PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Gaddis 36J-223**

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	Latittude	Longitude	Slot
0.0	0.0	1344050.15	3151737.16	40.276540	-104.956170	

Ensign Rig #119 - RKB - 23' WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 310'FNL, 1270'FWL	9.0	0.0	0.0	Point
BHL 500'FSL, 1653'FWL	7182.0	-4488.2	379.5	Point

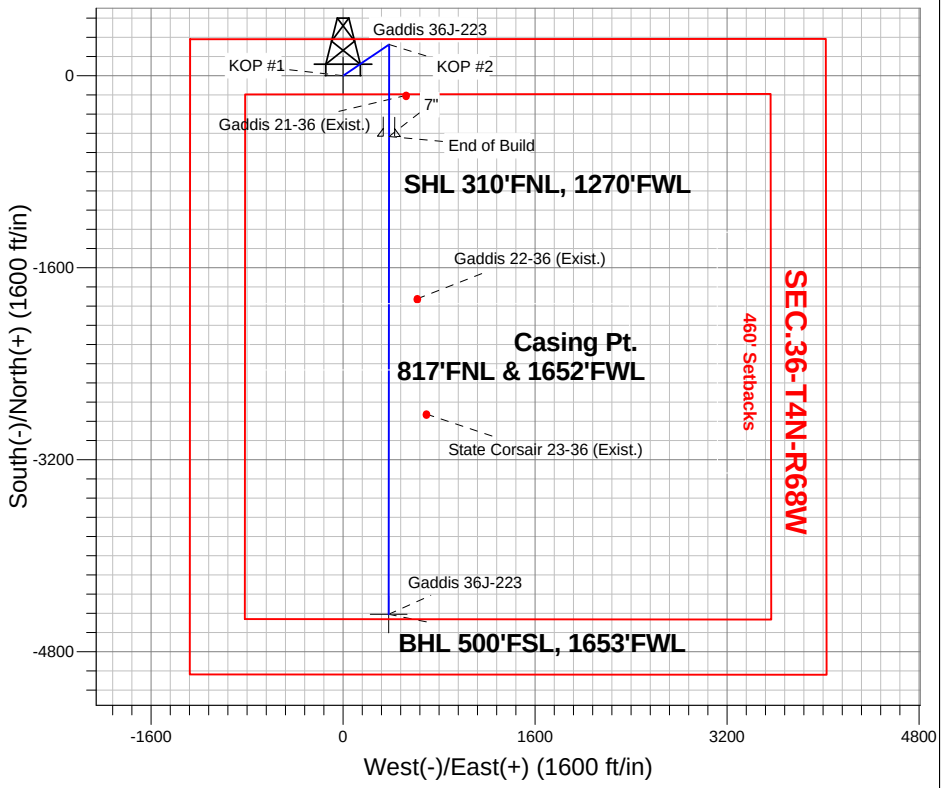
T
M
Azimuths to True North
Magnetic North: 8.64°

Magnetic Field
Strength: 52798.0snT
Dip Angle: 66.84°
Date: 10/16/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP #1
6431.2	6459.6	KOP #2
7195.2	7662.2	End of Build

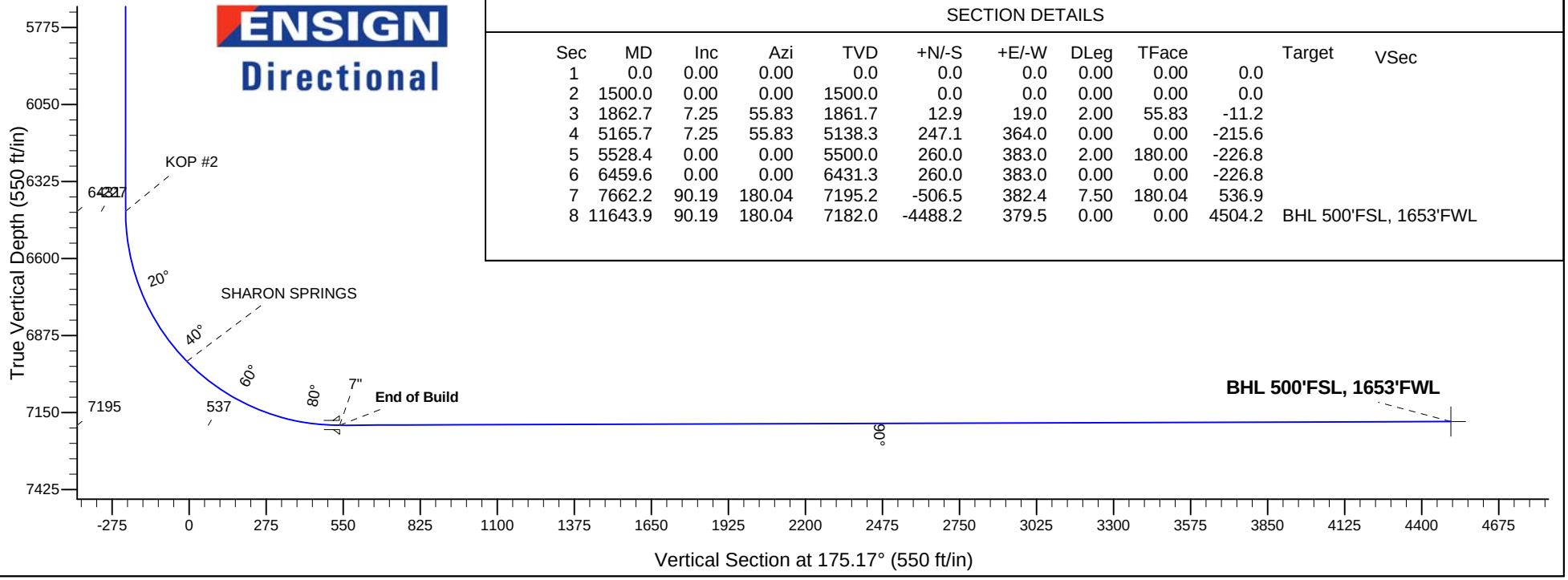
Gaddis Pad Sec.36-T4N-R68W
Gaddis 36J-223
Plan #2 (10-16-13)
12:25, October 21 2013



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace		Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0		
3	1862.7	7.25	55.83	1861.7	12.9	19.0	2.00	55.83	-11.2		
4	5165.7	7.25	55.83	5138.3	247.1	364.0	0.00	0.00	-215.6		
5	5528.4	0.00	0.00	5500.0	260.0	383.0	2.00	180.00	-226.8		
6	6459.6	0.00	0.00	6431.3	260.0	383.0	0.00	0.00	-226.8		
7	7662.2	90.19	180.04	7195.2	-506.5	382.4	7.50	180.04	536.9		
8	11643.9	90.19	180.04	7182.0	-4488.2	379.5	0.00	0.00	4504.2	BHL 500'FSL, 1653'FWL	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.36-T4N-R68W
Gaddis Pad Sec.36-T4N-R68W
Gaddis 36J-223

Wellbore #1

Plan: Plan #2 (10-16-13)

Standard Planning Report

21 October, 2013

Database:	Landmark	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Project:	SEC.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site:	Gaddis Pad Sec.36-T4N-R68W	**North Reference:**	True
Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-16-13)		

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-223

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,344,050.15 ft	**Latitude:**	40.276540
	+E/-W	27.9 ft	**Easting:**	3,151,737.16 ft	**Longitude:**	-104.956170
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	10/16/2013	8.64	66.84	52,798

Design Plan #2 (10-16-13)

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	
6,459.6	0.00	0.00	6,431.3	260.0	383.0	0.00	0.00	0.00	0.00	
7,662.2	90.19	180.04	7,195.2	-506.5	382.4	7.50	7.50	0.00	180.04	
11,643.9	90.19	180.04	7,182.0	-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-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Project:	SEC.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site:	Gaddis Pad Sec.36-T4N-R68W	**North Reference:**	True
Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-16-13)		

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
9.0	0.00	0.00	9.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 310'FNL, 1270'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,600.0	2.00	55.83	1,600.0	1.0	1.4	-0.9	2.00	2.00	0.00
1,700.0	4.00	55.83	1,699.8	3.9	5.8	-3.4	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
1,862.7	7.25	55.83	1,861.7	12.9	19.0	-11.2	2.00	2.00	0.00
1,900.0	7.25	55.83	1,898.7	15.5	22.9	-13.5	0.00	0.00	0.00
2,000.0	7.25	55.83	1,997.9	22.6	33.3	-19.7	0.00	0.00	0.00
2,100.0	7.25	55.83	2,097.1	29.7	43.8	-25.9	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
2,300.0	7.25	55.83	2,295.5	43.9	64.7	-38.3	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
2,500.0	7.25	55.83	2,493.9	58.1	85.5	-50.7	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
2,700.0	7.25	55.83	2,692.3	72.3	106.4	-63.0	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
2,900.0	7.25	55.83	2,890.7	86.4	127.3	-75.4	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
3,100.0	7.25	55.83	3,089.1	100.6	148.2	-87.8	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
3,300.0	7.25	55.83	3,287.5	114.8	169.1	-100.2	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
3,500.0	7.25	55.83	3,485.9	129.0	190.0	-112.5	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
3,665.4	7.25	55.83	3,650.0	140.7	207.3	-122.8	0.00	0.00	0.00
PARKMAN									
3,700.0	7.25	55.83	3,684.3	143.2	210.9	-124.9	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
3,900.0	7.25	55.83	3,882.7	157.4	231.8	-137.3	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
4,100.0	7.25	55.83	4,081.1	171.5	252.7	-149.6	0.00	0.00	0.00
4,199.7	7.25	55.83	4,180.0	178.6	263.1	-155.8	0.00	0.00	0.00
SUSSEX									
4,200.0	7.25	55.83	4,180.3	178.6	263.1	-155.8	0.00	0.00	0.00
4,300.0	7.25	55.83	4,279.5	185.7	273.6	-162.0	0.00	0.00	0.00

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Project:	SEC.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site:	Gaddis Pad Sec.36-T4N-R68W	**North Reference:**	True
Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-16-13)		

