7,700.0	7,034.8	7,107.4	7,000.3	37.3	21.2	-86.31	979.6	1,551.8	502.9	462.7	40.14	12.529	
7,800.0	7,034.4	7,106.6	6,999.4	37.6	21.2	-91.39	979.6	1,551.8	409.1	367.4	41.76	9.798	
7,900.0	7,033.7	7,105.2	6,998.1	38.0	21.2	-90.91	979.6	1,551.8	319.1	276.4	42.75	7.465	
8,000.0	7,032.9	7,103.9	6,996.8	38.5	21.1	-90.43	979.6	1,551.8	237.3	193.4	43.84	5.413	
8,100.0	7,032.2	7,102.6	6,995.4	39.1	21.1	-89.95	979.6	1,551.8	175.4	130.4	45.02	3.896	
8,177.7	7,031.6	7,101.5	6,994.4	39.7	21.1	-89.57	979.6	1,551.8	157.2	111.2	45.99	3.419	CC, ES, SF
8,200.0	7,031.4	7,101.2	6,994.1	39.8	21.1	-89.46	979.6	1,551.8	158.8	112.5	46.27	3.432	
8,300.0	7,030.7	7,099.9	6,992.8	40.6	21.1	-88.97	979.6	1,551.8	199.2	151.6	47.58	4.186	
8,400.0	7,029.9	7,098.6	6,991.4	41.5	21.1	-88.48	979.6	1,551.8	272.2	223.3	48.95	5.562	
8,500.0	7,029.2	7,097.2	6,990.1	42.4	21.1	-87.99	979.6	1,551.9	358.5	308.2	50.36	7.119	
8,600.0	7,028.4	7,095.8	6,988.7	43.5	21.1	-87.49	979.7	1,551.9	450.5	398.7	51.82	8.695	
8,700.0	7,027.7	7,094.5	6,987.3	44.6	21.1	-86.99	979.7	1,551.9	545.4	492.1	53.31	10.231	
8,800.0	7,026.9	7,093.1	6,986.0	45.7	21.1	-86.49	979.7	1,551.9	641.8	586.9	54.82	11.706	
8,900.0	7,026.1	7,091.7	6,984.6	46.9	21.1	-85.99	979.7	1,551.9	739.1	682.7	56.37	13.113	
9,000.0	7,025.4	7,090.3	6,983.2	48.2	21.1	-85.49	979.7	1,551.9	837.1	779.2	57.93	14.450	
9,100.0	7,024.6	7,088.9	6,981.8	49.6	21.1	-84.99	979.7	1,551.9	935.5	876.0	59.51	15.720	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Purvis 10TD Pad Sec. 10-T4N-R67W - Purvis 10TD - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 155-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
3,200.0	3,128.2	3,473.6	3,254.9	12.7	21.1	-51.90	522.5	1,278.5	978.6	948.4	30.23	32.376	
3,300.0	3,223.9	3,559.4	3,334.0	13.3	21.7	-51.18	490.4	1,287.8	944.0	912.7	31.30	30.164	
3,400.0	3,319.5	3,648.0	3,416.0	13.9	22.3	-50.42	458.1	1,297.5	910.2	877.9	32.37	28.118	
3,500.0	3,415.2	3,742.3	3,503.5	14.5	23.0	-49.62	424.7	1,307.3	876.8	843.3	33.48	26.190	
3,600.0	3,510.8	3,837.7	3,592.1	15.1	23.6	-48.75	390.6	1,317.1	843.3	808.7	34.60	24.370	
3,700.0	3,606.4	3,929.9	3,676.8	15.7	24.3	-47.66	355.9	1,327.9	809.9	774.1	35.73	22.669	
3,800.0	3,702.1	4,017.2	3,757.1	16.4	25.0	-46.53	323.0	1,338.6	777.1	740.3	36.81	21.109	
3,900.0	3,797.7	4,105.6	3,838.0	17.0	25.6	-45.23	289.6	1,350.5	745.6	707.7	37.90	19.673	
4,000.0	3,893.4	4,199.2	3,923.8	17.6	26.3	-43.75	254.4	1,363.1	714.7	675.7	39.00	18.324	
4,100.0	3,989.0	4,295.5	4,013.1	18.2	27.0	-42.33	220.3	1,374.7	684.2	644.1	40.06	17.078	
4,200.0	4,084.6	4,393.3	4,104.4	18.8	27.6	-40.93	186.7	1,384.7	653.1	612.0	41.09	15.896	
4,300.0	4,180.3	4,480.8	4,185.8	19.5	28.2	-39.48	156.1	1,394.3	622.9	580.8	42.03	14.820	
4,400.0	4,275.9	4,565.4	4,264.6	20.1	28.8	-37.93	126.9	1,404.8	594.3	551.4	42.92	13.847	
4,500.0	4,371.6	4,651.4	4,344.4	20.7	29.4	-36.16	97.5	1,416.9	568.0	524.2	43.78	12.973	
4,600.0	4,467.2	4,746.0	4,431.5	21.3	30.1	-33.84	63.5	1,431.4	542.7	498.1	44.64	12.158	
4,700.0	4,562.8	4,833.4	4,511.7	21.9	30.8	-31.45	32.0	1,445.8	519.4	474.0	45.38	11.444	
4,800.0	4,658.5	4,932.3	4,602.7	22.6	31.5	-28.56	-3.4	1,461.9	497.1	451.1	46.06	10.793	
4,900.0	4,754.1	5,027.9	4,690.7	23.2	32.2	-25.52	-37.6	1,477.0	475.7	429.1	46.60	10.208	
5,000.0	4,849.8	5,125.8	4,781.2	23.8	32.9	-22.27	-71.9	1,491.7	455.2	408.2	47.02	9.681	
5,100.0	4,945.4	5,226.9	4,875.7	24.4	33.6	-18.94	-105.2	1,505.5	435.1	387.8	47.31	9.198	
5,200.0	5,041.0	5,330.6	4,974.0	25.1	34.2	-15.79	-135.5	1,517.2	414.5	367.0	47.52	8.722	
5,300.0	5,136.7	5,431.8	5,071.3	25.7	34.7	-12.90	-161.9	1,526.7	393.4	345.7	47.67	8.252	
5,400.0	5,232.3	5,535.3	5,171.8	26.3	35.2	-10.13	-185.6	1,534.8	371.7	323.9	47.78	7.780	
5,500.0	5,328.0	5,637.4	5,272.0	26.9	35.6	-7.86	-204.1	1,540.7	348.7	300.8	47.91	7.278	
5,600.0	5,423.6	5,738.3	5,371.7	27.5	35.9	-5.99	-218.5	1,545.4	324.8	276.8	48.06	6.759	
5,700.0	5,519.2	5,836.6	5,469.3	28.2	36.2	-4.49	-229.4	1,549.2	300.3	252.0	48.24	6.224	
5,800.0	5,614.9	5,935.1	5,567.3	28.8	36.4	-3.19	-238.0	1,552.8	275.4	227.0	48.44	5.685	
5,900.0	5,710.5	6,034.8	5,666.8	29.4	36.6	-2.05	-244.8	1,555.7	249.8	201.1	48.65	5.134	
6,000.0	5,806.2	6,132.9	5,764.8	30.0	36.7	-1.02	-250.0	1,557.7	223.2	174.4	48.87	4.568	
6,100.0	5,901.8	6,230.6	5,862.3	30.7	36.9	-0.11	-253.7	1,559.2	196.0	146.9	49.10	3.993	
6,200.0	5,997.5	6,327.0	5,958.7	31.3	37.0	0.58	-256.0	1,560.5	168.5	119.1	49.35	3.414	
6,300.0	6,093.1	6,423.8	6,055.5	31.9	37.1	1.33	-257.6	1,561.6	140.6	91.0	49.59	2.835	
6,400.0	6,188.7	6,520.2	6,151.9	32.5	37.2	2.34	-259.0	1,562.2	112.3	62.5	49.78	2.256	
6,500.0	6,284.4	6,616.0	6,247.7	33.2	37.3	8.41	-260.6	1,562.6	83.9	34.2	49.76	1.687	
6,600.0	6,380.0	6,711.8	6,343.4	33.7	37.4	46.61	-262.6	1,562.8	58.7	10.0	48.67	1.206	Level 2
6,677.8	6,453.5	6,785.0	6,416.7	34.0	37.5	87.29	-264.2	1,562.8	49.5	1.7	47.82	1.036	Level 2, CC, ES, SF
6,700.0	6,474.3	6,805.6	6,437.3	34.1	37.5	99.53	-264.7	1,562.7	50.5	2.8	47.65	1.060	Level 2
6,800.0	6,565.7	6,895.9	6,527.5	34.6	37.6	141.87	-267.0	1,562.6	76.2	26.9	49.29	1.546	
6,900.0	6,652.5	6,981.1	6,612.7	35.0	37.7	163.00	-269.6	1,562.2	124.1	74.9	49.29	2.519	
7,000.0	6,733.5	7,060.5	6,692.0	35.3	37.8	174.22	-271.9	1,561.5	184.5	137.6	46.96	3.929	
7,100.0	6,807.0	7,131.7	6,763.2	35.6	37.9	-178.68	-273.9	1,560.7	254.3	210.6	43.71	5.818	
7,200.0	6,872.0	7,194.1	6,825.5	35.9	37.9	-173.10	-275.7	1,560.1	332.2	291.8	40.36	8.231	
7,300.0	6,927.2	7,246.7	6,878.1	36.2	38.0	-167.47	-277.3	1,559.6	416.8	379.1	37.76	11.039	
7,400.0	6,971.8	7,287.5	6,918.9	36.4	38.0	-160.06	-278.6	1,559.2	507.0	469.7	37.34	13.580	
7,500.0	7,004.9	7,316.6	6,948.0	36.7	38.1	-147.89	-279.5	1,558.9	601.5	559.8	41.65	14.441	
7,600.0	7,026.0	7,333.7	6,965.1	37.0	38.1	-124.49	-280.1	1,558.7	698.7	645.8	52.91	13.206	
7,700.0	7,034.8	7,338.8	6,970.2	37.3	38.1	-86.45	-280.3	1,558.7	797.0	738.8	58.17	13.701	
7,800.0	7,034.4	7,335.2	6,966.6	37.6	38.1	-75.64	-280.1	1,558.7	895.3	839.0	56.28	15.908	
7,900.0	7,033.7	7,331.3	6,962.7	38.0	38.1	-74.24	-280.0	1,558.8	994.0	937.2	56.77	17.508	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Q-321 - Wellbore #1 - Plan #3 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	47.4	0.0	47.4				
100.0	100.0	99.0	99.0	0.1	0.1	0.00	47.4	0.0	47.4	47.2	0.19	243.367	
200.0	200.0	199.0	199.0	0.3	0.3	0.00	47.4	0.0	47.4	46.7	0.64	73.661	
300.0	300.0	299.0	299.0	0.5	0.5	0.00	47.4	0.0	47.4	46.3	1.09	43.348	
400.0	400.0	399.0	399.0	0.8	0.8	0.00	47.4	0.0	47.4	45.8	1.54	30.710	
500.0	500.0	499.0	499.0	1.0	1.0	0.00	47.4	0.0	47.4	45.4	1.99	23.778	
600.0	600.0	599.0	599.0	1.2	1.2	0.00	47.4	0.0	47.4	44.9	2.44	19.399	
700.0	700.0	699.0	699.0	1.4	1.4	0.00	47.4	0.0	47.4	44.5	2.89	16.382	
800.0	800.0	799.0	799.0	1.7	1.7	0.00	47.4	0.0	47.4	44.0	3.34	14.177	CC
900.0	900.0	899.0	899.0	1.9	1.9	-100.81	47.4	0.0	47.6	43.8	3.77	12.606	ES
1,000.0	999.9	998.9	998.9	2.1	2.1	-105.35	47.4	0.0	48.5	44.3	4.20	11.541	
1,100.0	1,099.7	1,098.7	1,098.7	2.3	2.3	-112.47	47.4	0.0	50.6	46.0	4.64	10.916	
1,200.0	1,199.3	1,198.3	1,198.3	2.5	2.6	-121.27	47.4	0.0	54.8	49.7	5.08	10.784	SF
1,300.0	1,298.6	1,297.6	1,297.6	2.8	2.8	-130.52	47.4	0.0	61.7	56.2	5.52	11.171	
1,400.0	1,397.5	1,396.5	1,396.5	3.1	3.0	-139.11	47.4	0.0	71.9	65.9	5.97	12.050	
1,500.0	1,496.1	1,496.9	1,496.9	3.4	3.2	-146.09	47.1	1.2	84.5	78.1	6.39	13.214	
1,600.0	1,594.2	1,597.7	1,597.6	3.7	3.4	-151.23	46.5	5.0	97.9	91.1	6.80	14.396	
1,700.0	1,691.7	1,699.0	1,698.7	4.1	3.6	-155.12	45.3	11.5	111.9	104.7	7.22	15.508	
1,800.0	1,788.6	1,800.7	1,800.0	4.5	3.9	-158.15	43.8	20.7	126.3	118.7	7.64	16.529	
1,900.0	1,884.9	1,899.9	1,898.6	5.0	4.1	-160.61	41.9	31.4	141.7	133.6	8.07	17.565	
2,000.0	1,980.5	1,998.2	1,996.3	5.6	4.3	-162.82	40.0	42.0	159.2	150.6	8.52	18.677	
2,100.0	2,076.2	2,096.5	2,094.0	6.1	4.6	-164.62	38.2	52.6	176.9	167.9	8.99	19.674	
2,200.0	2,171.8	2,194.8	2,191.7	6.7	4.8	-166.10	36.3	63.3	194.8	185.4	9.47	20.574	
2,300.0	2,267.5	2,293.0	2,289.3	7.3	5.1	-167.33	34.5	73.9	212.9	202.9	9.95	21.387	
2,400.0	2,363.1	2,391.3	2,387.0	7.9	5.3	-168.36	32.6	84.5	231.0	220.5	10.44	22.123	
2,500.0	2,458.7	2,489.6	2,484.7	8.4	5.6	-169.25	30.8	95.2	249.1	238.2	10.93	22.790	
2,600.0	2,554.4	2,587.8	2,582.4	9.0	5.9	-170.01	28.9	105.8	267.3	255.9	11.43	23.397	
2,700.0	2,650.0	2,686.1	2,680.0	9.6	6.1	-170.68	27.1	116.4	285.6	273.7	11.92	23.951	
2,800.0	2,745.7	2,784.4	2,777.7	10.2	6.4	-171.27	25.2	127.1	303.9	291.5	12.43	24.457	
2,900.0	2,841.3	2,882.7	2,875.4	10.8	6.7	-171.79	23.4	137.7	322.2	309.3	12.93	24.920	
3,000.0	2,936.9	2,980.9	2,973.1	11.4	7.0	-172.25	21.5	148.3	340.5	327.1	13.44	25.346	
3,100.0	3,032.6	3,079.2	3,070.7	12.1	7.3	-172.67	19.7	158.9	358.9	345.0	13.94	25.739	
3,200.0	3,128.2	3,177.5	3,168.4	12.7	7.5	-173.05	17.8	169.6	377.3	362.8	14.45	26.102	
3,300.0	3,223.9	3,275.7	3,266.1	13.3	7.8	-173.39	16.0	180.2	395.7	380.7	14.97	26.437	
3,400.0	3,319.5	3,374.0	3,363.8	13.9	8.1	-173.70	14.1	190.8	414.1	398.6	15.48	26.749	
