

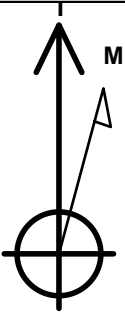
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Gaddis 36J-423

Surface Location: Gaddis Pad Sec.36-T4N-R68W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5057.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1344050.15 3151737.16 40.276540 -104.956170
RKB - 15' WELL @ 5072.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape Point
BHL 500'FSL, 1653'FWL	7387.0	-4488.2	379.5	Point



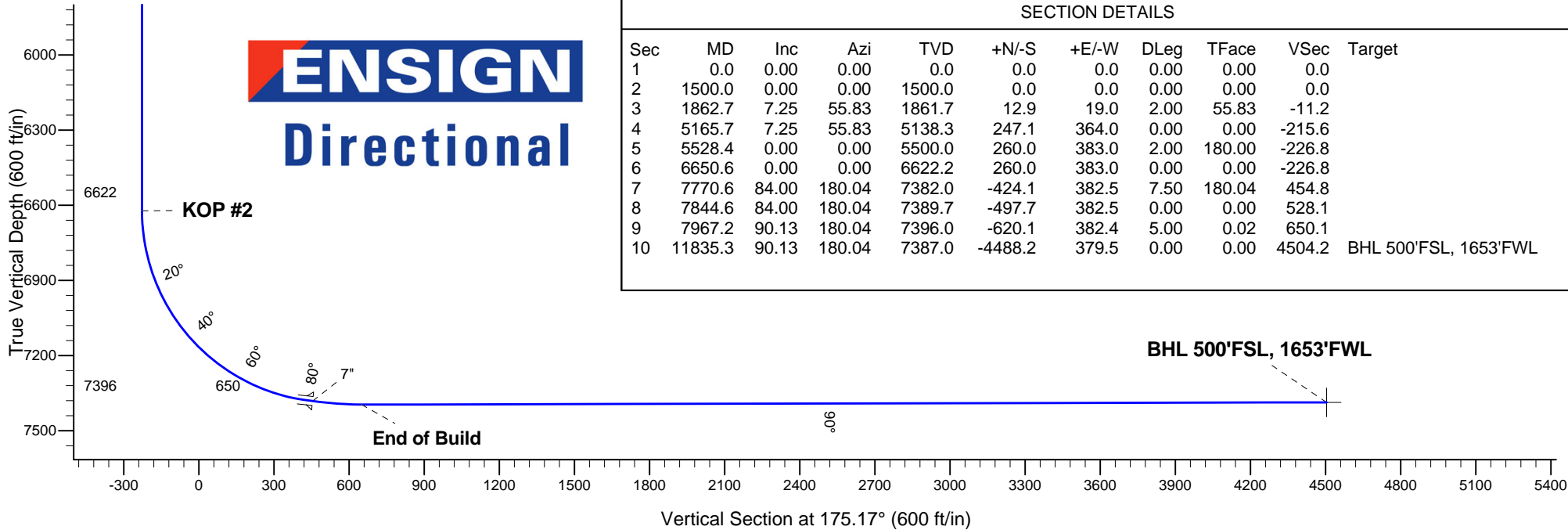
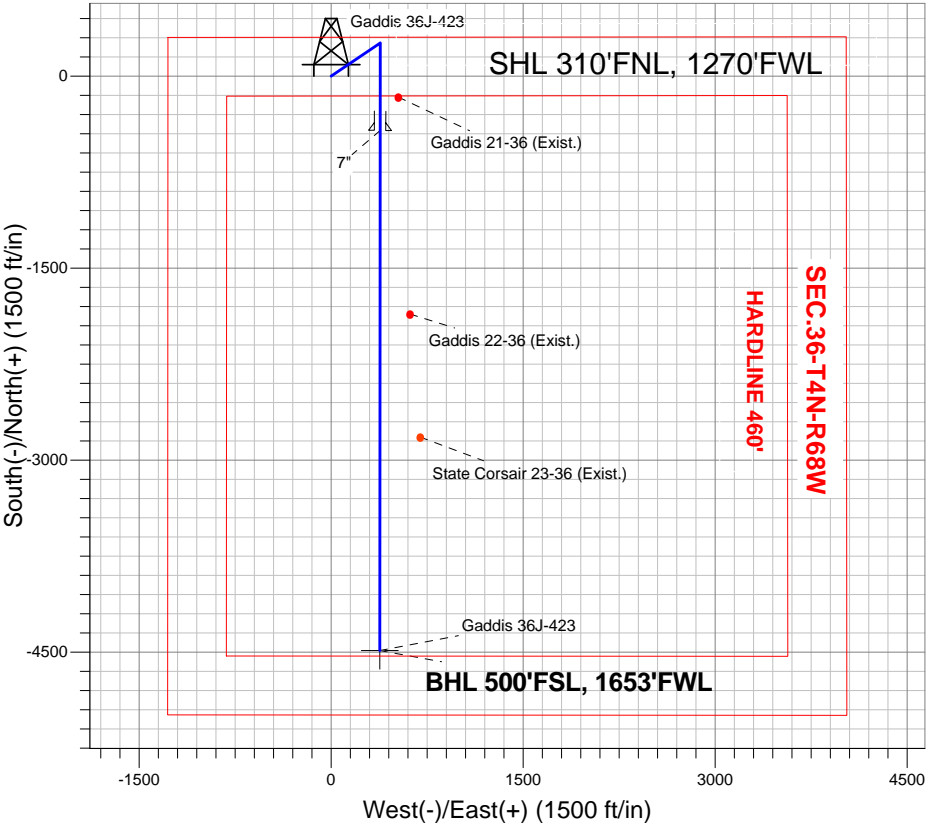
Azimuths to True North
Magnetic North: 8.74°

Magnetic Field
Strength: 52879.3nT
Dip Angle: 66.87°
Date: 1/7/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP #1
6622.2	6650.6	KOP #2
7396.0	7967.2	End of Build

Gaddis Pad Sec.36-T4N-R68W
Gaddis 36J-423
Plan #1 (1-07-13)





Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.36-T4N-R68W

Gaddis Pad Sec.36-T4N-R68W

Gaddis 36J-423

Wellbore #1

Plan: Plan #1 (1-07-13)

Standard Planning Report

08 January, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36J-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Project	SEC.36-T4N-R68W, 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	Gaddis Pad Sec.36-T4N-R68W			
Site Position:		Northing:	1,344,049.99 ft	Latitude: 40.276540
From:	Lat/Long	Easting:	3,151,709.26 ft	Longitude: -104.956270
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence: 0.35 °

Well	Gaddis 36J-423			
Well Position	+N/-S	0.0 ft	Northing:	1,344,050.15 ft
	+E/-W	27.9 ft	Easting:	3,151,737.16 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	5,057.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/7/2013	8.75	66.87	52,879

Design	Plan #1 (1-07-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	175.17

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	
1,862.7	7.25	55.83	1,861.7	12.9	19.0	2.00	2.00	0.00	55.83	
5,165.7	7.25	55.83	5,138.3	247.1	364.0	0.00	0.00	0.00	0.00	
5,528.4	0.00	0.00	5,500.0	260.0	383.0	2.00	-2.00	0.00	180.00	
6,650.6	0.00	0.00	6,622.2	260.0	383.0	0.00	0.00	0.00	0.00	
7,770.6	84.00	180.04	7,382.0	-424.1	382.5	7.50	7.50	0.00	180.04	
7,844.6	84.00	180.04	7,389.7	-497.7	382.5	0.00	0.00	0.00	0.00	
7,967.2	90.13	180.04	7,396.0	-620.1	382.4	5.00	5.00	0.00	0.02	
11,835.3	90.13	180.04	7,387.0	-4,488.2	379.5	0.00	0.00	0.00	0.00	BHL 500'FSL, 1653

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36J-423
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Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	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
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	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
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	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									
1,520.0	0.40	55.83	1,520.0	0.0	0.1	0.0	2.00	2.00	0.00
1,560.0	1.20	55.83	1,560.0	0.4	0.5	-0.3	2.00	2.00	0.00
1,600.0	2.00	55.83	1,600.0	1.0	1.4	-0.9	2.00	2.00	0.00
1,640.0	2.80	55.83	1,639.9	1.9	2.8	-1.7	2.00	2.00	0.00
1,680.0	3.60	55.83	1,679.9	3.2	4.7	-2.8	2.00	2.00	0.00
1,720.0	4.40	55.83	1,719.8	4.7	7.0	-4.1	2.00	2.00	0.00
1,760.0	5.20	55.83	1,759.6	6.6	9.8	-5.8	2.00	2.00	0.00
1,800.0	6.00	55.83	1,799.5	8.8	13.0	-7.7	2.00	2.00	0.00
1,840.0	6.80	55.83	1,839.2	11.3	16.7	-9.9	2.00	2.00	0.00
1,862.7	7.25	55.83	1,861.7	12.9	19.0	-11.2	2.00	2.00	0.00
1,880.0	7.25	55.83	1,878.9	14.1	20.8	-12.3	0.00	0.00	0.00
1,920.0	7.25	55.83	1,918.6	16.9	25.0	-14.8	0.00	0.00	0.00
1,960.0	7.25	55.83	1,958.3	19.8	29.1	-17.3	0.00	0.00	0.00

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Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,000.0	7.25	55.83	1,997.9	22.6	33.3	-19.7	0.00	0.00	0.00
2,040.0	7.25	55.83	2,037.6	25.5	37.5	-22.2	0.00	0.00	0.00
2,080.0	7.25	55.83	2,077.3	28.3	41.7	-24.7	0.00	0.00	0.00
2,120.0	7.25	55.83	2,117.0	31.1	45.9	-27.2	0.00	0.00	0.00
2,160.0	7.25	55.83	2,156.7	34.0	50.0	-29.6	0.00	0.00	0.00
2,200.0	7.25	55.83	2,196.3	36.8	54.2	-32.1	0.00	0.00	0.00
2,240.0	7.25	55.83	2,236.0	39.6	58.4	-34.6	0.00	0.00	0.00
2,280.0	7.25	55.83	2,275.7	42.5	62.6	-37.0	0.00	0.00	0.00
2,320.0	7.25	55.83	2,315.4	45.3	66.7	-39.5	0.00	0.00	0.00
2,360.0	7.25	55.83	2,355.1	48.1	70.9	-42.0	0.00	0.00	0.00
2,400.0	7.25	55.83	2,394.7	51.0	75.1	-44.5	0.00	0.00	0.00
2,440.0	7.25	55.83	2,434.4	53.8	79.3	-46.9	0.00	0.00	0.00
2,480.0	7.25	55.83	2,474.1	56.7	83.5	-49.4	0.00	0.00	0.00
2,520.0	7.25	55.83	2,513.8	59.5	87.6	-51.9	0.00	0.00	0.00
2,560.0	7.25	55.83	2,553.5	62.3	91.8	-54.4	0.00	0.00	0.00
2,600.0	7.25	55.83	2,593.1	65.2	96.0	-56.8	0.00	0.00	0.00
2,640.0	7.25	55.83	2,632.8	68.0	100.2	-59.3	0.00	0.00	0.00
2,680.0	7.25	55.83	2,672.5	70.8	104.4	-61.8	0.00	0.00	0.00
2,720.0	7.25	55.83	2,712.2	73.7	108.5	-64.3	0.00	0.00	0.00
2,760.0	7.25	55.83	2,751.9	76.5	112.7	-66.7	0.00	0.00	0.00
2,800.0	7.25	55.83	2,791.5	79.4	116.9	-69.2	0.00	0.00	0.00
2,840.0	7.25	55.83	2,831.2	82.2	121.1	-71.7	0.00	0.00	0.00
2,880.0	7.25	55.83	2,870.9	85.0	125.2	-74.2	0.00	0.00	0.00
2,920.0	7.25	55.83	2,910.6	87.9	129.4	-76.6	0.00	0.00	0.00
2,960.0	7.25	55.83	2,950.2	90.7	133.6	-79.1	0.00	0.00	0.00
3,000.0	7.25	55.83	2,989.9	93.5	137.8	-81.6	0.00	0.00	0.00
3,040.0	7.25	55.83	3,029.6	96.4	142.0	-84.1	0.00	0.00	0.00
3,080.0	7.25	55.83	3,069.3	99.2	146.1	-86.5	0.00	0.00	0.00
3,120.0	7.25	55.83	3,109.0	102.0	150.3	-89.0	0.00	0.00	0.00
3,160.0	7.25	55.83	3,148.6	104.9	154.5	-91.5	0.00	0.00	0.00
3,200.0	7.25	55.83	3,188.3	107.7	158.7	-94.0	0.00	0.00	0.00
3,240.0	7.25	55.83	3,228.0	110.6	162.9	-96.4	0.00	0.00	0.00
3,280.0	7.25	55.83	3,267.7	113.4	167.0	-98.9	0.00	0.00	0.00
3,320.0	7.25	55.83	3,307.4	116.2	171.2	-101.4	0.00	0.00	0.00
3,360.0	7.25	55.83	3,347.0	119.1	175.4	-103.9	0.00	0.00	0.00
3,400.0	7.25	55.83	3,386.7	121.9	179.6	-106.3	0.00	0.00	0.00
3,440.0	7.25	55.83	3,426.4	124.7	183.7	-108.8	0.00	0.00	0.00
3,480.0	7.25	55.83	3,466.1	127.6	187.9	-111.3	0.00	0.00	0.00
3,520.0	7.25	55.83	3,505.8	130.4	192.1	-113.8	0.00	0.00	0.00
3,560.0	7.25	55.83	3,545.4	133.2	196.3	-116.2	0.00	0.00	0.00
3,600.0	7.25	55.83	3,585.1	136.1	200.5	-118.7	0.00	0.00	0.00
3,640.0	7.25	55.83	3,624.8	138.9	204.6	-121.2	0.00	0.00	0.00
3,680.0	7.25	55.83	3,664.5	141.8	208.8	-123.7	0.00	0.00	0.00
3,720.0	7.25	55.83	3,704.2	144.6	213.0	-126.1	0.00	0.00	0.00
3,760.0	7.25	55.83	3,743.8	147.4	217.2	-128.6	0.00	0.00	0.00
3,800.0	7.25	55.83	3,783.5	150.3	221.4	-131.1	0.00	0.00	0.00
3,840.0	7.25	55.83	3,823.2	153.1	225.5	-133.6	0.00	0.00	0.00
3,880.0	7.25	55.83	3,862.9	155.9	229.7	-136.0	0.00	0.00	0.00
3,920.0	7.25	55.83	3,902.6	158.8	233.9	-138.5	0.00	0.00	0.00
3,960.0	7.25	55.83	3,942.2	161.6	238.1	-141.0	0.00	0.00	0.00
4,000.0	7.25	55.83	3,981.9	164.5	242.3	-143.5	0.00	0.00	0.00
4,040.0	7.25	55.83	4,021.6	167.3	246.4	-145.9	0.00	0.00	0.00
4,080.0	7.25	55.83	4,061.3	170.1	250.6	-148.4	0.00	0.00	0.00

