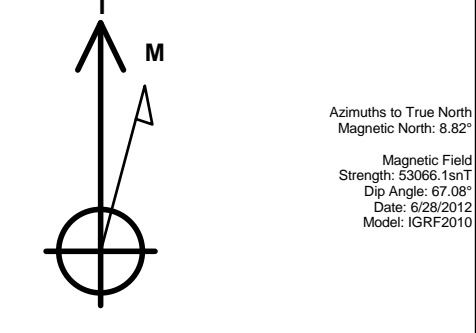


PETROLEUM DEVELOPMENT CORP Weld County CO

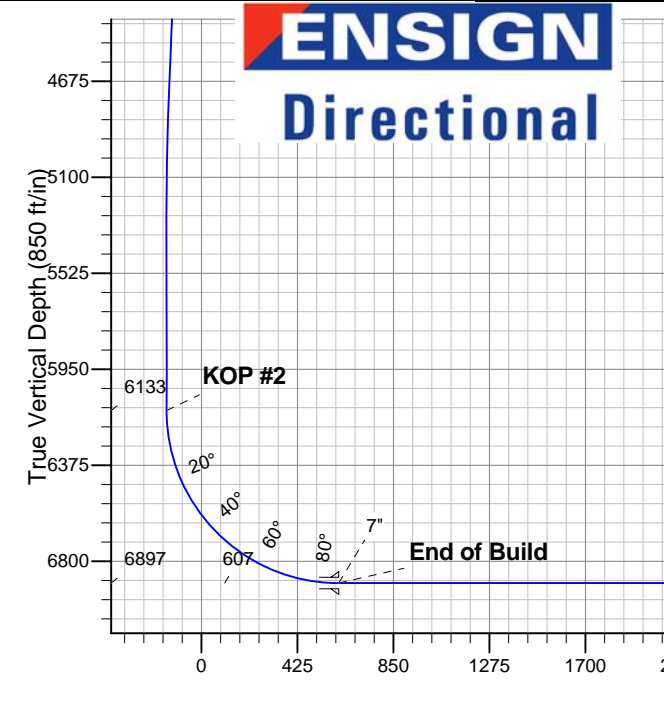
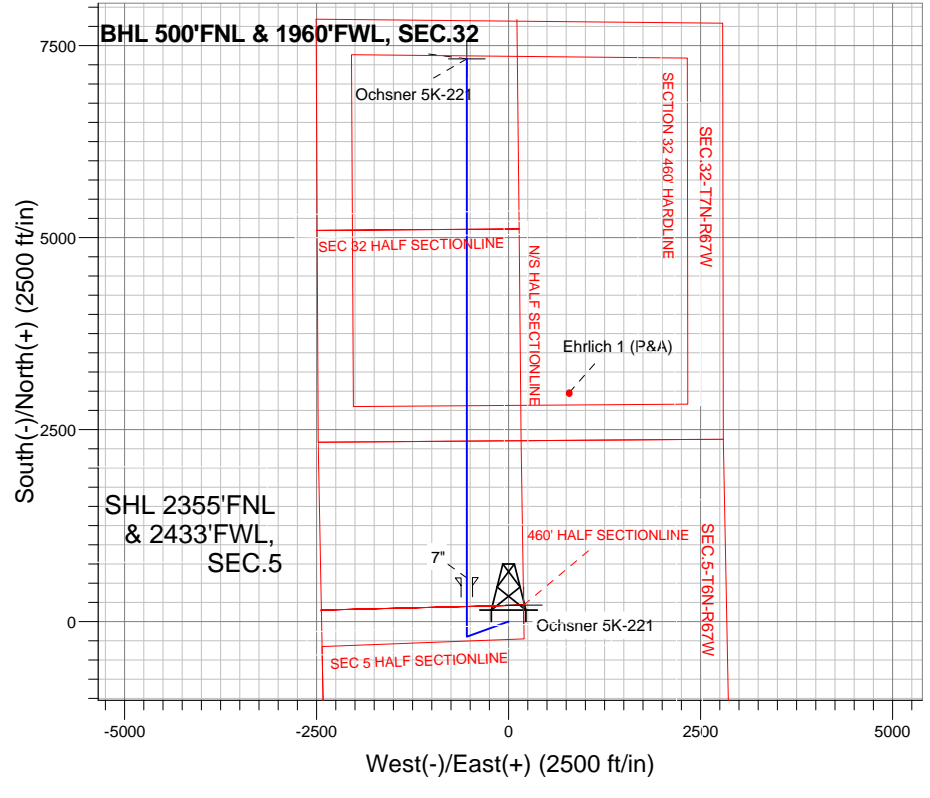
Well Name: **Ochsner 5K-221**
Surface Location: Ochsner 5Q-HZ Pad Sec.5-T6N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4883.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1431554.32 3161799.27 40.516560 -104.918050
RKB Ensign 32 - 15' WELL @ 4898.0ft (RKB Ensign 32 - 15')

