PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Honebein 7K-223**

Surface Location: Honebein 4N64W7K Pad Sec.7-T4N-R64W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

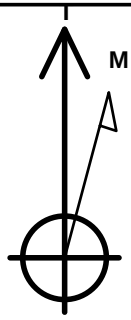
Ground Elevation: 4850.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1362858.46	3251709.52	40.325930	-104.597200	

RKB - 15' WELL @ 4865.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2352'FSL & 1350'FWL, Sec.7	1.0	0.0	0.0	Point
BHL 2141'FNL & 1554'FWL, Sec.18	6917.0	-4488.2	189.6	Point



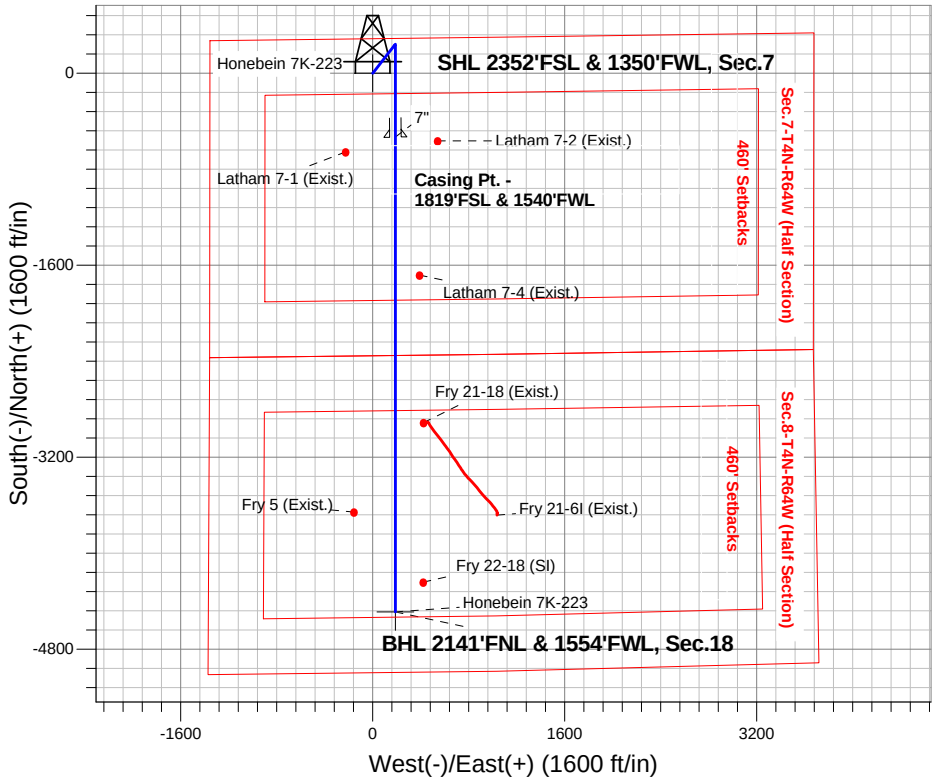
Azimuths to True North
Magnetic North: 8.34°

Magnetic Field
Strength: 52774.6snT
Dip Angle: 66.91°
Date: 8/20/2014
Model: IGRF2010

Honebein 4N64W7K Pad Sec.7-T4N-R64W
Honebein 7K-223
Plan #1 (8-15-14)
14:28, August 21 2014

ANNOTATIONS

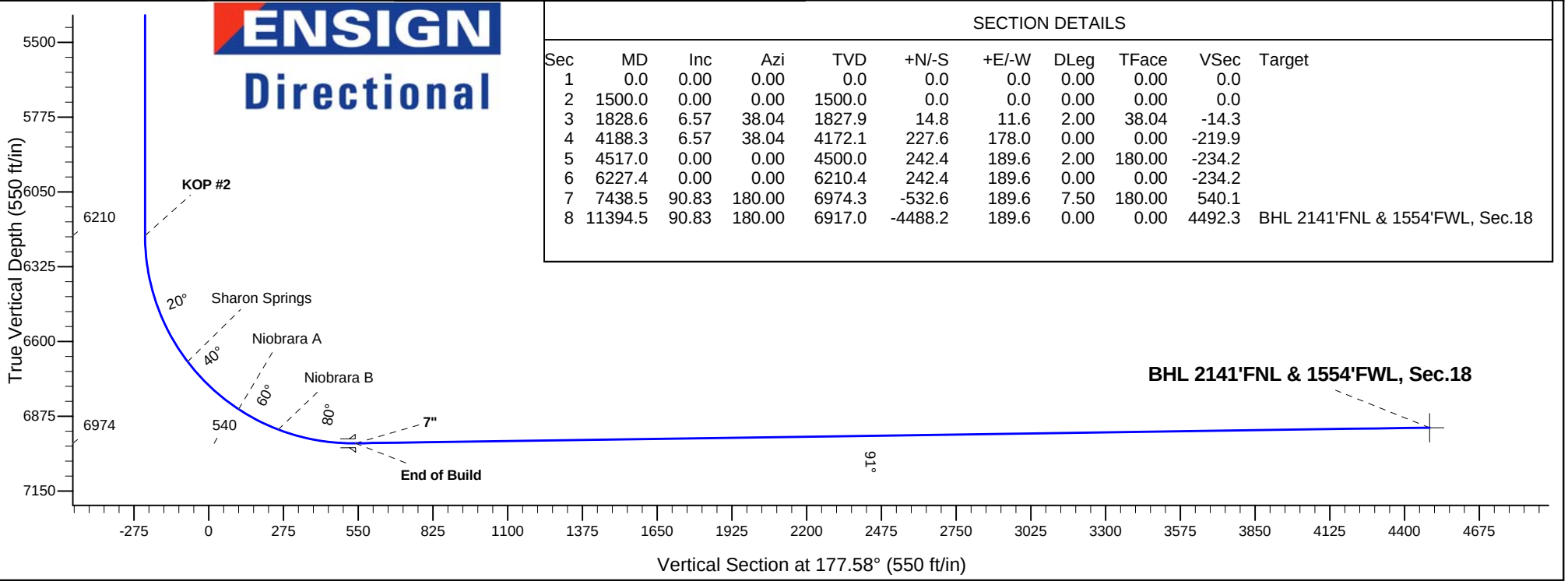
TVD	MD	Annotation
1500.0	1500.0	KOP #1
6210.4	6227.4	KOP #2
6974.3	7438.5	End of Build



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1828.6	6.57	38.04	1827.9	14.8	11.6	2.00	38.04	-14.3	
4	4188.3	6.57	38.04	4172.1	227.6	178.0	0.00	0.00	-219.9	
5	4517.0	0.00	0.00	4500.0	242.4	189.6	2.00	180.00	-234.2	
6	6227.4	0.00	0.00	6210.4	242.4	189.6	0.00	0.00	-234.2	
7	7438.5	90.83	180.00	6974.3	-532.6	189.6	7.50	180.00	540.1	
8	11394.5	90.83	180.00	6917.0	-4488.2	189.6	0.00	0.00	4492.3	BHL 2141'FNL & 1554'FWL, Sec.18



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.7-T4N-R64W
Honebein 4N64W7K Pad Sec.7-T4N-R64W
Honebein 7K-223

Wellbore #1

Plan: Plan #1 (8-15-14)

Standard Planning Report

21 August, 2014

Database:	Landmark	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Project:	SEC.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**North Reference:**	True
Well:	Honebein 7K-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-15-14)		

Project	SEC.7-T4N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Honebein 4N64W7K Pad Sec.7-T4N-R64W				
Site Position:		**Northing:**	1,362,857.25 ft	**Latitude:**	40.325930
From:	Lat/Long	**Easting:**	3,251,589.63 ft	**Longitude:**	-104.597630
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.58 °

Well	Honebein 7K-223					
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,362,858.46 ft	**Latitude:**	40.325930
	+E/-W	119.9 ft	**Easting:**	3,251,709.52 ft	**Longitude:**	-104.597200
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,850.0 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	8/20/2014	8.34	66.91	52,775

Design	Plan #1 (8-15-14)				
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	177.58	

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,828.6	6.57	38.04	1,827.9	14.8	11.6	2.00	2.00	0.00	38.04	
4,188.3	6.57	38.04	4,172.1	227.6	178.0	0.00	0.00	0.00	0.00	
4,517.0	0.00	0.00	4,500.0	242.4	189.6	2.00	-2.00	0.00	180.00	
6,227.4	0.00	0.00	6,210.4	242.4	189.6	0.00	0.00	0.00	0.00	
7,438.5	90.83	180.00	6,974.3	-532.6	189.6	7.50	7.50	0.00	180.00	
11,394.5	90.83	180.00	6,917.0	-4,488.2	189.6	0.00	0.00	0.00	0.00	BHL 2141'FNL & 15

Database:	Landmark	**Local Co-ordinate Reference:**	Well Honebein 7K-223
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Project:	SEC.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**North Reference:**	True
Well:	Honebein 7K-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-15-14)		

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 2352'FSL & 1350'FWL, Sec.7									
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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,600.0	2.00	38.04	1,600.0	1.4	1.1	-1.3	2.00	2.00	0.00
1,700.0	4.00	38.04	1,699.8	5.5	4.3	-5.3	2.00	2.00	0.00
1,800.0	6.00	38.04	1,799.5	12.4	9.7	-11.9	2.00	2.00	0.00
1,828.6	6.57	38.04	1,827.9	14.8	11.6	-14.3	2.00	2.00	0.00
1,900.0	6.57	38.04	1,898.8	21.3	16.6	-20.5	0.00	0.00	0.00
2,000.0	6.57	38.04	1,998.2	30.3	23.7	-29.3	0.00	0.00	0.00
2,100.0	6.57	38.04	2,097.5	39.3	30.7	-38.0	0.00	0.00	0.00
2,200.0	6.57	38.04	2,196.8	48.3	37.8	-46.7	0.00	0.00	0.00
2,300.0	6.57	38.04	2,296.2	57.3	44.8	-55.4	0.00	0.00	0.00
2,400.0	6.57	38.04	2,395.5	66.3	51.9	-64.1	0.00	0.00	0.00
2,500.0	6.57	38.04	2,494.9	75.4	59.0	-72.8	0.00	0.00	0.00
2,600.0	6.57	38.04	2,594.2	84.4	66.0	-81.5	0.00	0.00	0.00
2,700.0	6.57	38.04	2,693.6	93.4	73.1	-90.2	0.00	0.00	0.00
2,800.0	6.57	38.04	2,792.9	102.4	80.1	-98.9	0.00	0.00	0.00
2,900.0	6.57	38.04	2,892.2	111.4	87.2	-107.6	0.00	0.00	0.00
3,000.0	6.57	38.04	2,991.6	120.4	94.2	-116.4	0.00	0.00	0.00
3,100.0	6.57	38.04	3,090.9	129.5	101.3	-125.1	0.00	0.00	0.00
3,200.0	6.57	38.04	3,190.3	138.5	108.3	-133.8	0.00	0.00	0.00
3,300.0	6.57	38.04	3,289.6	147.5	115.4	-142.5	0.00	0.00	0.00
3,400.0	6.57	38.04	3,389.0	156.5	122.4	-151.2	0.00	0.00	0.00
3,500.0	6.57	38.04	3,488.3	165.5	129.5	-159.9	0.00	0.00	0.00
3,600.0	6.57	38.04	3,587.6	174.5	136.5	-168.6	0.00	0.00	0.00
3,700.0	6.57	38.04	3,687.0	183.5	143.6	-177.3	0.00	0.00	0.00
3,737.3	6.57	38.04	3,724.0	186.9	146.2	-180.6	0.00	0.00	0.00
Parkman									
3,800.0	6.57	38.04	3,786.3	192.6	150.6	-186.0	0.00	0.00	0.00
3,900.0	6.57	38.04	3,885.7	201.6	157.7	-194.7	0.00	0.00	0.00
4,000.0	6.57	38.04	3,985.0	210.6	164.8	-203.4	0.00	0.00	0.00
4,100.0	6.57	38.04	4,084.3	219.6	171.8	-212.2	0.00	0.00	0.00
4,188.3	6.57	38.04	4,172.1	227.6	178.0	-219.9	0.00	0.00	0.00
4,200.0	6.34	38.04	4,183.7	228.6	178.8	-220.9	2.00	-2.00	0.00
4,300.0	4.34	38.04	4,283.3	235.9	184.6	-227.9	2.00	-2.00	0.00
4,400.0	2.34	38.04	4,383.1	240.5	188.2	-232.4	2.00	-2.00	0.00
4,466.9	1.00	38.04	4,450.0	242.1	189.4	-233.8	2.00	-2.00	0.00

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Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**North Reference:**	True
Well:	Honebein 7K-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-15-14)		

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)
Sussex									
4,500.0	0.34	38.04	4,483.0	242.4	189.6	-234.1	2.00	-2.00	0.00
4,517.0	0.00	0.00	4,500.0	242.4	189.6	-234.2	2.00	-2.00	0.00
4,600.0	0.00	0.00	4,583.0	242.4	189.6	-234.2	0.00	0.00	0.00
4,700.0	0.00	0.00	4,683.0	242.4	189.6	-234.2	0.00	0.00	0.00
4,800.0	0.00	0.00	4,783.0	242.4	189.6	-234.2	0.00	0.00	0.00
4,900.0	0.00	0.00	4,883.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,000.0	0.00	0.00	4,983.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,100.0	0.00	0.00	5,083.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,183.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,257.0	0.00	0.00	5,240.0	242.4	189.6	-234.2	0.00	0.00	0.00
Shannon									
5,300.0	0.00	0.00	5,283.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,383.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,483.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,583.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,683.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,783.0	242.4	189.6	-234.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,883.0	242.4	189.6	-234.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,983.0	242.4	189.6	-234.2	0.00	0.00	0.00
6,100.0	0.00	0.00	6,083.0	242.4	189.6	-234.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,183.0	242.4	189.6	-234.2	0.00	0.00	0.00
6,227.4	0.00	0.00	6,210.4	242.4	189.6	-234.2	0.00	0.00	0.00
KOP #2									
6,300.0	5.45	180.00	6,282.9	239.0	189.6	-230.7	7.50	7.50	0.00
6,400.0	12.95	180.00	6,381.6	223.0	189.6	-214.8	7.50	7.50	0.00
6,500.0	20.45	180.00	6,477.3	194.3	189.6	-186.1	7.50	7.50	0.00
6,600.0	27.95	180.00	6,568.5	153.3	189.6	-145.2	7.50	7.50	0.00
6,700.0	35.45	180.00	6,653.5	100.8	189.6	-92.7	7.50	7.50	0.00
6,725.5	37.36	180.00	6,674.0	85.7	189.6	-77.6	7.50	7.50	0.00
Sharon Springs									
6,800.0	42.95	180.00	6,730.9	37.7	189.6	-29.6	7.50	7.50	0.00
6,900.0	50.45	180.00	6,799.5	-35.1	189.6	43.0	7.50	7.50	0.00
6,983.5	56.71	180.00	6,849.0	-102.2	189.6	110.1	7.50	7.50	0.00
Niobrara A									
7,000.0	57.95	180.00	6,857.9	-116.1	189.6	124.0	7.50	7.50	0.00
7,100.0	65.45	180.00	6,905.3	-204.1	189.6	211.9	7.50	7.50	0.00
7,148.4	69.07	180.00	6,924.0	-248.7	189.6	256.5	7.50	7.50	0.00
Niobrara B									
7,200.0	72.95	180.00	6,940.8	-297.5	189.6	305.2	7.50	7.50	0.00
7,300.0	80.45	180.00	6,963.8	-394.7	189.6	402.4	7.50	7.50	0.00
7,400.0	87.95	180.00	6,973.9	-494.2	189.6	501.7	7.50	7.50	0.00
7,438.5	90.83	180.00	6,974.3	-532.7	189.6	540.2	7.49	7.49	0.00
End of Build - 7"									
7,500.0	90.83	180.00	6,973.4	-594.1	189.6	601.6	0.00	0.00	0.00
7,600.0	90.83	180.00	6,972.0	-694.1	189.6	701.5	0.00	0.00	0.00
7,700.0	90.83	180.00	6,970.5	-794.1	189.6	801.4	0.00	0.00	0.00
7,800.0	90.83	180.00	6,969.1	-894.1	189.6	901.3	0.00	0.00	0.00
7,900.0	90.83	180.00	6,967.6	-994.1	189.6	1,001.2	0.00	0.00	0.00
8,000.0	90.83	180.00	6,966.2	-1,094.1	189.6	1,101.1	0.00	0.00	0.00
8,100.0	90.83	180.00	6,964.7	-1,194.1	189.6	1,201.0	0.00	0.00	0.00
8,200.0	90.83	180.00	6,963.3	-1,294.1	189.6	1,300.9	0.00	0.00	0.00

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Project:	SEC.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**North Reference:**	True
Well:	Honebein 7K-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-15-14)		

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)
8,300.0	90.83	180.00	6,961.8	-1,394.1	189.6	1,400.8	0.00	0.00	0.00
8,400.0	90.83	180.00	6,960.4	-1,494.0	189.6	1,500.7	0.00	0.00	0.00
8,500.0	90.83	180.00	6,958.9	-1,594.0	189.6	1,600.6	0.00	0.00	0.00
8,600.0	90.83	180.00	6,957.5	-1,694.0	189.6	1,700.5	0.00	0.00	0.00
8,700.0	90.83	180.00	6,956.0	-1,794.0	189.6	1,800.4	0.00	0.00	0.00
8,800.0	90.83	180.00	6,954.6	-1,894.0	189.6	1,900.3	0.00	0.00	0.00
8,900.0	90.83	180.00	6,953.1	-1,994.0	189.6	2,000.2	0.00	0.00	0.00
9,000.0	90.83	180.00	6,951.7	-2,094.0	189.6	2,100.1	0.00	0.00	0.00
9,100.0	90.83	180.00	6,950.2	-2,194.0	189.6	2,200.0	0.00	0.00	0.00
9,200.0	90.83	180.00	6,948.8	-2,294.0	189.6	2,299.9	0.00	0.00	0.00
9,300.0	90.83	180.00	6,947.3	-2,394.0	189.6	2,399.8	0.00	0.00	0.00
9,400.0	90.83	180.00	6,945.9	-2,493.9	189.6	2,499.7	0.00	0.00	0.00
9,500.0	90.83	180.00	6,944.4	-2,593.9	189.6	2,599.6	0.00	0.00	0.00
9,600.0	90.83	180.00	6,943.0	-2,693.9	189.6	2,699.5	0.00	0.00	0.00
9,700.0	90.83	180.00	6,941.5	-2,793.9	189.6	2,799.4	0.00	0.00	0.00
9,800.0	90.83	180.00	6,940.1	-2,893.9	189.6	2,899.3	0.00	0.00	0.00
9,900.0	90.83	180.00	6,938.6	-2,993.9	189.6	2,999.2	0.00	0.00	0.00
10,000.0	90.83	180.00	6,937.2	-3,093.9	189.6	3,099.1	0.00	0.00	0.00
10,100.0	90.83	180.00	6,935.8	-3,193.9	189.6	3,199.0	0.00	0.00	0.00
10,200.0	90.83	180.00	6,934.3	-3,293.9	189.6	3,298.9	0.00	0.00	0.00
10,300.0	90.83	180.00	6,932.9	-3,393.9	189.6	3,398.8	0.00	0.00	0.00
10,400.0	90.83	180.00	6,931.4	-3,493.8	189.6	3,498.7	0.00	0.00	0.00
10,500.0	90.83	180.00	6,930.0	-3,593.8	189.6	3,598.6	0.00	0.00	0.00
10,600.0	90.83	180.00	6,928.5	-3,693.8	189.6	3,698.5	0.00	0.00	0.00
10,700.0	90.83	180.00	6,927.1	-3,793.8	189.6	3,798.4	0.00	0.00	0.00
10,800.0	90.83	180.00	6,925.6	-3,893.8	189.6	3,898.3	0.00	0.00	0.00
10,900.0	90.83	180.00	6,924.2	-3,993.8	189.6	3,998.2	0.00	0.00	0.00
11,000.0	90.83	180.00	6,922.7	-4,093.8	189.6	4,098.1	0.00	0.00	0.00
11,100.0	90.83	180.00	6,921.3	-4,193.8	189.6	4,198.0	0.00	0.00	0.00
11,200.0	90.83	180.00	6,919.8	-4,293.8	189.6	4,297.9	0.00	0.00	0.00
11,300.0	90.83	180.00	6,918.4	-4,393.7	189.6	4,397.8	0.00	0.00	0.00
11,394.5	90.83	180.00	6,917.0	-4,488.2	189.6	4,492.3	0.00	0.00	0.00
BHL 2141'FNL & 1554'FWL, Sec.18									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 2352'FSL & 135(- plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,362,858.47	3,251,709.52	40.325930	-104.597200
BHL 2141'FNL & 155 - plan hits target center - Point	0.00	0.00	6,917.0	-4,488.2	189.6	1,358,372.57	3,251,944.83	40.313610	-104.596520

