

PETROLEUM DEVELOPMENT CORP Weld County CO

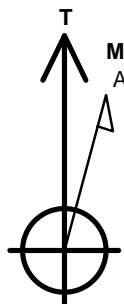
Well Name: **Becker Ranch 5R-203**

Surface Location: Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4781.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1339344.94	3259018.40	40.261180	-104.571870	
RKB - 15' WELL @ 4796.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 211'FNL, 1815'FEL	1.0	0.0	0.0	Point
BHL 500'FSL, 1465'FEL	6766.0	-4593.8	329.4	Point



Azimuths to True North
 Magnetic North: 8.42°

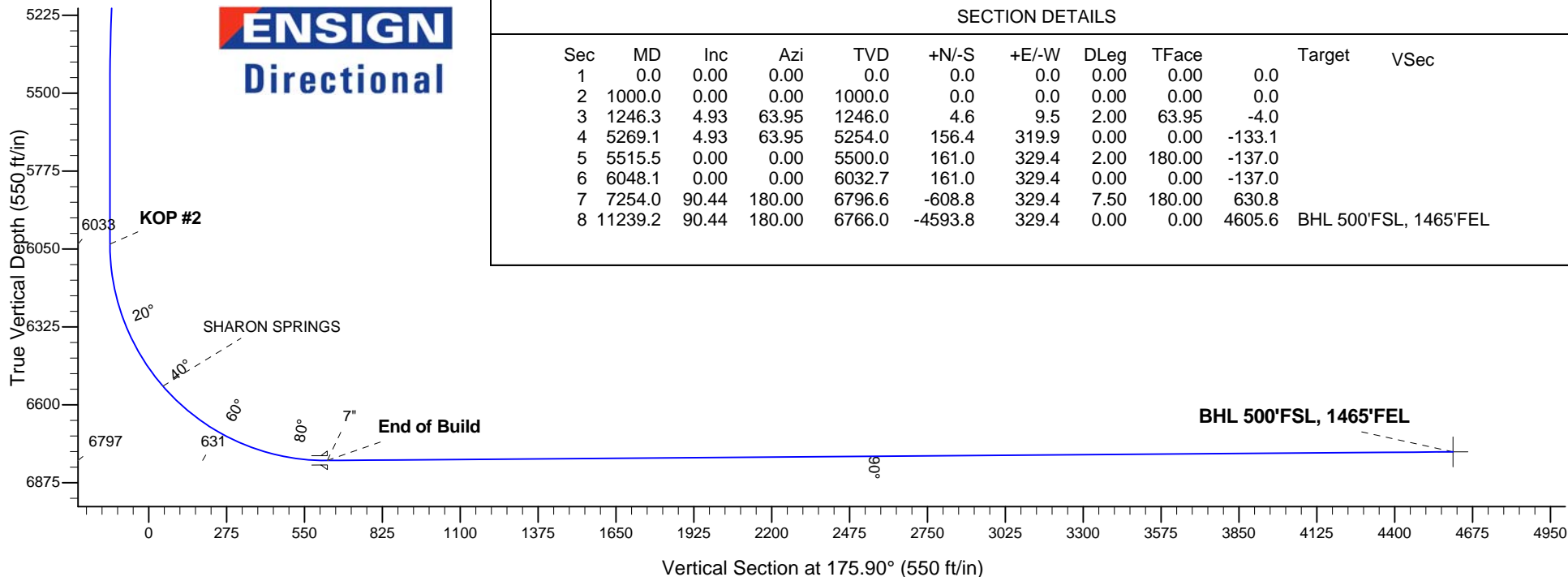
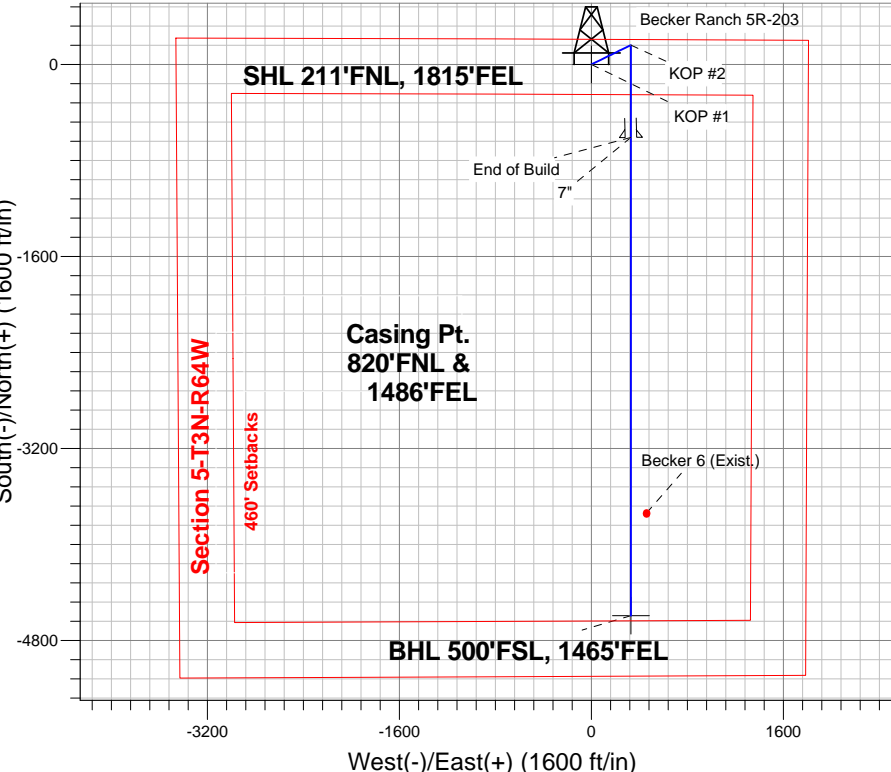
Magnetic Field
 Strength: 52819.3snT
 Dip Angle: 66.88°
 Date: 12/2/2013
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6032.6	6048.1	KOP #2
6796.6	7254.0	End of Build

Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W
 Becker Ranch 5R-203
 Plan #1 (12-02-13)
 9:31, December 04 2013

South(-)/North(+) (1600 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1246.3	4.93	63.95	1246.0	4.6	9.5	2.00	63.95	-4.0	
4	5269.1	4.93	63.95	5254.0	156.4	319.9	0.00	0.00	-133.1	
5	5515.5	0.00	0.00	5500.0	161.0	329.4	2.00	180.00	-137.0	
6	6048.1	0.00	0.00	6032.7	161.0	329.4	0.00	0.00	-137.0	
7	7254.0	90.44	180.00	6796.6	-608.8	329.4	7.50	180.00	630.8	
8	11239.2	90.44	180.00	6766.0	-4593.8	329.4	0.00	0.00	4605.6	BHL 500'FSL, 1465'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T3N-R64W

Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W

Becker Ranch 5R-203

Wellbore #1

Plan: Plan #1 (12-02-13)

Standard Planning Report

04 December, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-02-13)		

Project	SEC.5-T3N-R64W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W											
Site Position:						Northing:			1,339,344.02 ft			Latitude:			40.261180		
From:			Lat/Long			Easting:			3,258,929.10 ft			Longitude:			-104.572190		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.60 °		

Well	Becker Ranch 5R-203					
Well Position	+N/-S	0.0 ft	Northing:	1,339,344.94 ft	Latitude:	40.261180
	+E/-W	89.3 ft	Easting:	3,259,018.40 ft	Longitude:	-104.571870
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,781.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/2/2013	8.42	66.88	52,819

Design	Plan #1 (12-02-13)			
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	175.90

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,246.3	4.93	63.95	1,246.0	4.6	9.5	2.00	2.00	0.00	63.95	
5,269.1	4.93	63.95	5,254.0	156.4	319.9	0.00	0.00	0.00	0.00	
5,515.5	0.00	0.00	5,500.0	161.0	329.4	2.00	-2.00	0.00	180.00	
6,048.1	0.00	0.00	6,032.7	161.0	329.4	0.00	0.00	0.00	0.00	
7,254.0	90.44	180.00	6,796.6	-608.8	329.4	7.50	7.50	0.00	180.00	
11,239.2	90.44	180.00	6,766.0	-4,593.8	329.4	0.00	0.00	0.00	0.00	BHL 500'FSL, 1465