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)
4,400.0	7.25	55.83	4,378.7	192.8	284.0	-168.2	0.00	0.00	0.00
4,500.0	7.25	55.83	4,477.9	199.9	294.5	-174.4	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
4,700.0	7.25	55.83	4,676.3	214.1	315.4	-186.8	0.00	0.00	0.00
4,713.8	7.25	55.83	4,690.0	215.1	316.8	-187.6	0.00	0.00	0.00
SHANNON									
4,800.0	7.25	55.83	4,775.5	221.2	325.8	-192.9	0.00	0.00	0.00
4,900.0	7.25	55.83	4,874.7	228.3	336.3	-199.1	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
5,100.0	7.25	55.83	5,073.1	242.5	357.2	-211.5	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
5,300.0	4.57	55.83	5,271.9	254.9	375.5	-222.3	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
5,500.0	0.57	55.83	5,471.6	259.9	382.9	-226.7	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
5,600.0	0.00	0.00	5,571.6	260.0	383.0	-226.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,671.6	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
5,900.0	0.00	0.00	5,871.6	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
6,100.0	0.00	0.00	6,071.6	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
6,300.0	0.00	0.00	6,271.6	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
6,459.6	0.00	0.00	6,431.2	260.0	383.0	-226.8	0.00	0.00	0.00
KOP #2									
6,500.0	3.03	180.04	6,471.6	258.9	383.0	-225.7	7.49	7.49	0.00
6,600.0	10.53	180.04	6,570.8	247.1	383.0	-214.0	7.50	7.50	0.00
6,700.0	18.03	180.04	6,667.7	222.5	383.0	-189.4	7.50	7.50	0.00
6,800.0	25.53	180.04	6,760.5	185.4	382.9	-152.5	7.50	7.50	0.00
6,900.0	33.03	180.04	6,847.6	136.6	382.9	-103.8	7.50	7.50	0.00
7,000.0	40.53	180.04	6,927.7	76.7	382.9	-44.2	7.50	7.50	0.00
7,053.4	44.53	180.04	6,967.0	40.7	382.8	-8.3	7.50	7.50	0.00
SHARON SPRINGS									
7,100.0	48.03	180.04	6,999.2	7.0	382.8	25.3	7.50	7.50	0.00
7,200.0	55.53	180.04	7,061.1	-71.5	382.8	103.5	7.50	7.50	0.00
7,300.0	63.03	180.04	7,112.1	-157.4	382.7	189.1	7.50	7.50	0.00
7,400.0	70.53	180.04	7,151.5	-249.3	382.6	280.6	7.50	7.50	0.00
7,500.0	78.03	180.04	7,178.6	-345.5	382.6	376.5	7.50	7.50	0.00
7,600.0	85.53	180.04	7,192.9	-444.4	382.5	475.0	7.50	7.50	0.00
7,662.2	90.19	180.04	7,195.2	-506.5	382.4	536.9	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.19	180.04	7,195.1	-544.3	382.4	574.6	0.00	0.00	0.00
7,800.0	90.19	180.04	7,194.7	-644.3	382.3	674.2	0.00	0.00	0.00
7,900.0	90.19	180.04	7,194.4	-744.3	382.3	773.9	0.00	0.00	0.00
8,000.0	90.19	180.04	7,194.1	-844.3	382.2	873.5	0.00	0.00	0.00
8,100.0	90.19	180.04	7,193.8	-944.3	382.1	973.1	0.00	0.00	0.00
8,200.0	90.19	180.04	7,193.4	-1,044.3	382.1	1,072.8	0.00	0.00	0.00
8,300.0	90.19	180.04	7,193.1	-1,144.3	382.0	1,172.4	0.00	0.00	0.00
8,400.0	90.19	180.04	7,192.8	-1,244.3	381.9	1,272.1	0.00	0.00	0.00

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Project:	SEC.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site:	Gaddis Pad Sec.36-T4N-R68W	**North Reference:**	True
Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-16-13)		

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)
8,500.0	90.19	180.04	7,192.4	-1,344.3	381.8	1,371.7	0.00	0.00	0.00
8,600.0	90.19	180.04	7,192.1	-1,444.3	381.8	1,471.3	0.00	0.00	0.00
8,700.0	90.19	180.04	7,191.8	-1,544.3	381.7	1,571.0	0.00	0.00	0.00
8,800.0	90.19	180.04	7,191.4	-1,644.3	381.6	1,670.6	0.00	0.00	0.00
8,900.0	90.19	180.04	7,191.1	-1,744.3	381.5	1,770.2	0.00	0.00	0.00
9,000.0	90.19	180.04	7,190.8	-1,844.3	381.5	1,869.9	0.00	0.00	0.00
9,100.0	90.19	180.04	7,190.4	-1,944.3	381.4	1,969.5	0.00	0.00	0.00
9,200.0	90.19	180.04	7,190.1	-2,044.3	381.3	2,069.2	0.00	0.00	0.00
9,300.0	90.19	180.04	7,189.8	-2,144.3	381.3	2,168.8	0.00	0.00	0.00
9,400.0	90.19	180.04	7,189.4	-2,244.3	381.2	2,268.4	0.00	0.00	0.00
9,500.0	90.19	180.04	7,189.1	-2,344.3	381.1	2,368.1	0.00	0.00	0.00
9,600.0	90.19	180.04	7,188.8	-2,444.3	381.0	2,467.7	0.00	0.00	0.00
9,700.0	90.19	180.04	7,188.4	-2,544.3	381.0	2,567.3	0.00	0.00	0.00
9,800.0	90.19	180.04	7,188.1	-2,644.3	380.9	2,667.0	0.00	0.00	0.00
9,900.0	90.19	180.04	7,187.8	-2,744.3	380.8	2,766.6	0.00	0.00	0.00
10,000.0	90.19	180.04	7,187.5	-2,844.3	380.7	2,866.3	0.00	0.00	0.00
10,100.0	90.19	180.04	7,187.1	-2,944.3	380.7	2,965.9	0.00	0.00	0.00
10,200.0	90.19	180.04	7,186.8	-3,044.3	380.6	3,065.5	0.00	0.00	0.00
10,300.0	90.19	180.04	7,186.5	-3,144.3	380.5	3,165.2	0.00	0.00	0.00
10,400.0	90.19	180.04	7,186.1	-3,244.3	380.5	3,264.8	0.00	0.00	0.00
10,500.0	90.19	180.04	7,185.8	-3,344.3	380.4	3,364.4	0.00	0.00	0.00
10,600.0	90.19	180.04	7,185.5	-3,444.3	380.3	3,464.1	0.00	0.00	0.00
10,700.0	90.19	180.04	7,185.1	-3,544.3	380.2	3,563.7	0.00	0.00	0.00
10,800.0	90.19	180.04	7,184.8	-3,644.3	380.2	3,663.4	0.00	0.00	0.00
10,900.0	90.19	180.04	7,184.5	-3,744.3	380.1	3,763.0	0.00	0.00	0.00
11,000.0	90.19	180.04	7,184.1	-3,844.3	380.0	3,862.6	0.00	0.00	0.00
11,100.0	90.19	180.04	7,183.8	-3,944.3	379.9	3,962.3	0.00	0.00	0.00
11,200.0	90.19	180.04	7,183.5	-4,044.3	379.9	4,061.9	0.00	0.00	0.00
11,300.0	90.19	180.04	7,183.1	-4,144.3	379.8	4,161.6	0.00	0.00	0.00
11,400.0	90.19	180.04	7,182.8	-4,244.3	379.7	4,261.2	0.00	0.00	0.00
11,500.0	90.19	180.04	7,182.5	-4,344.3	379.7	4,360.8	0.00	0.00	0.00
11,600.0	90.19	180.04	7,182.1	-4,444.3	379.6	4,460.5	0.00	0.00	0.00
11,643.9	90.19	180.04	7,182.0	-4,488.2	379.5	4,504.2	0.00	0.00	0.00
BHL 500'FSL, 1653'FWL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,662.2	7,195.2	7"	7	8-3/4

Database:	Landmark	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Project:	SEC.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site:	Gaddis Pad Sec.36-T4N-R68W	**North Reference:**	True
Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-16-13)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,665.4	3,650.0	PARKMAN		0.00	
4,199.7	4,180.0	SUSSEX		0.00	
4,713.8	4,690.0	SHANNON		0.00	
7,053.4	6,967.0	SHARON SPRINGS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,500.0	1,500.0	0.0	0.0	KOP #1
6,459.6	6,431.2	260.0	383.0	KOP #2
7,662.2	7,195.2	-506.5	382.4	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.36-T4N-R68W
Gaddis Pad Sec.36-T4N-R68W
Gaddis 36J-223

Wellbore #1
Plan #2 (10-16-13)