3,500.0	3,415.2	3,472.3	3,461.4	14.5	8.4	-173.99	12.3	201.5	432.5	416.5	15.99	27.039	
3,600.0	3,510.8	3,570.5	3,559.1	15.1	8.7	-174.25	10.4	212.1	450.9	434.4	16.51	27.309	
3,700.0	3,606.4	3,668.8	3,656.8	15.7	9.0	-174.49	8.6	222.7	469.3	452.3	17.03	27.561	
3,800.0	3,702.1	3,767.1	3,754.5	16.4	9.3	-174.71	6.7	233.4	487.8	470.2	17.55	27.796	
3,900.0	3,797.7	3,865.3	3,852.1	17.0	9.5	-174.92	4.9	244.0	506.2	488.1	18.07	28.018	
4,000.0	3,893.4	3,963.6	3,949.8	17.6	9.8	-175.11	3.0	254.6	524.6	506.1	18.59	28.225	
4,100.0	3,989.0	4,061.9	4,047.5	18.2	10.1	-175.29	1.2	265.2	543.1	524.0	19.11	28.420	
4,200.0	4,084.6	4,160.2	4,145.2	18.8	10.4	-175.46	-0.7	275.9	561.6	541.9	19.63	28.604	
4,300.0	4,180.3	4,258.4	4,242.8	19.5	10.7	-175.61	-2.5	286.5	580.0	559.9	20.16	28.778	
4,400.0	4,275.9	4,356.7	4,340.5	20.1	11.0	-175.76	-4.4	297.1	598.5	577.8	20.68	28.941	
4,500.0	4,371.6	4,455.0	4,438.2	20.7	11.3	-175.90	-6.2	307.8	617.0	595.7	21.20	29.096	
4,600.0	4,467.2	4,553.2	4,535.9	21.3	11.6	-176.03	-8.0	318.4	635.4	613.7	21.73	29.243	
4,700.0	4,562.8	4,651.5	4,633.5	21.9	11.9	-176.15	-9.9	329.0	653.9	631.6	22.25	29.382	
4,800.0	4,658.5	4,749.8	4,731.2	22.6	12.2	-176.27	-11.7	339.7	672.4	649.6	22.78	29.515	
4,900.0	4,754.1	4,848.0	4,828.9	23.2	12.5	-176.38	-13.6	350.3	690.9	667.6	23.31	29.640	
5,000.0	4,849.8	4,946.3	4,926.6	23.8	12.8	-176.48	-15.4	360.9	709.3	685.5	23.84	29.760	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Q-321 - Wellbore #1 - Plan #3 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,945.4	5,044.6	5,024.2	24.4	13.1	-176.58	-17.3	371.6	727.8	703.5	24.36	29.874	
5,200.0	5,041.0	5,142.8	5,121.9	25.1	13.4	-176.67	-19.1	382.2	746.3	721.4	24.89	29.983	
5,300.0	5,136.7	5,241.1	5,219.6	25.7	13.7	-176.76	-21.0	392.8	764.8	739.4	25.42	30.086	
5,400.0	5,232.3	5,339.4	5,317.3	26.3	14.0	-176.85	-22.8	403.4	783.3	757.4	25.95	30.186	
5,500.0	5,328.0	5,437.6	5,414.9	26.9	14.2	-176.93	-24.7	414.1	801.8	775.3	26.48	30.280	
5,600.0	5,423.6	5,535.9	5,512.6	27.5	14.5	-177.01	-26.5	424.7	820.3	793.3	27.01	30.371	
5,700.0	5,519.2	5,634.2	5,610.3	28.2	14.8	-177.08	-28.4	435.3	838.8	811.2	27.54	30.458	
5,800.0	5,614.9	5,732.5	5,708.0	28.8	15.1	-177.15	-30.2	446.0	857.3	829.2	28.07	30.542	
5,900.0	5,710.5	5,830.7	5,805.6	29.4	15.4	-177.22	-32.1	456.6	875.8	847.2	28.60	30.622	
6,000.0	5,806.2	5,929.0	5,903.3	30.0	15.7	-177.28	-33.9	467.2	894.3	865.2	29.13	30.698	
6,100.0	5,901.8	6,027.3	6,001.0	30.7	16.0	-177.35	-35.8	477.9	912.8	883.1	29.66	30.772	
6,200.0	5,997.5	6,125.5	6,098.7	31.3	16.3	-177.41	-37.6	488.5	931.3	901.1	30.19	30.843	
6,300.0	6,093.1	6,223.8	6,196.3	31.9	16.6	-177.46	-39.5	499.1	949.8	919.1	30.73	30.911	
6,400.0	6,188.7	6,322.1	6,294.0	32.5	16.9	-177.52	-41.3	509.7	968.3	937.0	31.26	30.977	
6,500.0	6,284.4	6,409.3	6,380.7	33.2	17.2	-173.53	-41.8	519.2	987.1	955.3	31.78	31.063	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Q-401 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	2.58	61.9	2.8	62.0				
100.0	100.0	99.0	99.0	0.1	0.1	2.58	61.9	2.8	62.0	61.8	0.19	318.627	
200.0	200.0	199.0	199.0	0.3	0.3	2.58	61.9	2.8	62.0	61.4	0.64	96.441	
300.0	300.0	299.0	299.0	0.5	0.5	2.58	61.9	2.8	62.0	60.9	1.09	56.753	
400.0	400.0	399.0	399.0	0.8	0.8	2.58	61.9	2.8	62.0	60.5	1.54	40.207	
500.0	500.0	499.0	499.0	1.0	1.0	2.58	61.9	2.8	62.0	60.0	1.99	31.131	
600.0	600.0	599.0	599.0	1.2	1.2	2.58	61.9	2.8	62.0	59.6	2.44	25.398	
700.0	700.0	699.0	699.0	1.4	1.4	2.58	61.9	2.8	62.0	59.1	2.89	21.448	
800.0	800.0	799.0	799.0	1.7	1.7	2.58	61.9	2.8	62.0	58.7	3.34	18.561	CC
900.0	900.0	899.0	899.0	1.9	1.9	-97.87	61.9	2.8	62.2	58.4	3.77	16.470	ES
1,000.0	999.9	998.9	998.9	2.1	2.1	-101.41	61.9	2.8	62.8	58.6	4.20	14.957	
1,100.0	1,099.7	1,098.7	1,098.7	2.3	2.3	-107.09	61.9	2.8	64.4	59.8	4.64	13.898	
1,200.0	1,199.3	1,198.3	1,198.3	2.5	2.6	-114.44	61.9	2.8	67.7	62.6	5.08	13.319	
1,300.0	1,298.6	1,297.6	1,297.6	2.8	2.8	-122.71	61.9	2.8	73.4	67.8	5.54	13.251	SF
1,400.0	1,397.5	1,396.5	1,396.5	3.1	3.0	-131.02	61.9	2.8	82.1	76.1	5.99	13.697	
1,500.0	1,496.1	1,495.1	1,495.1	3.4	3.2	-138.66	61.9	2.8	94.1	87.7	6.44	14.613	
1,600.0	1,594.2	1,593.2	1,593.2	3.7	3.5	-145.23	61.9	2.8	109.6	102.7	6.88	15.926	
1,700.0	1,691.7	1,690.7	1,690.7	4.1	3.7	-150.68	61.9	2.8	128.5	121.1	7.32	17.554	
1,800.0	1,788.6	1,787.6	1,787.6	4.5	3.9	-155.11	61.9	2.8	150.5	142.8	7.75	19.425	
1,900.0	1,884.9	1,883.9	1,883.9	5.0	4.1	-158.68	61.9	2.8	175.7	167.5	8.18	21.480	
2,000.0	1,980.5	1,979.5	1,979.5	5.6	4.3	-161.60	61.9	2.8	203.1	194.5	8.63	23.545	
2,100.0	2,076.2	2,079.7	2,079.7	6.1	4.5	-164.04	61.4	3.4	230.4	221.3	9.08	25.374	
2,200.0	2,171.8	2,182.3	2,182.2	6.7	4.7	-166.21	58.9	6.0	255.6	246.1	9.51	26.868	
2,300.0	2,267.5	2,286.0	2,285.7	7.3	4.9	-168.20	54.6	10.6	278.6	268.7	9.95	28.003	
2,400.0	2,363.1	2,390.7	2,390.0	7.9	5.1	-170.11	48.2	17.3	299.4	289.1	10.39	28.807	
2,500.0	2,458.7	2,490.5	2,489.2	8.4	5.3	-171.85	40.8	25.2	318.7	307.9	10.84	29.392	
2,600.0	2,554.4	2,588.2	2,586.4	9.0	5.5	-173.37	33.4	33.0	338.2	326.9	11.30	29.915	
2,700.0	2,650.0	2,686.0	2,683.5	9.6	5.8	-174.72	26.1	40.8	357.8	346.0	11.77	30.388	
2,800.0	2,745.7	2,783.7	2,780.6	10.2	6.0	-175.92	18.7	48.7	377.6	365.4	12.25	30.816	
2,900.0	2,841.3	2,881.4	2,877.8	10.8	6.2	-177.01	11.4	56.5	397.6	384.8	12.74	31.199	
3,000.0	2,936.9	2,979.1	2,974.9	11.4	6.5	-178.00	4.0	64.3	417.7	404.4	13.24	31.542	
3,100.0	3,032.6	3,076.8	3,072.0	12.1	6.7	-178.89	-3.4	72.1	437.9	424.1	13.75	31.850	
3,200.0	3,128.2	3,174.6	3,169.2	12.7	7.0	-179.71	-10.7	79.9	458.1	443.9	14.26	32.125	
3,300.0	3,223.9	3,272.3	3,266.3	13.3	7.2	179.54	-18.1	87.7	478.5	463.7	14.78	32.371	
3,400.0	3,319.5	3,370.0	3,363.4	13.9	7.5	178.86	-25.5	95.5	499.0	483.6	15.31	32.592	
3,500.0	3,415.2	3,467.7	3,460.5	14.5	7.7	178.22	-32.8	103.3	519.5	503.6	15.84	32.789	
3,600.0	3,510.8	3,565.4	3,557.7	15.1	8.0	177.64	-40.2	111.2	540.0	523.6	16.38	32.966	
3,700.0	3,606.4	3,663.2	3,654.8	15.7	8.3	177.10	-47.5	119.0	560.6	543.7	16.93	33.124	
3,800.0	3,702.1	3,760.9	3,751.9	16.4	8.5	176.59	-54.9	126.8	581.3	563.8	17.47	33.266	
3,900.0	3,797.7	3,858.6	3,849.1	17.0	8.8	176.13	-62.3	134.6	602.0	583.9	18.03	33.393	
4,000.0	3,893.4	3,956.3	3,946.2	17.6	9.1	175.69	-69.6	142.4	622.7	604.1	18.58	33.508	
4,100.0	3,989.0	4,054.0	4,043.3	18.2	9.4	175.28	-77.0	150.2	643.5	624.3	19.14	33.611	
4,200.0	4,084.6	4,151.8	4,140.4	18.8	9.6	174.89	-84.3	158.0	664.3	644.6	19.71	33.704	
4,300.0	4,180.3	4,249.5	4,237.6	19.5	9.9	174.53	-91.7	165.9	685.1	664.8	20.28	33.787	
4,400.0	4,275.9	4,347.2	4,334.7	20.1	10.2	174.19	-99.1	173.7	705.9	685.1	20.85	33.862	
4,500.0	4,371.6	4,444.9	4,431.8	20.7	10.5	173.87	-106.4	181.5	726.8	705.4	21.42	33.930	
4,600.0	4,467.2	4,542.6	4,529.0	21.3	10.8	173.57	-113.8	189.3	747.7	725.7	22.00	33.992	
4,700.0	4,562.8	4,640.4	4,626.1	21.9	11.0	173.29	-121.1	197.1	768.6	746.0	22.57	34.047	
4,800.0	4,658.5	4,738.1	4,723.2	22.6	11.3	173.02	-128.5	204.9	789.5	766.4	23.15	34.097	
4,900.0	4,754.1	4,835.8	4,820.3	23.2	11.6	172.76	-135.9	212.7	810.4	786.7	23.74	34.143	
5,000.0	4,849.8	4,933.5	4,917.5	23.8	11.9	172.52	-143.2	220.5	831.4	807.1	24.32	34.184	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Q-401 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,945.4	5,031.2	5,014.6	24.4	12.2	172.28	-150.6	228.4	852.4	827.5	24.91	34.221	
5,200.0	5,041.0	5,129.0	5,111.7	25.1	12.5	172.06	-158.0	236.2	873.3	847.9	25.50	34.255	
5,300.0	5,136.7	5,226.7	5,208.9	25.7	12.8	171.85	-165.3	244.0	894.3	868.3	26.09	34.285	
5,400.0	5,232.3	5,324.4	5,306.0	26.3	13.1	171.65	-172.7	251.8	915.3	888.7	26.68	34.313	
5,500.0	5,328.0	5,422.1	5,403.1	26.9	13.3	171.46	-180.0	259.6	936.4	909.1	27.27	34.338	
5,600.0	5,423.6	5,519.9	5,500.2	27.5	13.6	171.28	-187.4	267.4	957.4	929.5	27.86	34.360	
5,700.0	5,519.2	5,617.6	5,597.4	28.2	13.9	171.10	-194.8	275.2	978.4	950.0	28.46	34.381	
5,800.0	5,614.9	5,715.3	5,694.5	28.8	14.2	170.93	-202.1	283.1	999.5	970.4	29.05	34.399	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-241 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.20	149.020	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.65	45.173	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	29.1	0.0	29.1	28.0	1.09	26.622	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.54	18.872	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	1.99	14.616	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.44	11.927	
700.0	700.0	700.0	700.0	1.4	1.4	0.00	29.1	0.0	29.1	26.2	2.89	10.074	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.34	8.719	CC
900.0	900.0	900.0	900.0	1.9	1.9	-101.77	29.1	0.0	29.4	25.6	3.78	7.780	ES
1,000.0	999.9	999.9	999.9	2.1	2.1	-109.01	29.1	0.0	30.4	26.2	4.20	7.241	
1,100.0	1,099.7	1,099.7	1,099.7	2.3	2.3	-119.71	29.1	0.0	33.1	28.5	4.64	7.149	
1,200.0	1,199.3	1,199.3	1,199.3	2.5	2.6	-131.53	29.1	0.0	38.5	33.4	5.07	7.593	