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Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-02-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 211'FNL, 1815'FEL									
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
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,100.0	2.00	63.95	1,100.0	0.8	1.6	-0.7	2.00	2.00	0.00
1,200.0	4.00	63.95	1,199.8	3.1	6.3	-2.6	2.00	2.00	0.00
1,246.3	4.93	63.95	1,246.0	4.6	9.5	-4.0	2.00	2.00	0.00
1,300.0	4.93	63.95	1,299.5	6.7	13.6	-5.7	0.00	0.00	0.00
1,400.0	4.93	63.95	1,399.1	10.4	21.4	-8.9	0.00	0.00	0.00
1,500.0	4.93	63.95	1,498.8	14.2	29.1	-12.1	0.00	0.00	0.00
1,600.0	4.93	63.95	1,598.4	18.0	36.8	-15.3	0.00	0.00	0.00
1,700.0	4.93	63.95	1,698.0	21.8	44.5	-18.5	0.00	0.00	0.00
1,800.0	4.93	63.95	1,797.7	25.5	52.2	-21.7	0.00	0.00	0.00
1,900.0	4.93	63.95	1,897.3	29.3	59.9	-24.9	0.00	0.00	0.00
2,000.0	4.93	63.95	1,996.9	33.1	67.7	-28.1	0.00	0.00	0.00
2,100.0	4.93	63.95	2,096.5	36.8	75.4	-31.4	0.00	0.00	0.00
2,200.0	4.93	63.95	2,196.2	40.6	83.1	-34.6	0.00	0.00	0.00
2,300.0	4.93	63.95	2,295.8	44.4	90.8	-37.8	0.00	0.00	0.00
2,400.0	4.93	63.95	2,395.4	48.2	98.5	-41.0	0.00	0.00	0.00
2,500.0	4.93	63.95	2,495.1	51.9	106.2	-44.2	0.00	0.00	0.00
2,600.0	4.93	63.95	2,594.7	55.7	113.9	-47.4	0.00	0.00	0.00
2,700.0	4.93	63.95	2,694.3	59.5	121.7	-50.6	0.00	0.00	0.00
2,800.0	4.93	63.95	2,794.0	63.2	129.4	-53.8	0.00	0.00	0.00
2,900.0	4.93	63.95	2,893.6	67.0	137.1	-57.0	0.00	0.00	0.00
3,000.0	4.93	63.95	2,993.2	70.8	144.8	-60.2	0.00	0.00	0.00
3,100.0	4.93	63.95	3,092.8	74.6	152.5	-63.5	0.00	0.00	0.00
3,200.0	4.93	63.95	3,192.5	78.3	160.2	-66.7	0.00	0.00	0.00
3,300.0	4.93	63.95	3,292.1	82.1	168.0	-69.9	0.00	0.00	0.00
3,400.0	4.93	63.95	3,391.7	85.9	175.7	-73.1	0.00	0.00	0.00
3,500.0	4.93	63.95	3,491.4	89.6	183.4	-76.3	0.00	0.00	0.00
3,600.0	4.93	63.95	3,591.0	93.4	191.1	-79.5	0.00	0.00	0.00
3,700.0	4.93	63.95	3,690.6	97.2	198.8	-82.7	0.00	0.00	0.00
3,709.4	4.93	63.95	3,700.0	97.5	199.5	-83.0	0.00	0.00	0.00
PARKMAN									
3,800.0	4.93	63.95	3,790.3	100.9	206.5	-85.9	0.00	0.00	0.00
3,900.0	4.93	63.95	3,889.9	104.7	214.2	-89.1	0.00	0.00	0.00
4,000.0	4.93	63.95	3,989.5	108.5	222.0	-92.3	0.00	0.00	0.00
4,100.0	4.93	63.95	4,089.2	112.3	229.7	-95.5	0.00	0.00	0.00
4,200.0	4.93	63.95	4,188.8	116.0	237.4	-98.8	0.00	0.00	0.00
4,300.0	4.93	63.95	4,288.4	119.8	245.1	-102.0	0.00	0.00	0.00
4,400.0	4.93	63.95	4,388.0	123.6	252.8	-105.2	0.00	0.00	0.00
4,412.0	4.93	63.95	4,400.0	124.0	253.8	-105.6	0.00	0.00	0.00
SUSSEX									

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Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-02-13)		

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)
4,500.0	4.93	63.95	4,487.7	127.3	260.5	-108.4	0.00	0.00	0.00
4,600.0	4.93	63.95	4,587.3	131.1	268.3	-111.6	0.00	0.00	0.00
4,700.0	4.93	63.95	4,686.9	134.9	276.0	-114.8	0.00	0.00	0.00
4,800.0	4.93	63.95	4,786.6	138.7	283.7	-118.0	0.00	0.00	0.00
4,900.0	4.93	63.95	4,886.2	142.4	291.4	-121.2	0.00	0.00	0.00
5,000.0	4.93	63.95	4,985.8	146.2	299.1	-124.4	0.00	0.00	0.00
5,100.0	4.93	63.95	5,085.5	150.0	306.8	-127.6	0.00	0.00	0.00
5,114.6	4.93	63.95	5,100.0	150.5	308.0	-128.1	0.00	0.00	0.00
SHANNON									
5,200.0	4.93	63.95	5,185.1	153.7	314.5	-130.9	0.00	0.00	0.00
5,269.1	4.93	63.95	5,254.0	156.4	319.9	-133.1	0.00	0.00	0.00
5,300.0	4.31	63.95	5,284.7	157.4	322.1	-134.0	2.00	-2.00	0.00
5,400.0	2.31	63.95	5,384.6	160.0	327.3	-136.2	2.00	-2.00	0.00
5,500.0	0.31	63.95	5,484.5	161.0	329.4	-137.0	2.00	-2.00	0.00
5,515.5	0.00	0.00	5,500.0	161.0	329.4	-137.0	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,584.5	161.0	329.4	-137.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,684.5	161.0	329.4	-137.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,784.5	161.0	329.4	-137.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,884.5	161.0	329.4	-137.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,984.5	161.0	329.4	-137.0	0.00	0.00	0.00
6,048.1	0.00	0.00	6,032.6	161.0	329.4	-137.0	0.00	0.00	0.00
KOP #2									
6,100.0	3.89	180.00	6,084.5	159.2	329.4	-135.3	7.49	7.49	0.00
6,200.0	11.39	180.00	6,183.5	146.0	329.4	-122.0	7.50	7.50	0.00
6,300.0	18.89	180.00	6,280.0	119.9	329.4	-96.0	7.50	7.50	0.00
6,400.0	26.39	180.00	6,372.2	81.4	329.4	-57.6	7.50	7.50	0.00
6,500.0	33.89	180.00	6,458.6	31.2	329.4	-7.6	7.50	7.50	0.00
6,595.0	41.01	180.00	6,534.0	-26.5	329.4	50.0	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	41.39	180.00	6,537.8	-29.8	329.4	53.3	7.50	7.50	0.00
6,700.0	48.89	180.00	6,608.3	-100.6	329.4	123.9	7.50	7.50	0.00
6,800.0	56.39	180.00	6,668.9	-180.1	329.4	203.2	7.50	7.50	0.00
6,900.0	63.89	180.00	6,718.7	-266.7	329.4	289.6	7.50	7.50	0.00
7,000.0	71.39	180.00	6,756.7	-359.1	329.4	381.8	7.50	7.50	0.00
7,100.0	78.89	180.00	6,782.3	-455.7	329.4	478.1	7.50	7.50	0.00
7,200.0	86.39	180.00	6,795.1	-554.8	329.4	577.0	7.50	7.50	0.00
7,254.0	90.44	180.00	6,796.6	-608.8	329.4	630.8	7.50	7.50	0.00
End of Build - 7"									
7,300.0	90.44	180.00	6,796.3	-654.8	329.4	676.7	0.00	0.00	0.00
7,400.0	90.44	180.00	6,795.5	-754.8	329.4	776.4	0.00	0.00	0.00
7,500.0	90.44	180.00	6,794.7	-854.8	329.4	876.2	0.00	0.00	0.00
7,600.0	90.44	180.00	6,793.9	-954.8	329.4	975.9	0.00	0.00	0.00
7,700.0	90.44	180.00	6,793.2	-1,054.8	329.4	1,075.6	0.00	0.00	0.00
7,800.0	90.44	180.00	6,792.4	-1,154.8	329.4	1,175.4	0.00	0.00	0.00
7,900.0	90.44	180.00	6,791.6	-1,254.8	329.4	1,275.1	0.00	0.00	0.00
8,000.0	90.44	180.00	6,790.9	-1,354.8	329.4	1,374.9	0.00	0.00	0.00
8,100.0	90.44	180.00	6,790.1	-1,454.8	329.4	1,474.6	0.00	0.00	0.00
8,200.0	90.44	180.00	6,789.3	-1,554.8	329.4	1,574.3	0.00	0.00	0.00
8,300.0	90.44	180.00	6,788.6	-1,654.8	329.4	1,674.1	0.00	0.00	0.00
8,400.0	90.44	180.00	6,787.8	-1,754.8	329.4	1,773.8	0.00	0.00	0.00
8,500.0	90.44	180.00	6,787.0	-1,854.8	329.4	1,873.6	0.00	0.00	0.00
8,600.0	90.44	180.00	6,786.3	-1,954.8	329.4	1,973.3	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	Plan #1 (12-02-13)		

