PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **High Pointe LLC 10H-232**

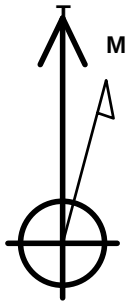
Surface Location: High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4977.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1391985.61	3170845.13	40.407780	-104.886500	

Original Well Elev WELL @ 4990.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 325'FSL & 628'FWL, Sec.10	1.0	0.0	0.0	Point
BHL 840'FSL & 500'FEL, Sec.11	7030.0	431.7	9396.1	Point



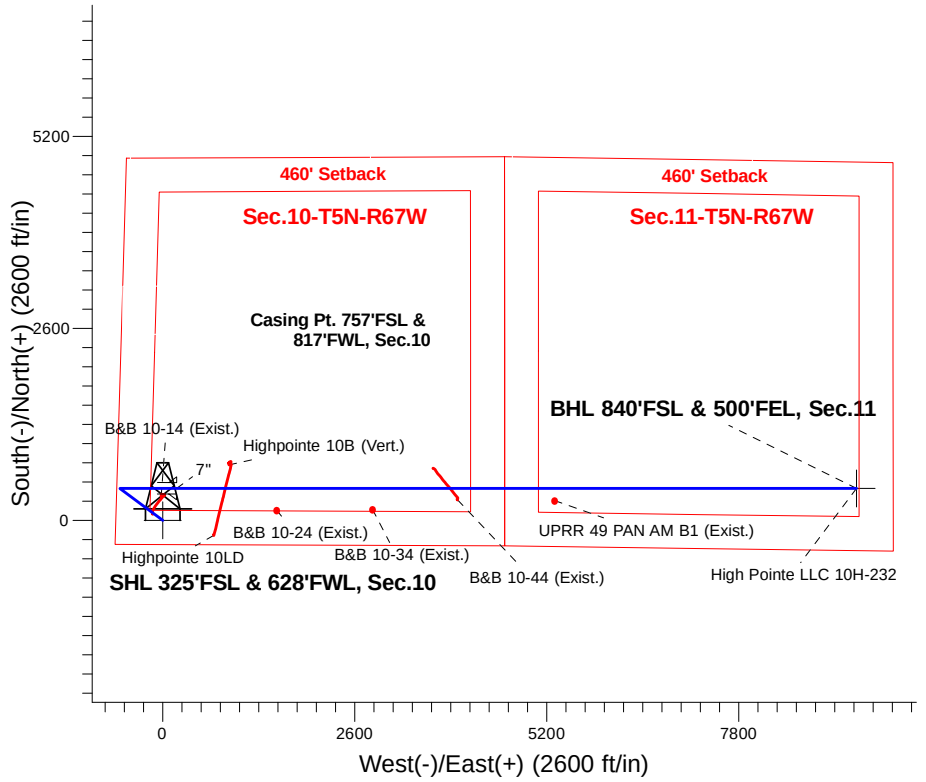
Azimuths to True North
Magnetic North: 8.24°

Magnetic Field
Strength: 52585.4snT
Dip Angle: 66.86°
Date: 7/18/2016
Model: IGRF2010

High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W
High Pointe LLC 10H-232
Plan #2 (7-18-16)
9:16, July 18 2016

ANNOTATIONS

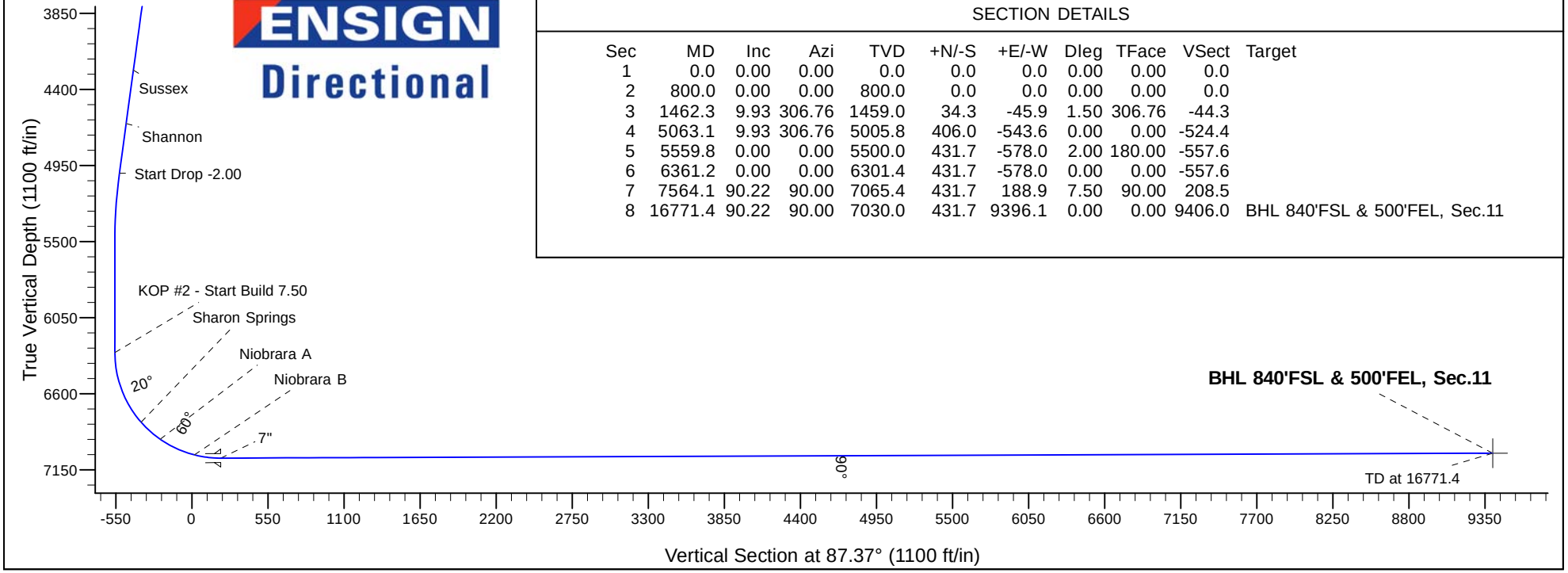
TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.50
5005.8	5063.1	Start Drop -2.00
6301.4	6361.2	KOP #2 - Start Build 7.50
7065.4	7564.1	Start 9207.3 hold at 7564.1 MD
7030.0	16771.4	TD at 16771.4



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1462.3	9.93	306.76	1459.0	34.3	-45.9	1.50	306.76	-44.3	
4	5063.1	9.93	306.76	5005.8	406.0	-543.6	0.00	0.00	-524.4	
5	5559.8	0.00	0.00	5500.0	431.7	-578.0	2.00	180.00	-557.6	
6	6361.2	0.00	0.00	6301.4	431.7	-578.0	0.00	0.00	-557.6	
7	7564.1	90.22	90.00	7065.4	431.7	188.9	7.50	90.00	208.5	
8	16771.4	90.22	90.00	7030.0	431.7	9396.1	0.00	0.00	9406.0	BHL 840'FSL & 500'FEL, Sec.11



ENSIGN Directional

PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.10-T5N-R67W
High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W
High Pointe LLC 10H-232

Wellbore #1

Plan: Plan #2 (7-18-16)

Standard Planning Report

18 July, 2016

PDC ENERGY
Growing E&P Value

Database:	US_EDM	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Project:	SEC.10-T5N-R67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**North Reference:**	True
Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-18-16)		

Project SEC.10-T5N-R67W, 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 High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W

Site Position:		**Northing:**	1,391,985.84 usft	**Latitude:**	40.407780
From:	Lat/Long	**Easting:**	3,170,875.77 usft	**Longitude:**	-104.886390
Position Uncertainty:	0.0 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.40 °

Well High Pointe LLC 10H-232

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,391,985.61 usft	**Latitude:**	40.407780
	+E/-W	-30.6 ft	**Easting:**	3,170,845.13 usft	**Longitude:**	-104.886500
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	0.0 ft	**Ground Level:**	4,977.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/18/2016	8.24	66.86	52,585

Design Plan #2 (7-18-16)

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	87.37

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,462.3	9.93	306.76	1,459.0	34.3	-45.9	1.50	1.50	0.00	306.76	
5,063.1	9.93	306.76	5,005.8	406.0	-543.6	0.00	0.00	0.00	0.00	
5,559.8	0.00	0.00	5,500.0	431.7	-578.0	2.00	-2.00	0.00	180.00	
6,361.2	0.00	0.00	6,301.4	431.7	-578.0	0.00	0.00	0.00	0.00	
7,564.1	90.22	90.00	7,065.4	431.7	188.9	7.50	7.50	0.00	90.00	
16,771.4	90.22	90.00	7,030.0	431.7	9,396.1	0.00	0.00	0.00	0.00	BHL 840'FSL & 500'F

Database:	US_EDM	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
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Project:	SEC.10-T5N-R67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**North Reference:**	True
Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-18-16)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 325'FSL & 628'FWL, Sec.10									
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
KOP - Start Build 1.50									
900.0	1.50	306.76	900.0	0.8	-1.0	-1.0	1.50	1.50	0.00
1,000.0	3.00	306.76	999.9	3.1	-4.2	-4.0	1.50	1.50	0.00
1,100.0	4.50	306.76	1,099.7	7.0	-9.4	-9.1	1.50	1.50	0.00
1,200.0	6.00	306.76	1,199.3	12.5	-16.8	-16.2	1.50	1.50	0.00
1,300.0	7.50	306.76	1,298.6	19.6	-26.2	-25.3	1.50	1.50	0.00
1,400.0	9.00	306.76	1,397.5	28.1	-37.7	-36.3	1.50	1.50	0.00
1,462.3	9.93	306.76	1,459.0	34.3	-45.9	-44.3	1.50	1.50	0.00
1,500.0	9.93	306.76	1,496.1	38.2	-51.1	-49.3	0.00	0.00	0.00
1,600.0	9.93	306.76	1,594.6	48.5	-64.9	-62.6	0.00	0.00	0.00
1,700.0	9.93	306.76	1,693.1	58.8	-78.7	-76.0	0.00	0.00	0.00
1,800.0	9.93	306.76	1,791.6	69.1	-92.6	-89.3	0.00	0.00	0.00
1,900.0	9.93	306.76	1,890.1	79.5	-106.4	-102.6	0.00	0.00	0.00
2,000.0	9.93	306.76	1,988.6	89.8	-120.2	-116.0	0.00	0.00	0.00
2,100.0	9.93	306.76	2,087.1	100.1	-134.0	-129.3	0.00	0.00	0.00
2,200.0	9.93	306.76	2,185.6	110.4	-147.9	-142.6	0.00	0.00	0.00
2,300.0	9.93	306.76	2,284.1	120.8	-161.7	-156.0	0.00	0.00	0.00
2,400.0	9.93	306.76	2,382.6	131.1	-175.5	-169.3	0.00	0.00	0.00
2,500.0	9.93	306.76	2,481.1	141.4	-189.3	-182.6	0.00	0.00	0.00
2,600.0	9.93	306.76	2,579.6	151.7	-203.1	-196.0	0.00	0.00	0.00
2,700.0	9.93	306.76	2,678.1	162.0	-217.0	-209.3	0.00	0.00	0.00
2,800.0	9.93	306.76	2,776.6	172.4	-230.8	-222.6	0.00	0.00	0.00
2,900.0	9.93	306.76	2,875.1	182.7	-244.6	-236.0	0.00	0.00	0.00
3,000.0	9.93	306.76	2,973.6	193.0	-258.4	-249.3	0.00	0.00	0.00
3,100.0	9.93	306.76	3,072.1	203.3	-272.3	-262.6	0.00	0.00	0.00
3,200.0	9.93	306.76	3,170.6	213.7	-286.1	-276.0	0.00	0.00	0.00
3,300.0	9.93	306.76	3,269.1	224.0	-299.9	-289.3	0.00	0.00	0.00
3,400.0	9.93	306.76	3,367.6	234.3	-313.7	-302.6	0.00	0.00	0.00
3,500.0	9.93	306.76	3,466.1	244.6	-327.5	-316.0	0.00	0.00	0.00
3,600.0	9.93	306.76	3,564.6	255.0	-341.4	-329.3	0.00	0.00	0.00
3,600.4	9.93	306.76	3,565.0	255.0	-341.4	-329.3	0.00	0.00	0.00
Parkman									
3,700.0	9.93	306.76	3,663.1	265.3	-355.2	-342.6	0.00	0.00	0.00
3,800.0	9.93	306.76	3,761.6	275.6	-369.0	-356.0	0.00	0.00	0.00
3,900.0	9.93	306.76	3,860.1	285.9	-382.8	-369.3	0.00	0.00	0.00
4,000.0	9.93	306.76	3,958.6	296.3	-396.6	-382.6	0.00	0.00	0.00
4,100.0	9.93	306.76	4,057.1	306.6	-410.5	-396.0	0.00	0.00	0.00
4,200.0	9.93	306.76	4,155.6	316.9	-424.3	-409.3	0.00	0.00	0.00
4,300.0	9.93	306.76	4,254.1	327.2	-438.1	-422.6	0.00	0.00	0.00
4,305.9	9.93	306.76	4,260.0	327.8	-438.9	-423.4	0.00	0.00	0.00
Sussex									

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Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**North Reference:**	True
Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-18-16)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.0	9.93	306.76	4,352.6	337.5	-451.9	-436.0	0.00	0.00	0.00
4,500.0	9.93	306.76	4,451.1	347.9	-465.8	-449.3	0.00	0.00	0.00
4,600.0	9.93	306.76	4,549.6	358.2	-479.6	-462.6	0.00	0.00	0.00
4,698.8	9.93	306.76	4,647.0	368.4	-493.2	-475.8	0.00	0.00	0.00
Shannon									
4,700.0	9.93	306.76	4,648.1	368.5	-493.4	-476.0	0.00	0.00	0.00
4,800.0	9.93	306.76	4,746.6	378.8	-507.2	-489.3	0.00	0.00	0.00
4,900.0	9.93	306.76	4,845.1	389.2	-521.0	-502.6	0.00	0.00	0.00
5,000.0	9.93	306.76	4,943.6	399.5	-534.9	-516.0	0.00	0.00	0.00
5,063.1	9.93	306.76	5,005.8	406.0	-543.6	-524.4	0.00	0.00	0.00
Start Drop -2.00									
5,100.0	9.20	306.76	5,042.2	409.7	-548.5	-529.1	2.00	-2.00	0.00
5,200.0	7.20	306.76	5,141.2	418.2	-559.9	-540.1	2.00	-2.00	0.00
5,300.0	5.20	306.76	5,240.6	424.7	-568.6	-548.5	2.00	-2.00	0.00
5,400.0	3.20	306.76	5,340.3	429.0	-574.4	-554.1	2.00	-2.00	0.00
5,500.0	1.20	306.76	5,440.2	431.3	-577.5	-557.1	2.00	-2.00	0.00
5,559.8	0.00	0.00	5,500.0	431.7	-578.0	-557.6	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,540.2	431.7	-578.0	-557.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,640.2	431.7	-578.0	-557.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,740.2	431.7	-578.0	-557.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,840.2	431.7	-578.0	-557.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,940.2	431.7	-578.0	-557.6	0.00	0.00	0.00
6,100.0	0.00	0.00	6,040.2	431.7	-578.0	-557.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,140.2	431.7	-578.0	-557.6	0.00	0.00	0.00
6,300.0	0.00	0.00	6,240.2	431.7	-578.0	-557.6	0.00	0.00	0.00
6,361.2	0.00	0.00	6,301.4	431.7	-578.0	-557.6	0.00	0.00	0.00
KOP #2 - Start Build 7.50									
6,400.0	2.91	90.00	6,340.2	431.7	-577.0	-556.6	7.50	7.50	0.00
6,500.0	10.41	90.00	6,439.5	431.7	-565.4	-545.0	7.50	7.50	0.00
6,600.0	17.91	90.00	6,536.3	431.7	-541.0	-520.6	7.50	7.50	0.00
6,700.0	25.41	90.00	6,629.2	431.7	-504.1	-483.8	7.50	7.50	0.00
6,800.0	32.91	90.00	6,716.5	431.7	-455.4	-435.1	7.50	7.50	0.00
6,900.0	40.41	90.00	6,796.6	431.7	-395.7	-375.5	7.50	7.50	0.00
6,912.4	41.34	90.00	6,806.0	431.7	-387.6	-367.4	7.50	7.50	0.00
Sharon Springs									
7,000.0	47.91	90.00	6,868.3	431.7	-326.1	-306.0	7.50	7.50	0.00
7,097.7	55.24	90.00	6,929.0	431.7	-249.7	-229.6	7.50	7.50	0.00
Niobrara A									
7,100.0	55.41	90.00	6,930.3	431.7	-247.7	-227.7	7.50	7.50	0.00
7,200.0	62.91	90.00	6,981.5	431.7	-161.9	-142.0	7.50	7.50	0.00
7,300.0	70.41	90.00	7,021.1	431.7	-70.2	-50.3	7.50	7.50	0.00
7,371.8	75.79	90.00	7,042.0	431.7	-1.5	18.3	7.50	7.50	0.00
Niobrara B									
7,400.0	77.91	90.00	7,048.4	431.7	25.9	45.7	7.50	7.50	0.00
7,500.0	85.41	90.00	7,062.9	431.7	124.8	144.5	7.50	7.50	0.00
7,564.1	90.22	90.00	7,065.4	431.7	188.8	208.5	7.50	7.50	0.00
Start 9207.3 hold at 7564.1 MD - 7"									
7,600.0	90.22	90.00	7,065.2	431.7	224.7	244.3	0.01	0.01	0.00
7,700.0	90.22	90.00	7,064.8	431.7	324.7	344.2	0.00	0.00	0.00
7,800.0	90.22	90.00	7,064.4	431.7	424.7	444.1	0.00	0.00	0.00
7,900.0	90.22	90.00	7,064.1	431.7	524.7	544.0	0.00	0.00	0.00