Database:	Landmark	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Project:	SEC.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**North Reference:**	True
Well:	Honebein 7K-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-15-14)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,438.5	6,974.3	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,737.3	3,724.0	Parkman		0.00	
4,466.9	4,450.0	Sussex		0.00	
5,257.0	5,240.0	Shannon		0.00	
6,725.5	6,674.0	Sharon Springs		0.00	
6,983.5	6,849.0	Niobrara A		0.00	
7,148.4	6,924.0	Niobrara B		0.00	
	6,994.0	Niobrara C		0.00	
	7,094.0	Ft. Hays		0.00	
	7,114.0	Codell		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,500.0	1,500.0	0.0	0.0	KOP #1
6,227.4	6,210.4	242.4	189.6	KOP #2
7,438.5	6,974.3	-532.7	189.6	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.7-T4N-R64W
Honebein 4N64W7K Pad Sec.7-T4N-R64W
Honebein 7K-223

Wellbore #1
Plan #1 (8-15-14)

Anticollision Report

21 August, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (8-15-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 8/21/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,394.5	Plan #1 (8-15-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec. 7-T4N-R64W						
Fry 21-18 (Exist.) - Wellbore #1 - Wellbore #1	9,816.9	6,912.9	234.2	37.3	1.190	Level 2, CC, ES, SF
Fry 21-6I (Exist.) - Wellbore #1 - Wellbore #1	10,582.7	7,005.8	845.9	548.6	2.845	CC
Fry 21-6I (Exist.) - Wellbore #1 - Wellbore #1	10,600.0	7,006.0	846.1	548.5	2.843	ES, SF
Fry 22-18 (SI) - Wellbore #1 - Wellbore #1	11,146.8	6,885.6	231.5	10.2	1.046	Level 2, CC, ES, SF
Fry 5 (Exist.) - Wellbore #1 - Wellbore #1	10,563.8	6,882.0	345.8	135.6	1.645	CC, ES, SF
Latham 7-1 (Exist.) - Wellbore #1 - Wellbore #1	7,561.6	6,955.5	415.5	256.2	2.609	CC, ES, SF
Latham 7-2 (Exist.) - Wellbore #1 - Wellbore #1	7,470.5	6,968.8	351.3	192.9	2.217	CC, ES, SF
Latham 7-4 (Exist.) - Wellbore #1 - Wellbore #1	8,589.1	6,943.6	200.7	25.5	1.146	Level 2, CC, ES, SF
Honebein 4N64W7K Pad Sec.7-T4N-R64W						
Honebein 7G-203 - Wellbore #1 - Plan #1 (8-14-14)	200.0	196.0	119.9	119.2	180.211	CC, ES
Honebein 7G-203 - Wellbore #1 - Plan #1 (8-14-14)	1,500.0	1,443.3	331.0	323.5	44.643	SF
Honebein 7G-323 - Wellbore #1 - Plan #1 (8-15-14)	400.0	397.0	89.2	87.7	56.954	CC, ES
Honebein 7G-323 - Wellbore #1 - Plan #1 (8-15-14)	900.0	877.9	130.0	126.2	33.953	SF
Honebein 7K-243 - Wellbore #1 - Plan #1 (8-15-15)	1,000.0	998.0	61.3	57.1	14.379	CC, ES
Honebein 7K-243 - Wellbore #1 - Plan #1 (8-15-15)	11,394.5	11,395.8	640.5	464.6	3.641	SF
Honebein 7K-323 - Wellbore #1 - Plan #1 (8-18-14)	966.3	967.3	30.7	26.5	7.442	CC
Honebein 7K-323 - Wellbore #1 - Plan #1 (8-18-14)	1,000.0	1,001.0	30.7	26.4	7.178	ES
Honebein 7K-323 - Wellbore #1 - Plan #1 (8-18-14)	11,394.5	11,464.7	383.1	210.0	2.213	SF
Honebein 7K-403 - Wellbore #1 - Plan #1 (8-15-14)	1,500.0	1,499.0	30.7	24.2	4.707	CC, ES
Honebein 7K-403 - Wellbore #1 - Plan #1 (8-15-14)	11,394.5	11,508.1	329.0	184.4	2.275	SF
Honebein 7O-243 - Wellbore #1 - Plan #1 (8-18-14)	766.0	768.0	58.6	55.3	18.167	CC
Honebein 7O-243 - Wellbore #1 - Plan #1 (8-18-14)	800.0	802.0	58.6	55.2	17.346	ES
Honebein 7O-243 - Wellbore #1 - Plan #1 (8-18-14)	11,394.5	11,443.2	641.5	465.0	3.635	SF

Offset Design Existing Wells Sec. 7-T4N-R64W - Fry 21-18 (Exist.) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 ft

Survey Program: 7208-UNKNOWN — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,900.0	6,953.1	6,926.1	6,926.1	42.0	138.5	-93.25	-2,910.8	423.9	946.3	766.2	180.07	5.255	
9,000.0	6,951.7	6,924.7	6,924.7	43.7	138.5	-92.89	-2,910.8	423.9	849.7	667.8	181.90	4.672	
9,100.0	6,950.2	6,923.2	6,923.2	45.5	138.5	-92.54	-2,910.8	423.9	754.1	570.4	183.73	4.105	
9,200.0	6,948.8	6,921.8	6,921.8	47.4	138.4	-92.18	-2,910.8	423.9	659.8	474.3	185.56	3.556	

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 Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Fry 21-18 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7208-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,300.0	6,947.3	6,920.3	6,920.3	49.2	138.4	-91.83	-2,910.8	423.9	567.5	380.1	187.40	3.028	
9,400.0	6,945.9	6,918.9	6,918.9	51.0	138.4	-91.48	-2,910.8	423.9	478.2	288.9	189.23	2.527	
9,500.0	6,944.4	6,917.4	6,917.4	52.8	138.3	-91.12	-2,910.8	423.9	394.0	203.0	191.07	2.062	
9,600.0	6,943.0	6,916.0	6,916.0	54.7	138.3	-90.77	-2,910.8	423.9	319.2	126.3	192.91	1.655	
9,700.0	6,941.5	6,914.5	6,914.5	56.5	138.3	-90.41	-2,910.8	423.9	261.8	67.0	194.74	1.344	Level 3
9,800.0	6,940.1	6,913.1	6,913.1	58.4	138.3	-90.06	-2,910.8	423.9	234.8	38.3	196.57	1.195	Level 2
9,816.9	6,939.9	6,912.9	6,912.9	58.7	138.3	-90.00	-2,910.8	423.9	234.2	37.3	196.88	1.190	Level 2, CC, ES, SF
9,900.0	6,938.6	6,911.6	6,911.6	60.2	138.2	-89.71	-2,910.8	423.9	248.5	50.1	198.40	1.253	Level 3
10,000.0	6,937.2	6,910.2	6,910.2	62.1	138.2	-89.35	-2,910.8	423.9	297.3	97.1	200.23	1.485	Level 3
10,100.0	6,935.8	6,908.8	6,908.8	64.0	138.2	-89.00	-2,910.8	423.9	367.4	165.4	202.05	1.818	
10,200.0	6,934.3	6,907.3	6,907.3	65.8	138.1	-88.64	-2,910.8	423.9	449.0	245.1	203.87	2.202	
10,300.0	6,932.9	6,905.9	6,905.9	67.7	138.1	-88.29	-2,910.8	423.9	536.8	331.2	205.68	2.610	
10,400.0	6,931.4	6,904.4	6,904.4	69.6	138.1	-87.93	-2,910.8	423.9	628.3	420.8	207.49	3.028	
10,500.0	6,930.0	6,903.0	6,903.0	71.4	138.1	-87.58	-2,910.8	423.9	722.1	512.8	209.29	3.450	
10,600.0	6,928.5	6,901.5	6,901.5	73.3	138.0	-87.23	-2,910.8	423.9	817.3	606.2	211.08	3.872	
10,700.0	6,927.1	6,900.1	6,900.1	75.2	138.0	-86.87	-2,910.8	423.9	913.5	700.7	212.87	4.291	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Fry 21-6I (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 644-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,935.8	7,002.1	6,907.5	64.0	233.6	-90.32	-3,676.5	1,035.5	973.9	685.6	288.27	3.378	
10,200.0	6,934.3	7,002.9	6,908.3	65.8	233.6	-90.37	-3,676.5	1,035.5	928.4	638.3	290.14	3.200	
10,300.0	6,932.9	7,003.7	6,909.0	67.7	233.7	-90.43	-3,676.5	1,035.5	891.9	599.9	292.00	3.054	
10,400.0	6,931.4	7,004.4	6,909.8	69.6	233.7	-90.48	-3,676.6	1,035.5	865.4	571.5	293.87	2.945	
10,500.0	6,930.0	7,005.2	6,910.6	71.4	233.7	-90.53	-3,676.6	1,035.5	849.9	554.2	295.74	2.874	
10,582.7	6,928.8	7,005.8	6,911.2	73.0	233.7	-90.57	-3,676.6	1,035.5	845.9	548.6	297.29	2.845	CC
10,600.0	6,928.5	7,006.0	6,911.3	73.3	233.7	-90.58	-3,676.6	1,035.5	846.1	548.5	297.61	2.843	ES, SF
10,700.0	6,927.1	7,006.7	6,912.1	75.2	233.7	-90.63	-3,676.6	1,035.5	854.0	554.5	299.49	2.852	
10,800.0	6,925.6	7,007.4	6,912.8	77.1	233.7	-90.68	-3,676.6	1,035.5	873.4	572.0	301.36	2.898	
10,900.0	6,924.2	7,008.2	6,913.5	78.9	233.8	-90.73	-3,676.6	1,035.5	903.5	600.2	303.24	2.979	
11,000.0	6,922.7	7,008.9	6,914.3	80.8	233.8	-90.78	-3,676.7	1,035.5	943.3	638.1	305.12	3.091	
11,100.0	6,921.3	7,009.6	6,915.0	82.7	233.8	-90.83	-3,676.7	1,035.5	991.6	684.6	307.00	3.230	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Fry 22-18 (SI) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7215-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,934.3	6,899.3	6,899.3	65.8	138.0	-93.39	-4,240.5	421.1	974.6	771.2	203.37	4.792	
10,300.0	6,932.9	6,897.9	6,897.9	67.7	138.0	-93.03	-4,240.5	421.1	877.8	672.5	205.28	4.276	
10,400.0	6,931.4	6,896.4	6,896.4	69.6	137.9	-92.68	-4,240.5	421.1	781.7	574.6	207.18	3.773	
10,500.0	6,930.0	6,895.0	6,895.0	71.4	137.9	-92.32	-4,240.5	421.1	686.9	477.8	209.09	3.285	
10,600.0	6,928.5	6,893.5	6,893.5	73.3	137.9	-91.96	-4,240.5	421.1	593.7	382.7	210.98	2.814	
10,700.0	6,927.1	6,892.1	6,892.1	75.2	137.8	-91.60	-4,240.5	421.1	503.1	290.3	212.88	2.363	
10,800.0	6,925.6	6,890.6	6,890.6	77.1	137.8	-91.24	-4,240.5	421.1	416.9	202.1	214.76	1.941	
10,900.0	6,924.2	6,889.2	6,889.2	78.9	137.8	-90.88	-4,240.5	421.1	338.3	121.7	216.65	1.562	
11,000.0	6,922.7	6,887.7	6,887.7	80.8	137.8	-90.53	-4,240.5	421.1	274.1	55.5	218.52	1.254	Level 3
11,100.0	6,921.3	6,886.3	6,886.3	82.7	137.7	-90.17	-4,240.5	421.1	236.1	15.7	220.39	1.071	Level 2
11,146.8	6,920.6	6,885.6	6,885.6	83.6	137.7	-90.00	-4,240.5	421.1	231.5	10.2	221.26	1.046	Level 2, CC, ES, SF
11,200.0	6,919.8	6,884.8	6,884.8	84.6	137.7	-89.81	-4,240.5	421.1	237.5	15.2	222.26	1.069	Level 2
11,300.0	6,918.4	6,883.4	6,883.4	86.5	137.7	-89.45	-4,240.5	421.1	277.6	53.5	224.11	1.239	Level 2
11,394.5	6,917.0	6,882.0	6,882.0	88.3	137.6	-89.11	-4,240.5	421.1	339.0	113.2	225.86	1.501	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Fry 5 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7422-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	6,941.5	6,894.5	6,894.5	56.5	137.9	92.07	-3,657.6	-156.2	930.4	736.1	194.26	4.789	
9,800.0	6,940.1	6,893.1	6,893.1	58.4	137.9	91.83	-3,657.6	-156.2	838.4	642.3	196.10	4.275	
9,900.0	6,938.6	6,891.6	6,891.6	60.2	137.8	91.59	-3,657.6	-156.2	748.4	550.5	197.95	3.781	
10,000.0	6,937.2	6,890.2	6,890.2	62.1	137.8	91.35	-3,657.6	-156.2	661.4	461.6	199.80	3.310	
10,100.0	6,935.8	6,888.8	6,888.8	64.0	137.8	91.11	-3,657.6	-156.2	578.5	376.9	201.64	2.869	
10,200.0	6,934.3	6,887.3	6,887.3	65.8	137.7	90.87	-3,657.6	-156.2	501.9	298.4	203.49	2.466	
10,300.0	6,932.9	6,885.9	6,885.9	67.7	137.7	90.63	-3,657.6	-156.2	434.9	229.6	205.34	2.118	
10,400.0	6,931.4	6,884.4	6,884.4	69.6	137.7	90.39	-3,657.6	-156.2	382.6	175.4	207.19	1.847	
10,500.0	6,930.0	6,883.0	6,883.0	71.4	137.7	90.15	-3,657.6	-156.2	351.6	142.6	209.04	1.682	
10,563.8	6,929.0	6,882.0	6,882.0	72.6	137.6	90.00	-3,657.6	-156.2	345.8	135.6	210.22	1.645	CC, ES, SF
10,600.0	6,928.5	6,881.5	6,881.5	73.3	137.6	89.91	-3,657.6	-156.2	347.7	136.8	210.88	1.649	
10,700.0	6,927.1	6,880.1	6,880.1	75.2	137.6	89.67	-3,657.6	-156.2	371.6	158.9	212.73	1.747	
10,800.0	6,925.6	6,878.6	6,878.6	77.1	137.6	89.43	-3,657.6	-156.2	418.7	204.2	214.57	1.952	
10,900.0	6,924.2	6,877.2	6,877.2	78.9	137.5	89.19	-3,657.6	-156.2	482.3	265.8	216.41	2.228	
11,000.0	6,922.7	6,875.7	6,875.7	80.8	137.5	88.95	-3,657.6	-156.2	556.6	338.3	218.25	2.550	
11,100.0	6,921.3	6,874.3	6,874.3	82.7	137.5	88.71	-3,657.6	-156.2	638.0	417.9	220.09	2.899	
11,200.0	6,919.8	6,872.8	6,872.8	84.6	137.5	88.47	-3,657.6	-156.2	724.0	502.1	221.92	3.263	
11,300.0	6,918.4	6,871.4	6,871.4	86.5	137.4	88.23	-3,657.6	-156.2	813.3	589.5	223.75	3.635	
11,394.5	6,917.0	6,870.0	6,870.0	88.3	137.4	88.01	-3,657.6	-156.2	899.7	674.2	225.48	3.990	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-1 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7710-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-161.00	-655.8	-225.9	693.8				
100.0	100.0	83.0	83.0	0.1	1.7	-161.00	-655.8	-225.9	693.6	691.8	1.77	391.270	
200.0	200.0	183.0	183.0	0.3	3.7	-161.00	-655.8	-225.9	693.6	689.6	4.00	173.505	
300.0	300.0	283.0	283.0	0.6	5.7	-161.00	-655.8	-225.9	693.6	687.3	6.22	111.467	
400.0	400.0	383.0	383.0	0.8	7.7	-161.00	-655.8	-225.9	693.6	685.1	8.45	82.108	
500.0	500.0	483.0	483.0	1.0	9.7	-161.00	-655.8	-225.9	693.6	682.9	10.67	64.991	
600.0	600.0	583.0	583.0	1.2	11.7	-161.00	-655.8	-225.9	693.6	680.7	12.90	53.779	
700.0	700.0	683.0	683.0	1.5	13.7	-161.00	-655.8	-225.9	693.6	678.4	15.12	45.867	
800.0	800.0	783.0	783.0	1.7	15.7	-161.00	-655.8	-225.9	693.6	676.2	17.35	39.984	
900.0	900.0	883.0	883.0	1.9	17.7	-161.00	-655.8	-225.9	693.6	674.0	19.57	35.439	
1,000.0	1,000.0	983.0	983.0	2.1	19.7	-161.00	-655.8	-225.9	693.6	671.8	21.80	31.821	
1,100.0	1,100.0	1,083.0	1,083.0	2.4	21.7	-161.00	-655.8	-225.9	693.6	669.5	24.02	28.874	
1,200.0	1,200.0	1,183.0	1,183.0	2.6	23.7	-161.00	-655.8	-225.9	693.6	667.3	26.24	26.426	
1,300.0	1,300.0	1,283.0	1,283.0	2.8	25.7	-161.00	-655.8	-225.9	693.6	665.1	28.47	24.361	
1,400.0	1,400.0	1,383.0	1,383.0	3.0	27.7	-161.00	-655.8	-225.9	693.6	662.9	30.69	22.595	
1,500.0	1,500.0	1,483.0	1,483.0	3.3	29.7	-161.00	-655.8	-225.9	693.6	660.6	32.92	21.068	
1,600.0	1,600.0	1,583.0	1,583.0	3.5	31.7	161.00	-655.8	-225.9	695.2	660.1	35.12	19.794	
1,700.0	1,699.8	1,682.8	1,682.8	3.7	33.7	161.11	-655.8	-225.9	700.2	662.9	37.28	18.782	
1,800.0	1,799.5	1,782.5	1,782.5	3.9	35.6	161.29	-655.8	-225.9	708.4	669.0	39.38	17.988	
1,828.6	1,827.9	1,810.9	1,810.9	4.0	36.2	161.35	-655.8	-225.9	711.4	671.4	39.98	17.796	
1,900.0	1,898.8	1,881.8	1,881.8	4.2	37.6	161.56	-655.8	-225.9	719.1	677.6	41.55	17.310	
2,000.0	1,998.2	1,981.2	1,981.2	4.4	39.6	161.84	-655.8	-225.9	730.0	686.3	43.75	16.687	
2,100.0	2,097.5	2,080.5	2,080.5	4.7	41.6	162.12	-655.8	-225.9	740.9	694.9	45.95	16.124	
2,200.0	2,196.8	2,179.8	2,179.8	4.9	43.6	162.38	-655.8	-225.9	751.8	703.7	48.16	15.612	
2,300.0	2,296.2	2,279.2	2,279.2	5.2	45.6	162.64	-655.8	-225.9	762.7	712.4	50.36	15.145	
2,400.0	2,395.5	2,378.5	2,378.5	5.4	47.6	162.90	-655.8	-225.9	773.7	721.1	52.57	14.717	
2,500.0	2,494.9	2,477.9	2,477.9	5.7	49.6	163.14	-655.8	-225.9	784.6	729.8	54.78	14.324	
2,600.0	2,594.2	2,577.2	2,577.2	6.0	51.5	163.38	-655.8	-225.9	795.6	738.6	56.99	13.961	
2,700.0	2,693.6	2,676.6	2,676.6	6.3	53.5	163.61	-655.8	-225.9	806.6	747.4	59.20	13.625	
2,800.0	2,792.9	2,775.9	2,775.9	6.6	55.5	163.84	-655.8	-225.9	817.6	756.2	61.41	13.314	
2,900.0	2,892.2	2,875.2	2,875.2	6.8	57.5	164.06	-655.8	-225.9	828.6	765.0	63.62	13.024	
3,000.0	2,991.6	2,974.6	2,974.6	7.1	59.5	164.27	-655.8	-225.9	839.6	773.8	65.83	12.754	
3,100.0	3,090.9	3,073.9	3,073.9	7.4	61.5	164.48	-655.8	-225.9	850.6	782.6	68.04	12.502	
3,200.0	3,190.3	3,173.3	3,173.3	7.7	63.5	164.69	-655.8	-225.9	861.7	791.4	70.25	12.265	
3,300.0	3,289.6	3,272.6	3,272.6	8.0	65.5	164.89	-655.8	-225.9	872.7	800.2	72.46	12.043	
3,400.0	3,389.0	3,372.0	3,372.0	8.3	67.4	165.08	-655.8	-225.9	883.8	809.1	74.68	11.835	
3,500.0	3,488.3	3,471.3	3,471.3	8.6	69.4	165.27	-655.8	-225.9	894.8	818.0	76.89	11.638	
3,600.0	3,587.6	3,570.6	3,570.6	8.9	71.4	165.45	-655.8	-225.9	905.9	826.8	79.10	11.453	
3,700.0	3,687.0	3,670.0	3,670.0	9.2	73.4	165.63	-655.8	-225.9	917.0	835.7	81.31	11.278	
3,800.0	3,786.3	3,769.3	3,769.3	9.5	75.4	165.81	-655.8	-225.9	928.1	844.6	83.52	11.112	
3,900.0	3,885.7	3,868.7	3,868.7	9.8	77.4	165.98	-655.8	-225.9	939.2	853.5	85.74	10.955	
4,000.0	3,985.0	3,968.0	3,968.0	10.0	79.4	166.14	-655.8	-225.9	950.3	862.4	87.95	10.805	
4,100.0	4,084.3	4,067.3	4,067.3	10.3	81.3	166.31	-655.8	-225.9	961.5	871.3	90.16	10.664	
4,188.3	4,172.1	4,155.1	4,155.1	10.6	83.1	166.45	-655.8	-225.9	971.3	879.2	92.12	10.544	
4,200.0	4,183.7	4,166.7	4,166.7	10.6	83.3	166.47	-655.8	-225.9	972.6	880.1	92.41	10.524	
4,300.0	4,283.3	4,266.3	4,266.3	10.9	85.3	166.64	-655.8	-225.9	981.6	886.8	94.84	10.351	
4,400.0	4,383.1	4,366.1	4,366.1	11.1	87.3	166.75	-655.8	-225.9	987.3	890.1	97.17	10.161	
4,500.0	4,483.0	4,466.0	4,466.0	11.2	89.3	166.79	-655.8	-225.9	989.6	890.2	99.39	9.956	
4,517.0	4,500.0	4,483.0	4,483.0	11.3	89.7	-155.17	-655.8	-225.9	989.6	889.8	99.76	9.920	
4,600.0	4,583.0	4,566.0	4,566.0	11.4	91.3	-155.17	-655.8	-225.9	989.6	888.0	101.58	9.742	
4,700.0	4,683.0	4,666.0	4,666.0	11.6	93.3	-155.17	-655.8	-225.9	989.6	885.8	103.80	9.534	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-1 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7710-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,783.0	4,766.0	4,766.0	11.8	95.3	-155.17	-655.8	-225.9	989.6	883.6	106.01	9.335	
4,900.0	4,883.0	4,866.0	4,866.0	12.0	97.3	-155.17	-655.8	-225.9	989.6	881.4	108.23	9.144	
5,000.0	4,983.0	4,966.0	4,966.0	12.2	99.3	-155.17	-655.8	-225.9	989.6	879.2	110.44	8.960	
5,100.0	5,083.0	5,066.0	5,066.0	12.4	101.3	-155.17	-655.8	-225.9	989.6	876.9	112.66	8.784	
5,200.0	5,183.0	5,166.0	5,166.0	12.6	103.3	-155.17	-655.8	-225.9	989.6	874.7	114.88	8.614	
5,300.0	5,283.0	5,266.0	5,266.0	12.8	105.3	-155.17	-655.8	-225.9	989.6	872.5	117.10	8.451	
5,400.0	5,383.0	5,366.0	5,366.0	13.0	107.3	-155.17	-655.8	-225.9	989.6	870.3	119.31	8.294	
5,500.0	5,483.0	5,466.0	5,466.0	13.2	109.3	-155.17	-655.8	-225.9	989.6	868.1	121.53	8.143	
5,600.0	5,583.0	5,566.0	5,566.0	13.4	111.3	-155.17	-655.8	-225.9	989.6	865.9	123.75	7.997	
5,700.0	5,683.0	5,666.0	5,666.0	13.6	113.3	-155.17	-655.8	-225.9	989.6	863.6	125.97	7.856	
5,800.0	5,783.0	5,766.0	5,766.0	13.8	115.3	-155.17	-655.8	-225.9	989.6	861.4	128.19	7.720	
5,900.0	5,883.0	5,866.0	5,866.0	14.0	117.3	-155.17	-655.8	-225.9	989.6	859.2	130.41	7.589	
6,000.0	5,983.0	5,966.0	5,966.0	14.2	119.3	-155.17	-655.8	-225.9	989.6	857.0	132.63	7.462	
6,100.0	6,083.0	6,066.0	6,066.0	14.4	121.3	-155.17	-655.8	-225.9	989.6	854.8	134.84	7.339	
6,200.0	6,183.0	6,166.0	6,166.0	14.6	123.3	-155.17	-655.8	-225.9	989.6	852.5	137.06	7.220	
6,227.4	6,210.4	6,193.4	6,193.4	14.7	123.9	-155.17	-655.8	-225.9	989.6	851.9	137.67	7.188	
6,250.0	6,233.0	6,216.0	6,216.0	14.7	124.3	24.84	-655.8	-225.9	989.3	851.2	138.10	7.163	
6,300.0	6,282.9	6,265.9	6,265.9	14.8	125.3	25.01	-655.8	-225.9	986.5	847.8	138.69	7.113	
6,350.0	6,332.5	6,315.5	6,315.5	14.8	126.3	25.35	-655.8	-225.9	980.7	841.9	138.79	7.066	
6,400.0	6,381.6	6,364.6	6,364.6	14.9	127.3	25.88	-655.8	-225.9	972.0	833.6	138.42	7.022	
6,450.0	6,429.9	6,412.9	6,412.9	14.9	128.3	26.61	-655.8	-225.9	960.5	822.9	137.59	6.981	
6,500.0	6,477.3	6,460.3	6,460.3	14.9	129.2	27.55	-655.8	-225.9	946.1	809.8	136.35	6.939	
6,550.0	6,523.5	6,506.5	6,506.5	14.9	130.1	28.73	-655.8	-225.9	929.1	794.3	134.77	6.894	
6,600.0	6,568.5	6,551.5	6,551.5	14.9	131.0	30.17	-655.8	-225.9	909.5	776.6	132.96	6.841	
6,650.0	6,611.8	6,594.8	6,594.8	14.9	131.9	31.91	-655.8	-225.9	887.5	756.4	131.05	6.772	
6,700.0	6,653.5	6,636.5	6,636.5	15.0	132.7	33.98	-655.8	-225.9	863.2	733.9	129.22	6.679	
6,750.0	6,693.2	6,676.2	6,676.2	15.0	133.5	36.43	-655.8	-225.9	836.7	709.0	127.71	6.551	
6,800.0	6,730.9	6,713.9	6,713.9	15.0	134.3	39.30	-655.8	-225.9	808.4	681.6	126.79	6.376	
6,850.0	6,766.4	6,749.4	6,749.4	15.0	135.0	42.63	-655.8	-225.9	778.4	651.6	126.74	6.141	
6,900.0	6,799.5	6,782.5	6,782.5	15.0	135.6	46.43	-655.8	-225.9	746.9	619.1	127.79	5.845	
6,950.0	6,830.0	6,813.0	6,813.0	15.1	136.3	50.71	-655.8	-225.9	714.4	584.3	130.08	5.492	
7,000.0	6,857.9	6,840.9	6,840.9	15.3	136.8	55.42	-655.8	-225.9	681.1	547.5	133.52	5.101	
7,050.0	6,883.0	6,866.0	6,866.0	15.5	137.3	60.47	-655.8	-225.9	647.4	509.6	137.81	4.698	
7,100.0	6,905.3	6,888.3	6,888.3	15.8	137.8	65.69	-655.8	-225.9	613.7	471.3	142.43	4.309	
7,150.0	6,924.6	6,907.6	6,907.6	16.1	138.2	70.88	-655.8	-225.9	580.6	433.8	146.83	3.954	
7,200.0	6,940.8	6,923.8	6,923.8	16.5	138.5	75.81	-655.8	-225.9	548.6	398.1	150.56	3.644	
7,250.0	6,953.9	6,936.9	6,936.9	16.9	138.7	80.26	-655.8	-225.9	518.4	365.0	153.39	3.380	
7,300.0	6,963.8	6,946.8	6,946.8	17.4	138.9	84.05	-655.8	-225.9	490.7	335.3	155.33	3.159	
7,350.0	6,970.5	6,953.5	6,953.5	17.9	139.1	87.05	-655.8	-225.9	466.2	309.6	156.57	2.978	
7,400.0	6,973.9	6,956.9	6,956.9	18.4	139.1	89.20	-655.8	-225.9	445.8	288.4	157.36	2.833	
7,438.5	6,974.3	6,957.3	6,957.3	18.8	139.1	90.25	-655.8	-225.9	433.4	275.5	157.82	2.746	
7,500.0	6,973.4	6,956.4	6,956.4	19.5	139.1	90.12	-655.8	-225.9	420.0	261.5	158.52	2.650	
7,561.6	6,972.5	6,955.5	6,955.5	20.3	139.1	90.00	-655.8	-225.9	415.5	256.2	159.28	2.609	CC, ES, SF
7,600.0	6,972.0	6,955.0	6,955.0	20.8	139.1	89.92	-655.8	-225.9	417.3	257.5	159.75	2.612	
7,700.0	6,970.5	6,953.5	6,953.5	22.1	139.1	89.72	-655.8	-225.9	437.9	276.9	161.07	2.719	
7,800.0	6,969.1	6,952.1	6,952.1	23.6	139.0	89.52	-655.8	-225.9	479.0	316.5	162.47	2.948	
7,900.0	6,967.6	6,950.6	6,950.6	25.1	139.0	89.32	-655.8	-225.9	535.8	371.9	163.93	3.269	
8,000.0	6,966.2	6,949.2	6,949.2	26.6	139.0	89.12	-655.8	-225.9	604.0	438.5	165.45	3.651	
8,100.0	6,964.7	6,947.7	6,947.7	28.2	139.0	88.92	-655.8	-225.9	680.0	513.0	167.00	4.072	
8,200.0	6,963.3	6,946.3	6,946.3	29.8	138.9	88.73	-655.8	-225.9	761.6	593.0	168.60	4.517	
8,300.0	6,961.8	6,944.8	6,944.8	31.5	138.9	88.53	-655.8	-225.9	847.2	677.0	170.22	4.977	

