

PETROLEUM DEVELOPMENT CORP Weld County CO

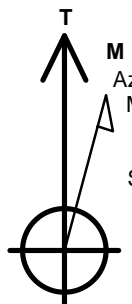
Well Name: **Becker Ranch 5R-403**

Surface Location: Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4783.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1339355.72	3260045.36	40.261180	-104.568190	
RKB - 15' WELL @ 4798.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 206'FNL, 790'FEL	1.0	0.0	0.0	Point
BHL 500'FSL, 1135'FEL	6985.0	-4593.9	-368.5	Point



Azimuths to True North
Magnetic North: 8.41°

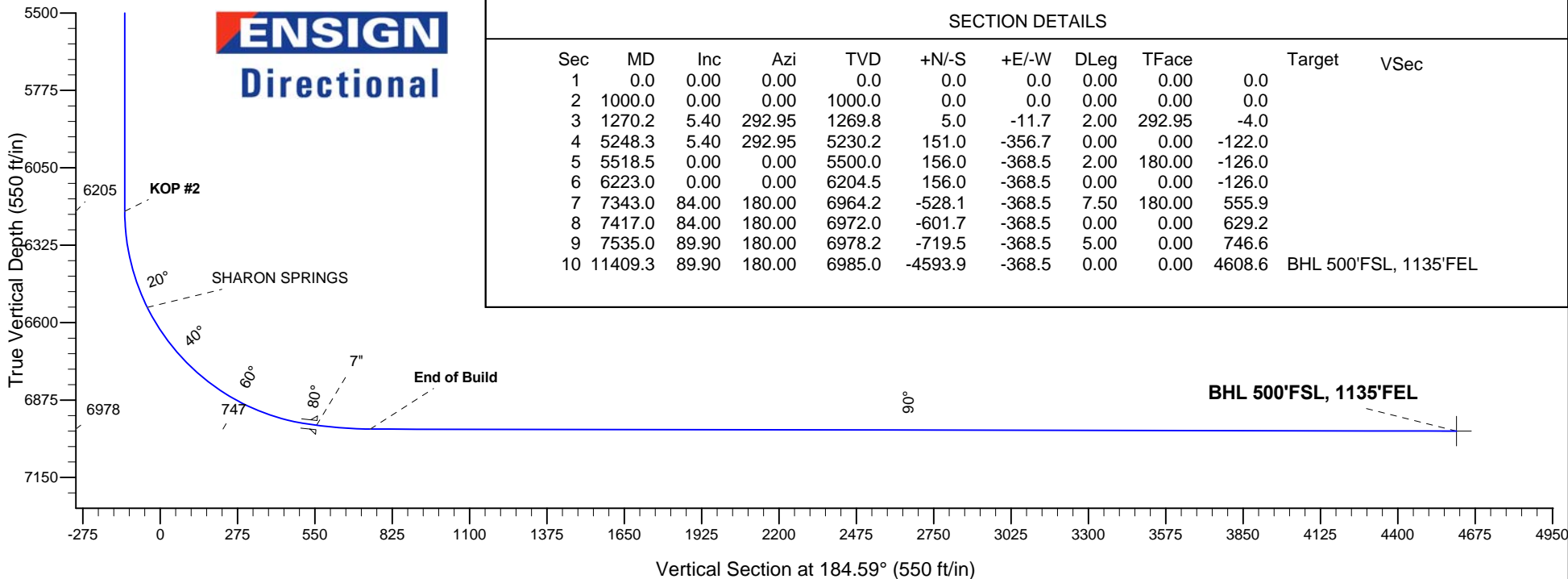
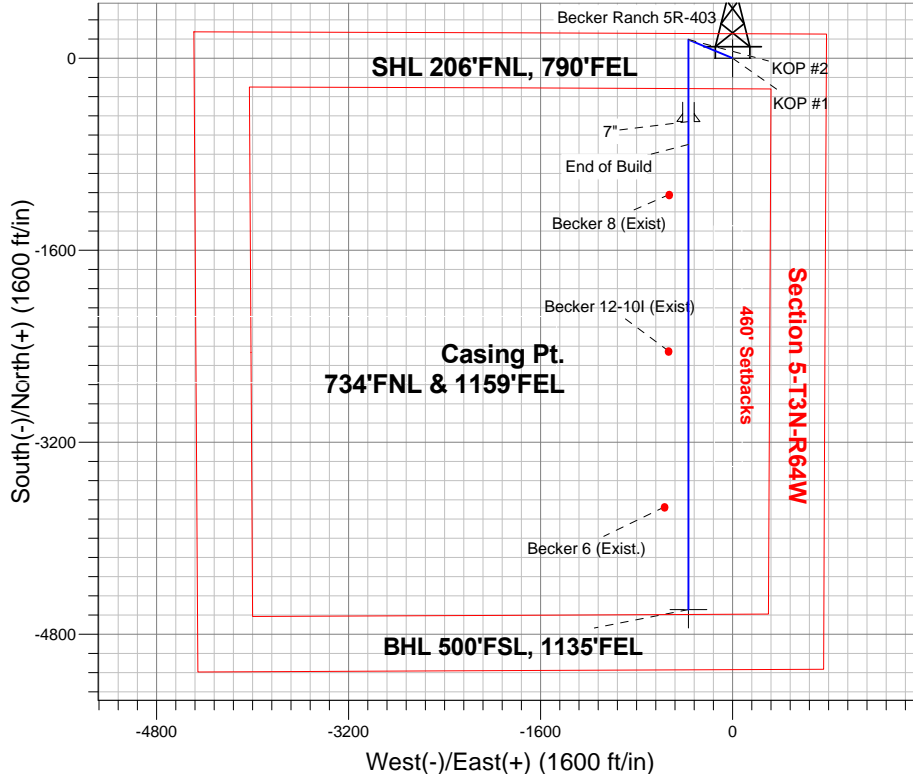
Magnetic Field
Strength: 52819.4snT
Dip Angle: 66.89°
Date: 12/3/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6204.5	6223.0	KOP #2
6978.2	7535.0	End of Build

Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W
Becker Ranch 5R-403
Plan #1 (12-03-13)
12:40, December 11 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	1270.2	5.40	292.95	1269.8	5.0	-11.7	2.00	292.95	-4.0	
4	5248.3	5.40	292.95	5230.2	151.0	-356.7	0.00	0.00	-122.0	
5	5518.5	0.00	0.00	5500.0	156.0	-368.5	2.00	180.00	-126.0	
6	6223.0	0.00	0.00	6204.5	156.0	-368.5	0.00	0.00	-126.0	
7	7343.0	84.00	180.00	6964.2	-528.1	-368.5	7.50	180.00	555.9	
8	7417.0	84.00	180.00	6972.0	-601.7	-368.5	0.00	0.00	629.2	
9	7535.0	89.90	180.00	6978.2	-719.5	-368.5	5.00	0.00	746.6	
10	11409.3	89.90	180.00	6985.0	-4593.9	-368.5	0.00	0.00	4608.6	BHL 500'FSL, 1135'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T3N-R64W

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

Becker Ranch 5R-403

Wellbore #1

Plan: Plan #1 (12-03-13)

Standard Planning Report

11 December, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-03-13)		

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 5RU-HZ Pad Sec.5-T3N-R64W											
Site Position:			Northing:			1,339,355.73ft			Latitude:			40.261180					
From:			Lat/Long			Easting:			3,260,045.36ft			Longitude:			-104.568190		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.60 °		

Well	Becker Ranch 5R-403					
Well Position	+N/-S	0.0 ft	Northing:	1,339,355.72 ft	Latitude:	40.261180
	+E/-W	0.0 ft	Easting:	3,260,045.36 ft	Longitude:	-104.568190
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,783.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/3/2013	8.41	66.89	52,819

Design	Plan #1 (12-03-13)			
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	184.59

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	
1,270.2	5.40	292.95	1,269.8	5.0	-11.7	2.00	2.00	0.00	292.95	
5,248.3	5.40	292.95	5,230.2	151.0	-356.7	0.00	0.00	0.00	0.00	
5,518.5	0.00	0.00	5,500.0	156.0	-368.5	2.00	-2.00	0.00	180.00	
6,223.0	0.00	0.00	6,204.5	156.0	-368.5	0.00	0.00	0.00	0.00	
7,343.0	84.00	180.00	6,964.2	-528.1	-368.5	7.50	7.50	0.00	180.00	
7,417.0	84.00	180.00	6,972.0	-601.7	-368.5	0.00	0.00	0.00	0.00	
7,535.0	89.90	180.00	6,978.2	-719.5	-368.5	5.00	5.00	0.00	0.00	
11,409.3	89.90	180.00	6,985.0	-4,593.9	-368.5	0.00	0.00	0.00	0.00	BHL 500'FSL, 1135

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-03-13)		