Planned Survey

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8,700.0	90.44	180.00	6,785.5	-2,054.8	329.4	2,073.0	0.00	0.00	0.00
8,800.0	90.44	180.00	6,784.7	-2,154.7	329.4	2,172.8	0.00	0.00	0.00
8,900.0	90.44	180.00	6,784.0	-2,254.7	329.4	2,272.5	0.00	0.00	0.00
9,000.0	90.44	180.00	6,783.2	-2,354.7	329.4	2,372.3	0.00	0.00	0.00
9,100.0	90.44	180.00	6,782.4	-2,454.7	329.4	2,472.0	0.00	0.00	0.00
9,200.0	90.44	180.00	6,781.7	-2,554.7	329.4	2,571.8	0.00	0.00	0.00
9,300.0	90.44	180.00	6,780.9	-2,654.7	329.4	2,671.5	0.00	0.00	0.00
9,400.0	90.44	180.00	6,780.1	-2,754.7	329.4	2,771.2	0.00	0.00	0.00
9,500.0	90.44	180.00	6,779.4	-2,854.7	329.4	2,871.0	0.00	0.00	0.00
9,600.0	90.44	180.00	6,778.6	-2,954.7	329.4	2,970.7	0.00	0.00	0.00
9,700.0	90.44	180.00	6,777.8	-3,054.7	329.4	3,070.5	0.00	0.00	0.00
9,800.0	90.44	180.00	6,777.1	-3,154.7	329.4	3,170.2	0.00	0.00	0.00
9,900.0	90.44	180.00	6,776.3	-3,254.7	329.4	3,269.9	0.00	0.00	0.00
10,000.0	90.44	180.00	6,775.5	-3,354.7	329.4	3,369.7	0.00	0.00	0.00
10,100.0	90.44	180.00	6,774.7	-3,454.7	329.4	3,469.4	0.00	0.00	0.00
10,200.0	90.44	180.00	6,774.0	-3,554.7	329.4	3,569.2	0.00	0.00	0.00
10,300.0	90.44	180.00	6,773.2	-3,654.7	329.4	3,668.9	0.00	0.00	0.00
10,400.0	90.44	180.00	6,772.4	-3,754.7	329.4	3,768.6	0.00	0.00	0.00
10,500.0	90.44	180.00	6,771.7	-3,854.7	329.4	3,868.4	0.00	0.00	0.00
10,600.0	90.44	180.00	6,770.9	-3,954.7	329.4	3,968.1	0.00	0.00	0.00
10,700.0	90.44	180.00	6,770.1	-4,054.7	329.4	4,067.9	0.00	0.00	0.00
10,800.0	90.44	180.00	6,769.4	-4,154.7	329.4	4,167.6	0.00	0.00	0.00
10,900.0	90.44	180.00	6,768.6	-4,254.7	329.4	4,267.3	0.00	0.00	0.00
11,000.0	90.44	180.00	6,767.8	-4,354.7	329.4	4,367.1	0.00	0.00	0.00
11,100.0	90.44	180.00	6,767.1	-4,454.7	329.4	4,466.8	0.00	0.00	0.00
11,200.0	90.44	180.00	6,766.3	-4,554.7	329.4	4,566.6	0.00	0.00	0.00
11,239.2	90.44	180.00	6,766.0	-4,593.8	329.4	4,605.6	0.00	0.00	0.00
BHL 500'FSL, 1465'FEL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,254.0	6,796.6	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,709.4	3,700.0	PARKMAN			
4,412.0	4,400.0	SUSSEX			
5,114.6	5,100.0	SHANNON			
6,595.0	6,534.0	SHARON SPRINGS			

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-02-13)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,048.1	6,032.6	161.0	329.4	KOP #2
7,254.0	6,796.6	-608.8	329.4	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T3N-R64W

Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W

Becker Ranch 5R-203

Wellbore #1

Plan #1 (12-02-13)

Anticollision Report

04 December, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (12-02-13)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	12/3/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,239.2	Plan #1 (12-02-13) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W						
Becker Ranch 5M-323 - Wellbore #1 - Plan #1 (12-02-13)	1,000.0	1,001.0	58.6	54.3	13.717	CC, ES
Becker Ranch 5M-323 - Wellbore #1 - Plan #1 (12-02-13)	11,239.2	11,312.7	664.0	485.6	3.722	SF
Becker Ranch 5M-403 - Wellbore #1 - Plan #1 (12-02-13)	966.3	967.3	89.3	85.2	21.670	CC
Becker Ranch 5M-403 - Wellbore #1 - Plan #1 (12-02-13)	1,000.0	1,000.0	89.3	85.0	20.914	ES
Becker Ranch 5M-403 - Wellbore #1 - Plan #1 (12-02-13)	1,100.0	1,098.0	92.5	87.8	19.697	SF
Becker Ranch 5R-443 - Wellbore #1 - Plan #1 (12-02-13)	1,000.0	1,001.0	27.9	23.6	6.532	CC, ES
Becker Ranch 5R-443 - Wellbore #1 - Plan #1 (12-02-13)	11,239.2	11,413.5	398.3	244.1	2.583	SF
Existing Wells Sec.5-T3N-R64W						
Becker 6 (Exist.) - Wellbore #1 - Wellbore #1	10,383.0	6,720.6	131.2	-76.9	0.631	Level 1, CC, ES, SF