1,300.0	1,298.6	1,299.6	1,299.6	2.8	2.8	-141.49	28.7	1.2	46.0	40.5	5.49	8.384	
1,400.0	1,397.5	1,400.3	1,400.2	3.1	3.0	-148.87	27.6	5.0	54.4	48.5	5.89	9.225	
1,500.0	1,496.1	1,501.2	1,500.8	3.4	3.2	-154.55	25.6	11.3	63.2	56.9	6.30	10.032	
1,600.0	1,594.2	1,602.3	1,601.6	3.7	3.4	-159.11	22.7	20.2	72.3	65.6	6.71	10.783	
1,700.0	1,691.7	1,703.8	1,702.3	4.1	3.6	-162.88	19.1	31.6	81.7	74.6	7.12	11.472	
1,800.0	1,788.6	1,805.5	1,803.0	4.5	3.9	-166.11	14.7	45.6	91.3	83.7	7.54	12.099	
1,900.0	1,884.9	1,907.5	1,903.4	5.0	4.2	-168.94	9.4	62.3	101.0	93.0	7.97	12.665	
2,000.0	1,980.5	2,009.8	2,003.7	5.6	4.5	-171.44	3.3	81.5	110.2	101.7	8.44	13.058	
2,100.0	2,076.2	2,109.3	2,101.1	6.1	4.9	-173.52	-3.1	101.5	118.4	109.4	8.93	13.261	
2,200.0	2,171.8	2,208.9	2,198.4	6.7	5.3	-175.34	-9.4	121.4	126.7	117.3	9.43	13.440	
2,300.0	2,267.5	2,308.5	2,295.8	7.3	5.7	-176.92	-15.7	141.4	135.1	125.2	9.94	13.595	
2,400.0	2,363.1	2,408.1	2,393.1	7.9	6.1	-178.33	-22.1	161.3	143.6	133.2	10.46	13.728	
2,500.0	2,458.7	2,507.6	2,490.5	8.4	6.5	-179.57	-28.4	181.3	152.2	141.2	11.00	13.841	
2,600.0	2,554.4	2,607.2	2,587.8	9.0	6.9	179.32	-34.7	201.2	160.9	149.4	11.55	13.936	
2,700.0	2,650.0	2,706.8	2,685.2	9.6	7.3	178.33	-41.0	221.2	169.6	157.5	12.10	14.016	
2,800.0	2,745.7	2,806.4	2,782.5	10.2	7.7	177.43	-47.4	241.2	178.4	165.7	12.67	14.082	
2,900.0	2,841.3	2,906.0	2,879.9	10.8	8.2	176.61	-53.7	261.1	187.2	174.0	13.24	14.136	
3,000.0	2,936.9	3,005.5	2,977.2	11.4	8.6	175.87	-60.0	281.1	196.0	182.2	13.82	14.180	
3,100.0	3,032.6	3,105.1	3,074.6	12.1	9.0	175.19	-66.4	301.0	204.9	190.5	14.41	14.216	
3,200.0	3,128.2	3,204.7	3,171.9	12.7	9.5	174.57	-72.7	321.0	213.8	198.8	15.01	14.244	
3,300.0	3,223.9	3,304.3	3,269.3	13.3	9.9	174.00	-79.0	340.9	222.7	207.1	15.61	14.267	
3,400.0	3,319.5	3,403.8	3,366.6	13.9	10.4	173.48	-85.4	360.9	231.7	215.4	16.22	14.284	
3,500.0	3,415.2	3,503.4	3,464.0	14.5	10.8	172.99	-91.7	380.8	240.6	223.8	16.83	14.296	
3,600.0	3,510.8	3,603.0	3,561.3	15.1	11.3	172.53	-98.0	400.8	249.6	232.1	17.45	14.305	
3,700.0	3,606.4	3,702.6	3,658.7	15.7	11.7	172.11	-104.4	420.8	258.6	240.5	18.07	14.311	
3,800.0	3,702.1	3,802.2	3,756.0	16.4	12.2	171.72	-110.7	440.7	267.6	248.9	18.69	14.314	
3,900.0	3,797.7	3,901.7	3,853.4	17.0	12.6	171.35	-117.0	460.7	276.6	257.3	19.32	14.315	
4,000.0	3,893.4	4,001.3	3,950.7	17.6	13.1	171.01	-123.4	480.6	285.6	265.7	19.95	14.314	
4,100.0	3,989.0	4,100.9	4,048.1	18.2	13.5	170.68	-129.7	500.6	294.6	274.1	20.59	14.311	
4,200.0	4,084.6	4,200.5	4,145.4	18.8	14.0	170.38	-136.0	520.5	303.7	282.5	21.23	14.307	
4,300.0	4,180.3	4,300.0	4,242.8	19.5	14.4	170.09	-142.4	540.5	312.7	290.9	21.87	14.302	
4,400.0	4,275.9	4,399.6	4,340.2	20.1	14.9	169.82	-148.7	560.5	321.8	299.3	22.51	14.296	
4,500.0	4,371.6	4,499.2	4,437.5	20.7	15.3	169.57	-155.0	580.4	330.8	307.7	23.15	14.289	
4,600.0	4,467.2	4,598.8	4,534.9	21.3	15.8	169.33	-161.4	600.4	339.9	316.1	23.80	14.282	
4,700.0	4,562.8	4,698.4	4,632.2	21.9	16.2	169.10	-167.7	620.3	349.0	324.5	24.45	14.274	
4,800.0	4,658.5	4,797.9	4,729.6	22.6	16.7	168.88	-174.0	640.3	358.1	333.0	25.10	14.266	
4,900.0	4,754.1	4,897.5	4,826.9	23.2	17.2	168.67	-180.4	660.2	367.2	341.4	25.75	14.257	
5,000.0	4,849.8	4,997.1	4,924.3	23.8	17.6	168.47	-186.7	680.2	376.2	349.8	26.41	14.249	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-241 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,945.4	5,096.7	5,021.6	24.4	18.1	168.29	-193.0	700.1	385.3	358.3	27.06	14.240	
5,200.0	5,041.0	5,196.2	5,119.0	25.1	18.5	168.11	-199.4	720.1	394.4	366.7	27.72	14.231	
5,300.0	5,136.7	5,295.8	5,216.3	25.7	19.0	167.94	-205.7	740.1	403.5	375.2	28.38	14.221	
5,400.0	5,232.3	5,395.4	5,313.7	26.3	19.5	167.77	-212.0	760.0	412.6	383.6	29.03	14.212	
5,500.0	5,328.0	5,495.0	5,411.0	26.9	19.9	167.62	-218.4	780.0	421.7	392.1	29.69	14.203	
5,600.0	5,423.6	5,594.6	5,508.4	27.5	20.4	167.47	-224.7	799.9	430.9	400.5	30.36	14.194	
5,700.0	5,519.2	5,694.1	5,605.7	28.2	20.8	167.32	-231.0	819.9	440.0	409.0	31.02	14.184	
5,800.0	5,614.9	5,793.7	5,703.1	28.8	21.3	167.19	-237.4	839.8	449.1	417.4	31.68	14.175	
5,900.0	5,710.5	5,893.3	5,800.4	29.4	21.8	167.05	-243.7	859.8	458.2	425.9	32.35	14.166	
6,000.0	5,806.2	5,992.9	5,897.8	30.0	22.2	166.93	-250.0	879.7	467.3	434.3	33.01	14.157	
6,100.0	5,901.8	6,092.4	5,995.1	30.7	22.7	166.80	-256.3	899.7	476.4	442.8	33.68	14.148	
6,200.0	5,997.5	6,192.0	6,092.5	31.3	23.2	166.69	-262.7	919.7	485.6	451.2	34.34	14.139	
6,300.0	6,093.1	6,291.6	6,189.8	31.9	23.6	166.57	-269.0	939.6	494.7	459.7	35.01	14.130	
6,400.0	6,188.7	6,394.8	6,290.9	32.5	24.0	166.88	-271.9	960.3	503.6	468.0	35.52	14.177	
6,500.0	6,284.4	6,497.3	6,390.6	33.2	24.4	172.49	-261.5	980.8	511.7	476.3	35.49	14.418	
6,600.0	6,380.0	6,596.5	6,485.1	33.7	24.6	-160.61	-238.5	1,000.2	520.3	485.2	35.18	14.792	
6,700.0	6,474.3	6,693.3	6,573.7	34.1	24.9	-139.28	-204.2	1,018.4	529.5	494.5	35.03	15.117	
6,800.0	6,565.7	6,788.0	6,655.6	34.6	25.0	-124.54	-159.9	1,035.3	539.1	503.9	35.13	15.346	
6,900.0	6,652.5	6,880.7	6,730.0	35.0	25.2	-114.36	-106.8	1,050.6	548.7	513.2	35.48	15.465	
7,000.0	6,733.5	6,971.7	6,796.4	35.3	25.3	-107.05	-46.2	1,064.4	558.2	522.1	36.05	15.485	
7,100.0	6,807.0	7,061.3	6,854.3	35.6	25.4	-101.58	21.0	1,076.3	567.2	530.4	36.75	15.431	
7,200.0	6,872.0	7,150.0	6,903.7	35.9	25.5	-97.38	93.9	1,086.6	575.5	537.9	37.54	15.330	
7,300.0	6,927.2	7,236.7	6,943.7	36.2	25.7	-94.16	170.3	1,094.9	582.9	544.5	38.36	15.197	
7,400.0	6,971.8	7,322.9	6,974.8	36.4	25.8	-91.69	250.4	1,101.4	589.2	549.9	39.21	15.026	
7,500.0	7,004.9	7,408.4	6,996.7	36.7	26.0	-89.88	332.9	1,106.0	594.1	554.1	40.08	14.824	
7,600.0	7,026.0	7,493.3	7,009.4	37.0	26.3	-88.64	416.7	1,108.8	597.7	556.7	41.01	14.575	
7,700.0	7,034.8	7,578.4	7,013.0	37.3	26.7	-87.93	501.7	1,109.6	599.7	557.7	42.02	14.270	
7,800.0	7,034.4	7,678.4	7,012.2	37.6	27.2	-87.88	601.7	1,109.6	599.8	556.0	43.83	13.684	
7,900.0	7,033.7	7,778.4	7,011.5	38.0	27.9	-87.88	701.7	1,109.6	599.8	553.8	46.00	13.040	
8,000.0	7,032.9	7,878.4	7,010.7	38.5	28.8	-87.88	801.7	1,109.6	599.8	551.5	48.37	12.400	
8,100.0	7,032.2	7,978.4	7,010.0	39.1	29.8	-87.88	901.7	1,109.6	599.8	548.9	50.92	11.779	
8,200.0	7,031.4	8,078.4	7,009.2	39.8	30.9	-87.88	1,001.7	1,109.6	599.8	546.2	53.63	11.185	
8,300.0	7,030.7	8,178.4	7,008.4	40.6	32.1	-87.88	1,101.7	1,109.6	599.8	543.4	56.46	10.623	
8,400.0	7,029.9	8,278.4	7,007.7	41.5	33.3	-87.88	1,201.7	1,109.6	599.8	540.4	59.41	10.096	
8,500.0	7,029.2	8,378.4	7,006.9	42.4	34.7	-87.88	1,301.7	1,109.6	599.8	537.4	62.46	9.604	
8,600.0	7,028.4	8,478.4	7,006.2	43.5	36.1	-87.88	1,401.7	1,109.6	599.8	534.2	65.59	9.146	
8,700.0	7,027.7	8,578.4	7,005.4	44.6	37.5	-87.88	1,501.7	1,109.6	599.8	531.0	68.79	8.720	
8,800.0	7,026.9	8,678.4	7,004.7	45.7	39.0	-87.88	1,601.7	1,109.6	599.8	527.8	72.05	8.326	
8,900.0	7,026.1	8,778.4	7,003.9	46.9	40.6	-87.88	1,701.7	1,109.6	599.8	524.5	75.36	7.959	
9,000.0	7,025.4	8,878.4	7,003.2	48.2	42.2	-87.88	1,801.7	1,109.6	599.8	521.1	78.73	7.619	
9,100.0	7,024.6	8,978.4	7,002.4	49.6	43.8	-87.88	1,901.7	1,109.6	599.8	517.7	82.13	7.303	
9,200.0	7,023.9	9,078.4	7,001.7	50.9	45.4	-87.88	2,001.7	1,109.6	599.8	514.3	85.57	7.010	
9,300.0	7,023.1	9,178.4	7,000.9	52.4	47.0	-87.88	2,101.7	1,109.6	599.8	510.8	89.05	6.736	
9,400.0	7,022.4	9,278.4	7,000.1	53.8	48.7	-87.88	2,201.7	1,109.6	599.8	507.3	92.55	6.481	
9,500.0	7,021.6	9,378.4	6,999.4	55.3	50.4	-87.88	2,301.7	1,109.6	599.8	503.8	96.08	6.243	
9,600.0	7,020.9	9,478.4	6,998.6	56.8	52.1	-87.88	2,401.7	1,109.6	599.8	500.2	99.63	6.021	
9,700.0	7,020.1	9,578.4	6,997.9	58.4	53.8	-87.88	2,501.7	1,109.6	599.8	496.6	103.20	5.812	
9,800.0	7,019.3	9,678.4	6,997.1	60.0	55.5	-87.88	2,601.7	1,109.6	599.8	493.0	106.79	5.617	
9,900.0	7,018.6	9,778.4	6,996.4	61.6	57.3	-87.88	2,701.7	1,109.6	599.8	489.4	110.39	5.434	
10,000.0	7,017.8	9,878.4	6,995.6	63.2	59.0	-87.88	2,801.7	1,109.6	599.8	485.8	114.01	5.261	
10,100.0	7,017.1	9,978.4	6,994.9	64.8	60.8	-87.88	2,901.7	1,109.6	599.8	482.2	117.65	5.099	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-241 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,016.3	10,078.4	6,994.1	66.5	62.6	-87.88	3,001.7	1,109.6	599.8	478.5	121.30	4.945	
10,300.0	7,015.6	10,178.4	6,993.4	68.1	64.4	-87.88	3,101.7	1,109.6	599.8	474.9	124.95	4.800	
10,400.0	7,014.8	10,278.4	6,992.6	69.8	66.2	-87.88	3,201.7	1,109.6	599.8	471.2	128.62	4.663	
10,500.0	7,014.1	10,378.4	6,991.9	71.5	67.9	-87.88	3,301.7	1,109.6	599.8	467.5	132.30	4.534	
10,600.0	7,013.3	10,478.4	6,991.1	73.2	69.8	-87.88	3,401.7	1,109.6	599.8	463.8	135.99	4.411	
10,700.0	7,012.6	10,578.4	6,990.3	74.9	71.6	-87.88	3,501.7	1,109.6	599.8	460.1	139.68	4.294	
10,800.0	7,011.8	10,678.4	6,989.6	76.7	73.4	-87.88	3,601.6	1,109.6	599.8	456.4	143.39	4.183	
10,900.0	7,011.0	10,778.4	6,988.8	78.4	75.2	-87.88	3,701.6	1,109.6	599.8	452.7	147.10	4.078	
11,000.0	7,010.3	10,878.4	6,988.1	80.2	77.0	-87.88	3,801.6	1,109.6	599.8	449.0	150.81	3.977	