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 206'FNL, 790'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	292.95	1,100.0	0.7	-1.6	-0.5	2.00	2.00	0.00
1,200.0	4.00	292.95	1,199.8	2.7	-6.4	-2.2	2.00	2.00	0.00
1,270.2	5.40	292.95	1,269.8	5.0	-11.7	-4.0	2.00	2.00	0.00
1,300.0	5.40	292.95	1,299.5	6.1	-14.3	-4.9	0.00	0.00	0.00
1,400.0	5.40	292.95	1,399.0	9.7	-23.0	-7.9	0.00	0.00	0.00
1,500.0	5.40	292.95	1,498.6	13.4	-31.7	-10.8	0.00	0.00	0.00
1,600.0	5.40	292.95	1,598.1	17.1	-40.3	-13.8	0.00	0.00	0.00
1,700.0	5.40	292.95	1,697.7	20.7	-49.0	-16.8	0.00	0.00	0.00
1,800.0	5.40	292.95	1,797.2	24.4	-57.7	-19.7	0.00	0.00	0.00
1,900.0	5.40	292.95	1,896.8	28.1	-66.3	-22.7	0.00	0.00	0.00
2,000.0	5.40	292.95	1,996.4	31.8	-75.0	-25.7	0.00	0.00	0.00
2,100.0	5.40	292.95	2,095.9	35.4	-83.7	-28.6	0.00	0.00	0.00
2,200.0	5.40	292.95	2,195.5	39.1	-92.4	-31.6	0.00	0.00	0.00
2,300.0	5.40	292.95	2,295.0	42.8	-101.0	-34.6	0.00	0.00	0.00
2,400.0	5.40	292.95	2,394.6	46.4	-109.7	-37.5	0.00	0.00	0.00
2,500.0	5.40	292.95	2,494.1	50.1	-118.4	-40.5	0.00	0.00	0.00
2,600.0	5.40	292.95	2,593.7	53.8	-127.1	-43.5	0.00	0.00	0.00
2,700.0	5.40	292.95	2,693.2	57.5	-135.7	-46.4	0.00	0.00	0.00
2,800.0	5.40	292.95	2,792.8	61.1	-144.4	-49.4	0.00	0.00	0.00
2,900.0	5.40	292.95	2,892.4	64.8	-153.1	-52.4	0.00	0.00	0.00
3,000.0	5.40	292.95	2,991.9	68.5	-161.8	-55.3	0.00	0.00	0.00
3,100.0	5.40	292.95	3,091.5	72.2	-170.4	-58.3	0.00	0.00	0.00
3,200.0	5.40	292.95	3,191.0	75.8	-179.1	-61.3	0.00	0.00	0.00
3,300.0	5.40	292.95	3,290.6	79.5	-187.8	-64.2	0.00	0.00	0.00
3,400.0	5.40	292.95	3,390.1	83.2	-196.4	-67.2	0.00	0.00	0.00
3,500.0	5.40	292.95	3,489.7	86.8	-205.1	-70.2	0.00	0.00	0.00
3,600.0	5.40	292.95	3,589.2	90.5	-213.8	-73.1	0.00	0.00	0.00
3,700.0	5.40	292.95	3,688.8	94.2	-222.5	-76.1	0.00	0.00	0.00
3,711.3	5.40	292.95	3,700.0	94.6	-223.4	-76.4	0.00	0.00	0.00
PARKMAN									
3,800.0	5.40	292.95	3,788.4	97.9	-231.1	-79.1	0.00	0.00	0.00
3,900.0	5.40	292.95	3,887.9	101.5	-239.8	-82.0	0.00	0.00	0.00
4,000.0	5.40	292.95	3,987.5	105.2	-248.5	-85.0	0.00	0.00	0.00
4,100.0	5.40	292.95	4,087.0	108.9	-257.2	-88.0	0.00	0.00	0.00
4,200.0	5.40	292.95	4,186.6	112.5	-265.8	-90.9	0.00	0.00	0.00
4,300.0	5.40	292.95	4,286.1	116.2	-274.5	-93.9	0.00	0.00	0.00
4,400.0	5.40	292.95	4,385.7	119.9	-283.2	-96.9	0.00	0.00	0.00
4,414.4	5.40	292.95	4,400.0	120.4	-284.4	-97.3	0.00	0.00	0.00
SUSSEX									

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-03-13)		

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	5.40	292.95	4,485.2	123.6	-291.8	-99.8	0.00	0.00	0.00
4,600.0	5.40	292.95	4,584.8	127.2	-300.5	-102.8	0.00	0.00	0.00
4,700.0	5.40	292.95	4,684.4	130.9	-309.2	-105.8	0.00	0.00	0.00
4,800.0	5.40	292.95	4,783.9	134.6	-317.9	-108.7	0.00	0.00	0.00
4,900.0	5.40	292.95	4,883.5	138.2	-326.5	-111.7	0.00	0.00	0.00
5,000.0	5.40	292.95	4,983.0	141.9	-335.2	-114.7	0.00	0.00	0.00
5,100.0	5.40	292.95	5,082.6	145.6	-343.9	-117.6	0.00	0.00	0.00
5,117.5	5.40	292.95	5,100.0	146.2	-345.4	-118.1	0.00	0.00	0.00
SHANNON									
5,200.0	5.40	292.95	5,182.1	149.3	-352.6	-120.6	0.00	0.00	0.00
5,248.3	5.40	292.95	5,230.2	151.0	-356.7	-122.0	0.00	0.00	0.00
5,300.0	4.37	292.95	5,281.7	152.8	-360.8	-123.4	2.00	-2.00	0.00
5,400.0	2.37	292.95	5,381.5	155.0	-366.2	-125.3	2.00	-2.00	0.00
5,500.0	0.37	292.95	5,481.5	156.0	-368.4	-126.0	2.00	-2.00	0.00
5,518.5	0.00	0.00	5,500.0	156.0	-368.5	-126.0	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,581.5	156.0	-368.5	-126.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,681.5	156.0	-368.5	-126.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,781.5	156.0	-368.5	-126.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,881.5	156.0	-368.5	-126.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,981.5	156.0	-368.5	-126.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,081.5	156.0	-368.5	-126.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,181.5	156.0	-368.5	-126.0	0.00	0.00	0.00
6,223.0	0.00	0.00	6,204.5	156.0	-368.5	-126.0	0.00	0.00	0.00
KOP #2									
6,300.0	5.78	180.00	6,281.4	152.1	-368.5	-122.2	7.50	7.50	0.00
6,400.0	13.28	180.00	6,379.9	135.6	-368.5	-105.7	7.50	7.50	0.00
6,500.0	20.78	180.00	6,475.5	106.3	-368.5	-76.5	7.50	7.50	0.00
6,577.0	26.56	180.00	6,546.0	75.4	-368.5	-45.7	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	28.28	180.00	6,566.4	64.8	-368.5	-35.2	7.50	7.50	0.00
6,700.0	35.78	180.00	6,651.1	11.8	-368.5	17.7	7.50	7.50	0.00
6,800.0	43.28	180.00	6,728.2	-51.8	-368.5	81.1	7.50	7.50	0.00
6,900.0	50.78	180.00	6,796.3	-124.9	-368.5	153.9	7.50	7.50	0.00
7,000.0	58.28	180.00	6,854.3	-206.3	-368.5	235.1	7.50	7.50	0.00
7,100.0	65.78	180.00	6,901.2	-294.5	-368.5	323.0	7.50	7.50	0.00
7,200.0	73.28	180.00	6,936.1	-388.1	-368.5	416.4	7.50	7.50	0.00
7,300.0	80.78	180.00	6,958.5	-485.5	-368.5	513.4	7.50	7.50	0.00
7,343.0	84.00	180.00	6,964.2	-528.1	-368.5	555.9	7.49	7.49	0.00
7"									
7,400.0	84.00	180.00	6,970.2	-584.8	-368.5	612.4	0.00	0.00	0.00
7,417.0	84.00	180.00	6,972.0	-601.7	-368.5	629.2	0.00	0.00	0.00
7,500.0	88.15	180.00	6,977.6	-684.5	-368.5	711.8	5.00	5.00	0.00
7,535.0	89.90	180.00	6,978.2	-719.5	-368.5	746.7	4.99	4.99	0.00
End of Build									
7,600.0	89.90	180.00	6,978.4	-784.5	-368.5	811.5	0.00	0.00	0.00
7,700.0	89.90	180.00	6,978.5	-884.5	-368.5	911.1	0.00	0.00	0.00
7,800.0	89.90	180.00	6,978.7	-984.5	-368.5	1,010.8	0.00	0.00	0.00
7,900.0	89.90	180.00	6,978.9	-1,084.5	-368.5	1,110.5	0.00	0.00	0.00
8,000.0	89.90	180.00	6,979.0	-1,184.5	-368.5	1,210.2	0.00	0.00	0.00
8,100.0	89.90	180.00	6,979.2	-1,284.5	-368.5	1,309.9	0.00	0.00	0.00
8,200.0	89.90	180.00	6,979.4	-1,384.5	-368.5	1,409.5	0.00	0.00	0.00
8,300.0	89.90	180.00	6,979.6	-1,484.5	-368.5	1,509.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-03-13)		

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)
8,400.0	89.90	180.00	6,979.7	-1,584.5	-368.5	1,608.9	0.00	0.00	0.00
8,500.0	89.90	180.00	6,979.9	-1,684.5	-368.5	1,708.6	0.00	0.00	0.00
8,600.0	89.90	180.00	6,980.1	-1,784.5	-368.5	1,808.3	0.00	0.00	0.00
8,700.0	89.90	180.00	6,980.3	-1,884.5	-368.5	1,907.9	0.00	0.00	0.00
8,800.0	89.90	180.00	6,980.4	-1,984.5	-368.5	2,007.6	0.00	0.00	0.00
8,900.0	89.90	180.00	6,980.6	-2,084.5	-368.5	2,107.3	0.00	0.00	0.00
9,000.0	89.90	180.00	6,980.8	-2,184.5	-368.5	2,207.0	0.00	0.00	0.00
9,100.0	89.90	180.00	6,981.0	-2,284.5	-368.5	2,306.7	0.00	0.00	0.00
9,200.0	89.90	180.00	6,981.1	-2,384.5	-368.5	2,406.3	0.00	0.00	0.00
9,300.0	89.90	180.00	6,981.3	-2,484.5	-368.5	2,506.0	0.00	0.00	0.00
9,400.0	89.90	180.00	6,981.5	-2,584.5	-368.5	2,605.7	0.00	0.00	0.00
9,500.0	89.90	180.00	6,981.7	-2,684.5	-368.5	2,705.4	0.00	0.00	0.00
9,600.0	89.90	180.00	6,981.8	-2,784.5	-368.5	2,805.1	0.00	0.00	0.00
9,700.0	89.90	180.00	6,982.0	-2,884.5	-368.5	2,904.7	0.00	0.00	0.00
9,800.0	89.90	180.00	6,982.2	-2,984.5	-368.5	3,004.4	0.00	0.00	0.00
9,900.0	89.90	180.00	6,982.4	-3,084.5	-368.5	3,104.1	0.00	0.00	0.00
10,000.0	89.90	180.00	6,982.5	-3,184.5	-368.5	3,203.8	0.00	0.00	0.00
10,100.0	89.90	180.00	6,982.7	-3,284.5	-368.5	3,303.5	0.00	0.00	0.00
10,200.0	89.90	180.00	6,982.9	-3,384.5	-368.5	3,403.1	0.00	0.00	0.00
10,300.0	89.90	180.00	6,983.1	-3,484.5	-368.5	3,502.8	0.00	0.00	0.00
10,400.0	89.90	180.00	6,983.2	-3,584.5	-368.5	3,602.5	0.00	0.00	0.00
10,500.0	89.90	180.00	6,983.4	-3,684.5	-368.5	3,702.2	0.00	0.00	0.00
10,600.0	89.90	180.00	6,983.6	-3,784.5	-368.5	3,801.9	0.00	0.00	0.00
10,700.0	89.90	180.00	6,983.8	-3,884.5	-368.5	3,901.5	0.00	0.00	0.00
10,800.0	89.90	180.00	6,983.9	-3,984.5	-368.5	4,001.2	0.00	0.00	0.00
10,900.0	89.90	180.00	6,984.1	-4,084.5	-368.5	4,100.9	0.00	0.00	0.00
11,000.0	89.90	180.00	6,984.3	-4,184.5	-368.5	4,200.6	0.00	0.00	0.00
11,100.0	89.90	180.00	6,984.5	-4,284.5	-368.5	4,300.3	0.00	0.00	0.00
11,200.0	89.90	180.00	6,984.6	-4,384.5	-368.5	4,399.9	0.00	0.00	0.00
11,300.0	89.90	180.00	6,984.8	-4,484.5	-368.5	4,499.6	0.00	0.00	0.00
11,400.0	89.90	180.00	6,985.0	-4,584.5	-368.5	4,599.3	0.00	0.00	0.00
11,409.3	89.90	180.00	6,985.0	-4,593.9	-368.5	4,608.6	0.00	0.00	0.00