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Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,120.0	7.25	55.83	4,101.0	173.0	254.8	-150.9	0.00	0.00	0.00
4,160.0	7.25	55.83	4,140.6	175.8	259.0	-153.4	0.00	0.00	0.00
4,200.0	7.25	55.83	4,180.3	178.6	263.1	-155.8	0.00	0.00	0.00
4,240.0	7.25	55.83	4,220.0	181.5	267.3	-158.3	0.00	0.00	0.00
4,280.0	7.25	55.83	4,259.7	184.3	271.5	-160.8	0.00	0.00	0.00
4,320.0	7.25	55.83	4,299.4	187.1	275.7	-163.3	0.00	0.00	0.00
4,360.0	7.25	55.83	4,339.0	190.0	279.9	-165.7	0.00	0.00	0.00
4,400.0	7.25	55.83	4,378.7	192.8	284.0	-168.2	0.00	0.00	0.00
4,440.0	7.25	55.83	4,418.4	195.7	288.2	-170.7	0.00	0.00	0.00
4,480.0	7.25	55.83	4,458.1	198.5	292.4	-173.1	0.00	0.00	0.00
4,520.0	7.25	55.83	4,497.8	201.3	296.6	-175.6	0.00	0.00	0.00
4,560.0	7.25	55.83	4,537.4	204.2	300.8	-178.1	0.00	0.00	0.00
4,600.0	7.25	55.83	4,577.1	207.0	304.9	-180.6	0.00	0.00	0.00
4,640.0	7.25	55.83	4,616.8	209.8	309.1	-183.0	0.00	0.00	0.00
4,680.0	7.25	55.83	4,656.5	212.7	313.3	-185.5	0.00	0.00	0.00
4,720.0	7.25	55.83	4,696.2	215.5	317.5	-188.0	0.00	0.00	0.00
4,760.0	7.25	55.83	4,735.8	218.4	321.6	-190.5	0.00	0.00	0.00
4,800.0	7.25	55.83	4,775.5	221.2	325.8	-192.9	0.00	0.00	0.00
4,840.0	7.25	55.83	4,815.2	224.0	330.0	-195.4	0.00	0.00	0.00
4,880.0	7.25	55.83	4,854.9	226.9	334.2	-197.9	0.00	0.00	0.00
4,920.0	7.25	55.83	4,894.6	229.7	338.4	-200.4	0.00	0.00	0.00
4,960.0	7.25	55.83	4,934.2	232.5	342.5	-202.8	0.00	0.00	0.00
5,000.0	7.25	55.83	4,973.9	235.4	346.7	-205.3	0.00	0.00	0.00
5,040.0	7.25	55.83	5,013.6	238.2	350.9	-207.8	0.00	0.00	0.00
5,080.0	7.25	55.83	5,053.3	241.0	355.1	-210.3	0.00	0.00	0.00
5,120.0	7.25	55.83	5,093.0	243.9	359.3	-212.7	0.00	0.00	0.00
5,160.0	7.25	55.83	5,132.6	246.7	363.4	-215.2	0.00	0.00	0.00
5,165.7	7.25	55.83	5,138.3	247.1	364.0	-215.6	0.00	0.00	0.00
5,200.0	6.57	55.83	5,172.3	249.4	367.4	-217.6	2.00	-2.00	0.00
5,240.0	5.77	55.83	5,212.1	251.9	371.0	-219.7	2.00	-2.00	0.00
5,280.0	4.97	55.83	5,251.9	254.0	374.1	-221.5	2.00	-2.00	0.00
5,320.0	4.17	55.83	5,291.8	255.7	376.7	-223.1	2.00	-2.00	0.00
5,360.0	3.37	55.83	5,331.7	257.2	378.9	-224.4	2.00	-2.00	0.00
5,400.0	2.57	55.83	5,371.7	258.4	380.6	-225.4	2.00	-2.00	0.00
5,440.0	1.77	55.83	5,411.6	259.2	381.9	-226.1	2.00	-2.00	0.00
5,480.0	0.97	55.83	5,451.6	259.8	382.7	-226.6	2.00	-2.00	0.00
5,520.0	0.17	55.83	5,491.6	260.0	383.0	-226.8	2.00	-2.00	0.00
5,528.4	0.00	0.00	5,500.0	260.0	383.0	-226.8	2.00	-2.00	0.00
5,560.0	0.00	0.00	5,531.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,571.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,640.0	0.00	0.00	5,611.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,680.0	0.00	0.00	5,651.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,691.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,731.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,771.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,840.0	0.00	0.00	5,811.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,880.0	0.00	0.00	5,851.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,920.0	0.00	0.00	5,891.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,960.0	0.00	0.00	5,931.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,971.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,040.0	0.00	0.00	6,011.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,080.0	0.00	0.00	6,051.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,120.0	0.00	0.00	6,091.6	260.0	383.0	-226.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36J-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,160.0	0.00	0.00	6,131.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,171.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,240.0	0.00	0.00	6,211.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,280.0	0.00	0.00	6,251.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,320.0	0.00	0.00	6,291.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,360.0	0.00	0.00	6,331.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,371.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,411.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,451.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,491.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,531.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,571.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,611.6	260.0	383.0	-226.8	0.00	0.00	0.00
6,650.6	0.00	0.00	6,622.2	260.0	383.0	-226.8	0.00	0.00	0.00
KOP #2									
6,680.0	2.21	180.04	6,651.6	259.4	383.0	-226.2	7.50	7.50	0.00
6,720.0	5.21	180.04	6,691.5	256.8	383.0	-223.7	7.50	7.50	0.00
6,760.0	8.21	180.04	6,731.3	252.2	383.0	-219.0	7.50	7.50	0.00
6,800.0	11.21	180.04	6,770.7	245.4	383.0	-212.3	7.50	7.50	0.00
6,840.0	14.21	180.04	6,809.7	236.6	383.0	-203.5	7.50	7.50	0.00
6,880.0	17.21	180.04	6,848.2	225.8	383.0	-192.7	7.50	7.50	0.00
6,920.0	20.21	180.04	6,886.1	213.0	383.0	-180.0	7.50	7.50	0.00
6,960.0	23.21	180.04	6,923.2	198.2	383.0	-165.2	7.50	7.50	0.00
7,000.0	26.21	180.04	6,959.6	181.5	382.9	-148.6	7.50	7.50	0.00
7,040.0	29.21	180.04	6,995.0	162.9	382.9	-130.0	7.50	7.50	0.00
7,080.0	32.21	180.04	7,029.4	142.5	382.9	-109.7	7.50	7.50	0.00
7,120.0	35.21	180.04	7,062.6	120.3	382.9	-87.6	7.50	7.50	0.00
7,160.0	38.21	180.04	7,094.7	96.4	382.9	-63.7	7.50	7.50	0.00
7,200.0	41.21	180.04	7,125.5	70.8	382.9	-38.3	7.50	7.50	0.00
7,240.0	44.21	180.04	7,154.9	43.7	382.8	-11.3	7.50	7.50	0.00
7,280.0	47.21	180.04	7,182.8	15.0	382.8	17.3	7.50	7.50	0.00
7,320.0	50.21	180.04	7,209.2	-15.0	382.8	47.2	7.50	7.50	0.00
7,360.0	53.21	180.04	7,234.0	-46.4	382.8	78.5	7.50	7.50	0.00
7,400.0	56.21	180.04	7,257.1	-79.0	382.8	111.0	7.50	7.50	0.00
7,440.0	59.21	180.04	7,278.5	-112.8	382.7	144.7	7.50	7.50	0.00
7,480.0	62.21	180.04	7,298.0	-147.7	382.7	179.4	7.50	7.50	0.00
7,520.0	65.21	180.04	7,315.7	-183.6	382.7	215.2	7.50	7.50	0.00
7,560.0	68.21	180.04	7,331.6	-220.3	382.7	251.8	7.50	7.50	0.00
7,600.0	71.21	180.04	7,345.4	-257.8	382.6	289.2	7.50	7.50	0.00
7,640.0	74.21	180.04	7,357.3	-296.0	382.6	327.2	7.50	7.50	0.00
7,680.0	77.21	180.04	7,367.2	-334.8	382.6	365.8	7.50	7.50	0.00
7,720.0	80.21	180.04	7,375.0	-374.0	382.6	404.9	7.50	7.50	0.00
7,760.0	83.21	180.04	7,380.8	-413.6	382.5	444.3	7.50	7.50	0.00
7,770.6	84.00	180.04	7,382.0	-424.1	382.5	454.8	7.49	7.49	0.00
7"									
7,800.0	84.00	180.04	7,385.0	-453.3	382.5	484.0	0.00	0.00	0.00
7,840.0	84.00	180.04	7,389.2	-493.1	382.5	523.6	0.00	0.00	0.00
7,844.6	84.00	180.04	7,389.7	-497.7	382.5	528.1	0.00	0.00	0.00
7,880.0	85.77	180.04	7,392.9	-533.0	382.4	563.3	5.00	5.00	0.00
7,920.0	87.77	180.04	7,395.1	-572.9	382.4	603.1	5.00	5.00	0.00
7,960.0	89.77	180.04	7,396.0	-612.9	382.4	642.9	5.00	5.00	0.00
7,967.2	90.13	180.04	7,396.0	-620.1	382.4	650.1	5.00	5.00	0.00
End of Build									

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36J-423
Company:	PETROLEUM DEVELOPMENT CORP Weld	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,000.0	90.13	180.04	7,395.9	-652.9	382.4	682.8	0.01	0.01	0.00
8,040.0	90.13	180.04	7,395.8	-692.9	382.3	722.6	0.00	0.00	0.00
8,080.0	90.13	180.04	7,395.7	-732.9	382.3	762.5	0.00	0.00	0.00
8,120.0	90.13	180.04	7,395.6	-772.9	382.3	802.3	0.00	0.00	0.00
8,160.0	90.13	180.04	7,395.5	-812.9	382.2	842.2	0.00	0.00	0.00
8,200.0	90.13	180.04	7,395.4	-852.9	382.2	882.1	0.00	0.00	0.00
8,240.0	90.13	180.04	7,395.3	-892.9	382.2	921.9	0.00	0.00	0.00
8,280.0	90.13	180.04	7,395.3	-932.9	382.2	961.8	0.00	0.00	0.00
8,320.0	90.13	180.04	7,395.2	-972.9	382.1	1,001.6	0.00	0.00	0.00
8,360.0	90.13	180.04	7,395.1	-1,012.9	382.1	1,041.5	0.00	0.00	0.00
8,400.0	90.13	180.04	7,395.0	-1,052.9	382.1	1,081.3	0.00	0.00	0.00
8,440.0	90.13	180.04	7,394.9	-1,092.9	382.0	1,121.2	0.00	0.00	0.00
8,480.0	90.13	180.04	7,394.8	-1,132.9	382.0	1,161.0	0.00	0.00	0.00
8,520.0	90.13	180.04	7,394.7	-1,172.9	382.0	1,200.9	0.00	0.00	0.00
8,560.0	90.13	180.04	7,394.6	-1,212.9	381.9	1,240.8	0.00	0.00	0.00
8,600.0	90.13	180.04	7,394.5	-1,252.9	381.9	1,280.6	0.00	0.00	0.00
8,640.0	90.13	180.04	7,394.4	-1,292.9	381.9	1,320.5	0.00	0.00	0.00
8,680.0	90.13	180.04	7,394.3	-1,332.9	381.9	1,360.3	0.00	0.00	0.00
8,720.0	90.13	180.04	7,394.2	-1,372.9	381.8	1,400.2	0.00	0.00	0.00
8,760.0	90.13	180.04	7,394.1	-1,412.9	381.8	1,440.0	0.00	0.00	0.00
8,800.0	90.13	180.04	7,394.0	-1,452.9	381.8	1,479.9	0.00	0.00	0.00
8,840.0	90.13	180.04	7,394.0	-1,492.9	381.7	1,519.7	0.00	0.00	0.00
8,880.0	90.13	180.04	7,393.9	-1,532.9	381.7	1,559.6	0.00	0.00	0.00
8,920.0	90.13	180.04	7,393.8	-1,572.9	381.7	1,599.4	0.00	0.00	0.00
8,960.0	90.13	180.04	7,393.7	-1,612.9	381.7	1,639.3	0.00	0.00	0.00
9,000.0	90.13	180.04	7,393.6	-1,652.9	381.6	1,679.2	0.00	0.00	0.00
9,040.0	90.13	180.04	7,393.5	-1,692.9	381.6	1,719.0	0.00	0.00	0.00
9,080.0	90.13	180.04	7,393.4	-1,732.9	381.6	1,758.9	0.00	0.00	0.00
9,120.0	90.13	180.04	7,393.3	-1,772.9	381.5	1,798.7	0.00	0.00	0.00
9,160.0	90.13	180.04	7,393.2	-1,812.9	381.5	1,838.6	0.00	0.00	0.00
9,200.0	90.13	180.04	7,393.1	-1,852.9	381.5	1,878.4	0.00	0.00	0.00
9,240.0	90.13	180.04	7,393.0	-1,892.9	381.5	1,918.3	0.00	0.00	0.00
9,280.0	90.13	180.04	7,392.9	-1,932.9	381.4	1,958.1	0.00	0.00	0.00
9,320.0	90.13	180.04	7,392.8	-1,972.9	381.4	1,998.0	0.00	0.00	0.00
9,360.0	90.13	180.04	7,392.7	-2,012.9	381.4	2,037.9	0.00	0.00	0.00
9,400.0	90.13	180.04	7,392.7	-2,052.9	381.3	2,077.7	0.00	0.00	0.00
9,440.0	90.13	180.04	7,392.6	-2,092.9	381.3	2,117.6	0.00	0.00	0.00
9,480.0	90.13	180.04	7,392.5	-2,132.9	381.3	2,157.4	0.00	0.00	0.00
9,520.0	90.13	180.04	7,392.4	-2,172.9	381.2	2,197.3	0.00	0.00	0.00
9,560.0	90.13	180.04	7,392.3	-2,212.9	381.2	2,237.1	0.00	0.00	0.00
9,600.0	90.13	180.04	7,392.2	-2,252.9	381.2	2,277.0	0.00	0.00	0.00
9,640.0	90.13	180.04	7,392.1	-2,292.9	381.2	2,316.8	0.00	0.00	0.00
9,680.0	90.13	180.04	7,392.0	-2,332.9	381.1	2,356.7	0.00	0.00	0.00
9,720.0	90.13	180.04	7,391.9	-2,372.9	381.1	2,396.6	0.00	0.00	0.00
9,760.0	90.13	180.04	7,391.8	-2,412.9	381.1	2,436.4	0.00	0.00	0.00
9,800.0	90.13	180.04	7,391.7	-2,452.9	381.0	2,476.3	0.00	0.00	0.00
9,840.0	90.13	180.04	7,391.6	-2,492.9	381.0	2,516.1	0.00	0.00	0.00
9,880.0	90.13	180.04	7,391.5	-2,532.9	381.0	2,556.0	0.00	0.00	0.00
9,920.0	90.13	180.04	7,391.4	-2,572.9	381.0	2,595.8	0.00	0.00	0.00
9,960.0	90.13	180.04	7,391.4	-2,612.9	380.9	2,635.7	0.00	0.00	0.00
10,000.0	90.13	180.04	7,391.3	-2,652.9	380.9	2,675.5	0.00	0.00	0.00
10,040.0	90.13	180.04	7,391.2	-2,692.9	380.9	2,715.4	0.00	0.00	0.00
10,080.0	90.13	180.04	7,391.1	-2,732.9	380.8	2,755.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36J-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,120.0	90.13	180.04	7,391.0	-2,772.9	380.8	2,795.1	0.00	0.00	0.00
10,160.0	90.13	180.04	7,390.9	-2,812.9	380.8	2,835.0	0.00	0.00	0.00
10,200.0	90.13	180.04	7,390.8	-2,852.9	380.7	2,874.8	0.00	0.00	0.00
10,240.0	90.13	180.04	7,390.7	-2,892.9	380.7	2,914.7	0.00	0.00	0.00
10,280.0	90.13	180.04	7,390.6	-2,932.9	380.7	2,954.5	0.00	0.00	0.00
10,320.0	90.13	180.04	7,390.5	-2,972.9	380.7	2,994.4	0.00	0.00	0.00
10,360.0	90.13	180.04	7,390.4	-3,012.9	380.6	3,034.2	0.00	0.00	0.00
10,400.0	90.13	180.04	7,390.3	-3,052.9	380.6	3,074.1	0.00	0.00	0.00
10,440.0	90.13	180.04	7,390.2	-3,092.9	380.6	3,113.9	0.00	0.00	0.00
10,480.0	90.13	180.04	7,390.1	-3,132.9	380.5	3,153.8	0.00	0.00	0.00
10,520.0	90.13	180.04	7,390.1	-3,172.9	380.5	3,193.7	0.00	0.00	0.00
10,560.0	90.13	180.04	7,390.0	-3,212.9	380.5	3,233.5	0.00	0.00	0.00
10,600.0	90.13	180.04	7,389.9	-3,252.9	380.5	3,273.4	0.00	0.00	0.00
10,640.0	90.13	180.04	7,389.8	-3,292.9	380.4	3,313.2	0.00	0.00	0.00
10,680.0	90.13	180.04	7,389.7	-3,332.9	380.4	3,353.1	0.00	0.00	0.00
10,720.0	90.13	180.04	7,389.6	-3,372.9	380.4	3,392.9	0.00	0.00	0.00
10,760.0	90.13	180.04	7,389.5	-3,412.9	380.3	3,432.8	0.00	0.00	0.00
10,800.0	90.13	180.04	7,389.4	-3,452.9	380.3	3,472.6	0.00	0.00	0.00
10,840.0	90.13	180.04	7,389.3	-3,492.9	380.3	3,512.5	0.00	0.00	0.00
10,880.0	90.13	180.04	7,389.2	-3,532.9	380.2	3,552.4	0.00	0.00	0.00
10,920.0	90.13	180.04	7,389.1	-3,572.9	380.2	3,592.2	0.00	0.00	0.00
10,960.0	90.13	180.04	7,389.0	-3,612.9	380.2	3,632.1	0.00	0.00	0.00
11,000.0	90.13	180.04	7,388.9	-3,652.9	380.2	3,671.9	0.00	0.00	0.00
11,040.0	90.13	180.04	7,388.8	-3,692.9	380.1	3,711.8	0.00	0.00	0.00
11,080.0	90.13	180.04	7,388.8	-3,732.9	380.1	3,751.6	0.00	0.00	0.00
11,120.0	90.13	180.04	7,388.7	-3,772.9	380.1	3,791.5	0.00	0.00	0.00
11,160.0	90.13	180.04	7,388.6	-3,812.9	380.0	3,831.3	0.00	0.00	0.00
11,200.0	90.13	180.04	7,388.5	-3,852.9	380.0	3,871.2	0.00	0.00	0.00
11,240.0	90.13	180.04	7,388.4	-3,892.9	380.0	3,911.0	0.00	0.00	0.00
11,280.0	90.13	180.04	7,388.3	-3,932.9	380.0	3,950.9	0.00	0.00	0.00
11,320.0	90.13	180.04	7,388.2	-3,972.9	379.9	3,990.8	0.00	0.00	0.00
11,360.0	90.13	180.04	7,388.1	-4,012.9	379.9	4,030.6	0.00	0.00	0.00
11,400.0	90.13	180.04	7,388.0	-4,052.9	379.9	4,070.5	0.00	0.00	0.00
11,440.0	90.13	180.04	7,387.9	-4,092.9	379.8	4,110.3	0.00	0.00	0.00
11,480.0	90.13	180.04	7,387.8	-4,132.9	379.8	4,150.2	0.00	0.00	0.00
11,520.0	90.13	180.04	7,387.7	-4,172.9	379.8	4,190.0	0.00	0.00	0.00
11,560.0	90.13	180.04	7,387.6	-4,212.9	379.8	4,229.9	0.00	0.00	0.00
11,600.0	90.13	180.04	7,387.5	-4,252.9	379.7	4,269.7	0.00	0.00	0.00
11,640.0	90.13	180.04	7,387.5	-4,292.9	379.7	4,309.6	0.00	0.00	0.00
11,680.0	90.13	180.04	7,387.4	-4,332.9	379.7	4,349.5	0.00	0.00	0.00
11,720.0	90.13	180.04	7,387.3	-4,372.9	379.6	4,389.3	0.00	0.00	0.00
11,760.0	90.13	180.04	7,387.2	-4,412.9	379.6	4,429.2	0.00	0.00	0.00
11,800.0	90.13	180.04	7,387.1	-4,452.9	379.6	4,469.0	0.00	0.00	0.00
11,835.3	90.13	180.04	7,387.0	-4,488.2	379.5	4,504.2	0.00	0.00	0.00
BHL 500'FSL, 1653'FWL									

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36J-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36J-423	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-07-13)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
BHL 500'FSL, 1653'F1	0.00	0.00	7,387.0	-4,488.2	379.5	1,339,564.56	3,152,144.21	40.264220	-104.954810
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
7,770.6	7,382.0	7"		7	8-3/4

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,500.0	1,500.0	0.0	0.0	KOP #1
6,650.6	6,622.2	260.0	383.0	KOP #2
7,967.2	7,396.0	-620.1	382.4	End of Build



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.36-T4N-R68W

Gaddis Pad Sec.36-T4N-R68W

Gaddis 36J-423

Wellbore #1

Plan #1 (1-07-13)

Anticollision Report

08 January, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (1-07-13)		
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 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 1/7/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,835.3	Plan #1 (1-07-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Gaddis Pad Sec.36-T4N-R68W						
Gaddis 21-36 (Exist.) - Wellbore #1 - Wellbore #1	7,498.1	7,294.3	141.9	-20.5	0.874	Level 1, CC
Gaddis 21-36 (Exist.) - Wellbore #1 - Wellbore #1	7,500.0	7,295.1	141.9	-20.5	0.874	Level 1, ES, SF
Gaddis 22-36 (Exist.) - Wellbore #1 - Wellbore #1	9,205.0	7,300.0	242.3	61.4	1.339	Level 3, CC, ES, SF
Gaddis 36J-203 - Wellbore #1 - Plan #2 (1-07-13)	1,500.0	1,501.0	27.9	21.4	4.279	CC, ES
Gaddis 36J-203 - Wellbore #1 - Plan #2 (1-07-13)	11,835.3	11,635.3	390.6	237.8	2.557	SF
Gaddis 36M-243 - Wellbore #1 - Plan #3 (1-07-13)	200.0	200.0	30.7	30.0	45.519	CC, ES
Gaddis 36M-243 - Wellbore #1 - Plan #3 (1-07-13)	11,835.3	11,674.2	440.6	279.7	2.738	SF
State Corsair 23-36 (Exist.) - Wellbore #1 - Wellbore #1	10,166.7	7,300.0	317.1	115.6	1.574	CC, ES, SF