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Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-18-16)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.0	90.22	90.00	7,063.7	431.7	624.7	643.9	0.00	0.00	0.00
8,100.0	90.22	90.00	7,063.3	431.7	724.7	743.8	0.00	0.00	0.00
8,200.0	90.22	90.00	7,062.9	431.7	824.7	843.7	0.00	0.00	0.00
8,300.0	90.22	90.00	7,062.5	431.7	924.7	943.6	0.00	0.00	0.00
8,400.0	90.22	90.00	7,062.1	431.7	1,024.7	1,043.5	0.00	0.00	0.00
8,500.0	90.22	90.00	7,061.8	431.7	1,124.7	1,143.4	0.00	0.00	0.00
8,600.0	90.22	90.00	7,061.4	431.7	1,224.7	1,243.3	0.00	0.00	0.00
8,700.0	90.22	90.00	7,061.0	431.7	1,324.7	1,343.2	0.00	0.00	0.00
8,800.0	90.22	90.00	7,060.6	431.7	1,424.7	1,443.0	0.00	0.00	0.00
8,900.0	90.22	90.00	7,060.2	431.7	1,524.7	1,542.9	0.00	0.00	0.00
9,000.0	90.22	90.00	7,059.8	431.7	1,624.7	1,642.8	0.00	0.00	0.00
9,100.0	90.22	90.00	7,059.5	431.7	1,724.7	1,742.7	0.00	0.00	0.00
9,200.0	90.22	90.00	7,059.1	431.7	1,824.7	1,842.6	0.00	0.00	0.00
9,300.0	90.22	90.00	7,058.7	431.7	1,924.7	1,942.5	0.00	0.00	0.00
9,400.0	90.22	90.00	7,058.3	431.7	2,024.7	2,042.4	0.00	0.00	0.00
9,500.0	90.22	90.00	7,057.9	431.7	2,124.7	2,142.3	0.00	0.00	0.00
9,600.0	90.22	90.00	7,057.5	431.7	2,224.7	2,242.2	0.00	0.00	0.00
9,700.0	90.22	90.00	7,057.2	431.7	2,324.7	2,342.1	0.00	0.00	0.00
9,800.0	90.22	90.00	7,056.8	431.7	2,424.7	2,442.0	0.00	0.00	0.00
9,900.0	90.22	90.00	7,056.4	431.7	2,524.7	2,541.9	0.00	0.00	0.00
10,000.0	90.22	90.00	7,056.0	431.7	2,624.7	2,641.8	0.00	0.00	0.00
10,100.0	90.22	90.00	7,055.6	431.7	2,724.7	2,741.7	0.00	0.00	0.00
10,200.0	90.22	90.00	7,055.2	431.7	2,824.7	2,841.6	0.00	0.00	0.00
10,300.0	90.22	90.00	7,054.8	431.7	2,924.7	2,941.5	0.00	0.00	0.00
10,400.0	90.22	90.00	7,054.5	431.7	3,024.7	3,041.3	0.00	0.00	0.00
10,500.0	90.22	90.00	7,054.1	431.7	3,124.7	3,141.2	0.00	0.00	0.00
10,600.0	90.22	90.00	7,053.7	431.7	3,224.7	3,241.1	0.00	0.00	0.00
10,700.0	90.22	90.00	7,053.3	431.7	3,324.7	3,341.0	0.00	0.00	0.00
10,800.0	90.22	90.00	7,052.9	431.7	3,424.7	3,440.9	0.00	0.00	0.00
10,900.0	90.22	90.00	7,052.5	431.7	3,524.7	3,540.8	0.00	0.00	0.00
11,000.0	90.22	90.00	7,052.2	431.7	3,624.7	3,640.7	0.00	0.00	0.00
11,100.0	90.22	90.00	7,051.8	431.7	3,724.7	3,740.6	0.00	0.00	0.00
11,200.0	90.22	90.00	7,051.4	431.7	3,824.7	3,840.5	0.00	0.00	0.00
11,300.0	90.22	90.00	7,051.0	431.7	3,924.7	3,940.4	0.00	0.00	0.00
11,400.0	90.22	90.00	7,050.6	431.7	4,024.7	4,040.3	0.00	0.00	0.00
11,500.0	90.22	90.00	7,050.2	431.7	4,124.7	4,140.2	0.00	0.00	0.00
11,600.0	90.22	90.00	7,049.9	431.7	4,224.7	4,240.1	0.00	0.00	0.00
11,700.0	90.22	90.00	7,049.5	431.7	4,324.7	4,340.0	0.00	0.00	0.00
11,800.0	90.22	90.00	7,049.1	431.7	4,424.7	4,439.9	0.00	0.00	0.00
11,900.0	90.22	90.00	7,048.7	431.7	4,524.7	4,539.8	0.00	0.00	0.00
12,000.0	90.22	90.00	7,048.3	431.7	4,624.7	4,639.6	0.00	0.00	0.00
12,100.0	90.22	90.00	7,047.9	431.7	4,724.7	4,739.5	0.00	0.00	0.00
12,200.0	90.22	90.00	7,047.6	431.7	4,824.7	4,839.4	0.00	0.00	0.00
12,300.0	90.22	90.00	7,047.2	431.7	4,924.7	4,939.3	0.00	0.00	0.00
12,400.0	90.22	90.00	7,046.8	431.7	5,024.7	5,039.2	0.00	0.00	0.00
12,500.0	90.22	90.00	7,046.4	431.7	5,124.7	5,139.1	0.00	0.00	0.00
12,600.0	90.22	90.00	7,046.0	431.7	5,224.7	5,239.0	0.00	0.00	0.00
12,700.0	90.22	90.00	7,045.6	431.7	5,324.7	5,338.9	0.00	0.00	0.00
12,800.0	90.22	90.00	7,045.2	431.7	5,424.7	5,438.8	0.00	0.00	0.00
12,900.0	90.22	90.00	7,044.9	431.7	5,524.7	5,538.7	0.00	0.00	0.00
13,000.0	90.22	90.00	7,044.5	431.7	5,624.7	5,638.6	0.00	0.00	0.00
13,100.0	90.22	90.00	7,044.1	431.7	5,724.7	5,738.5	0.00	0.00	0.00

Database:	US_EDM	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Project:	SEC.10-T5N-R67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**North Reference:**	True
Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-18-16)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,200.0	90.22	90.00	7,043.7	431.7	5,824.7	5,838.4	0.00	0.00	0.00
13,300.0	90.22	90.00	7,043.3	431.7	5,924.7	5,938.3	0.00	0.00	0.00
13,400.0	90.22	90.00	7,042.9	431.7	6,024.7	6,038.2	0.00	0.00	0.00
13,500.0	90.22	90.00	7,042.6	431.7	6,124.7	6,138.1	0.00	0.00	0.00
13,600.0	90.22	90.00	7,042.2	431.7	6,224.7	6,238.0	0.00	0.00	0.00
13,700.0	90.22	90.00	7,041.8	431.7	6,324.7	6,337.8	0.00	0.00	0.00
13,800.0	90.22	90.00	7,041.4	431.7	6,424.7	6,437.7	0.00	0.00	0.00
13,900.0	90.22	90.00	7,041.0	431.7	6,524.7	6,537.6	0.00	0.00	0.00
14,000.0	90.22	90.00	7,040.6	431.7	6,624.7	6,637.5	0.00	0.00	0.00
14,100.0	90.22	90.00	7,040.3	431.7	6,724.7	6,737.4	0.00	0.00	0.00
14,200.0	90.22	90.00	7,039.9	431.7	6,824.7	6,837.3	0.00	0.00	0.00
14,300.0	90.22	90.00	7,039.5	431.7	6,924.7	6,937.2	0.00	0.00	0.00
14,400.0	90.22	90.00	7,039.1	431.7	7,024.7	7,037.1	0.00	0.00	0.00
14,500.0	90.22	90.00	7,038.7	431.7	7,124.7	7,137.0	0.00	0.00	0.00
14,600.0	90.22	90.00	7,038.3	431.7	7,224.7	7,236.9	0.00	0.00	0.00
14,700.0	90.22	90.00	7,038.0	431.7	7,324.7	7,336.8	0.00	0.00	0.00
14,800.0	90.22	90.00	7,037.6	431.7	7,424.7	7,436.7	0.00	0.00	0.00
14,900.0	90.22	90.00	7,037.2	431.7	7,524.7	7,536.6	0.00	0.00	0.00
15,000.0	90.22	90.00	7,036.8	431.7	7,624.7	7,636.5	0.00	0.00	0.00
15,100.0	90.22	90.00	7,036.4	431.7	7,724.7	7,736.4	0.00	0.00	0.00
15,200.0	90.22	90.00	7,036.0	431.7	7,824.7	7,836.3	0.00	0.00	0.00
15,300.0	90.22	90.00	7,035.6	431.7	7,924.7	7,936.1	0.00	0.00	0.00
15,400.0	90.22	90.00	7,035.3	431.7	8,024.7	8,036.0	0.00	0.00	0.00
15,500.0	90.22	90.00	7,034.9	431.7	8,124.7	8,135.9	0.00	0.00	0.00
15,600.0	90.22	90.00	7,034.5	431.7	8,224.7	8,235.8	0.00	0.00	0.00
15,700.0	90.22	90.00	7,034.1	431.7	8,324.7	8,335.7	0.00	0.00	0.00
15,800.0	90.22	90.00	7,033.7	431.7	8,424.7	8,435.6	0.00	0.00	0.00
15,900.0	90.22	90.00	7,033.3	431.7	8,524.7	8,535.5	0.00	0.00	0.00
16,000.0	90.22	90.00	7,033.0	431.7	8,624.7	8,635.4	0.00	0.00	0.00
16,100.0	90.22	90.00	7,032.6	431.7	8,724.7	8,735.3	0.00	0.00	0.00
16,200.0	90.22	90.00	7,032.2	431.7	8,824.7	8,835.2	0.00	0.00	0.00
16,300.0	90.22	90.00	7,031.8	431.7	8,924.7	8,935.1	0.00	0.00	0.00
16,400.0	90.22	90.00	7,031.4	431.7	9,024.7	9,035.0	0.00	0.00	0.00
16,500.0	90.22	90.00	7,031.0	431.7	9,124.7	9,134.9	0.00	0.00	0.00
16,600.0	90.22	90.00	7,030.7	431.7	9,224.7	9,234.8	0.00	0.00	0.00
16,700.0	90.22	90.00	7,030.3	431.7	9,324.7	9,334.7	0.00	0.00	0.00
16,771.4	90.22	90.00	7,030.0	431.7	9,396.1	9,406.0	0.00	0.00	0.00

TD at 16771.4 - BHL 840'FSL & 500'FEL, Sec.11 - BHL 725'FSL & 500'FEL, Sec.11

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 325'FSL & 628'FWL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,391,985.63	3,170,845.13	40.407780	-104.886500
BHL 840'FSL & 500'FEL - plan hits target center - Point	0.00	0.00	7,030.0	431.7	9,396.1	1,392,482.28	3,180,237.62	40.408960	-104.852760

Database:	US_EDM	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Project:	SEC.10-T5N-R67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**North Reference:**	True
Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-18-16)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,564.1	7,065.4	7"	7	8-3/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,600.4	3,565.0	Parkman		0.00	
4,305.9	4,260.0	Sussex		0.00	
4,698.8	4,647.0	Shannon		0.00	
6,912.4	6,806.0	Sharon Springs		0.00	
7,097.7	6,929.0	Niobrara A		0.00	
7,371.8	7,042.0	Niobrara B		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
800.0	800.0	0.0	0.0	KOP - Start Build 1.50
5,063.1	5,005.8	34.3	-45.9	Start Drop -2.00
6,361.2	6,301.4	406.0	-543.6	KOP #2 - Start Build 7.50
7,564.1	7,065.4	431.7	-578.0	Start 9207.3 hold at 7564.1 MD
16,771.4	7,030.0	431.7	-578.0	TD at 16771.4

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.10-T5N-R67W
High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W
High Pointe LLC 10H-232

Wellbore #1
Plan #2 (7-18-16)

Anticollision Report

18 July, 2016

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (7-18-16)

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 1,000.0 ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.45 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 7/18/2016

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	16,771.4	Plan #2 (7-18-16) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Pad Sec.10-T5N-R67W						
B&B 10-14 (Exist.) - Wellbore #1 - Wellbore #1	7,352.1	7,052.5	94.3	54.0	2.340	CC, ES, SF
B&B 10-24 (Exist.) - Wellbore #1 - Wellbore #1	8,918.1	7,044.2	293.2	53.2	1.221	Level 2, CC, ES, SF
B&B 10-34 (Exist.) - Wellbore #1 - Wellbore #1	10,215.9	7,073.2	282.2	-1.7	0.994	Level 1, CC, ES, SF
B&B 10-44 (Exist.) - Wellbore #1 - Wellbore #1	11,362.6	7,112.2	148.4	-19.0	0.886	Level 1, CC, ES, SF
UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #	12,680.5	7,065.7	161.5	-205.9	0.440	Level 1, CC, ES, SF
High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W						
High Pointe LLC 10H-302 - Wellbore #1 - Plan #1 (1-20-1	200.0	200.0	13.9	13.1	16.857	CC
High Pointe LLC 10H-302 - Wellbore #1 - Plan #1 (1-20-1	16,771.4	16,870.2	354.8	-303.9	0.539	Level 1, ES, SF
High Pointe LLC 10I-202 - Wellbore #1 - Plan #1 (1-19-1	800.0	800.0	16.7	12.6	4.046	CC
High Pointe LLC 10I-202 - Wellbore #1 - Plan #1 (1-19-1	16,771.4	16,753.6	677.6	9.5	1.014	Level 2, ES, SF
High Pointe LLC 10I-312 - Wellbore #1 - Plan #1 (1-19-1	800.0	800.0	30.6	26.5	7.417	CC
High Pointe LLC 10I-312 - Wellbore #1 - Plan #1 (1-19-1	16,771.4	16,825.8	383.6	-277.6	0.580	Level 1, ES, SF
Highpoint 10LD Pad Sec.10-T5N-R67W						
Highpointe 10B (Vert.) - Wellbore #1 - Wellbore #1	8,270.5	7,055.7	328.1	266.5	5.324	CC, ES
Highpointe 10B (Vert.) - Wellbore #1 - Wellbore #1	8,300.0	7,055.6	329.4	266.9	5.270	SF
Highpointe 10LD - Wellbore #1 - Wellbore #1	8,064.0	7,158.8	630.5	569.3	10.295	CC, ES
Highpointe 10LD - Wellbore #1 - Wellbore #1	8,300.0	7,155.5	673.2	605.0	9.871	SF

Offset Design Existing Wells Pad Sec.10-T5N-R67W - B&B 10-14 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft
Offset Well Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

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	-57.92	83.8	-133.7	158.3				
100.0	100.0	84.8	84.8	0.1	0.1	-57.83	84.3	-134.0	158.4	158.1	0.28	573.145	
200.0	200.0	184.9	184.9	0.4	0.4	-57.53	85.8	-134.8	159.8	159.0	0.85	188.318	
300.0	300.0	285.0	285.0	0.7	0.7	-57.29	87.0	-135.5	161.1	159.7	1.43	112.936	
400.0	400.0	386.1	386.1	1.0	1.0	-57.46	87.2	-136.6	162.1	160.1	1.96	82.659	
500.0	500.0	484.5	484.5	1.2	1.3	-57.60	87.3	-137.6	163.0	160.5	2.50	65.083	
600.0	600.0	582.7	582.7	1.5	1.6	-57.40	88.9	-139.0	165.1	162.0	3.09	53.499	
700.0	700.0	679.7	679.5	1.8	1.9	-56.66	92.5	-140.6	168.5	164.9	3.66	46.062	

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.10-T5N-R67W - B&B 10-14 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

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
800.0	800.0	777.2	776.8	2.1	2.2	-54.84	99.9	-141.8	173.7	169.5	4.22	41.169	
900.0	900.0	875.7	874.6	2.3	2.4	1.44	111.1	-141.3	178.9	174.1	4.77	37.525	
1,000.0	999.9	974.8	972.5	2.6	2.7	5.82	126.1	-138.0	182.4	177.0	5.31	34.343	
1,100.0	1,099.7	1,074.3	1,070.1	2.9	3.0	11.68	144.5	-131.1	184.4	178.5	5.86	31.473	
1,200.0	1,199.3	1,171.3	1,164.2	3.2	3.3	18.89	165.0	-120.5	185.7	179.3	6.41	28.993	
1,300.0	1,298.6	1,268.1	1,256.8	3.5	3.6	27.93	188.6	-104.9	188.7	181.7	6.97	27.061	
1,400.0	1,397.5	1,367.0	1,351.3	3.8	4.0	37.57	211.9	-87.1	193.2	185.6	7.57	25.524	
1,500.0	1,496.1	1,465.1	1,445.8	4.2	4.3	46.53	232.5	-70.7	198.8	190.6	8.20	24.248	
1,600.0	1,594.6	1,565.9	1,543.6	4.6	4.6	54.65	251.7	-56.0	206.9	198.0	8.87	23.321	
1,700.0	1,693.1	1,666.5	1,642.0	5.0	5.0	61.77	268.2	-42.8	215.9	206.3	9.57	22.554	
1,800.0	1,791.6	1,767.7	1,741.3	5.5	5.3	68.14	283.2	-30.6	226.0	215.7	10.29	21.956	
1,900.0	1,890.1	1,871.8	1,843.9	5.9	5.7	74.01	296.3	-19.2	236.0	225.0	11.04	21.384	
2,000.0	1,988.6	1,976.0	1,947.1	6.3	6.0	79.15	306.8	-10.1	245.0	233.2	11.79	20.775	
2,100.0	2,087.1	2,079.3	2,049.9	6.8	6.3	83.65	315.5	-3.2	253.1	240.6	12.55	20.161	
2,200.0	2,185.6	2,182.3	2,152.6	7.2	6.7	87.63	322.9	1.6	260.5	247.2	13.32	19.554	
2,300.0	2,284.1	2,285.4	2,255.3	7.7	7.0	91.41	328.8	5.5	267.3	253.2	14.09	18.968	
2,400.0	2,382.6	2,386.4	2,356.2	8.2	7.3	95.07	333.0	8.8	273.7	258.9	14.84	18.440	
2,500.0	2,481.1	2,486.2	2,455.9	8.6	7.6	98.53	336.6	11.7	280.5	264.9	15.59	17.995	
2,600.0	2,579.6	2,587.1	2,556.7	9.1	7.9	101.80	340.0	14.0	287.6	271.2	16.33	17.610	
2,700.0	2,678.1	2,688.5	2,658.1	9.6	8.2	104.88	343.0	15.4	294.6	277.5	17.07	17.259	
2,800.0	2,776.6	2,788.8	2,758.4	10.0	8.5	107.87	345.1	16.3	301.6	283.8	17.76	16.976	
2,900.0	2,875.1	2,889.2	2,858.7	10.5	8.7	111.09	345.2	18.0	308.8	290.5	18.36	16.824	
3,000.0	2,973.6	2,987.7	2,957.2	11.0	8.9	114.17	344.8	19.4	316.6	297.7	18.90	16.754	
3,100.0	3,072.1	3,087.7	3,057.3	11.5	9.0	117.15	344.2	20.7	325.1	305.7	19.40	16.755	
3,200.0	3,170.6	3,183.6	3,153.1	11.9	9.2	119.92	343.4	22.0	334.3	314.4	19.89	16.810	
3,300.0	3,269.1	3,282.1	3,251.5	12.4	9.3	122.55	343.0	23.7	344.8	324.4	20.40	16.904	
3,400.0	3,367.6	3,385.5	3,355.0	12.9	9.4	125.13	342.4	24.7	355.2	334.4	20.83	17.054	
3,500.0	3,466.1	3,489.3	3,458.8	13.4	9.5	127.44	342.2	23.8	364.7	343.5	21.21	17.194	
3,600.0	3,564.6	3,588.1	3,557.5	13.8	9.6	129.43	342.3	22.1	373.9	352.3	21.64	17.278	
3,700.0	3,663.1	3,684.4	3,653.8	14.3	9.8	131.20	343.0	20.7	383.9	361.7	22.13	17.347	
3,800.0	3,761.6	3,781.1	3,750.5	14.8	10.0	132.89	343.9	19.8	394.8	372.2	22.63	17.446	
3,900.0	3,860.1	3,885.2	3,854.6	15.3	10.1	134.76	343.7	18.8	405.8	382.8	23.06	17.598	
4,000.0	3,958.6	3,984.3	3,953.7	15.8	10.2	136.54	342.7	16.9	416.3	392.8	23.43	17.764	
4,100.0	4,057.1	4,079.9	4,049.3	16.2	10.3	138.08	342.5	15.4	427.4	403.6	23.87	17.905	
4,200.0	4,155.6	4,173.3	4,142.7	16.7	10.6	139.31	343.8	14.7	439.8	415.4	24.41	18.017	
4,300.0	4,254.1	4,268.8	4,238.1	17.2	10.9	140.56	344.8	15.0	453.5	428.5	24.98	18.154	
4,400.0	4,352.6	4,375.5	4,344.8	17.7	11.1	141.84	346.1	15.1	467.2	441.6	25.53	18.298	
4,500.0	4,451.1	4,477.5	4,446.9	18.2	11.3	143.08	346.7	13.4	479.2	453.2	26.02	18.418	
4,600.0	4,549.6	4,581.2	4,550.5	18.6	11.5	144.25	347.5	11.1	491.0	464.5	26.50	18.527	
4,700.0	4,648.1	4,689.0	4,658.2	19.1	11.7	145.50	347.5	7.1	501.5	474.5	26.95	18.608	
4,800.0	4,746.6	4,786.4	4,755.6	19.6	11.9	146.63	347.2	2.7	511.3	483.9	27.38	18.677	
4,900.0	4,845.1	4,880.2	4,849.2	20.1	12.0	147.68	346.8	-1.0	522.1	494.3	27.81	18.772	
5,000.0	4,943.6	4,974.3	4,943.3	20.6	12.2	148.59	347.3	-3.6	534.0	505.7	28.28	18.881	
5,100.0	5,042.2	5,072.0	5,041.0	21.0	12.4	149.52	347.8	-5.7	546.5	517.7	28.78	18.990	
5,200.0	5,141.2	5,169.4	5,138.4	21.4	12.6	150.38	347.8	-7.7	556.8	527.6	29.21	19.064	
5,300.0	5,240.6	5,268.2	5,237.2	21.6	12.8	151.08	347.1	-9.5	564.5	534.9	29.60	19.071	
5,400.0	5,340.3	5,367.7	5,336.7	21.9	13.0	151.45	347.7	-11.1	569.3	539.2	30.03	18.959	
5,500.0	5,440.2	5,466.0	5,434.9	22.1	13.2	151.61	348.3	-12.5	571.1	540.7	30.42	18.773	
5,600.0	5,540.2	5,561.5	5,530.4	22.2	13.4	98.39	348.4	-13.5	570.6	536.4	34.21	16.679	
5,700.0	5,640.2	5,663.3	5,632.2	22.4	13.7	98.24	350.0	-13.7	570.2	535.5	34.67	16.447	
5,800.0	5,740.2	5,763.5	5,732.4	22.6	14.0	98.11	351.4	-14.6	569.1	533.9	35.14	16.192	