WELLBORE TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
460' HALF SECTIONLINE	1.0	215.0	197.3	Polygon
BHL 500'FNL & 1960'FWL	6897.0	7326.5	-542.0	Point

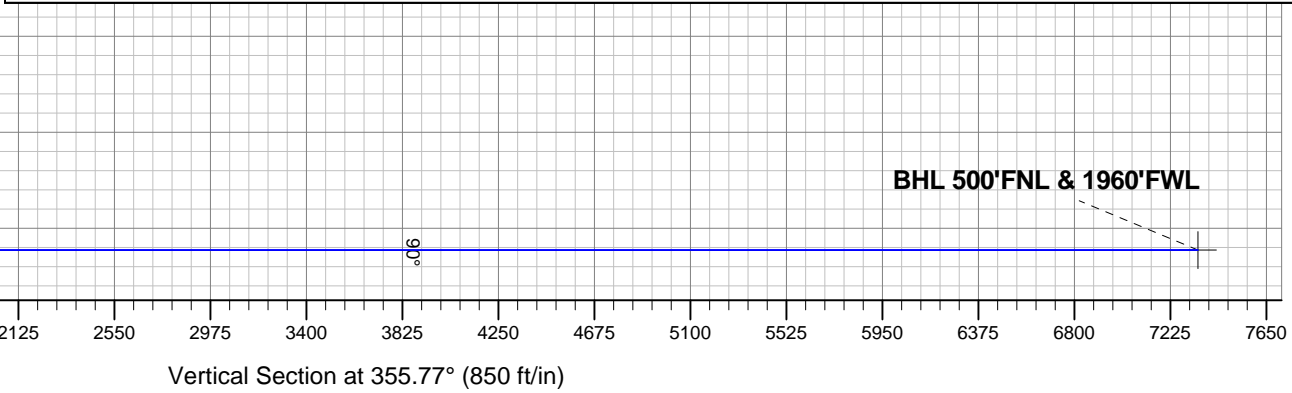


Ochsner 5Q-HZ Pad Sec.5-T6N-R67W
Ochsner 5K-221
Plan #1 (6-28-12)
14:46, July 18 2012

ANNOTATIONS		
TVD	MD	Annotation
1000.0	1000.0	KOP #1
6133.1	6175.2	KOP #2
6897.0	7375.2	End of Build



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1435.0	8.70	250.21	1433.3	-11.2	-31.0	2.00	250.21	-8.8	
4	4807.1	8.70	250.21	4766.7	-183.8	-511.0	0.00	0.00	-145.6	
5	5242.1	0.00	0.00	5200.0	-195.0	-542.0	2.00	180.00	-154.5	
6	6175.2	0.00	0.00	6133.1	-195.0	-542.0	0.00	0.00	-154.5	
7	7375.2	90.00	360.00	6897.0	568.9	-542.0	7.50	360.00	607.4	
8	14132.8	90.00	360.00	6897.0	7326.5	-542.0	0.00	0.00	7346.5	BHL 500'FNL & 1960'FWL





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T6N-R67W

Ochsner 5Q-HZ Pad Sec.5-T6N-R67W

Ochsner 5K-221

Wellbore #1

Plan: Plan #1 (6-28-12)

Standard Planning Report

18 July, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Project	SEC.5-T6N-R67W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Ochsner 5Q-HZ Pad Sec.5-T6N-R67W											
Site Position:						Northing:			1,431,605.64 ft			Latitude:			40.516700		
From:			Lat/Long			Easting:			3,161,846.20 ft			Longitude:			-104.917880		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.38 °		