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 21-36 (Exist.) - Wellbore #1 - Wellbore #1												
Survey Program: 7300-UNKNOWN												
Offset Site Error: 0.0 ft												
Offset Well Error: 0.0 ft												
Reference	Offset	Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	107.35	-163.9	524.6	549.7			
100.0	100.0	88.0	88.0	0.1	1.8	107.35	-163.9	524.6	549.6	547.7	1.87	293.498
200.0	200.0	188.0	188.0	0.3	3.8	107.35	-163.9	524.6	549.6	545.5	4.10	134.135
300.0	300.0	288.0	288.0	0.6	5.8	107.35	-163.9	524.6	549.6	543.3	6.32	86.933
400.0	400.0	388.0	388.0	0.8	7.8	107.35	-163.9	524.6	549.6	541.1	8.55	64.304
500.0	500.0	488.0	488.0	1.0	9.8	107.35	-163.9	524.6	549.6	538.8	10.77	51.023
600.0	600.0	588.0	588.0	1.2	11.8	107.35	-163.9	524.6	549.6	536.6	13.00	42.289
700.0	700.0	688.0	688.0	1.5	13.8	107.35	-163.9	524.6	549.6	534.4	15.22	36.108
800.0	800.0	788.0	788.0	1.7	15.8	107.35	-163.9	524.6	549.6	532.2	17.45	31.503
900.0	900.0	888.0	888.0	1.9	17.8	107.35	-163.9	524.6	549.6	529.9	19.67	27.940
1,000.0	1,000.0	988.0	988.0	2.1	19.8	107.35	-163.9	524.6	549.6	527.7	21.90	25.101
1,100.0	1,100.0	1,088.0	1,088.0	2.4	21.8	107.35	-163.9	524.6	549.6	525.5	24.12	22.786
1,200.0	1,200.0	1,188.0	1,188.0	2.6	23.8	107.35	-163.9	524.6	549.6	523.3	26.34	20.862
1,300.0	1,300.0	1,288.0	1,288.0	2.8	25.8	107.35	-163.9	524.6	549.6	521.0	28.57	19.237
1,400.0	1,400.0	1,388.0	1,388.0	3.0	27.8	107.35	-163.9	524.6	549.6	518.8	30.79	17.847
1,500.0	1,500.0	1,488.0	1,488.0	3.3	29.8	107.35	-163.9	524.6	549.6	516.6	33.02	16.645
1,600.0	1,600.0	1,588.0	1,588.0	3.5	31.8	51.68	-163.9	524.6	548.5	513.3	35.23	15.570
1,700.0	1,699.8	1,687.8	1,687.8	3.7	33.8	52.17	-163.9	524.6	545.3	507.9	37.41	14.574