Offset Design		Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-323 - Wellbore #1 - Plan #1 (12-02-1										Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	1.0	1.0	0.0	0.0	-89.99	0.0	-58.6	58.6	58.6	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-89.99	0.0	-58.6	58.6	58.4	0.23	258.176		
200.0	200.0	201.0	201.0	0.3	0.3	-89.99	0.0	-58.6	58.6	57.9	0.68	86.631		
300.0	300.0	301.0	301.0	0.6	0.6	-89.99	0.0	-58.6	58.6	57.5	1.13	52.048		
400.0	400.0	401.0	401.0	0.8	0.8	-89.99	0.0	-58.6	58.6	57.0	1.58	37.198		
500.0	500.0	501.0	501.0	1.0	1.0	-89.99	0.0	-58.6	58.6	56.6	2.03	28.941		
600.0	600.0	601.0	601.0	1.2	1.2	-89.99	0.0	-58.6	58.6	56.1	2.47	23.684		
700.0	700.0	701.0	701.0	1.5	1.5	-89.99	0.0	-58.6	58.6	55.7	2.92	20.043		
800.0	800.0	801.0	801.0	1.7	1.7	-89.99	0.0	-58.6	58.6	55.2	3.37	17.372		
900.0	900.0	901.0	901.0	1.9	1.9	-89.99	0.0	-58.6	58.6	54.8	3.82	15.330		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-89.99	0.0	-58.6	58.6	54.3	4.27	13.717	CC, ES	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-154.66	0.0	-58.6	60.2	55.5	4.71	12.768		
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	-156.60	0.0	-58.6	65.0	59.8	5.15	12.623		
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	-159.15	0.0	-58.6	72.6	67.0	5.58	13.007		
1,400.0	1,399.1	1,400.1	1,400.1	3.0	3.0	-161.32	0.0	-58.6	80.7	74.6	6.02	13.400		
1,500.0	1,498.8	1,499.8	1,499.8	3.3	3.3	-163.09	0.0	-58.6	88.8	82.4	6.46	13.750		
1,600.0	1,598.4	1,596.9	1,596.9	3.5	3.5	-163.90	0.8	-60.0	98.4	91.5	6.89	14.267		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-323 - Wellbore #1 - Plan #1 (12-02-1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,700.0	1,698.0	1,693.5	1,693.3	3.8	3.7	-163.43		3.3	-64.2	110.4	103.1	7.32	15.076	
1,800.0	1,797.7	1,791.0	1,790.6	4.0	3.9	-162.20		7.3	-70.9	124.7	117.0	7.76	16.069	
1,900.0	1,897.3	1,889.9	1,889.1	4.3	4.1	-161.12		11.5	-78.0	139.4	131.2	8.20	16.991	
2,000.0	1,996.9	1,988.8	1,987.7	4.5	4.4	-160.24		15.8	-85.1	154.1	145.4	8.65	17.817	
2,100.0	2,096.5	2,087.7	2,086.2	4.8	4.6	-159.51		20.0	-92.2	168.8	159.7	9.10	18.558	
2,200.0	2,196.2	2,186.6	2,184.7	5.1	4.8	-158.90		24.2	-99.3	183.5	174.0	9.55	19.226	
2,300.0	2,295.8	2,285.5	2,283.3	5.3	5.1	-158.38		28.4	-106.4	198.3	188.3	10.00	19.830	
2,400.0	2,395.4	2,384.4	2,381.8	5.6	5.3	-157.94		32.6	-113.5	213.1	202.6	10.45	20.380	
2,500.0	2,495.1	2,483.3	2,480.4	5.8	5.6	-157.55		36.9	-120.6	227.9	216.9	10.91	20.881	
2,600.0	2,594.7	2,582.1	2,578.9	6.1	5.8	-157.21		41.1	-127.7	242.6	231.3	11.37	21.340	
2,700.0	2,694.3	2,681.0	2,677.5	6.4	6.1	-156.90		45.3	-134.8	257.4	245.6	11.83	21.761	
2,800.0	2,794.0	2,779.9	2,776.0	6.6	6.3	-156.64		49.5	-141.9	272.3	260.0	12.29	22.149	
2,900.0	2,893.6	2,878.8	2,874.6	6.9	6.6	-156.39		53.7	-149.0	287.1	274.3	12.75	22.507	
3,000.0	2,993.2	2,977.7	2,973.1	7.2	6.8	-156.18		57.9	-156.1	301.9	288.7	13.22	22.839	
3,100.0	3,092.8	3,076.6	3,071.6	7.4	7.1	-155.98		62.2	-163.2	316.7	303.0	13.68	23.147	
3,200.0	3,192.5	3,175.5	3,170.2	7.7	7.3	-155.80		66.4	-170.2	331.5	317.4	14.15	23.434	
3,300.0	3,292.1	3,274.4	3,268.7	8.0	7.6	-155.63		70.6	-177.3	346.3	331.7	14.61	23.701	
3,400.0	3,391.7	3,373.3	3,367.3	8.3	7.9	-155.48		74.8	-184.4	361.2	346.1	15.08	23.951	
3,500.0	3,491.4	3,472.2	3,465.8	8.5	8.1	-155.34		79.0	-191.5	376.0	360.5	15.55	24.186	
3,600.0	3,591.0	3,571.0	3,564.4	8.8	8.4	-155.22		83.3	-198.6	390.8	374.8	16.01	24.405	
3,700.0	3,690.6	3,669.9	3,662.9	9.1	8.6	-155.10		87.5	-205.7	405.7	389.2	16.48	24.612	
3,800.0	3,790.3	3,768.8	3,761.5	9.3	8.9	-154.99		91.7	-212.8	420.5	403.6	16.95	24.807	
3,900.0	3,889.9	3,867.7	3,860.0	9.6	9.2	-154.88		95.9	-219.9	435.4	417.9	17.42	24.990	
4,000.0	3,989.5	3,966.6	3,958.6	9.9	9.4	-154.79		100.1	-227.0	450.2	432.3	17.89	25.164	
4,100.0	4,089.2	4,065.5	4,057.1	10.2	9.7	-154.70		104.4	-234.1	465.0	446.7	18.36	25.328	
4,200.0	4,188.8	4,164.4	4,155.6	10.4	10.0	-154.61		108.6	-241.2	479.9	461.0	18.83	25.484	
4,300.0	4,288.4	4,263.3	4,254.2	10.7	10.2	-154.53		112.8	-248.3	494.7	475.4	19.30	25.631	
4,400.0	4,388.0	4,362.2	4,352.7	11.0	10.5	-154.46		117.0	-255.4	509.6	489.8	19.77	25.771	
4,500.0	4,487.7	4,461.1	4,451.3	11.2	10.7	-154.39		121.2	-262.5	524.4	504.2	20.24	25.905	
4,600.0	4,587.3	4,559.9	4,549.8	11.5	11.0	-154.32		125.5	-269.6	539.2	518.5	20.72	26.032	
4,700.0	4,686.9	4,658.8	4,648.4	11.8	11.3	-154.26		129.7	-276.7	554.1	532.9	21.19	26.153	
4,800.0	4,786.6	4,757.7	4,746.9	12.1	11.5	-154.20		133.9	-283.8	568.9	547.3	21.66	26.268	
4,900.0	4,886.2	4,856.6	4,845.5	12.3	11.8	-154.14		138.1	-290.9	583.8	561.7	22.13	26.379	
5,000.0	4,985.8	4,955.5	4,944.0	12.6	12.1	-154.09		142.3	-298.0	598.6	576.0	22.60	26.484	
5,100.0	5,085.5	5,054.4	5,042.5	12.9	12.3	-154.03		146.6	-305.1	613.5	590.4	23.08	26.585	
5,200.0	5,185.1	5,153.3	5,141.1	13.1	12.6	-153.98		150.8	-312.2	628.3	604.8	23.55	26.682	
5,300.0	5,284.7	5,252.2	5,239.7	13.4	12.9	-153.97		155.0	-319.3	643.0	619.0	24.03	26.763	
5,400.0	5,384.6	5,370.5	5,357.6	13.6	13.1	-153.96		159.2	-326.3	654.2	629.8	24.48	26.730	
5,500.0	5,484.5	5,494.9	5,482.0	13.8	13.3	-153.95		161.0	-329.3	658.7	633.8	24.88	26.473	
5,600.0	5,584.5	5,598.4	5,585.5	13.9	13.5	-90.00		161.0	-329.4	658.8	633.5	25.27	26.074	
5,700.0	5,684.5	5,698.4	5,685.5	14.1	13.7	-90.00		161.0	-329.4	658.8	633.1	25.68	25.654	
5,800.0	5,784.5	5,798.4	5,785.5	14.3	13.9	-90.00		161.0	-329.4	658.8	632.7	26.09	25.246	
5,900.0	5,884.5	5,898.4	5,885.5	14.5	14.1	-90.00		161.0	-329.4	658.8	632.3	26.51	24.849	
6,000.0	5,984.5	5,998.4	5,985.5	14.7	14.3	-90.00		161.0	-329.4	658.8	631.8	26.93	24.464	
6,049.4	6,033.9	6,047.8	6,034.9	14.8	14.4	90.07		161.0	-329.4	658.8	631.6	27.12	24.287	
6,100.0	6,084.5	6,098.4	6,085.5	14.9	14.5	90.15		161.0	-329.4	658.8	631.4	27.33	24.108	
6,200.0	6,183.5	6,198.7	6,185.7	15.0	14.7	90.97		157.1	-329.4	658.9	631.2	27.63	23.842	
6,300.0	6,280.0	6,300.4	6,285.8	15.1	14.8	91.80		140.1	-329.4	659.1	631.2	27.85	23.662	
6,400.0	6,372.2	6,403.4	6,384.1	15.2	14.9	92.61		109.5	-329.4	659.5	631.4	28.03	23.523	
6,500.0	6,458.6	6,507.7	6,478.5	15.3	15.0	93.37		65.3	-329.4	659.9	631.7	28.24	23.371	
6,600.0	6,537.8	6,613.3	6,567.1	15.4	15.1	94.08		7.9	-329.4	660.5	631.9	28.54	23.138	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-323 - Wellbore #1 - Plan #1 (12-02-1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,700.0	6,608.3	6,720.2	6,647.8	15.6	15.2	94.72		-62.0	-329.4	661.0	632.0	29.05	22.759	
6,800.0	6,668.9	6,828.2	6,718.6	15.9	15.5	95.28		-143.4	-329.4	661.6	631.8	29.83	22.177	
6,900.0	6,718.7	6,937.1	6,777.7	16.4	15.9	95.74		-234.8	-329.4	662.1	631.1	30.97	21.378	
7,000.0	6,756.7	7,046.9	6,823.5	17.1	16.7	96.09		-334.4	-329.4	662.5	630.0	32.50	20.385	
7,100.0	6,782.3	7,157.2	6,854.8	18.0	17.6	96.33		-440.1	-329.4	662.8	628.4	34.42	19.257	
7,200.0	6,795.1	7,267.9	6,870.4	19.1	18.8	96.45		-549.6	-329.4	663.0	626.3	36.68	18.073	
7,300.0	6,796.3	7,373.5	6,872.0	20.2	20.1	96.48		-655.2	-329.4	663.0	623.8	39.16	16.933	
7,400.0	6,795.5	7,473.5	6,871.5	21.5	21.3	96.49		-755.2	-329.4	663.0	621.3	41.77	15.874	
7,500.0	6,794.7	7,573.5	6,870.9	22.9	22.7	96.51		-855.2	-329.4	663.0	618.5	44.55	14.883	
7,600.0	6,793.9	7,673.5	6,870.3	24.4	24.2	96.53		-955.2	-329.4	663.1	615.6	47.48	13.967	
7,700.0	6,793.2	7,773.5	6,869.8	25.9	25.7	96.55		-1,055.2	-329.4	663.1	612.6	50.52	13.125	
7,800.0	6,792.4	7,873.5	6,869.2	27.4	27.3	96.57		-1,155.2	-329.4	663.1	609.5	53.66	12.357	
7,900.0	6,791.6	7,973.5	6,868.7	29.0	28.9	96.58		-1,255.2	-329.4	663.1	606.3	56.89	11.656	
8,000.0	6,790.9	8,073.5	6,868.1	30.7	30.5	96.60		-1,355.2	-329.4	663.2	603.0	60.19	11.019	
8,100.0	6,790.1	8,173.5	6,867.6	32.3	32.2	96.62		-1,455.2	-329.4	663.2	599.7	63.54	10.438	
8,200.0	6,789.3	8,273.5	6,867.0	34.0	33.9	96.64		-1,555.2	-329.4	663.2	596.3	66.94	9.907	
8,300.0	6,788.6	8,373.5	6,866.4	35.7	35.6	96.65		-1,655.2	-329.4	663.2	592.9	70.39	9.423	
8,400.0	6,787.8	8,473.5	6,865.9	37.5	37.3	96.67		-1,755.2	-329.4	663.3	589.4	73.87	8.979	
8,500.0	6,787.0	8,573.5	6,865.3	39.2	39.1	96.69		-1,855.2	-329.4	663.3	585.9	77.38	8.572	
8,600.0	6,786.3	8,673.5	6,864.8	41.0	40.9	96.71		-1,955.2	-329.4	663.3	582.4	80.92	8.197	
8,700.0	6,785.5	8,773.5	6,864.2	42.8	42.7	96.73		-2,055.2	-329.4	663.3	578.9	84.48	7.852	
8,800.0	6,784.7	8,873.5	6,863.6	44.6	44.5	96.74		-2,155.2	-329.4	663.4	575.3	88.06	7.533	
8,900.0	6,784.0	8,973.5	6,863.1	46.4	46.3	96.76		-2,255.2	-329.4	663.4	571.7	91.67	7.237	
9,000.0	6,783.2	9,073.5	6,862.5	48.2	48.1	96.78		-2,355.2	-329.4	663.4	568.1	95.28	6.963	
9,100.0	6,782.4	9,173.5	6,862.0	50.0	49.9	96.80		-2,455.2	-329.4	663.4	564.5	98.92	6.707	
9,200.0	6,781.7	9,273.5	6,861.4	51.8	51.7	96.82		-2,555.2	-329.4	663.5	560.9	102.56	6.469	
9,300.0	6,780.9	9,373.5	6,860.8	53.7	53.6	96.83		-2,655.2	-329.4	663.5	557.3	106.22	6.246	
9,400.0	6,780.1	9,473.5	6,860.3	55.5	55.4	96.85		-2,755.2	-329.4	663.5	553.6	109.89	6.038	