Well	Ochsner 5K-221					
Well Position	+N/-S	-51.0 ft	Northing:	1,431,554.32 ft	Latitude:	40.516560
	+E/-W	-47.3 ft	Easting:	3,161,799.27 ft	Longitude:	-104.918050
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,883.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/28/2012	8.82	67.08	53,066

Design	Plan #1 (6-28-12)			
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	355.77

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,435.0	8.70	250.21	1,433.3	-11.2	-31.0	2.00	2.00	0.00	250.21	
4,807.1	8.70	250.21	4,766.7	-183.8	-511.0	0.00	0.00	0.00	0.00	
5,242.1	0.00	0.00	5,200.0	-195.0	-542.0	2.00	-2.00	0.00	180.00	
6,175.2	0.00	0.00	6,133.1	-195.0	-542.0	0.00	0.00	0.00	0.00	
7,375.2	90.00	360.00	6,897.0	568.9	-542.0	7.50	7.50	0.00	360.00	
14,132.8	90.00	360.00	6,897.0	7,326.5	-542.0	0.00	0.00	0.00	0.00	BHL 500'FNL & 196

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
460' HALF SECTIONLINE									
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,040.0	0.80	250.21	1,040.0	-0.1	-0.3	-0.1	2.00	2.00	0.00
1,080.0	1.60	250.21	1,080.0	-0.4	-1.1	-0.3	2.00	2.00	0.00
1,120.0	2.40	250.21	1,120.0	-0.9	-2.4	-0.7	2.00	2.00	0.00
1,160.0	3.20	250.21	1,159.9	-1.5	-4.2	-1.2	2.00	2.00	0.00
1,200.0	4.00	250.21	1,199.8	-2.4	-6.6	-1.9	2.00	2.00	0.00
1,240.0	4.80	250.21	1,239.7	-3.4	-9.5	-2.7	2.00	2.00	0.00
1,280.0	5.60	250.21	1,279.6	-4.6	-12.9	-3.7	2.00	2.00	0.00
1,320.0	6.40	250.21	1,319.3	-6.0	-16.8	-4.8	2.00	2.00	0.00
1,360.0	7.20	250.21	1,359.1	-7.6	-21.3	-6.1	2.00	2.00	0.00
1,400.0	8.00	250.21	1,398.7	-9.4	-26.2	-7.5	2.00	2.00	0.00
1,435.0	8.70	250.21	1,433.3	-11.2	-31.0	-8.8	2.00	2.00	0.00
1,440.0	8.70	250.21	1,438.3	-11.4	-31.7	-9.0	0.00	0.00	0.00
1,480.0	8.70	250.21	1,477.8	-13.5	-37.4	-10.7	0.00	0.00	0.00
1,520.0	8.70	250.21	1,517.4	-15.5	-43.1	-12.3	0.00	0.00	0.00
1,560.0	8.70	250.21	1,556.9	-17.6	-48.8	-13.9	0.00	0.00	0.00
1,600.0	8.70	250.21	1,596.4	-19.6	-54.5	-15.5	0.00	0.00	0.00
1,640.0	8.70	250.21	1,636.0	-21.7	-60.2	-17.2	0.00	0.00	0.00
1,680.0	8.70	250.21	1,675.5	-23.7	-65.9	-18.8	0.00	0.00	0.00
1,720.0	8.70	250.21	1,715.1	-25.8	-71.6	-20.4	0.00	0.00	0.00
1,760.0	8.70	250.21	1,754.6	-27.8	-77.3	-22.0	0.00	0.00	0.00
1,800.0	8.70	250.21	1,794.1	-29.9	-83.0	-23.6	0.00	0.00	0.00
1,840.0	8.70	250.21	1,833.7	-31.9	-88.7	-25.3	0.00	0.00	0.00
1,880.0	8.70	250.21	1,873.2	-33.9	-94.4	-26.9	0.00	0.00	0.00
1,920.0	8.70	250.21	1,912.7	-36.0	-100.0	-28.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,960.0	8.70	250.21	1,952.3	-38.0	-105.7	-30.1	0.00	0.00	0.00
2,000.0	8.70	250.21	1,991.8	-40.1	-111.4	-31.8	0.00	0.00	0.00