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.10-T5N-R67W - B&B 10-14 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

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
5,884.7	5,824.9	5,843.0	5,811.9	22.8	14.2	97.99	352.7	-14.9	568.6	533.1	35.53	16.005	
5,900.0	5,840.2	5,857.1	5,825.9	22.8	14.3	97.97	352.9	-14.9	568.6	533.0	35.59	15.975	
6,000.0	5,940.2	5,960.0	5,928.9	23.0	14.5	97.83	354.2	-14.2	569.1	533.0	36.06	15.781	
6,081.1	6,021.3	6,039.3	6,008.2	23.1	14.7	97.77	354.8	-14.7	568.6	532.2	36.41	15.616	
6,100.0	6,040.2	6,055.6	6,024.5	23.2	14.8	97.76	354.9	-14.6	568.6	532.1	36.48	15.587	
6,200.0	6,140.2	6,151.0	6,119.8	23.3	14.9	97.78	354.6	-13.4	569.9	533.1	36.83	15.473	
6,300.0	6,240.2	6,252.2	6,221.0	23.5	15.0	97.90	353.3	-12.5	570.9	533.8	37.16	15.365	
6,400.0	6,340.2	6,358.5	6,327.3	23.7	15.2	7.97	352.6	-11.6	570.9	536.6	34.25	16.667	
6,500.0	6,439.5	6,464.2	6,433.0	23.8	15.3	8.35	352.0	-12.6	558.6	524.7	33.84	16.504	
6,600.0	6,536.3	6,561.9	6,530.7	23.7	15.5	9.10	351.7	-13.9	533.1	500.3	32.81	16.249	
6,700.0	6,629.2	6,654.7	6,623.5	23.6	15.7	10.50	350.5	-15.5	495.4	464.2	31.13	15.911	
6,800.0	6,716.5	6,737.7	6,706.4	23.4	15.8	12.73	348.9	-16.9	446.3	417.4	28.91	15.440	
6,900.0	6,796.6	6,812.4	6,781.2	23.2	15.9	16.27	347.1	-17.1	388.0	361.6	26.35	14.723	
7,000.0	6,868.3	6,885.4	6,854.1	23.1	15.9	22.85	344.1	-17.5	320.8	296.6	24.21	13.251	
7,100.0	6,930.3	6,948.0	6,916.6	23.1	16.0	34.74	341.0	-18.3	246.7	221.9	24.80	9.947	
7,200.0	6,981.5	6,999.4	6,967.9	23.4	16.1	54.69	339.1	-19.1	170.3	139.2	31.04	5.485	
7,300.0	7,021.1	7,037.2	7,005.7	24.1	16.1	78.41	337.9	-19.6	106.6	68.3	38.32	2.782	
7,352.1	7,036.9	7,052.5	7,021.0	24.7	16.1	88.17	337.4	-19.7	94.3	54.0	40.31	2.340	CC, ES, SF
7,400.0	7,048.4	7,063.7	7,032.3	25.3	16.1	93.93	337.1	-19.8	105.1	63.9	41.23	2.550	
7,500.0	7,062.9	7,078.1	7,046.6	27.0	16.2	94.97	336.6	-19.8	173.1	130.1	43.00	4.026	
7,600.0	7,065.2	7,080.2	7,048.7	29.0	16.2	87.33	336.6	-19.8	262.5	217.7	44.79	5.860	
7,700.0	7,064.8	7,079.5	7,048.0	31.3	16.2	86.93	336.6	-19.8	357.5	310.5	47.02	7.602	
7,800.0	7,064.4	7,078.8	7,047.4	33.8	16.2	86.51	336.6	-19.8	454.7	405.2	49.45	9.194	
7,900.0	7,064.1	7,078.1	7,046.7	36.4	16.2	86.09	336.6	-19.8	552.8	500.8	52.03	10.624	
8,000.0	7,063.7	7,077.4	7,045.9	39.2	16.2	85.64	336.6	-19.8	651.6	596.8	54.74	11.904	
8,100.0	7,063.3	7,076.6	7,045.1	42.1	16.2	85.18	336.7	-19.8	750.6	693.1	57.53	13.048	
8,200.0	7,062.9	7,075.8	7,044.3	45.0	16.2	84.70	336.7	-19.8	849.9	789.5	60.40	14.072	
8,300.0	7,062.5	7,075.0	7,043.5	48.0	16.2	84.21	336.7	-19.8	949.3	886.0	63.32	14.993	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.10-T5N-R67W - B&B 10-24 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7931-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
8,000.0	7,063.7	7,047.7	7,047.7	39.2	172.7	90.69	138.5	1,542.8	963.8	751.9	211.83	4.550	
8,100.0	7,063.3	7,047.3	7,047.3	42.1	172.7	90.61	138.5	1,542.8	869.0	654.4	214.67	4.048	
8,200.0	7,062.9	7,046.9	7,046.9	45.0	172.6	90.54	138.5	1,542.8	775.6	558.0	217.60	3.564	
8,300.0	7,062.5	7,046.5	7,046.5	48.0	172.6	90.46	138.5	1,542.8	684.1	463.5	220.60	3.101	
8,400.0	7,062.1	7,046.1	7,046.1	51.1	172.6	90.39	138.5	1,542.8	595.3	371.7	223.65	2.662	
8,500.0	7,061.8	7,045.8	7,045.8	54.2	172.6	90.31	138.5	1,542.8	510.7	283.9	226.75	2.252	
8,600.0	7,061.4	7,045.4	7,045.4	57.3	172.6	90.24	138.5	1,542.8	432.6	202.7	229.88	1.882	
8,700.0	7,061.0	7,045.0	7,045.0	60.5	172.6	90.16	138.5	1,542.8	365.4	132.4	233.05	1.568	
8,800.0	7,060.6	7,044.6	7,044.6	63.7	172.6	90.09	138.5	1,542.8	316.1	79.9	236.24	1.338	Level 3
8,900.0	7,060.2	7,044.2	7,044.2	66.9	172.6	90.01	138.5	1,542.8	293.8	54.3	239.46	1.227	Level 2
8,918.1	7,060.2	7,044.2	7,044.2	67.5	172.6	90.00	138.5	1,542.8	293.2	53.2	240.04	1.221	Level 2, CC, ES, SF
9,000.0	7,059.8	7,043.8	7,043.8	70.2	172.6	89.94	138.5	1,542.8	304.4	61.7	242.69	1.254	Level 3
9,100.0	7,059.5	7,043.5	7,043.5	73.5	172.6	89.86	138.5	1,542.8	345.1	99.1	245.95	1.403	Level 3
9,200.0	7,059.1	7,043.1	7,043.1	76.7	172.6	89.79	138.5	1,542.8	406.7	157.5	249.22	1.632	
9,300.0	7,058.7	7,042.7	7,042.7	80.0	172.5	89.71	138.5	1,542.8	481.5	229.0	252.50	1.907	
9,400.0	7,058.3	7,042.3	7,042.3	83.3	172.5	89.64	138.5	1,542.8	564.1	308.3	255.79	2.205	
9,500.0	7,057.9	7,041.9	7,041.9	86.7	172.5	89.56	138.5	1,542.8	651.6	392.5	259.10	2.515	
9,600.0	7,057.5	7,041.5	7,041.5	90.0	172.5	89.49	138.5	1,542.8	742.3	479.9	262.41	2.829	
9,700.0	7,057.2	7,041.2	7,041.2	93.3	172.5	89.41	138.5	1,542.8	835.1	569.3	265.73	3.143	
9,800.0	7,056.8	7,040.8	7,040.8	96.7	172.5	89.34	138.5	1,542.8	929.4	660.3	269.06	3.454	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.10-T5N-R67W - B&B 10-34 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7888-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,300.0	7,058.7	7,076.7	7,076.7	80.0	173.4	90.71	149.5	2,840.6	958.3	705.0	253.34	3.783	
9,400.0	7,058.3	7,076.3	7,076.3	83.3	173.4	90.64	149.5	2,840.6	863.3	606.6	256.64	3.364	
9,500.0	7,057.9	7,075.9	7,075.9	86.7	173.4	90.56	149.5	2,840.6	769.5	509.5	259.95	2.960	
9,600.0	7,057.5	7,075.5	7,075.5	90.0	173.4	90.48	149.5	2,840.6	677.4	414.1	263.27	2.573	
9,700.0	7,057.2	7,075.2	7,075.2	93.3	173.3	90.40	149.5	2,840.6	588.0	321.4	266.60	2.206	
9,800.0	7,056.8	7,074.8	7,074.8	96.7	173.3	90.32	149.5	2,840.6	502.5	232.6	269.93	1.862	
9,900.0	7,056.4	7,074.4	7,074.4	100.0	173.3	90.25	149.5	2,840.6	423.5	150.3	273.27	1.550	
10,000.0	7,056.0	7,074.0	7,074.0	103.4	173.3	90.17	149.5	2,840.6	355.3	78.6	276.61	1.284	Level 3
10,100.0	7,055.6	7,073.6	7,073.6	106.7	173.3	90.09	149.5	2,840.6	305.0	25.1	279.96	1.089	Level 2
10,200.0	7,055.2	7,073.2	7,073.2	110.1	173.3	90.01	149.5	2,840.6	282.6	-0.7	283.32	0.997	Level 1
10,215.9	7,055.2	7,073.2	7,073.2	110.6	173.3	90.00	149.5	2,840.6	282.2	-1.7	283.85	0.994	Level 1, CC, ES, SF
10,300.0	7,054.8	7,072.8	7,072.8	113.5	173.3	89.93	149.5	2,840.6	294.4	7.8	286.68	1.027	Level 2
10,400.0	7,054.5	7,072.5	7,072.5	116.8	173.3	89.86	149.5	2,840.6	336.9	46.9	290.04	1.162	Level 2
10,500.0	7,054.1	7,072.1	7,072.1	120.2	173.3	89.78	149.5	2,840.6	400.4	107.0	293.41	1.365	Level 3
10,600.0	7,053.7	7,071.7	7,071.7	123.6	173.3	89.70	149.5	2,840.6	476.6	179.9	296.77	1.606	
10,700.0	7,053.3	7,071.3	7,071.3	127.0	173.2	89.62	149.5	2,840.6	560.4	260.2	300.14	1.867	
10,800.0	7,052.9	7,070.9	7,070.9	130.4	173.2	89.54	149.5	2,840.6	648.7	345.2	303.52	2.137	
10,900.0	7,052.5	7,070.5	7,070.5	133.7	173.2	89.47	149.5	2,840.6	740.0	433.1	306.89	2.411	
11,000.0	7,052.2	7,070.2	7,070.2	137.1	173.2	89.39	149.5	2,840.6	833.4	523.1	310.27	2.686	
11,100.0	7,051.8	7,069.8	7,069.8	140.5	173.2	89.31	149.5	2,840.6	928.1	614.4	313.65	2.959	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.10-T5N-R67W - B&B 10-44 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1488-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
10,400.0	7,054.5	7,115.1	7,070.3	116.8	20.0	90.58	283.3	3,987.3	973.9	839.1	134.84	7.223	
10,500.0	7,054.1	7,114.8	7,070.0	120.2	20.0	90.47	283.3	3,987.3	875.2	737.0	138.22	6.332	
10,600.0	7,053.7	7,114.5	7,069.7	123.6	20.0	90.36	283.3	3,987.3	776.9	635.3	141.60	5.486	
10,700.0	7,053.3	7,114.2	7,069.4	127.0	20.0	90.24	283.3	3,987.3	679.0	534.0	144.98	4.683	
10,800.0	7,052.9	7,113.9	7,069.1	130.4	20.0	90.13	283.3	3,987.3	581.8	433.4	148.37	3.921	
10,900.0	7,052.5	7,113.6	7,068.8	133.7	20.0	90.01	283.3	3,987.3	485.8	334.0	151.76	3.201	
11,000.0	7,052.2	7,113.3	7,068.5	137.1	20.0	89.89	283.3	3,987.3	391.8	236.6	155.15	2.525	
11,100.0	7,051.8	7,113.0	7,068.2	140.5	20.0	89.78	283.3	3,987.3	301.6	143.1	158.54	1.902	
11,200.0	7,051.4	7,112.7	7,067.9	143.9	20.0	89.66	283.3	3,987.3	220.1	58.2	161.94	1.359	Level 3
11,300.0	7,051.0	7,112.4	7,067.6	147.3	20.0	89.54	283.3	3,987.3	161.1	-4.3	165.33	0.974	Level 1
11,362.6	7,050.8	7,112.2	7,067.4	149.5	20.0	89.47	283.3	3,987.3	148.4	-19.0	167.46	0.886	Level 1, CC, ES, SF
11,400.0	7,050.6	7,112.1	7,067.3	150.7	20.0	89.42	283.3	3,987.3	153.1	-15.7	168.73	0.907	Level 1
11,500.0	7,050.2	7,111.8	7,067.0	154.1	20.0	89.30	283.3	3,987.3	202.3	30.2	172.13	1.175	Level 2
11,600.0	7,049.9	7,111.5	7,066.6	157.5	20.0	89.18	283.3	3,987.3	280.0	104.5	175.53	1.595	
11,700.0	7,049.5	7,111.2	7,066.3	160.9	20.0	89.06	283.3	3,987.3	368.6	189.7	178.93	2.060	
11,800.0	7,049.1	7,110.9	7,066.0	164.4	20.0	88.94	283.3	3,987.3	461.9	279.6	182.33	2.534	
11,900.0	7,048.7	7,110.5	7,065.7	167.8	20.0	88.82	283.3	3,987.3	557.6	371.8	185.73	3.002	
12,000.0	7,048.3	7,110.2	7,065.4	171.2	20.0	88.70	283.3	3,987.3	654.5	465.4	189.13	3.461	
12,100.0	7,047.9	7,109.9	7,065.1	174.6	20.0	88.57	283.3	3,987.3	752.2	559.7	192.53	3.907	
12,200.0	7,047.6	7,109.6	7,064.8	178.0	20.0	88.45	283.3	3,987.3	850.5	654.6	195.93	4.341	
12,300.0	7,047.2	7,109.3	7,064.4	181.4	20.0	88.33	283.3	3,987.3	949.1	749.8	199.33	4.762	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.10-T5N-R67W - UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7860-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
11,700.0	7,049.5	7,069.5	7,069.5	160.9	173.2	91.34	270.2	5,305.2	993.7	659.6	334.05	2.975	
11,800.0	7,049.1	7,069.1	7,069.1	164.4	173.2	91.20	270.2	5,305.2	895.2	557.7	337.46	2.653	
11,900.0	7,048.7	7,068.7	7,068.7	167.8	173.2	91.06	270.2	5,305.2	797.0	456.1	340.87	2.338	
12,000.0	7,048.3	7,068.3	7,068.3	171.2	173.2	90.93	270.2	5,305.2	699.4	355.1	344.28	2.031	
12,100.0	7,047.9	7,067.9	7,067.9	174.6	173.2	90.79	270.2	5,305.2	602.5	254.8	347.69	1.733	
12,200.0	7,047.6	7,067.6	7,067.6	178.0	173.2	90.65	270.2	5,305.2	506.9	155.8	351.10	1.444	Level 3
12,300.0	7,047.2	7,067.2	7,067.2	181.4	173.1	90.52	270.2	5,305.2	413.3	58.8	354.51	1.166	Level 2
12,400.0	7,046.8	7,066.8	7,066.8	184.8	173.1	90.38	270.2	5,305.2	323.7	-34.3	357.92	0.904	Level 1
12,500.0	7,046.4	7,066.4	7,066.4	188.2	173.1	90.25	270.2	5,305.2	242.2	-119.1	361.33	0.670	Level 1
12,600.0	7,046.0	7,066.0	7,066.0	191.7	173.1	90.11	270.2	5,305.2	180.5	-184.3	364.73	0.495	Level 1
12,680.5	7,045.7	7,065.7	7,065.7	194.4	173.1	90.00	270.2	5,305.2	161.5	-205.9	367.47	0.440	Level 1, CC, ES, SF
12,700.0	7,045.6	7,065.6	7,065.6	195.1	173.1	89.97	270.2	5,305.2	162.7	-205.4	368.14	0.442	Level 1
12,800.0	7,045.2	7,065.2	7,065.2	198.5	173.1	89.84	270.2	5,305.2	200.9	-170.6	371.54	0.541	Level 1
12,900.0	7,044.9	7,064.9	7,064.9	201.9	173.1	89.70	270.2	5,305.2	272.6	-102.4	374.95	0.727	Level 1
13,000.0	7,044.5	7,064.5	7,064.5	205.3	173.1	89.56	270.2	5,305.2	358.0	-20.3	378.35	0.946	Level 1
13,100.0	7,044.1	7,064.1	7,064.1	208.8	173.1	89.43	270.2	5,305.2	449.5	67.8	381.75	1.178	Level 2
13,200.0	7,043.7	7,063.7	7,063.7	212.2	173.1	89.29	270.2	5,305.2	544.1	158.9	385.15	1.413	Level 3
13,300.0	7,043.3	7,063.3	7,063.3	215.6	173.1	89.16	270.2	5,305.2	640.2	251.7	388.54	1.648	
13,400.0	7,042.9	7,062.9	7,062.9	219.0	173.0	89.02	270.2	5,305.2	737.4	345.5	391.94	1.882	
13,500.0	7,042.6	7,062.6	7,062.6	222.4	173.0	88.88	270.2	5,305.2	835.3	440.0	395.33	2.113	
13,600.0	7,042.2	7,062.2	7,062.2	225.9	173.0	88.75	270.2	5,305.2	933.6	534.9	398.72	2.341	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10H-302 - Wellbore #1 - Plan