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 Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-1 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7710-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,960.4	6,943.4	6,943.4	33.2	138.9	88.33	-655.8	-225.9	935.6	763.7	171.87	5.444	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7281-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	136.23	-564.7	540.9	782.0				
100.0	100.0	95.0	95.0	0.1	1.9	136.23	-564.7	540.9	782.0	779.9	2.01	388.537	
200.0	200.0	195.0	195.0	0.3	3.9	136.23	-564.7	540.9	782.0	777.7	4.24	184.541	
300.0	300.0	295.0	295.0	0.6	5.9	136.23	-564.7	540.9	782.0	775.5	6.46	121.007	
400.0	400.0	395.0	395.0	0.8	7.9	136.23	-564.7	540.9	782.0	773.3	8.69	90.017	
500.0	500.0	495.0	495.0	1.0	9.9	136.23	-564.7	540.9	782.0	771.1	10.91	71.663	
600.0	600.0	595.0	595.0	1.2	11.9	136.23	-564.7	540.9	782.0	768.8	13.14	59.526	
700.0	700.0	695.0	695.0	1.5	13.9	136.23	-564.7	540.9	782.0	766.6	15.36	50.905	
800.0	800.0	795.0	795.0	1.7	15.9	136.23	-564.7	540.9	782.0	764.4	17.59	44.465	
900.0	900.0	895.0	895.0	1.9	17.9	136.23	-564.7	540.9	782.0	762.2	19.81	39.472	
1,000.0	1,000.0	995.0	995.0	2.1	19.9	136.23	-564.7	540.9	782.0	759.9	22.04	35.487	
1,100.0	1,100.0	1,095.0	1,095.0	2.4	21.9	136.23	-564.7	540.9	782.0	757.7	24.26	32.232	
1,200.0	1,200.0	1,195.0	1,195.0	2.6	23.9	136.23	-564.7	540.9	782.0	755.5	26.48	29.525	
1,300.0	1,300.0	1,295.0	1,295.0	2.8	25.9	136.23	-564.7	540.9	782.0	753.3	28.71	27.237	
1,400.0	1,400.0	1,395.0	1,395.0	3.0	27.9	136.23	-564.7	540.9	782.0	751.0	30.93	25.278	
1,500.0	1,500.0	1,495.0	1,495.0	3.3	29.9	136.23	-564.7	540.9	782.0	748.8	33.16	23.582	
1,600.0	1,600.0	1,595.0	1,595.0	3.5	31.9	98.31	-564.7	540.9	782.2	746.8	35.38	22.109	
1,700.0	1,699.8	1,694.8	1,694.8	3.7	33.9	98.68	-564.7	540.9	783.0	745.4	37.60	20.827	
1,800.0	1,799.5	1,794.5	1,794.5	3.9	35.9	99.28	-564.7	540.9	784.4	744.5	39.81	19.702	
1,828.6	1,827.9	1,822.9	1,822.9	4.0	36.5	99.49	-564.7	540.9	784.9	744.4	40.44	19.406	
1,900.0	1,898.8	1,893.8	1,893.8	4.2	37.9	100.08	-564.7	540.9	786.3	744.2	42.03	18.707	
2,000.0	1,998.2	1,993.2	1,993.2	4.4	39.9	100.89	-564.7	540.9	788.4	744.1	44.26	17.812	
2,100.0	2,097.5	2,092.5	2,092.5	4.7	41.9	101.70	-564.7	540.9	790.6	744.1	46.50	17.003	
2,200.0	2,196.8	2,191.8	2,191.8	4.9	43.8	102.50	-564.7	540.9	793.0	744.3	48.74	16.271	
2,300.0	2,296.2	2,291.2	2,291.2	5.2	45.8	103.30	-564.7	540.9	795.6	744.6	50.99	15.604	
2,400.0	2,395.5	2,390.5	2,390.5	5.4	47.8	104.10	-564.7	540.9	798.3	745.1	53.24	14.995	
2,500.0	2,494.9	2,489.9	2,489.9	5.7	49.8	104.89	-564.7	540.9	801.2	745.7	55.49	14.438	
2,600.0	2,594.2	2,589.2	2,589.2	6.0	51.8	105.67	-564.7	540.9	804.2	746.5	57.75	13.927	
2,700.0	2,693.6	2,688.6	2,688.6	6.3	53.8	106.45	-564.7	540.9	807.4	747.4	60.01	13.456	
2,800.0	2,792.9	2,787.9	2,787.9	6.6	55.8	107.22	-564.7	540.9	810.8	748.5	62.27	13.021	
2,900.0	2,892.2	2,887.2	2,887.2	6.8	57.7	107.98	-564.7	540.9	814.3	749.7	64.53	12.619	
3,000.0	2,991.6	2,986.6	2,986.6	7.1	59.7	108.74	-564.7	540.9	817.9	751.1	66.79	12.246	
3,100.0	3,090.9	3,085.9	3,085.9	7.4	61.7	109.49	-564.7	540.9	821.7	752.6	69.05	11.899	
3,200.0	3,190.3	3,185.3	3,185.3	7.7	63.7	110.24	-564.7	540.9	825.6	754.3	71.31	11.577	
3,300.0	3,289.6	3,284.6	3,284.6	8.0	65.7	110.98	-564.7	540.9	829.6	756.0	73.57	11.276	
3,400.0	3,389.0	3,384.0	3,384.0	8.3	67.7	111.71	-564.7	540.9	833.8	758.0	75.84	10.995	
3,500.0	3,488.3	3,483.3	3,483.3	8.6	69.7	112.43	-564.7	540.9	838.1	760.0	78.10	10.732	
3,600.0	3,587.6	3,582.6	3,582.6	8.9	71.7	113.14	-564.7	540.9	842.6	762.2	80.36	10.485	
3,700.0	3,687.0	3,682.0	3,682.0	9.2	73.6	113.85	-564.7	540.9	847.2	764.6	82.62	10.254	
3,800.0	3,786.3	3,781.3	3,781.3	9.5	75.6	114.55	-564.7	540.9	851.9	767.0	84.88	10.037	
3,900.0	3,885.7	3,880.7	3,880.7	9.8	77.6	115.24	-564.7	540.9	856.7	769.6	87.14	9.832	
4,000.0	3,985.0	3,980.0	3,980.0	10.0	79.6	115.93	-564.7	540.9	861.7	772.3	89.40	9.639	
4,100.0	4,084.3	4,079.3	4,079.3	10.3	81.6	116.61	-564.7	540.9	866.8	775.1	91.66	9.457	
4,188.3	4,172.1	4,167.1	4,167.1	10.6	83.3	117.20	-564.7	540.9	871.4	777.8	93.65	9.305	
4,200.0	4,183.7	4,178.7	4,178.7	10.6	83.6	117.29	-564.7	540.9	872.0	778.1	93.92	9.285	
4,300.0	4,283.3	4,278.3	4,278.3	10.9	85.6	117.90	-564.7	540.9	876.3	780.2	96.16	9.113	
4,400.0	4,383.1	4,378.1	4,378.1	11.1	87.6	118.28	-564.7	540.9	879.1	780.7	98.38	8.935	
4,500.0	4,483.0	4,478.0	4,478.0	11.2	89.6	118.44	-564.7	540.9	880.2	779.6	100.56	8.753	
4,517.0	4,500.0	4,495.0	4,495.0	11.3	89.9	156.48	-564.7	540.9	880.2	779.3	100.93	8.721	
4,600.0	4,583.0	4,578.0	4,578.0	11.4	91.6	156.48	-564.7	540.9	880.2	777.5	102.74	8.568	
4,700.0	4,683.0	4,678.0	4,678.0	11.6	93.6	156.48	-564.7	540.9	880.2	775.3	104.93	8.388	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7281-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,783.0	4,778.0	4,778.0	11.8	95.6	156.48	-564.7	540.9	880.2	773.1	107.13	8.216	
4,900.0	4,883.0	4,878.0	4,878.0	12.0	97.6	156.48	-564.7	540.9	880.2	770.9	109.33	8.051	
5,000.0	4,983.0	4,978.0	4,978.0	12.2	99.6	156.48	-564.7	540.9	880.2	768.7	111.53	7.892	
5,100.0	5,083.0	5,078.0	5,078.0	12.4	101.6	156.48	-564.7	540.9	880.2	766.5	113.74	7.739	
5,200.0	5,183.0	5,178.0	5,178.0	12.6	103.6	156.48	-564.7	540.9	880.2	764.3	115.94	7.592	
5,300.0	5,283.0	5,278.0	5,278.0	12.8	105.6	156.48	-564.7	540.9	880.2	762.1	118.14	7.450	
5,400.0	5,383.0	5,378.0	5,378.0	13.0	107.6	156.48	-564.7	540.9	880.2	759.9	120.35	7.314	
5,500.0	5,483.0	5,478.0	5,478.0	13.2	109.6	156.48	-564.7	540.9	880.2	757.7	122.55	7.182	
5,600.0	5,583.0	5,578.0	5,578.0	13.4	111.6	156.48	-564.7	540.9	880.2	755.5	124.76	7.055	
5,700.0	5,683.0	5,678.0	5,678.0	13.6	113.6	156.48	-564.7	540.9	880.2	753.2	126.96	6.933	
5,800.0	5,783.0	5,778.0	5,778.0	13.8	115.6	156.48	-564.7	540.9	880.2	751.0	129.17	6.814	
5,900.0	5,883.0	5,878.0	5,878.0	14.0	117.6	156.48	-564.7	540.9	880.2	748.8	131.38	6.700	
6,000.0	5,983.0	5,978.0	5,978.0	14.2	119.6	156.48	-564.7	540.9	880.2	746.6	133.58	6.589	
6,100.0	6,083.0	6,078.0	6,078.0	14.4	121.6	156.48	-564.7	540.9	880.2	744.4	135.79	6.482	
6,200.0	6,183.0	6,178.0	6,178.0	14.6	123.6	156.48	-564.7	540.9	880.2	742.2	138.00	6.378	
6,227.4	6,210.4	6,205.4	6,205.4	14.7	124.1	156.48	-564.7	540.9	880.2	741.6	138.61	6.350	
6,250.0	6,233.0	6,228.0	6,228.0	14.7	124.6	-23.54	-564.7	540.9	879.9	740.9	139.04	6.328	
6,300.0	6,282.9	6,277.9	6,277.9	14.8	125.6	-23.71	-564.7	540.9	877.1	737.4	139.63	6.281	
6,350.0	6,332.5	6,327.5	6,327.5	14.8	126.6	-24.05	-564.7	540.9	871.2	731.5	139.71	6.236	
6,400.0	6,381.6	6,376.6	6,376.6	14.9	127.5	-24.59	-564.7	540.9	862.4	723.1	139.30	6.191	
6,450.0	6,429.9	6,424.9	6,424.9	14.9	128.5	-25.33	-564.7	540.9	850.8	712.4	138.42	6.146	
6,500.0	6,477.3	6,472.3	6,472.3	14.9	129.4	-26.29	-564.7	540.9	836.3	699.2	137.12	6.099	
6,550.0	6,523.5	6,518.5	6,518.5	14.9	130.4	-27.50	-564.7	540.9	819.1	683.7	135.46	6.047	
6,600.0	6,568.5	6,563.5	6,563.5	14.9	131.3	-28.98	-564.7	540.9	799.3	665.8	133.54	5.986	
6,650.0	6,611.8	6,606.8	6,606.8	14.9	132.1	-30.78	-564.7	540.9	777.1	645.6	131.52	5.908	
6,700.0	6,653.5	6,648.5	6,648.5	15.0	133.0	-32.94	-564.7	540.9	752.5	622.9	129.58	5.807	
6,750.0	6,693.2	6,688.2	6,688.2	15.0	133.8	-35.51	-564.7	540.9	725.9	597.9	127.98	5.672	
6,800.0	6,730.9	6,725.9	6,725.9	15.0	134.5	-38.55	-564.7	540.9	697.3	570.3	127.00	5.490	
6,850.0	6,766.4	6,761.4	6,761.4	15.0	135.2	-42.09	-564.7	540.9	667.1	540.1	126.98	5.254	
6,900.0	6,799.5	6,794.5	6,794.5	15.0	135.9	-46.17	-564.7	540.9	635.5	507.4	128.17	4.959	
6,950.0	6,830.0	6,825.0	6,825.0	15.1	136.5	-50.78	-564.7	540.9	603.0	472.2	130.71	4.613	
7,000.0	6,857.9	6,852.9	6,852.9	15.3	137.1	-55.88	-564.7	540.9	569.8	435.3	134.48	4.237	
7,050.0	6,883.0	6,878.0	6,878.0	15.5	137.6	-61.32	-564.7	540.9	536.4	397.3	139.08	3.857	
7,100.0	6,905.3	6,900.3	6,900.3	15.8	138.0	-66.90	-564.7	540.9	503.4	359.5	143.90	3.498	
7,150.0	6,924.6	6,919.6	6,919.6	16.1	138.4	-72.36	-564.7	540.9	471.5	323.2	148.30	3.179	
7,200.0	6,940.8	6,935.8	6,935.8	16.5	138.7	-77.43	-564.7	540.9	441.4	289.5	151.84	2.907	
7,250.0	6,953.9	6,948.9	6,948.9	16.9	139.0	-81.84	-564.7	540.9	413.9	259.6	154.35	2.682	
7,300.0	6,963.8	6,958.8	6,958.8	17.4	139.2	-85.41	-564.7	540.9	390.2	234.3	155.97	2.502	
7,350.0	6,970.5	6,965.5	6,965.5	17.9	139.3	-88.02	-564.7	540.9	371.4	214.4	156.96	2.366	
7,400.0	6,973.9	6,968.9	6,968.9	18.4	139.4	-89.59	-564.7	540.9	358.3	200.7	157.63	2.273	
7,438.5	6,974.3	6,969.3	6,969.3	18.8	139.4	-90.08	-564.7	540.9	352.8	194.7	158.06	2.232	
7,470.5	6,973.8	6,968.8	6,968.8	19.2	139.4	-90.00	-564.7	540.9	351.3	192.9	158.43	2.217	CC, ES, SF
7,500.0	6,973.4	6,968.4	6,968.4	19.5	139.4	-89.93	-564.7	540.9	352.5	193.8	158.76	2.221	
7,600.0	6,972.0	6,967.0	6,967.0	20.8	139.3	-89.69	-564.7	540.9	374.4	214.4	159.99	2.340	
7,700.0	6,970.5	6,965.5	6,965.5	22.1	139.3	-89.46	-564.7	540.9	419.6	258.3	161.32	2.601	
7,800.0	6,969.1	6,964.1	6,964.1	23.6	139.3	-89.22	-564.7	540.9	481.6	318.9	162.72	2.960	
7,900.0	6,967.6	6,962.6	6,962.6	25.1	139.3	-88.99	-564.7	540.9	554.8	390.6	164.18	3.379	
8,000.0	6,966.2	6,961.2	6,961.2	26.6	139.2	-88.75	-564.7	540.9	635.4	469.7	165.69	3.835	
8,100.0	6,964.7	6,959.7	6,959.7	28.2	139.2	-88.51	-564.7	540.9	720.8	553.6	167.25	4.310	
8,200.0	6,963.3	6,958.3	6,958.3	29.8	139.2	-88.28	-564.7	540.9	809.6	640.7	168.84	4.795	
8,300.0	6,961.8	6,956.8	6,956.8	31.5	139.1	-88.04	-564.7	540.9	900.7	730.3	170.46	5.284	