9,500.0	6,779.4	9,573.5	6,859.7	57.4	57.2	96.87		-2,855.2	-329.4	663.5	550.0	113.56	5.843	
9,600.0	6,778.6	9,673.5	6,859.2	59.2	59.1	96.89		-2,955.2	-329.4	663.6	546.3	117.25	5.660	
9,700.0	6,777.8	9,773.5	6,858.6	61.1	61.0	96.91		-3,055.2	-329.4	663.6	542.6	120.94	5.487	
9,800.0	6,777.1	9,873.5	6,858.1	62.9	62.8	96.92		-3,155.2	-329.4	663.6	539.0	124.64	5.324	
9,900.0	6,776.3	9,973.5	6,857.5	64.8	64.7	96.94		-3,255.2	-329.4	663.6	535.3	128.35	5.171	
10,000.0	6,775.5	10,073.5	6,856.9	66.6	66.5	96.96		-3,355.2	-329.4	663.7	531.6	132.06	5.026	
10,100.0	6,774.7	10,173.5	6,856.4	68.5	68.4	96.98		-3,455.2	-329.4	663.7	527.9	135.77	4.888	
10,200.0	6,774.0	10,273.5	6,855.8	70.4	70.3	97.00		-3,555.2	-329.4	663.7	524.2	139.49	4.758	
10,300.0	6,773.2	10,373.5	6,855.3	72.3	72.2	97.01		-3,655.2	-329.4	663.7	520.5	143.22	4.634	
10,400.0	6,772.4	10,473.5	6,854.7	74.1	74.0	97.03		-3,755.2	-329.4	663.8	516.8	146.95	4.517	
10,500.0	6,771.7	10,573.5	6,854.1	76.0	75.9	97.05		-3,855.2	-329.4	663.8	513.1	150.68	4.405	
10,600.0	6,770.9	10,673.5	6,853.6	77.9	77.8	97.07		-3,955.2	-329.4	663.8	509.4	154.42	4.299	
10,700.0	6,770.1	10,773.5	6,853.0	79.8	79.7	97.09		-4,055.1	-329.4	663.8	505.7	158.16	4.197	
10,800.0	6,769.4	10,873.5	6,852.5	81.6	81.6	97.10		-4,155.1	-329.4	663.9	502.0	161.91	4.100	
10,900.0	6,768.6	10,973.5	6,851.9	83.5	83.4	97.12		-4,255.1	-329.4	663.9	498.2	165.65	4.008	
11,000.0	6,767.8	11,073.5	6,851.4	85.4	85.3	97.14		-4,355.1	-329.4	663.9	494.5	169.40	3.919	
11,100.0	6,767.1	11,173.5	6,850.8	87.3	87.2	97.16		-4,455.1	-329.4	663.9	490.8	173.15	3.835	
11,200.0	6,766.3	11,273.5	6,850.2	89.2	89.1	97.18		-4,555.1	-329.4	664.0	487.1	176.90	3.753	
11,239.2	6,766.0	11,312.7	6,850.0	89.9	89.8	97.18		-4,594.3	-329.4	664.0	485.6	178.37	3.722 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-89.99	-89.99	0.0	-89.3	89.3	89.3	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-89.99	-89.99	0.0	-89.3	89.3	89.1	0.23	393.412	
200.0	200.0	201.0	201.0	0.3	0.3	-89.99	-89.99	0.0	-89.3	89.3	88.6	0.68	132.009	
300.0	300.0	301.0	301.0	0.6	0.6	-89.99	-89.99	0.0	-89.3	89.3	88.2	1.13	79.311	
400.0	400.0	401.0	401.0	0.8	0.8	-89.99	-89.99	0.0	-89.3	89.3	87.7	1.58	56.683	
500.0	500.0	501.0	501.0	1.0	1.0	-89.99	-89.99	0.0	-89.3	89.3	87.3	2.03	44.101	
600.0	600.0	601.0	601.0	1.2	1.2	-89.99	-89.99	0.0	-89.3	89.3	86.8	2.47	36.090	
700.0	700.0	701.0	701.0	1.5	1.5	-89.99	-89.99	0.0	-89.3	89.3	86.4	2.92	30.542	
800.0	800.0	801.0	801.0	1.7	1.7	-89.99	-89.99	0.0	-89.3	89.3	85.9	3.37	26.472	
900.0	900.0	901.0	901.0	1.9	1.9	-89.99	-89.99	0.0	-89.3	89.3	85.5	3.82	23.360	
966.3	966.3	967.3	967.3	2.1	2.1	-89.99	-89.99	0.0	-89.3	89.3	85.2	4.12	21.670 CC	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.99	-89.99	0.0	-89.3	89.3	85.0	4.27	20.914 ES	
1,100.0	1,100.0	1,098.0	1,097.9	2.4	2.3	-154.09	-154.09	0.5	-90.9	92.5	87.8	4.70	19.697 SF	
1,200.0	1,199.8	1,194.3	1,194.2	2.6	2.6	-154.49	-154.49	1.8	-95.7	102.1	97.0	5.11	19.978	
1,300.0	1,299.5	1,289.6	1,289.1	2.8	2.8	-154.98	-154.98	4.0	-103.4	117.6	112.1	5.53	21.259	
1,400.0	1,399.1	1,383.8	1,382.7	3.0	3.0	-155.06	-155.06	7.0	-114.0	136.5	130.6	5.96	22.916	
1,500.0	1,498.8	1,480.2	1,478.1	3.3	3.3	-154.86	-154.86	10.7	-127.2	157.8	151.4	6.39	24.676	
1,600.0	1,598.4	1,577.9	1,574.8	3.5	3.5	-154.69	-154.69	14.5	-140.6	179.2	172.3	6.83	26.230	
1,700.0	1,698.0	1,675.6	1,671.5	3.8	3.8	-154.56	-154.56	18.3	-154.1	200.6	193.3	7.27	27.576	
1,800.0	1,797.7	1,773.3	1,768.2	4.0	4.1	-154.46	-154.46	22.1	-167.6	221.9	214.2	7.72	28.750	
1,900.0	1,897.3	1,871.0	1,864.8	4.3	4.4	-154.37	-154.37	26.0	-181.1	243.3	235.2	8.17	29.777	
2,000.0	1,996.9	1,968.7	1,961.5	4.5	4.7	-154.30	-154.30	29.8	-194.5	264.7	256.1	8.63	30.690	
2,100.0	2,096.5	2,066.4	2,058.2	4.8	5.0	-154.23	-154.23	33.6	-208.0	286.1	277.0	9.08	31.499	
2,200.0	2,196.2	2,164.0	2,154.9	5.1	5.3	-154.18	-154.18	37.4	-221.5	307.5	297.9	9.54	32.223	
2,300.0	2,295.8	2,261.7	2,251.5	5.3	5.7	-154.13	-154.13	41.2	-234.9	328.9	318.9	10.00	32.873	
2,400.0	2,395.4	2,359.4	2,348.2	5.6	6.0	-154.09	-154.09	45.0	-248.4	350.3	339.8	10.47	33.459	
2,500.0	2,495.1	2,457.1	2,444.9	5.8	6.3	-154.06	-154.06	48.8	-261.9	371.7	360.7	10.93	33.991	
2,600.0	2,594.7	2,554.8	2,541.6	6.1	6.6	-154.02	-154.02	52.6	-275.3	393.0	381.6	11.40	34.475	
2,700.0	2,694.3	2,652.5	2,638.3	6.4	7.0	-153.99	-153.99	56.4	-288.8	414.4	402.6	11.87	34.917	
2,800.0	2,794.0	2,750.2	2,734.9	6.6	7.3	-153.97	-153.97	60.2	-302.3	435.8	423.5	12.34	35.322	
2,900.0	2,893.6	2,847.8	2,831.6	6.9	7.6	-153.94	-153.94	64.0	-315.7	457.2	444.4	12.81	35.695	
3,000.0	2,993.2	2,945.5	2,928.3	7.2	8.0	-153.92	-153.92	67.8	-329.2	478.6	465.3	13.28	36.039	
3,100.0	3,092.8	3,043.2	3,025.0	7.4	8.3	-153.90	-153.90	71.6	-342.7	500.0	486.2	13.75	36.357	
3,200.0	3,192.5	3,140.9	3,121.6	7.7	8.6	-153.88	-153.88	75.5	-356.2	521.4	507.2	14.22	36.653	
3,300.0	3,292.1	3,238.6	3,218.3	8.0	9.0	-153.87	-153.87	79.3	-369.6	542.8	528.1	14.70	36.927	
3,400.0	3,391.7	3,336.3	3,315.0	8.3	9.3	-153.85	-153.85	83.1	-383.1	564.2	549.0	15.17	37.183	
3,500.0	3,491.4	3,434.0	3,411.7	8.5	9.6	-153.84	-153.84	86.9	-396.6	585.5	569.9	15.65	37.422	
3,600.0	3,591.0	3,531.6	3,508.4	8.8	10.0	-153.82	-153.82	90.7	-410.0	606.9	590.8	16.12	37.646	
3,700.0	3,690.6	3,629.3	3,605.0	9.1	10.3	-153.81	-153.81	94.5	-423.5	628.3	611.7	16.60	37.856	
3,800.0	3,790.3	3,727.0	3,701.7	9.3	10.7	-153.80	-153.80	98.3	-437.0	649.7	632.6	17.07	38.053	
3,900.0	3,889.9	3,824.7	3,798.4	9.6	11.0	-153.79	-153.79	102.1	-450.4	671.1	653.5	17.55	38.239	
4,000.0	3,989.5	3,922.4	3,895.1	9.9	11.3	-153.78	-153.78	105.9	-463.9	692.5	674.5	18.03	38.414	
4,100.0	4,089.2	4,020.1	3,991.7	10.2	11.7	-153.77	-153.77	109.7	-477.4	713.9	695.4	18.50	38.579	
4,200.0	4,188.8	4,117.8	4,088.4	10.4	12.0	-153.76	-153.76	113.5	-490.8	735.3	716.3	18.98	38.735	
4,300.0	4,288.4	4,215.4	4,185.1	10.7	12.4	-153.75	-153.75	117.3	-504.3	756.7	737.2	19.46	38.883	
4,400.0	4,388.0	4,313.1	4,281.8	11.0	12.7	-153.74	-153.74	121.2	-517.8	778.0	758.1	19.94	39.024	
4,500.0	4,487.7	4,410.8	4,378.5	11.2	13.0	-153.74	-153.74	125.0	-531.3	799.4	779.0	20.42	39.157	
4,600.0	4,587.3	4,508.5	4,475.1	11.5	13.4	-153.73	-153.73	128.8	-544.7	820.8	799.9	20.89	39.283	
4,700.0	4,686.9	4,606.2	4,571.8	11.8	13.7	-153.72	-153.72	132.6	-558.2	842.2	820.8	21.37	39.404	
4,800.0	4,786.6	4,703.9	4,668.5	12.1	14.1	-153.72	-153.72	136.4	-571.7	863.6	841.7	21.85	39.519	
4,900.0	4,886.2	4,801.6	4,765.2	12.3	14.4	-153.71	-153.71	140.2	-585.1	885.0	862.7	22.33	39.628	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-403 - Wellbore #1 - Plan #1 (12-02-1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,985.8	4,899.2	4,861.8	12.6	14.7	-153.70	144.0	-598.6	906.4	883.6	22.81	39.733		
5,100.0	5,085.5	4,996.9	4,958.5	12.9	15.1	-153.70	147.8	-612.1	927.8	904.5	23.29	39.833		
5,200.0	5,185.1	5,094.6	5,055.2	13.1	15.4	-153.69	151.6	-625.5	949.2	925.4	23.77	39.928		
5,300.0	5,284.7	5,222.8	5,182.3	13.4	15.8	-153.76	156.2	-641.8	969.4	945.1	24.31	39.880		
5,400.0	5,384.6	5,370.3	5,329.2	13.6	16.1	-153.90	159.6	-653.9	982.8	958.0	24.82	39.594		
5,500.0	5,484.5	5,519.5	5,478.3	13.8	16.4	-153.95	161.0	-658.7	988.1	962.8	25.29	39.070		
5,600.0	5,584.5	5,626.7	5,585.5	13.9	16.5	-90.00	161.0	-658.8	988.2	962.5	25.68	38.481		
5,700.0	5,684.5	5,726.7	5,685.5	14.1	16.7	-90.00	161.0	-658.8	988.2	962.1	26.08	37.890		
5,800.0	5,784.5	5,826.7	5,785.5	14.3	16.8	-90.00	161.0	-658.8	988.2	961.7	26.48	37.314		
5,900.0	5,884.5	5,926.7	5,885.5	14.5	17.0	-90.00	161.0	-658.8	988.2	961.3	26.89	36.754		
6,000.0	5,984.5	6,026.7	5,985.5	14.7	17.2	-90.00	161.0	-658.8	988.2	960.9	27.29	36.208		
6,049.3	6,033.9	6,076.0	6,034.9	14.8	17.3	90.05	161.0	-658.8	988.2	960.7	27.48	35.958		
6,100.0	6,084.5	6,126.7	6,085.5	14.9	17.3	90.10	161.0	-658.8	988.2	960.5	27.68	35.706		
6,200.0	6,183.5	6,225.7	6,184.5	15.0	17.5	90.86	161.0	-658.8	988.3	960.3	27.99	35.304		
6,300.0	6,280.0	6,325.7	6,284.4	15.1	17.7	92.15	158.0	-658.8	988.9	960.7	28.25	35.009		
6,400.0	6,372.2	6,429.7	6,387.0	15.2	17.8	93.49	141.7	-658.8	990.1	961.7	28.44	34.814		
6,500.0	6,458.6	6,537.4	6,490.0	15.3	17.9	94.78	110.4	-658.8	991.8	963.2	28.63	34.644		
6,600.0	6,537.8	6,649.0	6,590.9	15.4	17.9	96.01	63.0	-658.8	993.9	965.0	28.88	34.415		
6,700.0	6,608.3	6,764.7	6,687.1	15.6	18.0	97.16	-1.1	-658.8	996.2	966.9	29.29	34.008		
6,800.0	6,668.9	6,884.3	6,775.2	15.9	18.2	98.18	-81.8	-658.8	998.6	968.6	29.95	33.344		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-443 - Wellbore #1 - Plan #1 (12-02-1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-89.98	-89.98	0.0	-27.9	27.9	27.9	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-89.98	-89.98	0.0	-27.9	27.9	27.7	0.23	122.941	
200.0	200.0	201.0	201.0	0.3	0.3	-89.98	-89.98	0.0	-27.9	27.9	27.2	0.68	41.253	
300.0	300.0	301.0	301.0	0.6	0.6	-89.98	-89.98	0.0	-27.9	27.9	26.8	1.13	24.785	
400.0	400.0	401.0	401.0	0.8	0.8	-89.98	-89.98	0.0	-27.9	27.9	26.3	1.58	17.713	