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,800.0	1,799.5	1,787.5	1,787.5	3.9	35.7	52.98	-163.9	524.6	540.0	500.4	39.58	13.642		
1,862.7	1,861.7	1,849.7	1,849.7	4.1	37.0	53.67	-163.9	524.6	535.6	494.7	40.93	13.086		
1,900.0	1,898.7	1,886.7	1,886.7	4.2	37.7	54.07	-163.9	524.6	532.8	491.1	41.76	12.761		
2,000.0	1,997.9	1,985.9	1,985.9	4.4	39.7	55.18	-163.9	524.6	525.5	481.5	43.98	11.949		
2,100.0	2,097.1	2,085.1	2,085.1	4.7	41.7	56.32	-163.9	524.6	518.3	472.1	46.21	11.218		
2,200.0	2,196.3	2,184.3	2,184.3	4.9	43.7	57.49	-163.9	524.6	511.4	463.0	48.45	10.556		
2,300.0	2,295.5	2,283.5	2,283.5	5.2	45.7	58.69	-163.9	524.6	504.7	454.0	50.69	9.956		
2,400.0	2,394.7	2,382.7	2,382.7	5.5	47.7	59.93	-163.9	524.6	498.2	445.3	52.95	9.410		
2,500.0	2,493.9	2,481.9	2,481.9	5.8	49.6	61.19	-163.9	524.6	492.0	436.8	55.21	8.911		
2,600.0	2,593.1	2,581.1	2,581.1	6.0	51.6	62.49	-163.9	524.6	486.0	428.5	57.47	8.455		
2,700.0	2,692.3	2,680.3	2,680.3	6.3	53.6	63.81	-163.9	524.6	480.2	420.5	59.75	8.038		
2,800.0	2,791.5	2,779.5	2,779.5	6.6	55.6	65.17	-163.9	524.6	474.8	412.7	62.03	7.654		
2,900.0	2,890.7	2,878.7	2,878.7	6.9	57.6	66.56	-163.9	524.6	469.6	405.3	64.31	7.301		
3,000.0	2,989.9	2,977.9	2,977.9	7.2	59.6	67.98	-163.9	524.6	464.7	398.1	66.60	6.977		
3,100.0	3,089.1	3,077.1	3,077.1	7.5	61.5	69.43	-163.9	524.6	460.0	391.1	68.89	6.677		
3,200.0	3,188.3	3,176.3	3,176.3	7.8	63.5	70.90	-163.9	524.6	455.7	384.5	71.19	6.401		
3,300.0	3,287.5	3,275.5	3,275.5	8.1	65.5	72.41	-163.9	524.6	451.7	378.2	73.49	6.146		
3,400.0	3,386.7	3,374.7	3,374.7	8.4	67.5	73.94	-163.9	524.6	448.0	372.2	75.80	5.911		
3,500.0	3,485.9	3,473.9	3,473.9	8.8	69.5	75.49	-163.9	524.6	444.7	366.6	78.10	5.693		
3,600.0	3,585.1	3,573.1	3,573.1	9.1	71.5	77.06	-163.9	524.6	441.7	361.2	80.41	5.492		
3,700.0	3,684.3	3,672.3	3,672.3	9.4	73.4	78.65	-163.9	524.6	439.0	356.3	82.72	5.307		
3,800.0	3,783.5	3,771.5	3,771.5	9.7	75.4	80.27	-163.9	524.6	436.7	351.6	85.04	5.135		
3,900.0	3,882.7	3,870.7	3,870.7	10.0	77.4	81.89	-163.9	524.6	434.7	347.3	87.35	4.976		
4,000.0	3,981.9	3,969.9	3,969.9	10.3	79.4	83.54	-163.9	524.6	433.1	343.4	89.66	4.830		
4,100.0	4,081.1	4,069.1	4,069.1	10.6	81.4	85.19	-163.9	524.6	431.8	339.8	91.97	4.695		
4,200.0	4,180.3	4,168.3	4,168.3	10.9	83.4	86.85	-163.9	524.6	430.9	336.7	94.28	4.571		
4,300.0	4,279.5	4,267.5	4,267.5	11.2	85.4	88.51	-163.9	524.6	430.4	333.8	96.59	4.456		
4,389.2	4,368.0	4,356.0	4,356.0	11.5	87.1	90.00	-163.9	524.6	430.3	331.6	98.64	4.362		
4,400.0	4,378.7	4,366.7	4,366.7	11.6	87.3	90.18	-163.9	524.6	430.3	331.4	98.89	4.351		
4,500.0	4,477.9	4,465.9	4,465.9	11.9	89.3	91.85	-163.9	524.6	430.5	329.3	101.19	4.254		
4,600.0	4,577.1	4,565.1	4,565.1	12.2	91.3	93.51	-163.9	524.6	431.1	327.6	103.49	4.165		
4,700.0	4,676.3	4,664.3	4,664.3	12.5	93.3	95.17	-163.9	524.6	432.1	326.3	105.79	4.084		
4,800.0	4,775.5	4,763.5	4,763.5	12.8	95.3	96.82	-163.9	524.6	433.4	325.3	108.08	4.010		
4,900.0	4,874.7	4,862.7	4,862.7	13.1	97.3	98.46	-163.9	524.6	435.1	324.7	110.36	3.942		
5,000.0	4,973.9	4,961.9	4,961.9	13.5	99.2	100.08	-163.9	524.6	437.1	324.5	112.65	3.881		
5,100.0	5,073.1	5,061.1	5,061.1	13.8	101.2	101.69	-163.9	524.6	439.5	324.6	114.92	3.825		
5,165.7	5,138.3	5,126.3	5,126.3	14.0	102.5	102.74	-163.9	524.6	441.3	324.9	116.41	3.791		
5,200.0	5,172.3	5,160.3	5,160.3	14.1	103.2	103.27	-163.9	524.6	442.2	325.0	117.19	3.774		
5,300.0	5,271.9	5,259.9	5,259.9	14.3	105.2	104.53	-163.9	524.6	444.6	325.2	119.40	3.724		
5,400.0	5,371.7	5,359.7	5,359.7	14.5	107.2	105.33	-163.9	524.6	446.2	324.6	121.59	3.670		
5,500.0	5,471.6	5,459.6	5,459.6	14.7	109.2	105.69	-163.9	524.6	446.9	323.2	123.75	3.611		
5,528.4	5,500.0	5,488.0	5,488.0	14.7	109.8	161.53	-163.9	524.6	447.0	322.6	124.36	3.594		
5,584.9	5,556.5	5,544.5	5,544.5	14.8	110.9	161.53	-163.9	524.6	447.0	321.4	125.59	3.559		
5,600.0	5,571.6	5,559.6	5,559.6	14.8	111.2	161.53	-163.9	524.6	447.0	321.0	125.91	3.550		
5,678.9	5,650.5	5,638.5	5,638.5	15.0	112.8	161.53	-163.9	524.6	447.0	319.3	127.64	3.502		
5,700.0	5,671.6	5,659.6	5,659.6	15.0	113.2	161.53	-163.9	524.6	447.0	318.9	128.10	3.489		
5,778.9	5,750.5	5,738.5	5,738.5	15.2	114.8	161.53	-163.9	524.6	447.0	317.1	129.82	3.443		
5,800.0	5,771.6	5,759.6	5,759.6	15.2	115.2	161.53	-163.9	524.6	447.0	316.7	130.28	3.431		
5,878.9	5,850.5	5,838.5	5,838.5	15.3	116.8	161.53	-163.9	524.6	447.0	314.9	132.00	3.386		
5,900.0	5,871.6	5,859.6	5,859.6	15.4	117.2	161.53	-163.9	524.6	447.0	314.5	132.46	3.374		
5,978.9	5,950.5	5,938.5	5,938.5	15.5	118.8	161.53	-163.9	524.6	447.0	312.8	134.19	3.331		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,000.0	5,971.6	5,959.6	5,959.6	15.6	119.2	161.53	-163.9	524.6	447.0	312.3	134.65	3.319		
6,078.9	6,050.5	6,038.5	6,038.5	15.7	120.8	161.53	-163.9	524.6	447.0	310.6	136.37	3.277		
6,100.0	6,071.6	6,059.6	6,059.6	15.7	121.2	161.53	-163.9	524.6	447.0	310.1	136.84	3.266		
6,178.9	6,150.5	6,138.5	6,138.5	15.9	122.8	161.53	-163.9	524.6	447.0	308.4	138.56	3.226		
6,200.0	6,171.6	6,159.6	6,159.6	15.9	123.2	161.53	-163.9	524.6	447.0	307.9	139.02	3.215		
6,278.9	6,250.5	6,238.5	6,238.5	16.1	124.8	161.53	-163.9	524.6	447.0	306.2	140.75	3.176		
6,300.0	6,271.6	6,259.6	6,259.6	16.1	125.2	161.53	-163.9	524.6	447.0	305.7	141.21	3.165		
6,378.9	6,350.5	6,338.5	6,338.5	16.3	126.8	161.53	-163.9	524.6	447.0	304.0	142.94	3.127		
6,400.0	6,371.6	6,359.6	6,359.6	16.3	127.2	161.53	-163.9	524.6	447.0	303.6	143.40	3.117		
6,478.9	6,450.5	6,438.5	6,438.5	16.5	128.8	161.53	-163.9	524.6	447.0	301.8	145.13	3.080		
6,500.0	6,471.6	6,459.6	6,459.6	16.5	129.2	161.53	-163.9	524.6	447.0	301.4	145.59	3.070		
6,578.9	6,550.5	6,538.5	6,538.5	16.6	130.8	161.53	-163.9	524.6	447.0	299.6	147.32	3.034		
6,600.0	6,571.6	6,559.6	6,559.6	16.7	131.2	161.53	-163.9	524.6	447.0	299.2	147.78	3.024		
6,650.6	6,622.2	6,610.2	6,610.2	16.8	132.2	161.53	-163.9	524.6	447.0	298.1	148.89	3.002		
6,700.0	6,671.6	6,659.6	6,659.6	16.9	133.2	-18.61	-163.9	524.6	445.4	295.8	149.67	2.976		
6,750.0	6,721.3	6,709.3	6,709.3	16.9	134.2	-18.92	-163.9	524.6	440.8	291.0	149.88	2.941		
6,800.0	6,770.7	6,758.7	6,758.7	17.0	135.2	-19.46	-163.9	524.6	433.2	283.7	149.51	2.897		
6,850.0	6,819.4	6,807.4	6,807.4	17.0	136.1	-20.25	-163.9	524.6	422.5	273.9	148.59	2.843		
6,900.0	6,867.2	6,855.2	6,855.2	17.0	137.1	-21.34	-163.9	524.6	408.9	261.7	147.15	2.779		
6,950.0	6,914.0	6,902.0	6,902.0	17.0	138.0	-22.76	-163.9	524.6	392.4	247.2	145.28	2.701		
7,000.0	6,959.6	6,947.6	6,947.6	17.0	139.0	-24.60	-163.9	524.6	373.3	230.2	143.09	2.609		
7,050.0	7,003.7	6,991.7	6,991.7	17.0	139.8	-26.97	-163.9	524.6	351.7	210.9	140.79	2.498		
7,100.0	7,046.2	7,034.2	7,034.2	17.0	140.7	-30.00	-163.9	524.6	327.7	189.0	138.67	2.363		
7,150.0	7,086.8	7,074.8	7,074.8	17.0	141.5	-33.86	-163.9	524.6	301.8	164.6	137.20	2.199		
7,200.0	7,125.5	7,113.5	7,113.5	17.0	142.3	-38.79	-163.9	524.6	274.2	137.2	137.01	2.001		
7,250.0	7,162.0	7,150.0	7,150.0	17.1	143.0	-45.00	-163.9	524.6	245.6	106.8	138.79	1.770		
7,300.0	7,196.2	7,184.2	7,184.2	17.1	143.7	-52.66	-163.9	524.6	216.9	73.9	142.97	1.517		
7,350.0	7,227.9	7,215.9	7,215.9	17.1	144.3	-61.69	-163.9	524.6	189.4	40.2	149.15	1.270 Level 3		
7,400.0	7,257.1	7,245.1	7,245.1	17.2	144.9	-71.61	-163.9	524.6	165.3	9.6	155.69	1.062 Level 2		
7,450.0	7,283.5	7,271.5	7,271.5	17.2	145.4	-81.50	-163.9	524.6	148.1	-12.4	160.46	0.923 Level 1		
7,498.1	7,306.3	7,294.3	7,294.3	17.4	145.9	-90.00	-163.9	524.6	141.9	-20.5	162.34	0.874 Level 1, CC		
7,500.0	7,307.1	7,295.1	7,295.1	17.4	145.9	-90.30	-163.9	524.6	141.9	-20.5	162.36	0.874 Level 1, ES, SF		
7,550.0	7,327.8	7,300.0	7,300.0	17.6	146.0	-91.43	-163.9	524.6	150.4	-12.3	162.67	0.924 Level 1		
7,600.0	7,345.4	7,300.0	7,300.0	17.8	146.0	-89.45	-163.9	524.6	173.4	10.4	163.04	1.064 Level 2		
7,650.0	7,360.0	7,300.0	7,300.0	18.1	146.0	-86.16	-163.9	524.6	206.3	43.2	163.11	1.265 Level 3		
7,700.0	7,371.4	7,300.0	7,300.0	18.5	146.0	-81.62	-163.9	524.6	244.8	82.6	162.26	1.509		
7,750.0	7,379.5	7,300.0	7,300.0	18.9	146.0	-75.96	-163.9	524.6	286.7	127.0	159.76	1.795		
7,770.6	7,382.0	7,300.0	7,300.0	19.1	146.0	-73.37	-163.9	524.6	304.6	146.5	158.07	1.927		
7,800.0	7,385.0	7,300.0	7,300.0	19.4	146.0	-73.37	-163.9	524.6	330.6	172.2	158.35	2.088		
7,844.6	7,389.7	7,300.0	7,300.0	19.8	146.0	-73.37	-163.9	524.6	371.0	212.2	158.78	2.336		
7,900.0	7,394.2	7,300.0	7,300.0	20.4	146.0	-67.04	-163.9	524.6	422.2	268.8	153.45	2.751		
7,967.2	7,396.0	7,300.0	7,300.0	21.2	146.0	-59.06	-163.9	524.6	485.2	341.0	144.17	3.365		
8,000.0	7,395.9	7,300.0	7,300.0	21.5	146.0	-59.06	-163.9	524.6	516.1	371.6	144.52	3.571		
8,100.0	7,395.7	7,300.0	7,300.0	22.8	146.0	-59.06	-163.9	524.6	611.6	466.0	145.64	4.200		
8,200.0	7,395.4	7,300.0	7,300.0	24.1	146.0	-59.06	-163.9	524.6	708.4	561.6	146.83	4.825		
8,300.0	7,395.2	7,300.0	7,300.0	25.5	146.0	-59.06	-163.9	524.6	806.0	657.9	148.09	5.443		
8,400.0	7,395.0	7,300.0	7,300.0	27.0	146.0	-59.06	-163.9	524.6	904.1	754.7	149.40	6.052		
8,500.0	7,394.7	7,300.0	7,300.0	28.5	146.0	-59.06	-163.9	524.6	1,002.6	851.8	150.76	6.650		
8,600.0	7,394.5	7,300.0	7,300.0	30.1	146.0	-59.06	-163.9	524.6	1,101.3	949.2	152.15	7.239		
8,700.0	7,394.3	7,300.0	7,300.0	31.7	146.0	-59.06	-163.9	524.6	1,200.3	1,046.7	153.57	7.816		
8,800.0	7,394.0	7,300.0	7,300.0	33.3	146.0	-59.06	-163.9	524.6	1,299.4	1,144.4	155.03	8.382		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design											Gaddis Pad Sec.36-T4N-R68W - Gaddis 21-36 (Exist.) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,900.0	7,393.8	7,300.0	7,300.0	35.0	146.0	-59.06	-163.9	524.6	1,398.7	1,242.2	156.50	8.937			
9,000.0	7,393.6	7,300.0	7,300.0	36.7	146.0	-59.06	-163.9	524.6	1,498.0	1,340.0	158.00	9.481			
9,100.0	7,393.3	7,300.0	7,300.0	38.4	146.0	-59.06	-163.9	524.6	1,597.4	1,437.9	159.52	10.014			
9,200.0	7,393.1	7,300.0	7,300.0	40.1	146.0	-59.06	-163.9	524.6	1,696.9	1,535.9	161.05	10.537			
9,300.0	7,392.9	7,300.0	7,300.0	41.9	146.0	-59.06	-163.9	524.6	1,796.5	1,633.9	162.59	11.049			
9,400.0	7,392.7	7,300.0	7,300.0	43.6	146.0	-59.06	-163.9	524.6	1,896.1	1,731.9	164.15	11.551			
9,500.0	7,392.4	7,300.0	7,300.0	45.4	146.0	-59.06	-163.9	524.6	1,995.7	1,830.0	165.71	12.043			
9,600.0	7,392.2	7,300.0	7,300.0	47.2	146.0	-59.06	-163.9	524.6	2,095.4	1,928.1	167.29	12.525			
9,700.0	7,392.0	7,300.0	7,300.0	49.0	146.0	-59.06	-163.9	524.6	2,195.1	2,026.2	168.88	12.998			
9,800.0	7,391.7	7,300.0	7,300.0	50.8	146.0	-59.06	-163.9	524.6	2,294.8	2,124.4	170.47	13.462			
9,900.0	7,391.5	7,300.0	7,300.0	52.6	146.0	-59.06	-163.9	524.6	2,394.6	2,222.5	172.07	13.916			
10,000.0	7,391.3	7,300.0	7,300.0	54.4	146.0	-59.06	-163.9	524.6	2,494.3	2,320.7	173.67	14.362			
10,100.0	7,391.0	7,300.0	7,300.0	56.3	146.0	-59.06	-163.9	524.6	2,594.1	2,418.8	175.29	14.799			
10,200.0	7,390.8	7,300.0	7,300.0	58.1	146.0	-59.06	-163.9	524.6	2,693.9	2,517.0	176.90	15.228			
10,300.0	7,390.6	7,300.0	7,300.0	59.9	146.0	-59.06	-163.9	524.6	2,793.8	2,615.2	178.52	15.649			
10,400.0	7,390.3	7,300.0	7,300.0	61.8	146.0	-59.06	-163.9	524.6	2,893.6	2,713.4	180.15	16.062			
10,500.0	7,390.1	7,300.0	7,300.0	63.6	146.0	-59.06	-163.9	524.6	2,993.4	2,811.7	181.78	16.468			
10,600.0	7,389.9	7,300.0	7,300.0	65.5	146.0	-59.06	-163.9	524.6	3,093.3	2,909.9	183.41	16.865			
10,700.0	7,389.6	7,300.0	7,300.0	67.3	146.0	-59.06	-163.9	524.6	3,193.1	3,008.1	185.04	17.256			
10,800.0	7,389.4	7,300.0	7,300.0	69.2	146.0	-59.06	-163.9	524.6	3,293.0	3,106.3	186.68	17.640			
10,900.0	7,389.2	7,300.0	7,300.0	71.0	146.0	-59.06	-163.9	524.6	3,392.9	3,204.6	188.32	18.016			
11,000.0	7,388.9	7,300.0	7,300.0	72.9	146.0	-59.06	-163.9	524.6	3,492.8	3,302.8	189.97	18.386			
11,100.0	7,388.7	7,300.0	7,300.0	74.8	146.0	-59.06	-163.9	524.6	3,592.7	3,401.1	191.61	18.750			
11,200.0	7,388.5	7,300.0	7,300.0	76.7	146.0	-59.06	-163.9	524.6	3,692.6	3,499.3	193.26	19.107			
11,300.0	7,388.2	7,300.0	7,300.0	78.5	146.0	-59.06	-163.9	524.6	3,792.5	3,597.6	194.91	19.457			
11,400.0	7,388.0	7,300.0	7,300.0	80.4	146.0	-59.06	-163.9	524.6	3,892.4	3,695.8	196.56	19.802			
11,500.0	7,387.8	7,300.0	7,300.0	82.3	146.0	-59.06	-163.9	524.6	3,992.3	3,794.1	198.22	20.141			
11,600.0	7,387.5	7,300.0	7,300.0	84.2	146.0	-59.06	-163.9	524.6	4,092.2	3,892.3	199.87	20.474			
11,700.0	7,387.3	7,300.0	7,300.0	86.0	146.0	-59.06	-163.9	524.6	4,192.1	3,990.6	201.53	20.801			
11,800.0	7,387.1	7,300.0	7,300.0	87.9	146.0	-59.06	-163.9	524.6	4,292.0	4,088.9	203.19	21.124			
11,835.3	7,387.0	7,300.0	7,300.0	88.6	146.0	-59.06	-163.9	524.6	4,327.4	4,123.6	203.77	21.236			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
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Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference				Offset				Semi Major Axis				Distance		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	161.64	-1,857.9	616.7	1,957.9					
100.0	100.0	65.0	65.0	0.1	1.3	161.64	-1,857.9	616.7	1,957.6	1,956.2	1.41	1,385.849		
200.0	200.0	165.0	165.0	0.3	3.3	161.64	-1,857.9	616.7	1,957.6	1,954.0	3.64	538.201		