11,100.0	7,009.5	10,978.4	6,987.3	81.9	78.9	-87.88	3,901.6	1,109.6	599.8	445.3	154.53	3.882	
11,200.0	7,008.8	11,078.4	6,986.6	83.7	80.7	-87.88	4,001.6	1,109.6	599.8	441.6	158.26	3.790	
11,300.0	7,008.0	11,178.4	6,985.8	85.4	82.5	-87.88	4,101.6	1,109.6	599.8	437.8	161.99	3.703	
11,400.0	7,007.3	11,278.4	6,985.1	87.2	84.4	-87.88	4,201.6	1,109.6	599.8	434.1	165.73	3.619	
11,500.0	7,006.5	11,378.4	6,984.3	89.0	86.2	-87.88	4,301.6	1,109.6	599.8	430.4	169.47	3.539	
11,600.0	7,005.8	11,478.4	6,983.6	90.8	88.1	-87.88	4,401.6	1,109.6	599.8	426.6	173.22	3.463	
11,661.0	7,005.3	11,539.5	6,983.1	91.9	89.2	-87.88	4,462.7	1,109.6	599.8	424.3	175.51	3.418	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-301 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	14.6	0.0	14.6				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	14.6	0.0	14.6	14.4	0.20	74.500	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.6	0.0	14.6	13.9	0.65	22.584	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	14.6	0.0	14.6	13.5	1.09	13.309	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	14.6	0.0	14.6	13.0	1.54	9.434	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	14.6	0.0	14.6	12.6	1.99	7.307	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	14.6	0.0	14.6	12.1	2.44	5.963	
700.0	700.0	700.0	700.0	1.4	1.4	0.00	14.6	0.0	14.6	11.7	2.89	5.036	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	14.6	0.0	14.6	11.2	3.34	4.359	CC
900.0	900.0	900.0	900.0	1.9	1.9	-104.25	14.6	0.0	14.8	11.1	3.78	3.928	ES
1,000.0	999.9	999.9	999.9	2.1	2.1	-117.76	14.6	0.0	16.3	12.1	4.20	3.869	
1,100.0	1,099.7	1,100.1	1,100.1	2.3	2.3	-131.87	14.3	1.3	19.2	14.6	4.61	4.158	
1,200.0	1,199.3	1,200.4	1,200.3	2.5	2.5	-142.22	13.3	5.1	22.8	17.8	5.02	4.552	
1,300.0	1,298.6	1,300.8	1,300.5	2.8	2.7	-149.91	11.8	11.5	26.9	21.5	5.42	4.962	
1,400.0	1,397.5	1,401.4	1,400.6	3.1	3.0	-155.84	9.6	20.5	31.3	25.4	5.84	5.357	
1,500.0	1,496.1	1,502.1	1,500.6	3.4	3.2	-160.58	6.8	32.0	35.8	29.5	6.25	5.723	
1,600.0	1,594.2	1,602.9	1,600.4	3.7	3.5	-164.51	3.4	46.2	40.4	33.8	6.68	6.057	
1,700.0	1,691.7	1,703.9	1,699.9	4.1	3.8	-167.86	-0.6	62.9	45.2	38.1	7.10	6.358	
1,800.0	1,788.6	1,805.0	1,799.0	4.5	4.1	-170.79	-5.3	82.1	50.0	42.4	7.54	6.628	
1,900.0	1,884.9	1,906.2	1,897.7	5.0	4.5	-173.41	-10.6	104.0	54.9	46.9	7.99	6.866	
2,000.0	1,980.5	2,006.7	1,995.2	5.6	4.9	-175.73	-16.3	127.8	59.6	51.1	8.48	7.034	
2,100.0	2,076.2	2,106.6	2,092.0	6.1	5.4	-177.70	-22.1	151.6	64.4	55.4	8.99	7.159	
2,200.0	2,171.8	2,206.4	2,188.8	6.7	5.8	-179.40	-27.9	175.5	69.2	59.7	9.52	7.265	
2,300.0	2,267.5	2,306.3	2,285.6	7.3	6.3	179.12	-33.6	199.4	74.1	64.0	10.07	7.356	
2,400.0	2,363.1	2,406.2	2,382.4	7.9	6.8	177.83	-39.4	223.2	79.0	68.4	10.63	7.431	
2,500.0	2,458.7	2,506.0	2,479.2	8.4	7.3	176.69	-45.2	247.1	83.9	72.7	11.20	7.494	
2,600.0	2,554.4	2,605.9	2,576.0	9.0	7.8	175.67	-50.9	270.9	88.9	77.1	11.78	7.546	
2,700.0	2,650.0	2,705.7	2,672.8	9.6	8.3	174.77	-56.7	294.8	93.9	81.5	12.38	7.589	
2,800.0	2,745.7	2,805.6	2,769.6	10.2	8.8	173.95	-62.5	318.7	98.9	86.0	12.98	7.623	
2,900.0	2,841.3	2,905.5	2,866.4	10.8	9.3	173.22	-68.2	342.5	104.0	90.4	13.59	7.651	
3,000.0	2,936.9	3,005.3	2,963.2	11.4	9.8	172.55	-74.0	366.4	109.1	94.8	14.21	7.674	
3,100.0	3,032.6	3,105.2	3,060.0	12.1	10.3	171.94	-79.8	390.2	114.1	99.3	14.84	7.692	
3,200.0	3,128.2	3,205.1	3,156.8	12.7	10.8	171.38	-85.6	414.1	119.2	103.7	15.47	7.705	
3,300.0	3,223.9	3,304.9	3,253.6	13.3	11.3	170.87	-91.3	437.9	124.3	108.2	16.11	7.716	
3,400.0	3,319.5	3,404.8	3,350.4	13.9	11.8	170.40	-97.1	461.8	129.4	112.7	16.75	7.724	
3,500.0	3,415.2	3,504.7	3,447.2	14.5	12.4	169.97	-102.9	485.7	134.5	117.1	17.40	7.730	
3,600.0	3,510.8	3,604.5	3,544.0	15.1	12.9	169.56	-108.6	509.5	139.6	121.6	18.06	7.733	
3,700.0	3,606.4	3,704.4	3,640.8	15.7	13.4	169.19	-114.4	533.4	144.8	126.1	18.71	7.736	
3,800.0	3,702.1	3,804.3	3,737.6	16.4	13.9	168.84	-120.2	557.2	149.9	130.5	19.38	7.737	
3,900.0	3,797.7	3,904.1	3,834.4	17.0	14.4	168.51	-125.9	581.1	155.0	135.0	20.04	7.736	
4,000.0	3,893.4	4,004.0	3,931.2	17.6	15.0	168.21	-131.7	605.0	160.2	139.5	20.71	7.735	
4,100.0	3,989.0	4,103.8	4,028.0	18.2	15.5	167.92	-137.5	628.8	165.3	143.9	21.38	7.734	
4,200.0	4,084.6	4,203.7	4,124.8	18.8	16.0	167.65	-143.2	652.7	170.5	148.4	22.05	7.731	
4,300.0	4,180.3	4,303.6	4,221.6	19.5	16.5	167.40	-149.0	676.5	175.6	152.9	22.73	7.728	
4,400.0	4,275.9	4,403.4	4,318.4	20.1	17.1	167.16	-154.8	700.4	180.8	157.4	23.40	7.725	
4,500.0	4,371.6	4,503.3	4,415.2	20.7	17.6	166.94	-160.5	724.3	185.9	161.9	24.08	7.721	
4,600.0	4,467.2	4,603.2	4,512.0	21.3	18.1	166.73	-166.3	748.1	191.1	166.3	24.76	7.717	
4,700.0	4,562.8	4,703.0	4,608.8	21.9	18.7	166.52	-172.1	772.0	196.3	170.8	25.45	7.713	
4,800.0	4,658.5	4,802.9	4,705.6	22.6	19.2	166.33	-177.9	795.8	201.4	175.3	26.13	7.709	
4,900.0	4,754.1	4,902.8	4,802.4	23.2	19.7	166.15	-183.6	819.7	206.6	179.8	26.82	7.704	
5,000.0	4,849.8	5,002.6	4,899.2	23.8	20.2	165.98	-189.4	843.6	211.8	184.3	27.50	7.700	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-301 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,945.4	5,102.5	4,996.0	24.4	20.8	165.81	-195.2	867.4	216.9	188.8	28.19	7.695	
5,200.0	5,041.0	5,202.4	5,092.8	25.1	21.3	165.65	-200.9	891.3	222.1	193.2	28.88	7.690	
5,300.0	5,136.7	5,302.2	5,189.6	25.7	21.8	165.50	-206.7	915.1	227.3	197.7	29.57	7.686	
5,400.0	5,232.3	5,402.1	5,286.4	26.3	22.4	165.36	-212.5	939.0	232.5	202.2	30.27	7.681	
5,500.0	5,328.0	5,501.9	5,383.2	26.9	22.9	165.22	-218.2	962.8	237.7	206.7	30.96	7.676	
5,600.0	5,423.6	5,601.8	5,480.0	27.5	23.4	165.09	-224.0	986.7	242.8	211.2	31.65	7.672	
5,700.0	5,519.2	5,701.7	5,576.8	28.2	23.9	164.97	-229.8	1,010.6	248.0	215.7	32.35	7.667	
5,800.0	5,614.9	5,801.5	5,673.6	28.8	24.5	164.85	-235.5	1,034.4	253.2	220.2	33.04	7.662	
5,900.0	5,710.5	5,901.4	5,770.4	29.4	25.0	164.73	-241.3	1,058.3	258.4	224.6	33.74	7.658	
6,000.0	5,806.2	6,001.3	5,867.2	30.0	25.5	164.62	-247.1	1,082.1	263.6	229.1	34.44	7.653	
6,100.0	5,901.8	6,101.1	5,964.0	30.7	26.1	164.51	-252.8	1,106.0	268.8	233.6	35.14	7.649	
6,200.0	5,997.5	6,201.0	6,060.8	31.3	26.6	164.41	-258.6	1,129.9	273.9	238.1	35.83	7.645	
6,300.0	6,093.1	6,300.9	6,157.6	31.9	27.1	164.31	-264.4	1,153.7	279.1	242.6	36.53	7.640	
6,400.0	6,188.7	6,400.7	6,254.4	32.5	27.7	164.22	-270.1	1,177.6	284.3	247.1	37.23	7.636	
6,500.0	6,284.4	6,501.6	6,352.2	33.2	28.2	167.97	-275.7	1,201.7	289.5	251.6	37.89	7.640	
6,600.0	6,380.0	6,606.3	6,453.7	33.7	28.6	-167.43	-271.5	1,226.7	294.5	256.4	38.13	7.725	
6,700.0	6,474.3	6,710.9	6,553.6	34.1	29.0	-148.17	-253.2	1,251.4	299.5	261.3	38.15	7.849	
6,800.0	6,565.7	6,815.3	6,650.0	34.6	29.3	-135.28	-221.0	1,275.2	304.2	266.1	38.05	7.995	
6,900.0	6,652.5	6,919.6	6,741.0	35.0	29.6	-126.71	-175.6	1,297.7	308.6	270.7	37.92	8.138	
7,000.0	6,733.5	7,023.6	6,825.0	35.3	29.8	-120.74	-118.2	1,318.6	312.7	274.8	37.88	8.254	
7,100.0	6,807.0	7,127.2	6,900.4	35.6	30.1	-116.36	-49.7	1,337.3	316.4	278.3	38.04	8.317	
7,200.0	6,872.0	7,230.3	6,965.9	35.9	30.3	-113.01	28.2	1,353.6	319.6	281.1	38.47	8.309	
7,300.0	6,927.2	7,333.0	7,020.3	36.2	30.4	-110.36	114.1	1,367.2	322.3	283.1	39.20	8.222	
7,400.0	6,971.8	7,435.2	7,062.9	36.4	30.6	-108.24	206.3	1,377.8	324.5	284.3	40.26	8.062	
7,500.0	7,004.9	7,536.8	7,093.0	36.7	30.9	-106.54	303.0	1,385.4	326.2	284.6	41.60	7.841	
7,600.0	7,026.0	7,637.8	7,110.4	37.0	31.1	-105.19	402.3	1,389.9	327.2	284.0	43.18	7.579	
7,700.0	7,034.8	7,738.2	7,114.9	37.3	31.5	-104.17	502.5	1,391.2	327.7	282.7	44.93	7.293	
7,800.0	7,034.4	7,838.2	7,114.2	37.6	31.9	-104.08	602.5	1,391.2	327.7	280.8	46.89	6.988	
7,900.0	7,033.7	7,938.2	7,113.4	38.0	32.4	-104.08	702.5	1,391.2	327.7	278.7	49.02	6.685	
8,000.0	7,032.9	8,038.2	7,112.7	38.5	33.1	-104.08	802.5	1,391.2	327.7	276.3	51.34	6.383	
8,100.0	7,032.2	8,138.2	7,111.9	39.1	33.9	-104.08	902.5	1,391.2	327.7	273.9	53.81	6.089	
8,200.0	7,031.4	8,238.2	7,111.2	39.8	34.8	-104.08	1,002.5	1,391.2	327.7	271.2	56.43	5.807	
8,300.0	7,030.7	8,338.2	7,110.4	40.6	35.8	-104.08	1,102.5	1,391.2	327.7	268.5	59.17	5.538	
8,400.0	7,029.9	8,438.2	7,109.6	41.5	36.8	-104.08	1,202.5	1,391.2	327.7	265.7	62.01	5.284	
8,500.0	7,029.2	8,538.2	7,108.9	42.4	38.0	-104.08	1,302.5	1,391.2	327.7	262.7	64.95	5.045	
8,600.0	7,028.4	8,638.2	7,108.1	43.5	39.2	-104.08	1,402.5	1,391.2	327.7	259.7	67.96	4.822	
8,700.0	7,027.7	8,738.2	7,107.4	44.6	40.5	-104.08	1,502.5	1,391.2	327.7	256.6	71.04	4.613	
8,800.0	7,026.9	8,838.2	7,106.6	45.7	41.9	-104.08	1,602.5	1,391.2	327.7	253.5	74.18	4.417	
8,900.0	7,026.1	8,938.2	7,105.9	46.9	43.3	-104.08	1,702.5	1,391.2	327.7	250.3	77.38	4.235	
9,000.0	7,025.4	9,038.2	7,105.1	48.2	44.8	-104.08	1,802.5	1,391.2	327.7	247.1	80.62	4.064	
9,100.0	7,024.6	9,138.2	7,104.4	49.6	46.3	-104.08	1,902.5	1,391.2	327.7	243.8	83.91	3.905	
9,200.0	7,023.9	9,238.2	7,103.6	50.9	47.8	-104.08	2,002.5	1,391.2	327.7	240.4	87.23	3.756	