500.0	500.0	501.0	501.0	1.0	1.0	-89.98	-89.98	0.0	-27.9	27.9	25.9	2.03	13.781	
600.0	600.0	601.0	601.0	1.2	1.2	-89.98	-89.98	0.0	-27.9	27.9	25.4	2.47	11.278	
700.0	700.0	701.0	701.0	1.5	1.5	-89.98	-89.98	0.0	-27.9	27.9	25.0	2.92	9.544	
800.0	800.0	801.0	801.0	1.7	1.7	-89.98	-89.98	0.0	-27.9	27.9	24.5	3.37	8.273	
900.0	900.0	901.0	901.0	1.9	1.9	-89.98	-89.98	0.0	-27.9	27.9	24.1	3.82	7.300	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-89.98	-89.98	0.0	-27.9	27.9	23.6	4.27	6.532 CC, ES	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-155.41	-155.41	0.0	-27.9	29.5	24.8	4.71	6.256	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	-159.01	-159.01	0.0	-27.9	34.3	29.2	5.15	6.669	
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	-163.00	-163.00	0.0	-27.9	42.1	36.5	5.58	7.545	
1,400.0	1,399.1	1,400.1	1,400.1	3.0	3.0	-165.86	-165.86	0.0	-27.9	50.4	44.3	6.02	8.370	
1,500.0	1,498.8	1,499.8	1,499.8	3.3	3.3	-167.90	-167.90	0.0	-27.9	58.7	52.3	6.46	9.093	
1,600.0	1,598.4	1,599.4	1,599.4	3.5	3.5	-169.44	-169.44	0.0	-27.9	67.2	60.3	6.90	9.729	
1,700.0	1,698.0	1,699.0	1,699.0	3.8	3.7	-170.63	-170.63	0.0	-27.9	75.6	68.3	7.35	10.291	
1,800.0	1,797.7	1,798.7	1,798.7	4.0	3.9	-171.58	-171.58	0.0	-27.9	84.1	76.3	7.79	10.791	
1,900.0	1,897.3	1,898.3	1,898.3	4.3	4.2	-172.36	-172.36	0.0	-27.9	92.6	84.4	8.24	11.237	
2,000.0	1,996.9	1,997.9	1,997.9	4.5	4.4	-173.01	-173.01	0.0	-27.9	101.1	92.4	8.69	11.637	
2,100.0	2,096.5	2,097.5	2,097.5	4.8	4.6	-173.56	-173.56	0.0	-27.9	109.7	100.5	9.14	11.999	
2,200.0	2,196.2	2,197.2	2,197.2	5.1	4.8	-174.02	-174.02	0.0	-27.9	118.2	108.6	9.59	12.326	
2,300.0	2,295.8	2,296.8	2,296.8	5.3	5.1	-174.43	-174.43	0.0	-27.9	126.7	116.7	10.04	12.625	
2,400.0	2,395.4	2,396.4	2,396.4	5.6	5.3	-174.78	-174.78	0.0	-27.9	135.3	124.8	10.49	12.897	
2,500.0	2,495.1	2,496.1	2,496.1	5.8	5.5	-175.09	-175.09	0.0	-27.9	143.8	132.9	10.94	13.147	
2,600.0	2,594.7	2,595.7	2,595.7	6.1	5.7	-175.37	-175.37	0.0	-27.9	152.4	141.0	11.39	13.377	
2,700.0	2,694.3	2,695.3	2,695.3	6.4	5.9	-175.61	-175.61	0.0	-27.9	161.0	149.1	11.84	13.589	
2,800.0	2,794.0	2,795.0	2,795.0	6.6	6.2	-175.84	-175.84	0.0	-27.9	169.5	157.2	12.30	13.786	
2,900.0	2,893.6	2,894.6	2,894.6	6.9	6.4	-176.04	-176.04	0.0	-27.9	178.1	165.3	12.75	13.968	
3,000.0	2,993.2	2,994.2	2,994.2	7.2	6.6	-176.22	-176.22	0.0	-27.9	186.7	173.5	13.20	14.138	
3,100.0	3,092.8	3,097.4	3,097.3	7.4	6.8	-175.98	-175.98	1.6	-27.6	194.4	180.7	13.66	14.228	
3,200.0	3,192.5	3,200.8	3,200.7	7.7	7.1	-174.85	-174.85	6.9	-26.7	200.2	186.1	14.12	14.181	
3,300.0	3,292.1	3,300.7	3,300.2	8.0	7.3	-173.36	-173.36	13.9	-25.5	205.2	190.7	14.57	14.083	
3,400.0	3,391.7	3,400.4	3,399.7	8.3	7.5	-171.94	-171.94	20.9	-24.3	210.4	195.3	15.03	13.997	
3,500.0	3,491.4	3,500.1	3,499.2	8.5	7.8	-170.60	-170.60	27.9	-23.1	215.6	200.1	15.49	13.921	
3,600.0	3,591.0	3,599.9	3,598.7	8.8	8.0	-169.32	-169.32	34.8	-21.9	221.0	205.0	15.95	13.854	
3,700.0	3,690.6	3,699.6	3,698.2	9.1	8.2	-168.09	-168.09	41.8	-20.7	226.4	210.0	16.42	13.795	
3,800.0	3,790.3	3,799.3	3,797.7	9.3	8.4	-166.93	-166.93	48.8	-19.5	232.0	215.1	16.88	13.742	
3,900.0	3,889.9	3,899.1	3,897.2	9.6	8.7	-165.82	-165.82	55.8	-18.2	237.7	220.3	17.35	13.696	
4,000.0	3,989.5	3,998.8	3,996.6	9.9	8.9	-164.77	-164.77	62.7	-17.0	243.4	225.6	17.83	13.655	
4,100.0	4,089.2	4,098.5	4,096.1	10.2	9.1	-163.76	-163.76	69.7	-15.8	249.2	230.9	18.30	13.619	
4,200.0	4,188.8	4,198.3	4,195.6	10.4	9.4	-162.80	-162.80	76.7	-14.6	255.1	236.3	18.78	13.587	
4,300.0	4,288.4	4,298.0	4,295.1	10.7	9.6	-161.88	-161.88	83.7	-13.4	261.1	241.8	19.26	13.559	
4,400.0	4,388.0	4,397.8	4,394.6	11.0	9.9	-161.00	-161.00	90.6	-12.2	267.1	247.4	19.74	13.534	
4,500.0	4,487.7	4,497.5	4,494.1	11.2	10.1	-160.16	-160.16	97.6	-11.0	273.2	253.0	20.22	13.512	
4,600.0	4,587.3	4,597.2	4,593.5	11.5	10.3	-159.36	-159.36	104.6	-9.8	279.3	258.6	20.70	13.493	
4,700.0	4,686.9	4,697.0	4,693.0	11.8	10.6	-158.60	-158.60	111.6	-8.6	285.5	264.3	21.19	13.476	
4,800.0	4,786.6	4,796.7	4,792.5	12.1	10.8	-157.86	-157.86	118.5	-7.4	291.8	270.1	21.68	13.461	
4,900.0	4,886.2	4,896.4	4,892.0	12.3	11.1	-157.16	-157.16	125.5	-6.1	298.1	275.9	22.16	13.448	
5,000.0	4,985.8	4,996.2	4,991.5	12.6	11.3	-156.49	-156.49	132.5	-4.9	304.4	281.7	22.65	13.437	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-443 - Wellbore #1 - Plan #1 (12-02-1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,085.5	5,095.9	5,091.0	12.9	11.5	-155.84	139.5	-3.7	310.8	287.6	23.15	13.427		
5,200.0	5,185.1	5,195.7	5,190.5	13.1	11.8	-155.22	146.4	-2.5	317.2	293.5	23.64	13.418		
5,300.0	5,284.7	5,295.4	5,289.9	13.4	12.0	-154.63	153.4	-1.3	323.5	299.3	24.13	13.405		
5,400.0	5,384.6	5,393.4	5,387.8	13.6	12.2	-154.14	158.8	-0.4	327.7	303.1	24.55	13.349		
5,500.0	5,484.5	5,491.4	5,485.8	13.8	12.4	-153.95	161.0	0.0	329.4	304.5	24.89	13.232		
5,600.0	5,584.5	5,591.2	5,585.5	13.9	12.6	-90.00	161.0	0.0	329.4	304.1	25.27	13.037		
5,700.0	5,684.5	5,691.2	5,685.5	14.1	12.8	-90.00	161.0	0.0	329.4	303.7	25.69	12.823		
5,800.0	5,784.5	5,791.2	5,785.5	14.3	13.0	-90.00	161.0	0.0	329.4	303.3	26.11	12.615		
5,900.0	5,884.5	5,891.2	5,885.5	14.5	13.3	-90.00	161.0	0.0	329.4	302.9	26.54	12.413		
6,000.0	5,984.5	5,991.2	5,985.5	14.7	13.5	-90.00	161.0	0.0	329.4	302.4	26.96	12.217		
6,049.4	6,033.9	6,040.5	6,034.9	14.8	13.6	90.15	161.0	0.0	329.4	302.2	27.16	12.126		
6,100.0	6,084.5	6,091.1	6,085.5	14.9	13.7	90.31	161.0	0.0	329.4	302.0	27.37	12.034		
6,200.0	6,183.5	6,190.2	6,184.5	15.0	13.9	92.56	161.0	0.0	329.7	302.0	27.77	11.876		
6,300.0	6,280.0	6,290.1	6,284.4	15.1	14.1	96.44	158.0	0.0	331.6	303.5	28.10	11.800		
6,400.0	6,372.2	6,394.1	6,387.0	15.2	14.2	100.36	141.7	0.0	335.2	306.8	28.31	11.841		
6,500.0	6,458.6	6,501.8	6,490.0	15.3	14.3	104.09	110.4	0.0	340.1	311.7	28.40	11.978		
6,600.0	6,537.8	6,613.5	6,590.9	15.4	14.4	107.54	63.0	0.0	346.2	317.7	28.42	12.182		
6,700.0	6,608.3	6,729.1	6,687.1	15.6	14.6	110.64	-1.1	0.0	352.8	324.3	28.46	12.397		
6,800.0	6,668.9	6,848.7	6,775.2	15.9	14.8	113.33	-81.8	0.0	359.5	330.8	28.65	12.549		
6,900.0	6,718.7	6,972.1	6,851.7	16.4	15.3	115.54	-178.5	0.0	365.7	336.5	29.16	12.542		
7,000.0	6,756.7	7,098.8	6,913.1	17.1	16.1	117.24	-289.1	0.0	370.9	340.7	30.12	12.313		
7,100.0	6,782.3	7,228.0	6,956.0	18.0	17.2	118.39	-410.9	0.0	374.6	342.9	31.66	11.832		
7,200.0	6,795.1	7,354.9	6,977.6	19.1	18.5	118.97	-535.7	0.0	376.6	342.8	33.74	11.161		
7,300.0	6,796.3	7,462.1	6,987.9	20.2	19.8	120.05	-642.5	0.0	380.8	345.0	35.77	10.646		
7,400.0	6,795.5	7,574.5	6,990.3	21.5	21.2	120.48	-754.8	0.0	382.2	344.1	38.10	10.031		
7,500.0	6,794.7	7,674.5	6,990.3	22.9	22.6	120.58	-854.8	0.0	382.6	342.1	40.53	9.440		
7,600.0	6,793.9	7,774.5	6,990.4	24.4	24.1	120.68	-954.7	0.0	383.0	339.9	43.08	8.891		
7,700.0	6,793.2	7,874.5	6,990.4	25.9	25.6	120.78	-1,054.7	0.0	383.4	337.7	45.73	8.385		
7,800.0	6,792.4	7,974.5	6,990.4	27.4	27.1	120.88	-1,154.7	0.0	383.8	335.3	48.46	7.920		
7,900.0	6,791.6	8,074.5	6,990.4	29.0	28.8	120.98	-1,254.7	0.0	384.2	332.9	51.26	7.495		
8,000.0	6,790.9	8,174.5	6,990.4	30.7	30.4	121.08	-1,354.7	0.0	384.6	330.5	54.12	7.107		
8,100.0	6,790.1	8,274.5	6,990.5	32.3	32.1	121.18	-1,454.7	0.0	385.0	328.0	57.02	6.752		
8,200.0	6,789.3	8,374.5	6,990.5	34.0	33.8	121.28	-1,554.7	0.0	385.4	325.5	59.97	6.427		
8,300.0	6,788.6	8,474.5	6,990.5	35.7	35.5	121.38	-1,654.7	0.0	385.8	322.9	62.94	6.130		
8,400.0	6,787.8	8,574.5	6,990.5	37.5	37.3	121.48	-1,754.7	0.0	386.2	320.3	65.95	5.857		
8,500.0	6,787.0	8,674.5	6,990.5	39.2	39.0	121.58	-1,854.7	0.0	386.6	317.7	68.98	5.605		
8,600.0	6,786.3	8,774.4	6,990.5	41.0	40.8	121.68	-1,954.7	0.0	387.1	315.0	72.02	5.374		
8,700.0	6,785.5	8,874.4	6,990.6	42.8	42.6	121.78	-2,054.7	0.0	387.5	312.4	75.09	5.160		
8,800.0	6,784.7	8,974.4	6,990.6	44.6	44.4	121.88	-2,154.7	0.0	387.9	309.7	78.17	4.962		
8,900.0	6,784.0	9,074.4	6,990.6	46.4	46.2	121.97	-2,254.7	0.0	388.3	307.0	81.26	4.779		
9,000.0	6,783.2	9,174.4	6,990.6	48.2	48.0	122.07	-2,354.7	0.0	388.7	304.4	84.35	4.608		
9,100.0	6,782.4	9,274.4	6,990.6	50.0	49.8	122.17	-2,454.7	0.0	389.1	301.7	87.46	4.449		
9,200.0	6,781.7	9,374.4	6,990.6	51.8	51.7	122.27	-2,554.7	0.0	389.6	299.0	90.57	4.301		
9,300.0	6,780.9	9,474.4	6,990.7	53.7	53.5	122.37	-2,654.7	0.0	390.0	296.3	93.69	4.162		
9,400.0	6,780.1	9,574.4	6,990.7	55.5	55.4	122.46	-2,754.7	0.0	390.4	293.6	96.81	4.033		
9,500.0	6,779.4	9,674.4	6,990.7	57.4	57.2	122.56	-2,854.7	0.0	390.8	290.9	99.94	3.911		
9,600.0	6,778.6	9,774.4	6,990.7	59.2	59.1	122.66	-2,954.7	0.0	391.2	288.2	103.06	3.796		
9,700.0	6,777.8	9,874.4	6,990.7	61.1	60.9	122.75	-3,054.7	0.0	391.7	285.5	106.19	3.688		
9,800.0	6,777.1	9,974.4	6,990.7	62.9	62.8	122.85	-3,154.7	0.0	392.1	282.8	109.32	3.587		
9,900.0	6,776.3	10,074.4	6,990.8	64.8	64.6	122.95	-3,254.7	0.0	392.5	280.1	112.45	3.491		
10,000.0	6,775.5	10,174.4	6,990.8	66.6	66.5	123.04	-3,354.7	0.0	392.9	277.4	115.58	3.400		