Anticollision Report

21 October, 2013

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (10-16-13)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 10/16/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,643.2	Plan #2 (10-16-13) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Gaddis Pad Sec.36-T4N-R68W						
Gaddis 21-36 (Exist.) - Wellbore #1 - Wellbore #1	7,307.1	7,095.3	141.9	-16.1	0.898	Level 1, CC, ES, SF
Gaddis 22-36 (Exist.) - Wellbore #1 - Wellbore #1	9,013.5	7,147.7	235.2	52.6	1.288	Level 3, CC, ES, SF
Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell	1,500.0	1,493.0	27.9	21.4	4.279	CC, ES
Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell	11,643.9	11,803.0	509.6	346.7	3.127	SF
Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 3	1,500.0	1,501.0	27.9	21.4	4.279	CC, ES
Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 3	11,643.9	11,766.8	334.0	159.6	1.914	SF
Gaddis 36M-443 - Wellbore #1 - Plan #4 (10-16-13)	200.0	200.0	30.7	30.0	45.519	CC, ES
Gaddis 36M-443 - Wellbore #1 - Plan #4 (10-16-13)	11,643.9	11,859.4	441.1	283.9	2.806	SF
State Corsair 23-36 (Exist.) - Wellbore #1 - Wellbore #1	9,975.2	7,132.5	314.1	114.4	1.573	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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	107.35	-163.9	524.6	550.0				
100.0	100.0	80.0	80.0	0.1	1.6	107.35	-163.9	524.6	549.6	547.9	1.71	320.918	
200.0	200.0	180.0	180.0	0.3	3.6	107.35	-163.9	524.6	549.6	545.7	3.94	139.586	
300.0	300.0	280.0	280.0	0.6	5.6	107.35	-163.9	524.6	549.6	543.4	6.16	89.190	
400.0	400.0	380.0	380.0	0.8	7.6	107.35	-163.9	524.6	549.6	541.2	8.39	65.531	
500.0	500.0	480.0	480.0	1.0	9.6	107.35	-163.9	524.6	549.6	539.0	10.61	51.792	
600.0	600.0	580.0	580.0	1.2	11.6	107.35	-163.9	524.6	549.6	536.8	12.84	42.816	
700.0	700.0	680.0	680.0	1.5	13.6	107.35	-163.9	524.6	549.6	534.5	15.06	36.491	
800.0	800.0	780.0	780.0	1.7	15.6	107.35	-163.9	524.6	549.6	532.3	17.29	31.795	
900.0	900.0	880.0	880.0	1.9	17.6	107.35	-163.9	524.6	549.6	530.1	19.51	28.169	
1,000.0	1,000.0	980.0	980.0	2.1	19.6	107.35	-163.9	524.6	549.6	527.9	21.74	25.286	
1,100.0	1,100.0	1,080.0	1,080.0	2.4	21.6	107.35	-163.9	524.6	549.6	525.6	23.96	22.938	
1,200.0	1,200.0	1,180.0	1,180.0	2.6	23.6	107.35	-163.9	524.6	549.6	523.4	26.18	20.989	
1,300.0	1,300.0	1,280.0	1,280.0	2.8	25.6	107.35	-163.9	524.6	549.6	521.2	28.41	19.345	
1,400.0	1,400.0	1,380.0	1,380.0	3.0	27.6	107.35	-163.9	524.6	549.6	519.0	30.63	17.940	
1,500.0	1,500.0	1,480.0	1,480.0	3.3	29.6	107.35	-163.9	524.6	549.6	516.7	32.86	16.726	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,600.0	1,600.0	1,580.0	1,580.0	3.5	31.6	51.68	-163.9	524.6	548.5	513.4	35.07	15.641	
1,700.0	1,699.8	1,679.8	1,679.8	3.7	33.6	52.17	-163.9	524.6	545.3	508.0	37.25	14.637	
1,800.0	1,799.5	1,779.5	1,779.5	3.9	35.6	52.98	-163.9	524.6	540.0	500.6	39.42	13.698	
1,900.0	1,898.7	1,878.7	1,878.7	4.2	37.6	54.07	-163.9	524.6	532.8	491.2	41.60	12.809	
2,000.0	1,997.9	1,977.9	1,977.9	4.4	39.6	55.18	-163.9	524.6	525.5	481.7	43.82	11.993	
2,100.0	2,097.1	2,077.1	2,077.1	4.7	41.5	56.32	-163.9	524.6	518.3	472.3	46.05	11.257	
2,200.0	2,196.3	2,176.3	2,176.3	4.9	43.5	57.49	-163.9	524.6	511.4	463.1	48.29	10.591	
2,300.0	2,295.5	2,275.5	2,275.5	5.2	45.5	58.69	-163.9	524.6	504.7	454.2	50.53	9.987	
2,400.0	2,394.7	2,374.7	2,374.7	5.5	47.5	59.93	-163.9	524.6	498.2	445.4	52.79	9.438	
2,500.0	2,493.9	2,473.9	2,473.9	5.8	49.5	61.19	-163.9	524.6	492.0	436.9	55.05	8.937	
2,600.0	2,593.1	2,573.1	2,573.1	6.0	51.5	62.49	-163.9	524.6	486.0	428.7	57.32	8.479	
2,700.0	2,692.3	2,672.3	2,672.3	6.3	53.4	63.81	-163.9	524.6	480.2	420.6	59.59	8.059	
2,800.0	2,791.5	2,771.5	2,771.5	6.6	55.4	65.17	-163.9	524.6	474.8	412.9	61.87	7.674	
2,900.0	2,890.7	2,870.7	2,870.7	6.9	57.4	66.56	-163.9	524.6	469.6	405.4	64.15	7.320	
3,000.0	2,989.9	2,969.9	2,969.9	7.2	59.4	67.98	-163.9	524.6	464.7	398.2	66.44	6.993	
3,100.0	3,089.1	3,069.1	3,069.1	7.5	61.4	69.43	-163.9	524.6	460.0	391.3	68.73	6.693	
3,200.0	3,188.3	3,168.3	3,168.3	7.8	63.4	70.90	-163.9	524.6	455.7	384.7	71.03	6.416	
3,300.0	3,287.5	3,267.5	3,267.5	8.1	65.4	72.41	-163.9	524.6	451.7	378.4	73.33	6.160	
3,400.0	3,386.7	3,366.7	3,366.7	8.4	67.3	73.93	-163.9	524.6	448.0	372.4	75.64	5.923	
3,500.0	3,485.9	3,465.9	3,465.9	8.8	69.3	75.49	-163.9	524.6	444.7	366.7	77.94	5.705	
3,600.0	3,585.1	3,565.1	3,565.1	9.1	71.3	77.06	-163.9	524.6	441.7	361.4	80.25	5.503	
3,700.0	3,684.3	3,664.3	3,664.3	9.4	73.3	78.65	-163.9	524.6	439.0	356.4	82.56	5.317	
3,800.0	3,783.5	3,763.5	3,763.5	9.7	75.3	80.27	-163.9	524.6	436.7	351.8	84.88	5.145	
3,900.0	3,882.7	3,862.7	3,862.7	10.0	77.3	81.89	-163.9	524.6	434.7	347.5	87.19	4.986	
4,000.0	3,981.9	3,961.9	3,961.9	10.3	79.2	83.54	-163.9	524.6	433.1	343.6	89.50	4.839	
4,100.0	4,081.1	4,061.1	4,061.1	10.6	81.2	85.19	-163.9	524.6	431.8	340.0	91.81	4.703	
4,200.0	4,180.3	4,160.3	4,160.3	10.9	83.2	86.85	-163.9	524.6	430.9	336.8	94.12	4.579	
4,300.0	4,279.5	4,259.5	4,259.5	11.2	85.2	88.51	-163.9	524.6	430.4	334.0	96.43	4.464	
4,389.2	4,368.1	4,348.1	4,348.1	11.5	87.0	90.00	-163.9	524.6	430.3	331.8	98.49	4.369	
4,400.0	4,378.7	4,358.7	4,358.7	11.6	87.2	90.18	-163.9	524.6	430.3	331.5	98.73	4.358	
4,500.0	4,477.9	4,457.9	4,457.9	11.9	89.2	91.85	-163.9	524.6	430.5	329.5	101.04	4.261	
4,600.0	4,577.1	4,557.1	4,557.1	12.2	91.1	93.51	-163.9	524.6	431.1	327.8	103.33	4.172	
4,700.0	4,676.3	4,656.3	4,656.3	12.5	93.1	95.17	-163.9	524.6	432.1	326.4	105.63	4.090	
4,800.0	4,775.5	4,755.5	4,755.5	12.8	95.1	96.82	-163.9	524.6	433.4	325.5	107.92	4.016	
4,900.0	4,874.7	4,854.7	4,854.7	13.1	97.1	98.46	-163.9	524.6	435.1	324.9	110.21	3.948	
5,000.0	4,973.9	4,953.9	4,953.9	13.5	99.1	100.08	-163.9	524.6	437.1	324.6	112.49	3.886	
5,100.0	5,073.1	5,053.1	5,053.1	13.8	101.1	101.69	-163.9	524.6	439.5	324.8	114.76	3.830	
5,200.0	5,172.3	5,152.3	5,152.3	14.1	103.0	103.27	-163.9	524.6	442.2	325.2	117.03	3.779	
5,300.0	5,271.9	5,251.9	5,251.9	14.3	105.0	104.53	-163.9	524.6	444.6	325.3	119.24	3.728	
5,400.0	5,371.7	5,351.7	5,351.7	14.5	107.0	105.33	-163.9	524.6	446.2	324.7	121.43	3.674	
5,500.0	5,471.6	5,451.6	5,451.6	14.7	109.0	105.68	-163.9	524.6	446.9	323.3	123.60	3.616	
5,600.0	5,571.6	5,551.6	5,551.6	14.8	111.0	161.53	-163.9	524.6	446.9	321.2	125.76	3.554	
5,678.9	5,650.5	5,630.5	5,630.5	15.0	112.6	161.53	-163.9	524.6	446.9	319.5	127.48	3.506	
5,700.0	5,671.6	5,651.6	5,651.6	15.0	113.0	161.53	-163.9	524.6	446.9	319.0	127.94	3.493	
5,778.9	5,750.5	5,730.5	5,730.5	15.2	114.6	161.53	-163.9	524.6	446.9	317.3	129.66	3.447	
5,800.0	5,771.6	5,751.6	5,751.6	15.2	115.0	161.53	-163.9	524.6	446.9	316.8	130.12	3.435	
5,878.9	5,850.5	5,830.5	5,830.5	15.3	116.6	161.53	-163.9	524.6	446.9	315.1	131.84	3.390	
5,900.0	5,871.6	5,851.6	5,851.6	15.4	117.0	161.53	-163.9	524.6	446.9	314.6	132.31	3.378	
5,978.9	5,950.5	5,930.5	5,930.5	15.5	118.6	161.53	-163.9	524.6	446.9	312.9	134.03	3.335	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,000.0	5,971.6	5,951.6	5,951.6	15.6	119.0	161.53	-163.9	524.6	446.9	312.5	134.49	3.323	
6,078.9	6,050.5	6,030.5	6,030.5	15.7	120.6	161.53	-163.9	524.6	446.9	310.7	136.21	3.281	
6,100.0	6,071.6	6,051.6	6,051.6	15.7	121.0	161.53	-163.9	524.6	446.9	310.3	136.68	3.270	
6,178.9	6,150.5	6,130.5	6,130.5	15.9	122.6	161.53	-163.9	524.6	446.9	308.5	138.40	3.229	
6,200.0	6,171.6	6,151.6	6,151.6	15.9	123.0	161.53	-163.9	524.6	446.9	308.1	138.86	3.219	
6,278.9	6,250.5	6,230.5	6,230.5	16.1	124.6	161.53	-163.9	524.6	446.9	306.4	140.59	3.179	
6,300.0	6,271.6	6,251.6	6,251.6	16.1	125.0	161.53	-163.9	524.6	446.9	305.9	141.05	3.169	
6,378.9	6,350.5	6,330.5	6,330.5	16.3	126.6	161.53	-163.9	524.6	446.9	304.2	142.78	3.130	
6,400.0	6,371.6	6,351.6	6,351.6	16.3	127.0	161.53	-163.9	524.6	446.9	303.7	143.24	3.120	
6,500.0	6,471.6	6,451.6	6,451.6	16.5	129.0	-18.58	-163.9	524.6	445.9	300.7	145.23	3.071	
6,600.0	6,570.8	6,550.8	6,550.8	16.6	131.0	-19.35	-163.9	524.6	434.8	289.4	145.33	2.992	
6,700.0	6,667.7	6,647.7	6,647.7	16.6	133.0	-21.12	-163.9	524.6	411.6	268.3	143.28	2.872	
6,800.0	6,760.5	6,740.5	6,740.5	16.7	134.8	-24.24	-163.9	524.6	377.0	237.5	139.49	2.703	
6,900.0	6,847.6	6,827.6	6,827.6	16.7	136.6	-29.40	-163.9	524.6	332.2	197.0	135.16	2.458	
7,000.0	6,927.7	6,907.7	6,907.7	16.7	138.2	-37.81	-163.9	524.6	279.3	146.1	133.14	2.098	
7,100.0	6,999.2	6,979.2	6,979.2	16.7	139.6	-51.17	-163.9	524.6	222.0	83.9	138.15	1.607	
7,200.0	7,061.1	7,041.1	7,041.1	16.8	140.8	-69.79	-163.9	524.6	169.3	18.9	150.38	1.126	Level 2
7,300.0	7,112.1	7,092.1	7,092.1	17.0	141.8	-88.83	-163.9	524.6	142.0	-15.8	157.86	0.900	Level 1
7,307.1	7,115.3	7,095.3	7,095.3	17.0	141.9	-90.00	-163.9	524.6	141.9	-16.1	157.98	0.898	Level 1, CC, ES, SF
7,400.0	7,151.5	7,131.5	7,131.5	17.4	142.6	-101.35	-163.9	524.6	165.6	9.2	156.42	1.059	Level 2
7,500.0	7,178.6	7,158.6	7,158.6	18.1	143.2	-104.87	-163.9	524.6	230.5	75.2	155.32	1.484	Level 3
7,600.0	7,192.9	7,172.9	7,172.9	19.0	143.5	-98.77	-163.9	524.6	314.4	154.6	159.74	1.968	
7,700.0	7,195.1	7,175.1	7,175.1	20.0	143.5	-89.49	-163.9	524.6	406.1	243.3	162.82	2.494	
7,800.0	7,194.7	7,174.7	7,174.7	21.1	143.5	-89.36	-163.9	524.6	501.0	337.0	163.99	3.055	
7,900.0	7,194.4	7,174.4	7,174.4	22.4	143.5	-89.22	-163.9	524.6	597.6	432.3	165.26	3.616	
8,000.0	7,194.1	7,174.1	7,174.1	23.7	143.5	-89.09	-163.9	524.6	695.1	528.5	166.62	4.172	
8,100.0	7,193.8	7,173.8	7,173.8	25.2	143.5	-88.95	-163.9	524.6	793.3	625.2	168.05	4.720	
8,200.0	7,193.4	7,173.4	7,173.4	26.6	143.5	-88.82	-163.9	524.6	891.8	722.3	169.54	5.260	
8,300.0	7,193.1	7,173.1	7,173.1	28.2	143.5	-88.69	-163.9	524.6	990.7	819.6	171.09	5.791	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 22-36 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7300-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,100.0	7,193.8	7,150.8	7,150.8	25.2	143.0	-90.74	-1,857.9	616.7	943.3	775.7	167.56	5.629	
8,200.0	7,193.4	7,150.4	7,150.4	26.6	143.0	-90.66	-1,857.9	616.7	846.8	677.7	169.07	5.009	
8,300.0	7,193.1	7,150.1	7,150.1	28.2	143.0	-90.58	-1,857.9	616.7	751.2	580.6	170.62	4.403	
8,400.0	7,192.8	7,149.8	7,149.8	29.7	143.0	-90.50	-1,857.9	616.7	657.0	484.8	172.21	3.815	
8,500.0	7,192.4	7,149.4	7,149.4	31.4	143.0	-90.41	-1,857.9	616.7	564.8	390.9	173.85	3.249	
8,600.0	7,192.1	7,149.1	7,149.1	33.0	143.0	-90.33	-1,857.9	616.7	475.7	300.2	175.51	2.710	
8,700.0	7,191.8	7,148.8	7,148.8	34.7	143.0	-90.25	-1,857.9	616.7	391.9	214.7	177.20	2.212	
8,800.0	7,191.4	7,148.4	7,148.4	36.4	143.0	-90.17	-1,857.9	616.7	317.7	138.8	178.91	1.776	
8,900.0	7,191.1	7,148.1	7,148.1	38.1	143.0	-90.09	-1,857.9	616.7	261.2	80.5	180.64	1.446	Level 3
9,000.0	7,190.8	7,147.8	7,147.8	39.8	143.0	-90.01	-1,857.9	616.7	235.6	53.2	182.39	1.292	Level 3
9,013.5	7,190.7	7,147.7	7,147.7	40.1	143.0	-90.00	-1,857.9	616.7	235.2	52.6	182.63	1.288	Level 3, CC, ES, SF
9,100.0	7,190.4	7,147.4	7,147.4	41.6	142.9	-89.93	-1,857.9	616.7	250.7	66.5	184.15	1.361	Level 3
9,200.0	7,190.1	7,147.1	7,147.1	43.3	142.9	-89.85	-1,857.9	616.7	300.2	114.3	185.93	1.615	
9,300.0	7,189.8	7,146.8	7,146.8	45.1	142.9	-89.77	-1,857.9	616.7	370.7	183.0	187.71	1.975	
9,400.0	7,189.4	7,146.4	7,146.4	46.9	142.9	-89.69	-1,857.9	616.7	452.5	263.0	189.51	2.388	
9,500.0	7,189.1	7,146.1	7,146.1	48.7	142.9	-89.61	-1,857.9	616.7	540.4	349.1	191.31	2.825	
9,600.0	7,188.8	7,145.8	7,145.8	50.5	142.9	-89.53	-1,857.9	616.7	631.9	438.8	193.12	3.272	
9,700.0	7,188.4	7,145.4	7,145.4	52.3	142.9	-89.45	-1,857.9	616.7	725.7	530.8	194.94	3.723	
9,800.0	7,188.1	7,145.1	7,145.1	54.2	142.9	-89.36	-1,857.9	616.7	820.9	624.2	196.77	4.172	
9,900.0	7,187.8	7,144.8	7,144.8	56.0	142.9	-89.28	-1,857.9	616.7	917.2	718.6	198.60	4.618	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell Sidetrack - P