BHL 500'FSL, 1135'FEL

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,343.0	6,964.2	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,711.3	3,700.0	PARKMAN			
4,414.4	4,400.0	SUSSEX			
5,117.5	5,100.0	SHANNON			
6,577.0	6,546.0	SHARON SPRINGS			

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-03-13)		

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
6,223.0	6,204.5	156.0	-368.5	KOP #2
7,535.0	6,978.2	-719.5	-368.5	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T3N-R64W

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

Becker Ranch 5R-403

Wellbore #1

Plan #1 (12-03-13)

Anticollision Report

11 December, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (12-03-13)		
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	12/5/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,408.7	Plan #1 (12-03-13) (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 5RU-HZ Pad Sec.5-T3N-R64W						
Becker Ranch 5R-323 - Wellbore #1 - Plan #1 (12-03-13)	1,000.0	1,001.0	27.9	23.6	6.532	CC, ES
Becker Ranch 5R-323 - Wellbore #1 - Plan #1 (12-03-13)	11,409.3	11,322.7	360.5	193.8	2.163	SF
Becker Ranch 5U-203 - Wellbore #1 - Plan #1 (12-03-13)	1,000.0	1,000.0	89.3	85.0	20.913	CC, ES
Becker Ranch 5U-203 - Wellbore #1 - Plan #1 (12-03-13)	1,100.0	1,097.0	92.5	87.8	19.708	SF
Becker Ranch 5U-443 - Wellbore #1 - Plan #1 (12-03-13)	1,000.0	1,001.0	58.6	54.3	13.717	CC, ES
Becker Ranch 5U-443 - Wellbore #1 - Plan #1 (12-03-13)	11,409.3	11,399.1	661.6	482.5	3.694	SF
Existing Wells Sec.5-T3N-R64W						
Becker 12-10I (Exist) - Wellbore #1 - Wellbore #1	9,256.3	6,934.2	164.6	-23.6	0.875	Level 1, CC, ES, SF
Becker 6 (Exist.) - Wellbore #1 - Wellbore #1	10,553.2	6,929.5	198.2	-14.1	0.934	Level 1, CC, ES, SF
Becker 8 (Exist) - Wellbore #1 - Wellbore #1	7,952.1	6,962.0	159.0	-7.0	0.958	Level 1, CC, ES, SF

Offset Design												
Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-323 - Wellbore #1 - Plan #1 (12-03-13)												
Survey Program: 0-MWD												
Reference		Offset		Semi Major Axis			Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
0.0	0.0	1.0	1.0	0.0	0.0	90.02	0.0	27.9	27.9	27.9	0.00	N/A
100.0	100.0	101.0	101.0	0.1	0.1	90.02	0.0	27.9	27.9	27.7	0.23	122.941
200.0	200.0	201.0	201.0	0.3	0.3	90.02	0.0	27.9	27.9	27.2	0.68	41.253
300.0	300.0	301.0	301.0	0.6	0.6	90.02	0.0	27.9	27.9	26.8	1.13	24.785
400.0	400.0	401.0	401.0	0.8	0.8	90.02	0.0	27.9	27.9	26.3	1.58	17.713
500.0	500.0	501.0	501.0	1.0	1.0	90.02	0.0	27.9	27.9	25.9	2.03	13.781
600.0	600.0	601.0	601.0	1.2	1.2	90.02	0.0	27.9	27.9	25.4	2.47	11.278
700.0	700.0	701.0	701.0	1.5	1.5	90.02	0.0	27.9	27.9	25.0	2.92	9.544
800.0	800.0	801.0	801.0	1.7	1.7	90.02	0.0	27.9	27.9	24.5	3.37	8.273
900.0	900.0	901.0	901.0	1.9	1.9	90.02	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	90.02	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	158.38	0.0	27.9	29.5	24.8	4.71	6.264
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	161.56	0.0	27.9	34.4	29.3	5.14	6.696
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	165.17	0.0	27.9	42.7	37.1	5.57	7.652
1,400.0	1,399.0	1,400.0	1,400.0	3.0	3.0	167.83	0.0	27.9	51.8	45.8	6.01	8.618
1,500.0	1,498.6	1,499.6	1,499.6	3.3	3.3	169.70	0.0	27.9	61.1	54.6	6.45	9.461

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-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,600.0	1,598.1	1,599.1	1,599.1	3.5	3.5	171.07		0.0	27.9	70.3	63.4	6.90	10.201	
1,700.0	1,697.7	1,698.7	1,698.7	3.8	3.7	172.12		0.0	27.9	79.7	72.3	7.34	10.852	
1,800.0	1,797.2	1,798.2	1,798.2	4.0	3.9	172.95		0.0	27.9	89.0	81.2	7.79	11.430	
1,900.0	1,896.8	1,897.8	1,897.8	4.3	4.2	173.62		0.0	27.9	98.4	90.1	8.23	11.944	
2,000.0	1,996.4	1,997.4	1,997.4	4.6	4.4	174.18		0.0	27.9	107.7	99.0	8.68	12.406	
2,100.0	2,095.9	2,096.9	2,096.9	4.8	4.6	174.65		0.0	27.9	117.1	108.0	9.13	12.822	
2,200.0	2,195.5	2,196.5	2,196.5	5.1	4.8	175.05		0.0	27.9	126.5	116.9	9.58	13.199	
2,300.0	2,295.0	2,296.0	2,296.0	5.4	5.0	175.39		0.0	27.9	135.9	125.8	10.03	13.541	
2,400.0	2,394.6	2,395.6	2,395.6	5.7	5.3	175.69		0.0	27.9	145.3	134.8	10.48	13.854	
2,500.0	2,494.1	2,495.1	2,495.1	5.9	5.5	175.95		0.0	27.9	154.6	143.7	10.94	14.140	
2,600.0	2,593.7	2,594.7	2,594.7	6.2	5.7	176.18		0.0	27.9	164.0	152.7	11.39	14.403	
2,700.0	2,693.2	2,694.2	2,694.2	6.5	5.9	176.39		0.0	27.9	173.4	161.6	11.84	14.646	
2,800.0	2,792.8	2,793.8	2,793.8	6.8	6.2	176.58		0.0	27.9	182.8	170.5	12.30	14.871	
2,900.0	2,892.4	2,893.4	2,893.4	7.0	6.4	176.74		0.0	27.9	192.2	179.5	12.75	15.080	
3,000.0	2,991.9	2,992.9	2,992.9	7.3	6.6	176.90		0.0	27.9	201.6	188.4	13.20	15.274	
3,100.0	3,091.5	3,092.5	3,092.5	7.6	6.8	177.07		1.5	27.3	210.0	196.3	13.66	15.368	
3,200.0	3,191.0	3,202.2	3,202.0	7.9	7.1	177.28		6.6	25.2	215.9	201.8	14.13	15.287	
3,300.0	3,290.6	3,302.4	3,302.0	8.2	7.3	177.52		13.4	22.4	220.6	206.0	14.58	15.130	
3,400.0	3,390.1	3,402.2	3,401.5	8.4	7.5	177.71		20.2	19.6	225.3	210.3	15.03	14.985	
3,500.0	3,489.7	3,502.0	3,501.0	8.7	7.8	177.95		26.9	16.8	230.1	214.6	15.49	14.853	
3,600.0	3,589.2	3,601.7	3,600.5	9.0	8.0	178.15		33.7	14.0	235.0	219.1	15.95	14.731	
3,700.0	3,688.8	3,701.5	3,700.0	9.3	8.2	169.98		40.5	11.2	240.0	223.6	16.42	14.619	
3,800.0	3,788.4	3,801.3	3,799.5	9.6	8.5	168.97		47.3	8.4	245.1	228.2	16.88	14.516	
3,900.0	3,887.9	3,901.1	3,899.0	9.8	8.7	167.99		54.1	5.7	250.2	232.9	17.35	14.420	
4,000.0	3,987.5	4,000.9	3,998.5	10.1	8.9	167.05		60.9	2.9	255.4	237.6	17.82	14.331	
4,100.0	4,087.0	4,100.6	4,098.0	10.4	9.2	166.15		67.6	0.1	260.7	242.4	18.30	14.248	
4,200.0	4,186.6	4,200.4	4,197.6	10.7	9.4	165.29		74.4	-2.7	266.0	247.3	18.77	14.171	
4,300.0	4,286.1	4,300.2	4,297.1	11.0	9.6	164.46		81.2	-5.5	271.4	252.2	19.25	14.100	
4,400.0	4,385.7	4,400.0	4,396.6	11.3	9.9	163.66		88.0	-8.3	276.9	257.2	19.73	14.033	
4,500.0	4,485.2	4,499.8	4,496.1	11.5	10.1	162.89		94.8	-11.1	282.4	262.2	20.21	13.970	
4,600.0	4,584.8	4,599.5	4,595.6	11.8	10.4	162.16		101.5	-13.9	288.0	267.3	20.70	13.911	
4,700.0	4,684.4	4,699.3	4,695.1	12.1	10.6	161.45		108.3	-16.7	293.5	272.4	21.19	13.856	
4,800.0	4,783.9	4,799.1	4,794.6	12.4	10.8	160.77		115.1	-19.5	299.2	277.5	21.67	13.805	
4,900.0	4,883.5	4,898.9	4,894.1	12.7	11.1	160.11		121.9	-22.3	304.9	282.7	22.16	13.756	
5,000.0	4,983.0	4,998.6	4,993.6	13.0	11.3	159.47		128.7	-25.0	310.6	287.9	22.65	13.710	
5,100.0	5,082.6	5,098.4	5,093.1	13.2	11.6	158.86		135.4	-27.8	316.4	293.2	23.15	13.667	
5,200.0	5,182.1	5,198.2	5,192.6	13.5	11.8	158.28		142.2	-30.6	322.1	298.5	23.64	13.627	
5,300.0	5,281.7	5,297.9	5,292.0	13.8	12.1	157.70		149.0	-33.4	327.5	303.4	24.14	13.571	
5,400.0	5,381.5	5,393.5	5,387.5	14.0	12.3	157.24		153.9	-35.5	330.8	306.3	24.52	13.491	
5,500.0	5,481.5	5,489.3	5,483.3	14.1	12.4	157.06		155.9	-36.3	332.1	307.3	24.86	13.362	
5,600.0	5,581.5	5,588.5	5,582.5	14.3	12.6	90.00		156.0	-36.3	332.2	306.9	25.23	13.167	
5,700.0	5,681.5	5,688.5	5,682.5	14.5	12.8	90.00		156.0	-36.3	332.2	306.5	25.65	12.952	
5,800.0	5,781.5	5,788.5	5,782.5	14.7	13.0	90.00		156.0	-36.3	332.2	306.1	26.07	12.742	
5,900.0	5,881.5	5,888.5	5,882.5	14.9	13.3	90.00		156.0	-36.3	332.2	305.7	26.49	12.538	
6,000.0	5,981.5	5,988.5	5,982.5	15.1	13.5	90.00		156.0	-36.3	332.2	305.3	26.92	12.340	
6,100.0	6,081.5	6,088.5	6,082.5	15.2	13.7	90.00		156.0	-36.3	332.2	304.8	27.34	12.148	
6,150.9	6,132.5	6,139.5	6,133.5	15.3	13.8	90.00		156.0	-36.3	332.2	304.6	27.56	12.053	
6,200.0	6,181.5	6,188.5	6,182.4	15.4	13.9	90.27		154.5	-36.3	332.2	304.4	27.74	11.977	
6,300.0	6,281.4	6,287.3	6,280.4	15.6	14.0	-88.21		141.9	-36.3	332.3	304.3	28.00	11.870	
6,400.0	6,379.9	6,385.0	6,374.8	15.7	14.1	-86.66		117.1	-36.3	332.7	304.6	28.18	11.807	
6,500.0	6,475.5	6,481.6	6,464.3	15.8	14.2	-85.18		80.9	-36.3	333.4	305.0	28.34	11.764	