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 Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-443 - Wellbore #1 - Plan #1 (12-02-1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,774.7	10,274.4	6,990.8	68.5	68.4	123.14	-3,454.7	0.0	393.4	274.7	118.71	3.314	
10,200.0	6,774.0	10,374.4	6,990.8	70.4	70.2	123.23	-3,554.7	0.0	393.8	272.0	121.84	3.232	
10,300.0	6,773.2	10,474.4	6,990.8	72.3	72.1	123.33	-3,654.7	0.0	394.2	269.3	124.96	3.155	
10,400.0	6,772.4	10,574.4	6,990.9	74.1	74.0	123.43	-3,754.7	0.0	394.7	266.6	128.09	3.081	
10,500.0	6,771.7	10,674.4	6,990.9	76.0	75.9	123.52	-3,854.7	0.0	395.1	263.9	131.21	3.011	
10,600.0	6,770.9	10,774.4	6,990.9	77.9	77.8	123.62	-3,954.7	0.0	395.5	261.2	134.33	2.944	
10,700.0	6,770.1	10,874.4	6,990.9	79.8	79.6	123.71	-4,054.7	0.0	396.0	258.5	137.45	2.881	
10,800.0	6,769.4	10,974.4	6,990.9	81.6	81.5	123.80	-4,154.7	0.0	396.4	255.8	140.56	2.820	
10,900.0	6,768.6	11,074.4	6,990.9	83.5	83.4	123.90	-4,254.6	0.0	396.8	253.2	143.67	2.762	
11,000.0	6,767.8	11,174.4	6,991.0	85.4	85.3	123.99	-4,354.6	0.0	397.3	250.5	146.78	2.707	
11,100.0	6,767.1	11,274.4	6,991.0	87.3	87.2	124.09	-4,454.6	0.0	397.7	247.8	149.89	2.653	
11,200.0	6,766.3	11,374.4	6,991.0	89.2	89.1	124.18	-4,554.6	0.0	398.2	245.2	152.99	2.603	
11,239.2	6,766.0	11,413.5	6,991.0	89.9	89.8	124.22	-4,593.8	0.0	398.3	244.1	154.20	2.583 SF	