2,040.0	8.70	250.21	2,031.4	-42.1	-117.1	-33.4	0.00	0.00	0.00
2,080.0	8.70	250.21	2,070.9	-44.2	-122.8	-35.0	0.00	0.00	0.00
2,120.0	8.70	250.21	2,110.4	-46.2	-128.5	-36.6	0.00	0.00	0.00
2,160.0	8.70	250.21	2,150.0	-48.3	-134.2	-38.3	0.00	0.00	0.00
2,200.0	8.70	250.21	2,189.5	-50.3	-139.9	-39.9	0.00	0.00	0.00
2,240.0	8.70	250.21	2,229.1	-52.4	-145.6	-41.5	0.00	0.00	0.00
2,280.0	8.70	250.21	2,268.6	-54.4	-151.3	-43.1	0.00	0.00	0.00
2,320.0	8.70	250.21	2,308.1	-56.5	-157.0	-44.7	0.00	0.00	0.00
2,360.0	8.70	250.21	2,347.7	-58.5	-162.7	-46.4	0.00	0.00	0.00
2,400.0	8.70	250.21	2,387.2	-60.6	-168.4	-48.0	0.00	0.00	0.00
2,440.0	8.70	250.21	2,426.8	-62.6	-174.1	-49.6	0.00	0.00	0.00
2,480.0	8.70	250.21	2,466.3	-64.7	-179.8	-51.2	0.00	0.00	0.00
2,520.0	8.70	250.21	2,505.8	-66.7	-185.4	-52.9	0.00	0.00	0.00
2,560.0	8.70	250.21	2,545.4	-68.8	-191.1	-54.5	0.00	0.00	0.00
2,600.0	8.70	250.21	2,584.9	-70.8	-196.8	-56.1	0.00	0.00	0.00
2,640.0	8.70	250.21	2,624.5	-72.9	-202.5	-57.7	0.00	0.00	0.00
2,680.0	8.70	250.21	2,664.0	-74.9	-208.2	-59.3	0.00	0.00	0.00
2,720.0	8.70	250.21	2,703.5	-77.0	-213.9	-61.0	0.00	0.00	0.00
2,760.0	8.70	250.21	2,743.1	-79.0	-219.6	-62.6	0.00	0.00	0.00
2,800.0	8.70	250.21	2,782.6	-81.1	-225.3	-64.2	0.00	0.00	0.00
2,840.0	8.70	250.21	2,822.2	-83.1	-231.0	-65.8	0.00	0.00	0.00
2,880.0	8.70	250.21	2,861.7	-85.2	-236.7	-67.5	0.00	0.00	0.00
2,920.0	8.70	250.21	2,901.2	-87.2	-242.4	-69.1	0.00	0.00	0.00
2,960.0	8.70	250.21	2,940.8	-89.3	-248.1	-70.7	0.00	0.00	0.00
3,000.0	8.70	250.21	2,980.3	-91.3	-253.8	-72.3	0.00	0.00	0.00
3,040.0	8.70	250.21	3,019.9	-93.3	-259.5	-74.0	0.00	0.00	0.00
3,080.0	8.70	250.21	3,059.4	-95.4	-265.2	-75.6	0.00	0.00	0.00
3,120.0	8.70	250.21	3,098.9	-97.4	-270.8	-77.2	0.00	0.00	0.00
3,160.0	8.70	250.21	3,138.5	-99.5	-276.5	-78.8	0.00	0.00	0.00
3,200.0	8.70	250.21	3,178.0	-101.5	-282.2	-80.4	0.00	0.00	0.00
3,240.0	8.70	250.21	3,217.6	-103.6	-287.9	-82.1	0.00	0.00	0.00
3,280.0	8.70	250.21	3,257.1	-105.6	-293.6	-83.7	0.00	0.00	0.00
3,320.0	8.70	250.21	3,296.6	-107.7	-299.3	-85.3	0.00	0.00	0.00
3,360.0	8.70	250.21	3,336.2	-109.7	-305.0	-86.9	0.00	0.00	0.00
3,400.0	8.70	250.21	3,375.7	-111.8	-310.7	-88.6	0.00	0.00	0.00
3,440.0	8.70	250.21	3,415.3	-113.8	-316.4	-90.2	0.00	0.00	0.00
3,480.0	8.70	250.21	3,454.8	-115.9	-322.1	-91.8	0.00	0.00	0.00
3,520.0	8.70	250.21	3,494.3	-117.9	-327.8	-93.4	0.00	0.00	0.00
3,560.0	8.70	250.21	3,533.9	-120.0	-333.5	-95.0	0.00	0.00	0.00
3,600.0	8.70	250.21	3,573.4	-122.0	-339.2	-96.7	0.00	0.00	0.00
3,640.0	8.70	250.21	3,613.0	-124.1	-344.9	-98.3	0.00	0.00	0.00
3,680.0	8.70	250.21	3,652.5	-126.1	-350.6	-99.9	0.00	0.00	0.00