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-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,600.0	6,566.4	6,577.2	6,547.8	15.9	14.3	-83.79	34.3	-36.3	334.2	305.6	28.52	11.718	
6,700.0	6,651.1	6,672.0	6,624.0	16.0	14.4	-82.51	-21.8	-36.3	335.1	306.3	28.78	11.642	
6,800.0	6,728.2	6,765.9	6,692.2	16.1	14.6	-81.36	-86.3	-36.3	336.0	306.8	29.19	11.511	
6,900.0	6,796.3	6,859.2	6,751.6	16.3	15.0	-80.36	-158.2	-36.3	337.0	307.1	29.81	11.305	
7,000.0	6,854.3	6,951.9	6,801.5	16.6	15.5	-79.51	-236.2	-36.3	337.8	307.2	30.67	11.014	
7,100.0	6,901.2	7,044.1	6,841.4	17.1	16.1	-78.84	-319.3	-36.3	338.6	306.8	31.83	10.639	
7,200.0	6,936.1	7,136.0	6,871.0	17.8	16.9	-78.34	-406.3	-36.3	339.2	305.9	33.27	10.195	
7,300.0	6,958.5	7,227.6	6,889.8	18.7	17.8	-78.02	-495.9	-36.3	339.6	304.6	35.00	9.703	
7,400.0	6,970.2	7,319.0	6,897.8	19.8	18.9	-77.57	-586.9	-36.3	340.2	303.2	36.99	9.196	
7,500.0	6,977.6	7,415.6	6,897.1	21.0	20.1	-76.23	-683.5	-36.3	342.0	302.9	39.10	8.747	
7,600.0	6,978.4	7,515.6	6,895.8	22.3	21.4	-75.89	-783.4	-36.3	342.5	300.9	41.60	8.234	
7,700.0	6,978.5	7,615.6	6,894.5	23.7	22.8	-75.65	-883.4	-36.3	342.9	298.6	44.30	7.740	
7,800.0	6,978.7	7,715.6	6,893.2	25.1	24.3	-75.41	-983.4	-36.3	343.3	296.1	47.13	7.283	
7,900.0	6,978.9	7,815.6	6,891.9	26.6	25.9	-75.17	-1,083.4	-36.3	343.6	293.6	50.07	6.863	
8,000.0	6,979.0	7,915.6	6,890.6	28.2	27.4	-74.93	-1,183.3	-36.3	344.0	290.9	53.10	6.479	
8,100.0	6,979.2	8,015.6	6,889.3	29.8	29.1	-74.69	-1,283.3	-36.3	344.4	288.2	56.20	6.129	
8,200.0	6,979.4	8,115.6	6,888.0	31.4	30.7	-74.45	-1,383.3	-36.3	344.8	285.4	59.35	5.809	
8,300.0	6,979.6	8,215.5	6,886.7	33.0	32.4	-74.22	-1,483.3	-36.3	345.2	282.6	62.56	5.518	
8,400.0	6,979.7	8,315.5	6,885.4	34.7	34.1	-73.98	-1,583.3	-36.3	345.6	279.8	65.81	5.252	
8,500.0	6,979.9	8,415.5	6,884.1	36.4	35.9	-73.74	-1,683.2	-36.3	346.0	276.9	69.09	5.009	
8,600.0	6,980.1	8,515.5	6,882.7	38.2	37.6	-73.51	-1,783.2	-36.3	346.4	274.0	72.39	4.786	
8,700.0	6,980.3	8,615.5	6,881.4	39.9	39.4	-73.27	-1,883.2	-36.3	346.9	271.1	75.72	4.581	
8,800.0	6,980.4	8,715.5	6,880.1	41.7	41.2	-73.04	-1,983.2	-36.3	347.3	268.2	79.07	4.392	
8,900.0	6,980.6	8,815.5	6,878.8	43.5	43.0	-72.80	-2,083.2	-36.3	347.7	265.3	82.43	4.218	
9,000.0	6,980.8	8,915.5	6,877.5	45.2	44.8	-72.57	-2,183.1	-36.3	348.2	262.4	85.80	4.058	
9,100.0	6,981.0	9,015.5	6,876.2	47.0	46.6	-72.34	-2,283.1	-36.3	348.6	259.4	89.19	3.909	
9,200.0	6,981.1	9,115.4	6,874.9	48.9	48.4	-72.11	-2,383.1	-36.3	349.1	256.5	92.58	3.770	
9,300.0	6,981.3	9,215.4	6,873.6	50.7	50.3	-71.88	-2,483.1	-36.3	349.5	253.5	95.98	3.642	
9,400.0	6,981.5	9,315.4	6,872.3	52.5	52.1	-71.64	-2,583.1	-36.3	350.0	250.6	99.38	3.522	
9,500.0	6,981.7	9,415.4	6,871.0	54.3	53.9	-71.41	-2,683.0	-36.3	350.5	247.7	102.78	3.410	
9,600.0	6,981.8	9,515.4	6,869.7	56.2	55.8	-71.18	-2,783.0	-36.3	350.9	244.8	106.18	3.305	
9,700.0	6,982.0	9,615.4	6,868.3	58.0	57.6	-70.96	-2,883.0	-36.3	351.4	241.8	109.58	3.207	
9,800.0	6,982.2	9,715.4	6,867.0	59.8	59.5	-70.73	-2,983.0	-36.3	351.9	238.9	112.99	3.115	
9,900.0	6,982.4	9,815.4	6,865.7	61.7	61.3	-70.50	-3,083.0	-36.3	352.4	236.0	116.39	3.028	
10,000.0	6,982.5	9,915.4	6,864.4	63.5	63.2	-70.27	-3,183.0	-36.3	352.9	233.1	119.79	2.946	
10,100.0	6,982.7	10,015.3	6,863.1	65.4	65.1	-70.05	-3,282.9	-36.3	353.4	230.2	123.18	2.869	
10,200.0	6,982.9	10,115.3	6,861.8	67.3	66.9	-69.82	-3,382.9	-36.3	353.9	227.3	126.57	2.796	
10,300.0	6,983.1	10,215.3	6,860.5	69.1	68.8	-69.60	-3,482.9	-36.3	354.4	224.5	129.96	2.727	
10,400.0	6,983.2	10,315.3	6,859.2	71.0	70.7	-69.37	-3,582.9	-36.3	354.9	221.6	133.34	2.662	
10,500.0	6,983.4	10,415.3	6,857.9	72.9	72.6	-69.15	-3,682.9	-36.3	355.5	218.7	136.72	2.600	
10,600.0	6,983.6	10,515.3	6,856.6	74.7	74.4	-68.92	-3,782.8	-36.3	356.0	215.9	140.09	2.541	
10,700.0	6,983.8	10,615.3	6,855.3	76.6	76.3	-68.70	-3,882.8	-36.3	356.5	213.1	143.45	2.485	
10,800.0	6,983.9	10,715.3	6,854.0	78.5	78.2	-68.48	-3,982.8	-36.3	357.1	210.3	146.81	2.432	
10,900.0	6,984.1	10,815.3	6,852.6	80.4	80.1	-68.26	-4,082.8	-36.3	357.6	207.5	150.16	2.382	
11,000.0	6,984.3	10,915.2	6,851.3	82.3	82.0	-68.04	-4,182.8	-36.3	358.2	204.7	153.50	2.333	
11,100.0	6,984.5	11,015.2	6,850.0	84.1	83.9	-67.82	-4,282.7	-36.3	358.7	201.9	156.84	2.287	
11,200.0	6,984.6	11,115.2	6,848.7	86.0	85.8	-67.60	-4,382.7	-36.3	359.3	199.1	160.16	2.243	
11,300.0	6,984.8	11,215.2	6,847.4	87.9	87.7	-67.38	-4,482.7	-36.3	359.9	196.4	163.48	2.201	
11,400.0	6,985.0	11,315.2	6,846.1	89.4	89.5	-67.16	-4,582.7	-36.3	360.4	194.0	166.45	2.165	