300.0	300.0	265.0	265.0	0.6	5.3	161.64	-1,857.9	616.7	1,957.6	1,951.8	5.86	333.945		
400.0	400.0	365.0	365.0	0.8	7.3	161.64	-1,857.9	616.7	1,957.6	1,949.5	8.09	242.074		
500.0	500.0	465.0	465.0	1.0	9.3	161.64	-1,857.9	616.7	1,957.6	1,947.3	10.31	189.846		
600.0	600.0	565.0	565.0	1.2	11.3	161.64	-1,857.9	616.7	1,957.6	1,945.1	12.54	156.155		
700.0	700.0	665.0	665.0	1.5	13.3	161.64	-1,857.9	616.7	1,957.6	1,942.9	14.76	132.620		
800.0	800.0	765.0	765.0	1.7	15.3	161.64	-1,857.9	616.7	1,957.6	1,940.6	16.99	115.250		
900.0	900.0	865.0	865.0	1.9	17.3	161.64	-1,857.9	616.7	1,957.6	1,938.4	19.21	101.903		
1,000.0	1,000.0	965.0	965.0	2.1	19.3	161.64	-1,857.9	616.7	1,957.6	1,936.2	21.44	91.326		
1,100.0	1,100.0	1,065.0	1,065.0	2.4	21.3	161.64	-1,857.9	616.7	1,957.6	1,934.0	23.66	82.739		
1,200.0	1,200.0	1,165.0	1,165.0	2.6	23.3	161.64	-1,857.9	616.7	1,957.6	1,931.7	25.88	75.628		
1,300.0	1,300.0	1,265.0	1,265.0	2.8	25.3	161.64	-1,857.9	616.7	1,957.6	1,929.5	28.11	69.642		
1,400.0	1,400.0	1,365.0	1,365.0	3.0	27.3	161.64	-1,857.9	616.7	1,957.6	1,927.3	30.33	64.535		
1,500.0	1,500.0	1,465.0	1,465.0	3.3	29.3	161.64	-1,857.9	616.7	1,957.6	1,925.1	32.56	60.125		
1,600.0	1,600.0	1,565.0	1,565.0	3.5	31.3	105.85	-1,857.9	616.7	1,958.1	1,923.3	34.78	56.305		
1,700.0	1,699.8	1,664.8	1,664.8	3.7	33.3	105.97	-1,857.9	616.7	1,959.5	1,922.6	36.98	52.982		
1,800.0	1,799.5	1,764.5	1,764.5	3.9	35.3	106.16	-1,857.9	616.7	1,962.0	1,922.8	39.19	50.061		
1,862.7	1,861.7	1,826.7	1,826.7	4.1	36.5	106.33	-1,857.9	616.7	1,964.0	1,923.4	40.58	48.404		
1,900.0	1,898.7	1,863.7	1,863.7	4.2	37.3	106.46	-1,857.9	616.7	1,965.3	1,923.9	41.40	47.467		
2,000.0	1,997.9	1,962.9	1,962.9	4.4	39.3	106.81	-1,857.9	616.7	1,969.0	1,925.3	43.63	45.124		
2,100.0	2,097.1	2,062.1	2,062.1	4.7	41.2	107.16	-1,857.9	616.7	1,972.7	1,926.8	45.87	43.004		
2,200.0	2,196.3	2,161.3	2,161.3	4.9	43.2	107.50	-1,857.9	616.7	1,976.5	1,928.4	48.12	41.076		
2,300.0	2,295.5	2,260.5	2,260.5	5.2	45.2	107.85	-1,857.9	616.7	1,980.3	1,930.0	50.37	39.317		
2,400.0	2,394.7	2,359.7	2,359.7	5.5	47.2	108.19	-1,857.9	616.7	1,984.3	1,931.7	52.62	37.706		
2,500.0	2,493.9	2,458.9	2,458.9	5.8	49.2	108.54	-1,857.9	616.7	1,988.3	1,933.4	54.88	36.226		
2,600.0	2,593.1	2,558.1	2,558.1	6.0	51.2	108.88	-1,857.9	616.7	1,992.4	1,935.2	57.15	34.863		
2,700.0	2,692.3	2,657.3	2,657.3	6.3	53.1	109.22	-1,857.9	616.7	1,996.5	1,937.1	59.41	33.603		
2,800.0	2,791.5	2,756.5	2,756.5	6.6	55.1	109.56	-1,857.9	616.7	2,000.7	1,939.1	61.68	32.436		
2,900.0	2,890.7	2,855.7	2,855.7	6.9	57.1	109.90	-1,857.9	616.7	2,005.0	1,941.1	63.95	31.351		
3,000.0	2,989.9	2,954.9	2,954.9	7.2	59.1	110.23	-1,857.9	616.7	2,009.4	1,943.2	66.23	30.341		
3,100.0	3,089.1	3,054.1	3,054.1	7.5	61.1	110.57	-1,857.9	616.7	2,013.8	1,945.3	68.50	29.399		
3,200.0	3,188.3	3,153.3	3,153.3	7.8	63.1	110.90	-1,857.9	616.7	2,018.3	1,947.5	70.77	28.518		
3,300.0	3,287.5	3,252.5	3,252.5	8.1	65.1	111.23	-1,857.9	616.7	2,022.9	1,949.8	73.05	27.692		
3,400.0	3,386.7	3,351.7	3,351.7	8.4	67.0	111.56	-1,857.9	616.7	2,027.5	1,952.2	75.33	26.916		
3,500.0	3,485.9	3,450.9	3,450.9	8.8	69.0	111.89	-1,857.9	616.7	2,032.2	1,954.6	77.60	26.187		
3,600.0	3,585.1	3,550.1	3,550.1	9.1	71.0	112.22	-1,857.9	616.7	2,037.0	1,957.1	79.88	25.501		
3,700.0	3,684.3	3,649.3	3,649.3	9.4	73.0	112.54	-1,857.9	616.7	2,041.9	1,959.7	82.16	24.852		
3,800.0	3,783.5	3,748.5	3,748.5	9.7	75.0	112.87	-1,857.9	616.7	2,046.8	1,962.3	84.44	24.240		
3,900.0	3,882.7	3,847.7	3,847.7	10.0	77.0	113.19	-1,857.9	616.7	2,051.7	1,965.0	86.71	23.661		
4,000.0	3,981.9	3,946.9	3,946.9	10.3	78.9	113.51	-1,857.9	616.7	2,056.8	1,967.8	88.99	23.112		
4,100.0	4,081.1	4,046.1	4,046.1	10.6	80.9	113.83	-1,857.9	616.7	2,061.9	1,970.6	91.27	22.591		
4,200.0	4,180.3	4,145.3	4,145.3	10.9	82.9	114.15	-1,857.9	616.7	2,067.0	1,973.5	93.55	22.096		
4,300.0	4,279.5	4,244.5	4,244.5	11.2	84.9	114.47	-1,857.9	616.7	2,072.3	1,976.5	95.83	21.625		
4,400.0	4,378.7	4,343.7	4,343.7	11.6	86.9	114.78	-1,857.9	616.7	2,077.6	1,979.5	98.10	21.177		
4,500.0	4,477.9	4,442.9	4,442.9	11.9	88.9	115.09	-1,857.9	616.7	2,082.9	1,982.6	100.38	20.750		
4,600.0	4,577.1	4,542.1	4,542.1	12.2	90.8	115.41	-1,857.9	616.7	2,088.4	1,985.7	102.66	20.343		
4,700.0	4,676.3	4,641.3	4,641.3	12.5	92.8	115.72	-1,857.9	616.7	2,093.8	1,988.9	104.93	19.954		
4,800.0	4,775.5	4,740.5	4,740.5	12.8	94.8	116.02	-1,857.9	616.7	2,099.4	1,992.2	107.21	19.582		
4,900.0	4,874.7	4,839.7	4,839.7	13.1	96.8	116.33	-1,857.9	616.7	2,105.0	1,995.5	109.49	19.226		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,973.9	4,938.9	4,938.9	13.5	98.8	116.64	-1,857.9	616.7	2,110.7	1,998.9	111.76	18.885		
5,100.0	5,073.1	5,038.1	5,038.1	13.8	100.8	116.94	-1,857.9	616.7	2,116.4	2,002.3	114.04	18.559		
5,165.7	5,138.3	5,103.3	5,103.3	14.0	102.1	117.14	-1,857.9	616.7	2,120.2	2,004.6	115.53	18.352		
5,200.0	5,172.3	5,137.3	5,137.3	14.1	102.7	117.27	-1,857.9	616.7	2,122.1	2,005.8	116.33	18.242		
5,300.0	5,271.9	5,236.9	5,236.9	14.3	104.7	117.58	-1,857.9	616.7	2,126.6	2,008.0	118.59	17.931		
5,400.0	5,371.7	5,336.7	5,336.7	14.5	106.7	117.78	-1,857.9	616.7	2,129.5	2,008.6	120.82	17.625		
5,500.0	5,471.6	5,436.6	5,436.6	14.7	108.7	117.87	-1,857.9	616.7	2,130.7	2,007.7	123.00	17.323		
5,528.4	5,500.0	5,465.0	5,465.0	14.7	109.3	173.70	-1,857.9	616.7	2,130.8	2,007.2	123.61	17.238		
5,600.0	5,571.6	5,536.6	5,536.6	14.8	110.7	173.70	-1,857.9	616.7	2,130.8	2,005.6	125.17	17.024		
5,700.0	5,671.6	5,636.6	5,636.6	15.0	112.7	173.70	-1,857.9	616.7	2,130.8	2,003.5	127.35	16.732		
5,800.0	5,771.6	5,736.6	5,736.6	15.2	114.7	173.70	-1,857.9	616.7	2,130.8	2,001.3	129.54	16.449		
5,900.0	5,871.6	5,836.6	5,836.6	15.4	116.7	173.70	-1,857.9	616.7	2,130.8	1,999.1	131.73	16.176		
6,000.0	5,971.6	5,936.6	5,936.6	15.6	118.7	173.70	-1,857.9	616.7	2,130.8	1,996.9	133.92	15.911		
6,100.0	6,071.6	6,036.6	6,036.6	15.7	120.7	173.70	-1,857.9	616.7	2,130.8	1,994.7	136.11	15.655		
6,200.0	6,171.6	6,136.6	6,136.6	15.9	122.7	173.70	-1,857.9	616.7	2,130.8	1,992.5	138.30	15.407		
6,300.0	6,271.6	6,236.6	6,236.6	16.1	124.7	173.70	-1,857.9	616.7	2,130.8	1,990.3	140.49	15.167		
6,400.0	6,371.6	6,336.6	6,336.6	16.3	126.7	173.70	-1,857.9	616.7	2,130.8	1,988.1	142.68	14.934		
6,500.0	6,471.6	6,436.6	6,436.6	16.5	128.7	173.70	-1,857.9	616.7	2,130.8	1,985.9	144.88	14.708		
6,600.0	6,571.6	6,536.6	6,536.6	16.7	130.7	173.70	-1,857.9	616.7	2,130.8	1,983.7	147.07	14.488		
6,650.6	6,622.2	6,587.2	6,587.2	16.8	131.7	173.70	-1,857.9	616.7	2,130.8	1,982.6	148.18	14.380		
6,700.0	6,671.6	6,636.6	6,636.6	16.9	132.7	-6.35	-1,857.9	616.7	2,129.2	1,980.3	148.92	14.297		
6,750.0	6,721.3	6,686.3	6,686.3	16.9	133.7	-6.41	-1,857.9	616.7	2,124.4	1,975.3	149.04	14.254		
6,800.0	6,770.7	6,735.7	6,735.7	17.0	134.7	-6.50	-1,857.9	616.7	2,116.3	1,967.8	148.51	14.251		
6,850.0	6,819.4	6,784.4	6,784.4	17.0	135.7	-6.64	-1,857.9	616.7	2,105.1	1,957.8	147.33	14.288		
6,900.0	6,867.2	6,832.2	6,832.2	17.0	136.6	-6.82	-1,857.9	616.7	2,090.7	1,945.2	145.49	14.370		
6,950.0	6,914.0	6,879.0	6,879.0	17.0	137.6	-7.04	-1,857.9	616.7	2,073.2	1,930.2	143.01	14.497		
7,000.0	6,959.6	6,924.6	6,924.6	17.0	138.5	-7.32	-1,857.9	616.7	2,052.8	1,912.9	139.89	14.675		
7,050.0	7,003.7	6,968.7	6,968.7	17.0	139.4	-7.67	-1,857.9	616.7	2,029.4	1,893.3	136.14	14.907		
7,100.0	7,046.2	7,011.2	7,011.2	17.0	140.2	-8.09	-1,857.9	616.7	2,003.2	1,871.4	131.79	15.200		
7,150.0	7,086.8	7,051.8	7,051.8	17.0	141.0	-8.59	-1,857.9	616.7	1,974.3	1,847.4	126.89	15.560		
7,200.0	7,125.5	7,090.5	7,090.5	17.0	141.8	-9.21	-1,857.9	616.7	1,942.9	1,821.4	121.47	15.994		
7,250.0	7,162.0	7,127.0	7,127.0	17.1	142.5	-9.95	-1,857.9	616.7	1,909.0	1,793.4	115.63	16.509		
7,300.0	7,196.2	7,161.2	7,161.2	17.1	143.2	-10.86	-1,857.9	616.7	1,872.8	1,763.3	109.47	17.108		
7,350.0	7,227.9	7,192.9	7,192.9	17.1	143.9	-11.98	-1,857.9	616.7	1,834.5	1,731.3	103.16	17.784		
7,400.0	7,257.1	7,222.1	7,222.1	17.2	144.4	-13.37	-1,857.9	616.7	1,794.2	1,697.3	96.95	18.507		
7,450.0	7,283.5	7,248.5	7,248.5	17.2	145.0	-15.14	-1,857.9	616.7	1,752.2	1,660.9	91.25	19.202		
7,500.0	7,307.1	7,272.1	7,272.1	17.4	145.4	-17.42	-1,857.9	616.7	1,708.5	1,621.8	86.74	19.697		
7,550.0	7,327.8	7,292.8	7,292.8	17.6	145.9	-20.43	-1,857.9	616.7	1,663.4	1,579.0	84.46	19.694		
7,600.0	7,345.4	7,300.0	7,300.0	17.8	146.0	-24.12	-1,857.9	616.7	1,617.2	1,532.0	85.14	18.995		
7,650.0	7,360.0	7,300.0	7,300.0	18.1	146.0	-28.85	-1,857.9	616.7	1,570.0	1,479.9	90.09	17.427		
7,700.0	7,371.4	7,300.0	7,300.0	18.5	146.0	-35.47	-1,857.9	616.7	1,522.2	1,421.0	101.17	15.046		
7,750.0	7,379.5	7,300.0	7,300.0	18.9	146.0	-45.01	-1,857.9	616.7	1,473.7	1,354.5	119.16	12.367		
7,770.6	7,382.0	7,300.0	7,300.0	19.1	146.0	-50.11	-1,857.9	616.7	1,453.6	1,325.3	128.33	11.327		
7,800.0	7,385.0	7,300.0	7,300.0	19.4	146.0	-50.11	-1,857.9	616.7	1,424.9	1,296.3	128.56	11.083		
7,844.6	7,389.7	7,300.0	7,300.0	19.8	146.0	-50.11	-1,857.9	616.7	1,381.4	1,252.4	128.92	10.715		
7,900.0	7,394.2	7,300.0	7,300.0	20.4	146.0	-60.59	-1,857.9	616.7	1,327.2	1,181.6	145.61	9.115		
7,967.2	7,396.0	7,300.0	7,300.0	21.2	146.0	-76.12	-1,857.9	616.7	1,261.3	1,099.2	162.10	7.781		
8,000.0	7,395.9	7,300.0	7,300.0	21.5	146.0	-76.12	-1,857.9	616.7	1,229.1	1,066.7	162.49	7.564		
8,100.0	7,395.7	7,300.0	7,300.0	22.8	146.0	-76.12	-1,857.9	616.7	1,131.3	967.6	163.73	6.909		
8,200.0	7,395.4	7,300.0	7,300.0	24.1	146.0	-76.12	-1,857.9	616.7	1,033.8	868.8	165.06	6.264		
8,300.0	7,395.2	7,300.0	7,300.0	25.5	146.0	-76.12	-1,857.9	616.7	936.9	770.5	166.45	5.629		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,400.0	7,395.0	7,300.0	7,300.0	27.0	146.0	-76.12	-1,857.9	616.7	840.7	672.8	167.91	5.007		
8,500.0	7,394.7	7,300.0	7,300.0	28.5	146.0	-76.12	-1,857.9	616.7	745.5	576.1	169.41	4.401		
8,600.0	7,394.5	7,300.0	7,300.0	30.1	146.0	-76.12	-1,857.9	616.7	651.7	480.8	170.96	3.812		
8,700.0	7,394.3	7,300.0	7,300.0	31.7	146.0	-76.12	-1,857.9	616.7	560.1	387.6	172.54	3.246		
8,800.0	7,394.0	7,300.0	7,300.0	33.3	146.0	-76.12	-1,857.9	616.7	472.0	297.8	174.16	2.710		
8,900.0	7,393.8	7,300.0	7,300.0	35.0	146.0	-76.12	-1,857.9	616.7	389.6	213.8	175.80	2.216		
9,000.0	7,393.6	7,300.0	7,300.0	36.7	146.0	-76.12	-1,857.9	616.7	317.4	139.9	177.46	1.789		
9,100.0	7,393.3	7,300.0	7,300.0	38.4	146.0	-76.12	-1,857.9	616.7	264.1	84.9	179.15	1.474	Level 3	
9,200.0	7,393.1	7,300.0	7,300.0	40.1	146.0	-76.12	-1,857.9	616.7	242.3	61.5	180.85	1.340	Level 3	
9,205.0	7,393.1	7,300.0	7,300.0	40.2	146.0	-76.12	-1,857.9	616.7	242.3	61.4	180.94	1.339	Level 3, CC, ES, SF	
9,300.0	7,392.9	7,300.0	7,300.0	41.9	146.0	-76.12	-1,857.9	616.7	260.2	77.7	182.57	1.425	Level 3	
9,400.0	7,392.7	7,300.0	7,300.0	43.6	146.0	-76.12	-1,857.9	616.7	311.0	126.7	184.29	1.688		
9,500.0	7,392.4	7,300.0	7,300.0	45.4	146.0	-76.12	-1,857.9	616.7	381.7	195.7	186.04	2.052		
9,600.0	7,392.2	7,300.0	7,300.0	47.2	146.0	-76.12	-1,857.9	616.7	463.4	275.6	187.79	2.468		
9,700.0	7,392.0	7,300.0	7,300.0	49.0	146.0	-76.12	-1,857.9	616.7	551.1	361.5	189.55	2.907		
9,800.0	7,391.7	7,300.0	7,300.0	50.8	146.0	-76.12	-1,857.9	616.7	642.4	451.1	191.31	3.358		
9,900.0	7,391.5	7,300.0	7,300.0	52.6	146.0	-76.12	-1,857.9	616.7	736.0	542.9	193.09	3.812		
10,000.0	7,391.3	7,300.0	7,300.0	54.4	146.0	-76.12	-1,857.9	616.7	831.1	636.2	194.87	4.265		
10,100.0	7,391.0	7,300.0	7,300.0	56.3	146.0	-76.12	-1,857.9	616.7	927.2	730.5	196.66	4.715		
10,200.0	7,390.8	7,300.0	7,300.0	58.1	146.0	-76.12	-1,857.9	616.7	1,024.0	825.6	198.46	5.160		
10,300.0	7,390.6	7,300.0	7,300.0	59.9	146.0	-76.12	-1,857.9	616.7	1,121.5	921.2	200.25	5.600		
10,400.0	7,390.3	7,300.0	7,300.0	61.8	146.0	-76.12	-1,857.9	616.7	1,219.3	1,017.2	202.06	6.034		
10,500.0	7,390.1	7,300.0	7,300.0	63.6	146.0	-76.12	-1,857.9	616.7	1,317.4	1,113.6	203.87	6.462		
10,600.0	7,389.9	7,300.0	7,300.0	65.5	146.0	-76.12	-1,857.9	616.7	1,415.9	1,210.2	205.68	6.884		
10,700.0	7,389.6	7,300.0	7,300.0	67.3	146.0	-76.12	-1,857.9	616.7	1,514.5	1,307.0	207.49	7.299		
10,800.0	7,389.4	7,300.0	7,300.0	69.2	146.0	-76.12	-1,857.9	616.7	1,613.3	1,404.0	209.31	7.708		
10,900.0	7,389.2	7,300.0	7,300.0	71.0	146.0	-76.12	-1,857.9	616.7	1,712.2	1,501.1	211.13	8.110		
11,000.0	7,388.9	7,300.0	7,300.0	72.9	146.0	-76.12	-1,857.9	616.7	1,811.2	1,598.3	212.95	8.505		
11,100.0	7,388.7	7,300.0	7,300.0	74.8	146.0	-76.12	-1,857.9	616.7	1,910.4	1,695.6	214.78	8.895		
11,200.0	7,388.5	7,300.0	7,300.0	76.7	146.0	-76.12	-1,857.9	616.7	2,009.6	1,793.0	216.61	9.278		
11,300.0	7,388.2	7,300.0	7,300.0	78.5	146.0	-76.12	-1,857.9	616.7	2,108.9	1,890.5	218.44	9.655		
11,400.0	7,388.0	7,300.0	7,300.0	80.4	146.0	-76.12	-1,857.9	616.7	2,208.3	1,988.0	220.27	10.025		
11,500.0	7,387.8	7,300.0	7,300.0	82.3	146.0	-76.12	-1,857.9	616.7	2,307.7	2,085.6	222.10	10.390		
11,600.0	7,387.5	7,300.0	7,300.0	84.2	146.0	-76.12	-1,857.9	616.7	2,407.2	2,183.3	223.94	10.749		
11,700.0	7,387.3	7,300.0	7,300.0	86.0	146.0	-76.12	-1,857.9	616.7	2,506.7	2,280.9	225.78	11.103		