9,300.0	7,023.1	9,338.2	7,102.9	52.4	49.3	-104.08	2,102.5	1,391.2	327.7	237.1	90.59	3.617	
9,400.0	7,022.4	9,438.2	7,102.1	53.8	50.9	-104.08	2,202.5	1,391.2	327.7	233.7	93.97	3.487	
9,500.0	7,021.6	9,538.2	7,101.3	55.3	52.5	-104.08	2,302.5	1,391.2	327.7	230.3	97.38	3.365	
9,600.0	7,020.9	9,638.2	7,100.6	56.8	54.2	-104.08	2,402.5	1,391.2	327.7	226.9	100.81	3.250	
9,700.0	7,020.1	9,738.2	7,099.8	58.4	55.8	-104.08	2,502.5	1,391.2	327.7	223.4	104.27	3.143	
9,800.0	7,019.3	9,838.2	7,099.1	60.0	57.5	-104.08	2,602.4	1,391.2	327.7	219.9	107.74	3.041	
9,900.0	7,018.6	9,938.2	7,098.3	61.6	59.2	-104.08	2,702.4	1,391.2	327.7	216.4	111.23	2.946	
10,000.0	7,017.8	10,038.2	7,097.6	63.2	60.9	-104.08	2,802.4	1,391.2	327.7	212.9	114.74	2.856	
10,100.0	7,017.1	10,138.2	7,096.8	64.8	62.6	-104.08	2,902.4	1,391.2	327.7	209.4	118.26	2.771	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-301 - Wellbore #1 - Plan #2 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,016.3	10,238.2	7,096.1	66.5	64.3	-104.08	3,002.4	1,391.2	327.7	205.9	121.79	2.690	
10,300.0	7,015.6	10,338.2	7,095.3	68.1	66.1	-104.08	3,102.4	1,391.2	327.7	202.3	125.34	2.614	
10,400.0	7,014.8	10,438.2	7,094.5	69.8	67.8	-104.08	3,202.4	1,391.2	327.7	198.8	128.90	2.542	
10,500.0	7,014.1	10,538.2	7,093.8	71.5	69.6	-104.08	3,302.4	1,391.2	327.7	195.2	132.46	2.474	
10,600.0	7,013.3	10,638.2	7,093.0	73.2	71.3	-104.08	3,402.4	1,391.2	327.7	191.6	136.04	2.409	
10,700.0	7,012.6	10,738.2	7,092.3	74.9	73.1	-104.08	3,502.4	1,391.2	327.7	188.1	139.63	2.347	
10,800.0	7,011.8	10,838.2	7,091.5	76.7	74.9	-104.08	3,602.4	1,391.2	327.7	184.5	143.22	2.288	
10,900.0	7,011.0	10,938.2	7,090.8	78.4	76.7	-104.08	3,702.4	1,391.2	327.7	180.9	146.82	2.232	
11,000.0	7,010.3	11,038.2	7,090.0	80.2	78.5	-104.08	3,802.4	1,391.2	327.7	177.3	150.43	2.178	
11,100.0	7,009.5	11,138.2	7,089.3	81.9	80.3	-104.08	3,902.4	1,391.2	327.7	173.6	154.04	2.127	
11,200.0	7,008.8	11,238.2	7,088.5	83.7	82.1	-104.08	4,002.4	1,391.2	327.7	170.0	157.66	2.078	
11,300.0	7,008.0	11,338.2	7,087.8	85.4	83.9	-104.08	4,102.4	1,391.2	327.7	166.4	161.29	2.032	
11,400.0	7,007.3	11,438.2	7,087.0	87.2	85.7	-104.08	4,202.4	1,391.2	327.7	162.8	164.92	1.987	
11,500.0	7,006.5	11,538.2	7,086.2	89.0	87.5	-104.08	4,302.4	1,391.2	327.7	159.1	168.55	1.944	
11,600.0	7,005.8	11,638.2	7,085.5	90.8	89.3	-104.08	4,402.4	1,391.2	327.7	155.5	172.19	1.903	
11,661.0	7,005.3	11,699.2	7,085.0	91.9	90.4	-104.08	4,463.4	1,391.2	327.7	153.3	174.42	1.879 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-321 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	180.00	-29.1	0.0	29.1				
100.0	100.0	101.0	101.0	0.1	0.1	180.00	-29.1	0.0	29.1	28.9	0.20	147.348	
200.0	200.0	201.0	201.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.65	45.023	
300.0	300.0	301.0	301.0	0.5	0.5	180.00	-29.1	0.0	29.1	28.0	1.10	26.571	
366.3	366.3	367.3	367.3	0.7	0.7	180.00	-29.1	0.0	29.1	27.7	1.40	20.892	CC
400.0	400.0	401.0	401.0	0.8	0.8	180.00	-29.1	0.0	29.1	27.6	1.55	18.848	
500.0	500.0	500.9	500.9	1.0	1.0	177.40	-29.2	1.3	29.3	27.3	1.98	14.767	ES
600.0	600.0	600.7	600.6	1.2	1.2	169.91	-29.5	5.3	30.0	27.6	2.42	12.419	
700.0	700.0	700.2	699.9	1.4	1.4	158.61	-30.0	11.8	32.3	29.4	2.86	11.276	
800.0	800.0	799.3	798.6	1.7	1.7	145.88	-30.7	20.8	37.1	33.8	3.32	11.178	
900.0	900.0	898.0	896.6	1.9	1.9	35.93	-31.5	32.3	44.3	40.6	3.76	11.788	
1,000.0	999.9	996.5	994.1	2.1	2.2	28.21	-32.6	46.4	52.4	48.3	4.19	12.514	
1,100.0	1,099.7	1,094.7	1,090.9	2.3	2.6	22.46	-33.8	62.8	61.1	56.5	4.63	13.205	
1,200.0	1,199.3	1,192.6	1,187.0	2.5	2.9	18.02	-35.2	81.7	70.1	65.1	5.07	13.825	
1,300.0	1,298.6	1,290.3	1,282.3	2.8	3.3	14.46	-36.8	103.0	79.4	73.8	5.53	14.364	
1,400.0	1,397.5	1,387.7	1,376.8	3.1	3.8	11.54	-38.5	126.7	88.7	82.7	5.98	14.825	
1,500.0	1,496.1	1,484.9	1,470.4	3.4	4.3	9.06	-40.5	152.6	98.1	91.7	6.45	15.211	
1,600.0	1,594.2	1,581.8	1,563.1	3.7	4.9	6.92	-42.6	180.9	107.6	100.7	6.93	15.536	
1,700.0	1,691.7	1,678.5	1,654.8	4.1	5.5	5.04	-44.8	211.4	117.1	109.7	7.42	15.791	
1,800.0	1,788.6	1,776.1	1,746.5	4.5	6.1	3.35	-47.3	244.4	126.4	118.5	7.92	15.967	
1,900.0	1,884.9	1,875.7	1,840.1	5.0	6.8	1.87	-49.8	278.6	133.8	125.4	8.44	15.858	
2,000.0	1,980.5	1,975.5	1,933.8	5.6	7.5	0.56	-52.3	312.8	139.2	130.2	8.99	15.487	
2,100.0	2,076.2	2,075.3	2,027.6	6.1	8.2	-0.65	-54.9	347.1	144.6	135.0	9.56	15.117	
2,200.0	2,171.8	2,175.2	2,121.3	6.7	8.9	-1.78	-57.4	381.3	150.0	139.9	10.15	14.779	
2,300.0	2,267.5	2,275.0	2,215.0	7.3	9.6	-2.82	-60.0	415.6	155.5	144.7	10.75	14.469	
2,400.0	2,363.1	2,374.8	2,308.7	7.9	10.3	-3.80	-62.5	449.8	161.0	149.7	11.35	14.182	
2,500.0	2,458.7	2,474.6	2,402.4	8.4	11.1	-4.71	-65.0	484.0	166.6	154.6	11.97	13.916	
2,600.0	2,554.4	2,574.4	2,496.2	9.0	11.8	-5.56	-67.6	518.3	172.2	159.6	12.60	13.667	
2,700.0	2,650.0	2,674.2	2,589.9	9.6	12.5	-6.36	-70.1	552.5	177.8	164.6	13.24	13.435	
2,800.0	2,745.7	2,774.0	2,683.6	10.2	13.2	-7.10	-72.7	586.8	183.5	169.6	13.88	13.217	
2,900.0	2,841.3	2,873.8	2,777.3	10.8	13.9	-7.81	-75.2	621.0	189.2	174.7	14.54	13.012	
3,000.0	2,936.9	2,973.6	2,871.0	11.4	14.7	-8.47	-77.7	655.3	194.9	179.7	15.21	12.818	
3,100.0	3,032.6	3,073.5	2,964.7	12.1	15.4	-9.09	-80.3	689.5	200.7	184.8	15.88	12.636	
3,200.0	3,128.2	3,173.3	3,058.5	12.7	16.1	-9.68	-82.8	723.8	206.5	189.9	16.57	12.463	
3,300.0	3,223.9	3,273.1	3,152.2	13.3	16.9	-10.24	-85.4	758.0	212.3	195.0	17.26	12.300	
3,400.0	3,319.5	3,372.9	3,245.9	13.9	17.6	-10.76	-87.9	792.2	218.1	200.1	17.96	12.146	
3,500.0	3,415.2	3,472.7	3,339.6	14.5	18.3	-11.26	-90.4	826.5	223.9	205.3	18.66	11.999	
3,600.0	3,510.8	3,572.5	3,433.3	15.1	19.0	-11.74	-93.0	860.7	229.8	210.4	19.37	11.860	
3,700.0	3,606.4	3,672.3	3,527.1	15.7	19.8	-12.19	-95.5	895.0	235.6	215.5	20.09	11.728	
3,800.0	3,702.1	3,772.1	3,620.8	16.4	20.5	-12.62	-98.1	929.2	241.5	220.7	20.82	11.602	
3,900.0	3,797.7	3,871.9	3,714.5	17.0	21.2	-13.03	-100.6	963.5	247.4	225.9	21.55	11.482	
4,000.0	3,893.4	3,971.8	3,808.2	17.6	22.0	-13.41	-103.1	997.7	253.3	231.0	22.28	11.368	
4,100.0	3,989.0	4,071.6	3,901.9	18.2	22.7	-13.79	-105.7	1,032.0	259.2	236.2	23.02	11.260	
4,200.0	4,084.6	4,171.4	3,995.6	18.8	23.4	-14.14	-108.2	1,066.2	265.1	241.4	23.77	11.156	
4,300.0	4,180.3	4,271.2	4,089.4	19.5	24.2	-14.48	-110.8	1,100.4	271.1	246.6	24.52	11.057	
4,400.0	4,275.9	4,371.0	4,183.1	20.1	24.9	-14.81	-113.3	1,134.7	277.0	251.8	25.27	10.963	
4,500.0	4,371.6	4,470.8	4,276.8	20.7	25.6	-15.12	-115.8	1,168.9	283.0	257.0	26.03	10.873	
4,600.0	4,467.2	4,570.6	4,370.5	21.3	26.4	-15.42	-118.4	1,203.2	288.9	262.2	26.79	10.786	
4,700.0	4,562.8	4,670.4	4,464.2	21.9	27.1	-15.70	-120.9	1,237.4	294.9	267.4	27.55	10.704	
4,800.0	4,658.5	4,770.2	4,558.0	22.6	27.8	-15.98	-123.5	1,271.7	300.9	272.6	28.32	10.624	
4,900.0	4,754.1	4,870.1	4,651.7	23.2	28.6	-16.24	-126.0	1,305.9	306.9	277.8	29.09	10.548	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-321 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,849.8	4,969.9	4,745.4	23.8	29.3	-16.50	-128.5	1,340.2	312.9	283.0	29.86	10.476	
5,100.0	4,945.4	5,069.7	4,839.1	24.4	30.0	-16.74	-131.1	1,374.4	318.8	288.2	30.64	10.406	
5,200.0	5,041.0	5,169.5	4,932.8	25.1	30.8	-16.98	-133.6	1,408.6	324.8	293.4	31.42	10.339	
5,300.0	5,136.7	5,269.3	5,026.5	25.7	31.5	-17.20	-136.2	1,442.9	330.8	298.6	32.20	10.274	
5,400.0	5,232.3	5,369.1	5,120.3	26.3	32.2	-17.42	-138.7	1,477.1	336.9	303.9	32.99	10.212	
5,500.0	5,328.0	5,468.9	5,214.0	26.9	33.0	-17.63	-141.2	1,511.4	342.9	309.1	33.77	10.152	
5,600.0	5,423.6	5,568.7	5,307.7	27.5	33.7	-17.84	-143.8	1,545.6	348.9	314.3	34.56	10.095	
5,700.0	5,519.2	5,668.5	5,401.4	28.2	34.4	-18.03	-146.3	1,579.9	354.9	319.6	35.35	10.039	
5,800.0	5,614.9	5,768.4	5,495.1	28.8	35.2	-18.22	-148.9	1,614.1	360.9	324.8	36.15	9.986	
5,900.0	5,710.5	5,868.2	5,588.9	29.4	35.9	-18.41	-151.4	1,648.4	367.0	330.0	36.94	9.934	
6,000.0	5,806.2	5,968.0	5,682.6	30.0	36.6	-18.59	-153.9	1,682.6	373.0	335.3	37.74	9.884	
6,100.0	5,901.8	6,067.8	5,776.3	30.7	37.4	-18.76	-156.5	1,716.8	379.0	340.5	38.53	9.836	
6,200.0	5,997.5	6,167.6	5,870.0	31.3	38.1	-18.93	-159.0	1,751.1	385.1	345.8	39.33	9.790	
6,300.0	6,093.1	6,267.4	5,963.7	31.9	38.9	-19.09	-161.6	1,785.3	391.1	351.0	40.14	9.745	
6,400.0	6,188.7	6,367.2	6,057.4	32.5	39.6	-19.25	-164.1	1,819.6	397.2	356.2	40.94	9.702	
6,500.0	6,284.4	6,467.0	6,151.2	33.2	40.3	-15.69	-166.6	1,853.8	403.2	361.4	41.76	9.655	
6,600.0	6,380.0	6,566.6	6,244.6	33.7	41.1	9.09	-169.2	1,888.0	407.7	365.7	41.99	9.710	
6,700.0	6,474.3	6,664.5	6,336.6	34.1	41.8	30.25	-171.7	1,921.6	410.5	369.2	41.29	9.943	
6,800.0	6,565.7	6,758.2	6,424.6	34.6	42.4	46.34	-173.4	1,953.7	413.4	373.1	40.30	10.259	
6,900.0	6,652.5	6,851.7	6,512.1	35.0	43.0	58.23	-166.2	1,985.7	418.5	378.7	39.80	10.517	
7,000.0	6,733.5	6,949.5	6,602.0	35.3	43.6	67.42	-146.6	2,018.6	426.2	386.3	39.92	10.677	
7,100.0	6,807.0	7,052.3	6,693.1	35.6	44.2	74.88	-113.0	2,052.0	436.3	395.7	40.52	10.767	