Offset Site Error: 0.0 ft

Survey Program: -8-MWD, 7210-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	-7.0	-7.0	0.0	0.0	-90.01	0.0	-27.9	27.9	27.9	0.00	N/A	
100.0	100.0	93.0	93.0	0.1	0.1	-90.01	0.0	-27.9	27.9	27.7	0.23	122.913	
200.0	200.0	193.0	193.0	0.3	0.3	-90.01	0.0	-27.9	27.9	27.2	0.68	41.243	
300.0	300.0	293.0	293.0	0.6	0.6	-90.01	0.0	-27.9	27.9	26.8	1.13	24.779	
400.0	400.0	393.0	393.0	0.8	0.8	-90.01	0.0	-27.9	27.9	26.3	1.58	17.709	
500.0	500.0	493.0	493.0	1.0	1.0	-90.01	0.0	-27.9	27.9	25.9	2.03	13.778	
600.0	600.0	593.0	593.0	1.2	1.2	-90.01	0.0	-27.9	27.9	25.4	2.47	11.275	
700.0	700.0	693.0	693.0	1.5	1.5	-90.01	0.0	-27.9	27.9	25.0	2.92	9.542	
800.0	800.0	793.0	793.0	1.7	1.7	-90.01	0.0	-27.9	27.9	24.5	3.37	8.271	
900.0	900.0	893.0	893.0	1.9	1.9	-90.01	0.0	-27.9	27.9	24.1	3.82	7.298	
1,000.0	1,000.0	993.0	993.0	2.1	2.1	-90.01	0.0	-27.9	27.9	23.6	4.27	6.530	
1,100.0	1,100.0	1,093.0	1,093.0	2.4	2.4	-90.01	0.0	-27.9	27.9	23.2	4.72	5.909	
1,200.0	1,200.0	1,193.0	1,193.0	2.6	2.6	-90.01	0.0	-27.9	27.9	22.7	5.17	5.395	
1,300.0	1,300.0	1,293.0	1,293.0	2.8	2.8	-90.01	0.0	-27.9	27.9	22.3	5.62	4.964	
1,400.0	1,400.0	1,393.0	1,393.0	3.0	3.0	-90.01	0.0	-27.9	27.9	21.8	6.07	4.596	
1,500.0	1,500.0	1,493.0	1,493.0	3.3	3.3	-90.01	0.0	-27.9	27.9	21.4	6.52	4.279	CC, ES
1,600.0	1,600.0	1,593.0	1,593.0	3.5	3.5	-147.73	0.0	-27.9	29.4	22.4	6.96	4.218	
1,700.0	1,699.8	1,692.8	1,692.8	3.7	3.7	-152.42	0.0	-27.9	33.9	26.5	7.39	4.587	
1,800.0	1,799.5	1,792.5	1,792.5	3.9	3.9	-157.89	0.0	-27.9	41.8	34.0	7.81	5.353	
1,900.0	1,898.7	1,891.7	1,891.7	4.2	4.2	-162.70	0.0	-27.9	53.1	44.9	8.24	6.445	
2,000.0	1,997.9	1,990.9	1,990.9	4.4	4.4	-166.00	0.0	-27.9	65.3	56.6	8.68	7.522	
2,100.0	2,097.1	2,090.1	2,090.1	4.7	4.6	-168.26	0.0	-27.9	77.6	68.5	9.12	8.508	
2,200.0	2,196.3	2,189.3	2,189.3	4.9	4.8	-169.89	0.0	-27.9	90.0	80.4	9.56	9.409	
2,300.0	2,295.5	2,288.5	2,288.5	5.2	5.0	-171.13	0.0	-27.9	102.4	92.4	10.01	10.234	
2,400.0	2,394.7	2,387.7	2,387.7	5.5	5.3	-172.10	0.0	-27.9	114.9	104.5	10.46	10.991	
2,500.0	2,493.9	2,486.9	2,486.9	5.8	5.5	-172.88	0.0	-27.9	127.5	116.5	10.91	11.686	
2,600.0	2,593.1	2,586.1	2,586.1	6.0	5.7	-173.52	0.0	-27.9	140.0	128.6	11.36	12.326	
2,700.0	2,692.3	2,685.3	2,685.3	6.3	5.9	-174.06	0.0	-27.9	152.5	140.7	11.81	12.918	
2,800.0	2,791.5	2,784.5	2,784.5	6.6	6.2	-174.51	0.0	-27.9	165.1	152.9	12.26	13.466	
2,900.0	2,890.7	2,883.7	2,883.7	6.9	6.4	-174.90	0.0	-27.9	177.7	165.0	12.71	13.975	
3,000.0	2,989.9	2,982.9	2,982.9	7.2	6.6	-175.24	0.0	-27.9	190.3	177.1	13.17	14.448	
3,100.0	3,089.1	3,087.1	3,087.0	7.5	6.8	-175.24	1.5	-27.4	201.8	188.1	13.63	14.800	
3,200.0	3,188.3	3,192.2	3,192.0	7.8	7.1	-174.54	6.7	-25.8	210.6	196.5	14.10	14.939	
3,300.0	3,287.5	3,297.5	3,296.9	8.1	7.3	-173.18	15.5	-23.0	216.9	202.3	14.57	14.888	
3,400.0	3,386.7	3,402.8	3,401.4	8.4	7.6	-171.18	28.0	-19.0	220.7	205.6	15.04	14.673	
3,500.0	3,485.9	3,502.4	3,500.0	8.8	7.8	-169.00	41.6	-14.6	223.5	208.0	15.51	14.408	
3,600.0	3,585.1	3,602.0	3,598.5	9.1	8.0	-166.88	55.2	-10.3	226.7	210.7	16.00	14.169	
3,700.0	3,684.3	3,701.6	3,697.1	9.4	8.3	-164.82	68.7	-6.0	230.1	213.7	16.49	13.953	
3,800.0	3,783.5	3,801.2	3,795.7	9.7	8.5	-162.83	82.3	-1.6	233.9	216.9	17.00	13.757	
3,900.0	3,882.7	3,900.8	3,894.3	10.0	8.8	-160.89	95.9	2.7	237.9	220.4	17.52	13.580	
4,000.0	3,981.9	4,000.4	3,992.8	10.3	9.1	-159.03	109.5	7.0	242.2	224.2	18.05	13.419	
4,100.0	4,081.1	4,100.0	4,091.4	10.6	9.3	-157.23	123.0	11.4	246.8	228.2	18.59	13.273	
4,200.0	4,180.3	4,199.6	4,190.0	10.9	9.6	-155.50	136.6	15.7	251.5	232.4	19.14	13.140	
4,300.0	4,279.5	4,299.2	4,288.6	11.2	9.9	-153.83	150.2	20.0	256.5	236.8	19.70	13.019	
4,400.0	4,378.7	4,398.8	4,387.1	11.6	10.2	-152.23	163.8	24.4	261.7	241.5	20.28	12.909	
4,500.0	4,477.9	4,498.4	4,485.7	11.9	10.5	-150.69	177.3	28.7	267.1	246.3	20.85	12.810	
4,600.0	4,577.1	4,598.0	4,584.3	12.2	10.8	-149.21	190.9	33.0	272.7	251.3	21.44	12.720	
4,700.0	4,676.3	4,697.6	4,682.9	12.5	11.1	-147.79	204.5	37.4	278.5	256.5	22.04	12.638	
4,800.0	4,775.5	4,797.2	4,781.4	12.8	11.4	-146.43	218.1	41.7	284.4	261.8	22.64	12.564	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell Sidetrack - P