11,800.0	7,387.1	7,300.0	7,300.0	87.9	146.0	-76.12	-1,857.9	616.7	2,606.3	2,378.6	227.61	11.450		
11,835.3	7,387.0	7,300.0	7,300.0	88.6	146.0	-76.12	-1,857.9	616.7	2,641.4	2,413.2	228.26	11.572		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	0.0	-27.9	27.9	27.9	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-27.9	27.9	27.7	0.23	122.913		
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-27.9	27.9	27.2	0.68	41.243		
300.0	300.0	301.0	301.0	0.6	0.6	-90.00	0.0	-27.9	27.9	26.8	1.13	24.779		
400.0	400.0	401.0	401.0	0.8	0.8	-90.00	0.0	-27.9	27.9	26.3	1.58	17.709		
500.0	500.0	501.0	501.0	1.0	1.0	-90.00	0.0	-27.9	27.9	25.9	2.03	13.778		
600.0	600.0	601.0	601.0	1.2	1.2	-90.00	0.0	-27.9	27.9	25.4	2.47	11.275		
700.0	700.0	701.0	701.0	1.5	1.5	-90.00	0.0	-27.9	27.9	25.0	2.92	9.542		
800.0	800.0	801.0	801.0	1.7	1.7	-90.00	0.0	-27.9	27.9	24.5	3.37	8.271		
900.0	900.0	901.0	901.0	1.9	1.9	-90.00	0.0	-27.9	27.9	24.1	3.82	7.298		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-90.00	0.0	-27.9	27.9	23.6	4.27	6.530		
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-90.00	0.0	-27.9	27.9	23.2	4.72	5.909		
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-90.00	0.0	-27.9	27.9	22.7	5.17	5.395		
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-90.00	0.0	-27.9	27.9	22.3	5.62	4.964		
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-90.00	0.0	-27.9	27.9	21.8	6.07	4.596		
1,500.0	1,500.0	1,501.0	1,501.0	3.3	3.3	-90.00	0.0	-27.9	27.9	21.4	6.52	4.279 CC, ES		
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	-147.73	0.0	-27.9	29.4	22.4	6.96	4.218		
1,700.0	1,699.8	1,700.8	1,700.8	3.7	3.7	-152.41	0.0	-27.9	33.9	26.5	7.39	4.587		
1,800.0	1,799.5	1,800.5	1,800.5	3.9	3.9	-157.89	0.0	-27.9	41.8	34.0	7.81	5.353		
1,862.7	1,861.7	1,862.7	1,862.7	4.1	4.1	-161.05	0.0	-27.9	48.6	40.5	8.07	6.020		
1,900.0	1,898.7	1,899.7	1,899.7	4.2	4.2	-162.70	0.0	-27.9	53.1	44.9	8.24	6.445		
2,000.0	1,997.9	1,998.9	1,998.9	4.4	4.4	-166.00	0.0	-27.9	65.3	56.6	8.68	7.522		
2,100.0	2,097.1	2,098.1	2,098.1	4.7	4.6	-168.25	0.0	-27.9	77.6	68.5	9.12	8.508		
2,200.0	2,196.3	2,197.3	2,197.3	4.9	4.8	-169.89	0.0	-27.9	90.0	80.4	9.56	9.409		
2,300.0	2,295.5	2,296.5	2,296.5	5.2	5.0	-171.13	0.0	-27.9	102.4	92.4	10.01	10.234		
2,400.0	2,394.7	2,395.7	2,395.7	5.5	5.3	-172.10	0.0	-27.9	114.9	104.5	10.46	10.990		
2,500.0	2,493.9	2,494.9	2,494.9	5.8	5.5	-172.88	0.0	-27.9	127.5	116.5	10.91	11.686		
2,600.0	2,593.1	2,594.1	2,594.1	6.0	5.7	-173.52	0.0	-27.9	140.0	128.6	11.36	12.326		
2,700.0	2,692.3	2,693.3	2,693.3	6.3	5.9	-174.06	0.0	-27.9	152.5	140.7	11.81	12.918		
2,800.0	2,791.5	2,792.5	2,792.5	6.6	6.2	-174.51	0.0	-27.9	165.1	152.8	12.26	13.466		
2,900.0	2,890.7	2,891.7	2,891.7	6.9	6.4	-174.90	0.0	-27.9	177.7	165.0	12.71	13.975		
3,000.0	2,989.9	2,990.9	2,990.9	7.2	6.6	-175.24	0.0	-27.9	190.3	177.1	13.17	14.448		
3,100.0	3,089.1	3,095.1	3,095.0	7.5	6.8	-175.24	1.5	-27.4	201.8	188.1	13.63	14.799		
3,200.0	3,188.3	3,200.2	3,200.0	7.8	7.1	-174.54	6.7	-25.8	210.6	196.5	14.10	14.939		
3,300.0	3,287.5	3,305.5	3,304.9	8.1	7.3	-173.18	15.5	-23.0	216.9	202.3	14.57	14.888		
3,400.0	3,386.7	3,410.8	3,409.4	8.4	7.6	-171.18	28.0	-19.0	220.7	205.6	15.04	14.673		
3,500.0	3,485.9	3,510.4	3,508.0	8.8	7.8	-169.00	41.6	-14.6	223.5	208.0	15.51	14.408		
3,600.0	3,585.1	3,610.0	3,606.5	9.1	8.0	-166.88	55.2	-10.3	226.7	210.7	16.00	14.169		
3,700.0	3,684.3	3,709.6	3,705.1	9.4	8.3	-164.82	68.7	-6.0	230.1	213.7	16.49	13.953		
3,800.0	3,783.5	3,809.2	3,803.7	9.7	8.5	-162.83	82.3	-1.6	233.9	216.9	17.00	13.757		
3,900.0	3,882.7	3,908.8	3,902.3	10.0	8.8	-160.89	95.9	2.7	237.9	220.4	17.52	13.580		
4,000.0	3,981.9	4,008.4	4,000.8	10.3	9.1	-159.03	109.5	7.0	242.2	224.2	18.05	13.419		
4,100.0	4,081.1	4,108.0	4,099.4	10.6	9.3	-157.23	123.0	11.4	246.8	228.2	18.59	13.273		
4,200.0	4,180.3	4,207.6	4,198.0	10.9	9.6	-155.50	136.6	15.7	251.5	232.4	19.14	13.140		
4,300.0	4,279.5	4,307.2	4,296.6	11.2	9.9	-153.83	150.2	20.0	256.5	236.8	19.70	13.019		
4,400.0	4,378.7	4,406.8	4,395.1	11.6	10.2	-152.23	163.8	24.4	261.7	241.5	20.27	12.910		
4,500.0	4,477.9	4,506.4	4,493.7	11.9	10.5	-150.69	177.3	28.7	267.1	246.3	20.85	12.810		
4,600.0	4,577.1	4,606.0	4,592.3	12.2	10.8	-149.21	190.9	33.0	272.7	251.3	21.44	12.720		
4,700.0	4,676.3	4,705.6	4,690.9	12.5	11.1	-147.79	204.5	37.4	278.5	256.5	22.04	12.639		
4,800.0	4,775.5	4,805.2	4,789.4	12.8	11.4	-146.43	218.1	41.7	284.4	261.8	22.64	12.565		
4,900.0	4,874.7	4,904.8	4,888.0	13.1	11.6	-145.13	231.6	46.0	290.5	267.3	23.24	12.498		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,973.9	5,001.7	4,984.1	13.5	11.9	-144.20	243.4	49.8	297.2	273.4	23.80	12.487		
5,100.0	5,073.1	5,098.5	5,080.5	13.8	12.1	-143.91	252.0	52.5	304.8	280.6	24.29	12.552		
5,165.7	5,138.3	5,162.1	5,144.0	14.0	12.2	-144.05	255.9	53.8	310.4	285.8	24.58	12.627		
5,200.0	5,172.3	5,195.3	5,177.1	14.1	12.3	-144.22	257.5	54.3	313.3	288.5	24.73	12.668		
5,300.0	5,271.9	5,291.9	5,273.7	14.3	12.5	-144.86	259.9	55.1	320.5	295.4	25.10	12.766		
5,400.0	5,371.7	5,390.9	5,372.7	14.5	12.7	-145.52	260.0	55.1	325.5	300.1	25.45	12.792		
5,500.0	5,471.6	5,490.8	5,472.6	14.7	12.9	-145.81	260.0	55.1	327.8	302.0	25.80	12.703		
5,528.4	5,500.0	5,519.2	5,501.0	14.7	12.9	-90.00	260.0	55.1	327.9	302.0	25.90	12.660		
5,600.0	5,571.6	5,590.8	5,572.6	14.8	13.1	-90.00	260.0	55.1	327.9	301.7	26.18	12.525		
5,700.0	5,671.6	5,690.8	5,672.6	15.0	13.3	-90.00	260.0	55.1	327.9	301.3	26.59	12.333		
5,800.0	5,771.6	5,790.8	5,772.6	15.2	13.5	-90.00	260.0	55.1	327.9	300.9	26.99	12.147		
5,900.0	5,871.6	5,890.8	5,872.6	15.4	13.7	-90.00	260.0	55.1	327.9	300.5	27.40	11.966		
6,000.0	5,971.6	5,990.8	5,972.6	15.6	13.9	-90.00	260.0	55.1	327.9	300.1	27.81	11.789		
6,100.0	6,071.6	6,090.8	6,072.6	15.7	14.1	-90.00	260.0	55.1	327.9	299.7	28.22	11.618		
6,200.0	6,171.6	6,190.8	6,172.6	15.9	14.3	-90.00	260.0	55.1	327.9	299.3	28.64	11.450		
6,300.0	6,271.6	6,290.8	6,272.6	16.1	14.5	-90.00	260.0	55.1	327.9	298.9	29.05	11.287		
6,400.0	6,371.6	6,390.8	6,372.6	16.3	14.7	-90.00	260.0	55.1	327.9	298.4	29.47	11.128		
6,456.0	6,427.7	6,446.9	6,428.7	16.4	14.9	-90.00	260.0	55.1	327.9	298.2	29.70	11.041		
6,500.0	6,471.6	6,490.8	6,472.6	16.5	14.9	-90.17	259.0	55.1	327.9	298.0	29.86	10.982		
6,600.0	6,571.6	6,589.3	6,570.4	16.7	15.0	-92.14	247.8	55.1	328.2	298.1	30.10	10.904		
6,650.6	6,622.2	6,637.6	6,617.6	16.8	15.1	-93.90	237.7	55.1	328.7	298.6	30.17	10.898		
6,700.0	6,671.6	6,683.8	6,662.1	16.9	15.1	84.08	225.2	55.1	329.8	299.6	30.20	10.922		
6,750.0	6,721.3	6,730.0	6,705.7	16.9	15.1	82.11	210.1	55.0	331.2	301.0	30.20	10.969		
6,800.0	6,770.7	6,775.5	6,747.8	17.0	15.1	80.20	192.7	55.0	333.0	302.9	30.18	11.035		
6,850.0	6,819.4	6,820.5	6,788.2	17.0	15.1	78.36	173.0	55.0	335.2	305.0	30.15	11.115		
6,900.0	6,867.2	6,865.0	6,827.0	17.0	15.1	76.59	151.3	55.0	337.6	307.4	30.12	11.209		
6,950.0	6,914.0	6,909.0	6,864.1	17.0	15.1	74.90	127.6	55.0	340.2	310.1	30.07	11.313		
7,000.0	6,959.6	6,950.0	6,897.3	17.0	15.2	73.36	103.6	54.9	343.0	313.0	30.02	11.425		
7,050.0	7,003.7	6,995.7	6,932.8	17.0	15.2	71.76	74.9	54.9	345.9	316.0	29.97	11.542		
7,100.0	7,046.2	7,038.4	6,964.4	17.0	15.2	70.33	46.1	54.9	348.9	319.0	29.92	11.661		
7,150.0	7,086.8	7,080.8	6,994.1	17.0	15.2	68.99	15.8	54.8	352.0	322.1	29.88	11.779		
7,200.0	7,125.5	7,122.9	7,021.8	17.0	15.3	67.74	-15.8	54.8	355.1	325.2	29.85	11.893		
7,250.0	7,162.0	7,164.6	7,047.6	17.1	15.4	66.59	-48.6	54.8	358.1	328.2	29.83	12.002		
7,300.0	7,196.2	7,206.1	7,071.5	17.1	15.6	65.53	-82.6	54.7	361.0	331.1	29.84	12.096		
7,350.0	7,227.9	7,250.0	7,094.6	17.1	15.7	64.52	-119.9	54.7	363.8	333.9	29.88	12.172		
7,400.0	7,257.1	7,288.4	7,113.1	17.2	15.9	63.70	-153.6	54.7	366.4	336.4	29.96	12.229		
7,450.0	7,283.5	7,329.3	7,130.8	17.2	16.1	62.93	-190.3	54.6	368.8	338.7	30.08	12.259		
7,500.0	7,307.1	7,369.9	7,146.5	17.4	16.4	62.25	-227.8	54.6	371.0	340.8	30.26	12.261		
7,550.0	7,327.8	7,410.4	7,160.2	17.6	16.6	61.67	-266.0	54.6	373.0	342.5	30.49	12.231		
7,600.0	7,345.4	7,450.0	7,171.5	17.8	16.9	61.18	-303.9	54.5	374.7	343.9	30.79	12.169		
7,650.0	7,360.0	7,491.1	7,181.2	18.1	17.3	60.77	-343.9	54.5	376.1	344.9	31.17	12.065		
7,700.0	7,371.4	7,531.3	7,188.6	18.5	17.6	60.46	-383.4	54.4	377.2	345.6	31.63	11.927		
7,750.0	7,379.5	7,571.5	7,193.9	18.9	18.0	60.24	-423.2	54.4	378.0	345.9	32.16	11.755		
7,770.6	7,382.0	7,588.0	7,195.4	19.1	18.2	60.17	-439.6	54.4	378.3	345.9	32.40	11.676		
7,800.0	7,385.0	7,611.6	7,197.1	19.4	18.4	60.06	-463.1	54.4	378.8	346.0	32.83	11.538		
7,844.6	7,389.7	7,650.0	7,198.2	19.8	18.8	59.68	-501.5	54.3	380.5	347.0	33.48	11.364		
7,900.0	7,394.2	7,700.1	7,197.9	20.4	19.4	59.04	-551.6	54.3	382.9	348.7	34.21	11.191		
7,967.2	7,396.0	7,767.3	7,197.6	21.2	20.2	58.72	-618.8	54.2	384.0	348.6	35.37	10.856		
8,000.0	7,395.9	7,800.0	7,197.4	21.5	20.6	58.71	-651.5	54.2	384.1	348.0	36.05	10.655		
8,100.0	7,395.7	7,900.0	7,196.9	22.8	21.9	58.68	-751.5	54.1	384.2	346.0	38.26	10.043		
8,200.0	7,395.4	8,000.0	7,196.4	24.1	23.2	58.64	-851.5	54.0	384.4	343.8	40.63	9.461		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,300.0	7,395.2	8,100.0	7,195.9	25.5	24.7	58.61	-951.5	53.9	384.6	341.4	43.13	8.917		
8,400.0	7,395.0	8,200.0	7,195.4	27.0	26.2	58.58	-1,051.5	53.8	384.7	339.0	45.74	8.412		
8,500.0	7,394.7	8,300.0	7,194.9	28.5	27.8	58.54	-1,151.5	53.7	384.9	336.5	48.43	7.947		
8,600.0	7,394.5	8,400.0	7,194.4	30.1	29.4	58.51	-1,251.5	53.6	385.1	333.9	51.21	7.520		
8,700.0	7,394.3	8,500.0	7,193.9	31.7	31.0	58.48	-1,351.5	53.4	385.2	331.2	54.05	7.128		
8,800.0	7,394.0	8,600.0	7,193.4	33.3	32.7	58.45	-1,451.5	53.3	385.4	328.5	56.94	6.769		
8,900.0	7,393.8	8,700.0	7,192.9	35.0	34.4	58.41	-1,551.5	53.2	385.6	325.7	59.87	6.440		
9,000.0	7,393.6	8,800.0	7,192.4	36.7	36.1	58.38	-1,651.5	53.1	385.7	322.9	62.85	6.138		
9,100.0	7,393.3	8,900.0	7,191.9	38.4	37.9	58.35	-1,751.5	53.0	385.9	320.1	65.86	5.860		
9,200.0	7,393.1	9,000.0	7,191.3	40.1	39.6	58.32	-1,851.5	52.9	386.1	317.2	68.90	5.604		
9,300.0	7,392.9	9,100.0	7,190.8	41.9	41.4	58.29	-1,951.5	52.8	386.3	314.3	71.96	5.368		
9,400.0	7,392.7	9,200.0	7,190.3	43.6	43.2	58.25	-2,051.5	52.7	386.4	311.4	75.04	5.149		
9,500.0	7,392.4	9,300.0	7,189.8	45.4	45.0	58.22	-2,151.5	52.6	386.6	308.4	78.15	4.947		
9,600.0	7,392.2	9,400.0	7,189.3	47.2	46.8	58.19	-2,251.5	52.5	386.8	305.5	81.27	4.759		
9,700.0	7,392.0	9,500.0	7,188.8	49.0	48.6	58.16	-2,351.5	52.4	386.9	302.5	84.40	4.584		
9,800.0	7,391.7	9,600.0	7,188.3	50.8	50.4	58.12	-2,451.5	52.3	387.1	299.5	87.55	4.421		
9,900.0	7,391.5	9,700.0	7,187.8	52.6	52.2	58.09	-2,551.5	52.2	387.3	296.6	90.71	4.269		
10,000.0	7,391.3	9,800.0	7,187.3	54.4	54.1	58.06	-2,651.5	52.1	387.4	293.6	93.87	4.127		
10,100.0	7,391.0	9,900.0	7,186.8	56.3	55.9	58.03	-2,751.5	52.0	387.6	290.6	97.05	3.994		
10,200.0	7,390.8	10,000.0	7,186.3	58.1	57.7	58.00	-2,851.5	51.9	387.8	287.5	100.23	3.869		
10,300.0	7,390.6	10,100.0	7,185.8	59.9	59.6	57.96	-2,951.5	51.8	387.9	284.5	103.42	3.751		
10,400.0	7,390.3	10,200.0	7,185.3	61.8	61.4	57.93	-3,051.5	51.7	388.1	281.5	106.62	3.640		
10,500.0	7,390.1	10,300.0	7,184.8	63.6	63.3	57.90	-3,151.5	51.6	388.3	278.5	109.82	3.536		
10,600.0	7,389.9	10,400.0	7,184.3	65.5	65.2	57.87	-3,251.5	51.5	388.5	275.4	113.03	3.437		
10,700.0	7,389.6	10,500.0	7,183.8	67.3	67.0	57.84	-3,351.5	51.4	388.6	272.4	116.24	3.343		
10,800.0	7,389.4	10,600.0	7,183.2	69.2	68.9	57.80	-3,451.5	51.3	388.8	269.3	119.45	3.255		
10,900.0	7,389.2	10,700.0	7,182.7	71.0	70.8	57.77	-3,551.5	51.2	389.0	266.3	122.67	3.171		
11,000.0	7,388.9	10,800.0	7,182.2	72.9	72.6	57.74	-3,651.5	51.1	389.1	263.2	125.89	3.091		
11,100.0	7,388.7	10,900.0	7,181.7	74.8	74.5	57.71	-3,751.5	51.0	389.3	260.2	129.11	3.015		
11,200.0	7,388.5	11,000.0	7,181.2	76.7	76.4	57.68	-3,851.5	50.9	389.5	257.1	132.34	2.943		
11,300.0	7,388.2	11,100.0	7,180.7	78.5	78.3	57.64	-3,951.5	50.8	389.6	254.1	135.56	2.874		
11,400.0	7,388.0	11,200.0	7,180.2	80.4	80.2	57.61	-4,051.5	50.7	389.8	251.0	138.79	2.809		
11,500.0	7,387.8	11,300.0	7,179.7	82.3	82.0	57.58	-4,151.5	50.6	390.0	248.0	142.02	2.746		
11,600.0	7,387.5	11,400.0	7,179.2	84.2	83.9	57.55	-4,251.5	50.5	390.2	244.9	145.25	2.686		
11,700.0	7,387.3	11,500.0	7,178.7	86.0	85.8	57.52	-4,351.5	50.4	390.3	241.9	148.48	2.629		
11,800.0	7,387.1	11,600.0	7,178.2	87.9	87.7	57.49	-4,451.5	50.3	390.5	238.8	151.71	2.574		
11,835.3	7,387.0	11,635.3	7,178.0	88.6	88.2	57.48	-4,486.8	50.2	390.6	237.8	152.74	2.557 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	30.7	30.7	30.5	0.22	136.557		
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	30.7	30.7	30.0	0.67	45.519 CC, ES		
300.0	300.0	299.0	298.9	0.6	0.6	88.99	0.6	32.3	32.3	31.2	1.12	28.958		
400.0	400.0	397.7	397.5	0.8	0.8	86.51	2.3	37.1	37.3	35.7	1.57	23.792		
500.0	500.0	495.9	495.4	1.0	1.0	83.59	5.1	45.1	45.6	43.6	2.03	22.449		
600.0	600.0	593.5	592.3	1.2	1.3	80.95	8.9	56.2	57.4	54.9	2.52	22.788		
700.0	700.0	691.8	689.6	1.5	1.6	78.88	13.7	69.7	71.7	68.7	3.03	23.692		
800.0	800.0	790.8	787.4	1.7	1.9	77.48	18.5	83.4	86.3	82.8	3.55	24.333		