3,720.0	8.70	250.21	3,692.0	-128.2	-356.2	-101.5	0.00	0.00	0.00
3,760.0	8.70	250.21	3,731.6	-130.2	-361.9	-103.2	0.00	0.00	0.00
3,800.0	8.70	250.21	3,771.1	-132.3	-367.6	-104.8	0.00	0.00	0.00
3,840.0	8.70	250.21	3,810.7	-134.3	-373.3	-106.4	0.00	0.00	0.00
3,880.0	8.70	250.21	3,850.2	-136.4	-379.0	-108.0	0.00	0.00	0.00
3,920.0	8.70	250.21	3,889.7	-138.4	-384.7	-109.7	0.00	0.00	0.00
3,960.0	8.70	250.21	3,929.3	-140.5	-390.4	-111.3	0.00	0.00	0.00
4,000.0	8.70	250.21	3,968.8	-142.5	-396.1	-112.9	0.00	0.00	0.00
4,040.0	8.70	250.21	4,008.4	-144.6	-401.8	-114.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,080.0	8.70	250.21	4,047.9	-146.6	-407.5	-116.1	0.00	0.00	0.00
4,120.0	8.70	250.21	4,087.4	-148.7	-413.2	-117.8	0.00	0.00	0.00
4,160.0	8.70	250.21	4,127.0	-150.7	-418.9	-119.4	0.00	0.00	0.00
4,200.0	8.70	250.21	4,166.5	-152.8	-424.6	-121.0	0.00	0.00	0.00
4,240.0	8.70	250.21	4,206.1	-154.8	-430.3	-122.6	0.00	0.00	0.00
4,280.0	8.70	250.21	4,245.6	-156.8	-436.0	-124.3	0.00	0.00	0.00
4,320.0	8.70	250.21	4,285.1	-158.9	-441.6	-125.9	0.00	0.00	0.00
4,360.0	8.70	250.21	4,324.7	-160.9	-447.3	-127.5	0.00	0.00	0.00
4,400.0	8.70	250.21	4,364.2	-163.0	-453.0	-129.1	0.00	0.00	0.00
4,440.0	8.70	250.21	4,403.8	-165.0	-458.7	-130.7	0.00	0.00	0.00
4,480.0	8.70	250.21	4,443.3	-167.1	-464.4	-132.4	0.00	0.00	0.00
4,520.0	8.70	250.21	4,482.8	-169.1	-470.1	-134.0	0.00	0.00	0.00
4,560.0	8.70	250.21	4,522.4	-171.2	-475.8	-135.6	0.00	0.00	0.00
4,600.0	8.70	250.21	4,561.9	-173.2	-481.5	-137.2	0.00	0.00	0.00
4,640.0	8.70	250.21	4,601.5	-175.3	-487.2	-138.9	0.00	0.00	0.00
4,680.0	8.70	250.21	4,641.0	-177.3	-492.9	-140.5	0.00	0.00	0.00
4,720.0	8.70	250.21	4,680.5	-179.4	-498.6	-142.1	0.00	0.00	0.00
4,760.0	8.70	250.21	4,720.1	-181.4	-504.3	-143.7	0.00	0.00	0.00
4,800.0	8.70	250.21	4,759.6	-183.5	-510.0	-145.4	0.00	0.00	0.00
4,807.1	8.70	250.21	4,766.7	-183.8	-511.0	-145.6	0.00	0.00	0.00
4,840.0	8.04	250.21	4,799.2	-185.5	-515.5	-146.9	2.00	-2.00	0.00
4,880.0	7.24	250.21	4,838.8	-187.3	-520.5	-148.3	2.00	-2.00	0.00
4,920.0	6.44	250.21	4,878.5	-188.9	-525.0	-149.6	2.00	-2.00	0.00
4,960.0	5.64	250.21	4,918.3	-190.3	-528.9	-150.8	2.00	-2.00	0.00
5,000.0	4.84	250.21	4,958.1	-191.5	-532.4	-151.7	2.00	-2.00	0.00
5,040.0	4.04	250.21	4,998.0	-192.6	-535.3	-152.6	2.00	-2.00	0.00
5,080.0	3.24	250.21	5,037.9	-193.4	-537.7	-153.3	2.00	-2.00	0.00
5,120.0	2.44	250.21	5,077.9	-194.1	-539.6	-153.8	2.00	-2.00	0.00
5,160.0	1.64	250.21	5,117.9	-194.6	-540.9	-154.2	2.00	-2.00	0.00
5,200.0	0.84	250.21	5,157.9	-194.9	-541.7	-154.4	2.00	-2.00	0.00
5,240.0	0.04	250.21	5,197.9	-195.0	-542.0	-154.5	2.00	-2.00	0.00