11,409.3	6,985.0	11,322.7	6,846.0	89.6	89.7	-67.15	-4,590.2	-36.3	360.5	193.8	166.70	2.163 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-203 - Wellbore #1 - Plan #1 (12-03-1)													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	
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	89.3	89.3					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	89.3	89.3	89.1	0.22	397.346		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	89.3	89.3	88.6	0.67	132.449		
300.0	300.0	300.0	300.0	0.6	0.6	90.01	0.0	89.3	89.3	88.2	1.12	79.469		
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	89.3	89.3	87.7	1.57	56.764		
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	89.3	89.3	87.3	2.02	44.150		
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	89.3	89.3	86.8	2.47	36.122		
700.0	700.0	700.0	700.0	1.5	1.5	90.01	0.0	89.3	89.3	86.4	2.92	30.565		
800.0	800.0	800.0	800.0	1.7	1.7	90.01	0.0	89.3	89.3	85.9	3.37	26.490		
900.0	900.0	900.0	900.0	1.9	1.9	90.01	0.0	89.3	89.3	85.5	3.82	23.373		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	0.0	89.3	89.3	85.0	4.27	20.913 CC, ES		
1,100.0	1,100.0	1,097.0	1,097.0	2.4	2.3	157.16	0.4	90.9	92.5	87.8	4.70	19.708 SF		
1,200.0	1,199.8	1,193.4	1,193.2	2.6	2.5	157.42	1.8	95.6	102.2	97.1	5.11	20.007		
1,300.0	1,299.5	1,288.6	1,288.1	2.8	2.8	157.75	4.0	103.3	118.1	112.6	5.53	21.373		
1,400.0	1,399.0	1,384.2	1,383.1	3.0	3.0	157.80	7.2	114.0	137.9	132.0	5.96	23.160		
1,500.0	1,498.6	1,480.2	1,478.2	3.3	3.2	157.66	10.7	126.3	159.3	152.9	6.39	24.947		
1,600.0	1,598.1	1,577.9	1,575.0	3.5	3.5	157.55	14.4	138.9	180.7	173.9	6.82	26.492		
1,700.0	1,697.7	1,675.6	1,671.8	3.8	3.8	157.47	18.0	151.4	202.1	194.8	7.26	27.829		
1,800.0	1,797.2	1,773.3	1,768.6	4.0	4.1	157.40	21.7	164.0	223.5	215.8	7.71	28.996		
1,900.0	1,896.8	1,871.0	1,865.4	4.3	4.4	157.34	25.3	176.5	244.9	236.7	8.16	30.017		
2,000.0	1,996.4	1,968.6	1,962.2	4.6	4.7	157.30	29.0	189.1	266.3	257.7	8.61	30.924		
2,100.0	2,095.9	2,066.3	2,059.1	4.8	5.0	157.26	32.6	201.6	287.7	278.6	9.07	31.730		
2,200.0	2,195.5	2,164.0	2,155.9	5.1	5.3	157.22	36.3	214.1	309.1	299.5	9.52	32.449		
2,300.0	2,295.0	2,261.7	2,252.7	5.4	5.6	157.19	39.9	226.7	330.5	320.5	9.98	33.096		
2,400.0	2,394.6	2,359.4	2,349.5	5.7	5.9	157.17	43.6	239.2	351.8	341.4	10.45	33.679		
2,500.0	2,494.1	2,457.1	2,446.3	5.9	6.2	157.14	47.2	251.8	373.2	362.3	10.91	34.209		
2,600.0	2,593.7	2,554.8	2,543.1	6.2	6.5	157.12	50.9	264.3	394.6	383.3	11.38	34.690		
2,700.0	2,693.2	2,652.4	2,639.9	6.5	6.8	157.10	54.5	276.8	416.0	404.2	11.84	35.130		
2,800.0	2,792.8	2,750.1	2,736.7	6.8	7.1	157.08	58.2	289.4	437.4	425.1	12.31	35.534		
2,900.0	2,892.4	2,847.8	2,833.5	7.0	7.4	157.07	61.8	301.9	458.8	446.0	12.78	35.905		
3,000.0	2,991.9	2,945.5	2,930.3	7.3	7.8	157.06	65.4	314.5	480.2	467.0	13.25	36.248		
3,100.0	3,091.5	3,043.2	3,027.1	7.6	8.1	157.04	69.1	327.0	501.6	487.9	13.72	36.565		
3,200.0	3,191.0	3,140.9	3,123.9	7.9	8.4	157.03	72.7	339.6	523.0	508.8	14.19	36.859		
3,300.0	3,290.6	3,238.6	3,220.7	8.2	8.7	157.02	76.4	352.1	544.4	529.7	14.66	37.133		
3,400.0	3,390.1	3,336.2	3,317.6	8.4	9.0	157.01	80.0	364.6	565.8	550.6	15.13	37.388		
3,500.0	3,489.7	3,433.9	3,414.4	8.7	9.4	157.00	83.7	377.2	587.2	571.6	15.61	37.626		
3,600.0	3,589.2	3,531.6	3,511.2	9.0	9.7	156.99	87.3	389.7	608.6	592.5	16.08	37.849		
3,700.0	3,688.8	3,629.3	3,608.0	9.3	10.0	156.98	91.0	402.3	630.0	613.4	16.55	38.058		
3,800.0	3,788.4	3,727.0	3,704.8	9.6	10.3	156.98	94.6	414.8	651.3	634.3	17.03	38.255		
3,900.0	3,887.9	3,824.7	3,801.6	9.8	10.7	156.97	98.3	427.4	672.7	655.2	17.50	38.440		
4,000.0	3,987.5	3,922.3	3,898.4	10.1	11.0	156.96	101.9	439.9	694.1	676.2	17.98	38.614		
4,100.0	4,087.0	4,020.0	3,995.2	10.4	11.3	156.96	105.6	452.4	715.5	697.1	18.45	38.779		
4,200.0	4,186.6	4,117.7	4,092.0	10.7	11.6	156.95	109.2	465.0	736.9	718.0	18.93	38.935		
4,300.0	4,286.1	4,215.4	4,188.8	11.0	12.0	156.95	112.8	477.5	758.3	738.9	19.40	39.082		
4,400.0	4,385.7	4,313.1	4,285.6	11.3	12.3	156.94	116.5	490.1	779.7	759.8	19.88	39.222		
4,500.0	4,485.2	4,410.8	4,382.4	11.5	12.6	156.93	120.1	502.6	801.1	780.7	20.36	39.355		
4,600.0	4,584.8	4,508.5	4,479.2	11.8	12.9	156.93	123.8	515.2	822.5	801.7	20.83	39.481		
4,700.0	4,684.4	4,606.1	4,576.1	12.1	13.3	156.93	127.4	527.7	843.9	822.6	21.31	39.601		
4,800.0	4,783.9	4,703.8	4,672.9	12.4	13.6	156.92	131.1	540.2	865.3	843.5	21.79	39.716		
4,900.0	4,883.5	4,801.5	4,769.7	12.7	13.9	156.92	134.7	552.8	886.7	864.4	22.26	39.825		
5,000.0	4,983.0	4,899.2	4,866.5	13.0	14.2	156.91	138.4	565.3	908.1	885.3	22.74	39.929		