Offset Site Error: 0.0 ft

Survey Program: -8-MWD, 7210-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,874.7	4,896.8	4,880.0	13.1	11.7	-145.13	231.6	46.0	290.5	267.3	23.25	12.498	
5,000.0	4,973.9	4,993.7	4,976.1	13.5	11.9	-144.20	243.4	49.8	297.2	273.4	23.80	12.487	
5,100.0	5,073.1	5,090.5	5,072.5	13.8	12.1	-143.91	252.0	52.5	304.8	280.6	24.29	12.552	
5,200.0	5,172.3	5,187.3	5,169.1	14.1	12.3	-144.23	257.5	54.3	313.3	288.5	24.73	12.667	
5,300.0	5,271.9	5,283.9	5,265.7	14.3	12.5	-144.86	259.9	55.1	320.5	295.4	25.10	12.766	
5,400.0	5,371.7	5,382.9	5,364.7	14.5	12.7	-145.52	260.0	55.1	325.5	300.1	25.45	12.792	
5,500.0	5,471.6	5,482.8	5,464.6	14.7	12.9	-145.81	260.0	55.1	327.8	302.0	25.80	12.703	
5,600.0	5,571.6	5,582.8	5,564.6	14.8	13.1	-90.00	260.0	55.1	327.9	301.7	26.18	12.524	
5,700.0	5,671.6	5,682.8	5,664.6	15.0	13.3	-90.00	260.0	55.1	327.9	301.3	26.59	12.333	
5,800.0	5,771.6	5,782.8	5,764.6	15.2	13.5	-90.00	260.0	55.1	327.9	300.9	27.00	12.147	
5,900.0	5,871.6	5,882.8	5,864.6	15.4	13.7	-90.00	260.0	55.1	327.9	300.5	27.40	11.966	
6,000.0	5,971.6	5,982.8	5,964.6	15.6	13.9	-90.00	260.0	55.1	327.9	300.1	27.81	11.789	
6,100.0	6,071.6	6,082.8	6,064.6	15.7	14.1	-90.00	260.0	55.1	327.9	299.7	28.23	11.617	
6,200.0	6,171.6	6,182.8	6,164.6	15.9	14.3	-90.00	260.0	55.1	327.9	299.3	28.64	11.450	
6,300.0	6,271.6	6,282.8	6,264.6	16.1	14.5	-90.00	260.0	55.1	327.9	298.9	29.05	11.287	
6,400.0	6,371.6	6,382.8	6,364.6	16.3	14.7	-90.00	260.0	55.1	327.9	298.4	29.47	11.128	
6,455.6	6,427.2	6,438.4	6,420.2	16.4	14.9	90.10	260.0	55.1	327.9	298.2	29.70	11.041	
6,500.0	6,471.6	6,482.8	6,464.6	16.5	14.9	90.14	260.0	55.1	327.9	298.0	29.88	10.975	
6,600.0	6,570.8	6,582.0	6,563.8	16.6	15.2	92.17	260.0	55.1	328.1	297.9	30.28	10.837	
6,700.0	6,667.7	6,680.8	6,662.6	16.6	15.4	96.12	259.1	55.1	329.9	299.3	30.67	10.759	
6,800.0	6,760.5	6,785.9	6,766.6	16.7	15.5	100.22	244.9	55.1	333.5	302.6	30.85	10.808	
6,900.0	6,847.6	6,896.1	6,871.6	16.7	15.5	103.68	211.9	55.0	337.8	307.0	30.83	10.957	
7,000.0	6,927.7	7,011.0	6,973.2	16.7	15.5	106.37	158.8	55.0	342.0	311.4	30.67	11.151	
7,100.0	6,999.2	7,129.6	7,066.4	16.7	15.5	108.18	85.7	54.9	345.3	314.8	30.54	11.306	
7,200.0	7,061.1	7,238.1	7,138.8	16.8	15.6	108.99	4.9	54.5	347.5	316.9	30.62	11.350	
7,300.0	7,112.1	7,322.0	7,187.8	17.0	15.8	109.26	-62.9	49.4	356.2	325.2	30.98	11.498	
7,400.0	7,151.5	7,404.9	7,231.0	17.4	16.1	109.25	-132.8	38.4	373.6	341.9	31.69	11.787	
7,500.0	7,178.6	7,486.1	7,267.7	18.1	16.5	108.90	-203.3	22.0	399.3	366.5	32.80	12.173	
7,600.0	7,192.9	7,565.6	7,298.0	19.0	16.9	108.14	-273.6	0.8	432.9	398.6	34.28	12.629	
7,700.0	7,195.1	7,684.9	7,337.8	20.0	17.8	109.75	-380.8	-33.1	471.0	435.1	35.91	13.115	
7,800.0	7,194.7	7,858.5	7,378.4	21.1	19.3	112.92	-545.8	-67.7	498.5	460.6	37.92	13.148	
7,900.0	7,194.4	8,047.6	7,395.8	22.4	21.4	114.13	-733.2	-82.8	509.7	468.8	40.86	12.474	
8,000.0	7,194.1	8,159.1	7,395.8	23.7	22.9	114.16	-844.7	-83.0	509.8	466.4	43.44	11.737	
8,100.0	7,193.8	8,259.1	7,395.5	25.2	24.2	114.17	-944.7	-83.0	509.8	463.8	46.05	11.070	
8,200.0	7,193.4	8,359.1	7,395.3	26.6	25.7	114.18	-1,044.7	-83.0	509.8	461.0	48.79	10.450	
8,300.0	7,193.1	8,459.1	7,395.0	28.2	27.2	114.20	-1,144.7	-83.1	509.8	458.2	51.62	9.876	
8,400.0	7,192.8	8,559.1	7,394.8	29.7	28.8	114.21	-1,244.7	-83.1	509.8	455.3	54.54	9.347	
8,500.0	7,192.4	8,659.1	7,394.6	31.4	30.4	114.22	-1,344.7	-83.1	509.8	452.3	57.53	8.862	
8,600.0	7,192.1	8,759.1	7,394.3	33.0	32.0	114.23	-1,444.7	-83.1	509.8	449.2	60.58	8.416	
8,700.0	7,191.8	8,859.1	7,394.1	34.7	33.7	114.24	-1,544.7	-83.2	509.8	446.1	63.68	8.006	
8,800.0	7,191.4	8,959.1	7,393.8	36.4	35.4	114.25	-1,644.7	-83.2	509.8	443.0	66.82	7.629	
8,900.0	7,191.1	9,059.1	7,393.6	38.1	37.1	114.26	-1,744.7	-83.2	509.8	439.8	70.01	7.282	
9,000.0	7,190.8	9,159.1	7,393.4	39.8	38.8	114.28	-1,844.7	-83.2	509.8	436.6	73.22	6.962	
9,100.0	7,190.4	9,259.1	7,393.1	41.6	40.6	114.29	-1,944.7	-83.3	509.8	433.3	76.47	6.667	
9,200.0	7,190.1	9,359.1	7,392.9	43.3	42.3	114.30	-2,044.7	-83.3	509.8	430.0	79.74	6.393	
9,300.0	7,189.8	9,459.1	7,392.6	45.1	44.1	114.31	-2,144.7	-83.3	509.8	426.7	83.03	6.139	
9,400.0	7,189.4	9,559.1	7,392.4	46.9	45.9	114.32	-2,244.7	-83.3	509.8	423.4	86.34	5.904	
9,500.0	7,189.1	9,659.1	7,392.2	48.7	47.7	114.33	-2,344.7	-83.4	509.8	420.1	89.67	5.685	
9,600.0	7,188.8	9,759.1	7,391.9	50.5	49.5	114.35	-2,444.7	-83.4	509.8	416.7	93.02	5.480	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell Sidetrack - P

Offset Site Error: 0.0 ft

Survey Program: -8-MWD, 7210-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	7,188.4	9,859.1	7,391.7	52.3	51.3	114.36	-2,544.7	-83.4	509.7	413.4	96.38	5.289	
9,800.0	7,188.1	9,959.1	7,391.4	54.2	53.2	114.37	-2,644.7	-83.4	509.7	410.0	99.75	5.110	
9,900.0	7,187.8	10,059.1	7,391.2	56.0	55.0	114.38	-2,744.7	-83.5	509.7	406.6	103.13	4.943	
10,000.0	7,187.5	10,159.1	7,391.0	57.8	56.8	114.39	-2,844.7	-83.5	509.7	403.2	106.52	4.785	
10,100.0	7,187.1	10,259.1	7,390.7	59.7	58.7	114.40	-2,944.7	-83.5	509.7	399.8	109.92	4.637	
10,200.0	7,186.8	10,359.1	7,390.5	61.5	60.5	114.41	-3,044.7	-83.5	509.7	396.4	113.33	4.498	
10,300.0	7,186.5	10,459.1	7,390.2	63.4	62.4	114.43	-3,144.7	-83.6	509.7	393.0	116.75	4.366	
10,400.0	7,186.1	10,559.1	7,390.0	65.2	64.2	114.44	-3,244.7	-83.6	509.7	389.5	120.17	4.241	
10,500.0	7,185.8	10,659.1	7,389.7	67.1	66.1	114.45	-3,344.7	-83.6	509.7	386.1	123.60	4.124	
10,600.0	7,185.5	10,759.1	7,389.5	68.9	68.0	114.46	-3,444.7	-83.6	509.7	382.7	127.04	4.012	
10,700.0	7,185.1	10,859.1	7,389.3	70.8	69.8	114.47	-3,544.7	-83.7	509.7	379.2	130.48	3.906	
10,800.0	7,184.8	10,959.1	7,389.0	72.7	71.7	114.48	-3,644.7	-83.7	509.7	375.8	133.92	3.806	
10,900.0	7,184.5	11,059.1	7,388.8	74.5	73.6	114.50	-3,744.7	-83.7	509.7	372.3	137.37	3.710	
11,000.0	7,184.1	11,159.1	7,388.5	76.4	75.4	114.51	-3,844.7	-83.7	509.7	368.9	140.82	3.619	
11,100.0	7,183.8	11,259.1	7,388.3	78.3	77.3	114.52	-3,944.7	-83.8	509.7	365.4	144.28	3.533	
11,200.0	7,183.5	11,359.1	7,388.1	80.2	79.2	114.53	-4,044.7	-83.8	509.7	361.9	147.74	3.450	
11,300.0	7,183.1	11,459.1	7,387.8	82.0	81.1	114.54	-4,144.7	-83.8	509.7	358.5	151.20	3.371	
11,400.0	7,182.8	11,559.1	7,387.6	83.9	83.0	114.55	-4,244.7	-83.8	509.7	355.0	154.67	3.295	
11,500.0	7,182.5	11,659.1	7,387.3	85.8	84.8	114.56	-4,344.7	-83.9	509.6	351.5	158.13	3.223	
11,600.0	7,182.1	11,759.1	7,387.1	87.7	86.7	114.58	-4,444.7	-83.9	509.6	348.0	161.60	3.154	
11,643.9	7,182.0	11,803.0	7,387.0	88.4	87.6	114.58	-4,488.6	-83.9	509.6	346.7	162.97	3.127	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 36J-3034 - Pl