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 Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7281-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,960.4	6,955.4	6,955.4	33.2	139.1	-87.81	-564.7	540.9	993.6	821.5	172.11	5.773	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec. 7-T4N-R64W - Latham 7-4 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7312-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,700.0	6,970.5	6,956.5	6,956.5	22.1	139.1	-93.67	-1,683.1	390.4	911.4	750.6	160.77	5.669	
7,800.0	6,969.1	6,955.1	6,955.1	23.6	139.1	-93.26	-1,683.1	390.4	814.1	651.9	162.25	5.018	
7,900.0	6,967.6	6,953.6	6,953.6	25.1	139.1	-92.85	-1,683.1	390.4	717.6	553.9	163.78	4.382	
8,000.0	6,966.2	6,952.2	6,952.2	26.6	139.0	-92.43	-1,683.1	390.4	622.3	456.9	165.36	3.763	
8,100.0	6,964.7	6,950.7	6,950.7	28.2	139.0	-92.02	-1,683.1	390.4	528.6	361.6	166.98	3.166	
8,200.0	6,963.3	6,949.3	6,949.3	29.8	139.0	-91.61	-1,683.1	390.4	437.8	269.1	168.63	2.596	
8,300.0	6,961.8	6,947.8	6,947.8	31.5	139.0	-91.19	-1,683.1	390.4	351.9	181.6	170.30	2.066	
8,400.0	6,960.4	6,946.4	6,946.4	33.2	138.9	-90.78	-1,683.1	390.4	275.8	103.8	172.00	1.603	
8,500.0	6,958.9	6,944.9	6,944.9	34.9	138.9	-90.37	-1,683.1	390.4	219.6	45.9	173.70	1.264	Level 3
8,589.1	6,957.6	6,943.6	6,943.6	36.5	138.9	-90.00	-1,683.1	390.4	200.7	25.5	175.23	1.146	Level 2, CC, ES, SF
8,600.0	6,957.5	6,943.5	6,943.5	36.6	138.9	-89.95	-1,683.1	390.4	201.0	25.6	175.42	1.146	Level 2
8,700.0	6,956.0	6,942.0	6,942.0	38.4	138.8	-89.54	-1,683.1	390.4	229.4	52.2	177.15	1.295	Level 3
8,800.0	6,954.6	6,940.6	6,940.6	40.2	138.8	-89.13	-1,683.1	390.4	291.2	112.3	178.88	1.628	
8,900.0	6,953.1	6,939.1	6,939.1	42.0	138.8	-88.71	-1,683.1	390.4	370.1	189.5	180.62	2.049	
9,000.0	6,951.7	6,937.7	6,937.7	43.7	138.8	-88.30	-1,683.1	390.4	457.3	274.9	182.36	2.508	
9,100.0	6,950.2	6,936.2	6,936.2	45.5	138.7	-87.89	-1,683.1	390.4	548.9	364.8	184.10	2.982	
9,200.0	6,948.8	6,934.8	6,934.8	47.4	138.7	-87.48	-1,683.1	390.4	643.0	457.2	185.83	3.460	
9,300.0	6,947.3	6,933.3	6,933.3	49.2	138.7	-87.06	-1,683.1	390.4	738.7	551.1	187.57	3.938	
9,400.0	6,945.9	6,931.9	6,931.9	51.0	138.6	-86.65	-1,683.1	390.4	835.3	646.0	189.30	4.413	
9,500.0	6,944.4	6,930.4	6,930.4	52.8	138.6	-86.24	-1,683.1	390.4	932.7	741.7	191.03	4.882	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7G-203 - Wellbore #1 - Plan #1 (8-14-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-119.9	120.0				
100.0	100.0	96.0	96.0	0.1	0.1	-90.00	0.0	-119.9	119.9	119.7	0.22	544.291	
200.0	200.0	196.0	196.0	0.3	0.3	-90.00	0.0	-119.9	119.9	119.2	0.67	180.211	CC, ES
300.0	300.0	292.2	292.2	0.6	0.5	-89.87	0.3	-121.4	121.4	120.3	1.10	110.449	
400.0	400.0	388.0	387.9	0.8	0.8	-89.47	1.2	-126.0	126.2	124.7	1.54	82.033	
500.0	500.0	483.4	482.9	1.0	1.0	-88.87	2.6	-133.6	134.3	132.3	1.99	67.412	
600.0	600.0	578.2	577.1	1.2	1.3	-88.14	4.7	-144.4	145.7	143.2	2.46	59.167	
700.0	700.0	672.1	670.0	1.5	1.6	-87.35	7.3	-158.0	160.3	157.4	2.95	54.274	
800.0	800.0	765.0	761.4	1.7	1.9	-86.57	10.5	-174.4	178.2	174.7	3.47	51.398	
900.0	900.0	858.1	852.4	1.9	2.3	-85.82	14.2	-193.7	199.1	195.1	4.00	49.734	
1,000.0	1,000.0	955.7	947.5	2.1	2.7	-85.15	18.2	-214.9	221.0	216.5	4.56	48.434	
1,100.0	1,100.0	1,053.2	1,042.6	2.4	3.2	-84.61	22.3	-236.0	243.0	237.9	5.13	47.383	
1,200.0	1,200.0	1,150.7	1,137.8	2.6	3.6	-84.15	26.3	-257.1	265.0	259.3	5.70	46.513	
1,300.0	1,300.0	1,248.3	1,232.9	2.8	4.1	-83.77	30.4	-278.3	286.9	280.7	6.27	45.785	
1,400.0	1,400.0	1,345.8	1,328.0	3.0	4.6	-83.44	34.4	-299.4	308.9	302.1	6.84	45.169	
1,500.0	1,500.0	1,443.3	1,423.2	3.3	5.0	-83.15	38.5	-320.5	331.0	323.5	7.41	44.643	SF
1,600.0	1,600.0	1,540.7	1,518.1	3.5	5.5	-120.78	42.5	-341.6	353.8	346.7	7.13	49.658	
1,700.0	1,699.8	1,637.5	1,612.6	3.7	6.0	-120.81	46.6	-362.6	378.5	370.9	7.59	49.884	
1,800.0	1,799.5	1,733.8	1,706.5	3.9	6.4	-121.19	50.6	-383.5	404.9	396.8	8.05	50.314	
1,828.6	1,827.9	1,761.3	1,733.3	4.0	6.5	-121.35	51.7	-389.4	412.8	404.6	8.18	50.468	
1,900.0	1,898.8	1,829.6	1,799.9	4.2	6.9	-122.09	54.6	-404.2	432.7	424.2	8.52	50.772	
2,000.0	1,998.2	1,925.3	1,893.3	4.4	7.3	-123.02	58.5	-425.0	460.7	451.7	9.01	51.126	
2,100.0	2,097.5	2,021.1	1,986.7	4.7	7.8	-123.85	62.5	-445.7	488.8	479.3	9.51	51.412	
2,200.0	2,196.8	2,116.8	2,080.0	4.9	8.3	-124.58	66.5	-466.5	517.0	507.0	10.01	51.645	
2,300.0	2,296.2	2,212.6	2,173.4	5.2	8.7	-125.24	70.5	-487.2	545.3	534.8	10.52	51.836	
2,400.0	2,395.5	2,308.3	2,266.8	5.4	9.2	-125.84	74.5	-507.9	573.6	562.6	11.03	51.993	
2,500.0	2,494.9	2,404.0	2,360.2	5.7	9.6	-126.38	78.4	-528.7	602.0	590.5	11.55	52.122	
2,600.0	2,594.2	2,499.8	2,453.6	6.0	10.1	-126.87	82.4	-549.4	630.4	618.4	12.07	52.230	
2,700.0	2,693.6	2,595.5	2,547.0	6.3	10.6	-127.32	86.4	-570.2	658.9	646.3	12.59	52.319	
2,800.0	2,792.9	2,691.3	2,640.3	6.6	11.0	-127.73	90.4	-590.9	687.4	674.3	13.12	52.394	
2,900.0	2,892.2	2,787.0	2,733.7	6.8	11.5	-128.11	94.4	-611.7	715.9	702.3	13.65	52.457	
3,000.0	2,991.6	2,882.7	2,827.1	7.1	12.0	-128.46	98.3	-632.4	744.5	730.3	14.18	52.509	
3,100.0	3,090.9	2,978.5	2,920.5	7.4	12.4	-128.78	102.3	-653.2	773.1	758.3	14.71	52.554	
3,200.0	3,190.3	3,074.2	3,013.9	7.7	12.9	-129.08	106.3	-673.9	801.6	786.4	15.24	52.591	
3,300.0	3,289.6	3,170.0	3,107.3	8.0	13.3	-129.36	110.3	-694.6	830.3	814.5	15.78	52.622	
3,400.0	3,389.0	3,265.7	3,200.6	8.3	13.8	-129.62	114.3	-715.4	858.9	842.6	16.31	52.649	
3,500.0	3,488.3	3,361.5	3,294.0	8.6	14.3	-129.87	118.2	-736.1	887.6	870.7	16.85	52.671	
3,600.0	3,587.6	3,457.2	3,387.4	8.9	14.7	-130.10	122.2	-756.9	916.2	898.8	17.39	52.689	
3,700.0	3,687.0	3,552.9	3,480.8	9.2	15.2	-130.31	126.2	-777.6	944.9	927.0	17.93	52.705	
3,800.0	3,786.3	3,648.7	3,574.2	9.5	15.7	-130.52	130.2	-798.4	973.6	955.1	18.47	52.718	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7G-323 - Wellbore #1 - Plan #1 (8-15-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-89.2	89.3				
100.0	100.0	97.0	97.0	0.1	0.1	-90.00	0.0	-89.2	89.2	89.0	0.22	403.001	
200.0	200.0	197.0	197.0	0.3	0.3	-90.00	0.0	-89.2	89.2	88.6	0.67	133.659	
300.0	300.0	297.0	297.0	0.6	0.6	-90.00	0.0	-89.2	89.2	88.1	1.12	79.873	
400.0	400.0	397.0	397.0	0.8	0.8	-90.00	0.0	-89.2	89.2	87.7	1.57	56.954	CC, ES
500.0	500.0	494.1	494.1	1.0	1.0	-89.77	0.4	-90.7	90.8	88.8	2.00	45.356	
600.0	600.0	590.9	590.8	1.2	1.2	-89.10	1.5	-95.4	95.6	93.2	2.44	39.246	
700.0	700.0	687.3	686.8	1.5	1.4	-88.12	3.4	-103.2	103.8	100.9	2.88	35.986	
800.0	800.0	783.0	781.9	1.7	1.7	-86.99	6.0	-114.1	115.2	111.9	3.35	34.434	
900.0	900.0	877.9	875.7	1.9	2.0	-85.82	9.3	-127.9	130.0	126.2	3.83	33.953	SF
1,000.0	1,000.0	974.4	970.6	2.1	2.3	-84.72	13.4	-144.5	147.5	143.2	4.33	34.043	
1,100.0	1,100.0	1,072.7	1,067.3	2.4	2.7	-83.81	17.5	-161.8	165.4	160.6	4.85	34.109	
1,200.0	1,200.0	1,171.1	1,164.1	2.6	3.0	-83.09	21.7	-179.1	183.4	178.0	5.37	34.132	
1,300.0	1,300.0	1,269.4	1,260.8	2.8	3.4	-82.49	25.9	-196.3	201.3	195.4	5.90	34.130	
1,400.0	1,400.0	1,367.8	1,357.6	3.0	3.8	-81.99	30.1	-213.6	219.3	212.9	6.43	34.116	
1,500.0	1,500.0	1,466.1	1,454.3	3.3	4.2	-81.57	34.2	-230.9	237.3	230.3	6.96	34.096	
1,600.0	1,600.0	1,564.3	1,550.9	3.5	4.6	-119.25	38.4	-248.1	256.1	249.1	7.00	36.598	
1,700.0	1,699.8	1,662.2	1,647.1	3.7	5.0	-119.51	42.6	-265.3	276.7	269.2	7.45	37.121	
1,800.0	1,799.5	1,759.5	1,742.8	3.9	5.4	-120.25	46.7	-282.4	299.0	291.1	7.91	37.804	
1,828.6	1,827.9	1,787.2	1,770.1	4.0	5.5	-120.53	47.9	-287.3	305.7	297.6	8.04	38.025	
1,900.0	1,898.8	1,856.4	1,838.1	4.2	5.8	-121.51	50.8	-299.4	322.7	314.3	8.38	38.519	
2,000.0	1,998.2	1,953.2	1,933.3	4.4	6.2	-122.72	54.9	-316.5	346.6	337.7	8.86	39.129	
2,100.0	2,097.5	2,050.1	2,028.6	4.7	6.6	-123.77	59.0	-333.5	370.6	361.3	9.35	39.656	
2,200.0	2,196.8	2,146.9	2,123.9	4.9	7.0	-124.70	63.1	-350.5	394.8	385.0	9.84	40.116	
2,300.0	2,296.2	2,243.8	2,219.1	5.2	7.3	-125.52	67.2	-367.5	419.1	408.7	10.34	40.519	
2,400.0	2,395.5	2,340.6	2,314.4	5.4	7.7	-126.25	71.4	-384.5	443.4	432.5	10.85	40.875	
2,500.0	2,494.9	2,437.5	2,409.6	5.7	8.1	-126.90	75.5	-401.5	467.8	456.4	11.36	41.191	
2,600.0	2,594.2	2,534.3	2,504.9	6.0	8.5	-127.49	79.6	-418.5	492.2	480.3	11.87	41.472	
2,700.0	2,693.6	2,631.2	2,600.1	6.3	8.9	-128.02	83.7	-435.5	516.7	504.3	12.38	41.725	
2,800.0	2,792.9	2,728.0	2,695.4	6.6	9.3	-128.51	87.8	-452.6	541.2	528.3	12.90	41.953	
2,900.0	2,892.2	2,824.9	2,790.7	6.8	9.7	-128.95	91.9	-469.6	565.7	552.3	13.42	42.159	
3,000.0	2,991.6	2,921.7	2,885.9	7.1	10.1	-129.36	96.0	-486.6	590.3	576.4	13.94	42.346	
3,100.0	3,090.9	3,018.6	2,981.2	7.4	10.5	-129.73	100.1	-503.6	614.9	600.4	14.46	42.517	
3,200.0	3,190.3	3,115.4	3,076.4	7.7	10.9	-130.08	104.3	-520.6	639.5	624.5	14.99	42.673	
3,300.0	3,289.6	3,212.3	3,171.7	8.0	11.3	-130.40	108.4	-537.6	664.2	648.7	15.51	42.816	
3,400.0	3,389.0	3,309.1	3,266.9	8.3	11.7	-130.70	112.5	-554.6	688.8	672.8	16.04	42.948	
3,500.0	3,488.3	3,406.0	3,362.2	8.6	12.1	-130.97	116.6	-571.6	713.5	697.0	16.57	43.070	
3,600.0	3,587.6	3,502.8	3,457.4	8.9	12.5	-131.23	120.7	-588.6	738.2	721.1	17.10	43.183	
3,700.0	3,687.0	3,599.7	3,552.7	9.2	12.9	-131.47	124.8	-605.7	762.9	745.3	17.62	43.288	
3,800.0	3,786.3	3,696.5	3,648.0	9.5	13.3	-131.70	128.9	-622.7	787.6	769.5	18.15	43.386	
3,900.0	3,885.7	3,793.4	3,743.2	9.8	13.7	-131.91	133.0	-639.7	812.4	793.7	18.69	43.477	
4,000.0	3,985.0	3,890.2	3,838.5	10.0	14.1	-132.11	137.1	-656.7	837.1	817.9	19.22	43.562	
4,100.0	4,084.3	3,987.1	3,933.7	10.3	14.5	-132.30	141.3	-673.7	861.9	842.1	19.75	43.641	
4,188.3	4,172.1	4,072.6	4,017.8	10.6	14.9	-132.45	144.9	-688.7	883.7	863.5	20.22	43.708	
4,200.0	4,183.7	4,083.9	4,029.0	10.6	14.9	-132.52	145.4	-690.7	886.6	866.3	20.29	43.705	
4,300.0	4,283.3	4,181.2	4,124.6	10.9	15.3	-132.94	149.5	-707.8	910.0	889.1	20.82	43.705	
4,400.0	4,383.1	4,278.9	4,220.8	11.1	15.7	-133.15	153.6	-725.0	931.0	909.7	21.32	43.658	
4,500.0	4,483.0	4,377.0	4,317.3	11.2	16.1	-133.18	157.8	-742.2	949.7	927.9	21.80	43.571	
4,517.0	4,500.0	4,393.7	4,333.7	11.3	16.2	-95.13	158.5	-745.1	952.6	930.8	21.87	43.552	
4,600.0	4,583.0	4,475.4	4,414.0	11.4	16.5	-94.84	162.0	-759.5	966.9	944.6	22.24	43.484	
4,700.0	4,683.0	4,573.8	4,510.8	11.6	16.9	-94.51	166.2	-776.8	984.1	961.4	22.69	43.372	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-243 - Wellbore #1 - Plan #1 (8-15-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-61.3	61.4				
100.0	100.0	98.0	98.0	0.1	0.1	-90.00	0.0	-61.3	61.3	61.1	0.22	275.666	
200.0	200.0	198.0	198.0	0.3	0.3	-90.00	0.0	-61.3	61.3	60.7	0.67	91.582	
300.0	300.0	298.0	298.0	0.6	0.6	-90.00	0.0	-61.3	61.3	60.2	1.12	54.802	
400.0	400.0	398.0	398.0	0.8	0.8	-90.00	0.0	-61.3	61.3	59.8	1.57	39.100	
500.0	500.0	498.0	498.0	1.0	1.0	-90.00	0.0	-61.3	61.3	59.3	2.02	30.391	
600.0	600.0	598.0	598.0	1.2	1.2	-90.00	0.0	-61.3	61.3	58.9	2.47	24.856	
700.0	700.0	698.0	698.0	1.5	1.5	-90.00	0.0	-61.3	61.3	58.4	2.92	21.026	
800.0	800.0	798.0	798.0	1.7	1.7	-90.00	0.0	-61.3	61.3	58.0	3.37	18.219	
900.0	900.0	898.0	898.0	1.9	1.9	-90.00	0.0	-61.3	61.3	57.5	3.82	16.073	
1,000.0	1,000.0	998.0	998.0	2.1	2.1	-90.00	0.0	-61.3	61.3	57.1	4.27	14.379	CC, ES
1,100.0	1,100.0	1,096.2	1,096.2	2.4	2.3	-89.23	0.8	-62.7	62.8	58.0	4.71	13.337	
1,200.0	1,200.0	1,194.1	1,194.0	2.6	2.6	-87.08	3.4	-67.0	67.2	62.0	5.14	13.063	
1,300.0	1,300.0	1,291.6	1,291.1	2.8	2.8	-84.07	7.7	-74.0	74.7	69.2	5.59	13.382	
1,400.0	1,400.0	1,389.4	1,388.2	3.0	3.0	-80.78	13.6	-83.8	85.4	79.4	6.04	14.140	
1,500.0	1,500.0	1,488.6	1,486.7	3.3	3.3	-78.05	19.9	-94.2	97.0	90.5	6.51	14.904	
1,600.0	1,600.0	1,587.8	1,585.1	3.5	3.5	-114.55	26.3	-104.7	109.4	102.5	6.91	15.828	
1,700.0	1,699.8	1,686.8	1,683.4	3.7	3.8	-114.76	32.6	-115.1	123.3	116.0	7.35	16.769	
1,800.0	1,799.5	1,785.6	1,781.4	3.9	4.1	-116.16	39.0	-125.6	138.8	131.0	7.80	17.785	
1,828.6	1,827.9	1,813.8	1,809.4	4.0	4.2	-116.72	40.8	-128.5	143.5	135.5	7.93	18.090	
1,900.0	1,898.8	1,884.0	1,879.0	4.2	4.4	-118.28	45.3	-135.9	155.5	147.2	8.26	18.820	
2,000.0	1,998.2	1,982.4	1,976.7	4.4	4.7	-120.09	51.5	-146.3	172.4	163.7	8.73	19.749	
2,100.0	2,097.5	2,080.8	2,074.4	4.7	5.0	-121.59	57.8	-156.7	189.6	180.3	9.21	20.579	
2,200.0	2,196.8	2,179.2	2,172.0	4.9	5.3	-122.83	64.1	-167.1	206.8	197.1	9.70	21.323	
2,300.0	2,296.2	2,277.7	2,269.7	5.2	5.6	-123.88	70.4	-177.5	224.1	213.9	10.19	21.991	
2,400.0	2,395.5	2,376.1	2,367.4	5.4	5.9	-124.79	76.7	-187.9	241.4	230.7	10.69	22.593	
2,500.0	2,494.9	2,474.5	2,465.0	5.7	6.2	-125.57	83.0	-198.3	258.8	247.6	11.19	23.137	
2,600.0	2,594.2	2,572.9	2,562.7	6.0	6.5	-126.25	89.3	-208.6	276.3	264.6	11.69	23.631	
2,700.0	2,693.6	2,671.3	2,660.3	6.3	6.8	-126.85	95.6	-219.0	293.8	281.6	12.20	24.081	
2,800.0	2,792.9	2,769.7	2,758.0	6.6	7.1	-127.38	101.9	-229.4	311.3	298.6	12.71	24.491	
2,900.0	2,892.2	2,868.2	2,855.7	6.8	7.4	-127.86	108.2	-239.8	328.8	315.6	13.22	24.868	
3,000.0	2,991.6	2,966.6	2,953.3	7.1	7.7	-128.29	114.5	-250.2	346.4	332.6	13.74	25.214	
3,100.0	3,090.9	3,065.0	3,051.0	7.4	8.0	-128.68	120.8	-260.6	363.9	349.7	14.25	25.532	
3,200.0	3,190.3	3,163.4	3,148.7	7.7	8.3	-129.03	127.1	-271.0	381.5	366.7	14.77	25.827	
3,300.0	3,289.6	3,261.8	3,246.3	8.0	8.6	-129.35	133.4	-281.3	399.1	383.8	15.29	26.100	
3,400.0	3,389.0	3,360.2	3,344.0	8.3	8.9	-129.64	139.7	-291.7	416.7	400.9	15.81	26.353	
3,500.0	3,488.3	3,458.6	3,441.7	8.6	9.2	-129.91	146.0	-302.1	434.3	418.0	16.33	26.589	
3,600.0	3,587.6	3,557.1	3,539.3	8.9	9.6	-130.16	152.3	-312.5	452.0	435.1	16.86	26.810	
3,700.0	3,687.0	3,655.5	3,637.0	9.2	9.9	-130.39	158.6	-322.9	469.6	452.2	17.38	27.015	
3,800.0	3,786.3	3,753.9	3,734.6	9.5	10.2	-130.61	164.9	-333.3	487.2	469.3	17.91	27.208	
3,900.0	3,885.7	3,852.3	3,832.3	9.8	10.5	-130.80	171.2	-343.6	504.9	486.4	18.43	27.389	
4,000.0	3,985.0	3,950.7	3,930.0	10.0	10.8	-130.99	177.5	-354.0	522.5	503.6	18.96	27.559	
4,100.0	4,084.3	4,049.1	4,027.6	10.3	11.1	-131.16	183.8	-364.4	540.2	520.7	19.49	27.720	
4,188.3	4,172.1	4,136.0	4,113.9	10.6	11.4	-131.31	189.4	-373.6	555.8	535.8	19.95	27.853	
4,200.0	4,183.7	4,147.6	4,125.3	10.6	11.4	-131.35	190.1	-374.8	557.8	537.8	20.02	27.868	
4,300.0	4,283.3	4,246.2	4,223.2	10.9	11.7	-131.59	196.4	-385.2	574.1	553.6	20.52	27.981	
4,400.0	4,383.1	4,345.2	4,321.4	11.1	12.1	-131.53	202.8	-395.7	588.1	567.1	20.99	28.017	
4,500.0	4,483.0	4,444.4	4,419.8	11.2	12.4	-131.20	209.1	-406.1	599.8	578.4	21.43	27.984	
4,517.0	4,500.0	4,461.2	4,436.5	11.3	12.4	-93.08	210.2	-407.9	601.5	580.0	21.50	27.973	
4,600.0	4,583.0	4,543.6	4,518.3	11.4	12.7	-92.54	215.5	-416.6	610.1	588.2	21.86	27.902	
4,700.0	4,683.0	4,642.8	4,616.8	11.6	13.0	-91.91	221.8	-427.1	620.4	598.1	22.31	27.801	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-243 - Wellbore #1 - Plan #1 (8-15-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,783.0	4,757.9	4,731.1	11.8	13.3	-91.26	228.5	-438.1	629.9	607.1	22.76	27.671	
4,900.0	4,883.0	4,880.6	4,853.5	12.0	13.6	-90.83	233.2	-445.7	636.0	612.8	23.19	27.423	
5,000.0	4,983.0	5,003.8	4,976.6	12.2	13.8	-90.66	235.1	-448.9	638.6	614.9	23.61	27.047	
5,100.0	5,083.0	5,108.2	5,081.0	12.4	13.9	-90.65	235.1	-448.9	638.6	614.6	24.00	26.609	
5,200.0	5,183.0	5,208.2	5,181.0	12.6	14.1	-90.65	235.1	-448.9	638.6	614.2	24.40	26.172	
5,300.0	5,283.0	5,308.2	5,281.0	12.8	14.3	-90.65	235.1	-448.9	638.6	613.8	24.80	25.748	
5,400.0	5,383.0	5,408.2	5,381.0	13.0	14.5	-90.65	235.1	-448.9	638.6	613.4	25.21	25.335	
5,500.0	5,483.0	5,508.2	5,481.0	13.2	14.6	-90.65	235.1	-448.9	638.6	613.0	25.61	24.935	
5,600.0	5,583.0	5,608.2	5,581.0	13.4	14.8	-90.65	235.1	-448.9	638.6	612.6	26.02	24.545	
5,700.0	5,683.0	5,708.2	5,681.0	13.6	15.0	-90.65	235.1	-448.9	638.6	612.2	26.43	24.166	
5,800.0	5,783.0	5,808.2	5,781.0	13.8	15.2	-90.65	235.1	-448.9	638.6	611.8	26.84	23.797	
5,900.0	5,883.0	5,908.2	5,881.0	14.0	15.4	-90.65	235.1	-448.9	638.6	611.4	27.25	23.438	
6,000.0	5,983.0	6,008.2	5,981.0	14.2	15.5	-90.65	235.1	-448.9	638.6	611.0	27.66	23.089	
6,100.0	6,083.0	6,108.2	6,081.0	14.4	15.7	-90.65	235.1	-448.9	638.6	610.5	28.07	22.750	
6,200.0	6,183.0	6,208.2	6,181.0	14.6	15.9	-90.65	235.1	-448.9	638.6	610.1	28.49	22.419	
6,227.4	6,210.4	6,235.6	6,208.4	14.7	16.0	-90.65	235.1	-448.9	638.6	610.0	28.60	22.330	
6,250.0	6,233.0	6,258.0	6,230.8	14.7	16.0	89.35	234.8	-448.9	638.6	609.9	28.68	22.268	
6,300.0	6,282.9	6,307.5	6,280.3	14.8	16.1	89.35	231.8	-448.9	638.6	609.8	28.82	22.161	
6,350.0	6,332.5	6,357.1	6,329.4	14.8	16.1	89.36	225.6	-448.9	638.6	609.7	28.92	22.079	
6,400.0	6,381.6	6,406.6	6,378.0	14.9	16.2	89.37	216.2	-448.9	638.6	609.6	29.00	22.019	
6,450.0	6,429.9	6,456.2	6,426.0	14.9	16.2	89.39	203.7	-448.9	638.6	609.6	29.06	21.978	
6,500.0	6,477.3	6,505.7	6,473.0	14.9	16.2	89.41	188.1	-448.9	638.6	609.5	29.09	21.950	
6,550.0	6,523.5	6,555.3	6,518.9	14.9	16.2	89.42	169.4	-448.9	638.6	609.5	29.12	21.930	
6,600.0	6,568.5	6,604.9	6,563.6	14.9	16.2	89.45	147.9	-448.9	638.6	609.5	29.15	21.911	
6,650.0	6,611.8	6,654.5	6,606.7	14.9	16.3	89.47	123.4	-448.9	638.6	609.4	29.18	21.888	
6,700.0	6,653.5	6,704.1	6,648.3	15.0	16.3	89.50	96.2	-448.9	638.6	609.4	29.22	21.852	
6,750.0	6,693.2	6,753.8	6,687.9	15.0	16.3	89.53	66.4	-448.9	638.6	609.3	29.30	21.795	
6,800.0	6,730.9	6,803.4	6,725.6	15.0	16.3	89.56	34.0	-448.9	638.6	609.2	29.41	21.710	
6,850.0	6,766.4	6,853.1	6,761.1	15.0	16.3	89.59	-0.7	-448.9	638.6	609.0	29.58	21.589	
6,900.0	6,799.5	6,902.9	6,794.2	15.0	16.3	89.62	-37.7	-448.9	638.6	608.8	29.80	21.426	
6,950.0	6,830.0	6,952.6	6,825.0	15.1	16.4	89.66	-76.9	-448.9	638.6	608.5	30.10	21.217	
7,000.0	6,857.9	7,002.4	6,853.1	15.3	16.5	89.70	-117.9	-448.9	638.6	608.1	30.47	20.958	
7,050.0	6,883.0	7,052.1	6,878.5	15.5	16.6	89.74	-160.7	-448.9	638.6	607.7	30.93	20.649	
7,100.0	6,905.3	7,102.0	6,901.0	15.8	16.8	89.78	-205.1	-448.9	638.6	607.1	31.47	20.292	
7,150.0	6,924.6	7,151.8	6,920.7	16.1	17.0	89.82	-250.9	-448.9	638.6	606.5	32.10	19.891	
7,200.0	6,940.8	7,201.7	6,937.3	16.5	17.3	89.86	-298.0	-448.9	638.6	605.8	32.83	19.452	
7,250.0	6,953.9	7,251.6	6,950.8	16.9	17.6	89.90	-346.0	-448.9	638.6	604.9	33.64	18.982	
7,300.0	6,963.8	7,301.5	6,961.2	17.4	18.1	89.94	-394.8	-448.9	638.6	604.0	34.54	18.490	
7,308.2	6,965.1	7,309.7	6,962.6	17.5	18.1	89.95	-402.9	-448.9	638.6	603.9	34.70	18.405	
7,350.0	6,970.5	7,351.5	6,968.3	17.9	18.5	89.99	-444.3	-448.9	638.6	603.1	35.51	17.983	
7,400.0	6,973.9	7,401.5	6,972.2	18.4	19.0	90.03	-494.1	-448.9	638.6	602.0	36.55	17.470	
7,438.5	6,974.3	7,440.0	6,973.0	18.8	19.4	90.06	-532.6	-448.9	638.6	601.2	37.40	17.074	
7,500.0	6,973.4	7,501.5	6,972.9	19.5	20.1	90.13	-594.1	-448.9	638.6	599.8	38.83	16.446	
7,600.0	6,972.0	7,601.5	6,972.6	20.8	21.4	90.24	-694.1	-448.9	638.6	597.3	41.33	15.449	
7,700.0	6,970.5	7,701.5	6,972.4	22.1	22.7	90.35	-794.1	-449.0	638.6	594.6	44.03	14.503	
7,800.0	6,969.1	7,801.5	6,972.2	23.6	24.1	90.46	-894.1	-449.0	638.6	591.7	46.89	13.620	
7,900.0	6,967.6	7,901.5	6,972.0	25.1	25.5	90.57	-994.1	-449.0	638.6	588.7	49.88	12.804	
8,000.0	6,966.2	8,001.5	6,971.7	26.6	27.1	90.68	-1,094.1	-449.0	638.6	585.7	52.97	12.056	
8,100.0	6,964.7	8,101.5	6,971.5	28.2	28.6	90.79	-1,194.1	-449.0	638.7	582.5	56.16	11.372	
8,200.0	6,963.3	8,201.5	6,971.3	29.8	30.2	90.90	-1,294.1	-449.0	638.7	579.2	59.43	10.747	
8,300.0	6,961.8	8,301.5	6,971.0	31.5	31.9	91.01	-1,394.1	-449.0	638.7	575.9	62.76	10.177	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-243 - Wellbore #1 - Plan #1 (8-15-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,960.4	8,401.5	6,970.8	33.2	33.5	91.12	-1,494.1	-449.0	638.7	572.6	66.14	9.657	
8,500.0	6,958.9	8,501.5	6,970.6	34.9	35.2	91.23	-1,594.1	-449.0	638.7	569.2	69.57	9.181	
8,600.0	6,957.5	8,601.5	6,970.4	36.6	37.0	91.34	-1,694.1	-449.0	638.8	565.7	73.04	8.745	
8,700.0	6,956.0	8,701.4	6,970.1	38.4	38.7	91.44	-1,794.0	-449.0	638.8	562.3	76.55	8.345	
8,800.0	6,954.6	8,801.4	6,969.9	40.2	40.4	91.55	-1,894.0	-449.0	638.8	558.8	80.08	7.977	
8,900.0	6,953.1	8,901.4	6,969.7	42.0	42.2	91.66	-1,994.0	-449.0	638.9	555.2	83.64	7.638	
9,000.0	6,951.7	9,001.4	6,969.5	43.7	44.0	91.77	-2,094.0	-449.0	638.9	551.7	87.22	7.325	
9,100.0	6,950.2	9,101.4	6,969.2	45.5	45.8	91.88	-2,194.0	-449.0	638.9	548.1	90.83	7.035	
9,200.0	6,948.8	9,201.4	6,969.0	47.4	47.6	91.99	-2,294.0	-449.0	639.0	544.5	94.45	6.766	
9,300.0	6,947.3	9,301.4	6,968.8	49.2	49.4	92.10	-2,394.0	-449.0	639.0	540.9	98.08	6.515	
9,400.0	6,945.9	9,401.4	6,968.5	51.0	51.2	92.21	-2,494.0	-449.0	639.1	537.3	101.73	6.282	
9,500.0	6,944.4	9,501.4	6,968.3	52.8	53.0	92.32	-2,594.0	-449.0	639.1	533.7	105.39	6.064	
9,600.0	6,943.0	9,601.4	6,968.1	54.7	54.9	92.43	-2,694.0	-449.0	639.2	530.1	109.06	5.861	
9,700.0	6,941.5	9,701.4	6,967.9	56.5	56.7	92.54	-2,794.0	-449.0	639.2	526.5	112.75	5.670	
9,800.0	6,940.1	9,801.4	6,967.6	58.4	58.5	92.65	-2,894.0	-449.0	639.3	522.9	116.44	5.490	
9,900.0	6,938.6	9,901.4	6,967.4	60.2	60.4	92.76	-2,994.0	-449.0	639.3	519.2	120.13	5.322	
10,000.0	6,937.2	10,001.3	6,967.2	62.1	62.2	92.87	-3,093.9	-449.0	639.4	515.6	123.84	5.163	
10,100.0	6,935.8	10,101.3	6,967.0	64.0	64.1	92.98	-3,193.9	-449.0	639.5	511.9	127.55	5.013	
10,200.0	6,934.3	10,201.3	6,966.7	65.8	66.0	93.09	-3,293.9	-449.0	639.5	508.3	131.27	4.872	
10,300.0	6,932.9	10,301.3	6,966.5	67.7	67.8	93.20	-3,393.9	-449.0	639.6	504.6	134.99	4.738	
10,400.0	6,931.4	10,401.3	6,966.3	69.6	69.7	93.30	-3,493.9	-449.0	639.7	501.0	138.71	4.611	
10,500.0	6,930.0	10,501.3	6,966.1	71.4	71.6	93.41	-3,593.9	-449.0	639.7	497.3	142.44	4.491	
10,600.0	6,928.5	10,601.3	6,965.8	73.3	73.4	93.52	-3,693.9	-449.0	639.8	493.6	146.18	4.377	
10,700.0	6,927.1	10,701.3	6,965.6	75.2	75.3	93.63	-3,793.9	-449.0	639.9	490.0	149.91	4.268	
10,800.0	6,925.6	10,801.3	6,965.4	77.1	77.2	93.74	-3,893.9	-449.0	640.0	486.3	153.65	4.165	
10,900.0	6,924.2	10,901.3	6,965.1	78.9	79.0	93.85	-3,993.9	-449.0	640.1	482.7	157.39	4.067	
11,000.0	6,922.7	11,001.3	6,964.9	80.8	80.9	93.96	-4,093.9	-449.0	640.1	479.0	161.14	3.973	
11,100.0	6,921.3	11,101.3	6,964.7	82.7	82.8	94.07	-4,193.9	-449.0	640.2	475.3	164.88	3.883	
11,200.0	6,919.8	11,201.3	6,964.5	84.6	84.7	94.18	-4,293.9	-449.0	640.3	471.7	168.63	3.797	
11,300.0	6,918.4	11,301.3	6,964.2	86.5	86.6	94.29	-4,393.8	-449.0	640.4	468.0	172.38	3.715	
11,394.5	6,917.0	11,395.8	6,964.0	88.3	88.4	94.39	-4,488.4	-449.0	640.5	464.6	175.92	3.641	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-323 - Wellbore #1 - Plan #1 (8-18-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.02	0.0	30.7	30.7	30.7	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	90.02	0.0	30.7	30.7	30.4	0.23	135.106	
200.0	200.0	201.0	201.0	0.3	0.3	90.02	0.0	30.7	30.7	30.0	0.68	45.335	
300.0	300.0	301.0	301.0	0.6	0.6	90.02	0.0	30.7	30.7	29.5	1.13	27.237	
400.0	400.0	401.0	401.0	0.8	0.8	90.02	0.0	30.7	30.7	29.1	1.58	19.466	
500.0	500.0	501.0	501.0	1.0	1.0	90.02	0.0	30.7	30.7	28.6	2.03	15.145	
600.0	600.0	601.0	601.0	1.2	1.2	90.02	0.0	30.7	30.7	28.2	2.47	12.394	
700.0	700.0	701.0	701.0	1.5	1.5	90.02	0.0	30.7	30.7	27.7	2.92	10.489	
800.0	800.0	801.0	801.0	1.7	1.7	90.02	0.0	30.7	30.7	27.3	3.37	9.091	
900.0	900.0	901.0	901.0	1.9	1.9	90.02	0.0	30.7	30.7	26.8	3.82	8.022	
966.3	966.3	967.3	967.3	2.1	2.1	90.02	0.0	30.7	30.7	26.5	4.12	7.442	CC
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	90.02	0.0	30.7	30.7	26.4	4.27	7.178	ES
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	88.76	0.7	32.3	32.3	27.6	4.71	6.852	
1,200.0	1,200.0	1,198.7	1,198.6	2.6	2.6	85.71	2.8	37.0	37.2	32.0	5.15	7.216	
1,300.0	1,300.0	1,297.0	1,296.5	2.8	2.8	82.11	6.2	44.7	45.4	39.8	5.59	8.120	
1,400.0	1,400.0	1,394.8	1,393.6	3.0	3.0	78.85	10.9	55.5	57.1	51.0	6.04	9.442	
1,500.0	1,500.0	1,494.0	1,491.8	3.3	3.3	76.47	16.2	67.5	70.1	63.6	6.50	10.784	
1,600.0	1,600.0	1,593.3	1,590.3	3.5	3.6	37.40	21.6	79.6	81.8	74.9	6.91	11.842	
1,700.0	1,699.8	1,692.8	1,689.0	3.7	3.8	37.94	26.9	91.7	90.8	83.4	7.34	12.363	
1,800.0	1,799.5	1,792.6	1,787.8	3.9	4.1	39.69	32.2	103.8	97.1	89.3	7.78	12.473	
1,828.6	1,827.9	1,821.2	1,816.2	4.0	4.2	40.39	33.8	107.3	98.4	90.5	7.91	12.440	
1,900.0	1,898.8	1,892.4	1,886.8	4.2	4.4	42.24	37.6	116.0	101.5	93.3	8.24	12.319	
2,000.0	1,998.2	1,992.2	1,985.7	4.4	4.7	44.64	42.9	128.1	106.0	97.3	8.71	12.168	
2,100.0	2,097.5	2,092.0	2,084.6	4.7	5.0	46.85	48.3	140.2	110.7	101.5	9.20	12.038	
2,200.0	2,196.8	2,191.8	2,183.5	4.9	5.3	48.87	53.6	152.3	115.6	105.9	9.69	11.922	
2,300.0	2,296.2	2,291.6	2,282.4	5.2	5.7	50.73	59.0	164.5	120.5	110.3	10.20	11.819	
2,400.0	2,395.5	2,391.4	2,381.3	5.4	6.0	52.44	64.3	176.6	125.6	114.9	10.71	11.725	
2,500.0	2,494.9	2,491.2	2,480.3	5.7	6.3	54.01	69.7	188.7	130.8	119.6	11.24	11.641	
2,600.0	2,594.2	2,591.0	2,579.2	6.0	6.6	55.46	75.0	200.8	136.1	124.3	11.77	11.563	
2,700.0	2,693.6	2,690.8	2,678.1	6.3	6.9	56.81	80.4	213.0	141.5	129.2	12.31	11.492	
2,800.0	2,792.9	2,790.6	2,777.0	6.6	7.3	58.05	85.7	225.1	146.9	134.1	12.86	11.426	
2,900.0	2,892.2	2,890.4	2,875.9	6.8	7.6	59.21	91.1	237.2	152.4	139.0	13.41	11.366	
3,000.0	2,991.6	2,990.2	2,974.9	7.1	7.9	60.28	96.4	249.3	158.0	144.0	13.97	11.310	
3,100.0	3,090.9	3,090.0	3,073.8	7.4	8.2	61.29	101.8	261.5	163.6	149.1	14.53	11.258	
3,200.0	3,190.3	3,189.8	3,172.7	7.7	8.5	62.22	107.1	273.6	169.2	154.1	15.10	11.209	
3,300.0	3,289.6	3,289.6	3,271.6	8.0	8.9	63.10	112.4	285.7	174.9	159.3	15.67	11.164	
3,400.0	3,389.0	3,389.4	3,370.5	8.3	9.2	63.91	117.8	297.9	180.7	164.4	16.24	11.122	
3,500.0	3,488.3	3,489.3	3,469.5	8.6	9.5	64.68	123.1	310.0	186.5	169.6	16.82	11.083	
3,600.0	3,587.6	3,589.1	3,568.4	8.9	9.9	65.41	128.5	322.1	192.3	174.9	17.40	11.047	
3,700.0	3,687.0	3,688.9	3,667.3	9.2	10.2	66.09	133.8	334.2	198.1	180.1	17.99	11.012	
3,800.0	3,786.3	3,788.7	3,766.2	9.5	10.5	66.73	139.2	346.4	204.0	185.4	18.57	10.980	
3,900.0	3,885.7	3,888.5	3,865.1	9.8	10.8	67.33	144.5	358.5	209.8	190.7	19.16	10.950	
4,000.0	3,985.0	3,988.3	3,964.1	10.0	11.2	67.90	149.9	370.6	215.7	196.0	19.75	10.922	
4,100.0	4,084.3	4,088.1	4,063.0	10.3	11.5	68.44	155.2	382.7	221.7	201.3	20.35	10.895	
4,188.3	4,172.1	4,176.2	4,150.3	10.6	11.8	68.90	159.9	393.4	226.9	206.0	20.87	10.873	
4,200.0	4,183.7	4,187.9	4,161.9	10.6	11.8	68.97	160.6	394.9	227.6	206.7	20.94	10.872	
4,300.0	4,283.3	4,287.6	4,260.8	10.9	12.2	69.08	165.9	407.0	234.3	212.9	21.44	10.932	
4,400.0	4,383.1	4,387.3	4,359.5	11.1	12.5	68.46	171.2	419.1	242.3	220.5	21.87	11.081	
4,500.0	4,483.0	4,486.6	4,458.0	11.2	12.8	67.17	176.6	431.2	251.7	229.5	22.24	11.320	
4,517.0	4,500.0	4,503.4	4,474.7	11.3	12.9	104.93	177.5	433.2	253.4	231.2	22.29	11.370	
4,600.0	4,583.0	4,585.7	4,556.2	11.4	13.1	103.42	181.9	443.2	262.2	239.6	22.57	11.615	