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-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design													Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-203 - Wellbore #1 - Plan #1 (12-03-1		Offset Site Error:		0.0 ft
Survey Program: 0-MWD															Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
5,100.0	5,082.6	4,996.9	4,963.3	13.2	14.6	156.91	142.0	577.9	929.4	906.2	23.22	40.029					
5,200.0	5,182.1	5,094.6	5,060.1	13.5	14.9	156.91	145.7	590.4	950.8	927.1	23.70	40.124					
5,300.0	5,281.7	5,211.8	5,176.4	13.8	15.2	156.98	149.9	604.9	971.4	947.2	24.22	40.101					
5,400.0	5,381.5	5,359.2	5,323.2	14.0	15.6	157.07	153.5	617.2	985.2	960.4	24.73	39.832					
5,500.0	5,481.5	5,508.5	5,472.3	14.1	15.8	157.11	154.9	622.3	990.8	965.6	25.20	39.319					
5,600.0	5,581.5	5,617.7	5,581.5	14.3	16.0	90.06	155.0	622.5	990.9	965.4	25.59	38.723					
5,700.0	5,681.5	5,717.7	5,681.5	14.5	16.1	90.06	155.0	622.5	990.9	965.0	25.99	38.125					
5,800.0	5,781.5	5,817.7	5,781.5	14.7	16.3	90.06	155.0	622.5	990.9	964.6	26.39	37.544					
5,900.0	5,881.5	5,917.7	5,881.5	14.9	16.5	90.06	155.0	622.5	990.9	964.2	26.80	36.977					
6,000.0	5,981.5	6,017.7	5,981.5	15.1	16.6	90.06	155.0	622.5	990.9	963.7	27.20	36.426					
6,056.5	6,038.0	6,074.1	6,038.0	15.2	16.7	90.06	155.0	622.5	990.9	963.5	27.43	36.121					
6,100.0	6,081.5	6,117.6	6,081.5	15.2	16.8	90.09	154.5	622.5	990.9	963.3	27.60	35.900					
6,200.0	6,181.5	6,216.3	6,179.6	15.4	16.9	90.67	144.5	622.5	991.0	963.1	27.96	35.449					
6,300.0	6,281.4	6,311.9	6,272.6	15.6	17.0	-88.27	122.8	622.5	991.4	963.2	28.24	35.104					
6,400.0	6,379.9	6,405.3	6,360.2	15.7	17.1	-87.21	90.6	622.5	992.2	963.7	28.46	34.866					
6,500.0	6,475.5	6,496.8	6,441.6	15.8	17.2	-86.21	48.9	622.5	993.2	964.5	28.64	34.672					
6,600.0	6,566.4	6,586.6	6,516.1	15.9	17.3	-85.27	-1.2	622.5	994.4	965.6	28.86	34.460					
6,700.0	6,651.1	6,675.0	6,583.2	16.0	17.4	-84.42	-58.7	622.5	995.8	966.6	29.17	34.142					
6,800.0	6,728.2	6,762.2	6,642.4	16.1	17.5	-83.65	-122.6	622.5	997.2	967.5	29.62	33.668					
6,900.0	6,796.3	6,850.0	6,694.3	16.3	17.8	-82.97	-193.3	622.5	998.5	968.2	30.29	32.968					
7,000.0	6,854.3	6,933.6	6,735.9	16.6	18.1	-82.41	-265.8	622.5	999.8	968.6	31.21	32.031					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-443 - Wellbore #1 - Plan #1 (12-03-1													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)	+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	90.02	0.0	58.6	58.6	58.6	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	90.02	0.0	58.6	58.6	58.4	0.23	258.176		
200.0	200.0	201.0	201.0	0.3	0.3	90.02	0.0	58.6	58.6	57.9	0.68	86.631		
300.0	300.0	301.0	301.0	0.6	0.6	90.02	0.0	58.6	58.6	57.5	1.13	52.048		
400.0	400.0	401.0	401.0	0.8	0.8	90.02	0.0	58.6	58.6	57.0	1.58	37.198		
500.0	500.0	501.0	501.0	1.0	1.0	90.02	0.0	58.6	58.6	56.6	2.03	28.941		
600.0	600.0	601.0	601.0	1.2	1.2	90.02	0.0	58.6	58.6	56.1	2.47	23.684		
700.0	700.0	701.0	701.0	1.5	1.5	90.02	0.0	58.6	58.6	55.7	2.92	20.043		
800.0	800.0	801.0	801.0	1.7	1.7	90.02	0.0	58.6	58.6	55.2	3.37	17.372		
900.0	900.0	901.0	901.0	1.9	1.9	90.02	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	90.02	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	157.70	0.0	58.6	60.2	55.5	4.71	12.778		
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	159.42	0.0	58.6	65.1	59.9	5.14	12.655		
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	161.74	0.0	58.6	73.2	67.6	5.57	13.125		
1,400.0	1,399.0	1,400.0	1,400.0	3.0	3.0	163.80	0.0	58.6	82.2	76.2	6.01	13.665		
1,500.0	1,498.6	1,499.6	1,499.6	3.3	3.3	165.45	0.0	58.6	91.3	84.8	6.45	14.139		
1,600.0	1,598.1	1,596.6	1,596.6	3.5	3.5	166.13	0.9	60.0	101.6	94.7	6.89	14.755		
1,700.0	1,697.7	1,693.1	1,693.0	3.8	3.7	165.56	3.6	64.0	114.5	107.1	7.32	15.640		
1,800.0	1,797.2	1,790.3	1,789.8	4.0	3.9	164.21	7.9	70.6	129.6	121.8	7.76	16.705		
1,900.0	1,896.8	1,889.0	1,888.2	4.3	4.1	162.99	12.7	77.7	145.2	137.0	8.20	17.705		
2,000.0	1,996.4	1,987.7	1,986.5	4.6	4.4	162.01	17.4	84.8	160.8	152.1	8.64	18.601		
2,100.0	2,095.9	2,086.5	2,084.9	4.8	4.6	161.20	22.1	91.9	176.5	167.4	9.09	19.405		
2,200.0	2,195.5	2,185.2	2,183.3	5.1	4.8	160.52	26.8	98.9	192.2	182.6	9.55	20.130		
2,300.0	2,295.0	2,283.9	2,281.6	5.4	5.1	159.95	31.5	106.0	207.9	197.9	10.00	20.786		
2,400.0	2,394.6	2,382.7	2,380.0	5.7	5.3	159.46	36.3	113.1	223.6	213.2	10.46	21.382		
2,500.0	2,494.1	2,481.4	2,478.4	5.9	5.6	159.03	41.0	120.2	239.4	228.5	10.92	21.925		
2,600.0	2,593.7	2,580.2	2,576.7	6.2	5.8	158.65	45.7	127.3	255.1	243.8	11.38	22.422		
2,700.0	2,693.2	2,678.9	2,675.1	6.5	6.1	158.32	50.4	134.4	270.9	259.1	11.84	22.878		
2,800.0	2,792.8	2,777.6	2,773.5	6.8	6.3	158.03	55.1	141.5	286.7	274.4	12.31	23.298		
2,900.0	2,892.4	2,876.4	2,871.8	7.0	6.6	157.76	59.8	148.6	302.5	289.7	12.77	23.685		
3,000.0	2,991.9	2,975.1	2,970.2	7.3	6.8	157.52	64.6	155.7	318.3	305.0	13.24	24.044		
3,100.0	3,091.5	3,073.8	3,068.6	7.6	7.1	157.31	69.3	162.8	334.1	320.4	13.70	24.377		
3,200.0	3,191.0	3,172.6	3,167.0	7.9	7.3	157.11	74.0	169.9	349.9	335.7	14.17	24.687		
3,300.0	3,290.6	3,271.3	3,265.3	8.2	7.6	156.93	78.7	177.0	365.7	351.0	14.64	24.976		
3,400.0	3,390.1	3,370.0	3,363.7	8.4	7.9	156.77	83.4	184.0	381.5	366.4	15.11	25.246		
3,500.0	3,489.7	3,468.8	3,462.1	8.7	8.1	156.62	88.2	191.1	397.3	381.7	15.58	25.498		
3,600.0	3,589.2	3,567.5	3,560.4	9.0	8.4	156.48	92.9	198.2	413.1	397.1	16.05	25.736		
3,700.0	3,688.8	3,666.3	3,658.8	9.3	8.6	156.35	97.6	205.3	428.9	412.4	16.52	25.958		
3,800.0	3,788.4	3,765.0	3,757.2	9.6	8.9	156.23	102.3	212.4	444.7	427.7	17.00	26.168		
3,900.0	3,887.9	3,863.7	3,855.5	9.8	9.2	156.11	107.0	219.5	460.6	443.1	17.47	26.366		
4,000.0	3,987.5	3,962.5	3,953.9	10.1	9.4	156.01	111.7	226.6	476.4	458.4	17.94	26.553		
4,100.0	4,087.0	4,061.2	4,052.3	10.4	9.7	155.91	116.5	233.7	492.2	473.8	18.41	26.730		
4,200.0	4,186.6	4,159.9	4,150.6	10.7	10.0	155.82	121.2	240.8	508.0	489.1	18.89	26.898		
4,300.0	4,286.1	4,258.7	4,249.0	11.0	10.2	155.73	125.9	247.9	523.9	504.5	19.36	27.056		
4,400.0	4,385.7	4,357.4	4,347.4	11.3	10.5	155.65	130.6	255.0	539.7	519.8	19.84	27.207		
4,500.0	4,485.2	4,456.2	4,445.7	11.5	10.8	155.58	135.3	262.1	555.5	535.2	20.31	27.351		
4,600.0	4,584.8	4,554.9	4,544.1	11.8	11.0	155.50	140.1	269.1	571.3	550.6	20.79	27.487		
4,700.0	4,684.4	4,653.6	4,642.5	12.1	11.3	155.44	144.8	276.2	587.2	565.9	21.26	27.618		
4,800.0	4,783.9	4,752.4	4,740.9	12.4	11.6	155.37	149.5	283.3	603.0	581.3	21.74	27.742		
4,900.0	4,883.5	4,870.5	4,858.7	12.7	11.8	155.40	154.1	290.2	617.5	595.3	22.21	27.801		
5,000.0	4,983.0	4,992.2	4,980.4	13.0	12.0	155.67	155.9	293.0	628.4	605.7	22.67	27.726		