7,200.0	6,872.0	7,160.8	6,783.8	35.9	44.7	81.11	-63.7	2,085.3	448.2	406.9	41.33	10.844	
7,300.0	6,927.2	7,275.9	6,871.7	36.2	45.3	86.37	3.0	2,117.6	461.4	419.3	42.11	10.959	
7,400.0	6,971.8	7,398.3	6,953.8	36.4	45.8	90.82	88.4	2,147.9	475.2	432.5	42.64	11.142	
7,500.0	7,004.9	7,528.3	7,025.7	36.7	46.3	94.51	193.2	2,174.5	488.4	445.4	42.94	11.375	
7,600.0	7,026.0	7,666.1	7,082.6	37.0	46.8	97.43	316.7	2,195.6	500.1	457.0	43.05	11.615	
7,700.0	7,034.8	7,811.1	7,119.0	37.3	47.2	99.54	456.1	2,209.3	509.3	466.1	43.20	11.788	
7,800.0	7,034.4	7,958.3	7,129.9	37.6	47.6	100.61	602.6	2,213.7	513.4	468.7	44.70	11.485	
7,900.0	7,033.7	8,058.3	7,129.2	38.0	48.0	100.61	702.6	2,213.7	513.4	466.7	46.68	10.998	
8,000.0	7,032.9	8,158.3	7,128.4	38.5	48.3	100.61	802.6	2,213.7	513.4	464.6	48.85	10.510	
8,100.0	7,032.2	8,258.3	7,127.7	39.1	48.8	100.61	902.6	2,213.7	513.4	462.2	51.20	10.027	
8,200.0	7,031.4	8,358.3	7,126.9	39.8	49.3	100.61	1,002.6	2,213.7	513.4	459.7	53.72	9.557	
8,300.0	7,030.7	8,458.3	7,126.2	40.6	49.9	100.61	1,102.6	2,213.7	513.4	457.0	56.38	9.106	
8,400.0	7,029.9	8,558.3	7,125.4	41.5	50.5	100.61	1,202.6	2,213.7	513.4	454.2	59.16	8.678	
8,500.0	7,029.2	8,658.3	7,124.7	42.4	51.2	100.61	1,302.6	2,213.7	513.4	451.4	62.05	8.274	
8,600.0	7,028.4	8,758.3	7,123.9	43.5	52.0	100.61	1,402.6	2,213.7	513.4	448.4	65.03	7.895	
8,700.0	7,027.7	8,858.3	7,123.2	44.6	52.8	100.61	1,502.6	2,213.7	513.4	445.3	68.09	7.540	
8,800.0	7,026.9	8,958.3	7,122.4	45.7	53.7	100.61	1,602.6	2,213.7	513.4	442.2	71.22	7.209	
8,900.0	7,026.1	9,058.3	7,121.6	46.9	54.6	100.61	1,702.6	2,213.7	513.4	439.0	74.41	6.900	
9,000.0	7,025.4	9,158.3	7,120.9	48.2	55.7	100.61	1,802.6	2,213.7	513.4	435.8	77.65	6.612	
9,100.0	7,024.6	9,258.3	7,120.1	49.6	56.7	100.61	1,902.6	2,213.7	513.4	432.5	80.94	6.343	
9,200.0	7,023.9	9,358.3	7,119.4	50.9	57.8	100.61	2,002.6	2,213.7	513.4	429.1	84.27	6.092	
9,300.0	7,023.1	9,458.3	7,118.6	52.4	59.0	100.61	2,102.6	2,213.7	513.4	425.8	87.64	5.858	
9,400.0	7,022.4	9,558.3	7,117.9	53.8	60.2	100.61	2,202.6	2,213.7	513.4	422.4	91.04	5.639	
9,500.0	7,021.6	9,658.3	7,117.1	55.3	61.5	100.61	2,302.6	2,213.7	513.4	418.9	94.47	5.435	
9,600.0	7,020.9	9,758.3	7,116.4	56.8	62.8	100.61	2,402.6	2,213.7	513.4	415.5	97.92	5.243	
9,700.0	7,020.1	9,858.3	7,115.6	58.4	64.1	100.61	2,502.6	2,213.7	513.4	412.0	101.40	5.063	
9,800.0	7,019.3	9,958.3	7,114.9	60.0	65.5	100.61	2,602.6	2,213.7	513.4	408.5	104.90	4.894	
9,900.0	7,018.6	10,058.3	7,114.1	61.6	66.9	100.61	2,702.6	2,213.7	513.4	405.0	108.42	4.735	
10,000.0	7,017.8	10,158.3	7,113.3	63.2	68.3	100.61	2,802.6	2,213.7	513.4	401.4	111.96	4.586	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-321 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,017.1	10,258.3	7,112.6	64.8	69.8	100.61	2,902.6	2,213.7	513.4	397.9	115.51	4.445	
10,200.0	7,016.3	10,358.3	7,111.8	66.5	71.3	100.61	3,002.5	2,213.7	513.4	394.3	119.07	4.312	
10,300.0	7,015.6	10,458.3	7,111.1	68.1	72.8	100.61	3,102.5	2,213.7	513.4	390.7	122.65	4.186	
10,400.0	7,014.8	10,558.3	7,110.3	69.8	74.4	100.61	3,202.5	2,213.7	513.4	387.2	126.24	4.067	
10,500.0	7,014.1	10,658.3	7,109.6	71.5	75.9	100.61	3,302.5	2,213.7	513.4	383.6	129.85	3.954	
10,600.0	7,013.3	10,758.3	7,108.8	73.2	77.5	100.61	3,402.5	2,213.7	513.4	379.9	133.46	3.847	
10,700.0	7,012.6	10,858.3	7,108.1	74.9	79.1	100.61	3,502.5	2,213.7	513.4	376.3	137.08	3.745	
10,800.0	7,011.8	10,958.3	7,107.3	76.7	80.7	100.61	3,602.5	2,213.7	513.4	372.7	140.71	3.649	
10,900.0	7,011.0	11,058.3	7,106.6	78.4	82.3	100.61	3,702.5	2,213.7	513.4	369.1	144.34	3.557	
11,000.0	7,010.3	11,158.3	7,105.8	80.2	84.0	100.61	3,802.5	2,213.7	513.4	365.4	147.99	3.469	
11,100.0	7,009.5	11,258.3	7,105.0	81.9	85.6	100.61	3,902.5	2,213.7	513.4	361.8	151.64	3.386	
11,200.0	7,008.8	11,358.3	7,104.3	83.7	87.3	100.61	4,002.5	2,213.7	513.4	358.1	155.30	3.306	
11,300.0	7,008.0	11,458.3	7,103.5	85.4	89.0	100.61	4,102.5	2,213.7	513.4	354.4	158.96	3.230	
11,400.0	7,007.3	11,558.3	7,102.8	87.2	90.7	100.61	4,202.5	2,213.7	513.4	350.8	162.63	3.157	
11,500.0	7,006.5	11,658.3	7,102.0	89.0	92.4	100.61	4,302.5	2,213.7	513.4	347.1	166.30	3.087	
11,600.0	7,005.8	11,758.3	7,101.3	90.8	94.1	100.61	4,402.5	2,213.7	513.4	343.4	169.98	3.020	
11,630.4	7,005.5	11,788.6	7,101.0	91.3	94.6	100.61	4,432.9	2,213.7	513.4	342.3	171.10	3.001	
11,661.0	7,005.3	11,807.7	7,100.9	91.9	95.0	100.61	4,451.9	2,213.7	513.5	341.5	172.02	2.985 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-421 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	169.17	-14.6	2.8	14.8				
100.0	100.0	101.0	101.0	0.1	0.1	169.17	-14.6	2.8	14.8	14.6	0.20	75.011	
200.0	200.0	201.0	201.0	0.3	0.3	169.17	-14.6	2.8	14.8	14.2	0.65	22.920	
300.0	300.0	301.0	301.0	0.5	0.5	169.17	-14.6	2.8	14.8	13.7	1.10	13.527	
400.0	400.0	401.0	401.0	0.8	0.8	169.17	-14.6	2.8	14.8	13.3	1.55	9.594	
500.0	500.0	501.0	501.0	1.0	1.0	169.17	-14.6	2.8	14.8	12.8	2.00	7.433	
566.3	566.3	567.3	567.3	1.1	1.1	169.17	-14.6	2.8	14.8	12.5	2.29	6.467	CC
600.0	600.0	601.0	601.0	1.2	1.2	169.17	-14.6	2.8	14.8	12.4	2.45	6.067	ES
700.0	700.0	700.9	700.8	1.4	1.4	164.41	-14.7	4.1	15.3	12.4	2.88	5.312	
800.0	800.0	800.6	800.5	1.7	1.6	152.22	-15.2	8.0	17.2	13.9	3.31	5.200	
900.0	900.0	900.0	899.7	1.9	1.9	40.84	-16.0	14.5	20.6	16.9	3.73	5.531	
1,000.0	999.9	999.5	998.8	2.1	2.1	32.21	-17.1	23.5	24.6	20.5	4.14	5.944	
1,100.0	1,099.7	1,098.8	1,097.4	2.3	2.3	25.94	-18.5	35.1	28.9	24.4	4.56	6.344	
1,200.0	1,199.3	1,197.9	1,195.5	2.5	2.6	21.19	-20.3	49.1	33.5	28.5	4.99	6.706	
1,300.0	1,298.6	1,296.9	1,293.1	2.8	3.0	17.46	-22.3	65.7	38.1	32.7	5.43	7.023	
1,400.0	1,397.5	1,395.8	1,390.0	3.1	3.3	14.43	-24.6	84.8	42.8	37.0	5.87	7.296	
1,500.0	1,496.1	1,494.5	1,486.4	3.4	3.7	11.90	-27.3	106.3	47.6	41.3	6.32	7.528	
1,600.0	1,594.2	1,593.1	1,582.0	3.7	4.2	9.74	-30.2	130.2	52.4	45.6	6.78	7.723	
1,700.0	1,691.7	1,691.6	1,676.8	4.1	4.7	7.85	-33.4	156.6	57.2	49.9	7.25	7.882	
1,800.0	1,788.6	1,790.0	1,770.8	4.5	5.2	6.17	-36.9	185.3	62.0	54.2	7.73	8.013	
1,900.0	1,884.9	1,889.5	1,865.4	5.0	5.8	4.71	-40.7	216.1	66.0	57.8	8.23	8.021	
2,000.0	1,980.5	1,989.5	1,960.3	5.6	6.4	3.52	-44.5	247.1	68.2	59.4	8.76	7.779	
2,100.0	2,076.2	2,089.4	2,055.3	6.1	7.0	2.40	-48.3	278.1	70.2	60.9	9.32	7.537	
2,200.0	2,171.8	2,189.4	2,150.3	6.7	7.7	1.35	-52.1	309.1	72.3	62.4	9.88	7.318	
2,300.0	2,267.5	2,289.4	2,245.2	7.3	8.3	0.36	-55.9	340.1	74.4	63.9	10.45	7.118	
2,400.0	2,363.1	2,389.3	2,340.2	7.9	8.9	-0.58	-59.7	371.1	76.5	65.5	11.03	6.936	
2,500.0	2,458.7	2,489.3	2,435.2	8.4	9.6	-1.46	-63.5	402.1	78.6	67.0	11.61	6.769	
2,600.0	2,554.4	2,589.3	2,530.1	9.0	10.2	-2.30	-67.3	433.1	80.8	68.6	12.21	6.615	
2,700.0	2,650.0	2,689.3	2,625.1	9.6	10.9	-3.10	-71.1	464.1	82.9	70.1	12.82	6.472	
2,800.0	2,745.7	2,789.2	2,720.1	10.2	11.5	-3.86	-74.9	495.1	85.1	71.7	13.43	6.339	
2,900.0	2,841.3	2,889.2	2,815.0	10.8	12.2	-4.57	-78.7	526.1	87.3	73.3	14.05	6.215	
3,000.0	2,936.9	2,989.2	2,910.0	11.4	12.8	-5.25	-82.5	557.1	89.5	74.9	14.68	6.099	
3,100.0	3,032.6	3,089.1	3,005.0	12.1	13.5	-5.90	-86.3	588.1	91.8	76.4	15.32	5.990	
3,200.0	3,128.2	3,189.1	3,099.9	12.7	14.2	-6.52	-90.1	619.1	94.0	78.0	15.96	5.888	
3,300.0	3,223.9	3,289.1	3,194.9	13.3	14.8	-7.11	-93.9	650.1	96.2	79.6	16.62	5.792	
3,400.0	3,319.5	3,389.0	3,289.9	13.9	15.5	-7.67	-97.7	681.1	98.5	81.2	17.28	5.701	
3,500.0	3,415.2	3,489.0	3,384.8	14.5	16.1	-8.21	-101.5	712.1	100.8	82.8	17.95	5.615	
3,600.0	3,510.8	3,589.0	3,479.8	15.1	16.8	-8.72	-105.3	743.1	103.0	84.4	18.62	5.534	
3,700.0	3,606.4	3,689.0	3,574.8	15.7	17.5	-9.22	-109.1	774.1	105.3	86.0	19.30	5.456	
3,800.0	3,702.1	3,788.9	3,669.7	16.4	18.1	-9.69	-112.9	805.1	107.6	87.6	19.99	5.383	
3,900.0	3,797.7	3,888.9	3,764.7	17.0	18.8	-10.14	-116.7	836.1	109.9	89.2	20.68	5.314	
4,000.0	3,893.4	3,988.9	3,859.7	17.6	19.5	-10.57	-120.4	867.1	112.2	90.8	21.38	5.248	
4,100.0	3,989.0	4,088.8	3,954.6	18.2	20.1	-10.98	-124.2	898.1	114.5	92.4	22.09	5.185	
4,200.0	4,084.6	4,188.8	4,049.6	18.8	20.8	-11.38	-128.0	929.1	116.8	94.0	22.80	5.125	
4,300.0	4,180.3	4,288.8	4,144.6	19.5	21.4	-11.77	-131.8	960.1	119.1	95.6	23.51	5.067	
4,400.0	4,275.9	4,388.7	4,239.5	20.1	22.1	-12.13	-135.6	991.1	121.5	97.2	24.23	5.013	
4,500.0	4,371.6	4,488.7	4,334.5	20.7	22.8	-12.49	-139.4	1,022.1	123.8	98.8	24.96	4.961	
4,600.0	4,467.2	4,588.7	4,429.5	21.3	23.4	-12.83	-143.2	1,053.1	126.1	100.4	25.69	4.911	
4,700.0	4,562.8	4,688.7	4,524.4	21.9	24.1	-13.16	-147.0	1,084.1	128.5	102.1	26.42	4.863	
4,800.0	4,658.5	4,788.6	4,619.4	22.6	24.8	-13.48	-150.8	1,115.1	130.8	103.7	27.16	4.817	
4,900.0	4,754.1	4,888.6	4,714.4	23.2	25.4	-13.78	-154.6	1,146.1	133.2	105.3	27.90	4.773	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-421 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,849.8	4,988.6	4,809.3	23.8	26.1	-14.08	-158.4	1,177.1	135.5	106.9	28.64	4.731	
5,100.0	4,945.4	5,088.5	4,904.3	24.4	26.8	-14.36	-162.2	1,208.1	137.9	108.5	29.39	4.691	
5,200.0	5,041.0	5,188.5	4,999.3	25.1	27.4	-14.64	-166.0	1,239.1	140.2	110.1	30.14	4.652	