900.0	900.0	889.7	885.2	1.9	2.3	76.49	23.3	97.1	100.9	96.9	4.08	24.768		
1,000.0	1,000.0	988.6	983.1	2.1	2.6	75.74	28.2	110.8	115.6	111.0	4.61	25.078		
1,100.0	1,100.0	1,087.5	1,080.9	2.4	3.0	75.17	33.0	124.5	130.2	125.1	5.15	25.308		
1,200.0	1,200.0	1,186.4	1,178.7	2.6	3.3	74.71	37.8	138.3	144.9	139.2	5.69	25.485		
1,300.0	1,300.0	1,285.3	1,276.6	2.8	3.7	74.34	42.6	152.0	159.6	153.3	6.23	25.625		
1,400.0	1,400.0	1,384.2	1,374.4	3.0	4.0	74.02	47.4	165.7	174.2	167.5	6.77	25.738		
1,500.0	1,500.0	1,483.1	1,472.3	3.3	4.4	73.76	52.3	179.4	188.9	181.6	7.31	25.831		
1,600.0	1,600.0	1,582.3	1,570.3	3.5	4.7	73.78	57.1	193.2	202.0	194.9	7.09	28.491		
1,700.0	1,699.8	1,681.8	1,668.8	3.7	5.1	73.94	61.9	207.0	211.7	204.2	7.54	28.064		
1,800.0	1,799.5	1,781.6	1,767.4	3.9	5.4	73.89	66.8	220.8	218.1	210.1	8.00	27.278		
1,862.7	1,861.7	1,844.2	1,829.4	4.1	5.6	73.82	69.9	229.5	220.5	212.2	8.28	26.630		
1,900.0	1,898.7	1,881.5	1,866.3	4.2	5.8	73.11	71.7	234.7	221.5	213.1	8.45	26.203		
2,000.0	1,997.9	1,981.4	1,965.1	4.4	6.1	73.89	76.5	248.5	224.3	215.4	8.92	25.135		
2,100.0	2,097.1	2,081.3	2,063.9	4.7	6.5	73.64	81.4	262.4	227.1	217.7	9.40	24.165		
2,200.0	2,196.3	2,181.2	2,162.8	4.9	6.8	73.37	86.3	276.3	230.0	220.1	9.88	23.283		
2,300.0	2,295.5	2,281.1	2,261.6	5.2	7.2	72.09	91.2	290.1	232.9	222.5	10.36	22.476		
2,400.0	2,394.7	2,381.1	2,360.4	5.5	7.5	72.79	96.0	304.0	235.8	224.9	10.85	21.737		
2,500.0	2,493.9	2,481.0	2,459.2	5.8	7.9	73.47	100.9	317.8	238.7	227.4	11.34	21.056		
2,600.0	2,593.1	2,580.9	2,558.1	6.0	8.2	74.14	105.8	331.7	241.7	229.9	11.83	20.428		
2,700.0	2,692.3	2,680.8	2,656.9	6.3	8.6	74.78	110.6	345.6	244.8	232.4	12.33	19.847		
2,800.0	2,791.5	2,780.7	2,755.7	6.6	9.0	75.42	115.5	359.4	247.8	235.0	12.83	19.308		
2,900.0	2,890.7	2,880.6	2,854.6	6.9	9.3	76.03	120.4	373.3	250.9	237.6	13.34	18.807		
3,000.0	2,989.9	2,980.6	2,953.4	7.2	9.7	76.64	125.2	387.1	254.0	240.2	13.85	18.340		
3,100.0	3,089.1	3,080.5	3,052.2	7.5	10.0	77.22	130.1	401.0	257.2	242.8	14.36	17.904		
3,200.0	3,188.3	3,180.4	3,151.1	7.8	10.4	77.80	135.0	414.9	260.3	245.4	14.88	17.496		
3,300.0	3,287.5	3,280.3	3,249.9	8.1	10.7	78.36	139.9	428.7	263.5	248.1	15.40	17.113		
3,400.0	3,386.7	3,380.2	3,348.7	8.4	11.1	78.90	144.7	442.6	266.7	250.8	15.92	16.754		
3,500.0	3,485.9	3,480.1	3,447.5	8.8	11.4	79.43	149.6	456.4	270.0	253.5	16.45	16.416		
3,600.0	3,585.1	3,580.1	3,546.4	9.1	11.8	79.95	154.5	470.3	273.2	256.3	16.97	16.097		
3,700.0	3,684.3	3,680.0	3,645.2	9.4	12.2	80.46	159.3	484.2	276.5	259.0	17.51	15.796		
3,800.0	3,783.5	3,779.9	3,744.0	9.7	12.5	80.96	164.2	498.0	279.8	261.8	18.04	15.512		
3,900.0	3,882.7	3,879.8	3,842.9	10.0	12.9	81.44	169.1	511.9	283.1	264.6	18.58	15.242		
4,000.0	3,981.9	3,979.7	3,941.7	10.3	13.2	81.92	173.9	525.7	286.5	267.4	19.12	14.987		
4,100.0	4,081.1	4,079.6	4,040.5	10.6	13.6	82.38	178.8	539.6	289.9	270.2	19.66	14.746		
4,200.0	4,180.3	4,179.5	4,139.4	10.9	13.9	82.83	183.7	553.5	293.2	273.0	20.20	14.516		
4,300.0	4,279.5	4,279.5	4,238.2	11.2	14.3	83.27	188.6	567.3	296.6	275.9	20.75	14.297		
4,400.0	4,378.7	4,379.4	4,337.0	11.6	14.6	83.70	193.4	581.2	300.1	278.8	21.30	14.089		
4,500.0	4,477.9	4,479.3	4,435.9	11.9	15.0	84.12	198.3	595.1	303.5	281.7	21.85	13.891		
4,600.0	4,577.1	4,579.2	4,534.7	12.2	15.4	84.54	203.2	608.9	307.0	284.5	22.40	13.702		
4,700.0	4,676.3	4,679.1	4,633.5	12.5	15.7	84.94	208.0	622.8	310.4	287.5	22.96	13.521		
4,800.0	4,775.5	4,779.0	4,732.3	12.8	16.1	85.33	212.9	636.6	313.9	290.4	23.52	13.348		
4,900.0	4,874.7	4,879.0	4,831.2	13.1	16.4	85.72	217.8	650.5	317.4	293.3	24.08	13.183		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,973.9	4,978.9	4,930.0	13.5	16.8	36.09	36.09	222.6	664.4	320.9	296.3	24.64	13.025	
5,100.0	5,073.1	5,078.8	5,028.8	13.8	17.1	36.46	36.46	227.5	678.2	324.4	299.2	25.20	12.874	
5,165.7	5,138.3	5,144.4	5,093.7	14.0	17.4	36.70	36.70	230.7	687.3	326.8	301.2	25.57	12.778	
5,200.0	5,172.3	5,178.7	5,127.7	14.1	17.5	36.82	36.82	232.4	692.1	328.1	302.4	25.75	12.741	
5,300.0	5,271.9	5,278.5	5,226.4	14.3	17.8	36.94	36.94	237.2	705.9	334.0	307.8	26.22	12.738	
5,400.0	5,371.7	5,378.1	5,324.9	14.5	18.2	36.74	36.74	242.1	719.7	342.7	316.1	26.62	12.872	
5,500.0	5,471.6	5,477.4	5,423.1	14.7	18.6	36.25	36.25	246.9	733.5	354.2	327.2	26.96	13.136	
5,528.4	5,500.0	5,505.5	5,450.9	14.7	18.7	91.89	91.89	248.3	737.4	358.0	330.9	27.04	13.237	
5,600.0	5,571.6	5,582.1	5,526.8	14.8	18.9	91.27	91.27	251.9	747.7	367.5	340.2	27.29	13.464	
5,700.0	5,671.6	5,695.4	5,639.3	15.0	19.2	90.60	90.60	256.1	759.5	377.9	350.2	27.65	13.667	
5,800.0	5,771.6	5,809.4	5,753.0	15.2	19.4	90.19	90.19	258.8	767.1	384.6	356.6	28.01	13.730	
5,900.0	5,871.6	5,923.9	5,867.5	15.4	19.6	90.01	90.01	259.9	770.5	387.5	359.2	28.38	13.653	
6,000.0	5,971.6	6,028.1	5,971.6	15.6	19.7	90.00	90.00	260.0	770.7	387.7	358.9	28.76	13.478	
6,100.0	6,071.6	6,128.1	6,071.6	15.7	19.8	90.00	90.00	260.0	770.7	387.7	358.5	29.15	13.301	
6,200.0	6,171.6	6,228.1	6,171.6	15.9	20.0	90.00	90.00	260.0	770.7	387.7	358.2	29.53	13.127	
6,300.0	6,271.6	6,328.1	6,271.6	16.1	20.1	90.00	90.00	260.0	770.7	387.7	357.8	29.92	12.958	
6,400.0	6,371.6	6,428.1	6,371.6	16.3	20.3	90.00	90.00	260.0	770.7	387.7	357.4	30.31	12.792	
6,467.5	6,439.2	6,495.6	6,439.2	16.4	20.4	90.00	90.00	260.0	770.7	387.7	357.1	30.57	12.682	
6,500.0	6,471.6	6,528.1	6,471.6	16.5	20.4	90.13	90.13	259.1	770.7	387.7	357.0	30.70	12.629	
6,600.0	6,571.6	6,626.7	6,569.5	16.7	20.5	91.78	91.78	247.9	770.7	387.9	356.7	31.17	12.444	
6,650.6	6,622.2	6,675.0	6,616.8	16.8	20.5	93.27	93.27	237.9	770.7	388.3	356.9	31.45	12.349	
6,700.0	6,671.6	6,721.3	6,661.4	16.9	20.6	-85.09	-85.09	225.4	770.7	389.2	357.5	31.72	12.269	
6,750.0	6,721.3	6,767.5	6,705.1	16.9	20.6	-83.43	-83.43	210.4	770.7	390.4	358.4	31.96	12.216	
6,800.0	6,770.7	6,813.2	6,747.2	17.0	20.6	-81.81	-81.81	192.9	770.6	391.9	359.7	32.15	12.189	
6,850.0	6,819.4	6,858.2	6,787.7	17.0	20.6	-80.24	-80.24	173.3	770.6	393.7	361.4	32.31	12.185	
6,900.0	6,867.2	6,902.7	6,826.6	17.0	20.6	-78.73	-78.73	151.5	770.6	395.7	363.3	32.42	12.206	
6,950.0	6,914.0	6,946.8	6,863.7	17.0	20.6	-77.27	-77.27	127.8	770.6	397.9	365.4	32.48	12.250	
7,000.0	6,959.6	6,990.4	6,899.1	17.0	20.6	-75.88	-75.88	102.3	770.6	400.2	367.7	32.50	12.314	
7,050.0	7,003.7	7,033.6	6,932.6	17.0	20.6	-74.56	-74.56	75.1	770.6	402.7	370.2	32.49	12.395	
7,100.0	7,046.2	7,076.4	6,964.2	17.0	20.6	-73.31	-73.31	46.3	770.5	405.3	372.8	32.45	12.491	
7,150.0	7,086.8	7,118.8	6,993.9	17.0	20.6	-72.14	-72.14	16.0	770.5	407.9	375.5	32.38	12.598	
7,200.0	7,125.5	7,160.9	7,021.7	17.0	20.6	-71.04	-71.04	-15.7	770.5	410.5	378.2	32.31	12.705	
7,250.0	7,162.0	7,200.0	7,045.9	17.1	20.7	-70.08	-70.08	-46.3	770.5	413.1	380.8	32.24	12.811	
7,300.0	7,196.2	7,244.3	7,071.4	17.1	20.7	-69.08	-69.08	-82.6	770.5	415.5	383.3	32.21	12.903	
7,350.0	7,227.9	7,285.6	7,093.3	17.1	20.8	-68.23	-68.23	-117.6	770.4	417.9	385.7	32.20	12.978	
7,400.0	7,257.1	7,326.7	7,113.1	17.2	20.8	-67.45	-67.45	-153.6	770.4	420.2	387.9	32.26	13.027	
7,450.0	7,283.5	7,367.6	7,130.9	17.2	20.9	-66.75	-66.75	-190.4	770.4	422.3	389.9	32.38	13.041	
7,500.0	7,307.1	7,408.3	7,146.6	17.4	21.1	-66.14	-66.14	-228.0	770.4	424.2	391.6	32.60	13.014	
7,550.0	7,327.8	7,450.0	7,160.6	17.6	21.2	-65.60	-65.60	-267.2	770.3	425.9	393.0	32.92	12.939	
7,600.0	7,345.4	7,489.3	7,171.8	17.8	21.4	-65.16	-65.16	-304.9	770.3	427.4	394.0	33.35	12.816	
7,650.0	7,360.0	7,529.7	7,181.3	18.1	21.6	-64.79	-64.79	-344.1	770.3	428.6	394.7	33.90	12.642	
7,700.0	7,371.4	7,569.9	7,188.6	18.5	21.8	-64.50	-64.50	-383.7	770.3	429.6	395.0	34.58	12.423	
7,750.0	7,379.5	7,610.1	7,193.9	18.9	22.1	-64.30	-64.30	-423.6	770.2	430.3	394.9	35.38	12.162	
7,770.6	7,382.0	7,626.7	7,195.5	19.1	22.2	-64.24	-64.24	-440.0	770.2	430.5	394.8	35.75	12.043	
7,800.0	7,385.0	7,650.0	7,197.1	19.4	22.3	-64.14	-64.14	-463.3	770.2	431.0	394.8	36.19	11.909	
7,844.6	7,389.7	7,685.9	7,198.1	19.8	22.6	-63.82	-63.82	-499.2	770.2	432.5	395.6	36.87	11.729	
7,900.0	7,394.2	7,738.9	7,197.9	20.4	23.1	-63.20	-63.20	-552.2	770.1	434.5	396.6	37.97	11.444	
7,967.2	7,396.0	7,806.1	7,197.6	21.2	23.7	-62.90	-62.90	-619.4	770.1	435.5	396.0	39.52	11.019	
8,000.0	7,395.9	7,838.9	7,197.4	21.5	24.0	-62.89	-62.89	-652.1	770.1	435.6	395.3	40.25	10.822	
8,100.0	7,395.7	7,938.9	7,196.9	22.8	25.1	-62.86	-62.86	-752.1	770.0	435.7	393.2	42.55	10.240	
8,200.0	7,395.4	8,038.9	7,196.4	24.1	26.3	-62.83	-62.83	-852.1	769.9	435.8	390.8	45.00	9.686	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,300.0	7,395.2	8,138.9	7,195.9	25.5	27.6	-62.79	-952.1	769.9	436.0	388.4	47.58	9.164			
8,400.0	7,395.0	8,238.9	7,195.4	27.0	28.9	-62.76	-1,052.1	769.8	436.1	385.8	50.26	8.677			
8,500.0	7,394.7	8,338.9	7,194.9	28.5	30.4	-62.73	-1,152.1	769.7	436.2	383.2	53.03	8.225			
8,600.0	7,394.5	8,438.9	7,194.4	30.1	31.8	-62.70	-1,252.1	769.7	436.3	380.5	55.89	7.808			
8,700.0	7,394.3	8,538.9	7,193.9	31.7	33.4	-62.67	-1,352.1	769.6	436.5	377.7	58.80	7.423			
8,800.0	7,394.0	8,638.9	7,193.4	33.3	34.9	-62.64	-1,452.1	769.5	436.6	374.8	61.78	7.068			
8,900.0	7,393.8	8,738.9	7,192.9	35.0	36.5	-62.60	-1,552.1	769.5	436.7	371.9	64.80	6.740			
9,000.0	7,393.6	8,838.9	7,192.4	36.7	38.1	-62.57	-1,652.1	769.4	436.9	369.0	67.86	6.438			
9,100.0	7,393.3	8,938.9	7,191.8	38.4	39.8	-62.54	-1,752.1	769.3	437.0	366.0	70.96	6.159			
9,200.0	7,393.1	9,038.9	7,191.3	40.1	41.5	-62.51	-1,852.1	769.3	437.1	363.0	74.08	5.900			
9,300.0	7,392.9	9,138.9	7,190.8	41.9	43.2	-62.48	-1,952.1	769.2	437.3	360.0	77.24	5.661			
9,400.0	7,392.7	9,238.9	7,190.3	43.6	44.9	-62.45	-2,052.1	769.1	437.4	357.0	80.42	5.439			
9,500.0	7,392.4	9,338.9	7,189.8	45.4	46.6	-62.42	-2,152.1	769.1	437.5	353.9	83.62	5.232			
9,600.0	7,392.2	9,438.9	7,189.3	47.2	48.3	-62.38	-2,252.1	769.0	437.7	350.8	86.84	5.040			
9,700.0	7,392.0	9,538.8	7,188.8	49.0	50.1	-62.35	-2,352.1	768.9	437.8	347.7	90.07	4.861			
9,800.0	7,391.7	9,638.8	7,188.3	50.8	51.9	-62.32	-2,452.1	768.9	437.9	344.6	93.32	4.693			
9,900.0	7,391.5	9,738.8	7,187.8	52.6	53.6	-62.29	-2,552.1	768.8	438.1	341.5	96.58	4.536			
10,000.0	7,391.3	9,838.8	7,187.3	54.4	55.4	-62.26	-2,652.1	768.7	438.2	338.3	99.85	4.389			
10,100.0	7,391.0	9,938.8	7,186.8	56.3	57.2	-62.23	-2,752.1	768.6	438.3	335.2	103.13	4.250			
10,200.0	7,390.8	10,038.8	7,186.3	58.1	59.0	-62.20	-2,852.1	768.6	438.5	332.0	106.42	4.120			
10,300.0	7,390.6	10,138.8	7,185.8	59.9	60.8	-62.16	-2,952.1	768.5	438.6	328.9	109.72	3.997			
10,400.0	7,390.3	10,238.8	7,185.3	61.8	62.7	-62.13	-3,052.1	768.4	438.7	325.7	113.02	3.882			
10,500.0	7,390.1	10,338.8	7,184.8	63.6	64.5	-62.10	-3,152.1	768.4	438.8	322.5	116.34	3.772			
10,600.0	7,389.9	10,438.8	7,184.3	65.5	66.3	-62.07	-3,252.1	768.3	439.0	319.3	119.65	3.669			
10,700.0	7,389.6	10,538.8	7,183.8	67.3	68.1	-62.04	-3,352.1	768.2	439.1	316.1	122.97	3.571			
10,800.0	7,389.4	10,638.8	7,183.2	69.2	70.0	-62.01	-3,452.1	768.2	439.2	312.9	126.30	3.478			
10,900.0	7,389.2	10,738.8	7,182.7	71.0	71.8	-61.98	-3,552.1	768.1	439.4	309.8	129.63	3.389			
11,000.0	7,388.9	10,838.8	7,182.2	72.9	73.7	-61.95	-3,652.1	768.0	439.5	306.5	132.97	3.305			
11,100.0	7,388.7	10,938.8	7,181.7	74.8	75.5	-61.91	-3,752.1	768.0	439.6	303.3	136.30	3.226			
11,200.0	7,388.5	11,038.8	7,181.2	76.7	77.4	-61.88	-3,852.1	767.9	439.8	300.1	139.64	3.149			
11,300.0	7,388.2	11,138.8	7,180.7	78.5	79.2	-61.85	-3,952.1	767.8	439.9	296.9	142.99	3.077			
11,400.0	7,388.0	11,238.8	7,180.2	80.4	81.1	-61.82	-4,052.1	767.8	440.1	293.7	146.33	3.007			
11,500.0	7,387.8	11,338.8	7,179.7	82.3	82.9	-61.79	-4,152.1	767.7	440.2	290.5	149.68	2.941			
11,600.0	7,387.5	11,438.8	7,179.2	84.2	84.8	-61.76	-4,252.1	767.6	440.3	287.3	153.03	2.877			
11,700.0	7,387.3	11,538.8	7,178.7	86.0	86.7	-61.73	-4,352.1	767.6	440.5	284.1	156.38	2.817			
11,800.0	7,387.1	11,638.8	7,178.2	87.9	88.5	-61.70	-4,452.1	767.5	440.6	280.9	159.73	2.758			
11,835.3	7,387.0	11,674.2	7,178.0	88.6	89.2	-61.69	-4,487.4	767.5	440.6	279.7	160.92	2.738 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	166.16	-2,819.7	694.9	2,904.4					
100.0	100.0	53.0	53.0	0.1	1.1	166.16	-2,819.7	694.9	2,904.1	2,902.9	1.17	2,476.641		
200.0	200.0	153.0	153.0	0.3	3.1	166.16	-2,819.7	694.9	2,904.1	2,900.7	3.40	854.804		
300.0	300.0	253.0	253.0	0.6	5.1	166.16	-2,819.7	694.9	2,904.1	2,898.4	5.62	516.544		
400.0	400.0	353.0	353.0	0.8	7.1	166.16	-2,819.7	694.9	2,904.1	2,896.2	7.85	370.092		
500.0	500.0	453.0	453.0	1.0	9.1	166.16	-2,819.7	694.9	2,904.1	2,894.0	10.07	288.341		
600.0	600.0	553.0	553.0	1.2	11.1	166.16	-2,819.7	694.9	2,904.1	2,891.8	12.30	236.172		
700.0	700.0	653.0	653.0	1.5	13.1	166.16	-2,819.7	694.9	2,904.1	2,889.5	14.52	199.988		
800.0	800.0	753.0	753.0	1.7	15.1	166.16	-2,819.7	694.9	2,904.1	2,887.3	16.75	173.419		
900.0	900.0	853.0	853.0	1.9	17.1	166.16	-2,819.7	694.9	2,904.1	2,885.1	18.97	153.082		
1,000.0	1,000.0	953.0	953.0	2.1	19.1	166.16	-2,819.7	694.9	2,904.1	2,882.9	21.20	137.014		