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-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design		Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-443 - Wellbore #1 - Plan #1 (12-03-1										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,100.0	5,082.6	5,095.4	5,083.6	13.2	12.2	156.02	156.0	293.1	637.1	614.0	23.10	27.582		
5,200.0	5,182.1	5,195.0	5,183.1	13.5	12.4	156.36	156.0	293.1	645.7	622.1	23.54	27.426		
5,300.0	5,281.7	5,294.6	5,282.7	13.8	12.6	156.71	156.0	293.1	653.9	629.9	24.00	27.249		
5,400.0	5,381.5	5,394.4	5,382.5	14.0	12.8	156.95	156.0	293.1	659.3	634.9	24.42	27.003		
5,500.0	5,481.5	5,494.4	5,482.5	14.1	13.0	157.05	156.0	293.1	661.5	636.7	24.81	26.666		
5,600.0	5,581.5	5,594.4	5,582.5	14.3	13.2	90.00	156.0	293.1	661.6	636.4	25.21	26.247		
5,700.0	5,681.5	5,694.4	5,682.5	14.5	13.4	90.00	156.0	293.1	661.6	635.9	25.62	25.821		
5,800.0	5,781.5	5,794.4	5,782.5	14.7	13.6	90.00	156.0	293.1	661.6	635.5	26.04	25.408		
5,900.0	5,881.5	5,894.4	5,882.5	14.9	13.8	90.00	156.0	293.1	661.6	635.1	26.46	25.006		
6,000.0	5,981.5	5,994.4	5,982.5	15.1	14.0	90.00	156.0	293.1	661.6	634.7	26.88	24.616		
6,100.0	6,081.5	6,094.4	6,082.5	15.2	14.2	90.00	156.0	293.1	661.6	634.3	27.30	24.237		
6,200.0	6,181.5	6,194.4	6,182.5	15.4	14.4	90.00	156.0	293.1	661.6	633.8	27.72	23.869		
6,300.0	6,281.4	6,294.4	6,282.4	15.6	14.6	-89.99	152.0	293.1	661.6	633.5	28.07	23.571		
6,400.0	6,379.9	6,394.3	6,380.9	15.7	14.7	-89.98	135.3	293.1	661.6	633.3	28.31	23.368		
6,500.0	6,475.5	6,494.3	6,476.4	15.8	14.8	-89.97	106.0	293.1	661.6	633.1	28.50	23.211		
6,600.0	6,566.4	6,594.3	6,567.2	15.9	14.9	-89.96	64.4	293.1	661.6	632.9	28.69	23.057		
6,700.0	6,651.1	6,694.2	6,651.8	16.0	15.0	-89.95	11.3	293.1	661.6	632.6	28.95	22.849		
6,800.0	6,728.2	6,794.1	6,728.7	16.1	15.2	-89.94	-52.3	293.1	661.6	632.2	29.36	22.530		
6,900.0	6,796.3	6,894.0	6,796.7	16.3	15.4	-89.93	-125.4	293.1	661.6	631.6	30.00	22.050		
7,000.0	6,854.3	6,993.9	6,854.6	16.6	15.8	-89.93	-206.7	293.1	661.6	630.6	30.94	21.384		
7,100.0	6,901.2	7,093.8	6,901.3	17.1	16.4	-89.92	-294.9	293.1	661.6	629.4	32.21	20.540		
7,200.0	6,936.1	7,193.7	6,936.2	17.8	17.2	-89.92	-388.4	293.1	661.6	627.7	33.83	19.558		
7,300.0	6,958.5	7,293.5	6,958.6	18.7	18.1	-89.91	-485.7	293.1	661.6	625.8	35.77	18.495		
7,400.0	6,970.2	7,393.5	6,970.2	19.8	19.2	-89.91	-584.9	293.1	661.6	623.6	38.00	17.411		
7,500.0	6,977.6	7,493.4	6,977.7	21.0	20.5	-89.91	-684.6	293.1	661.6	621.1	40.46	16.352		
7,600.0	6,978.4	7,593.4	6,978.4	22.3	21.8	-89.91	-784.5	293.1	661.6	618.5	43.11	15.348		
7,700.0	6,978.5	7,693.4	6,978.5	23.7	23.2	-89.91	-884.5	293.1	661.6	615.6	45.92	14.406		
7,800.0	6,978.7	7,793.4	6,978.7	25.1	24.6	-89.91	-984.5	293.1	661.6	612.7	48.88	13.535		
7,900.0	6,978.9	7,893.4	6,978.9	26.6	26.2	-89.91	-1,084.5	293.1	661.6	609.6	51.95	12.734		
8,000.0	6,979.0	7,993.4	6,979.1	28.2	27.7	-89.91	-1,184.5	293.1	661.6	606.4	55.12	12.002		
8,100.0	6,979.2	8,093.4	6,979.2	29.8	29.4	-89.91	-1,284.5	293.1	661.6	603.2	58.37	11.334		
8,200.0	6,979.4	8,193.4	6,979.4	31.4	31.0	-89.91	-1,384.5	293.1	661.6	599.9	61.68	10.725		
8,300.0	6,979.6	8,293.4	6,979.6	33.0	32.7	-89.91	-1,484.5	293.1	661.6	596.5	65.06	10.169		
8,400.0	6,979.7	8,393.4	6,979.8	34.7	34.4	-89.91	-1,584.5	293.1	661.6	593.1	68.48	9.661		
8,500.0	6,979.9	8,493.4	6,979.9	36.4	36.1	-89.91	-1,684.5	293.1	661.6	589.6	71.95	9.195		
8,600.0	6,980.1	8,593.4	6,980.1	38.2	37.9	-89.91	-1,784.5	293.1	661.6	586.1	75.45	8.769		
8,700.0	6,980.3	8,693.4	6,980.3	39.9	39.6	-89.91	-1,884.5	293.1	661.6	582.6	78.98	8.376		
8,800.0	6,980.4	8,793.4	6,980.5	41.7	41.4	-89.91	-1,984.5	293.1	661.6	579.0	82.54	8.015		
8,900.0	6,980.6	8,893.4	6,980.6	43.5	43.2	-89.91	-2,084.5	293.1	661.6	575.4	86.12	7.682		
9,000.0	6,980.8	8,993.4	6,980.8	45.2	45.0	-89.91	-2,184.5	293.1	661.6	571.8	89.73	7.373		
9,100.0	6,981.0	9,093.4	6,981.0	47.0	46.8	-89.91	-2,284.5	293.1	661.6	568.2	93.35	7.087		
9,200.0	6,981.1	9,193.4	6,981.2	48.9	48.6	-89.91	-2,384.5	293.1	661.6	564.6	96.99	6.821		
9,300.0	6,981.3	9,293.4	6,981.3	50.7	50.4	-89.91	-2,484.5	293.1	661.6	560.9	100.65	6.573		
9,400.0	6,981.5	9,393.4	6,981.5	52.5	52.3	-89.91	-2,584.5	293.1	661.6	557.3	104.31	6.342		
9,500.0	6,981.7	9,493.4	6,981.7	54.3	54.1	-89.91	-2,684.5	293.1	661.6	553.6	107.99	6.126		
9,600.0	6,981.8	9,593.4	6,981.8	56.2	55.9	-89.91	-2,784.5	293.1	661.6	549.9	111.68	5.924		
9,700.0	6,982.0	9,693.4	6,982.0	58.0	57.8	-89.91	-2,884.5	293.1	661.6	546.2	115.38	5.734		
9,800.0	6,982.2	9,793.4	6,982.2	59.8	59.6	-89.91	-2,984.5	293.1	661.6	542.5	119.09	5.555		
9,900.0	6,982.4	9,893.4	6,982.4	61.7	61.5	-89.91	-3,084.5	293.1	661.6	538.8	122.81	5.387		
10,000.0	6,982.5	9,993.4	6,982.5	63.5	63.3	-89.91	-3,184.5	293.1	661.6	535.0	126.53	5.228		
10,100.0	6,982.7	10,093.4	6,982.7	65.4	65.2	-89.91	-3,284.5	293.1	661.6	531.3	130.26	5.079		