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 Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-323 - Wellbore #1 - Plan #1 (8-18-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,700.0	4,683.0	4,684.9	4,654.5	11.6	13.5	101.74	187.2	455.2	272.9	250.0	22.93	11.900	
4,800.0	4,783.0	4,784.0	4,752.7	11.8	13.8	100.19	192.5	467.3	283.8	260.5	23.30	12.183	
4,900.0	4,883.0	4,883.1	4,850.9	12.0	14.1	98.75	197.8	479.3	295.0	271.3	23.67	12.462	
5,000.0	4,983.0	4,982.2	4,949.2	12.2	14.5	97.42	203.1	491.4	306.3	282.2	24.05	12.737	
5,100.0	5,083.0	5,081.3	5,047.4	12.4	14.8	96.18	208.4	503.4	317.7	293.3	24.43	13.006	
5,200.0	5,183.0	5,180.4	5,145.7	12.6	15.1	95.03	213.7	515.5	329.3	304.5	24.82	13.271	
5,300.0	5,283.0	5,279.5	5,243.9	12.8	15.4	93.95	219.1	527.5	341.0	315.8	25.21	13.530	
5,400.0	5,383.0	5,378.7	5,342.1	13.0	15.8	92.95	224.4	539.5	352.9	327.3	25.60	13.782	
5,500.0	5,483.0	5,477.8	5,440.4	13.2	16.1	92.01	229.7	551.6	364.8	338.8	26.00	14.029	
5,600.0	5,583.0	5,576.9	5,538.6	13.4	16.4	91.14	235.0	563.6	376.8	350.4	26.41	14.270	
5,700.0	5,683.0	5,678.5	5,639.3	13.6	16.8	90.30	240.4	575.9	388.9	362.0	26.81	14.502	
5,800.0	5,783.0	5,792.2	5,752.4	13.8	17.0	89.59	245.3	587.0	398.6	371.4	27.21	14.650	
5,900.0	5,883.0	5,906.8	5,866.7	14.0	17.3	89.16	248.3	593.9	404.7	377.1	27.60	14.662	
6,000.0	5,983.0	6,021.8	5,981.6	14.2	17.4	88.99	249.6	596.7	407.2	379.2	28.00	14.542	
6,100.0	6,083.0	6,124.2	6,084.0	14.4	17.6	88.99	249.6	596.8	407.2	378.8	28.40	14.340	
6,200.0	6,183.0	6,224.2	6,184.0	14.6	17.8	88.99	249.6	596.8	407.2	378.4	28.80	14.139	
6,227.4	6,210.4	6,251.6	6,211.4	14.7	17.8	88.99	249.6	596.8	407.2	378.3	28.91	14.084	
6,250.0	6,233.0	6,274.2	6,234.0	14.7	17.8	-91.06	249.6	596.8	407.2	378.2	28.99	14.045	
6,300.0	6,282.9	6,324.6	6,284.4	14.8	17.9	-91.41	249.0	596.8	407.3	378.1	29.12	13.983	
6,350.0	6,332.5	6,375.4	6,335.2	14.8	18.0	-91.80	245.3	596.7	407.3	378.1	29.22	13.938	
6,400.0	6,381.6	6,426.5	6,385.7	14.9	18.0	-92.18	238.2	596.7	407.4	378.1	29.29	13.907	
6,450.0	6,429.9	6,477.7	6,435.8	14.9	18.1	-92.55	227.7	596.6	407.4	378.1	29.34	13.887	
6,500.0	6,477.3	6,529.1	6,485.3	14.9	18.1	-92.92	213.8	596.5	407.4	378.1	29.37	13.874	
6,550.0	6,523.5	6,580.7	6,533.9	14.9	18.1	-93.26	196.5	596.4	407.5	378.1	29.38	13.866	
6,600.0	6,568.5	6,632.5	6,581.4	14.9	18.1	-93.60	175.9	596.3	407.5	378.1	29.40	13.859	
6,650.0	6,611.8	6,684.4	6,627.6	14.9	18.1	-93.92	152.1	596.1	407.5	378.0	29.42	13.848	
6,700.0	6,653.5	6,736.5	6,672.1	15.0	18.1	-94.23	125.1	596.0	407.4	378.0	29.46	13.829	
6,750.0	6,693.2	6,788.7	6,714.8	15.0	18.1	-94.51	95.1	595.8	407.4	377.9	29.53	13.796	
6,800.0	6,730.9	6,841.1	6,755.5	15.0	18.1	-94.78	62.1	595.6	407.3	377.7	29.63	13.746	
6,850.0	6,766.4	6,893.6	6,793.9	15.0	18.1	-95.02	26.3	595.3	407.3	377.5	29.79	13.672	
6,900.0	6,799.5	6,946.2	6,829.8	15.0	18.2	-95.25	-12.1	595.1	407.1	377.1	30.00	13.573	
6,950.0	6,830.0	6,998.9	6,863.0	15.1	18.2	-95.45	-53.0	594.8	407.0	376.7	30.27	13.444	
7,000.0	6,857.9	7,051.7	6,893.4	15.3	18.3	-95.62	-96.1	594.5	406.9	376.2	30.63	13.283	
7,050.0	6,883.0	7,104.6	6,920.8	15.5	18.4	-95.77	-141.4	594.2	406.7	375.6	31.07	13.089	
7,100.0	6,905.3	7,157.5	6,945.1	15.8	18.5	-95.90	-188.4	593.9	406.5	374.9	31.59	12.865	
7,150.0	6,924.6	7,210.5	6,966.0	16.1	18.7	-96.00	-237.1	593.6	406.2	374.0	32.21	12.612	
7,200.0	6,940.8	7,263.5	6,983.5	16.5	18.9	-96.07	-287.1	593.3	405.9	373.0	32.91	12.334	
7,250.0	6,953.9	7,316.6	6,997.5	16.9	19.2	-96.11	-338.3	593.0	405.6	371.9	33.70	12.036	
7,300.0	6,963.8	7,369.6	7,007.9	17.4	19.6	-96.13	-390.2	592.6	405.3	370.7	34.58	11.722	
7,350.0	6,970.5	7,422.6	7,014.7	17.9	20.0	-96.12	-442.8	592.3	405.0	369.4	35.53	11.398	
7,400.0	6,973.9	7,475.6	7,017.9	18.4	20.5	-96.08	-495.7	591.9	404.6	368.0	36.55	11.068	
7,438.5	6,974.3	7,515.5	7,017.9	18.8	20.9	-96.06	-535.5	591.7	404.3	366.9	37.38	10.817	
7,500.0	6,973.4	7,577.0	7,017.5	19.5	21.5	-96.13	-597.1	591.3	404.0	365.2	38.78	10.416	
7,600.0	6,972.0	7,677.0	7,016.8	20.8	22.6	-96.24	-697.1	590.6	403.4	362.2	41.24	9.781	
7,700.0	6,970.5	7,777.0	7,016.0	22.1	23.9	-96.35	-797.0	590.0	402.8	358.9	43.90	9.177	
7,800.0	6,969.1	7,877.0	7,015.3	23.6	25.2	-96.46	-897.0	589.3	402.3	355.6	46.71	8.613	
7,900.0	6,967.6	7,977.0	7,014.6	25.1	26.6	-96.57	-997.0	588.7	401.7	352.1	49.65	8.091	
8,000.0	6,966.2	8,077.0	7,013.8	26.6	28.1	-96.69	-1,097.0	588.1	401.1	348.4	52.70	7.612	
8,100.0	6,964.7	8,177.0	7,013.1	28.2	29.6	-96.80	-1,197.0	587.4	400.6	344.7	55.84	7.174	
8,200.0	6,963.3	8,277.0	7,012.4	29.8	31.1	-96.91	-1,297.0	586.8	400.0	341.0	59.06	6.773	
8,300.0	6,961.8	8,377.0	7,011.6	31.5	32.7	-97.02	-1,397.0	586.1	399.5	337.1	62.34	6.408	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-323 - Wellbore #1 - Plan #1 (8-18-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,960.4	8,477.0	7,010.9	33.2	34.4	-97.14	-1,497.0	585.5	398.9	333.2	65.68	6.074	
8,500.0	6,958.9	8,577.0	7,010.2	34.9	36.0	-97.25	-1,597.0	584.8	398.4	329.3	69.06	5.768	
8,600.0	6,957.5	8,676.9	7,009.4	36.6	37.7	-97.36	-1,697.0	584.2	397.8	325.3	72.48	5.489	
8,700.0	6,956.0	8,776.9	7,008.7	38.4	39.4	-97.48	-1,796.9	583.5	397.3	321.3	75.94	5.232	
8,800.0	6,954.6	8,876.9	7,008.0	40.2	41.1	-97.59	-1,896.9	582.9	396.7	317.3	79.42	4.995	
8,900.0	6,953.1	8,976.9	7,007.2	42.0	42.9	-97.71	-1,996.9	582.2	396.2	313.2	82.93	4.777	
9,000.0	6,951.7	9,076.9	7,006.5	43.7	44.6	-97.82	-2,096.9	581.6	395.6	309.2	86.46	4.576	
9,100.0	6,950.2	9,176.9	7,005.8	45.5	46.4	-97.94	-2,196.9	580.9	395.1	305.1	90.00	4.390	
9,200.0	6,948.8	9,276.9	7,005.0	47.4	48.2	-98.06	-2,296.9	580.3	394.5	301.0	93.57	4.217	
9,300.0	6,947.3	9,376.9	7,004.3	49.2	50.0	-98.17	-2,396.9	579.6	394.0	296.9	97.15	4.056	
9,400.0	6,945.9	9,476.9	7,003.6	51.0	51.8	-98.29	-2,496.9	579.0	393.5	292.7	100.74	3.906	
9,500.0	6,944.4	9,576.9	7,002.8	52.8	53.6	-98.40	-2,596.9	578.3	392.9	288.6	104.34	3.766	
9,600.0	6,943.0	9,676.9	7,002.1	54.7	55.4	-98.52	-2,696.9	577.7	392.4	284.4	107.95	3.635	
9,700.0	6,941.5	9,776.9	7,001.4	56.5	57.2	-98.64	-2,796.9	577.0	391.9	280.3	111.57	3.512	
9,800.0	6,940.1	9,876.9	7,000.6	58.4	59.0	-98.76	-2,896.8	576.4	391.3	276.1	115.20	3.397	
9,900.0	6,938.6	9,976.9	6,999.9	60.2	60.8	-98.88	-2,996.8	575.7	390.8	272.0	118.83	3.289	
10,000.0	6,937.2	10,076.9	6,999.2	62.1	62.7	-98.99	-3,096.8	575.1	390.3	267.8	122.47	3.187	
10,100.0	6,935.8	10,176.9	6,998.4	64.0	64.5	-99.11	-3,196.8	574.5	389.7	263.6	126.11	3.091	
10,200.0	6,934.3	10,276.9	6,997.7	65.8	66.4	-99.23	-3,296.8	573.8	389.2	259.5	129.75	3.000	
10,300.0	6,932.9	10,376.9	6,997.0	67.7	68.2	-99.35	-3,396.8	573.2	388.7	255.3	133.40	2.914	
10,400.0	6,931.4	10,476.9	6,996.2	69.6	70.1	-99.47	-3,496.8	572.5	388.2	251.1	137.06	2.832	
10,500.0	6,930.0	10,576.9	6,995.5	71.4	71.9	-99.59	-3,596.8	571.9	387.7	246.9	140.71	2.755	
10,600.0	6,928.5	10,676.9	6,994.8	73.3	73.8	-99.71	-3,696.8	571.2	387.1	242.8	144.37	2.682	
10,700.0	6,927.1	10,776.8	6,994.0	75.2	75.6	-99.83	-3,796.8	570.6	386.6	238.6	148.02	2.612	
10,800.0	6,925.6	10,876.8	6,993.3	77.1	77.5	-99.95	-3,896.7	569.9	386.1	234.4	151.68	2.545	
10,900.0	6,924.2	10,976.8	6,992.6	78.9	79.4	-100.07	-3,996.7	569.3	385.6	230.2	155.34	2.482	
11,000.0	6,922.7	11,076.8	6,991.8	80.8	81.2	-100.20	-4,096.7	568.6	385.1	226.1	159.00	2.422	
11,100.0	6,921.3	11,176.8	6,991.1	82.7	83.1	-100.32	-4,196.7	568.0	384.6	221.9	162.66	2.364	
11,200.0	6,919.8	11,276.8	6,990.4	84.6	85.0	-100.44	-4,296.7	567.3	384.1	217.7	166.32	2.309	
11,300.0	6,918.4	11,376.8	6,989.6	86.5	86.9	-100.56	-4,396.7	566.7	383.6	213.6	169.98	2.256	
11,373.4	6,917.3	11,450.2	6,989.1	87.9	88.1	-100.65	-4,470.1	566.2	383.2	210.7	172.49	2.221	
11,394.5	6,917.0	11,464.7	6,989.0	88.3	88.3	-100.67	-4,484.6	566.1	383.1	210.0	173.09	2.213	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-403 - Wellbore #1 - Plan #1 (8-15-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-30.7	30.7				
100.0	100.0	99.0	99.0	0.1	0.1	-89.99	0.0	-30.7	30.7	30.4	0.22	137.142	
200.0	200.0	199.0	199.0	0.3	0.3	-89.99	0.0	-30.7	30.7	30.0	0.67	45.638	
300.0	300.0	299.0	299.0	0.6	0.6	-89.99	0.0	-30.7	30.7	29.5	1.12	27.346	
400.0	400.0	399.0	399.0	0.8	0.8	-89.99	0.0	-30.7	30.7	29.1	1.57	19.522	
500.0	500.0	499.0	499.0	1.0	1.0	-89.99	0.0	-30.7	30.7	28.7	2.02	15.179	
600.0	600.0	599.0	599.0	1.2	1.2	-89.99	0.0	-30.7	30.7	28.2	2.47	12.416	
700.0	700.0	699.0	699.0	1.5	1.5	-89.99	0.0	-30.7	30.7	27.8	2.92	10.505	
800.0	800.0	799.0	799.0	1.7	1.7	-89.99	0.0	-30.7	30.7	27.3	3.37	9.103	
900.0	900.0	899.0	899.0	1.9	1.9	-89.99	0.0	-30.7	30.7	26.9	3.82	8.032	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	-89.99	0.0	-30.7	30.7	26.4	4.27	7.186	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	-89.99	0.0	-30.7	30.7	26.0	4.72	6.501	
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	-89.99	0.0	-30.7	30.7	25.5	5.17	5.936	
1,300.0	1,300.0	1,299.0	1,299.0	2.8	2.8	-89.99	0.0	-30.7	30.7	25.1	5.62	5.460	
1,400.0	1,400.0	1,399.0	1,399.0	3.0	3.0	-89.99	0.0	-30.7	30.7	24.6	6.07	5.056	
1,500.0	1,500.0	1,499.0	1,499.0	3.3	3.3	-89.99	0.0	-30.7	30.7	24.2	6.52	4.707	CC, ES
1,600.0	1,600.0	1,599.0	1,599.0	3.5	3.5	-130.49	0.0	-30.7	31.8	24.8	6.96	4.565	
1,700.0	1,699.8	1,698.8	1,698.8	3.7	3.7	-136.89	0.0	-30.7	35.4	28.0	7.40	4.785	
1,800.0	1,799.5	1,798.5	1,798.5	3.9	3.9	-144.92	0.0	-30.7	42.2	34.4	7.83	5.390	
1,828.6	1,827.9	1,826.9	1,826.9	4.0	4.0	-147.19	0.0	-30.7	44.8	36.8	7.95	5.635	
1,900.0	1,898.8	1,897.8	1,897.8	4.2	4.2	-152.08	0.0	-30.7	51.9	43.6	8.26	6.276	
2,000.0	1,998.2	1,997.2	1,997.2	4.4	4.4	-157.02	0.0	-30.7	62.2	53.5	8.71	7.145	
2,100.0	2,097.5	2,097.5	2,097.4	4.7	4.6	-159.35	1.6	-30.9	72.3	63.1	9.16	7.892	
2,200.0	2,196.8	2,198.1	2,198.0	4.9	4.8	-158.84	6.8	-31.7	81.0	71.4	9.61	8.430	
2,300.0	2,296.2	2,298.3	2,297.8	5.2	5.1	-156.55	15.0	-32.9	88.6	78.6	10.07	8.804	
2,400.0	2,395.5	2,398.0	2,397.1	5.4	5.3	-154.36	23.6	-34.3	96.2	85.7	10.53	9.135	
2,500.0	2,494.9	2,497.6	2,496.4	5.7	5.5	-152.50	32.2	-35.6	103.9	92.9	11.01	9.444	
2,600.0	2,594.2	2,597.3	2,595.6	6.0	5.7	-150.89	40.8	-36.9	111.8	100.3	11.49	9.729	
2,700.0	2,693.6	2,696.9	2,694.9	6.3	6.0	-149.49	49.4	-38.2	119.6	107.7	11.97	9.993	
2,800.0	2,792.9	2,796.6	2,794.2	6.6	6.2	-148.27	58.1	-39.5	127.6	115.1	12.46	10.238	
2,900.0	2,892.2	2,896.2	2,893.4	6.8	6.5	-147.19	66.7	-40.8	135.6	122.6	12.96	10.463	
3,000.0	2,991.6	2,995.9	2,992.7	7.1	6.7	-146.23	75.3	-42.1	143.6	130.2	13.46	10.672	
3,100.0	3,090.9	3,095.5	3,092.0	7.4	7.0	-145.38	83.9	-43.4	151.7	137.8	13.96	10.866	
3,200.0	3,190.3	3,195.2	3,191.2	7.7	7.2	-144.61	92.5	-44.7	159.8	145.4	14.47	11.046	
3,300.0	3,289.6	3,294.8	3,290.5	8.0	7.5	-143.91	101.2	-46.1	168.0	153.0	14.98	11.212	
3,400.0	3,389.0	3,394.5	3,389.8	8.3	7.7	-143.28	109.8	-47.4	176.1	160.6	15.49	11.368	
3,500.0	3,488.3	3,494.1	3,489.0	8.6	8.0	-142.70	118.4	-48.7	184.3	168.3	16.01	11.512	
3,600.0	3,587.6	3,593.8	3,588.3	8.9	8.2	-142.18	127.0	-50.0	192.5	176.0	16.53	11.647	
3,700.0	3,687.0	3,693.4	3,687.6	9.2	8.5	-141.70	135.6	-51.3	200.7	183.7	17.05	11.774	
3,800.0	3,786.3	3,793.1	3,786.8	9.5	8.8	-141.25	144.3	-52.6	208.9	191.4	17.57	11.892	
3,900.0	3,885.7	3,892.7	3,886.1	9.8	9.0	-140.84	152.9	-53.9	217.2	199.1	18.09	12.003	
4,000.0	3,985.0	3,992.4	3,985.4	10.0	9.3	-140.46	161.5	-55.2	225.4	206.8	18.62	12.107	
4,100.0	4,084.3	4,092.0	4,084.6	10.3	9.5	-140.10	170.1	-56.5	233.7	214.5	19.14	12.205	
4,188.3	4,172.1	4,180.0	4,172.3	10.6	9.8	-139.81	177.7	-57.7	240.9	221.3	19.61	12.287	
4,200.0	4,183.7	4,191.7	4,183.9	10.6	9.8	-139.78	178.7	-57.9	241.9	222.2	19.67	12.297	
4,300.0	4,283.3	4,291.4	4,283.3	10.9	10.1	-139.24	187.4	-59.2	248.5	228.4	20.17	12.324	
4,400.0	4,383.1	4,391.2	4,382.7	11.1	10.3	-138.17	196.0	-60.5	252.6	231.9	20.65	12.233	
4,500.0	4,483.0	4,490.9	4,482.0	11.2	10.6	-136.57	204.6	-61.8	254.2	233.1	21.12	12.038	
4,517.0	4,500.0	4,507.8	4,498.8	11.3	10.6	-98.21	206.1	-62.0	254.3	233.1	21.20	11.995	
4,600.0	4,583.0	4,590.5	4,581.2	11.4	10.8	-96.58	213.2	-63.1	254.4	232.8	21.60	11.778	
4,700.0	4,683.0	4,690.2	4,680.5	11.6	11.1	-94.62	221.9	-64.4	254.9	232.8	22.11	11.530	