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-13.9	13.9	13.9	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-13.9	13.9	13.6	0.28	50.572	
200.0	200.0	200.0	200.0	0.4	0.4	-89.98	0.0	-13.9	13.9	13.1	0.83	16.857	CC
300.0	300.0	299.8	299.8	0.7	0.7	-85.87	1.1	-14.7	14.7	13.4	1.38	10.707	
400.0	400.0	399.4	399.3	1.0	1.0	-76.01	4.2	-17.0	17.5	15.6	1.93	9.062	
500.0	500.0	498.8	498.4	1.2	1.3	-65.45	9.5	-20.8	22.9	20.4	2.49	9.176	
600.0	600.0	597.7	597.0	1.5	1.6	-57.17	16.8	-26.0	31.1	28.0	3.06	10.154	
700.0	700.0	696.1	694.7	1.8	1.9	-51.42	26.1	-32.7	42.2	38.5	3.65	11.550	
800.0	800.0	793.9	791.5	2.1	2.3	-47.54	37.4	-40.9	56.0	51.8	4.27	13.129	
900.0	900.0	891.4	887.7	2.3	2.7	8.49	50.6	-50.4	71.2	66.4	4.74	15.022	
1,000.0	999.9	990.4	985.2	2.6	3.1	10.70	64.7	-60.5	84.7	79.4	5.29	16.006	
1,100.0	1,099.7	1,089.8	1,082.9	2.9	3.6	12.62	78.8	-70.7	95.8	90.0	5.86	16.360	
1,200.0	1,199.3	1,189.3	1,181.0	3.2	4.1	14.49	93.0	-80.9	104.5	98.1	6.43	16.247	
1,300.0	1,298.6	1,289.1	1,279.2	3.5	4.5	16.45	107.2	-91.1	110.8	103.7	7.02	15.788	
1,400.0	1,397.5	1,388.9	1,377.4	3.8	5.0	18.61	121.4	-101.4	114.7	107.0	7.62	15.056	
1,500.0	1,496.1	1,488.8	1,475.8	4.2	5.5	21.06	135.6	-111.6	116.4	108.2	8.24	14.137	
1,600.0	1,594.6	1,588.6	1,574.1	4.6	6.0	23.53	149.8	-121.8	118.0	109.1	8.88	13.276	
1,700.0	1,693.1	1,688.5	1,672.4	5.0	6.4	25.94	164.0	-132.1	119.7	110.1	9.56	12.523	
1,800.0	1,791.6	1,788.3	1,770.7	5.5	6.9	28.27	178.2	-142.3	121.6	111.4	10.26	11.858	
1,900.0	1,890.1	1,888.2	1,869.0	5.9	7.4	30.53	192.4	-152.5	123.8	112.8	10.98	11.269	
2,000.0	1,988.6	1,988.1	1,967.3	6.3	7.9	32.70	206.6	-162.7	126.1	114.4	11.73	10.746	
2,100.0	2,087.1	2,087.9	2,065.6	6.8	8.4	34.80	220.8	-173.0	128.6	116.1	12.51	10.278	
2,200.0	2,185.6	2,187.8	2,164.0	7.2	8.8	36.81	235.0	-183.2	131.3	117.9	13.31	9.860	
2,300.0	2,284.1	2,287.6	2,262.3	7.7	9.3	38.74	249.2	-193.4	134.1	119.9	14.14	9.485	
2,400.0	2,382.6	2,387.5	2,360.6	8.2	9.8	40.59	263.4	-203.7	137.0	122.1	14.98	9.149	
2,500.0	2,481.1	2,487.4	2,458.9	8.6	10.3	42.36	277.6	-213.9	140.1	124.3	15.84	8.846	
2,600.0	2,579.6	2,587.2	2,557.2	9.1	10.8	44.05	291.8	-224.1	143.4	126.6	16.72	8.573	
2,700.0	2,678.1	2,687.1	2,655.5	9.6	11.3	45.67	306.0	-234.4	146.7	129.1	17.62	8.327	
2,800.0	2,776.6	2,786.9	2,753.8	10.0	11.7	47.21	320.2	-244.6	150.2	131.7	18.53	8.105	
2,900.0	2,875.1	2,886.8	2,852.2	10.5	12.2	48.68	334.4	-254.8	153.7	134.3	19.45	7.904	
3,000.0	2,973.6	2,986.7	2,950.5	11.0	12.7	50.09	348.6	-265.1	157.4	137.0	20.38	7.722	
3,100.0	3,072.1	3,086.5	3,048.8	11.5	13.2	51.43	362.8	-275.3	161.2	139.8	21.33	7.556	
3,200.0	3,170.6	3,186.4	3,147.1	11.9	13.7	52.71	377.0	-285.5	165.0	142.7	22.28	7.406	
3,300.0	3,269.1	3,286.2	3,245.4	12.4	14.2	53.93	391.2	-295.8	168.9	145.7	23.24	7.269	
3,400.0	3,367.6	3,386.1	3,343.7	12.9	14.7	55.09	405.4	-306.0	172.9	148.7	24.20	7.144	
3,500.0	3,466.1	3,486.0	3,442.0	13.4	15.1	56.20	419.6	-316.2	177.0	151.8	25.17	7.030	
3,600.0	3,564.6	3,585.8	3,540.4	13.8	15.6	57.27	433.8	-326.5	181.1	154.9	26.14	6.926	
3,700.0	3,663.1	3,685.7	3,638.7	14.3	16.1	58.28	448.0	-336.7	185.3	158.1	27.12	6.830	
3,800.0	3,761.6	3,785.6	3,737.0	14.8	16.6	59.25	462.2	-346.9	189.5	161.4	28.10	6.743	
3,900.0	3,860.1	3,885.4	3,835.3	15.3	17.1	60.18	476.4	-357.2	193.8	164.7	29.09	6.662	
4,000.0	3,958.6	3,985.3	3,933.6	15.8	17.6	61.06	490.6	-367.4	198.1	168.0	30.07	6.588	
4,100.0	4,057.1	4,085.1	4,031.9	16.2	18.1	61.91	504.8	-377.6	202.5	171.4	31.06	6.519	
4,200.0	4,155.6	4,185.0	4,130.2	16.7	18.5	62.72	519.0	-387.8	206.9	174.9	32.05	6.456	
4,300.0	4,254.1	4,284.9	4,228.6	17.2	19.0	63.50	533.2	-398.1	211.4	178.3	33.04	6.397	
4,400.0	4,352.6	4,384.7	4,326.9	17.7	19.5	64.24	547.4	-408.3	215.9	181.8	34.03	6.343	
4,500.0	4,451.1	4,484.6	4,425.2	18.2	20.0	64.96	561.6	-418.5	220.4	185.4	35.03	6.293	
4,600.0	4,549.6	4,584.4	4,523.5	18.6	20.5	65.65	575.8	-428.8	225.0	189.0	36.02	6.246	
4,700.0	4,648.1	4,684.3	4,621.8	19.1	21.0	66.30	590.0	-439.0	229.6	192.6	37.01	6.203	
4,800.0	4,746.6	4,784.2	4,720.1	19.6	21.5	66.94	604.2	-449.2	234.2	196.2	38.01	6.162	
4,900.0	4,845.1	4,884.0	4,818.4	20.1	22.0	67.55	618.4	-459.5	238.9	199.9	39.00	6.124	
5,000.0	4,943.6	4,983.9	4,916.8	20.6	22.4	68.13	632.6	-469.7	243.5	203.5	39.99	6.089	

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10H-302 - Wellbore #1 - Plan

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
5,100.0	5,042.2	5,083.7	5,015.1	21.0	22.9	68.68	646.8	-479.9	248.3	207.4	40.96	6.063	
5,200.0	5,141.2	5,183.6	5,113.3	21.4	23.4	68.69	661.0	-490.2	254.1	212.4	41.69	6.096	
5,300.0	5,240.6	5,283.2	5,211.5	21.6	23.9	68.01	675.2	-500.4	261.2	219.0	42.25	6.183	
5,400.0	5,340.3	5,382.6	5,309.3	21.9	24.4	66.72	689.3	-510.6	269.8	227.1	42.64	6.326	
5,500.0	5,440.2	5,481.7	5,406.8	22.1	24.9	64.91	703.4	-520.7	279.9	237.1	42.86	6.531	
5,600.0	5,540.2	5,580.2	5,503.9	22.2	25.3	9.38	717.4	-530.8	291.8	253.2	38.59	7.562	
5,700.0	5,640.2	5,678.7	5,600.8	22.4	25.8	7.06	731.4	-540.9	304.5	264.8	39.78	7.655	
5,800.0	5,740.2	5,777.1	5,697.7	22.6	26.3	4.92	745.4	-551.0	317.7	276.8	40.94	7.760	
5,900.0	5,840.2	5,885.3	5,804.6	22.8	26.7	2.99	759.2	-560.9	329.8	287.8	41.99	7.854	
6,000.0	5,940.2	5,994.7	5,913.2	23.0	27.0	1.61	769.7	-568.5	339.2	296.4	42.87	7.914	
6,100.0	6,040.2	6,104.9	6,023.0	23.2	27.3	0.71	777.0	-573.7	345.7	302.1	43.57	7.934	
6,200.0	6,140.2	6,215.7	6,133.7	23.3	27.5	0.25	780.8	-576.5	349.1	305.0	44.12	7.913	
6,300.0	6,240.2	6,322.2	6,240.2	23.5	27.7	0.18	781.4	-576.9	349.7	305.2	44.54	7.852	
6,400.0	6,340.2	6,422.2	6,340.2	23.7	27.8	-89.99	781.4	-576.9	349.7	305.2	44.50	7.858	
6,401.7	6,341.9	6,423.9	6,341.9	23.7	27.8	-90.00	781.4	-576.9	349.7	305.2	44.50	7.858	
6,500.0	6,439.5	6,522.2	6,440.2	23.8	28.0	-91.48	781.4	-574.5	349.8	305.5	44.36	7.887	
6,600.0	6,536.3	6,623.6	6,540.4	23.7	28.0	-93.12	781.4	-559.7	350.2	306.3	43.95	7.969	
6,700.0	6,629.2	6,726.4	6,639.1	23.6	27.9	-94.71	781.4	-531.3	350.9	307.5	43.41	8.083	
6,800.0	6,716.5	6,830.5	6,734.3	23.4	27.8	-96.23	781.4	-489.3	351.8	308.9	42.85	8.211	
6,900.0	6,796.6	6,936.1	6,824.0	23.2	27.6	-97.63	781.4	-434.0	352.9	310.5	42.40	8.322	
7,000.0	6,868.3	7,042.9	6,906.2	23.1	27.3	-98.90	781.4	-365.9	354.0	311.7	42.25	8.379	
7,100.0	6,930.3	7,150.9	6,978.9	23.1	27.1	-100.02	781.4	-286.1	355.1	312.5	42.61	8.335	
7,200.0	6,981.5	7,260.0	7,040.1	23.4	26.8	-100.94	781.4	-195.9	356.2	312.5	43.68	8.154	
7,300.0	7,021.1	7,370.0	7,088.2	24.1	26.7	-101.67	781.4	-97.1	357.1	311.5	45.60	7.831	
7,400.0	7,048.4	7,480.7	7,121.8	25.3	26.6	-102.18	781.4	8.3	357.8	309.4	48.38	7.395	
7,500.0	7,062.9	7,591.8	7,139.9	27.0	27.4	-102.46	781.4	117.8	358.1	306.2	51.93	6.897	
7,600.0	7,065.2	7,699.3	7,142.8	29.0	29.4	-102.51	781.4	225.2	358.2	302.2	56.00	6.396	
7,700.0	7,064.8	7,799.3	7,142.2	31.3	31.7	-102.48	781.4	325.2	358.2	297.8	60.42	5.928	
7,800.0	7,064.4	7,899.3	7,141.7	33.8	34.2	-102.45	781.4	425.2	358.1	292.9	65.23	5.490	
7,900.0	7,064.1	7,999.3	7,141.1	36.4	36.8	-102.42	781.4	525.2	358.1	287.7	70.36	5.090	
8,000.0	7,063.7	8,099.3	7,140.5	39.2	39.6	-102.39	781.4	625.2	358.1	282.3	75.74	4.728	
8,100.0	7,063.3	8,199.3	7,139.9	42.1	42.4	-102.36	781.4	725.2	358.0	276.7	81.32	4.402	
8,200.0	7,062.9	8,299.3	7,139.4	45.0	45.3	-102.33	781.4	825.2	358.0	270.9	87.07	4.111	
8,300.0	7,062.5	8,399.3	7,138.8	48.0	48.3	-102.30	781.4	925.2	357.9	265.0	92.95	3.851	
8,400.0	7,062.1	8,499.3	7,138.2	51.1	51.4	-102.27	781.4	1,025.2	357.9	258.9	98.94	3.617	
8,500.0	7,061.8	8,599.3	7,137.6	54.2	54.4	-102.24	781.4	1,125.2	357.8	252.8	105.02	3.407	
8,600.0	7,061.4	8,699.3	7,137.1	57.3	57.6	-102.21	781.4	1,225.2	357.8	246.6	111.19	3.218	
8,700.0	7,061.0	8,799.3	7,136.5	60.5	60.7	-102.18	781.4	1,325.2	357.8	240.4	117.41	3.047	
8,800.0	7,060.6	8,899.3	7,135.9	63.7	63.9	-102.15	781.4	1,425.2	357.7	234.0	123.69	2.892	
8,900.0	7,060.2	8,999.3	7,135.3	66.9	67.1	-102.12	781.4	1,525.2	357.7	227.7	130.02	2.751	
9,000.0	7,059.8	9,099.3	7,134.8	70.2	70.3	-102.09	781.4	1,625.2	357.6	221.3	136.39	2.622	
9,100.0	7,059.5	9,199.3	7,134.2	73.5	73.6	-102.06	781.4	1,725.2	357.6	214.8	142.80	2.504	
9,200.0	7,059.1	9,299.3	7,133.6	76.7	76.9	-102.03	781.4	1,825.2	357.6	208.3	149.24	2.396	
9,300.0	7,058.7	9,399.3	7,133.0	80.0	80.1	-102.00	781.4	1,925.2	357.5	201.8	155.70	2.296	
9,400.0	7,058.3	9,499.3	7,132.5	83.3	83.4	-101.97	781.4	2,025.2	357.5	195.3	162.19	2.204	
9,500.0	7,057.9	9,599.3	7,131.9	86.7	86.7	-101.94	781.4	2,125.2	357.4	188.7	168.70	2.119	
9,600.0	7,057.5	9,699.3	7,131.3	90.0	90.0	-101.91	781.4	2,225.2	357.4	182.2	175.23	2.040	
9,700.0	7,057.2	9,799.3	7,130.7	93.3	93.3	-101.88	781.4	2,325.1	357.4	175.6	181.78	1.966	
9,800.0	7,056.8	9,899.3	7,130.1	96.7	96.7	-101.85	781.4	2,425.1	357.3	169.0	188.35	1.897	
9,900.0	7,056.4	9,999.3	7,129.6	100.0	100.0	-101.82	781.4	2,525.1	357.3	162.4	194.93	1.833	

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10H-302 - Wellbore #1 - Plan