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-90.01	0.0	-27.9	27.9	27.9	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-90.01	0.0	-27.9	27.9	27.7	0.23	122.913	
200.0	200.0	201.0	201.0	0.3	0.3	-90.01	0.0	-27.9	27.9	27.2	0.68	41.243	
300.0	300.0	301.0	301.0	0.6	0.6	-90.01	0.0	-27.9	27.9	26.8	1.13	24.779	
400.0	400.0	401.0	401.0	0.8	0.8	-90.01	0.0	-27.9	27.9	26.3	1.58	17.709	
500.0	500.0	501.0	501.0	1.0	1.0	-90.01	0.0	-27.9	27.9	25.9	2.03	13.778	
600.0	600.0	601.0	601.0	1.2	1.2	-90.01	0.0	-27.9	27.9	25.4	2.47	11.275	
700.0	700.0	701.0	701.0	1.5	1.5	-90.01	0.0	-27.9	27.9	25.0	2.92	9.542	
800.0	800.0	801.0	801.0	1.7	1.7	-90.01	0.0	-27.9	27.9	24.5	3.37	8.271	
900.0	900.0	901.0	901.0	1.9	1.9	-90.01	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	-90.01	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	-90.01	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	-90.01	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	-90.01	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	-90.01	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	-90.01	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	-152.42	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	
1,900.0	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	-168.26	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	10.991	
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	152.9	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	14.800	
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	20.28	12.909	
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	12.638	
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	12.564	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 36J-3034 - Pl

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,874.7	4,904.8	4,888.0	13.1	11.7	-145.13	231.6	46.0	290.5	267.3	23.25	12.498	
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	
5,200.0	5,172.3	5,195.3	5,177.1	14.1	12.3	-144.23	257.5	54.3	313.3	288.5	24.73	12.667	
5,300.0	5,271.9	5,291.9	5,273.7	14.3	12.5	-144.86	259.9	55.1	320.5	295.3	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	
5,600.0	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	12.524	
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	27.00	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	11.965	
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	28.23	11.617	
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	
6,455.6	6,427.2	6,446.4	6,428.2	16.4	14.9	90.10	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	90.14	260.0	55.1	327.9	298.0	29.88	10.975	
6,600.0	6,570.8	6,590.0	6,571.8	16.6	15.2	92.17	260.0	55.1	328.1	297.9	30.28	10.837	
6,700.0	6,667.7	6,688.8	6,670.6	16.6	15.4	96.12	259.1	55.1	329.9	299.3	30.67	10.759	
6,800.0	6,760.5	6,793.9	6,774.6	16.7	15.5	100.22	244.9	55.1	333.5	302.6	30.85	10.808	
6,900.0	6,847.6	6,904.1	6,879.6	16.7	15.5	103.68	211.9	55.0	337.8	307.0	30.83	10.957	
7,000.0	6,927.7	7,019.0	6,981.2	16.7	15.5	106.37	158.8	55.0	342.0	311.4	30.67	11.151	
7,100.0	6,999.2	7,137.6	7,074.4	16.7	15.5	108.18	85.7	54.9	345.3	314.8	30.54	11.306	
7,200.0	7,061.1	7,258.5	7,153.9	16.8	15.6	109.02	-5.3	54.8	346.9	316.3	30.64	11.323	
7,300.0	7,112.1	7,380.1	7,215.0	17.0	16.0	108.87	-110.2	54.7	346.7	315.5	31.20	11.111	
7,400.0	7,151.5	7,500.5	7,254.8	17.4	16.6	107.73	-223.6	54.6	344.6	312.2	32.34	10.653	
7,500.0	7,178.6	7,618.1	7,272.4	18.1	17.5	105.65	-339.7	54.5	341.0	306.9	34.10	10.001	
7,600.0	7,192.9	7,723.1	7,272.9	19.0	18.4	103.49	-444.7	54.4	337.5	301.3	36.18	9.328	
7,700.0	7,195.1	7,823.0	7,272.0	20.0	19.5	103.03	-544.6	54.3	336.8	298.5	38.33	8.787	
7,800.0	7,194.7	7,923.0	7,271.2	21.1	20.6	102.95	-644.6	54.2	336.7	296.1	40.64	8.286	
7,900.0	7,194.4	8,023.0	7,270.4	22.4	21.9	102.86	-744.6	54.1	336.6	293.5	43.16	7.801	
8,000.0	7,194.1	8,123.0	7,269.5	23.7	23.3	102.78	-844.6	54.0	336.6	290.7	45.84	7.341	
8,100.0	7,193.8	8,223.0	7,268.7	25.2	24.7	102.69	-944.6	53.9	336.5	287.8	48.68	6.912	
8,200.0	7,193.4	8,323.0	7,267.9	26.6	26.2	102.61	-1,044.6	53.8	336.4	284.8	51.63	6.515	
8,300.0	7,193.1	8,423.0	7,267.0	28.2	27.8	102.52	-1,144.6	53.7	336.3	281.6	54.69	6.150	
8,400.0	7,192.8	8,523.0	7,266.2	29.7	29.4	102.44	-1,244.6	53.6	336.2	278.4	57.83	5.814	
8,500.0	7,192.4	8,623.0	7,265.3	31.4	31.0	102.35	-1,344.6	53.5	336.2	275.1	61.05	5.507	
8,600.0	7,192.1	8,723.0	7,264.5	33.0	32.7	102.27	-1,444.6	53.4	336.1	271.8	64.32	5.225	
8,700.0	7,191.8	8,823.0	7,263.7	34.7	34.4	102.18	-1,544.6	53.3	336.0	268.3	67.66	4.966	
8,800.0	7,191.4	8,923.0	7,262.8	36.4	36.1	102.10	-1,644.6	53.1	335.9	264.9	71.03	4.729	
8,900.0	7,191.1	9,023.0	7,262.0	38.1	37.8	102.01	-1,744.5	53.0	335.8	261.4	74.45	4.511	
9,000.0	7,190.8	9,123.0	7,261.1	39.8	39.6	101.93	-1,844.5	52.9	335.8	257.9	77.91	4.310	
9,100.0	7,190.4	9,223.0	7,260.3	41.6	41.3	101.84	-1,944.5	52.8	335.7	254.3	81.39	4.124	
9,200.0	7,190.1	9,323.0	7,259.5	43.3	43.1	101.75	-2,044.5	52.7	335.6	250.7	84.90	3.953	
9,300.0	7,189.8	9,423.0	7,258.6	45.1	44.9	101.67	-2,144.5	52.6	335.5	247.1	88.44	3.794	
9,400.0	7,189.4	9,523.0	7,257.8	46.9	46.7	101.58	-2,244.5	52.5	335.5	243.5	92.00	3.646	
9,500.0	7,189.1	9,623.0	7,257.0	48.7	48.5	101.50	-2,344.5	52.4	335.4	239.8	95.58	3.509	
9,600.0	7,188.8	9,723.0	7,256.1	50.5	50.3	101.41	-2,444.5	52.3	335.3	236.2	99.18	3.381	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 36J-3034 - Pl