1,100.0	1,100.0	1,053.0	1,053.0	2.4	21.1	166.16	-2,819.7	694.9	2,904.1	2,880.6	23.42	123.998		
1,200.0	1,200.0	1,153.0	1,153.0	2.6	23.1	166.16	-2,819.7	694.9	2,904.1	2,878.4	25.64	113.241		
1,300.0	1,300.0	1,253.0	1,253.0	2.8	25.1	166.16	-2,819.7	694.9	2,904.1	2,876.2	27.87	104.201		
1,400.0	1,400.0	1,353.0	1,353.0	3.0	27.1	166.16	-2,819.7	694.9	2,904.1	2,874.0	30.09	96.498		
1,500.0	1,500.0	1,453.0	1,453.0	3.3	29.1	166.16	-2,819.7	694.9	2,904.1	2,871.7	32.32	89.856		
1,600.0	1,600.0	1,553.0	1,553.0	3.5	31.1	110.35	-2,819.7	694.9	2,904.7	2,870.1	34.54	84.107		
1,700.0	1,699.8	1,652.8	1,652.8	3.7	33.1	110.41	-2,819.7	694.9	2,906.5	2,869.8	36.74	79.107		
1,800.0	1,799.5	1,752.5	1,752.5	3.9	35.0	110.51	-2,819.7	694.9	2,909.6	2,870.6	38.94	74.714		
1,862.7	1,861.7	1,814.7	1,814.7	4.1	36.3	110.60	-2,819.7	694.9	2,912.1	2,871.8	40.32	72.222		
1,900.0	1,898.7	1,851.7	1,851.7	4.2	37.0	110.68	-2,819.7	694.9	2,913.8	2,872.6	41.15	70.808		
2,000.0	1,997.9	1,950.9	1,950.9	4.4	39.0	110.91	-2,819.7	694.9	2,918.3	2,874.9	43.38	67.275		
2,100.0	2,097.1	2,050.1	2,050.1	4.7	41.0	111.14	-2,819.7	694.9	2,922.9	2,877.2	45.62	64.076		
2,200.0	2,196.3	2,149.3	2,149.3	4.9	43.0	111.37	-2,819.7	694.9	2,927.5	2,879.6	47.86	61.169		
2,300.0	2,295.5	2,248.5	2,248.5	5.2	45.0	111.60	-2,819.7	694.9	2,932.1	2,882.0	50.11	58.516		
2,400.0	2,394.7	2,347.7	2,347.7	5.5	47.0	111.83	-2,819.7	694.9	2,936.8	2,884.5	52.36	56.087		
2,500.0	2,493.9	2,446.9	2,446.9	5.8	48.9	112.06	-2,819.7	694.9	2,941.6	2,887.0	54.62	53.855		
2,600.0	2,593.1	2,546.1	2,546.1	6.0	50.9	112.28	-2,819.7	694.9	2,946.4	2,889.5	56.88	51.798		
2,700.0	2,692.3	2,645.3	2,645.3	6.3	52.9	112.51	-2,819.7	694.9	2,951.2	2,892.1	59.15	49.897		
2,800.0	2,791.5	2,744.5	2,744.5	6.6	54.9	112.73	-2,819.7	694.9	2,956.1	2,894.7	61.41	48.135		
2,900.0	2,890.7	2,843.7	2,843.7	6.9	56.9	112.95	-2,819.7	694.9	2,961.0	2,897.4	63.68	46.498		
3,000.0	2,989.9	2,942.9	2,942.9	7.2	58.9	113.18	-2,819.7	694.9	2,966.0	2,900.1	65.95	44.972		
3,100.0	3,089.1	3,042.1	3,042.1	7.5	60.8	113.40	-2,819.7	694.9	2,971.1	2,902.8	68.22	43.548		
3,200.0	3,188.3	3,141.3	3,141.3	7.8	62.8	113.62	-2,819.7	694.9	2,976.1	2,905.6	70.50	42.216		
3,300.0	3,287.5	3,240.5	3,240.5	8.1	64.8	113.84	-2,819.7	694.9	2,981.2	2,908.5	72.77	40.967		
3,400.0	3,386.7	3,339.7	3,339.7	8.4	66.8	114.06	-2,819.7	694.9	2,986.4	2,911.4	75.05	39.794		
3,500.0	3,485.9	3,438.9	3,438.9	8.8	68.8	114.28	-2,819.7	694.9	2,991.6	2,914.3	77.32	38.690		
3,600.0	3,585.1	3,538.1	3,538.1	9.1	70.8	114.50	-2,819.7	694.9	2,996.9	2,917.3	79.60	37.649		
3,700.0	3,684.3	3,637.3	3,637.3	9.4	72.7	114.72	-2,819.7	694.9	3,002.1	2,920.3	81.88	36.667		
3,800.0	3,783.5	3,736.5	3,736.5	9.7	74.7	114.94	-2,819.7	694.9	3,007.5	2,923.3	84.15	35.738		
3,900.0	3,882.7	3,835.7	3,835.7	10.0	76.7	115.15	-2,819.7	694.9	3,012.9	2,926.4	86.43	34.858		
4,000.0	3,981.9	3,934.9	3,934.9	10.3	78.7	115.37	-2,819.7	694.9	3,018.3	2,929.6	88.71	34.024		
4,100.0	4,081.1	4,034.1	4,034.1	10.6	80.7	115.58	-2,819.7	694.9	3,023.8	2,932.8	90.99	33.232		
4,200.0	4,180.3	4,133.3	4,133.3	10.9	82.7	115.80	-2,819.7	694.9	3,029.3	2,936.0	93.27	32.480		
4,300.0	4,279.5	4,232.5	4,232.5	11.2	84.7	116.01	-2,819.7	694.9	3,034.8	2,939.3	95.54	31.763		
4,400.0	4,378.7	4,331.7	4,331.7	11.6	86.6	116.22	-2,819.7	694.9	3,040.4	2,942.6	97.82	31.081		
4,500.0	4,477.9	4,430.9	4,430.9	11.9	88.6	116.43	-2,819.7	694.9	3,046.0	2,945.9	100.10	30.430		
4,600.0	4,577.1	4,530.1	4,530.1	12.2	90.6	116.64	-2,819.7	694.9	3,051.7	2,949.3	102.38	29.808		
4,700.0	4,676.3	4,629.3	4,629.3	12.5	92.6	116.85	-2,819.7	694.9	3,057.4	2,952.8	104.66	29.214		
4,800.0	4,775.5	4,728.5	4,728.5	12.8	94.6	117.06	-2,819.7	694.9	3,063.2	2,956.3	106.94	28.645		
4,900.0	4,874.7	4,827.7	4,827.7	13.1	96.6	117.27	-2,819.7	694.9	3,069.0	2,959.8	109.21	28.101		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,973.9	4,926.9	4,926.9	13.5	98.5	117.48	-2,819.7	694.9	3,074.9	2,963.4	111.49	27.579		
5,100.0	5,073.1	5,026.1	5,026.1	13.8	100.5	117.69	-2,819.7	694.9	3,080.7	2,967.0	113.77	27.079		
5,165.7	5,138.3	5,091.3	5,091.3	14.0	101.8	117.82	-2,819.7	694.9	3,084.6	2,969.4	115.26	26.761		
5,200.0	5,172.3	5,125.3	5,125.3	14.1	102.5	117.92	-2,819.7	694.9	3,086.6	2,970.5	116.06	26.594		
5,300.0	5,271.9	5,224.9	5,224.9	14.3	104.5	118.16	-2,819.7	694.9	3,091.1	2,972.8	118.33	26.122		
5,400.0	5,371.7	5,324.7	5,324.7	14.5	106.5	118.32	-2,819.7	694.9	3,094.1	2,973.5	120.56	25.663		
5,500.0	5,471.6	5,424.6	5,424.6	14.7	108.5	118.38	-2,819.7	694.9	3,095.4	2,972.6	122.75	25.218		
5,528.4	5,500.0	5,453.0	5,453.0	14.7	109.1	174.22	-2,819.7	694.9	3,095.5	2,972.1	123.36	25.093		
5,600.0	5,571.6	5,524.6	5,524.6	14.8	110.5	174.22	-2,819.7	694.9	3,095.5	2,970.5	124.91	24.781		
5,700.0	5,671.6	5,624.6	5,624.6	15.0	112.5	174.22	-2,819.7	694.9	3,095.5	2,968.4	127.10	24.355		
5,800.0	5,771.6	5,724.6	5,724.6	15.2	114.5	174.22	-2,819.7	694.9	3,095.5	2,966.2	129.28	23.943		
5,900.0	5,871.6	5,824.6	5,824.6	15.4	116.5	174.22	-2,819.7	694.9	3,095.5	2,964.0	131.47	23.545		
6,000.0	5,971.6	5,924.6	5,924.6	15.6	118.5	174.22	-2,819.7	694.9	3,095.5	2,961.8	133.66	23.159		
6,100.0	6,071.6	6,024.6	6,024.6	15.7	120.5	174.22	-2,819.7	694.9	3,095.5	2,959.6	135.85	22.786		
6,200.0	6,171.6	6,124.6	6,124.6	15.9	122.5	174.22	-2,819.7	694.9	3,095.5	2,957.4	138.04	22.424		
6,300.0	6,271.6	6,224.6	6,224.6	16.1	124.5	174.22	-2,819.7	694.9	3,095.5	2,955.2	140.23	22.073		
6,400.0	6,371.6	6,324.6	6,324.6	16.3	126.5	174.22	-2,819.7	694.9	3,095.5	2,953.0	142.43	21.733		
6,500.0	6,471.6	6,424.6	6,424.6	16.5	128.5	174.22	-2,819.7	694.9	3,095.5	2,950.8	144.62	21.404		
6,600.0	6,571.6	6,524.6	6,524.6	16.7	130.5	174.22	-2,819.7	694.9	3,095.5	2,948.6	146.82	21.084		
6,650.6	6,622.2	6,575.2	6,575.2	16.8	131.5	174.22	-2,819.7	694.9	3,095.5	2,947.5	147.93	20.926		
6,700.0	6,671.6	6,624.6	6,624.6	16.9	132.5	-5.84	-2,819.7	694.9	3,093.9	2,945.2	148.67	20.810		
6,750.0	6,721.3	6,674.3	6,674.3	16.9	133.5	-5.88	-2,819.7	694.9	3,089.0	2,940.2	148.78	20.762		
6,800.0	6,770.7	6,723.7	6,723.7	17.0	134.5	-5.96	-2,819.7	694.9	3,081.0	2,932.7	148.25	20.782		
6,850.0	6,819.4	6,772.4	6,772.4	17.0	135.4	-6.08	-2,819.7	694.9	3,069.7	2,922.6	147.07	20.872		
6,900.0	6,867.2	6,820.2	6,820.2	17.0	136.4	-6.23	-2,819.7	694.9	3,055.3	2,910.1	145.23	21.037		
6,950.0	6,914.0	6,867.0	6,867.0	17.0	137.3	-6.42	-2,819.7	694.9	3,037.8	2,895.1	142.74	21.282		
7,000.0	6,959.6	6,912.6	6,912.6	17.0	138.3	-6.65	-2,819.7	694.9	3,017.3	2,877.7	139.61	21.613		
7,050.0	7,003.7	6,956.7	6,956.7	17.0	139.1	-6.94	-2,819.7	694.9	2,993.9	2,858.1	135.84	22.040		
7,100.0	7,046.2	6,999.2	6,999.2	17.0	140.0	-7.29	-2,819.7	694.9	2,967.7	2,836.3	131.47	22.573		
7,150.0	7,086.8	7,039.8	7,039.8	17.0	140.8	-7.71	-2,819.7	694.9	2,938.8	2,812.3	126.53	23.227		
7,200.0	7,125.5	7,078.5	7,078.5	17.0	141.6	-8.22	-2,819.7	694.9	2,907.3	2,786.3	121.05	24.017		
7,250.0	7,162.0	7,115.0	7,115.0	17.1	142.3	-8.83	-2,819.7	694.9	2,873.4	2,758.2	115.11	24.962		
7,300.0	7,196.2	7,149.2	7,149.2	17.1	143.0	-9.58	-2,819.7	694.9	2,837.1	2,728.3	108.79	26.079		
7,350.0	7,227.9	7,180.9	7,180.9	17.1	143.6	-10.50	-2,819.7	694.9	2,798.7	2,696.5	102.23	27.377		
7,400.0	7,257.1	7,210.1	7,210.1	17.2	144.2	-11.64	-2,819.7	694.9	2,758.4	2,662.8	95.63	28.846		
7,450.0	7,283.5	7,236.5	7,236.5	17.2	144.7	-13.09	-2,819.7	694.9	2,716.2	2,626.9	89.30	30.417		
7,500.0	7,307.1	7,260.1	7,260.1	17.4	145.2	-14.95	-2,819.7	694.9	2,672.5	2,588.7	83.78	31.898		
7,550.0	7,327.8	7,280.8	7,280.8	17.6	145.6	-17.43	-2,819.7	694.9	2,627.3	2,547.3	79.96	32.858		
7,600.0	7,345.4	7,298.4	7,298.4	17.8	146.0	-20.83	-2,819.7	694.9	2,580.8	2,501.6	79.27	32.556		
7,650.0	7,360.0	7,300.0	7,300.0	18.1	146.0	-25.28	-2,819.7	694.9	2,533.4	2,450.5	82.88	30.568		
7,700.0	7,371.4	7,300.0	7,300.0	18.5	146.0	-31.79	-2,819.7	694.9	2,485.2	2,391.8	93.42	26.602		
7,750.0	7,379.5	7,300.0	7,300.0	18.9	146.0	-41.95	-2,819.7	694.9	2,436.4	2,323.2	113.19	21.525		
7,770.6	7,382.0	7,300.0	7,300.0	19.1	146.0	-47.76	-2,819.7	694.9	2,416.1	2,292.0	124.13	19.464		
7,800.0	7,385.0	7,300.0	7,300.0	19.4	146.0	-47.76	-2,819.7	694.9	2,387.2	2,262.8	124.35	19.197		
7,844.6	7,389.7	7,300.0	7,300.0	19.8	146.0	-47.76	-2,819.7	694.9	2,343.3	2,218.6	124.70	18.791		
7,900.0	7,394.2	7,300.0	7,300.0	20.4	146.0	-60.90	-2,819.7	694.9	2,288.7	2,142.7	146.03	15.673		
7,967.2	7,396.0	7,300.0	7,300.0	21.2	146.0	-82.05	-2,819.7	694.9	2,222.2	2,057.1	165.14	13.456		
8,000.0	7,395.9	7,300.0	7,300.0	21.5	146.0	-82.05	-2,819.7	694.9	2,189.8	2,024.3	165.53	13.229		
8,100.0	7,395.7	7,300.0	7,300.0	22.8	146.0	-82.05	-2,819.7	694.9	2,090.9	1,924.1	166.79	12.536		
8,200.0	7,395.4	7,300.0	7,300.0	24.1	146.0	-82.05	-2,819.7	694.9	1,992.1	1,824.0	168.14	11.848		
8,300.0	7,395.2	7,300.0	7,300.0	25.5	146.0	-82.05	-2,819.7	694.9	1,893.5	1,723.9	169.56	11.167		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,400.0	7,395.0	7,300.0	7,300.0	27.0	146.0	-82.05	-2,819.7	694.9	1,794.9	1,623.9	171.04	10.494		
8,500.0	7,394.7	7,300.0	7,300.0	28.5	146.0	-82.05	-2,819.7	694.9	1,696.6	1,524.0	172.57	9.831		
8,600.0	7,394.5	7,300.0	7,300.0	30.1	146.0	-82.05	-2,819.7	694.9	1,598.5	1,424.3	174.15	9.179		
8,700.0	7,394.3	7,300.0	7,300.0	31.7	146.0	-82.05	-2,819.7	694.9	1,500.6	1,324.8	175.76	8.538		
8,800.0	7,394.0	7,300.0	7,300.0	33.3	146.0	-82.05	-2,819.7	694.9	1,403.0	1,225.6	177.40	7.909		
8,900.0	7,393.8	7,300.0	7,300.0	35.0	146.0	-82.05	-2,819.7	694.9	1,305.8	1,126.7	179.07	7.292		
9,000.0	7,393.6	7,300.0	7,300.0	36.7	146.0	-82.05	-2,819.7	694.9	1,209.0	1,028.3	180.77	6.688		
9,100.0	7,393.3	7,300.0	7,300.0	38.4	146.0	-82.05	-2,819.7	694.9	1,112.8	930.4	182.48	6.099		
9,200.0	7,393.1	7,300.0	7,300.0	40.1	146.0	-82.05	-2,819.7	694.9	1,017.4	833.2	184.21	5.523		
9,300.0	7,392.9	7,300.0	7,300.0	41.9	146.0	-82.05	-2,819.7	694.9	922.9	736.9	185.96	4.963		
9,400.0	7,392.7	7,300.0	7,300.0	43.6	146.0	-82.05	-2,819.7	694.9	829.7	642.0	187.72	4.420		
9,500.0	7,392.4	7,300.0	7,300.0	45.4	146.0	-82.05	-2,819.7	694.9	738.3	548.8	189.49	3.896		
9,600.0	7,392.2	7,300.0	7,300.0	47.2	146.0	-82.05	-2,819.7	694.9	649.4	458.1	191.27	3.395		
9,700.0	7,392.0	7,300.0	7,300.0	49.0	146.0	-82.05	-2,819.7	694.9	564.3	371.2	193.06	2.923		
9,800.0	7,391.7	7,300.0	7,300.0	50.8	146.0	-82.05	-2,819.7	694.9	484.8	290.0	194.86	2.488		
9,900.0	7,391.5	7,300.0	7,300.0	52.6	146.0	-82.05	-2,819.7	694.9	414.4	217.7	196.67	2.107		
10,000.0	7,391.3	7,300.0	7,300.0	54.4	146.0	-82.05	-2,819.7	694.9	358.3	159.8	198.48	1.805		
10,100.0	7,391.0	7,300.0	7,300.0	56.3	146.0	-82.05	-2,819.7	694.9	324.1	123.8	200.30	1.618		
10,166.7	7,390.9	7,300.0	7,300.0	57.5	146.0	-82.05	-2,819.7	694.9	317.1	115.6	201.52	1.574 CC, ES, SF		
10,200.0	7,390.8	7,300.0	7,300.0	58.1	146.0	-82.05	-2,819.7	694.9	318.9	116.8	202.12	1.578		
10,300.0	7,390.6	7,300.0	7,300.0	59.9	146.0	-82.05	-2,819.7	694.9	344.0	140.1	203.95	1.687		
10,400.0	7,390.3	7,300.0	7,300.0	61.8	146.0	-82.05	-2,819.7	694.9	393.7	187.9	205.79	1.913		
10,500.0	7,390.1	7,300.0	7,300.0	63.6	146.0	-82.05	-2,819.7	694.9	460.1	252.4	207.63	2.216		
10,600.0	7,389.9	7,300.0	7,300.0	65.5	146.0	-82.05	-2,819.7	694.9	537.0	327.5	209.47	2.563		
10,700.0	7,389.6	7,300.0	7,300.0	67.3	146.0	-82.05	-2,819.7	694.9	620.5	409.2	211.32	2.936		
10,800.0	7,389.4	7,300.0	7,300.0	69.2	146.0	-82.05	-2,819.7	694.9	708.3	495.1	213.17	3.323		
10,900.0	7,389.2	7,300.0	7,300.0	71.0	146.0	-82.05	-2,819.7	694.9	798.9	583.9	215.02	3.716		
11,000.0	7,388.9	7,300.0	7,300.0	72.9	146.0	-82.05	-2,819.7	694.9	891.6	674.7	216.87	4.111		
11,100.0	7,388.7	7,300.0	7,300.0	74.8	146.0	-82.05	-2,819.7	694.9	985.7	767.0	218.73	4.507		
11,200.0	7,388.5	7,300.0	7,300.0	76.7	146.0	-82.05	-2,819.7	694.9	1,080.9	860.3	220.59	4.900		
11,300.0	7,388.2	7,300.0	7,300.0	78.5	146.0	-82.05	-2,819.7	694.9	1,176.8	954.4	222.45	5.290		
11,400.0	7,388.0	7,300.0	7,300.0	80.4	146.0	-82.05	-2,819.7	694.9	1,273.4	1,049.1	224.32	5.677		
11,500.0	7,387.8	7,300.0	7,300.0	82.3	146.0	-82.05	-2,819.7	694.9	1,370.5	1,144.3	226.18	6.059		
11,600.0	7,387.5	7,300.0	7,300.0	84.2	146.0	-82.05	-2,819.7	694.9	1,468.0	1,239.9	228.05	6.437		
11,700.0	7,387.3	7,300.0	7,300.0	86.0	146.0	-82.05	-2,819.7	694.9	1,565.8	1,335.8	229.92	6.810		
11,800.0	7,387.1	7,300.0	7,300.0	87.9	146.0	-82.05	-2,819.7	694.9	1,663.8	1,432.0	231.79	7.178		
11,835.3	7,387.0	7,300.0	7,300.0	88.6	146.0	-82.05	-2,819.7	694.9	1,698.5	1,466.1	232.45	7.307		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36J-423
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5072.0ft (RKB - 15')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5072.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36J-423	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 (1-07-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5072.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Gaddis 36J-423
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.35°



Coordinates are relative to: Gaddis 36J-423
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.35°