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
10,000.0	7,056.0	10,099.3	7,129.0	103.4	103.3	-101.79	781.4	2,625.1	357.3	155.7	201.52	1.773	
10,100.0	7,055.6	10,199.3	7,128.4	106.7	106.7	-101.76	781.4	2,725.1	357.2	149.1	208.13	1.716	
10,200.0	7,055.2	10,299.3	7,127.8	110.1	110.0	-101.73	781.4	2,825.1	357.2	142.4	214.74	1.663	
10,300.0	7,054.8	10,399.3	7,127.3	113.5	113.4	-101.70	781.4	2,925.1	357.1	135.8	221.37	1.613	
10,400.0	7,054.5	10,499.3	7,126.7	116.8	116.8	-101.67	781.4	3,025.1	357.1	129.1	228.00	1.566	
10,500.0	7,054.1	10,599.3	7,126.1	120.2	120.1	-101.64	781.4	3,125.1	357.1	122.4	234.65	1.522	
10,600.0	7,053.7	10,699.3	7,125.5	123.6	123.5	-101.61	781.4	3,225.1	357.0	115.7	241.30	1.480	Level 3
10,700.0	7,053.3	10,799.3	7,125.0	127.0	126.9	-101.58	781.4	3,325.1	357.0	109.0	247.96	1.440	Level 3
10,800.0	7,052.9	10,899.3	7,124.4	130.4	130.2	-101.55	781.4	3,425.1	356.9	102.3	254.63	1.402	Level 3
10,900.0	7,052.5	10,999.3	7,123.8	133.7	133.6	-101.52	781.4	3,525.1	356.9	95.6	261.30	1.366	Level 3
11,000.0	7,052.2	11,099.3	7,123.2	137.1	137.0	-101.49	781.4	3,625.1	356.9	88.9	267.98	1.332	Level 3
11,100.0	7,051.8	11,199.3	7,122.7	140.5	140.4	-101.46	781.4	3,725.1	356.8	82.2	274.67	1.299	Level 3
11,200.0	7,051.4	11,299.3	7,122.1	143.9	143.8	-101.43	781.4	3,825.1	356.8	75.4	281.36	1.268	Level 3
11,300.0	7,051.0	11,399.3	7,121.5	147.3	147.1	-101.40	781.4	3,925.1	356.8	68.7	288.05	1.239	Level 2
11,400.0	7,050.6	11,499.3	7,120.9	150.7	150.5	-101.37	781.4	4,025.1	356.7	62.0	294.76	1.210	Level 2
11,500.0	7,050.2	11,599.3	7,120.4	154.1	153.9	-101.34	781.4	4,125.1	356.7	55.2	301.46	1.183	Level 2
11,600.0	7,049.9	11,699.3	7,119.8	157.5	157.3	-101.31	781.4	4,225.1	356.6	48.5	308.17	1.157	Level 2
11,700.0	7,049.5	11,799.3	7,119.2	160.9	160.7	-101.28	781.4	4,325.1	356.6	41.7	314.89	1.132	Level 2
11,800.0	7,049.1	11,899.3	7,118.6	164.4	164.1	-101.25	781.4	4,425.1	356.6	35.0	321.61	1.109	Level 2
11,900.0	7,048.7	11,999.3	7,118.1	167.8	167.5	-101.22	781.4	4,525.1	356.5	28.2	328.33	1.086	Level 2
12,000.0	7,048.3	12,099.3	7,117.5	171.2	170.9	-101.19	781.4	4,625.1	356.5	21.4	335.06	1.064	Level 2
12,100.0	7,047.9	12,199.3	7,116.9	174.6	174.3	-101.16	781.4	4,725.1	356.5	14.7	341.79	1.043	Level 2
12,200.0	7,047.6	12,299.3	7,116.3	178.0	177.7	-101.13	781.4	4,825.1	356.4	7.9	348.52	1.023	Level 2
12,300.0	7,047.2	12,399.3	7,115.8	181.4	181.1	-101.10	781.4	4,925.1	356.4	1.1	355.26	1.003	Level 2
12,400.0	7,046.8	12,499.3	7,115.2	184.8	184.5	-101.06	781.4	5,025.1	356.3	-5.7	362.00	0.984	Level 1
12,500.0	7,046.4	12,599.3	7,114.6	188.2	187.9	-101.03	781.4	5,125.1	356.3	-12.4	368.74	0.966	Level 1
12,600.0	7,046.0	12,699.3	7,114.0	191.7	191.3	-101.00	781.4	5,225.1	356.3	-19.2	375.49	0.949	Level 1
12,700.0	7,045.6	12,799.3	7,113.4	195.1	194.8	-100.97	781.4	5,325.1	356.2	-26.0	382.24	0.932	Level 1
12,800.0	7,045.2	12,899.3	7,112.9	198.5	198.2	-100.94	781.4	5,425.1	356.2	-32.8	388.99	0.916	Level 1
12,900.0	7,044.9	12,999.3	7,112.3	201.9	201.6	-100.91	781.4	5,525.1	356.2	-39.6	395.75	0.900	Level 1
13,000.0	7,044.5	13,099.2	7,111.7	205.3	205.0	-100.88	781.4	5,625.1	356.1	-46.4	402.50	0.885	Level 1
13,100.0	7,044.1	13,199.2	7,111.1	208.8	208.4	-100.85	781.4	5,725.1	356.1	-53.2	409.26	0.870	Level 1
13,200.0	7,043.7	13,299.2	7,110.6	212.2	211.8	-100.82	781.4	5,825.1	356.1	-60.0	416.03	0.856	Level 1
13,300.0	7,043.3	13,399.2	7,110.0	215.6	215.2	-100.79	781.4	5,925.1	356.0	-66.8	422.79	0.842	Level 1
13,400.0	7,042.9	13,499.2	7,109.4	219.0	218.6	-100.76	781.4	6,025.1	356.0	-73.6	429.56	0.829	Level 1
13,500.0	7,042.6	13,599.2	7,108.8	222.4	222.0	-100.73	781.4	6,125.1	356.0	-80.4	436.33	0.816	Level 1
13,600.0	7,042.2	13,699.2	7,108.3	225.9	225.5	-100.70	781.4	6,225.1	355.9	-87.2	443.10	0.803	Level 1
13,700.0	7,041.8	13,799.2	7,107.7	229.3	228.9	-100.67	781.4	6,325.1	355.9	-94.0	449.87	0.791	Level 1
13,800.0	7,041.4	13,899.2	7,107.1	232.7	232.3	-100.64	781.4	6,425.1	355.8	-100.8	456.65	0.779	Level 1
13,900.0	7,041.0	13,999.2	7,106.5	236.1	235.7	-100.61	781.4	6,525.1	355.8	-107.6	463.43	0.768	Level 1
14,000.0	7,040.6	14,099.2	7,106.0	239.6	239.1	-100.58	781.4	6,625.1	355.8	-114.4	470.21	0.757	Level 1
14,100.0	7,040.3	14,199.2	7,105.4	243.0	242.5	-100.55	781.4	6,725.1	355.7	-121.2	476.99	0.746	Level 1
14,200.0	7,039.9	14,299.2	7,104.8	246.4	246.0	-100.52	781.4	6,825.1	355.7	-128.1	483.78	0.735	Level 1
14,300.0	7,039.5	14,399.2	7,104.2	249.8	249.4	-100.49	781.4	6,925.1	355.7	-134.9	490.56	0.725	Level 1
14,400.0	7,039.1	14,499.2	7,103.7	253.3	252.8	-100.46	781.4	7,025.1	355.6	-141.7	497.35	0.715	Level 1
14,500.0	7,038.7	14,599.2	7,103.1	256.7	256.2	-100.43	781.4	7,125.1	355.6	-148.5	504.14	0.705	Level 1
14,600.0	7,038.3	14,699.2	7,102.5	260.1	259.6	-100.40	781.4	7,225.1	355.6	-155.4	510.93	0.696	Level 1
14,700.0	7,038.0	14,799.2	7,101.9	263.6	263.1	-100.37	781.4	7,325.1	355.5	-162.2	517.72	0.687	Level 1
14,800.0	7,037.6	14,899.2	7,101.4	267.0	266.5	-100.34	781.4	7,425.1	355.5	-169.0	524.52	0.678	Level 1
14,900.0	7,037.2	14,999.2	7,100.8	270.4	269.9	-100.31	781.4	7,525.1	355.5	-175.8	531.32	0.669	Level 1
15,000.0	7,036.8	15,099.2	7,100.2	273.8	273.3	-100.27	781.4	7,625.1	355.4	-182.7	538.12	0.661	Level 1

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10H-302 - Wellbore #1 - Plan

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
15,100.0	7,036.4	15,199.2	7,099.6	277.3	276.8	-100.24	781.4	7,725.1	355.4	-189.5	544.92	0.652	Level 1
15,200.0	7,036.0	15,299.2	7,099.0	280.7	280.2	-100.21	781.4	7,825.0	355.4	-196.4	551.72	0.644	Level 1
15,300.0	7,035.6	15,399.2	7,098.5	284.1	283.6	-100.18	781.4	7,925.0	355.3	-203.2	558.52	0.636	Level 1
15,400.0	7,035.3	15,499.2	7,097.9	287.6	287.0	-100.15	781.4	8,025.0	355.3	-210.0	565.33	0.628	Level 1
15,500.0	7,034.9	15,599.2	7,097.3	291.0	290.4	-100.12	781.4	8,125.0	355.3	-216.9	572.13	0.621	Level 1
15,600.0	7,034.5	15,699.2	7,096.7	294.4	293.9	-100.09	781.4	8,225.0	355.2	-223.7	578.94	0.614	Level 1
15,700.0	7,034.1	15,799.2	7,096.2	297.9	297.3	-100.06	781.4	8,325.0	355.2	-230.6	585.75	0.606	Level 1
15,800.0	7,033.7	15,899.2	7,095.6	301.3	300.7	-100.03	781.4	8,425.0	355.2	-237.4	592.56	0.599	Level 1
15,900.0	7,033.3	15,999.2	7,095.0	304.7	304.1	-100.00	781.4	8,525.0	355.1	-244.2	599.38	0.593	Level 1
16,000.0	7,033.0	16,099.2	7,094.4	308.2	307.6	-99.97	781.4	8,625.0	355.1	-251.1	606.19	0.586	Level 1
16,100.0	7,032.6	16,199.2	7,093.9	311.6	311.0	-99.94	781.4	8,725.0	355.1	-257.9	613.01	0.579	Level 1
16,200.0	7,032.2	16,299.2	7,093.3	315.0	314.4	-99.91	781.4	8,825.0	355.0	-264.8	619.82	0.573	Level 1
16,300.0	7,031.8	16,399.2	7,092.7	318.4	317.8	-99.88	781.4	8,925.0	355.0	-271.6	626.64	0.567	Level 1
16,400.0	7,031.4	16,499.2	7,092.1	321.9	321.3	-99.85	781.4	9,025.0	355.0	-278.5	633.46	0.560	Level 1
16,500.0	7,031.0	16,599.2	7,091.6	325.3	324.7	-99.82	781.4	9,125.0	354.9	-285.3	640.28	0.554	Level 1
16,600.0	7,030.7	16,699.2	7,091.0	328.7	328.1	-99.79	781.4	9,225.0	354.9	-292.2	647.11	0.548	Level 1
16,700.0	7,030.3	16,799.2	7,090.4	332.2	331.5	-99.76	781.4	9,325.0	354.9	-299.1	653.93	0.543	Level 1
16,754.9	7,030.1	16,854.1	7,090.1	334.1	333.4	-99.74	781.4	9,379.9	354.9	-302.8	657.68	0.540	Level 1
16,771.4	7,030.0	16,870.2	7,090.0	334.6	334.0	-99.73	781.4	9,396.0	354.8	-303.9	658.79	0.539	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-202 - Wellbore #1 - Plan #

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	90.01	0.0	16.7	16.7	16.7	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	16.7	16.7	16.4	0.28	60.687	
200.0	200.0	200.0	200.0	0.4	0.4	90.01	0.0	16.7	16.7	15.9	0.83	20.229	
300.0	300.0	300.0	300.0	0.7	0.7	90.01	0.0	16.7	16.7	15.3	1.38	12.137	
400.0	400.0	400.0	400.0	1.0	1.0	90.01	0.0	16.7	16.7	14.8	1.93	8.670	
500.0	500.0	500.0	500.0	1.2	1.2	90.01	0.0	16.7	16.7	14.2	2.48	6.743	
600.0	600.0	600.0	600.0	1.5	1.5	90.01	0.0	16.7	16.7	13.7	3.03	5.517	
700.0	700.0	700.0	700.0	1.8	1.8	90.01	0.0	16.7	16.7	13.1	3.58	4.668	
800.0	800.0	800.0	800.0	2.1	2.1	90.01	0.0	16.7	16.7	12.6	4.13	4.046	CC
900.0	900.0	900.0	900.0	2.3	2.3	145.77	0.0	16.7	17.8	13.1	4.67	3.802	
1,000.0	999.9	999.9	999.9	2.6	2.6	151.75	0.0	16.7	21.1	15.9	5.22	4.052	
1,100.0	1,099.7	1,100.2	1,100.2	2.9	2.9	160.08	-0.5	15.5	26.1	20.3	5.74	4.543	
1,200.0	1,199.3	1,200.5	1,200.4	3.2	3.1	170.16	-2.0	11.9	32.1	25.9	6.24	5.149	
1,300.0	1,298.6	1,300.5	1,300.2	3.5	3.4	-179.77	-4.5	5.8	40.1	33.3	6.76	5.930	
1,400.0	1,397.5	1,400.2	1,399.5	3.8	3.6	-170.79	-8.0	-2.6	50.4	43.1	7.30	6.901	
1,500.0	1,496.1	1,499.6	1,498.1	4.2	3.9	-163.24	-12.5	-13.4	63.2	55.3	7.89	8.001	
1,600.0	1,594.6	1,598.5	1,596.1	4.6	4.2	-156.91	-17.7	-26.1	76.8	68.3	8.55	8.986	
1,700.0	1,693.1	1,697.3	1,693.9	5.0	4.6	-152.40	-23.1	-38.9	91.1	81.8	9.24	9.860	
1,800.0	1,791.6	1,796.0	1,791.7	5.5	4.9	-149.13	-28.4	-51.7	105.7	95.8	9.95	10.628	
1,900.0	1,890.1	1,894.8	1,889.5	5.9	5.3	-146.65	-33.7	-64.5	120.6	110.0	10.68	11.296	
2,000.0	1,988.6	1,993.5	1,987.3	6.3	5.7	-144.72	-39.0	-77.3	135.7	124.3	11.43	11.878	
2,100.0	2,087.1	2,092.3	2,085.0	6.8	6.0	-143.18	-44.3	-90.1	150.9	138.8	12.19	12.386	
2,200.0	2,185.6	2,191.1	2,182.8	7.2	6.4	-141.92	-49.6	-102.9	166.2	153.3	12.96	12.831	
2,300.0	2,284.1	2,289.8	2,280.6	7.7	6.8	-140.88	-54.9	-115.7	181.6	167.9	13.73	13.223	
2,400.0	2,382.6	2,388.6	2,378.4	8.2	7.2	-139.99	-60.2	-128.5	197.0	182.5	14.52	13.570	
2,500.0	2,481.1	2,487.4	2,476.2	8.6	7.6	-139.24	-65.5	-141.3	212.5	197.2	15.31	13.879	
2,600.0	2,579.6	2,586.1	2,574.0	9.1	8.0	-138.58	-70.8	-154.1	228.0	211.9	16.10	14.156	
2,700.0	2,678.1	2,684.9	2,671.7	9.6	8.4	-138.01	-76.2	-166.9	243.5	226.6	16.90	14.404	
2,800.0	2,776.6	2,783.6	2,769.5	10.0	8.8	-137.51	-81.5	-179.7	259.0	241.3	17.71	14.628	
2,900.0	2,875.1	2,882.4	2,867.3	10.5	9.2	-137.07	-86.8	-192.5	274.6	256.0	18.51	14.831	
3,000.0	2,973.6	2,981.2	2,965.1	11.0	9.7	-136.67	-92.1	-205.3	290.1	270.8	19.32	15.015	
3,100.0	3,072.1	3,079.9	3,062.9	11.5	10.1	-136.31	-97.4	-218.1	305.7	285.6	20.13	15.184	
3,200.0	3,170.6	3,178.7	3,160.7	11.9	10.5	-135.99	-102.7	-230.9	321.3	300.3	20.95	15.339	
3,300.0	3,269.1	3,277.5	3,258.5	12.4	10.9	-135.70	-108.0	-243.8	336.9	315.1	21.76	15.481	
3,400.0	3,367.6	3,376.2	3,356.2	12.9	11.3	-135.43	-113.3	-256.6	352.5	329.9	22.58	15.612	
3,500.0	3,466.1	3,475.0	3,454.0	13.4	11.7	-135.19	-118.6	-269.4	368.1	344.7	23.40	15.733	
3,600.0	3,564.6	3,573.7	3,551.8	13.8	12.1	-134.97	-123.9	-282.2	383.7	359.5	24.22	15.845	
3,700.0	3,663.1	3,672.5	3,649.6	14.3	12.6	-134.76	-129.2	-295.0	399.3	374.3	25.04	15.949	
3,800.0	3,761.6	3,771.3	3,747.4	14.8	13.0	-134.57	-134.6	-307.8	415.0	389.1	25.86	16.047	
3,900.0	3,860.1	3,870.0	3,845.2	15.3	13.4	-134.39	-139.9	-320.6	430.6	403.9	26.68	16.137	
4,000.0	3,958.6	3,968.8	3,943.0	15.8	13.8	-134.23	-145.2	-333.4	446.2	418.7	27.51	16.222	
4,100.0	4,057.1	4,067.6	4,040.7	16.2	14.2	-134.07	-150.5	-346.2	461.9	433.5	28.33	16.302	
4,200.0	4,155.6	4,166.3	4,138.5	16.7	14.7	-133.93	-155.8	-359.0	477.5	448.3	29.16	16.377	
4,300.0	4,254.1	4,265.1	4,236.3	17.2	15.1	-133.80	-161.1	-371.8	493.1	463.2	29.98	16.447	
4,400.0	4,352.6	4,363.8	4,334.1	17.7	15.5	-133.67	-166.4	-384.6	508.8	478.0	30.81	16.514	
4,500.0	4,451.1	4,462.6	4,431.9	18.2	15.9	-133.55	-171.7	-397.4	524.4	492.8	31.64	16.576	
4,600.0	4,549.6	4,561.4	4,529.7	18.6	16.3	-133.44	-177.0	-410.2	540.1	507.6	32.46	16.636	
4,700.0	4,648.1	4,660.1	4,627.4	19.1	16.8	-133.33	-182.3	-423.0	555.7	522.4	33.29	16.692	
4,800.0	4,746.6	4,758.9	4,725.2	19.6	17.2	-133.24	-187.7	-435.8	571.4	537.3	34.12	16.745	
4,900.0	4,845.1	4,857.7	4,823.0	20.1	17.6	-133.14	-193.0	-448.6	587.0	552.1	34.95	16.796	
5,000.0	4,943.6	4,956.4	4,920.8	20.6	18.0	-133.05	-198.3	-461.4	602.7	566.9	35.78	16.844	