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	7,188.4	9,823.0	7,255.3	52.3	52.1	101.33	-2,544.5	52.2	335.3	232.5	102.79	3.262	
9,800.0	7,188.1	9,923.0	7,254.4	54.2	54.0	101.24	-2,644.5	52.1	335.2	228.8	106.41	3.150	
9,900.0	7,187.8	10,023.0	7,253.6	56.0	55.8	101.15	-2,744.5	52.0	335.1	225.1	110.05	3.045	
10,000.0	7,187.5	10,123.0	7,252.8	57.8	57.7	101.07	-2,844.5	51.9	335.1	221.3	113.71	2.947	
10,100.0	7,187.1	10,223.0	7,251.9	59.7	59.5	100.98	-2,944.5	51.8	335.0	217.6	117.37	2.854	
10,200.0	7,186.8	10,323.0	7,251.1	61.5	61.4	100.90	-3,044.5	51.7	334.9	213.9	121.04	2.767	
10,300.0	7,186.5	10,423.0	7,250.3	63.4	63.2	100.81	-3,144.5	51.6	334.9	210.1	124.73	2.685	
10,400.0	7,186.1	10,523.0	7,249.4	65.2	65.1	100.72	-3,244.5	51.5	334.8	206.4	128.42	2.607	
10,500.0	7,185.8	10,623.0	7,248.6	67.1	66.9	100.64	-3,344.5	51.4	334.7	202.6	132.12	2.534	
10,600.0	7,185.5	10,723.0	7,247.7	68.9	68.8	100.55	-3,444.5	51.3	334.7	198.8	135.83	2.464	
10,700.0	7,185.1	10,823.0	7,246.9	70.8	70.7	100.47	-3,544.5	51.2	334.6	195.1	139.54	2.398	
10,800.0	7,184.8	10,923.0	7,246.1	72.7	72.5	100.38	-3,644.5	51.1	334.5	191.3	143.26	2.335	
10,900.0	7,184.5	11,023.0	7,245.2	74.5	74.4	100.29	-3,744.5	51.0	334.5	187.5	146.99	2.275	
11,000.0	7,184.1	11,123.0	7,244.4	76.4	76.3	100.21	-3,844.4	50.9	334.4	183.7	150.72	2.219	
11,100.0	7,183.8	11,223.0	7,243.6	78.3	78.2	100.12	-3,944.4	50.8	334.4	179.9	154.46	2.165	
11,200.0	7,183.5	11,323.0	7,242.7	80.2	80.0	100.03	-4,044.4	50.7	334.3	176.1	158.21	2.113	
11,300.0	7,183.1	11,423.0	7,241.9	82.0	81.9	99.95	-4,144.4	50.6	334.2	172.3	161.96	2.064	
11,400.0	7,182.8	11,523.0	7,241.0	83.9	83.8	99.86	-4,244.4	50.5	334.2	168.5	165.71	2.017	
11,500.0	7,182.5	11,623.0	7,240.2	85.8	85.7	99.78	-4,344.4	50.4	334.1	164.7	169.47	1.972	
11,600.0	7,182.1	11,723.0	7,239.4	87.7	87.5	99.69	-4,444.4	50.3	334.1	160.9	173.15	1.929	
11,643.9	7,182.0	11,766.8	7,239.0	88.4	88.2	99.65	-4,488.2	50.2	334.0	159.6	174.48	1.914	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36M-443 - Wellbore #1 - Plan #4 (10-16-13) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	30.7	30.7	30.5	0.22	136.557	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	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	89.00	0.6	32.3	32.3	31.2	1.12	28.957	
400.0	400.0	397.7	397.5	0.8	0.8	86.52	2.3	37.1	37.3	35.7	1.57	23.792	
500.0	500.0	495.9	495.4	1.0	1.0	83.60	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	22.787	
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	24.767	
1,000.0	1,000.0	988.6	983.1	2.1	2.6	75.75	28.2	110.8	115.6	111.0	4.61	25.077	
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	25.307	
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	25.484	
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	25.624	
1,400.0	1,400.0	1,384.2	1,374.4	3.0	4.0	74.03	47.4	165.7	174.2	167.5	6.77	25.737	
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	25.830	
1,600.0	1,600.0	1,582.3	1,570.3	3.5	4.7	17.78	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	17.94	61.9	207.0	211.7	204.2	7.54	28.063	
1,800.0	1,799.5	1,781.6	1,767.4	3.9	5.4	18.39	66.8	220.8	218.1	210.1	8.00	27.278	
1,900.0	1,898.7	1,881.5	1,866.3	4.2	5.8	19.11	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	19.89	76.5	248.5	224.3	215.4	8.92	25.134	
2,100.0	2,097.1	2,081.3	2,063.9	4.7	6.5	20.64	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	21.37	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	22.09	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	22.79	96.0	304.0	235.8	224.9	10.85	21.736	
2,500.0	2,493.9	2,481.0	2,459.2	5.8	7.9	23.47	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	24.14	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	24.78	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	25.42	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	26.03	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	26.64	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	27.22	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	27.80	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	28.36	139.8	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	28.90	144.7	442.6	266.7	250.8	15.92	16.753	
3,500.0	3,485.9	3,480.1	3,447.5	8.8	11.4	29.44	149.6	456.4	270.0	253.5	16.45	16.415	
3,600.0	3,585.1	3,580.1	3,546.4	9.1	11.8	29.96	154.5	470.3	273.2	256.3	16.97	16.096	
3,700.0	3,684.3	3,680.0	3,645.2	9.4	12.2	30.46	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	30.96	164.2	498.0	279.8	261.8	18.04	15.511	
3,900.0	3,882.7	3,879.8	3,842.9	10.0	12.9	31.44	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	31.92	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	32.38	178.8	539.6	289.9	270.2	19.66	14.745	
4,200.0	4,180.3	4,179.5	4,139.4	10.9	13.9	32.83	183.7	553.5	293.2	273.0	20.20	14.515	
4,300.0	4,279.5	4,279.5	4,238.2	11.2	14.3	33.27	188.5	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	33.70	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	34.12	198.3	595.1	303.5	281.7	21.85	13.890	
4,600.0	4,577.1	4,579.2	4,534.7	12.2	15.4	34.54	203.2	608.9	307.0	284.5	22.40	13.701	
4,700.0	4,676.3	4,679.1	4,633.5	12.5	15.7	34.94	208.0	622.8	310.4	287.5	22.96	13.520	
4,800.0	4,775.5	4,779.0	4,732.3	12.8	16.1	35.33	212.9	636.6	313.9	290.4	23.52	13.348	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36M-443 - Wellbore #1 - Plan #4 (10-16-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,874.7	4,879.0	4,831.2	13.1	16.4	35.72	217.8	650.5	317.4	293.3	24.08	13.183	
5,000.0	4,973.9	4,978.9	4,930.0	13.5	16.8	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	227.5	678.2	324.4	299.2	25.20	12.873	
5,200.0	5,172.3	5,178.7	5,127.7	14.1	17.5	36.82	232.4	692.1	328.1	302.4	25.76	12.740	
5,300.0	5,271.9	5,278.5	5,226.4	14.3	17.8	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	242.1	719.7	342.7	316.1	26.63	12.872	
5,500.0	5,471.6	5,477.4	5,423.1	14.7	18.6	36.25	246.9	733.5	354.2	327.2	26.96	13.136	
5,600.0	5,571.6	5,582.1	5,526.8	14.8	18.9	91.27	251.9	747.7	367.5	340.2	27.30	13.464	
5,700.0	5,671.6	5,695.4	5,639.3	15.0	19.2	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	258.7	767.1	384.6	356.6	28.01	13.729	
5,900.0	5,871.6	5,923.9	5,867.5	15.4	19.6	90.01	259.9	770.5	387.5	359.2	28.39	13.653	
6,000.0	5,971.6	6,028.1	5,971.6	15.6	19.7	90.00	260.0	770.7	387.7	358.9	28.77	13.478	
6,100.0	6,071.6	6,128.1	6,071.6	15.7	19.8	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	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	260.0	770.7	387.7	357.8	29.92	12.957	
6,400.0	6,371.6	6,428.1	6,371.6	16.3	20.3	90.00	260.0	770.7	387.7	357.4	30.31	12.791	
6,450.4	6,422.0	6,478.4	6,422.0	16.4	20.4	-90.14	260.0	770.7	387.7	357.2	30.49	12.714	
6,500.0	6,471.6	6,528.0	6,471.6	16.5	20.4	-90.20	260.0	770.7	387.7	357.0	30.68	12.639	
6,600.0	6,570.8	6,627.3	6,570.8	16.6	20.6	-91.91	260.0	770.7	387.9	357.1	30.81	12.590	
6,700.0	6,667.7	6,726.6	6,670.1	16.6	20.7	-95.16	258.2	770.7	389.4	358.6	30.75	12.661	
6,800.0	6,760.5	6,830.2	6,772.7	16.7	20.8	-98.59	244.2	770.7	392.4	361.7	30.63	12.809	
6,900.0	6,847.6	6,937.5	6,875.9	16.7	20.8	-101.89	215.2	770.7	396.7	366.2	30.50	13.005	
7,000.0	6,927.7	7,048.9	6,977.6	16.7	20.9	-104.98	170.2	770.6	402.0	371.6	30.39	13.227	
7,100.0	6,999.2	7,164.4	7,075.1	16.7	20.9	-107.79	108.4	770.6	407.9	377.6	30.34	13.445	
7,200.0	7,061.1	7,284.0	7,165.0	16.8	20.9	-110.26	29.6	770.5	414.0	383.6	30.40	13.618	
7,300.0	7,112.1	7,407.6	7,243.8	17.0	21.0	-112.33	-65.4	770.5	419.7	389.1	30.64	13.701	
7,400.0	7,151.5	7,534.6	7,307.7	17.4	21.2	-113.94	-175.0	770.4	424.6	393.5	31.14	13.636	
7,500.0	7,178.6	7,664.4	7,353.4	18.1	21.6	-115.06	-296.4	770.3	428.2	396.2	31.98	13.390	
7,600.0	7,192.9	7,795.7	7,378.1	19.0	22.3	-115.65	-425.2	770.2	430.1	396.9	33.20	12.955	
7,700.0	7,195.1	7,900.8	7,388.6	20.0	23.1	-116.52	-529.7	770.2	433.6	399.1	34.54	12.554	
7,800.0	7,194.7	8,015.8	7,392.0	21.1	24.2	-116.96	-644.6	770.1	435.0	398.4	36.60	11.885	
7,900.0	7,194.4	8,115.8	7,392.0	22.4	25.3	-117.00	-744.6	770.0	435.2	396.3	38.84	11.206	
8,000.0	7,194.1	8,215.8	7,392.0	23.7	26.4	-117.04	-844.6	769.9	435.3	394.1	41.24	10.556	
8,100.0	7,193.8	8,315.8	7,392.0	25.2	27.7	-117.08	-944.6	769.9	435.5	391.7	43.79	9.946	
8,200.0	7,193.4	8,415.8	7,392.0	26.6	29.0	-117.12	-1,044.6	769.8	435.6	389.2	46.45	9.379	
8,300.0	7,193.1	8,515.8	7,392.0	28.2	30.4	-117.16	-1,144.6	769.7	435.8	386.6	49.21	8.855	
8,400.0	7,192.8	8,615.8	7,392.0	29.7	31.9	-117.20	-1,244.6	769.7	436.0	383.9	52.06	8.374	
8,500.0	7,192.4	8,715.8	7,392.0	31.4	33.4	-117.23	-1,344.6	769.6	436.1	381.1	54.98	7.933	
8,600.0	7,192.1	8,815.8	7,392.0	33.0	35.0	-117.27	-1,444.6	769.5	436.3	378.3	57.95	7.528	
8,700.0	7,191.8	8,915.8	7,392.0	34.7	36.5	-117.31	-1,544.6	769.5	436.4	375.4	60.98	7.157	
8,800.0	7,191.4	9,015.8	7,392.0	36.4	38.2	-117.35	-1,644.6	769.4	436.6	372.5	64.04	6.817	
8,900.0	7,191.1	9,115.8	7,392.0	38.1	39.8	-117.39	-1,744.6	769.3	436.7	369.6	67.15	6.504	
9,000.0	7,190.8	9,215.8	7,392.0	39.8	41.5	-117.43	-1,844.6	769.3	436.9	366.6	70.28	6.217	
9,100.0	7,190.4	9,315.8	7,392.0	41.6	43.1	-117.46	-1,944.6	769.2	437.1	363.6	73.44	5.951	
9,200.0	7,190.1	9,415.8	7,392.0	43.3	44.9	-117.50	-2,044.6	769.1	437.2	360.6	76.62	5.706	
9,300.0	7,189.8	9,515.8	7,392.0	45.1	46.6	-117.54	-2,144.6	769.1	437.4	357.5	79.83	5.479	
9,400.0	7,189.4	9,615.8	7,392.0	46.9	48.3	-117.58	-2,244.6	769.0	437.5	354.5	83.05	5.268	
9,500.0	7,189.1	9,715.8	7,392.0	48.7	50.1	-117.62	-2,344.6	768.9	437.7	351.4	86.29	5.072	
9,600.0	7,188.8	9,815.8	7,392.0	50.5	51.8	-117.65	-2,444.6	768.9	437.8	348.3	89.54	4.890	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36M-443 - Wellbore #1 - Plan #4 (10-16-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	7,188.4	9,915.8	7,392.0	52.3	53.6	-117.69	-2,544.6	768.8	438.0	345.2	92.80	4.720	
9,800.0	7,188.1	10,015.8	7,392.0	54.2	55.4	-117.73	-2,644.6	768.7	438.2	342.1	96.08	4.561	
9,900.0	7,187.8	10,115.8	7,392.0	56.0	57.2	-117.77	-2,744.6	768.7	438.3	339.0	99.36	4.411	
10,000.0	7,187.5	10,215.8	7,392.0	57.8	59.0	-117.81	-2,844.6	768.6	438.5	335.8	102.65	4.272	
10,100.0	7,187.1	10,315.8	7,392.0	59.7	60.8	-117.85	-2,944.6	768.5	438.6	332.7	105.95	4.140	
10,200.0	7,186.8	10,415.8	7,392.0	61.5	62.6	-117.88	-3,044.6	768.4	438.8	329.5	109.25	4.016	
10,300.0	7,186.5	10,515.8	7,392.0	63.4	64.4	-117.92	-3,144.6	768.4	439.0	326.4	112.56	3.900	
10,400.0	7,186.1	10,615.8	7,392.0	65.2	66.2	-117.96	-3,244.6	768.3	439.1	323.2	115.87	3.790	
10,500.0	7,185.8	10,715.8	7,392.0	67.1	68.1	-118.00	-3,344.6	768.2	439.3	320.1	119.19	3.685	
10,600.0	7,185.5	10,815.8	7,392.0	68.9	69.9	-118.04	-3,444.6	768.2	439.4	316.9	122.52	3.587	
10,700.0	7,185.1	10,915.8	7,392.0	70.8	71.7	-118.07	-3,544.6	768.1	439.6	313.7	125.84	3.493	
10,800.0	7,184.8	11,015.8	7,392.0	72.7	73.6	-118.11	-3,644.6	768.0	439.8	310.6	129.17	3.404	
10,900.0	7,184.5	11,115.8	7,392.0	74.5	75.4	-118.15	-3,744.6	768.0	439.9	307.4	132.50	3.320	
11,000.0	7,184.1	11,215.8	7,392.0	76.4	77.3	-118.19	-3,844.6	767.9	440.1	304.2	135.84	3.240	
11,100.0	7,183.8	11,315.8	7,392.0	78.3	79.1	-118.22	-3,944.6	767.8	440.2	301.1	139.17	3.163	
11,200.0	7,183.5	11,415.8	7,392.0	80.2	81.0	-118.26	-4,044.6	767.8	440.4	297.9	142.51	3.090	
11,300.0	7,183.1	11,515.8	7,392.0	82.0	82.8	-118.30	-4,144.6	767.7	440.6	294.7	145.85	3.021	
11,400.0	7,182.8	11,615.8	7,392.0	83.9	84.7	-118.34	-4,244.5	767.6	440.7	291.5	149.19	2.954	
11,500.0	7,182.5	11,715.8	7,392.0	85.8	86.6	-118.37	-4,344.5	767.6	440.9	288.3	152.53	2.890	
11,600.0	7,182.1	11,815.8	7,392.0	87.7	88.4	-118.41	-4,444.5	767.5	441.0	285.2	155.87	2.830	
11,643.9	7,182.0	11,859.4	7,392.0	88.4	89.3	-118.43	-4,488.2	767.5	441.1	283.9	157.18	2.806	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - State Corsair 23-36 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