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 Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-403 - Wellbore #1 - Plan #1 (8-15-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,783.0	4,790.1	4,780.0	11.8	11.4	-92.70	230.3	-65.7	255.6	233.0	22.60	11.312	
4,900.0	4,883.0	4,890.9	4,880.7	12.0	11.6	-91.38	236.2	-66.6	256.3	233.3	23.02	11.134	
5,000.0	4,983.0	4,992.1	4,981.8	12.2	11.7	-90.84	238.6	-67.0	256.6	233.2	23.41	10.962	
5,100.0	5,083.0	5,092.3	5,082.0	12.4	11.9	-90.83	238.7	-67.0	256.6	232.8	23.80	10.784	
5,200.0	5,183.0	5,192.3	5,182.0	12.6	12.1	-90.83	238.7	-67.0	256.6	232.4	24.21	10.601	
5,300.0	5,283.0	5,292.3	5,282.0	12.8	12.3	-90.83	238.7	-67.0	256.6	232.0	24.62	10.423	
5,400.0	5,383.0	5,392.3	5,382.0	13.0	12.5	-90.83	238.7	-67.0	256.6	231.6	25.04	10.250	
5,500.0	5,483.0	5,492.3	5,482.0	13.2	12.8	-90.83	238.7	-67.0	256.6	231.2	25.45	10.083	
5,600.0	5,583.0	5,592.3	5,582.0	13.4	13.0	-90.83	238.7	-67.0	256.6	230.8	25.87	9.920	
5,700.0	5,683.0	5,692.3	5,682.0	13.6	13.2	-90.83	238.7	-67.0	256.6	230.3	26.29	9.762	
5,800.0	5,783.0	5,792.3	5,782.0	13.8	13.4	-90.83	238.7	-67.0	256.6	229.9	26.71	9.609	
5,900.0	5,883.0	5,892.3	5,882.0	14.0	13.6	-90.83	238.7	-67.0	256.6	229.5	27.13	9.460	
6,000.0	5,983.0	5,992.3	5,982.0	14.2	13.8	-90.83	238.7	-67.0	256.6	229.1	27.55	9.315	
6,100.0	6,083.0	6,092.3	6,082.0	14.4	14.0	-90.83	238.7	-67.0	256.6	228.7	27.97	9.175	
6,200.0	6,183.0	6,192.3	6,182.0	14.6	14.2	-90.83	238.7	-67.0	256.6	228.2	28.40	9.038	
6,227.4	6,210.4	6,219.7	6,209.4	14.7	14.3	-90.83	238.7	-67.0	256.6	228.1	28.51	9.001	
6,250.0	6,233.0	6,242.3	6,232.0	14.7	14.3	89.25	238.7	-67.0	256.6	228.0	28.60	8.973	
6,300.0	6,282.9	6,292.2	6,281.9	14.8	14.4	89.94	238.7	-67.0	256.6	227.8	28.79	8.915	
6,302.6	6,285.5	6,294.8	6,284.5	14.8	14.5	90.00	238.7	-67.0	256.6	227.8	28.79	8.912	
6,350.0	6,332.5	6,341.8	6,331.5	14.8	14.6	91.35	238.7	-67.0	256.7	227.7	28.96	8.863	
6,400.0	6,381.6	6,391.7	6,381.4	14.9	14.6	93.16	237.3	-67.0	257.0	227.9	29.10	8.833	
6,450.0	6,429.9	6,442.3	6,431.8	14.9	14.7	94.98	232.7	-67.0	257.6	228.4	29.20	8.823	
6,500.0	6,477.3	6,493.4	6,482.2	14.9	14.7	96.77	224.6	-67.0	258.5	229.2	29.26	8.833	
6,550.0	6,523.5	6,545.1	6,532.6	14.9	14.8	98.52	212.9	-67.0	259.6	230.3	29.29	8.860	
6,600.0	6,568.5	6,597.4	6,582.6	14.9	14.8	100.24	197.8	-67.0	260.9	231.6	29.30	8.904	
6,650.0	6,611.8	6,650.3	6,632.1	14.9	14.8	101.91	179.0	-67.0	262.4	233.1	29.28	8.963	
6,700.0	6,653.5	6,703.8	6,680.6	15.0	14.8	103.52	156.5	-67.0	264.1	234.8	29.24	9.032	
6,750.0	6,693.2	6,758.0	6,728.0	15.0	14.9	105.06	130.4	-67.0	265.9	236.7	29.19	9.110	
6,800.0	6,730.9	6,812.7	6,774.0	15.0	14.9	106.52	100.6	-67.0	267.9	238.7	29.15	9.190	
6,850.0	6,766.4	6,868.1	6,818.1	15.0	14.9	107.90	67.2	-67.0	269.9	240.8	29.12	9.268	
6,900.0	6,799.5	6,924.0	6,860.2	15.0	15.0	109.18	30.4	-67.0	271.9	242.8	29.12	9.337	
6,950.0	6,830.0	6,980.5	6,899.8	15.1	15.1	110.37	-9.9	-67.0	274.0	244.8	29.18	9.390	
7,000.0	6,857.9	7,037.6	6,936.7	15.3	15.2	111.47	-53.4	-67.0	275.9	246.7	29.29	9.421	
7,050.0	6,883.0	7,095.2	6,970.6	15.5	15.4	112.45	-100.0	-67.0	277.8	248.4	29.48	9.423	
7,100.0	6,905.3	7,153.3	7,001.0	15.8	15.7	113.33	-149.4	-67.0	279.6	249.8	29.77	9.391	
7,150.0	6,924.6	7,211.8	7,027.8	16.1	16.0	114.10	-201.4	-67.0	281.2	251.1	30.18	9.319	
7,200.0	6,940.8	7,270.7	7,050.7	16.5	16.4	114.75	-255.7	-67.0	282.7	252.0	30.70	9.208	
7,250.0	6,953.9	7,329.9	7,069.4	16.9	16.8	115.29	-311.8	-67.0	283.9	252.5	31.34	9.058	
7,300.0	6,963.8	7,389.4	7,083.8	17.4	17.3	115.70	-369.6	-67.0	284.8	252.7	32.10	8.872	
7,350.0	6,970.5	7,449.1	7,093.7	17.9	17.8	116.00	-428.4	-67.0	285.5	252.5	32.99	8.654	
7,400.0	6,973.9	7,508.9	7,098.9	18.4	18.5	116.18	-488.0	-67.0	285.9	251.9	34.01	8.408	
7,438.5	6,974.3	7,552.8	7,099.9	18.8	18.9	116.25	-531.9	-67.0	286.1	251.3	34.84	8.213	
7,500.0	6,973.4	7,614.3	7,100.2	19.5	19.7	116.47	-593.4	-67.0	286.7	250.6	36.10	7.942	
7,600.0	6,972.0	7,714.3	7,100.8	20.8	20.9	116.83	-693.4	-67.0	287.6	249.3	38.29	7.511	
7,700.0	6,970.5	7,814.3	7,101.3	22.1	22.2	117.19	-793.4	-67.0	288.5	247.8	40.63	7.099	
7,800.0	6,969.1	7,914.3	7,101.9	23.6	23.7	117.54	-893.4	-67.0	289.4	246.3	43.11	6.713	
7,900.0	6,967.6	8,014.3	7,102.5	25.1	25.1	117.89	-993.3	-67.0	290.3	244.6	45.69	6.354	
8,000.0	6,966.2	8,114.2	7,103.0	26.6	26.7	118.24	-1,093.3	-67.0	291.3	242.9	48.36	6.023	
8,100.0	6,964.7	8,214.2	7,103.6	28.2	28.3	118.59	-1,193.3	-67.0	292.2	241.1	51.09	5.720	
8,200.0	6,963.3	8,314.2	7,104.1	29.8	29.9	118.93	-1,293.3	-67.0	293.2	239.3	53.88	5.442	
8,300.0	6,961.8	8,414.2	7,104.7	31.5	31.6	119.27	-1,393.3	-67.0	294.2	237.5	56.70	5.188	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7K-403 - Wellbore #1 - Plan #1 (8-15-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,960.4	8,514.2	7,105.3	33.2	33.3	119.61	-1,493.2	-67.0	295.2	235.6	59.56	4.955	
8,500.0	6,958.9	8,614.1	7,105.8	34.9	35.0	119.95	-1,593.2	-67.0	296.2	233.7	62.45	4.743	
8,600.0	6,957.5	8,714.1	7,106.4	36.6	36.7	120.29	-1,693.2	-67.0	297.2	231.8	65.35	4.547	
8,700.0	6,956.0	8,814.1	7,106.9	38.4	38.5	120.62	-1,793.2	-67.0	298.2	229.9	68.26	4.368	
8,800.0	6,954.6	8,914.1	7,107.5	40.2	40.2	120.95	-1,893.2	-67.0	299.2	228.0	71.19	4.203	
8,900.0	6,953.1	9,014.1	7,108.0	42.0	42.0	121.28	-1,993.1	-66.9	300.2	226.1	74.12	4.051	
9,000.0	6,951.7	9,114.0	7,108.6	43.7	43.8	121.61	-2,093.1	-66.9	301.3	224.2	77.06	3.910	
9,100.0	6,950.2	9,214.0	7,109.2	45.5	45.6	121.93	-2,193.1	-66.9	302.3	222.4	79.99	3.780	
9,200.0	6,948.8	9,314.0	7,109.7	47.4	47.4	122.25	-2,293.1	-66.9	303.4	220.5	82.92	3.659	
9,300.0	6,947.3	9,414.0	7,110.3	49.2	49.2	122.57	-2,393.0	-66.9	304.5	218.6	85.85	3.547	
9,400.0	6,945.9	9,514.0	7,110.8	51.0	51.0	122.89	-2,493.0	-66.9	305.6	216.8	88.77	3.442	
9,500.0	6,944.4	9,613.9	7,111.4	52.8	52.9	123.20	-2,593.0	-66.9	306.7	215.0	91.68	3.345	
9,600.0	6,943.0	9,713.9	7,112.0	54.7	54.7	123.52	-2,693.0	-66.9	307.8	213.2	94.59	3.254	
9,700.0	6,941.5	9,813.9	7,112.5	56.5	56.6	123.83	-2,793.0	-66.9	308.9	211.4	97.49	3.168	
9,800.0	6,940.1	9,913.9	7,113.1	58.4	58.4	124.13	-2,892.9	-66.9	310.0	209.6	100.38	3.088	
9,900.0	6,938.6	10,013.9	7,113.6	60.2	60.3	124.44	-2,992.9	-66.9	311.1	207.9	103.25	3.013	
10,000.0	6,937.2	10,113.8	7,114.2	62.1	62.1	124.74	-3,092.9	-66.9	312.3	206.2	106.12	2.943	
10,100.0	6,935.8	10,213.8	7,114.7	64.0	64.0	125.05	-3,192.9	-66.9	313.4	204.4	108.97	2.876	
10,200.0	6,934.3	10,313.8	7,115.3	65.8	65.8	125.34	-3,292.8	-66.9	314.6	202.8	111.81	2.813	
10,300.0	6,932.9	10,413.8	7,115.9	67.7	67.7	125.64	-3,392.8	-66.9	315.7	201.1	114.64	2.754	
10,400.0	6,931.4	10,513.8	7,116.4	69.6	69.6	125.94	-3,492.8	-66.9	316.9	199.5	117.45	2.698	
10,500.0	6,930.0	10,613.7	7,117.0	71.4	71.5	126.23	-3,592.8	-66.9	318.1	197.8	120.25	2.645	
10,600.0	6,928.5	10,713.7	7,117.5	73.3	73.3	126.52	-3,692.8	-66.9	319.3	196.2	123.03	2.595	
10,700.0	6,927.1	10,813.7	7,118.1	75.2	75.2	126.81	-3,792.7	-66.9	320.5	194.7	125.81	2.547	
10,800.0	6,925.6	10,913.7	7,118.7	77.1	77.1	127.10	-3,892.7	-66.9	321.7	193.1	128.56	2.502	
10,900.0	6,924.2	11,013.7	7,119.2	78.9	79.0	127.38	-3,992.7	-66.9	322.9	191.6	131.30	2.459	
11,000.0	6,922.7	11,113.6	7,119.8	80.8	80.9	127.66	-4,092.7	-66.9	324.1	190.1	134.03	2.418	
11,100.0	6,921.3	11,213.6	7,120.3	82.7	82.7	127.94	-4,192.7	-66.9	325.3	188.6	136.74	2.379	
11,200.0	6,919.8	11,313.6	7,120.9	84.6	84.6	128.22	-4,292.6	-66.9	326.6	187.1	139.44	2.342	
11,300.0	6,918.4	11,413.6	7,121.4	86.5	86.5	128.49	-4,392.6	-66.9	327.8	185.7	142.12	2.307	
11,394.5	6,917.0	11,508.1	7,122.0	88.3	88.3	128.75	-4,487.1	-66.9	329.0	184.4	144.64	2.275 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7O-243 - Wellbore #1 - Plan #1 (8-18-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	2.0	2.0	0.0	0.0	90.00	0.0	58.6	58.6	58.6	0.00	N/A	
100.0	100.0	102.0	102.0	0.1	0.1	90.00	0.0	58.6	58.6	58.3	0.23	255.401	
200.0	200.0	202.0	202.0	0.3	0.3	90.00	0.0	58.6	58.6	57.9	0.68	86.261	
300.0	300.0	302.0	302.0	0.6	0.6	90.00	0.0	58.6	58.6	57.4	1.13	51.894	
400.0	400.0	402.0	402.0	0.8	0.8	90.00	0.0	58.6	58.6	57.0	1.58	37.110	
500.0	500.0	502.0	502.0	1.0	1.0	90.00	0.0	58.6	58.6	56.5	2.03	28.881	
600.0	600.0	602.0	602.0	1.2	1.2	90.00	0.0	58.6	58.6	56.1	2.48	23.640	
700.0	700.0	702.0	702.0	1.5	1.5	90.00	0.0	58.6	58.6	55.6	2.93	20.008	
766.0	766.0	768.0	768.0	1.6	1.6	90.00	0.0	58.6	58.6	55.3	3.22	18.167	CC
800.0	800.0	802.0	802.0	1.7	1.7	90.00	0.0	58.6	58.6	55.2	3.38	17.346	ES
900.0	900.0	900.0	900.0	1.9	1.9	89.49	0.5	60.2	60.3	56.4	3.81	15.804	
1,000.0	1,000.0	997.8	997.7	2.1	2.1	88.15	2.1	65.1	65.2	61.0	4.25	15.361	
1,100.0	1,100.0	1,095.2	1,094.7	2.4	2.3	86.34	4.7	73.0	73.5	68.8	4.69	15.688	
1,200.0	1,200.0	1,191.9	1,190.6	2.6	2.6	84.40	8.2	84.0	85.2	80.0	5.14	16.585	
1,300.0	1,300.0	1,288.0	1,285.6	2.8	2.8	82.59	12.7	98.0	100.2	94.6	5.60	17.898	
1,400.0	1,400.0	1,386.6	1,382.9	3.0	3.1	81.10	17.8	113.6	116.5	110.5	6.07	19.204	
1,500.0	1,500.0	1,485.2	1,480.1	3.3	3.5	79.98	22.8	129.2	133.0	126.4	6.55	20.307	
1,600.0	1,600.0	1,584.0	1,577.6	3.5	3.8	41.31	27.9	144.8	148.1	141.2	6.91	21.440	
1,700.0	1,699.8	1,683.2	1,675.4	3.7	4.1	41.62	32.9	160.4	160.7	153.4	7.36	21.851	
1,800.0	1,799.5	1,782.7	1,773.4	3.9	4.5	42.68	38.0	176.2	170.8	163.0	7.81	21.875	
1,828.6	1,827.9	1,811.2	1,801.6	4.0	4.6	43.11	39.5	180.7	173.2	165.2	7.94	21.819	
1,900.0	1,898.8	1,882.2	1,871.6	4.2	4.8	44.29	43.1	191.9	179.0	170.7	8.27	21.632	
2,000.0	1,998.2	1,981.7	1,969.8	4.4	5.2	45.82	48.2	207.6	187.3	178.5	8.76	21.385	
2,100.0	2,097.5	2,081.3	2,067.9	4.7	5.6	47.21	53.3	223.3	195.7	186.4	9.25	21.155	
2,200.0	2,196.8	2,180.8	2,166.1	4.9	5.9	48.49	58.3	239.1	204.2	194.4	9.75	20.939	
2,300.0	2,296.2	2,280.4	2,264.2	5.2	6.3	49.67	63.4	254.8	212.8	202.5	10.26	20.736	
2,400.0	2,395.5	2,379.9	2,362.4	5.4	6.7	50.76	68.5	270.5	221.4	210.7	10.78	20.544	
2,500.0	2,494.9	2,479.4	2,460.5	5.7	7.0	51.76	73.6	286.3	230.2	218.9	11.30	20.364	
2,600.0	2,594.2	2,579.0	2,558.7	6.0	7.4	52.69	78.7	302.0	239.0	227.2	11.84	20.193	
2,700.0	2,693.6	2,678.5	2,656.8	6.3	7.8	53.56	83.8	317.7	247.9	235.5	12.37	20.032	
2,800.0	2,792.9	2,778.0	2,755.0	6.6	8.1	54.36	88.9	333.4	256.8	243.9	12.92	19.880	
2,900.0	2,892.2	2,877.6	2,853.2	6.8	8.5	55.11	93.9	349.2	265.8	252.3	13.47	19.736	
3,000.0	2,991.6	2,977.1	2,951.3	7.1	8.9	55.81	99.0	364.9	274.8	260.8	14.02	19.599	
3,100.0	3,090.9	3,076.7	3,049.5	7.4	9.3	56.47	104.1	380.6	283.8	269.3	14.58	19.471	
3,200.0	3,190.3	3,176.2	3,147.6	7.7	9.6	57.09	109.2	396.4	292.9	277.8	15.14	19.348	
3,300.0	3,289.6	3,275.7	3,245.8	8.0	10.0	57.67	114.3	412.1	302.0	286.3	15.70	19.233	
3,400.0	3,389.0	3,375.3	3,343.9	8.3	10.4	58.21	119.4	427.8	311.2	294.9	16.27	19.123	
3,500.0	3,488.3	3,474.8	3,442.1	8.6	10.8	58.72	124.4	443.5	320.4	303.5	16.84	19.019	
3,600.0	3,587.6	3,574.4	3,540.3	8.9	11.2	59.21	129.5	459.3	329.6	312.2	17.42	18.920	
3,700.0	3,687.0	3,673.9	3,638.4	9.2	11.5	59.67	134.6	475.0	338.8	320.8	18.00	18.826	
3,800.0	3,786.3	3,773.4	3,736.6	9.5	11.9	60.10	139.7	490.7	348.0	329.5	18.57	18.737	
3,900.0	3,885.7	3,873.0	3,834.7	9.8	12.3	60.52	144.8	506.5	357.3	338.1	19.16	18.652	
4,000.0	3,985.0	3,972.5	3,932.9	10.0	12.7	60.91	149.9	522.2	366.6	346.8	19.74	18.571	
4,100.0	4,084.3	4,072.0	4,031.0	10.3	13.1	61.28	154.9	537.9	375.9	355.5	20.32	18.494	
4,188.3	4,172.1	4,159.9	4,117.7	10.6	13.4	61.59	159.4	551.8	384.1	363.2	20.84	18.429	
4,200.0	4,183.7	4,171.6	4,129.2	10.6	13.4	61.65	160.0	553.6	385.2	364.3	20.91	18.424	
4,300.0	4,283.3	4,271.0	4,227.3	10.9	13.8	61.89	165.1	569.4	395.5	374.1	21.41	18.473	
4,400.0	4,383.1	4,370.3	4,325.1	11.1	14.2	61.73	170.2	585.0	407.5	385.6	21.86	18.643	
4,500.0	4,483.0	4,469.2	4,422.7	11.2	14.6	61.19	175.2	600.7	421.1	398.9	22.25	18.929	
4,517.0	4,500.0	4,485.9	4,439.1	11.3	14.7	99.11	176.1	603.3	423.6	401.3	22.31	18.989	
4,600.0	4,583.0	4,567.8	4,519.9	11.4	15.0	98.29	180.3	616.2	436.0	413.4	22.62	19.275	