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-202 - Wellbore #1 - Plan #

Survey Program: 0-MWD

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
5,100.0	5,042.2	5,055.2	5,018.6	21.0	18.5	-133.03	-203.6	-474.2	618.2	581.6	36.61	16.886	
5,200.0	5,141.2	5,154.2	5,116.6	21.4	18.9	-132.95	-208.9	-487.1	631.8	594.4	37.36	16.910	
5,300.0	5,240.6	5,253.4	5,214.9	21.6	19.3	-132.62	-214.2	-499.9	643.1	605.0	38.09	16.885	
5,400.0	5,340.3	5,352.7	5,313.1	21.9	19.7	-132.04	-219.6	-512.8	652.1	613.3	38.77	16.818	
5,500.0	5,440.2	5,451.9	5,411.4	22.1	20.2	-131.23	-224.9	-525.7	658.9	619.5	39.43	16.713	
5,600.0	5,540.2	5,550.9	5,509.4	22.2	20.6	176.59	-230.2	-538.5	663.8	629.0	34.86	19.043	
5,700.0	5,640.2	5,650.8	5,608.3	22.4	21.0	177.72	-235.6	-551.4	668.6	633.3	35.33	18.923	
5,800.0	5,740.2	5,759.2	5,715.9	22.6	21.4	178.74	-240.5	-563.2	672.8	637.0	35.78	18.803	
5,900.0	5,840.2	5,868.3	5,824.7	22.8	21.6	179.43	-243.8	-571.3	675.8	639.5	36.22	18.657	
6,000.0	5,940.2	5,978.0	5,934.3	23.0	21.8	179.80	-245.6	-575.6	677.3	640.7	36.66	18.477	
6,100.0	6,040.2	6,083.9	6,040.2	23.2	22.0	179.86	-245.9	-576.3	677.6	640.5	37.10	18.263	
6,200.0	6,140.2	6,183.9	6,140.2	23.3	22.2	179.86	-245.9	-576.3	677.6	640.1	37.54	18.051	
6,300.0	6,240.2	6,283.9	6,240.2	23.5	22.4	179.86	-245.9	-576.3	677.6	639.6	37.98	17.843	
6,400.0	6,340.2	6,383.8	6,340.1	23.7	22.6	89.86	-245.9	-575.3	677.6	633.8	43.79	15.474	
6,500.0	6,439.5	6,483.6	6,439.1	23.8	22.6	89.86	-245.9	-563.8	677.6	633.7	43.90	15.434	
6,600.0	6,536.3	6,583.4	6,535.8	23.7	22.6	89.86	-245.9	-539.4	677.6	633.8	43.80	15.472	
6,700.0	6,629.2	6,683.2	6,628.6	23.6	22.4	89.87	-245.9	-502.7	677.6	634.1	43.54	15.563	
6,800.0	6,716.5	6,783.0	6,715.7	23.4	22.2	89.88	-245.9	-454.2	677.6	634.4	43.24	15.670	
6,900.0	6,796.6	6,882.8	6,795.8	23.2	22.1	89.89	-245.9	-394.7	677.6	634.6	43.05	15.740	
7,000.0	6,868.3	6,982.7	6,867.5	23.1	22.1	89.90	-245.9	-325.4	677.6	634.5	43.15	15.703	
7,100.0	6,930.3	7,082.5	6,929.5	23.1	22.2	89.92	-245.9	-247.2	677.6	633.9	43.75	15.487	
7,200.0	6,981.5	7,182.4	6,980.8	23.4	22.6	89.93	-245.9	-161.6	677.6	632.6	45.03	15.049	
7,300.0	7,021.1	7,282.3	7,020.6	24.1	23.5	89.95	-245.9	-70.0	677.6	630.5	47.08	14.392	
7,331.2	7,031.0	7,313.5	7,030.5	24.4	23.9	89.96	-245.9	-40.5	677.6	629.7	47.92	14.140	
7,400.0	7,048.4	7,382.3	7,048.1	25.3	24.8	89.97	-245.9	26.0	677.6	627.7	49.92	13.575	
7,500.0	7,062.9	7,482.2	7,062.8	27.0	26.5	89.99	-245.9	124.8	677.6	624.2	53.44	12.680	
7,600.0	7,065.2	7,582.2	7,065.2	29.0	28.5	90.00	-245.9	224.7	677.6	620.1	57.49	11.787	
7,700.0	7,064.8	7,682.2	7,064.8	31.3	30.7	90.00	-245.9	324.7	677.6	615.6	62.02	10.926	
7,800.0	7,064.4	7,782.2	7,064.4	33.8	33.2	90.00	-245.9	424.7	677.6	610.7	66.94	10.122	
7,900.0	7,064.1	7,882.2	7,064.1	36.4	35.8	90.00	-245.9	524.7	677.6	605.4	72.19	9.387	
8,000.0	7,063.7	7,982.2	7,063.7	39.2	38.5	90.00	-245.9	624.7	677.6	599.9	77.69	8.722	
8,100.0	7,063.3	8,082.2	7,063.3	42.1	41.4	90.00	-245.9	724.7	677.6	594.2	83.39	8.125	
8,200.0	7,062.9	8,182.2	7,062.9	45.0	44.3	90.00	-245.9	824.7	677.6	588.3	89.27	7.591	
8,300.0	7,062.5	8,282.2	7,062.5	48.0	47.3	90.00	-245.9	924.7	677.6	582.3	95.27	7.112	
8,400.0	7,062.1	8,382.2	7,062.1	51.1	50.4	90.00	-245.9	1,024.7	677.6	576.2	101.39	6.683	
8,500.0	7,061.8	8,482.2	7,061.8	54.2	53.5	90.00	-245.9	1,124.7	677.6	570.0	107.60	6.298	
8,600.0	7,061.4	8,582.2	7,061.4	57.3	56.6	90.00	-245.9	1,224.7	677.6	563.7	113.88	5.950	
8,700.0	7,061.0	8,682.2	7,061.0	60.5	59.8	90.00	-245.9	1,324.7	677.6	557.4	120.23	5.636	
8,800.0	7,060.6	8,782.2	7,060.6	63.7	63.0	90.00	-245.9	1,424.7	677.6	551.0	126.64	5.351	
8,900.0	7,060.2	8,882.2	7,060.2	66.9	66.2	90.00	-245.9	1,524.7	677.6	544.5	133.09	5.091	
9,000.0	7,059.8	8,982.2	7,059.8	70.2	69.5	90.00	-245.9	1,624.7	677.6	538.0	139.58	4.854	
9,100.0	7,059.5	9,082.2	7,059.5	73.5	72.7	90.00	-245.9	1,724.7	677.6	531.5	146.11	4.638	
9,200.0	7,059.1	9,182.2	7,059.1	76.7	76.0	90.00	-245.9	1,824.7	677.6	524.9	152.67	4.438	
9,300.0	7,058.7	9,282.2	7,058.7	80.0	79.3	90.00	-245.9	1,924.7	677.6	518.4	159.26	4.255	
9,400.0	7,058.3	9,382.2	7,058.3	83.3	82.6	90.00	-245.9	2,024.7	677.6	511.7	165.87	4.085	
9,500.0	7,057.9	9,482.2	7,057.9	86.7	85.9	90.00	-245.9	2,124.7	677.6	505.1	172.50	3.928	
9,600.0	7,057.5	9,582.2	7,057.5	90.0	89.3	90.00	-245.9	2,224.7	677.6	498.5	179.15	3.782	
9,700.0	7,057.2	9,682.2	7,057.2	93.3	92.6	90.00	-245.9	2,324.7	677.6	491.8	185.81	3.647	
9,800.0	7,056.8	9,782.2	7,056.8	96.7	95.9	90.00	-245.9	2,424.7	677.6	485.1	192.49	3.520	
9,900.0	7,056.4	9,882.2	7,056.4	100.0	99.3	90.00	-245.9	2,524.7	677.6	478.4	199.19	3.402	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-202 - Wellbore #1 - Plan #

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
10,000.0	7,056.0	9,982.2	7,056.0	103.4	102.6	90.00	-245.9	2,624.7	677.6	471.7	205.89	3.291	
10,100.0	7,055.6	10,082.2	7,055.6	106.7	106.0	90.00	-245.9	2,724.7	677.6	465.0	212.61	3.187	
10,200.0	7,055.2	10,182.2	7,055.2	110.1	109.3	90.00	-245.9	2,824.7	677.6	458.3	219.34	3.089	
10,300.0	7,054.8	10,282.2	7,054.8	113.5	112.7	90.00	-245.9	2,924.7	677.6	451.5	226.07	2.997	
10,400.0	7,054.5	10,382.2	7,054.5	116.8	116.1	90.00	-245.9	3,024.7	677.6	444.8	232.82	2.910	
10,500.0	7,054.1	10,482.2	7,054.1	120.2	119.4	90.00	-245.9	3,124.7	677.6	438.0	239.57	2.828	
10,600.0	7,053.7	10,582.2	7,053.7	123.6	122.8	90.00	-245.9	3,224.7	677.6	431.3	246.33	2.751	
10,700.0	7,053.3	10,682.2	7,053.3	127.0	126.2	90.00	-245.9	3,324.7	677.6	424.5	253.10	2.677	
10,800.0	7,052.9	10,782.2	7,052.9	130.4	129.6	90.00	-245.9	3,424.7	677.6	417.7	259.87	2.608	
10,900.0	7,052.5	10,882.2	7,052.5	133.7	133.0	90.00	-245.9	3,524.7	677.6	411.0	266.64	2.541	
11,000.0	7,052.2	10,982.2	7,052.2	137.1	136.4	90.00	-245.9	3,624.7	677.6	404.2	273.42	2.478	
11,100.0	7,051.8	11,082.2	7,051.8	140.5	139.7	90.00	-245.9	3,724.7	677.6	397.4	280.21	2.418	
11,200.0	7,051.4	11,182.2	7,051.4	143.9	143.1	90.00	-245.9	3,824.7	677.6	390.6	287.00	2.361	
11,300.0	7,051.0	11,282.2	7,051.0	147.3	146.5	90.00	-245.9	3,924.7	677.6	383.8	293.80	2.306	
11,400.0	7,050.6	11,382.2	7,050.6	150.7	149.9	90.00	-245.9	4,024.7	677.6	377.0	300.60	2.254	
11,500.0	7,050.2	11,482.2	7,050.2	154.1	153.3	90.00	-245.9	4,124.7	677.6	370.2	307.40	2.204	
11,600.0	7,049.9	11,582.2	7,049.9	157.5	156.7	90.00	-245.9	4,224.7	677.6	363.4	314.20	2.157	
11,700.0	7,049.5	11,682.2	7,049.5	160.9	160.1	90.00	-245.9	4,324.7	677.6	356.6	321.01	2.111	
11,800.0	7,049.1	11,782.2	7,049.1	164.4	163.5	90.00	-245.9	4,424.7	677.6	349.8	327.82	2.067	
11,900.0	7,048.7	11,882.2	7,048.7	167.8	166.9	90.00	-245.9	4,524.7	677.6	343.0	334.64	2.025	
12,000.0	7,048.3	11,982.2	7,048.3	171.2	170.3	90.00	-245.9	4,624.7	677.6	336.2	341.45	1.985	
12,100.0	7,047.9	12,082.2	7,047.9	174.6	173.7	90.00	-245.9	4,724.7	677.6	329.3	348.27	1.946	
12,200.0	7,047.6	12,182.2	7,047.6	178.0	177.2	90.00	-245.9	4,824.7	677.6	322.5	355.09	1.908	
12,300.0	7,047.2	12,282.2	7,047.2	181.4	180.6	90.00	-245.9	4,924.7	677.6	315.7	361.92	1.872	
12,400.0	7,046.8	12,382.2	7,046.8	184.8	184.0	90.00	-245.9	5,024.7	677.6	308.9	368.74	1.838	
12,500.0	7,046.4	12,482.2	7,046.4	188.2	187.4	90.00	-245.9	5,124.7	677.6	302.0	375.57	1.804	
12,600.0	7,046.0	12,582.2	7,046.0	191.7	190.8	90.00	-245.9	5,224.7	677.6	295.2	382.40	1.772	
12,700.0	7,045.6	12,682.2	7,045.6	195.1	194.2	90.00	-245.9	5,324.7	677.6	288.4	389.23	1.741	
12,800.0	7,045.2	12,782.2	7,045.2	198.5	197.6	90.00	-245.9	5,424.7	677.6	281.6	396.06	1.711	
12,900.0	7,044.9	12,882.2	7,044.9	201.9	201.0	90.00	-245.9	5,524.7	677.6	274.7	402.90	1.682	
13,000.0	7,044.5	12,982.2	7,044.5	205.3	204.5	90.00	-245.9	5,624.7	677.6	267.9	409.73	1.654	
13,100.0	7,044.1	13,082.2	7,044.1	208.8	207.9	90.00	-245.9	5,724.7	677.6	261.0	416.57	1.627	
13,200.0	7,043.7	13,182.2	7,043.7	212.2	211.3	90.00	-245.9	5,824.7	677.6	254.2	423.41	1.600	
13,300.0	7,043.3	13,282.2	7,043.3	215.6	214.7	90.00	-245.9	5,924.7	677.6	247.4	430.24	1.575	
13,400.0	7,042.9	13,382.2	7,042.9	219.0	218.1	90.00	-245.9	6,024.7	677.6	240.5	437.09	1.550	
13,500.0	7,042.6	13,482.2	7,042.6	222.4	221.5	90.00	-245.9	6,124.7	677.6	233.7	443.93	1.526	
13,600.0	7,042.2	13,582.2	7,042.2	225.9	225.0	90.00	-245.9	6,224.7	677.6	226.8	450.77	1.503	
13,700.0	7,041.8	13,682.2	7,041.8	229.3	228.4	90.00	-245.9	6,324.7	677.6	220.0	457.61	1.481	Level 3
13,800.0	7,041.4	13,782.2	7,041.4	232.7	231.8	90.00	-245.9	6,424.7	677.6	213.2	464.46	1.459	Level 3
13,900.0	7,041.0	13,882.2	7,041.0	236.1	235.2	90.00	-245.9	6,524.7	677.6	206.3	471.30	1.438	Level 3
14,000.0	7,040.6	13,982.2	7,040.6	239.6	238.6	90.00	-245.9	6,624.7	677.6	199.5	478.15	1.417	Level 3
14,100.0	7,040.3	14,082.2	7,040.3	243.0	242.1	90.00	-245.9	6,724.7	677.6	192.6	485.00	1.397	Level 3
14,200.0	7,039.9	14,182.2	7,039.9	246.4	245.5	90.00	-245.9	6,824.7	677.6	185.8	491.85	1.378	Level 3
14,300.0	7,039.5	14,282.2	7,039.5	249.8	248.9	90.00	-245.9	6,924.7	677.6	178.9	498.70	1.359	Level 3
14,400.0	7,039.1	14,382.2	7,039.1	253.3	252.3	90.00	-245.9	7,024.7	677.6	172.1	505.55	1.340	Level 3
14,500.0	7,038.7	14,482.2	7,038.7	256.7	255.7	90.00	-245.9	7,124.7	677.6	165.2	512.40	1.322	Level 3
14,600.0	7,038.3	14,582.2	7,038.3	260.1	259.2	90.00	-245.9	7,224.7	677.6	158.4	519.25	1.305	Level 3
14,700.0	7,038.0	14,682.2	7,038.0	263.6	262.6	90.00	-245.9	7,324.7	677.6	151.5	526.10	1.288	Level 3
14,800.0	7,037.6	14,782.2	7,037.6	267.0	266.0	90.00	-245.9	7,424.7	677.6	144.7	532.95	1.271	Level 3
14,900.0	7,037.2	14,882.2	7,037.2	270.4	269.4	90.00	-245.9	7,524.7	677.6	137.8	539.81	1.255	Level 3
15,000.0	7,036.8	14,982.2	7,036.8	273.8	272.9	90.00	-245.9	7,624.7	677.6	131.0	546.66	1.240	Level 2

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-202 - Wellbore #1 - Plan # — **Offset Site Error:** 0.0 ft

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

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,100.0	7,036.4	15,082.2	7,036.4	277.3	276.3	90.00	-245.9	7,724.7	677.6	124.1	553.51	1.224	Level 2
15,200.0	7,036.0	15,182.2	7,036.0	280.7	279.7	90.00	-245.9	7,824.7	677.6	117.2	560.37	1.209	Level 2
15,300.0	7,035.6	15,282.2	7,035.7	284.1	283.1	90.00	-245.9	7,924.7	677.6	110.4	567.23	1.195	Level 2
15,400.0	7,035.3	15,382.2	7,035.3	287.6	286.6	90.00	-245.9	8,024.7	677.6	103.5	574.08	1.180	Level 2
15,500.0	7,034.9	15,482.2	7,034.9	291.0	290.0	90.00	-245.9	8,124.7	677.6	96.7	580.94	1.166	Level 2
15,600.0	7,034.5	15,582.2	7,034.5	294.4	293.4	90.00	-245.9	8,224.7	677.6	89.8	587.80	1.153	Level 2
15,700.0	7,034.1	15,682.2	7,034.1	297.9	296.8	90.00	-245.9	8,324.7	677.6	83.0	594.65	1.140	Level 2
15,800.0	7,033.7	15,782.2	7,033.7	301.3	300.3	90.00	-245.9	8,424.7	677.6	76.1	601.51	1.127	Level 2
15,900.0	7,033.3	15,882.2	7,033.3	304.7	303.7	90.00	-245.9	8,524.7	677.6	69.2	608.37	1.114	Level 2
16,000.0	7,033.0	15,982.2	7,033.0	308.2	307.1	90.00	-245.9	8,624.7	677.6	62.4	615.23	1.101	Level 2
16,100.0	7,032.6	16,082.2	7,032.6	311.6	310.5	90.00	-245.9	8,724.7	677.6	55.5	622.09	1.089	Level 2
16,200.0	7,032.2	16,182.2	7,032.2	315.0	314.0	90.00	-245.9	8,824.7	677.6	48.7	628.95	1.077	Level 2
16,300.0	7,031.8	16,282.2	7,031.8	318.4	317.4	90.00	-245.9	8,924.7	677.6	41.8	635.81	1.066	Level 2
16,400.0	7,031.4	16,382.2	7,031.4	321.9	320.8	90.00	-245.9	9,024.7	677.6	35.0	642.67	1.054	Level 2
16,500.0	7,031.0	16,482.2	7,031.0	325.3	324.3	90.00	-245.9	9,124.7	677.6	28.1	649.53	1.043	Level 2
16,600.0	7,030.7	16,582.2	7,030.7	328.7	327.7	90.00	-245.9	9,224.7	677.6	21.2	656.39	1.032	Level 2
16,700.0	7,030.3	16,682.2	7,030.3	332.2	331.1	90.00	-245.9	9,324.7	677.6	14.4	663.25	1.022	Level 2
16,771.4	7,030.0	16,753.6	7,030.0	334.6	333.6	90.00	-245.9	9,396.1	677.6	9.5	668.15	1.014	Level 2, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-312 - Wellbore #1 - Plan #