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7167-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,400.0	6,780.1	6,728.1	6,728.1	55.5	134.6	-93.29	-3,737.7	460.6	991.7	802.2	189.48	5.234		
9,500.0	6,779.4	6,727.4	6,727.4	57.4	134.5	-92.96	-3,737.7	460.6	892.7	701.3	191.37	4.665		
9,600.0	6,778.6	6,726.6	6,726.6	59.2	134.5	-92.62	-3,737.7	460.6	793.9	600.7	193.27	4.108		
9,700.0	6,777.8	6,725.8	6,725.8	61.1	134.5	-92.29	-3,737.7	460.6	695.5	500.3	195.17	3.564		
9,800.0	6,777.1	6,725.1	6,725.1	62.9	134.5	-91.95	-3,737.7	460.6	597.6	400.5	197.06	3.033		
9,900.0	6,776.3	6,724.3	6,724.3	64.8	134.5	-91.62	-3,737.7	460.6	500.5	301.6	198.95	2.516		
10,000.0	6,775.5	6,723.5	6,723.5	66.6	134.5	-91.28	-3,737.7	460.6	404.9	204.0	200.84	2.016		
10,100.0	6,774.7	6,722.7	6,722.7	68.5	134.5	-90.95	-3,737.7	460.6	311.9	109.2	202.73	1.539		
10,200.0	6,774.0	6,722.0	6,722.0	70.4	134.4	-90.61	-3,737.7	460.6	225.2	20.6	204.61	1.101 Level 2		
10,300.0	6,773.2	6,721.2	6,721.2	72.3	134.4	-90.28	-3,737.7	460.6	155.3	-51.2	206.49	0.752 Level 1		
10,383.0	6,772.6	6,720.6	6,720.6	73.8	134.4	-90.00	-3,737.7	460.6	131.2	-76.9	208.04	0.631 Level 1, CC, ES, SF		
10,400.0	6,772.4	6,720.4	6,720.4	74.1	134.4	-89.94	-3,737.7	460.6	132.3	-76.1	208.36	0.635 Level 1		
10,500.0	6,771.7	6,719.7	6,719.7	76.0	134.4	-89.61	-3,737.7	460.6	175.8	-34.5	210.23	0.836 Level 1		
10,600.0	6,770.9	6,718.9	6,718.9	77.9	134.4	-89.27	-3,737.7	460.6	253.5	41.4	212.09	1.195 Level 2		
10,700.0	6,770.1	6,718.1	6,718.1	79.8	134.4	-88.94	-3,737.7	460.6	343.0	129.1	213.95	1.603		
10,800.0	6,769.4	6,717.4	6,717.4	81.6	134.3	-88.60	-3,737.7	460.6	437.1	221.3	215.80	2.026		
10,900.0	6,768.6	6,716.6	6,716.6	83.5	134.3	-88.27	-3,737.7	460.6	533.3	315.7	217.65	2.450		
11,000.0	6,767.8	6,715.8	6,715.8	85.4	134.3	-87.93	-3,737.7	460.6	630.7	411.3	219.49	2.874		
11,100.0	6,767.1	6,715.1	6,715.1	87.3	134.3	-87.60	-3,737.7	460.6	728.8	507.5	221.32	3.293		
11,200.0	6,766.3	6,714.3	6,714.3	89.2	134.3	-87.26	-3,737.7	460.6	827.4	604.3	223.15	3.708		
11,239.2	6,766.0	6,714.0	6,714.0	89.9	134.3	-87.13	-3,737.7	460.6	866.1	642.2	223.86	3.869		

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (12-02-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4796.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Becker Ranch 5R-203
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4796.0ft (RKB - 15')
Reference Site:	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4796.0ft (RKB - 15')
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Reference Wellbore	Wellbore #1	Database:	Landmark
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