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 Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7O-243 - Wellbore #1 - Plan #1 (8-18-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,700.0	4,683.0	4,666.4	4,617.2	11.6	15.3	97.36	185.3	631.8	451.0	428.0	23.01	19.596	
4,800.0	4,783.0	4,765.0	4,714.4	11.8	15.7	96.49	190.3	647.4	466.1	442.7	23.41	19.908	
4,900.0	4,883.0	4,863.6	4,811.6	12.0	16.1	95.67	195.4	663.0	481.3	457.5	23.82	20.210	
5,000.0	4,983.0	4,962.2	4,908.9	12.2	16.5	94.91	200.4	678.6	496.6	472.4	24.22	20.503	
5,100.0	5,083.0	5,060.9	5,006.1	12.4	16.9	94.19	205.4	694.2	512.0	487.4	24.63	20.786	
5,200.0	5,183.0	5,159.5	5,103.4	12.6	17.2	93.51	210.5	709.7	527.4	502.4	25.04	21.060	
5,300.0	5,283.0	5,258.1	5,200.6	12.8	17.6	92.87	215.5	725.3	543.0	517.5	25.46	21.326	
5,400.0	5,383.0	5,356.7	5,297.8	13.0	18.0	92.27	220.6	740.9	558.5	532.7	25.88	21.583	
5,500.0	5,483.0	5,455.3	5,395.1	13.2	18.4	91.70	225.6	756.5	574.2	547.9	26.30	21.831	
5,600.0	5,583.0	5,553.9	5,492.3	13.4	18.8	91.16	230.6	772.1	589.9	563.2	26.73	22.072	
5,700.0	5,683.0	5,652.5	5,589.6	13.6	19.1	90.64	235.7	787.6	605.6	578.5	27.15	22.305	
5,800.0	5,783.0	5,767.6	5,703.2	13.8	19.5	90.11	241.2	804.8	620.6	593.0	27.58	22.499	
5,900.0	5,883.0	5,893.1	5,827.8	14.0	19.8	89.70	245.7	818.7	631.7	603.7	28.01	22.552	
6,000.0	5,983.0	6,019.6	5,954.0	14.2	20.0	89.45	248.6	827.5	638.7	610.2	28.43	22.462	
6,100.0	6,083.0	6,146.6	6,081.0	14.4	20.2	89.35	249.7	831.0	641.4	612.6	28.85	22.231	
6,200.0	6,183.0	6,250.7	6,185.0	14.6	20.4	89.35	249.7	831.1	641.5	612.2	29.25	21.931	
6,227.4	6,210.4	6,278.1	6,212.5	14.7	20.4	89.35	249.7	831.1	641.5	612.1	29.36	21.851	
6,250.0	6,233.0	6,300.9	6,235.3	14.7	20.4	-90.65	249.3	831.1	641.5	612.0	29.44	21.792	
6,300.0	6,282.9	6,351.4	6,285.6	14.8	20.5	-90.63	246.0	831.1	641.5	611.9	29.57	21.690	
6,350.0	6,332.5	6,401.9	6,335.7	14.8	20.5	-90.61	239.4	831.1	641.5	611.8	29.68	21.612	
6,400.0	6,381.6	6,452.3	6,385.1	14.9	20.6	-90.59	229.5	831.1	641.5	611.7	29.76	21.553	
6,450.0	6,429.9	6,502.8	6,433.8	14.9	20.6	-90.57	216.3	831.1	641.4	611.6	29.82	21.512	
6,500.0	6,477.3	6,553.2	6,481.5	14.9	20.6	-90.55	200.0	831.1	641.4	611.6	29.86	21.484	
6,550.0	6,523.5	6,603.6	6,528.0	14.9	20.6	-90.52	180.6	831.1	641.4	611.6	29.89	21.463	
6,600.0	6,568.5	6,653.9	6,573.1	14.9	20.6	-90.49	158.2	831.1	641.4	611.5	29.91	21.444	
6,650.0	6,611.8	6,704.3	6,616.6	14.9	20.6	-90.46	132.8	831.1	641.4	611.5	29.94	21.421	
6,700.0	6,653.5	6,754.6	6,658.3	15.0	20.6	-90.43	104.7	831.1	641.4	611.4	29.99	21.385	
6,750.0	6,693.2	6,804.9	6,698.0	15.0	20.6	-90.39	73.9	831.1	641.4	611.4	30.07	21.330	
6,800.0	6,730.9	6,855.2	6,735.6	15.0	20.6	-90.35	40.5	831.1	641.4	611.2	30.19	21.248	
6,850.0	6,766.4	6,905.4	6,771.0	15.0	20.7	-90.31	4.8	831.1	641.4	611.1	30.35	21.133	
6,900.0	6,799.5	6,955.6	6,803.8	15.0	20.7	-90.27	-33.1	831.1	641.4	610.8	30.57	20.979	
6,950.0	6,830.0	7,005.8	6,834.2	15.1	20.7	-90.23	-73.1	831.1	641.4	610.6	30.86	20.782	
7,000.0	6,857.9	7,056.0	6,861.7	15.3	20.8	-90.19	-115.0	831.1	641.4	610.2	31.23	20.537	
7,050.0	6,883.0	7,106.1	6,886.5	15.5	20.9	-90.15	-158.5	831.1	641.4	609.7	31.68	20.246	
7,100.0	6,905.3	7,156.2	6,908.4	15.8	21.0	-90.11	-203.6	831.1	641.4	609.2	32.22	19.910	
7,150.0	6,924.6	7,206.2	6,927.2	16.1	21.2	-90.06	-250.0	831.1	641.4	608.6	32.84	19.531	
7,200.0	6,940.8	7,256.3	6,943.0	16.5	21.4	-90.02	-297.4	831.1	641.4	607.9	33.55	19.116	
7,231.7	6,949.5	7,288.0	6,951.3	16.8	21.5	-89.99	-328.0	831.1	641.4	607.4	34.06	18.833	
7,250.0	6,953.9	7,306.3	6,955.6	16.9	21.6	-89.97	-345.8	831.1	641.4	607.1	34.35	18.671	
7,300.0	6,963.8	7,356.2	6,965.0	17.4	21.9	-89.93	-394.9	831.1	641.4	606.2	35.24	18.204	
7,350.0	6,970.5	7,406.2	6,971.2	17.9	22.2	-89.88	-444.4	831.1	641.4	605.2	36.19	17.721	
7,400.0	6,973.9	7,456.1	6,974.1	18.4	22.6	-89.84	-494.2	831.1	641.4	604.2	37.22	17.232	
7,438.5	6,974.3	7,494.4	6,974.2	18.8	22.9	-89.81	-532.6	831.1	641.4	603.4	38.06	16.855	
7,500.0	6,973.4	7,556.0	6,973.3	19.5	23.4	-89.81	-594.1	831.1	641.4	601.9	39.48	16.246	
7,600.0	6,972.0	7,656.0	6,971.9	20.8	24.5	-89.81	-694.1	831.1	641.4	599.5	41.95	15.289	
7,700.0	6,970.5	7,756.0	6,970.4	22.1	25.6	-89.81	-794.1	831.1	641.4	596.8	44.62	14.376	
7,800.0	6,969.1	7,856.0	6,969.0	23.6	26.8	-89.81	-894.1	831.1	641.4	594.0	47.45	13.519	
7,900.0	6,967.6	7,956.0	6,967.5	25.1	28.1	-89.81	-994.1	831.1	641.4	591.0	50.41	12.725	
8,000.0	6,966.2	8,056.0	6,966.1	26.6	29.5	-89.81	-1,094.1	831.1	641.4	587.9	53.48	11.994	
8,100.0	6,964.7	8,156.0	6,964.6	28.2	30.9	-89.81	-1,194.1	831.1	641.4	584.8	56.65	11.323	
8,200.0	6,963.3	8,256.0	6,963.2	29.8	32.4	-89.81	-1,294.0	831.1	641.4	581.5	59.89	10.710	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Honebein 4N64W7K Pad Sec.7-T4N-R64W - Honebein 7O-243 - Wellbore #1 - Plan #1 (8-18-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