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	90.01	0.0	30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.6	30.6	30.4	0.28	111.259	
200.0	200.0	200.0	200.0	0.4	0.4	90.01	0.0	30.6	30.6	29.8	0.83	37.086	
300.0	300.0	300.0	300.0	0.7	0.7	90.01	0.0	30.6	30.6	29.3	1.38	22.252	
400.0	400.0	400.0	400.0	1.0	1.0	90.01	0.0	30.6	30.6	28.7	1.93	15.894	
500.0	500.0	500.0	500.0	1.2	1.2	90.01	0.0	30.6	30.6	28.2	2.48	12.362	
600.0	600.0	600.0	600.0	1.5	1.5	90.01	0.0	30.6	30.6	27.6	3.03	10.114	
700.0	700.0	700.0	700.0	1.8	1.8	90.01	0.0	30.6	30.6	27.1	3.58	8.558	
800.0	800.0	800.0	800.0	2.1	2.1	90.01	0.0	30.6	30.6	26.5	4.13	7.417 CC	
900.0	900.0	900.0	900.0	2.3	2.3	144.66	0.0	30.6	31.7	27.0	4.67	6.779	
1,000.0	999.9	999.9	999.9	2.6	2.6	148.36	0.0	30.6	35.0	29.8	5.22	6.704	
1,100.0	1,099.7	1,099.7	1,099.7	2.9	2.9	153.15	0.0	30.6	40.7	34.9	5.76	7.064	
1,200.0	1,199.3	1,199.3	1,199.3	3.2	3.2	157.94	0.0	30.6	49.0	42.7	6.30	7.778	
1,300.0	1,298.6	1,299.6	1,299.6	3.5	3.4	162.34	0.1	29.8	59.3	52.4	6.83	8.674	
1,400.0	1,397.5	1,399.9	1,399.9	3.8	3.7	166.39	0.3	27.2	70.6	63.3	7.34	9.613	
1,500.0	1,496.1	1,500.3	1,500.2	4.2	3.9	170.08	0.7	22.8	83.0	75.1	7.87	10.547	
1,600.0	1,594.6	1,600.9	1,600.6	4.6	4.2	173.31	1.2	16.7	94.5	86.1	8.40	11.244	
1,700.0	1,693.1	1,701.9	1,701.2	5.0	4.5	176.28	1.9	8.8	104.7	95.7	8.95	11.693	
1,800.0	1,791.6	1,803.0	1,801.9	5.5	4.8	179.18	2.7	-0.9	113.6	104.1	9.52	11.934	
1,900.0	1,890.1	1,904.3	1,902.5	5.9	5.1	-177.89	3.7	-12.4	121.3	111.2	10.11	12.004	
2,000.0	1,988.6	2,005.3	2,002.7	6.3	5.4	-174.86	4.9	-25.6	127.9	117.2	10.72	11.932	
2,100.0	2,087.1	2,104.9	2,101.3	6.8	5.8	-172.01	6.1	-39.2	134.3	122.9	11.35	11.833	
2,200.0	2,185.6	2,204.5	2,200.0	7.2	6.1	-169.42	7.2	-52.8	141.0	129.0	12.00	11.747	
2,300.0	2,284.1	2,304.1	2,298.6	7.7	6.5	-167.08	8.4	-66.5	148.0	135.3	12.68	11.672	
2,400.0	2,382.6	2,403.7	2,397.2	8.2	6.8	-164.94	9.6	-80.1	155.2	141.8	13.37	11.604	
2,500.0	2,481.1	2,503.2	2,495.9	8.6	7.2	-163.00	10.8	-93.7	162.6	148.5	14.08	11.544	
2,600.0	2,579.6	2,602.8	2,594.5	9.1	7.6	-161.22	12.0	-107.3	170.1	155.3	14.81	11.488	
2,700.0	2,678.1	2,702.4	2,693.2	9.6	8.0	-159.60	13.2	-120.9	177.8	162.3	15.55	11.438	
2,800.0	2,776.6	2,802.0	2,791.8	10.0	8.4	-158.12	14.3	-134.5	185.7	169.4	16.30	11.391	
2,900.0	2,875.1	2,901.6	2,890.4	10.5	8.7	-156.75	15.5	-148.1	193.6	176.6	17.06	11.348	
3,000.0	2,973.6	3,001.1	2,989.1	11.0	9.1	-155.50	16.7	-161.7	201.7	183.9	17.84	11.309	
3,100.0	3,072.1	3,100.7	3,087.7	11.5	9.5	-154.34	17.9	-175.3	209.9	191.2	18.62	11.273	
3,200.0	3,170.6	3,200.3	3,186.4	11.9	9.9	-153.27	19.1	-188.9	218.1	198.7	19.40	11.239	
3,300.0	3,269.1	3,299.9	3,285.0	12.4	10.3	-152.27	20.2	-202.5	226.4	206.2	20.20	11.209	
3,400.0	3,367.6	3,399.5	3,383.6	12.9	10.7	-151.35	21.4	-216.1	234.7	213.7	21.00	11.180	
3,500.0	3,466.1	3,499.0	3,482.3	13.4	11.1	-150.49	22.6	-229.7	243.2	221.4	21.80	11.154	
3,600.0	3,564.6	3,598.6	3,580.9	13.8	11.5	-149.68	23.8	-243.3	251.6	229.0	22.61	11.130	
3,700.0	3,663.1	3,698.2	3,679.6	14.3	11.9	-148.93	25.0	-256.9	260.1	236.7	23.42	11.107	
3,800.0	3,761.6	3,797.8	3,778.2	14.8	12.3	-148.23	26.2	-270.5	268.7	244.5	24.24	11.086	
3,900.0	3,860.1	3,897.4	3,876.8	15.3	12.8	-147.57	27.3	-284.1	277.3	252.2	25.06	11.067	
4,000.0	3,958.6	3,997.0	3,975.5	15.8	13.2	-146.95	28.5	-297.8	285.9	260.0	25.88	11.049	
4,100.0	4,057.1	4,096.5	4,074.1	16.2	13.6	-146.37	29.7	-311.4	294.6	267.9	26.70	11.032	
4,200.0	4,155.6	4,196.1	4,172.8	16.7	14.0	-145.82	30.9	-325.0	303.3	275.7	27.53	11.016	
4,300.0	4,254.1	4,295.7	4,271.4	17.2	14.4	-145.30	32.1	-338.6	312.0	283.6	28.36	11.002	
4,400.0	4,352.6	4,395.3	4,370.0	17.7	14.8	-144.81	33.2	-352.2	320.7	291.5	29.19	10.988	
4,500.0	4,451.1	4,494.9	4,468.7	18.2	15.2	-144.35	34.4	-365.8	329.5	299.5	30.02	10.976	
4,600.0	4,549.6	4,594.4	4,567.3	18.6	15.6	-143.90	35.6	-379.4	338.3	307.4	30.85	10.964	
4,700.0	4,648.1	4,694.0	4,666.0	19.1	16.0	-143.49	36.8	-393.0	347.1	315.4	31.69	10.953	
4,800.0	4,746.6	4,793.6	4,764.6	19.6	16.4	-143.09	38.0	-406.6	355.9	323.3	32.52	10.942	
4,900.0	4,845.1	4,893.2	4,863.2	20.1	16.9	-142.71	39.1	-420.2	364.7	331.3	33.36	10.933	
5,000.0	4,943.6	4,992.8	4,961.9	20.6	17.3	-142.35	40.3	-433.8	373.5	339.4	34.20	10.923	

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-312 - Wellbore #1 - Plan #

Survey Program: 0-MWD

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
5,100.0	5,042.2	5,092.4	5,060.5	21.0	17.7	-142.02	41.5	-447.4	382.2	347.2	35.03	10.911	
5,200.0	5,141.2	5,192.1	5,159.3	21.4	18.1	-141.50	42.7	-461.0	388.7	352.9	35.82	10.854	
5,300.0	5,240.6	5,291.8	5,258.1	21.6	18.5	-140.64	43.9	-474.7	392.6	356.0	36.60	10.726	
5,400.0	5,340.3	5,391.4	5,356.8	21.9	18.9	-139.44	45.1	-488.3	393.9	356.5	37.39	10.533	
5,500.0	5,440.2	5,490.8	5,455.3	22.1	19.4	-137.89	46.2	-501.9	392.7	354.5	38.19	10.285	
5,600.0	5,540.2	5,590.0	5,553.5	22.2	19.8	170.75	47.4	-515.4	389.6	354.5	35.05	11.115	
5,700.0	5,640.2	5,689.0	5,651.6	22.4	20.2	172.70	48.6	-528.9	386.4	351.1	35.28	10.954	
5,800.0	5,740.2	5,788.1	5,749.7	22.6	20.6	174.69	49.8	-542.5	383.7	348.2	35.51	10.806	
5,900.0	5,840.2	5,886.4	5,847.1	22.8	21.0	176.64	50.9	-555.6	381.5	345.8	35.75	10.673	
6,000.0	5,940.2	5,984.1	5,944.2	23.0	21.3	178.19	51.8	-566.0	380.1	344.1	36.00	10.558	
6,100.0	6,040.2	6,082.4	6,042.3	23.2	21.5	179.25	52.4	-573.0	379.3	343.0	36.32	10.445	
6,200.0	6,140.2	6,181.1	6,140.9	23.3	21.7	179.81	52.7	-576.8	379.0	342.3	36.69	10.329	
6,281.8	6,222.0	6,262.2	6,222.0	23.5	21.8	179.90	52.8	-577.4	378.9	341.9	37.04	10.230	
6,300.0	6,240.2	6,280.4	6,240.2	23.5	21.9	179.90	52.8	-577.4	378.9	341.8	37.12	10.208	
6,371.2	6,311.4	6,351.6	6,311.4	23.7	22.0	90.10	52.8	-577.4	378.9	335.0	43.93	8.625	
6,400.0	6,340.2	6,380.4	6,340.2	23.7	22.1	90.05	52.8	-577.4	378.9	334.9	44.04	8.603	
6,500.0	6,439.5	6,480.5	6,440.2	23.8	22.2	91.39	52.8	-574.7	379.0	334.6	44.39	8.539	
6,600.0	6,536.3	6,581.9	6,540.4	23.7	22.3	92.84	52.8	-559.4	379.4	334.9	44.49	8.528	
6,700.0	6,629.2	6,684.6	6,639.0	23.6	22.2	94.25	52.8	-530.6	380.0	335.6	44.37	8.563	
6,800.0	6,716.5	6,788.7	6,733.9	23.4	22.0	95.59	52.8	-488.3	380.7	336.6	44.12	8.629	
6,900.0	6,796.6	6,894.1	6,823.3	23.2	21.9	96.83	52.8	-432.6	381.6	337.8	43.87	8.700	
7,000.0	6,868.3	7,000.7	6,905.1	23.1	21.8	97.95	52.8	-364.4	382.6	338.8	43.80	8.736	
7,100.0	6,930.3	7,108.4	6,977.3	23.1	22.0	98.93	52.8	-284.5	383.6	339.4	44.15	8.688	
7,200.0	6,981.5	7,217.2	7,038.0	23.4	22.5	99.74	52.8	-194.4	384.5	339.3	45.16	8.514	
7,300.0	7,021.1	7,326.7	7,085.7	24.1	23.4	100.38	52.8	-95.9	385.2	338.2	46.99	8.198	
7,400.0	7,048.4	7,436.9	7,118.9	25.3	24.9	100.83	52.8	9.1	385.8	336.1	49.70	7.762	
7,500.0	7,062.9	7,547.6	7,136.7	27.0	26.7	101.07	52.8	118.2	386.1	332.9	53.22	7.255	
7,600.0	7,065.2	7,654.6	7,139.6	29.0	28.9	101.11	52.8	225.1	386.1	328.8	57.32	6.737	
7,700.0	7,064.8	7,754.6	7,139.1	31.3	31.1	101.09	52.8	325.1	386.1	324.4	61.76	6.252	
7,800.0	7,064.4	7,854.6	7,138.5	33.8	33.6	101.06	52.8	425.1	386.1	319.5	66.58	5.799	
7,900.0	7,064.1	7,954.6	7,138.0	36.4	36.2	101.04	52.8	525.1	386.0	314.3	71.72	5.383	
8,000.0	7,063.7	8,054.6	7,137.5	39.2	38.9	101.02	52.8	625.1	386.0	308.9	77.11	5.006	
8,100.0	7,063.3	8,154.6	7,136.9	42.1	41.7	101.00	52.8	725.1	386.0	303.3	82.71	4.667	
8,200.0	7,062.9	8,254.6	7,136.4	45.0	44.6	100.97	52.8	825.1	386.0	297.5	88.47	4.363	
8,300.0	7,062.5	8,354.6	7,135.8	48.0	47.6	100.95	52.8	925.1	385.9	291.6	94.37	4.090	
8,400.0	7,062.1	8,454.6	7,135.3	51.1	50.7	100.93	52.8	1,025.1	385.9	285.5	100.38	3.844	
8,500.0	7,061.8	8,554.6	7,134.8	54.2	53.8	100.90	52.8	1,125.1	385.9	279.4	106.48	3.624	
8,600.0	7,061.4	8,654.6	7,134.2	57.3	56.9	100.88	52.8	1,225.1	385.8	273.2	112.66	3.425	
8,700.0	7,061.0	8,754.6	7,133.7	60.5	60.1	100.86	52.8	1,325.1	385.8	266.9	118.91	3.245	
8,800.0	7,060.6	8,854.6	7,133.1	63.7	63.3	100.84	52.8	1,425.1	385.8	260.6	125.21	3.081	
8,900.0	7,060.2	8,954.6	7,132.6	66.9	66.5	100.81	52.8	1,525.1	385.7	254.2	131.56	2.932	
9,000.0	7,059.8	9,054.6	7,132.0	70.2	69.7	100.79	52.8	1,625.1	385.7	247.8	137.95	2.796	
9,100.0	7,059.5	9,154.6	7,131.5	73.5	73.0	100.77	52.8	1,725.1	385.7	241.3	144.38	2.671	
9,200.0	7,059.1	9,254.6	7,131.0	76.7	76.3	100.74	52.8	1,825.1	385.7	234.8	150.84	2.557	
9,300.0	7,058.7	9,354.6	7,130.4	80.0	79.6	100.72	52.8	1,925.1	385.6	228.3	157.33	2.451	
9,400.0	7,058.3	9,454.6	7,129.9	83.3	82.9	100.70	52.8	2,025.1	385.6	221.8	163.84	2.354	
9,500.0	7,057.9	9,554.6	7,129.3	86.7	86.2	100.67	52.8	2,125.1	385.6	215.2	170.38	2.263	
9,600.0	7,057.5	9,654.6	7,128.8	90.0	89.5	100.65	52.8	2,225.1	385.5	208.6	176.93	2.179	
9,700.0	7,057.2	9,754.6	7,128.3	93.3	92.8	100.63	52.8	2,325.1	385.5	202.0	183.50	2.101	
9,800.0	7,056.8	9,854.6	7,127.7	96.7	96.2	100.61	52.8	2,425.1	385.5	195.4	190.09	2.028	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-312 - Wellbore #1 - Plan #

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
9,900.0	7,056.4	9,954.6	7,127.2	100.0	99.5	100.58	52.8	2,525.1	385.5	188.8	196.69	1.960	
10,000.0	7,056.0	10,054.6	7,126.6	103.4	102.9	100.56	52.8	2,625.1	385.4	182.1	203.31	1.896	
10,100.0	7,055.6	10,154.6	7,126.1	106.7	106.2	100.54	52.8	2,725.1	385.4	175.5	209.94	1.836	
10,200.0	7,055.2	10,254.6	7,125.6	110.1	109.6	100.51	52.8	2,825.1	385.4	168.8	216.58	1.779	
10,300.0	7,054.8	10,354.6	7,125.0	113.5	113.0	100.49	52.8	2,925.1	385.3	162.1	223.22	1.726	
10,400.0	7,054.5	10,454.6	7,124.5	116.8	116.3	100.47	52.8	3,025.1	385.3	155.4	229.88	1.676	
10,500.0	7,054.1	10,554.6	7,123.9	120.2	119.7	100.45	52.8	3,125.1	385.3	148.7	236.55	1.629	
10,600.0	7,053.7	10,654.6	7,123.4	123.6	123.1	100.42	52.8	3,225.1	385.3	142.0	243.22	1.584	
10,700.0	7,053.3	10,754.6	7,122.8	127.0	126.5	100.40	52.8	3,325.1	385.2	135.3	249.91	1.541	
10,800.0	7,052.9	10,854.6	7,122.3	130.4	129.9	100.38	52.8	3,425.1	385.2	128.6	256.59	1.501	
10,900.0	7,052.5	10,954.6	7,121.8	133.7	133.3	100.35	52.8	3,525.1	385.2	121.9	263.29	1.463	Level 3
11,000.0	7,052.2	11,054.6	7,121.2	137.1	136.7	100.33	52.8	3,625.1	385.1	115.1	269.99	1.426	Level 3
11,100.0	7,051.8	11,154.6	7,120.7	140.5	140.0	100.31	52.8	3,725.1	385.1	108.4	276.70	1.392	Level 3
11,200.0	7,051.4	11,254.6	7,120.1	143.9	143.4	100.28	52.8	3,825.1	385.1	101.7	283.41	1.359	Level 3
11,300.0	7,051.0	11,354.6	7,119.6	147.3	146.8	100.26	52.8	3,925.1	385.1	94.9	290.13	1.327	Level 3
11,400.0	7,050.6	11,454.6	7,119.1	150.7	150.2	100.24	52.8	4,025.1	385.0	88.2	296.85	1.297	Level 3
11,500.0	7,050.2	11,554.6	7,118.5	154.1	153.6	100.22	52.8	4,125.1	385.0	81.4	303.57	1.268	Level 3
11,600.0	7,049.9	11,654.6	7,118.0	157.5	157.0	100.19	52.8	4,225.1	385.0	74.7	310.30	1.241	Level 2
11,700.0	7,049.5	11,754.6	7,117.4	160.9	160.5	100.17	52.8	4,325.1	384.9	67.9	317.04	1.214	Level 2
11,800.0	7,049.1	11,854.6	7,116.9	164.4	163.9	100.15	52.8	4,425.1	384.9	61.1	323.78	1.189	Level 2
11,900.0	7,048.7	11,954.6	7,116.4	167.8	167.3	100.12	52.8	4,525.1	384.9	54.4	330.52	1.164	Level 2
12,000.0	7,048.3	12,054.6	7,115.8	171.2	170.7	100.10	52.8	4,625.1	384.9	47.6	337.26	1.141	Level 2
12,100.0	7,047.9	12,154.6	7,115.3	174.6	174.1	100.08	52.8	4,725.1	384.8	40.8	344.01	1.119	Level 2
12,200.0	7,047.6	12,254.6	7,114.7	178.0	177.5	100.05	52.8	4,825.1	384.8	34.0	350.76	1.097	Level 2
12,300.0	7,047.2	12,354.6	7,114.2	181.4	180.9	100.03	52.8	4,925.1	384.8	27.3	357.52	1.076	Level 2
12,400.0	7,046.8	12,454.6	7,113.7	184.8	184.3	100.01	52.8	5,025.1	384.7	20.5	364.27	1.056	Level 2
12,500.0	7,046.4	12,554.6	7,113.1	188.2	187.7	99.99	52.8	5,125.1	384.7	13.7	371.03	1.037	Level 2
12,600.0	7,046.0	12,654.6	7,112.6	191.7	191.2	99.96	52.8	5,225.1	384.7	6.9	377.80	1.018	Level 2
12,700.0	7,045.6	12,754.6	7,112.0	195.1	194.6	99.94	52.8	5,325.1	384.7	0.1	384.56	1.000	Level 2
12,800.0	7,045.2	12,854.6	7,111.5	198.5	198.0	99.92	52.8	5,425.1	384.6	-6.7	391.33	0.983	Level 1
12,900.0	7,044.9	12,954.6	7,110.9	201.9	201.4	99.89	52.8	5,525.1	384.6	-13.5	398.10	0.966	Level 1
13,000.0	7,044.5	13,054.6	7,110.4	205.3	204.8	99.87	52.8	5,625.1	384.6	-20.3	404.87	0.950	Level 1
13,100.0	7,044.1	13,154.6	7,109.9	208.8	208.3	99.85	52.8	5,725.1	384.6	-27.1	411.65	0.934	Level 1
13,200.0	7,043.7	13,254.6	7,109.3	212.2	211.7	99.82	52.8	5,825.1	384.5	-33.9	418.42	0.919	Level 1
13,300.0	7,043.3	13,354.6	7,108.8	215.6	215.1	99.80	52.8	5,925.1	384.5	-40.7	425.20	0.904	Level 1
13,400.0	7,042.9	13,454.6	7,108.2	219.0	218.5	99.78	52.8	6,025.1	384.5	-47.5	431.98	0.890	Level 1
13,500.0	7,042.6	13,554.6	7,107.7	222.4	221.9	99.75	52.8	6,125.1	384.5	-54.3	438.76	0.876	Level 1
13,600.0	7,042.2	13,654.6	7,107.2	225.9	225.4	99.73	52.8	6,225.1	384.4	-61.1	445.55	0.863	Level 1
13,700.0	7,041.8	13,754.6	7,106.6	229.3	228.8	99.71	52.8	6,325.0	384.4	-67.9	452.34	0.850	Level 1
13,800.0	7,041.4	13,854.6	7,106.1	232.7	232.2	99.69	52.8	6,425.0	384.4	-74.8	459.12	0.837	Level 1
13,900.0	7,041.0	13,954.6	7,105.5	236.1	235.6	99.66	52.8	6,525.0	384.3	-81.6	465.91	0.825	Level 1
14,000.0	7,040.6	14,054.6	7,105.0	239.6	239.1	99.64	52.8	6,625.0	384.3	-88.4	472.71	0.813	Level 1
14,100.0	7,040.3	14,154.6	7,104.5	243.0	242.5	99.62	52.8	6,725.0	384.3	-95.2	479.50	0.801	Level 1
14,200.0	7,039.9	14,254.6	7,103.9	246.4	245.9	99.59	52.8	6,825.0	384.3	-102.0	486.29	0.790	Level 1
14,300.0	7,039.5	14,354.6	7,103.4	249.8	249.3	99.57	52.8	6,925.0	384.2	-108.9	493.09	0.779	Level 1
14,400.0	7,039.1	14,454.6	7,102.8	253.3	252.8	99.55	52.8	7,025.0	384.2	-115.7	499.89	0.769	Level 1
14,500.0	7,038.7	14,554.6	7,102.3	256.7	256.2	99.52	52.8	7,125.0	384.2	-122.5	506.69	0.758	Level 1
14,600.0	7,038.3	14,654.6	7,101.7	260.1	259.6	99.50	52.8	7,225.0	384.2	-129.3	513.49	0.748	Level 1
14,700.0	7,038.0	14,754.6	7,101.2	263.6	263.1	99.48	52.8	7,325.0	384.1	-136.2	520.29	0.738	Level 1
14,800.0	7,037.6	14,854.6	7,100.7	267.0	266.5	99.45	52.8	7,425.0	384.1	-143.0	527.10	0.729	Level 1
14,900.0	7,037.2	14,954.6	7,100.1	270.4	269.9	99.43	52.8	7,525.0	384.1	-149.8	533.90	0.719	Level 1