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-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design										Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-443 - Wellbore #1 - Plan #1 (12-03-1				Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis		Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
10,200.0	6,982.9	10,193.4	6,982.9	67.3	67.1	-89.91	-3,384.5	293.1	661.6	527.6	134.00	4.937				
10,300.0	6,983.1	10,293.4	6,983.1	69.1	68.9	-89.91	-3,484.5	293.1	661.6	523.8	137.74	4.803				
10,400.0	6,983.2	10,393.4	6,983.2	71.0	70.8	-89.91	-3,584.5	293.1	661.6	520.1	141.49	4.676				
10,500.0	6,983.4	10,493.4	6,983.4	72.9	72.7	-89.91	-3,684.5	293.1	661.6	516.3	145.24	4.555				
10,600.0	6,983.6	10,593.4	6,983.6	74.7	74.6	-89.91	-3,784.5	293.1	661.6	512.6	149.00	4.440				
10,700.0	6,983.8	10,693.4	6,983.8	76.6	76.4	-89.91	-3,884.5	293.1	661.6	508.8	152.76	4.331				
10,800.0	6,983.9	10,793.4	6,983.9	78.5	78.3	-89.91	-3,984.5	293.1	661.6	505.0	156.53	4.227				
10,900.0	6,984.1	10,893.4	6,984.1	80.4	80.2	-89.91	-4,084.5	293.1	661.6	501.3	160.29	4.127				
11,000.0	6,984.3	10,993.4	6,984.3	82.3	82.1	-89.91	-4,184.5	293.1	661.6	497.5	164.07	4.032				
11,100.0	6,984.5	11,093.4	6,984.5	84.1	84.0	-89.91	-4,284.5	293.1	661.6	493.7	167.84	3.942				
11,200.0	6,984.6	11,193.4	6,984.6	86.0	85.9	-89.91	-4,384.5	293.1	661.6	489.9	171.62	3.855				
11,300.0	6,984.8	11,293.4	6,984.8	87.9	87.8	-89.91	-4,484.5	293.1	661.6	486.2	175.40	3.772				
11,400.0	6,985.0	11,393.4	6,985.0	89.4	89.6	-89.91	-4,584.5	293.1	661.6	482.7	178.82	3.700				
11,400.0	6,985.0	11,393.4	6,985.0	89.4	89.6	-89.91	-4,584.5	293.1	661.6	482.7	178.82	3.700				
11,409.3	6,985.0	11,399.1	6,985.0	89.6	89.8	-89.91	-4,590.2	293.1	661.6	482.5	179.07	3.694 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 12-10I (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	6,979.6	6,932.6	6,932.6	33.0	138.7	89.42	-2,440.8	-533.1	970.4	799.2	171.22	5.668	
8,400.0	6,979.7	6,932.7	6,932.7	34.7	138.7	89.48	-2,440.8	-533.1	872.0	699.1	172.93	5.043	
8,500.0	6,979.9	6,932.9	6,932.9	36.4	138.7	89.54	-2,440.8	-533.1	774.0	599.4	174.67	4.432	
8,600.0	6,980.1	6,933.1	6,933.1	38.2	138.7	89.60	-2,440.8	-533.1	676.7	500.2	176.42	3.836	
8,700.0	6,980.3	6,933.3	6,933.3	39.9	138.7	89.66	-2,440.8	-533.1	580.2	402.0	178.19	3.256	
8,800.0	6,980.4	6,933.4	6,933.4	41.7	138.7	89.72	-2,440.8	-533.1	485.1	305.1	179.97	2.696	
8,900.0	6,980.6	6,933.6	6,933.6	43.5	138.7	89.78	-2,440.8	-533.1	392.5	210.8	181.76	2.160	
9,000.0	6,980.8	6,933.8	6,933.8	45.2	138.7	89.84	-2,440.8	-533.1	304.6	121.1	183.57	1.660	
9,100.0	6,981.0	6,934.0	6,934.0	47.0	138.7	89.91	-2,440.8	-533.1	227.0	41.7	185.38	1.225 Level 2	
9,200.0	6,981.1	6,934.1	6,934.1	48.9	138.7	89.97	-2,440.8	-533.1	174.0	-13.2	187.20	0.930 Level 1	
9,256.3	6,981.2	6,934.2	6,934.2	49.9	138.7	90.00	-2,440.8	-533.1	164.6	-23.6	188.23	0.875 Level 1, CC, ES, SF	
9,300.0	6,981.3	6,934.3	6,934.3	50.7	138.7	90.03	-2,440.8	-533.1	170.3	-18.7	189.03	0.901 Level 1	
9,400.0	6,981.5	6,934.5	6,934.5	52.5	138.7	90.09	-2,440.8	-533.1	218.5	27.7	190.87	1.145 Level 2	
9,500.0	6,981.7	6,934.7	6,934.7	54.3	138.7	90.15	-2,440.8	-533.1	294.1	101.4	192.71	1.526	
9,600.0	6,981.8	6,934.8	6,934.8	56.2	138.7	90.21	-2,440.8	-533.1	381.1	186.5	194.55	1.959	
9,700.0	6,982.0	6,935.0	6,935.0	58.0	138.7	90.27	-2,440.8	-533.1	473.2	276.8	196.40	2.410	
9,800.0	6,982.2	6,935.2	6,935.2	59.8	138.7	90.33	-2,440.8	-533.1	568.1	369.8	198.26	2.865	
9,900.0	6,982.4	6,935.4	6,935.4	61.7	138.7	90.39	-2,440.8	-533.1	664.4	464.3	200.12	3.320	
10,000.0	6,982.5	6,935.5	6,935.5	63.5	138.7	90.45	-2,440.8	-533.1	761.7	559.7	201.98	3.771	
10,100.0	6,982.7	6,935.7	6,935.7	65.4	138.7	90.51	-2,440.8	-533.1	859.6	655.7	203.85	4.217	
10,200.0	6,982.9	6,935.9	6,935.9	67.3	138.7	90.57	-2,440.8	-533.1	957.9	752.2	205.71	4.657	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	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	
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)		Minimum Separation (ft)	Separation Factor
9,600.0	6,981.8	6,927.8	6,927.8	56.2	138.6	89.52	-3,737.7	-566.6	973.6	779.2	194.42	5.008	
9,700.0	6,982.0	6,928.0	6,928.0	58.0	138.6	89.57	-3,737.7	-566.6	875.9	679.7	196.28	4.463	
9,800.0	6,982.2	6,928.2	6,928.2	59.8	138.6	89.62	-3,737.7	-566.6	778.9	580.7	198.13	3.931	
9,900.0	6,982.4	6,928.4	6,928.4	61.7	138.6	89.67	-3,737.7	-566.6	682.6	482.6	199.99	3.413	
10,000.0	6,982.5	6,928.5	6,928.5	63.5	138.6	89.72	-3,737.7	-566.6	587.7	385.8	201.86	2.911	
10,100.0	6,982.7	6,928.7	6,928.7	65.4	138.6	89.77	-3,737.7	-566.6	494.7	290.9	203.73	2.428	
10,200.0	6,982.9	6,928.9	6,928.9	67.3	138.6	89.82	-3,737.7	-566.6	405.0	199.4	205.60	1.970	
10,300.0	6,983.1	6,929.1	6,929.1	69.1	138.6	89.87	-3,737.7	-566.6	321.6	114.1	207.47	1.550	
10,400.0	6,983.2	6,929.2	6,929.2	71.0	138.6	89.92	-3,737.7	-566.6	250.5	41.2	209.35	1.197 Level 2	
10,500.0	6,983.4	6,929.4	6,929.4	72.9	138.6	89.97	-3,737.7	-566.6	205.2	-6.0	211.23	0.971 Level 1	
10,553.2	6,983.5	6,929.5	6,929.5	73.9	138.6	90.00	-3,737.7	-566.6	198.2	-14.1	212.23	0.934 Level 1, CC, ES, SF	
10,600.0	6,983.6	6,929.6	6,929.6	74.7	138.6	90.02	-3,737.7	-566.6	203.6	-9.5	213.11	0.955 Level 1	
10,700.0	6,983.8	6,929.8	6,929.8	76.6	138.6	90.07	-3,737.7	-566.6	246.6	31.6	214.99	1.147 Level 2	
10,800.0	6,983.9	6,929.9	6,929.9	78.5	138.6	90.12	-3,737.7	-566.6	316.5	99.6	216.87	1.459 Level 3	
10,900.0	6,984.1	6,930.1	6,930.1	80.4	138.6	90.17	-3,737.7	-566.6	399.4	180.6	218.76	1.826	
11,000.0	6,984.3	6,930.3	6,930.3	82.3	138.6	90.23	-3,737.7	-566.6	488.7	268.1	220.65	2.215	
11,100.0	6,984.5	6,930.5	6,930.5	84.1	138.6	90.28	-3,737.7	-566.6	581.6	359.0	222.54	2.613	
11,200.0	6,984.6	6,930.6	6,930.6	86.0	138.6	90.33	-3,737.7	-566.6	676.4	452.0	224.43	3.014	
11,300.0	6,984.8	6,930.8	6,930.8	87.9	138.6	90.38	-3,737.7	-566.6	772.6	546.3	226.32	3.414	
11,400.0	6,985.0	6,931.0	6,931.0	89.4	138.6	90.43	-3,737.7	-566.6	869.6	641.8	227.85	3.817	
11,409.3	6,985.0	6,931.0	6,931.0	89.6	138.6	90.43	-3,737.7	-566.6	878.7	650.7	228.00	3.854	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Sec.5-T3N-R64W - Becker 8 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,000.0	6,854.3	6,837.3	6,837.3	16.6	136.7	18.01	-1,136.6	-527.5	943.8	852.2	91.63	10.300		
7,100.0	6,901.2	6,884.2	6,884.2	17.1	137.7	24.72	-1,136.6	-527.5	857.0	768.6	88.35	9.700		
7,200.0	6,936.1	6,919.1	6,919.1	17.8	138.4	36.45	-1,136.6	-527.5	765.2	664.3	100.89	7.584		
7,300.0	6,958.5	6,941.5	6,941.5	18.7	138.8	56.73	-1,136.6	-527.5	670.2	537.4	132.80	5.047		
7,400.0	6,970.2	6,953.2	6,953.2	19.8	139.1	70.07	-1,136.6	-527.5	574.3	425.0	149.26	3.847		
7,500.0	6,977.6	6,960.6	6,960.6	21.0	139.2	84.76	-1,136.6	-527.5	479.3	320.3	158.94	3.015		
7,600.0	6,978.4	6,961.4	6,961.4	22.3	139.2	89.78	-1,136.6	-527.5	386.4	225.5	160.83	2.402		
7,700.0	6,978.5	6,961.5	6,961.5	23.7	139.2	89.84	-1,136.6	-527.5	298.1	135.8	162.24	1.837		
7,800.0	6,978.7	6,961.7	6,961.7	25.1	139.2	89.90	-1,136.6	-527.5	220.1	56.4	163.72	1.344 Level 3		
7,900.0	6,978.9	6,961.9	6,961.9	26.6	139.2	89.97	-1,136.6	-527.5	167.4	2.1	165.25	1.013 Level 2		
7,952.1	6,979.0	6,962.0	6,962.0	27.4	139.2	90.00	-1,136.6	-527.5	159.0	-7.0	166.08	0.958 Level 1, CC, ES, SF		
8,000.0	6,979.0	6,962.0	6,962.0	28.2	139.2	90.03	-1,136.6	-527.5	166.1	-0.7	166.84	0.996 Level 1		
8,100.0	6,979.2	6,962.2	6,962.2	29.8	139.2	90.09	-1,136.6	-527.5	217.2	48.7	168.46	1.289 Level 3		
8,200.0	6,979.4	6,962.4	6,962.4	31.4	139.2	90.16	-1,136.6	-527.5	294.5	124.4	170.12	1.731		
8,300.0	6,979.6	6,962.6	6,962.6	33.0	139.3	90.22	-1,136.6	-527.5	382.5	210.7	171.81	2.226		
8,400.0	6,979.7	6,962.7	6,962.7	34.7	139.3	90.28	-1,136.6	-527.5	475.3	301.8	173.52	2.739		
8,500.0	6,979.9	6,962.9	6,962.9	36.4	139.3	90.34	-1,136.6	-527.5	570.5	395.3	175.25	3.255		
8,600.0	6,980.1	6,963.1	6,963.1	38.2	139.3	90.41	-1,136.6	-527.5	667.1	490.1	177.00	3.769		
8,700.0	6,980.3	6,963.3	6,963.3	39.9	139.3	90.47	-1,136.6	-527.5	764.6	585.8	178.77	4.277		
8,800.0	6,980.4	6,963.4	6,963.4	41.7	139.3	90.53	-1,136.6	-527.5	862.7	682.1	180.55	4.778		
8,900.0	6,980.6	6,963.6	6,963.6	43.5	139.3	90.60	-1,136.6	-527.5	961.1	778.8	182.34	5.271		

Reference Depths are relative to WELL @ 4798.0ft (RKB - 15')	Coordinates are relative to: Becker Ranch 5R-403
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.60°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5R-403
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4798.0ft (RKB - 15')
Reference Site:	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4798.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5R-403	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 (12-03-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4798.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Becker Ranch 5R-403
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°