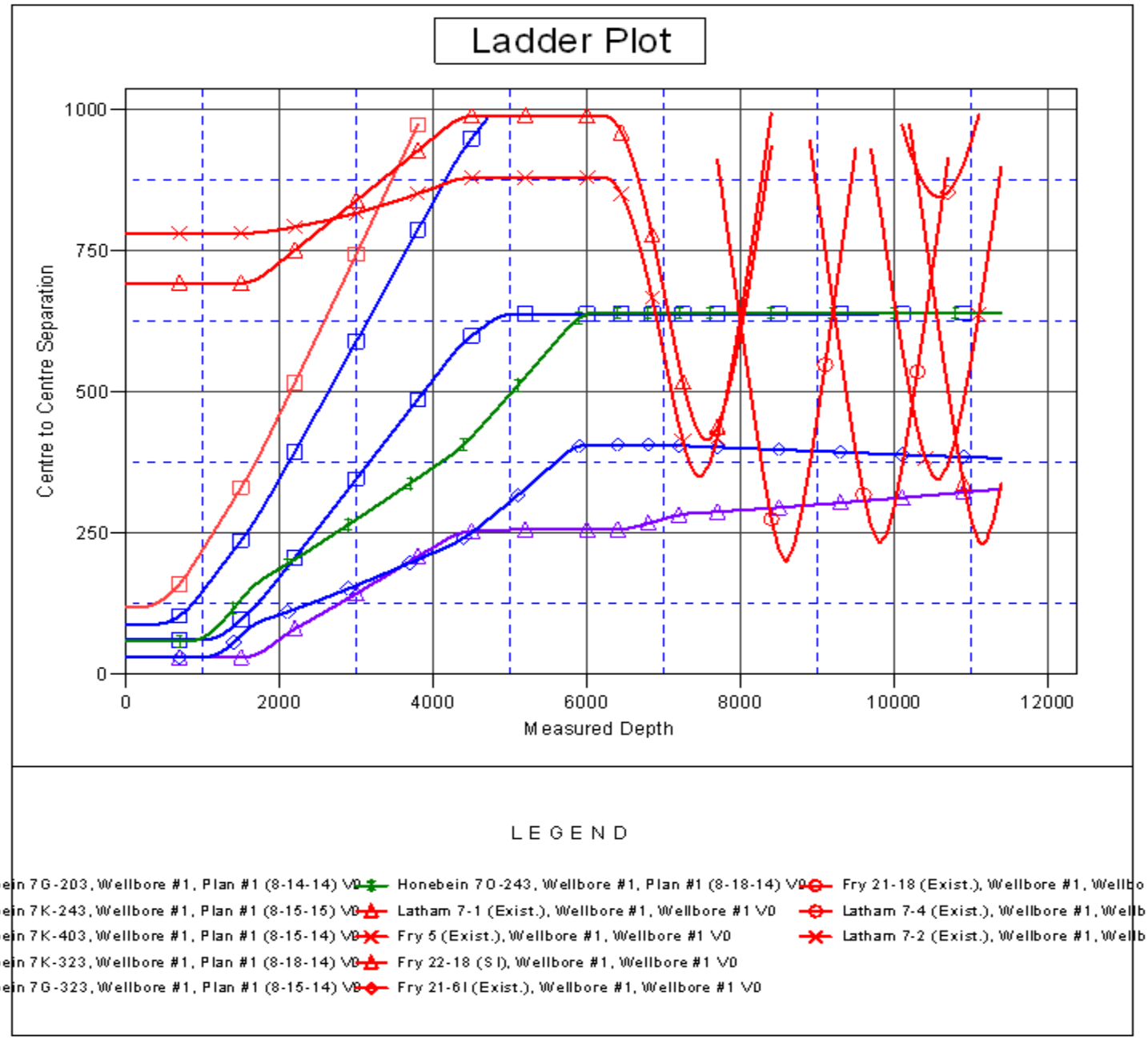
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	6,961.8	8,356.0	6,961.7	31.5	34.0	-89.81	-1,394.0	831.1	641.4	578.2	63.20	10.148	
8,400.0	6,960.4	8,456.0	6,960.3	33.2	35.5	-89.81	-1,494.0	831.1	641.4	574.8	66.57	9.635	
8,500.0	6,958.9	8,556.0	6,958.8	34.9	37.1	-89.81	-1,594.0	831.1	641.4	571.4	69.99	9.164	
8,600.0	6,957.5	8,656.0	6,957.4	36.6	38.8	-89.81	-1,694.0	831.0	641.4	568.0	73.45	8.733	
8,700.0	6,956.0	8,756.0	6,955.9	38.4	40.4	-89.81	-1,794.0	831.0	641.4	564.5	76.94	8.336	
8,800.0	6,954.6	8,856.0	6,954.5	40.2	42.1	-89.81	-1,894.0	831.0	641.4	560.9	80.47	7.971	
8,900.0	6,953.1	8,956.0	6,953.0	42.0	43.8	-89.81	-1,994.0	831.0	641.4	557.4	84.02	7.634	
9,000.0	6,951.7	9,056.0	6,951.6	43.7	45.5	-89.81	-2,094.0	831.0	641.4	553.8	87.60	7.322	
9,100.0	6,950.2	9,156.0	6,950.1	45.5	47.3	-89.81	-2,193.9	831.0	641.4	550.2	91.20	7.033	
9,200.0	6,948.8	9,256.0	6,948.7	47.4	49.0	-89.81	-2,293.9	831.0	641.4	546.6	94.82	6.765	
9,300.0	6,947.3	9,356.0	6,947.2	49.2	50.8	-89.81	-2,393.9	831.0	641.4	543.0	98.45	6.515	
9,400.0	6,945.9	9,456.0	6,945.8	51.0	52.6	-89.81	-2,493.9	831.0	641.4	539.3	102.10	6.282	
9,500.0	6,944.4	9,556.0	6,944.3	52.8	54.3	-89.81	-2,593.9	831.0	641.4	535.6	105.77	6.064	
9,600.0	6,943.0	9,656.0	6,942.9	54.7	56.1	-89.81	-2,693.9	831.0	641.4	532.0	109.44	5.861	
9,700.0	6,941.5	9,756.0	6,941.4	56.5	57.9	-89.81	-2,793.9	831.0	641.4	528.3	113.13	5.670	
9,800.0	6,940.1	9,856.0	6,940.0	58.4	59.7	-89.81	-2,893.9	831.0	641.4	524.6	116.83	5.490	
9,900.0	6,938.6	9,956.0	6,938.5	60.2	61.5	-89.81	-2,993.9	831.0	641.4	520.9	120.53	5.322	
10,000.0	6,937.2	10,056.0	6,937.1	62.1	63.4	-89.81	-3,093.9	831.0	641.4	517.2	124.24	5.163	
10,100.0	6,935.8	10,156.0	6,935.6	64.0	65.2	-89.81	-3,193.8	831.0	641.4	513.4	127.96	5.012	
10,200.0	6,934.3	10,256.0	6,934.2	65.8	67.0	-89.81	-3,293.8	831.0	641.4	509.7	131.69	4.871	
10,300.0	6,932.9	10,356.0	6,932.7	67.7	68.9	-89.81	-3,393.8	831.0	641.4	506.0	135.43	4.736	
10,400.0	6,931.4	10,456.0	6,931.3	69.6	70.7	-89.81	-3,493.8	831.0	641.4	502.2	139.16	4.609	
10,500.0	6,930.0	10,556.0	6,929.9	71.4	72.5	-89.81	-3,593.8	831.0	641.4	498.5	142.91	4.488	
10,600.0	6,928.5	10,656.0	6,928.4	73.3	74.4	-89.81	-3,693.8	831.0	641.4	494.8	146.66	4.373	
10,700.0	6,927.1	10,756.0	6,927.0	75.2	76.2	-89.81	-3,793.8	831.0	641.4	491.0	150.41	4.264	
10,800.0	6,925.6	10,856.0	6,925.5	77.1	78.1	-89.81	-3,893.8	831.0	641.4	487.2	154.17	4.160	
10,900.0	6,924.2	10,956.0	6,924.1	78.9	80.0	-89.81	-3,993.8	831.0	641.4	483.5	157.93	4.061	
11,000.0	6,922.7	11,056.0	6,922.6	80.8	81.8	-89.81	-4,093.7	831.0	641.4	479.7	161.70	3.967	
11,100.0	6,921.3	11,156.0	6,921.2	82.7	83.7	-89.81	-4,193.7	831.0	641.4	475.9	165.47	3.876	
11,200.0	6,919.8	11,256.0	6,919.7	84.6	85.5	-89.81	-4,293.7	831.0	641.4	472.2	169.24	3.790	
11,300.0	6,918.4	11,356.0	6,918.3	86.5	87.4	-89.81	-4,393.7	831.0	641.4	468.4	173.02	3.707	
11,365.4	6,917.4	11,421.4	6,917.3	87.7	88.6	-89.81	-4,459.1	831.0	641.4	465.9	175.49	3.655	
11,394.5	6,917.0	11,443.2	6,917.0	88.3	89.0	-89.81	-4,481.0	831.0	641.5	465.0	176.45	3.635	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4865.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Honebein 7K-223
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Honebein 7K-223
Project:	SEC.7-T4N-R64W	**TVD Reference:**	WELL @ 4865.0ft (RKB - 15')
Reference Site:	Honebein 4N64W7K Pad Sec.7-T4N-R64W	**MD Reference:**	WELL @ 4865.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Honebein 7K-223	**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 (8-15-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4865.0ft (RKB - 15')	Coordinates are relative to: Honebein 7K-223
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: 0.58°