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W - High Pointe LLC 10I-312 - Wellbore #1 - Plan # — **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
15,000.0	7,036.8	15,054.6	7,099.6	273.8	273.3	99.41	52.8	7,625.0	384.1	-156.7	540.71	0.710	Level 1
15,100.0	7,036.4	15,154.6	7,099.0	277.3	276.8	99.39	52.8	7,725.0	384.0	-163.5	547.52	0.701	Level 1
15,200.0	7,036.0	15,254.6	7,098.5	280.7	280.2	99.36	52.8	7,825.0	384.0	-170.3	554.33	0.693	Level 1
15,300.0	7,035.6	15,354.6	7,098.0	284.1	283.6	99.34	52.8	7,925.0	384.0	-177.2	561.14	0.684	Level 1
15,400.0	7,035.3	15,454.6	7,097.4	287.6	287.1	99.32	52.8	8,025.0	384.0	-184.0	567.95	0.676	Level 1
15,500.0	7,034.9	15,554.6	7,096.9	291.0	290.5	99.29	52.8	8,125.0	383.9	-190.8	574.76	0.668	Level 1
15,600.0	7,034.5	15,654.6	7,096.3	294.4	293.9	99.27	52.8	8,225.0	383.9	-197.7	581.58	0.660	Level 1
15,700.0	7,034.1	15,754.6	7,095.8	297.9	297.4	99.25	52.8	8,325.0	383.9	-204.5	588.39	0.652	Level 1
15,800.0	7,033.7	15,854.6	7,095.3	301.3	300.8	99.22	52.8	8,425.0	383.8	-211.4	595.21	0.645	Level 1
15,900.0	7,033.3	15,954.6	7,094.7	304.7	304.2	99.20	52.8	8,525.0	383.8	-218.2	602.03	0.638	Level 1
16,000.0	7,033.0	16,054.6	7,094.2	308.2	307.6	99.18	52.8	8,625.0	383.8	-225.1	608.85	0.630	Level 1
16,100.0	7,032.6	16,154.6	7,093.6	311.6	311.1	99.15	52.8	8,725.0	383.8	-231.9	615.67	0.623	Level 1
16,200.0	7,032.2	16,254.6	7,093.1	315.0	314.5	99.13	52.8	8,825.0	383.7	-238.7	622.49	0.616	Level 1
16,300.0	7,031.8	16,354.6	7,092.5	318.4	317.9	99.11	52.8	8,925.0	383.7	-245.6	629.31	0.610	Level 1
16,400.0	7,031.4	16,454.6	7,092.0	321.9	321.4	99.08	52.8	9,025.0	383.7	-252.4	636.14	0.603	Level 1
16,500.0	7,031.0	16,554.6	7,091.5	325.3	324.8	99.06	52.8	9,125.0	383.7	-259.3	642.96	0.597	Level 1
16,600.0	7,030.7	16,654.6	7,090.9	328.7	328.2	99.04	52.8	9,225.0	383.6	-266.1	649.79	0.590	Level 1
16,700.0	7,030.3	16,754.6	7,090.4	332.2	331.7	99.02	52.8	9,325.0	383.6	-273.0	656.62	0.584	Level 1
16,762.0	7,030.0	16,816.6	7,090.0	334.3	333.6	99.00	52.8	9,387.0	383.6	-277.0	660.65	0.581	Level 1
16,771.4	7,030.0	16,825.8	7,090.0	334.6	333.8	99.00	52.8	9,396.2	383.6	-277.6	661.17	0.580	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Highpoint 10LD Pad Sec.10-T5N-R67W - Highpointe 10B (Vert.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1400-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,400.0	7,048.4	7,039.5	7,039.0	25.3	14.6	-61.60	760.1	895.3	929.3	893.1	36.23	25.647	
7,500.0	7,062.9	7,054.5	7,054.0	27.0	14.6	-80.21	759.8	895.3	837.4	796.1	41.32	20.267	
7,600.0	7,065.2	7,057.0	7,056.5	29.0	14.6	-91.38	759.7	895.3	746.5	702.9	43.58	17.129	
7,700.0	7,064.8	7,056.8	7,056.3	31.3	14.6	-91.34	759.7	895.3	658.2	612.3	45.86	14.353	
7,800.0	7,064.4	7,056.6	7,056.1	33.8	14.6	-91.31	759.7	895.3	573.6	525.3	48.33	11.870	
7,900.0	7,064.1	7,056.4	7,055.9	36.4	14.6	-91.27	759.7	895.3	494.9	444.0	50.96	9.713	
8,000.0	7,063.7	7,056.2	7,055.7	39.2	14.6	-91.24	759.7	895.3	425.3	371.6	53.71	7.917	
8,100.0	7,063.3	7,056.0	7,055.5	42.1	14.6	-91.21	759.7	895.3	369.8	313.2	56.57	6.537	
8,200.0	7,062.9	7,055.8	7,055.3	45.0	14.6	-91.17	759.8	895.3	335.6	276.1	59.51	5.640	
8,270.5	7,062.6	7,055.7	7,055.2	47.1	14.6	-91.15	759.8	895.3	328.1	266.5	61.63	5.324	CC, ES
8,300.0	7,062.5	7,055.6	7,055.2	48.0	14.6	-91.14	759.8	895.3	329.4	266.9	62.52	5.270	SF
8,400.0	7,062.1	7,055.5	7,055.0	51.1	14.6	-91.10	759.8	895.3	352.7	287.2	65.58	5.379	
8,500.0	7,061.8	7,055.3	7,054.8	54.2	14.6	-91.07	759.8	895.3	400.4	331.7	68.69	5.829	
8,600.0	7,061.4	7,055.1	7,054.6	57.3	14.6	-91.04	759.8	895.3	465.0	393.2	71.83	6.473	
8,700.0	7,061.0	7,054.9	7,054.4	60.5	14.6	-91.00	759.8	895.3	540.5	465.5	75.01	7.205	
8,800.0	7,060.6	7,054.7	7,054.2	63.7	14.6	-90.97	759.8	895.3	622.9	544.7	78.21	7.964	
8,900.0	7,060.2	7,054.5	7,054.0	66.9	14.6	-90.94	759.8	895.3	709.9	628.4	81.44	8.716	
9,000.0	7,059.8	7,054.3	7,053.8	70.2	14.6	-90.90	759.8	895.3	799.9	715.2	84.69	9.444	
9,100.0	7,059.5	7,054.1	7,053.6	73.5	14.6	-90.87	759.8	895.3	892.0	804.0	87.96	10.141	
9,200.0	7,059.1	7,053.9	7,053.4	76.7	14.6	-90.84	759.8	895.3	985.7	894.4	91.24	10.803	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Offset Design Highpoint 10LD Pad Sec.10-T5N-R67W - Highpointe 10LD - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 90-MWD

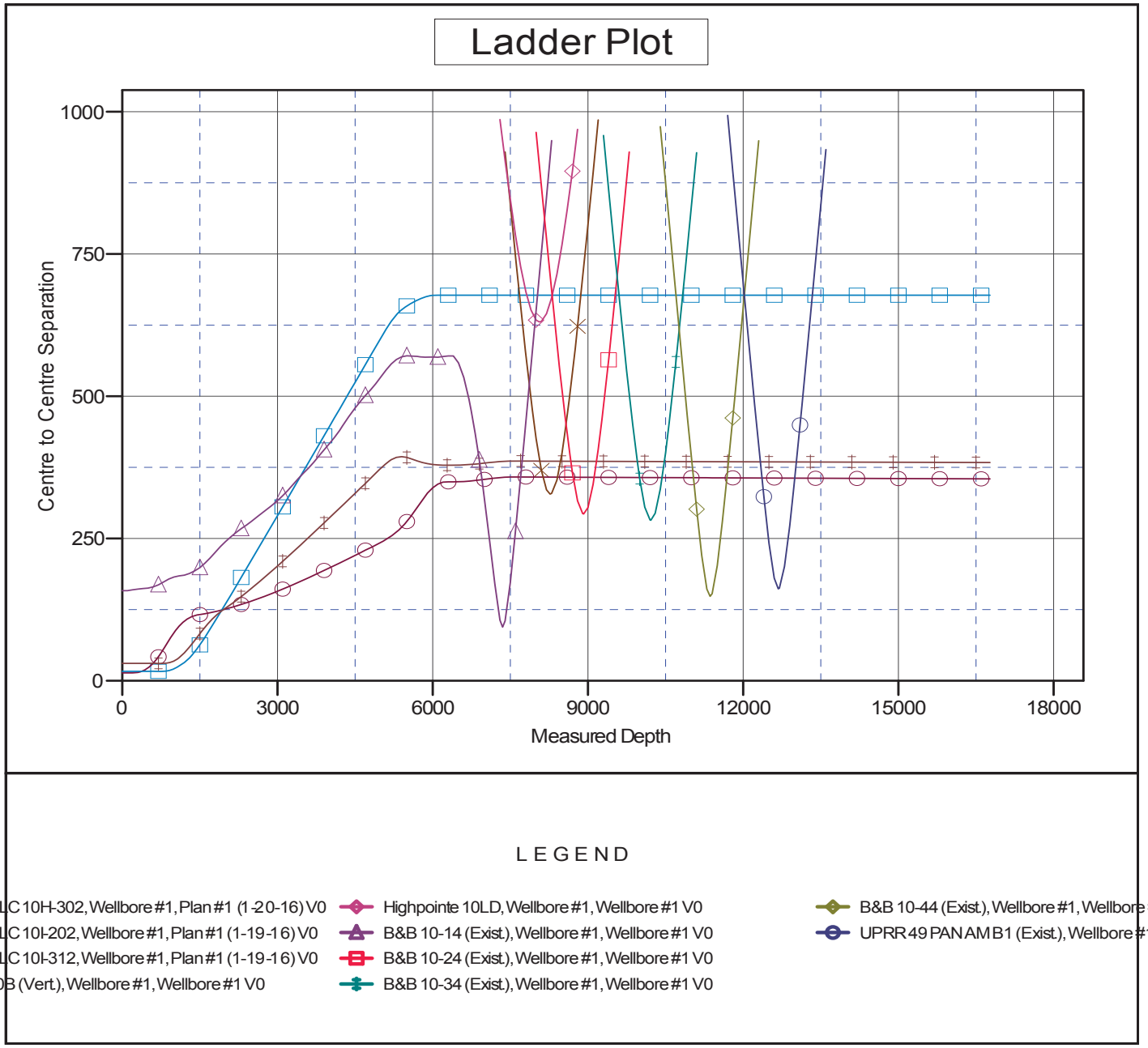
Offset Well Error: 0.0 ft

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
7,300.0	7,021.1	7,123.5	7,000.1	24.1	27.8	67.47	-197.8	689.0	986.3	944.4	41.88	23.552	
7,400.0	7,048.4	7,149.6	7,026.3	25.3	27.9	76.89	-198.5	688.8	914.6	869.9	44.73	20.446	
7,500.0	7,062.9	7,163.3	7,039.9	27.0	27.9	85.10	-198.8	688.6	845.9	798.7	47.19	17.925	
7,600.0	7,065.2	7,164.8	7,041.4	29.0	27.9	89.27	-198.8	688.6	782.8	733.5	49.31	15.876	
7,700.0	7,064.8	7,163.5	7,040.1	31.3	27.9	89.16	-198.8	688.6	728.0	676.5	51.58	14.116	
7,800.0	7,064.4	7,162.2	7,038.9	33.8	27.9	89.04	-198.8	688.7	683.6	629.5	54.04	12.648	
7,900.0	7,064.1	7,160.9	7,037.6	36.4	27.9	88.92	-198.7	688.7	651.5	594.8	56.67	11.497	
8,000.0	7,063.7	7,159.6	7,036.3	39.2	27.9	88.80	-198.7	688.7	633.8	574.3	59.42	10.666	
8,064.0	7,063.4	7,158.8	7,035.4	41.0	27.9	88.72	-198.7	688.7	630.5	569.3	61.25	10.295	CC, ES
8,100.0	7,063.3	7,158.3	7,034.9	42.1	27.9	88.68	-198.7	688.7	631.6	569.3	62.27	10.142	
8,200.0	7,062.9	7,156.9	7,033.6	45.0	27.9	88.56	-198.6	688.7	645.0	579.8	65.21	9.892	
8,300.0	7,062.5	7,155.5	7,032.2	48.0	27.9	88.43	-198.6	688.7	673.2	605.0	68.21	9.871	SF
8,400.0	7,062.1	7,154.1	7,030.8	51.1	27.9	88.31	-198.6	688.7	714.5	643.2	71.26	10.026	
8,500.0	7,061.8	7,152.7	7,029.4	54.2	27.9	88.18	-198.5	688.7	766.6	692.2	74.36	10.309	
8,600.0	7,061.4	7,151.3	7,027.9	57.3	27.9	88.05	-198.5	688.8	827.5	750.0	77.50	10.678	
8,700.0	7,061.0	7,149.8	7,026.5	60.5	27.9	87.91	-198.5	688.8	895.5	814.9	80.66	11.102	
8,800.0	7,060.6	7,148.4	7,025.0	63.7	27.9	87.78	-198.4	688.8	969.1	885.2	83.86	11.556	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4990.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

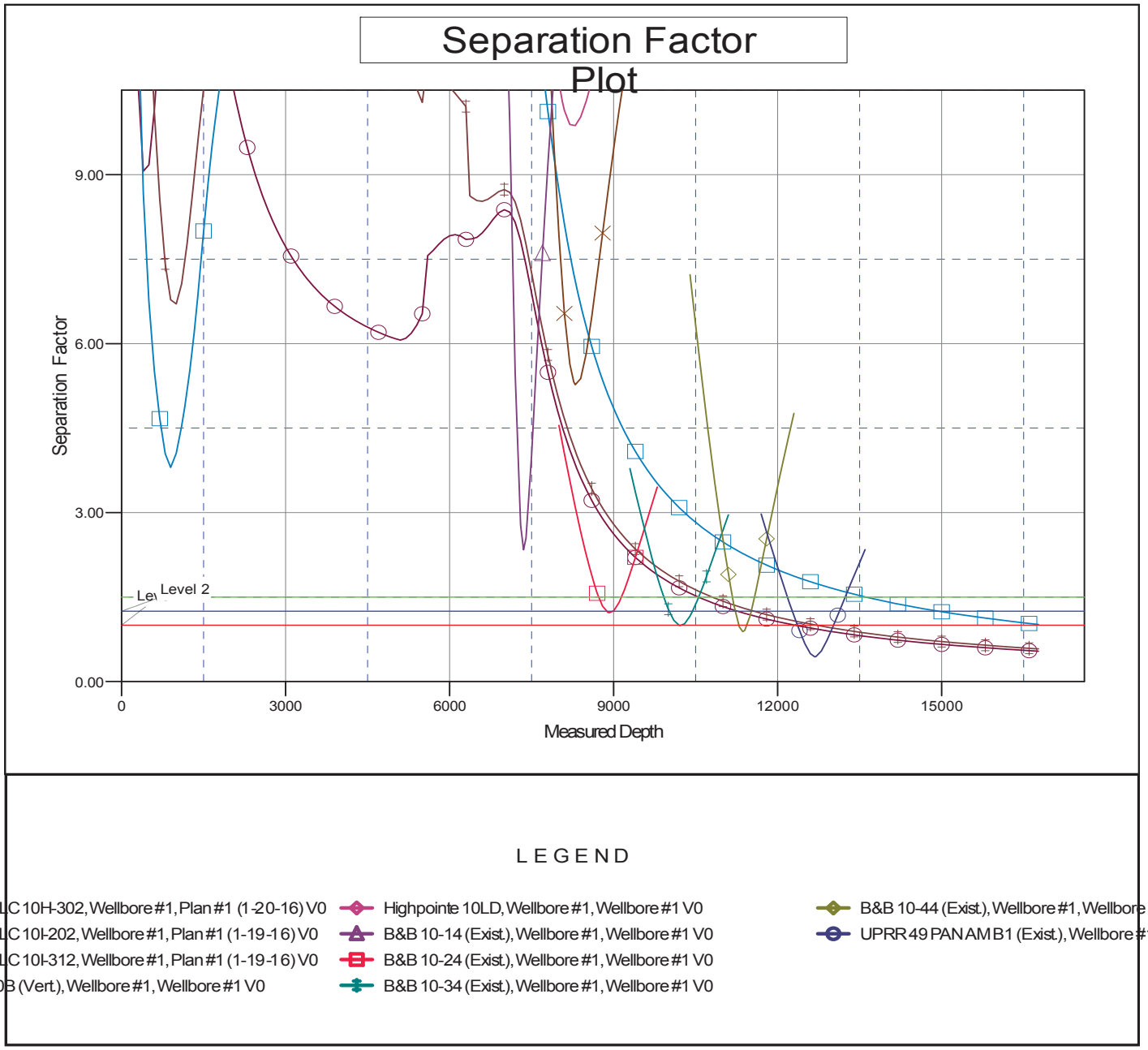
Coordinates are relative to: High Pointe LLC 10H-232
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.40°



Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	**Local Co-ordinate Reference:**	Well High Pointe LLC 10H-232
Project:	SEC.10-T5N-R67W	**TVD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Reference Site:	High Pointe LLC 5N67W10L Pad Sec.10-T5N-RR67W	**MD Reference:**	WELL @ 4990.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	High Pointe LLC 10H-232	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-18-16)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4990.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: High Pointe LLC 10H-232
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.40°



LEGEND

LLC 10H-302, Wellbore #1, Plan #1 (1-20-16) V0
LLC 10I-202, Wellbore #1, Plan #1 (1-19-16) V0
LLC 10I-312, Wellbore #1, Plan #1 (1-19-16) V0
10B (Vert.), Wellbore #1, Wellbore #1 V0
Highpointe 10LD, Wellbore #1, Wellbore #1 V0
B&B 10-14 (Exist.), Wellbore #1, Wellbore #1 V0
B&B 10-24 (Exist.), Wellbore #1, Wellbore #1 V0
B&B 10-34 (Exist.), Wellbore #1, Wellbore #1 V0
B&B 10-44 (Exist.), Wellbore #1, Wellbore #
UPRR 49 PAN AM B1 (Exist.), Wellbore #1