5,300.0	5,136.7	5,288.5	5,094.2	25.7	28.1	-14.91	-169.8	1,270.1	142.6	111.7	30.89	4.615	
5,400.0	5,232.3	5,388.4	5,189.2	26.3	28.8	-15.16	-173.6	1,301.1	144.9	113.3	31.65	4.579	
5,500.0	5,328.0	5,488.4	5,284.2	26.9	29.4	-15.41	-177.4	1,332.1	147.3	114.9	32.41	4.545	
5,600.0	5,423.6	5,588.4	5,379.1	27.5	30.1	-15.66	-181.2	1,363.1	149.7	116.5	33.18	4.511	
5,700.0	5,519.2	5,688.4	5,474.1	28.2	30.8	-15.89	-185.0	1,394.1	152.0	118.1	33.94	4.480	
5,800.0	5,614.9	5,788.3	5,569.1	28.8	31.4	-16.12	-188.8	1,425.1	154.4	119.7	34.71	4.449	
5,900.0	5,710.5	5,888.3	5,664.0	29.4	32.1	-16.34	-192.6	1,456.1	156.8	121.3	35.48	4.419	
6,000.0	5,806.2	5,988.3	5,759.0	30.0	32.8	-16.55	-196.4	1,487.1	159.2	122.9	36.25	4.390	
6,100.0	5,901.8	6,088.2	5,854.0	30.7	33.4	-16.76	-200.2	1,518.1	161.5	124.5	37.03	4.363	
6,200.0	5,997.5	6,188.2	5,948.9	31.3	34.1	-16.96	-204.0	1,549.1	163.9	126.1	37.81	4.336	
6,300.0	6,093.1	6,288.2	6,043.9	31.9	34.8	-17.16	-207.8	1,580.1	166.3	127.7	38.59	4.310	
6,400.0	6,188.7	6,388.1	6,138.9	32.5	35.4	-17.35	-211.6	1,611.1	168.7	129.3	39.37	4.285	
6,500.0	6,284.4	6,488.1	6,233.8	33.2	36.1	-13.75	-215.4	1,642.1	171.1	130.9	40.13	4.262	
6,600.0	6,380.0	6,587.7	6,328.5	33.7	36.8	12.85	-219.2	1,672.9	172.3	132.7	39.65	4.346	
6,700.0	6,474.3	6,685.5	6,421.3	34.1	37.4	38.08	-222.9	1,703.3	173.6	135.5	38.12	4.554	
6,800.0	6,565.7	6,781.9	6,512.9	34.6	38.0	59.75	-225.1	1,733.1	179.0	141.2	37.75	4.741	
6,900.0	6,652.5	6,882.9	6,608.5	35.0	38.6	76.82	-216.1	1,764.3	190.1	150.7	39.38	4.827	
7,000.0	6,733.5	6,989.0	6,706.8	35.3	39.1	90.09	-192.5	1,796.3	205.8	164.3	41.46	4.963	
7,100.0	6,807.0	7,101.0	6,806.1	35.6	39.6	100.42	-152.3	1,828.6	224.5	181.8	42.70	5.258	
7,200.0	6,872.0	7,219.4	6,903.8	35.9	40.1	108.46	-93.7	1,860.3	244.5	201.9	42.60	5.740	
7,300.0	6,927.2	7,344.7	6,996.6	36.2	40.6	114.65	-15.2	1,890.4	264.3	223.1	41.22	6.412	
7,400.0	6,971.8	7,477.1	7,079.9	36.4	41.0	119.34	83.8	1,917.3	282.4	243.5	38.83	7.272	
7,500.0	7,004.9	7,616.1	7,148.7	36.7	41.4	122.74	202.5	1,939.4	297.4	261.3	36.11	8.236	
7,600.0	7,026.0	7,760.9	7,197.3	37.0	41.8	125.01	337.7	1,954.9	308.4	274.9	33.49	9.210	
7,700.0	7,034.8	7,909.8	7,221.1	37.3	42.2	126.22	484.2	1,962.3	314.4	282.8	31.66	9.931	
7,800.0	7,034.4	8,025.9	7,223.6	37.6	42.5	126.56	600.3	1,962.7	315.9	283.4	32.44	9.737	
7,900.0	7,033.7	8,125.9	7,224.4	38.0	42.9	126.79	700.3	1,962.7	316.8	282.8	33.97	9.326	
8,000.0	7,032.9	8,225.9	7,225.3	38.5	43.3	127.02	800.3	1,962.7	317.8	282.1	35.70	8.900	
8,100.0	7,032.2	8,325.9	7,226.1	39.1	43.8	127.25	900.2	1,962.7	318.8	281.1	37.61	8.475	
8,200.0	7,031.4	8,425.9	7,227.0	39.8	44.4	127.48	1,000.2	1,962.7	319.7	280.1	39.66	8.062	
8,300.0	7,030.7	8,525.8	7,227.8	40.6	45.1	127.71	1,100.2	1,962.7	320.7	278.9	41.82	7.668	
8,400.0	7,029.9	8,625.8	7,228.7	41.5	45.8	127.94	1,200.2	1,962.7	321.7	277.6	44.09	7.297	
8,500.0	7,029.2	8,725.8	7,229.5	42.4	46.6	128.16	1,300.2	1,962.7	322.7	276.3	46.43	6.950	
8,600.0	7,028.4	8,825.8	7,230.4	43.5	47.5	128.38	1,400.2	1,962.7	323.7	274.8	48.84	6.627	
8,700.0	7,027.7	8,925.8	7,231.3	44.6	48.5	128.61	1,500.1	1,962.7	324.7	273.4	51.31	6.328	
8,800.0	7,026.9	9,025.8	7,232.1	45.7	49.5	128.83	1,600.1	1,962.7	325.7	271.9	53.82	6.052	
8,900.0	7,026.1	9,125.8	7,233.0	46.9	50.6	129.05	1,700.1	1,962.7	326.7	270.3	56.36	5.796	
9,000.0	7,025.4	9,225.8	7,233.8	48.2	51.7	129.27	1,800.1	1,962.7	327.7	268.8	58.94	5.560	
9,100.0	7,024.6	9,325.7	7,234.7	49.6	52.9	129.48	1,900.1	1,962.7	328.7	267.2	61.54	5.342	
9,200.0	7,023.9	9,425.7	7,235.5	50.9	54.2	129.70	2,000.1	1,962.7	329.8	265.6	64.16	5.140	
9,300.0	7,023.1	9,525.7	7,236.4	52.4	55.5	129.91	2,100.1	1,962.7	330.8	264.0	66.79	4.953	
9,400.0	7,022.4	9,625.7	7,237.2	53.8	56.8	130.12	2,200.0	1,962.7	331.8	262.4	69.44	4.779	
9,500.0	7,021.6	9,725.7	7,238.1	55.3	58.2	130.34	2,300.0	1,962.7	332.9	260.8	72.09	4.617	
9,600.0	7,020.9	9,825.7	7,238.9	56.8	59.6	130.55	2,400.0	1,962.7	333.9	259.2	74.75	4.467	
9,700.0	7,020.1	9,925.7	7,239.8	58.4	61.1	130.76	2,500.0	1,962.7	334.9	257.5	77.41	4.327	
9,800.0	7,019.3	10,025.7	7,240.6	60.0	62.5	130.96	2,600.0	1,962.7	336.0	255.9	80.07	4.196	
9,900.0	7,018.6	10,125.6	7,241.5	61.6	64.0	131.17	2,700.0	1,962.7	337.1	254.3	82.74	4.074	
10,000.0	7,017.8	10,225.6	7,242.3	63.2	65.6	131.37	2,799.9	1,962.7	338.1	252.7	85.40	3.959	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10T-421 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,017.1	10,325.6	7,243.2	64.8	67.1	131.58	2,899.9	1,962.7	339.2	251.1	88.07	3.851	
10,200.0	7,016.3	10,425.6	7,244.0	66.5	68.7	131.78	2,999.9	1,962.7	340.2	249.5	90.73	3.750	
10,300.0	7,015.6	10,525.6	7,244.9	68.1	70.3	131.98	3,099.9	1,962.7	341.3	247.9	93.38	3.655	
10,400.0	7,014.8	10,625.6	7,245.7	69.8	71.9	132.18	3,199.9	1,962.7	342.4	246.4	96.03	3.566	
10,500.0	7,014.1	10,725.6	7,246.6	71.5	73.6	132.38	3,299.9	1,962.7	343.5	244.8	98.67	3.481	
10,600.0	7,013.3	10,825.6	7,247.4	73.2	75.2	132.58	3,399.8	1,962.7	344.6	243.3	101.31	3.401	
10,700.0	7,012.6	10,925.5	7,248.3	74.9	76.9	132.77	3,499.8	1,962.7	345.7	241.7	103.94	3.325	
10,800.0	7,011.8	11,025.5	7,249.2	76.7	78.6	132.97	3,599.8	1,962.7	346.7	240.2	106.57	3.254	
10,900.0	7,011.0	11,125.5	7,250.0	78.4	80.3	133.16	3,699.8	1,962.7	347.8	238.7	109.19	3.186	
11,000.0	7,010.3	11,225.5	7,250.9	80.2	82.0	133.35	3,799.8	1,962.7	348.9	237.1	111.80	3.121	
11,100.0	7,009.5	11,325.5	7,251.7	81.9	83.7	133.55	3,899.8	1,962.7	350.1	235.7	114.40	3.060	
11,200.0	7,008.8	11,425.5	7,252.6	83.7	85.4	133.74	3,999.7	1,962.7	351.2	234.2	116.99	3.002	
11,300.0	7,008.0	11,525.5	7,253.4	85.4	87.1	133.92	4,099.7	1,962.7	352.3	232.7	119.57	2.946	
11,400.0	7,007.3	11,625.4	7,254.3	87.2	88.9	134.11	4,199.7	1,962.7	353.4	231.2	122.15	2.893	
11,500.0	7,006.5	11,725.4	7,255.1	89.0	90.6	134.30	4,299.7	1,962.7	354.5	229.8	124.72	2.843	
11,600.0	7,005.8	11,825.4	7,256.0	90.8	92.4	134.48	4,399.7	1,962.7	355.6	228.4	127.27	2.794	
11,661.0	7,005.3	11,885.0	7,256.5	91.9	93.4	134.59	4,459.2	1,962.7	356.3	227.5	128.81	2.766	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Y-241 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	180.00	-43.7	0.0	43.7				
100.0	100.0	101.0	101.0	0.1	0.1	180.00	-43.7	0.0	43.7	43.5	0.20	221.022	
166.3	166.3	167.3	167.3	0.2	0.2	180.00	-43.7	0.0	43.7	43.2	0.50	88.144	CC
200.0	200.0	201.0	201.0	0.3	0.3	180.00	-43.7	0.0	43.7	43.1	0.65	67.547	
300.0	300.0	300.8	300.8	0.5	0.5	178.27	-43.9	1.3	43.9	42.8	1.08	40.456	ES
400.0	400.0	400.6	400.5	0.8	0.8	173.27	-44.3	5.2	44.6	43.1	1.53	29.238	
500.0	500.0	500.0	499.7	1.0	1.0	165.45	-45.1	11.7	46.6	44.6	1.98	23.525	
600.0	600.0	599.0	598.3	1.2	1.2	155.83	-46.1	20.7	50.6	48.2	2.45	20.657	
700.0	700.0	697.5	696.1	1.4	1.5	145.87	-47.4	32.1	57.5	54.5	2.95	19.513	
800.0	800.0	795.3	792.9	1.7	1.8	136.82	-49.0	46.0	67.7	64.2	3.48	19.452	
900.0	900.0	892.6	888.8	1.9	2.2	30.39	-50.9	62.2	80.2	76.3	3.86	20.760	
1,000.0	999.9	989.5	983.9	2.1	2.6	25.15	-53.0	80.8	93.4	89.1	4.31	21.696	
1,100.0	1,099.7	1,086.0	1,078.1	2.3	3.0	21.19	-55.4	101.6	107.1	102.4	4.76	22.511	
1,200.0	1,199.3	1,182.2	1,171.4	2.5	3.5	18.11	-58.1	124.8	121.1	115.9	5.22	23.195	
1,300.0	1,298.6	1,278.0	1,263.8	2.8	4.0	15.63	-61.0	150.1	135.2	129.5	5.69	23.752	
1,400.0	1,397.5	1,373.5	1,355.1	3.1	4.5	13.60	-64.2	177.7	149.4	143.2	6.18	24.187	
1,500.0	1,496.1	1,468.6	1,445.4	3.4	5.1	11.89	-67.6	207.4	163.6	156.9	6.66	24.544	
1,600.0	1,594.2	1,563.4	1,534.6	3.7	5.8	10.44	-71.3	239.2	177.7	170.6	7.17	24.790	
1,700.0	1,691.7	1,657.8	1,622.7	4.1	6.5	9.17	-75.2	273.0	191.8	184.2	7.69	24.960	
1,800.0	1,788.6	1,754.2	1,711.8	4.5	7.2	8.05	-79.4	309.6	205.6	197.4	8.22	25.017	
1,900.0	1,884.9	1,853.5	1,803.4	5.0	8.0	7.12	-83.8	347.5	217.2	208.5	8.77	24.767	
2,000.0	1,980.5	1,953.0	1,895.2	5.6	8.8	6.35	-88.1	385.6	226.9	217.5	9.35	24.261	
2,100.0	2,076.2	2,052.5	1,987.1	6.1	9.6	5.65	-92.5	423.6	236.5	226.5	9.95	23.766	
2,200.0	2,171.8	2,152.0	2,078.9	6.7	10.4	5.01	-96.9	461.7	246.1	235.5	10.55	23.320	
2,300.0	2,267.5	2,251.5	2,170.7	7.3	11.2	4.42	-101.3	499.7	255.7	244.6	11.16	22.916	
2,400.0	2,363.1	2,351.0	2,262.6	7.9	12.0	3.86	-105.7	537.8	265.4	253.6	11.77	22.549	
2,500.0	2,458.7	2,450.5	2,354.4	8.4	12.9	3.35	-110.1	575.8	275.1	262.7	12.38	22.213	
2,600.0	2,554.4	2,550.0	2,446.2	9.0	13.7	2.87	-114.4	613.8	284.8	271.8	13.00	21.904	
2,700.0	2,650.0	2,649.5	2,538.1	9.6	14.5	2.43	-118.8	651.9	294.5	280.9	13.62	21.620	
2,800.0	2,745.7	2,749.0	2,629.9	10.2	15.3	2.01	-123.2	689.9	304.3	290.0	14.25	21.357	
2,900.0	2,841.3	2,848.5	2,721.7	10.8	16.1	1.62	-127.6	728.0	314.0	299.1	14.87	21.114	
3,000.0	2,936.9	2,948.0	2,813.6	11.4	17.0	1.25	-132.0	766.0	323.8	308.3	15.50	20.887	
3,100.0	3,032.6	3,047.5	2,905.4	12.1	17.8	0.91	-136.3	804.1	333.6	317.4	16.13	20.676	
3,200.0	3,128.2	3,147.0	2,997.3	12.7	18.6	0.58	-140.7	842.1	343.4	326.6	16.77	20.478	