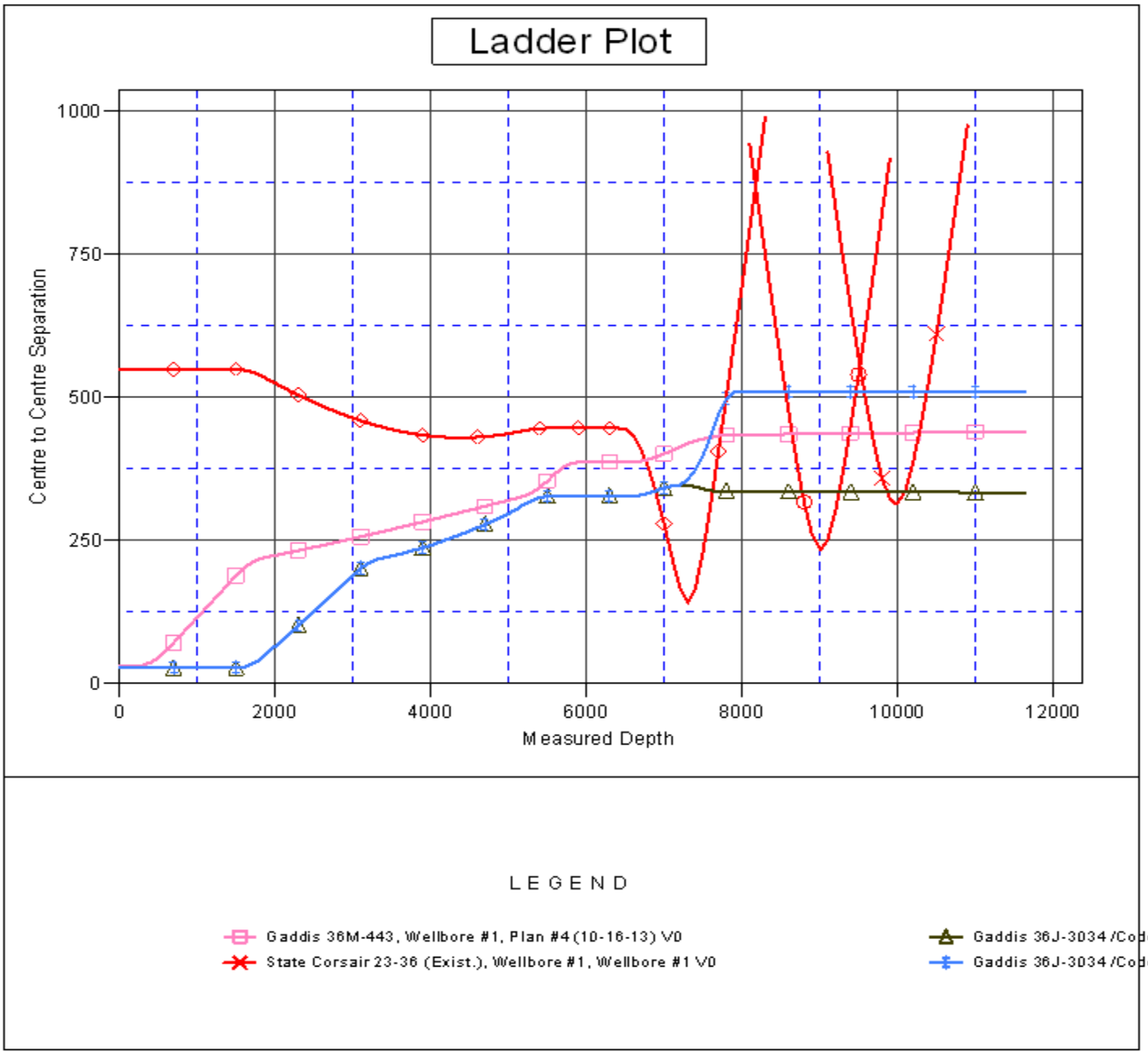
Survey Program: 7300-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,100.0	7,190.4	7,135.4	7,135.4	41.6	142.7	-90.53	-2,819.7	694.9	929.8	745.9	183.89	5.056	
9,200.0	7,190.1	7,135.1	7,135.1	43.3	142.7	-90.47	-2,819.7	694.9	836.4	650.7	185.67	4.505	
9,300.0	7,189.8	7,134.8	7,134.8	45.1	142.7	-90.41	-2,819.7	694.9	744.7	557.2	187.45	3.973	
9,400.0	7,189.4	7,134.4	7,134.4	46.9	142.7	-90.35	-2,819.7	694.9	655.4	466.1	189.25	3.463	
9,500.0	7,189.1	7,134.1	7,134.1	48.7	142.7	-90.29	-2,819.7	694.9	569.6	378.6	191.06	2.981	
9,600.0	7,188.8	7,133.8	7,133.8	50.5	142.7	-90.23	-2,819.7	694.9	489.3	296.4	192.87	2.537	
9,700.0	7,188.4	7,133.4	7,133.4	52.3	142.7	-90.17	-2,819.7	694.9	417.6	222.9	194.69	2.145	
9,800.0	7,188.1	7,133.1	7,133.1	54.2	142.7	-90.11	-2,819.7	694.9	359.6	163.1	196.52	1.830	
9,900.0	7,187.8	7,132.8	7,132.8	56.0	142.7	-90.05	-2,819.7	694.9	323.0	124.6	198.36	1.628	
9,975.2	7,187.5	7,132.5	7,132.5	57.4	142.7	-90.00	-2,819.7	694.9	314.1	114.4	199.74	1.573	CC, ES, SF
10,000.0	7,187.5	7,132.5	7,132.5	57.8	142.6	-89.98	-2,819.7	694.9	315.1	114.9	200.19	1.574	
10,100.0	7,187.1	7,132.1	7,132.1	59.7	142.6	-89.92	-2,819.7	694.9	338.0	136.0	202.04	1.673	
10,200.0	7,186.8	7,131.8	7,131.8	61.5	142.6	-89.86	-2,819.7	694.9	386.3	182.4	203.89	1.895	
10,300.0	7,186.5	7,131.5	7,131.5	63.4	142.6	-89.80	-2,819.7	694.9	451.8	246.1	205.74	2.196	
10,400.0	7,186.1	7,131.1	7,131.1	65.2	142.6	-89.74	-2,819.7	694.9	528.3	320.7	207.59	2.545	
10,500.0	7,185.8	7,130.8	7,130.8	67.1	142.6	-89.68	-2,819.7	694.9	611.6	402.2	209.45	2.920	
10,600.0	7,185.5	7,130.5	7,130.5	68.9	142.6	-89.62	-2,819.7	694.9	699.3	488.0	211.31	3.309	
10,700.0	7,185.1	7,130.1	7,130.1	70.8	142.6	-89.56	-2,819.7	694.9	789.9	576.8	213.17	3.706	
10,800.0	7,184.8	7,129.8	7,129.8	72.7	142.6	-89.50	-2,819.7	694.9	882.6	667.6	215.04	4.104	
10,900.0	7,184.5	7,129.5	7,129.5	74.5	142.6	-89.44	-2,819.7	694.9	976.7	759.8	216.90	4.503	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5080.0ft (Ensign Rig #119 - Coordinates are relative to: Gaddis 36J-223
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.35°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Gaddis 36J-223
Project:	SEC.36-T4N-R68W	**TVD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	**MD Reference:**	WELL @ 5080.0ft (Ensign Rig #119 - RKB - 23')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Gaddis 36J-223	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (10-16-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5080.0ft (Ensign Rig #119 - Coordinates are relative to: Gaddis 36J-223
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.35°