3,300.0	3,223.9	3,246.5	3,089.1	13.3	19.4	0.27	-145.1	880.2	353.2	335.8	17.40	20.292	
3,400.0	3,319.5	3,346.0	3,180.9	13.9	20.2	-0.02	-149.5	918.2	363.0	345.0	18.04	20.118	
3,500.0	3,415.2	3,445.5	3,272.8	14.5	21.1	-0.30	-153.9	956.3	372.8	354.1	18.68	19.954	
3,600.0	3,510.8	3,545.0	3,364.6	15.1	21.9	-0.56	-158.3	994.3	382.7	363.3	19.33	19.799	
3,700.0	3,606.4	3,644.5	3,456.4	15.7	22.7	-0.81	-162.6	1,032.4	392.5	372.5	19.97	19.653	
3,800.0	3,702.1	3,744.0	3,548.3	16.4	23.5	-1.05	-167.0	1,070.4	402.3	381.7	20.62	19.514	
3,900.0	3,797.7	3,843.5	3,640.1	17.0	24.4	-1.27	-171.4	1,108.4	412.2	390.9	21.27	19.383	
4,000.0	3,893.4	3,943.0	3,731.9	17.6	25.2	-1.49	-175.8	1,146.5	422.1	400.1	21.92	19.258	
4,100.0	3,989.0	4,042.5	3,823.8	18.2	26.0	-1.69	-180.2	1,184.5	431.9	409.4	22.57	19.139	
4,200.0	4,084.6	4,142.0	3,915.6	18.8	26.8	-1.89	-184.6	1,222.6	441.8	418.6	23.22	19.026	
4,300.0	4,180.3	4,241.5	4,007.4	19.5	27.7	-2.07	-188.9	1,260.6	451.7	427.8	23.87	18.919	
4,400.0	4,275.9	4,341.0	4,099.3	20.1	28.5	-2.25	-193.3	1,298.7	461.5	437.0	24.53	18.816	
4,500.0	4,371.6	4,440.5	4,191.1	20.7	29.3	-2.43	-197.7	1,336.7	471.4	446.2	25.19	18.718	
4,600.0	4,467.2	4,540.0	4,282.9	21.3	30.1	-2.59	-202.1	1,374.8	481.3	455.5	25.84	18.624	
4,700.0	4,562.8	4,639.5	4,374.8	21.9	31.0	-2.75	-206.5	1,412.8	491.2	464.7	26.50	18.534	
4,800.0	4,658.5	4,739.0	4,466.6	22.6	31.8	-2.90	-210.9	1,450.9	501.1	473.9	27.16	18.448	
4,900.0	4,754.1	4,838.5	4,558.4	23.2	32.6	-3.05	-215.2	1,488.9	511.0	483.2	27.83	18.365	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Y-241 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,849.8	4,938.0	4,650.3	23.8	33.5	-3.19	-219.6	1,527.0	520.9	492.4	28.49	18.286	
5,100.0	4,945.4	5,037.5	4,742.1	24.4	34.3	-3.32	-224.0	1,565.0	530.8	501.7	29.15	18.209	
5,200.0	5,041.0	5,137.0	4,833.9	25.1	35.1	-3.45	-228.4	1,603.0	540.7	510.9	29.82	18.136	
5,300.0	5,136.7	5,236.5	4,925.8	25.7	35.9	-3.58	-232.8	1,641.1	550.6	520.2	30.48	18.065	
5,400.0	5,232.3	5,336.0	5,017.6	26.3	36.8	-3.70	-237.2	1,679.1	560.6	529.4	31.15	17.997	
5,500.0	5,328.0	5,435.5	5,109.5	26.9	37.6	-3.82	-241.5	1,717.2	570.5	538.7	31.81	17.932	
5,600.0	5,423.6	5,535.0	5,201.3	27.5	38.4	-3.93	-245.9	1,755.2	580.4	547.9	32.48	17.869	
5,700.0	5,519.2	5,634.5	5,293.1	28.2	39.2	-4.04	-250.3	1,793.3	590.3	557.2	33.15	17.808	
5,800.0	5,614.9	5,734.0	5,385.0	28.8	40.1	-4.14	-254.7	1,831.3	600.2	566.4	33.82	17.749	
5,900.0	5,710.5	5,833.5	5,476.8	29.4	40.9	-4.25	-259.1	1,869.4	610.2	575.7	34.49	17.692	
6,000.0	5,806.2	5,933.0	5,568.6	30.0	41.7	-4.35	-263.5	1,907.4	620.1	584.9	35.16	17.637	
6,100.0	5,901.8	6,032.5	5,660.5	30.7	42.5	-4.44	-267.8	1,945.5	630.0	594.2	35.83	17.584	
6,200.0	5,997.5	6,132.0	5,752.3	31.3	43.4	-4.53	-272.2	1,983.5	639.9	603.4	36.50	17.532	
6,300.0	6,093.1	6,231.5	5,844.1	31.9	44.2	-4.62	-276.6	2,021.6	649.9	612.7	37.17	17.482	
6,400.0	6,188.7	6,331.0	5,936.0	32.5	45.0	-4.71	-281.0	2,059.6	659.8	622.0	37.85	17.434	
6,500.0	6,284.4	6,430.5	6,027.8	33.2	45.9	-1.15	-285.4	2,097.6	669.7	631.2	38.53	17.382	
6,600.0	6,380.0	6,529.6	6,119.3	33.7	46.7	22.79	-289.7	2,135.5	680.3	641.1	39.17	17.367	
6,700.0	6,474.3	6,626.8	6,208.9	34.1	47.5	42.20	-294.0	2,172.7	692.0	652.3	39.63	17.459	
6,800.0	6,565.7	6,720.4	6,295.3	34.6	48.3	55.86	-298.1	2,208.5	705.7	665.7	40.03	17.627	
6,900.0	6,652.5	6,808.8	6,376.9	35.0	49.0	65.51	-302.0	2,242.3	722.8	682.4	40.47	17.860	
7,000.0	6,733.5	6,911.5	6,471.8	35.3	49.8	73.24	-302.3	2,281.6	744.1	703.1	41.03	18.137	
7,100.0	6,807.0	7,031.6	6,581.4	35.6	50.6	79.56	-285.5	2,327.3	767.7	726.0	41.70	18.411	
7,200.0	6,872.0	7,167.1	6,700.4	35.9	51.4	84.80	-244.6	2,377.2	792.2	749.9	42.37	18.698	
7,300.0	6,927.2	7,322.1	6,825.6	36.2	52.3	89.21	-170.7	2,430.1	816.1	773.1	42.97	18.994	
7,400.0	6,971.8	7,499.6	6,948.5	36.4	53.1	92.81	-54.6	2,482.7	837.1	793.6	43.47	19.259	
7,500.0	7,004.9	7,699.6	7,053.1	36.7	53.8	95.34	109.0	2,528.2	852.9	808.9	44.02	19.375	
7,600.0	7,026.0	7,915.9	7,117.8	37.0	54.3	96.48	312.6	2,557.7	861.2	816.2	44.97	19.151	
7,700.0	7,034.8	8,109.1	7,129.3	37.3	54.7	96.21	504.8	2,565.0	861.1	814.8	46.35	18.581	
7,800.0	7,034.4	8,209.1	7,126.2	37.6	54.9	96.05	604.7	2,565.0	860.7	812.8	47.89	17.972	
7,900.0	7,033.7	8,309.1	7,123.0	38.0	55.2	95.89	704.7	2,565.0	860.5	810.5	49.93	17.233	
8,000.0	7,032.9	8,409.0	7,119.9	38.5	55.5	95.74	804.6	2,565.0	860.2	808.0	52.18	16.486	
8,100.0	7,032.2	8,509.0	7,116.7	39.1	55.8	95.58	904.5	2,565.0	860.0	805.4	54.61	15.749	
8,200.0	7,031.4	8,609.0	7,113.6	39.8	56.2	95.42	1,004.4	2,565.0	859.8	802.6	57.19	15.033	
8,300.0	7,030.7	8,708.9	7,110.5	40.6	56.7	95.26	1,104.4	2,565.0	859.5	799.6	59.92	14.346	
8,400.0	7,029.9	8,808.9	7,107.3	41.5	57.2	95.10	1,204.3	2,565.0	859.3	796.6	62.76	13.692	
8,500.0	7,029.2	8,908.9	7,104.2	42.4	57.8	94.95	1,304.2	2,565.0	859.1	793.4	65.71	13.074	
8,600.0	7,028.4	9,008.9	7,101.1	43.5	58.4	94.79	1,404.1	2,565.0	858.9	790.2	68.75	12.493	
8,700.0	7,027.7	9,108.8	7,097.9	44.6	59.1	94.63	1,504.1	2,565.0	858.7	786.8	71.87	11.948	
8,800.0	7,026.9	9,208.8	7,094.8	45.7	59.9	94.47	1,604.0	2,565.0	858.5	783.5	75.06	11.438	
8,900.0	7,026.1	9,308.8	7,091.7	46.9	60.7	94.31	1,703.9	2,565.0	858.3	780.0	78.31	10.960	
9,000.0	7,025.4	9,408.7	7,088.5	48.2	61.5	94.15	1,803.8	2,565.0	858.2	776.5	81.62	10.514	
9,100.0	7,024.6	9,508.7	7,085.4	49.6	62.4	93.99	1,903.7	2,565.0	858.0	773.0	84.98	10.097	
9,200.0	7,023.9	9,608.7	7,082.2	50.9	63.4	93.84	2,003.7	2,565.0	857.8	769.5	88.37	9.707	
9,300.0	7,023.1	9,708.7	7,079.1	52.4	64.4	93.68	2,103.6	2,565.0	857.7	765.9	91.81	9.342	
9,400.0	7,022.4	9,808.6	7,076.0	53.8	65.5	93.52	2,203.5	2,565.0	857.5	762.3	95.28	9.000	
9,500.0	7,021.6	9,908.6	7,072.8	55.3	66.6	93.36	2,303.4	2,565.0	857.4	758.6	98.78	8.680	
9,600.0	7,020.9	10,008.6	7,069.7	56.8	67.7	93.20	2,403.4	2,565.0	857.3	754.9	102.31	8.379	
9,700.0	7,020.1	10,108.5	7,066.6	58.4	69.0	93.04	2,503.3	2,565.0	857.1	751.3	105.86	8.097	
9,800.0	7,019.3	10,208.5	7,063.4	60.0	70.2	92.88	2,603.2	2,565.0	857.0	747.6	109.44	7.831	
9,900.0	7,018.6	10,308.5	7,060.3	61.6	71.5	92.72	2,703.1	2,565.0	856.9	743.9	113.03	7.581	
10,000.0	7,017.8	10,408.5	7,057.2	63.2	72.8	92.56	2,803.0	2,565.0	856.8	740.1	116.64	7.345	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Spaur 4N67W10LQ Pad Sec.10-T4N-R67W - Spaur 10Y-241 - Wellbore #1 - Plan #1 (6-11-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

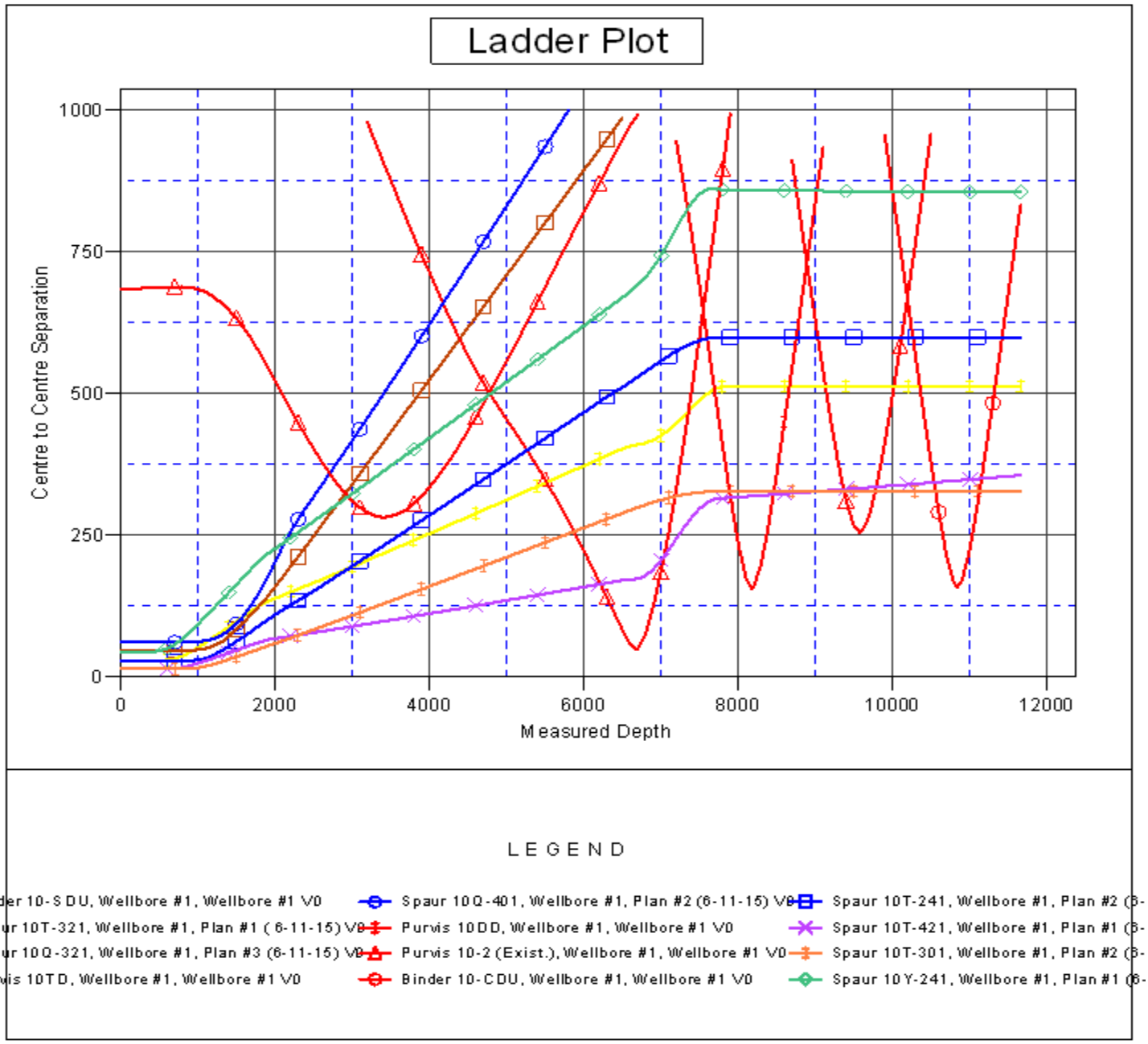
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,017.1	10,508.4	7,054.0	64.8	74.1	92.40	2,903.0	2,565.0	856.7	736.4	120.27	7.123	
10,200.0	7,016.3	10,608.4	7,050.9	66.5	75.5	92.25	3,002.9	2,565.0	856.6	732.7	123.92	6.913	
10,300.0	7,015.6	10,708.4	7,047.7	68.1	76.9	92.09	3,102.8	2,565.0	856.5	728.9	127.57	6.714	
10,400.0	7,014.8	10,808.3	7,044.6	69.8	78.4	91.93	3,202.7	2,565.0	856.4	725.2	131.24	6.525	
10,500.0	7,014.1	10,908.3	7,041.5	71.5	79.9	91.77	3,302.7	2,565.0	856.3	721.4	134.93	6.347	
10,600.0	7,013.3	11,008.3	7,038.3	73.2	81.3	91.61	3,402.6	2,565.0	856.3	717.6	138.62	6.177	
10,700.0	7,012.6	11,108.3	7,035.2	74.9	82.9	91.45	3,502.5	2,565.0	856.2	713.9	142.32	6.016	
10,800.0	7,011.8	11,208.2	7,032.1	76.7	84.4	91.29	3,602.4	2,565.0	856.1	710.1	146.03	5.863	
10,900.0	7,011.0	11,308.2	7,028.9	78.4	85.9	91.13	3,702.3	2,565.0	856.1	706.3	149.75	5.717	
11,000.0	7,010.3	11,408.2	7,025.8	80.2	87.5	90.97	3,802.3	2,565.0	856.0	702.6	153.47	5.578	
11,100.0	7,009.5	11,508.1	7,022.7	81.9	89.1	90.81	3,902.2	2,565.0	856.0	698.8	157.20	5.445	
11,200.0	7,008.8	11,608.1	7,019.5	83.7	90.7	90.65	4,002.1	2,565.0	856.0	695.0	160.94	5.319	
11,300.0	7,008.0	11,708.1	7,016.4	85.4	92.3	90.49	4,102.0	2,565.0	855.9	691.3	164.69	5.197	
11,400.0	7,007.3	11,808.1	7,013.2	87.2	93.9	90.33	4,202.0	2,565.0	855.9	687.5	168.43	5.082	
11,500.0	7,006.5	11,908.0	7,010.1	89.0	95.6	90.17	4,301.9	2,565.0	855.9	683.7	172.19	4.971	
11,600.0	7,005.8	12,008.0	7,007.0	90.8	97.2	90.01	4,401.8	2,565.0	855.9	680.0	175.94	4.865	
11,628.8	7,005.5	12,036.8	7,006.1	91.3	97.7	89.97	4,430.6	2,565.0	855.9	678.9	177.03	4.835	
11,661.0	7,005.3	12,054.6	7,005.5	91.9	98.0	89.94	4,448.3	2,565.0	856.0	678.1	177.96	4.810	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4843.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Spaur 10T-201
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.40°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Spaur 10T-201
Project:	SEC.10-T4N-R67W	**TVD Reference:**	WELL @ 4843.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10LQ Pad Sec.10-T4N-R67W	**MD Reference:**	WELL @ 4843.0ft (RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Spaur 10T-201	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 2003.21 Single User Db
Reference Design:	Plan #1 (6-11-15)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4843.0ft (RKB - 13')	Coordinates are relative to: Spaur 10T-201
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.40°