5,242.1	0.00	0.00	5,200.0	-195.0	-542.0	-154.5	2.00	-2.00	0.00
5,280.0	0.00	0.00	5,237.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,320.0	0.00	0.00	5,277.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,360.0	0.00	0.00	5,317.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,357.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,440.0	0.00	0.00	5,397.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,480.0	0.00	0.00	5,437.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,520.0	0.00	0.00	5,477.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,560.0	0.00	0.00	5,517.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,557.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,597.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,637.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,677.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,717.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,757.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,797.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,837.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,877.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,917.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,957.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,997.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
6,080.0	0.00	0.00	6,037.9	-195.0	-542.0	-154.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,120.0	0.00	0.00	6,077.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,117.9	-195.0	-542.0	-154.5	0.00	0.00	0.00
6,175.2	0.00	0.00	6,133.1	-195.0	-542.0	-154.5	0.00	0.00	0.00
KOP #2									
6,200.0	1.86	360.00	6,157.9	-194.6	-542.0	-154.1	7.50	7.50	0.00
6,240.0	4.86	360.00	6,197.8	-192.3	-542.0	-151.7	7.50	7.50	0.00
6,280.0	7.86	360.00	6,237.5	-187.8	-542.0	-147.3	7.50	7.50	0.00
6,320.0	10.86	360.00	6,277.0	-181.3	-542.0	-140.8	7.50	7.50	0.00
6,360.0	13.86	360.00	6,316.1	-172.8	-542.0	-132.3	7.50	7.50	0.00
6,400.0	16.86	360.00	6,354.6	-162.2	-542.0	-121.7	7.50	7.50	0.00
6,440.0	19.86	360.00	6,392.6	-149.6	-542.0	-109.2	7.50	7.50	0.00
6,480.0	22.86	360.00	6,429.8	-135.0	-542.0	-94.6	7.50	7.50	0.00
6,520.0	25.86	360.00	6,466.3	-118.5	-542.0	-78.2	7.50	7.50	0.00
6,560.0	28.86	360.00	6,501.8	-100.1	-542.0	-59.9	7.50	7.50	0.00
6,600.0	31.86	360.00	6,536.3	-79.9	-542.0	-39.7	7.50	7.50	0.00
6,640.0	34.86	360.00	6,569.7	-57.9	-542.0	-17.8	7.50	7.50	0.00
6,680.0	37.86	360.00	6,601.9	-34.2	-542.0	5.9	7.50	7.50	0.00
6,720.0	40.86	360.00	6,632.8	-8.8	-542.0	31.2	7.50	7.50	0.00
6,760.0	43.86	360.00	6,662.4	18.1	-542.0	58.1	7.50	7.50	0.00
6,800.0	46.86	360.00	6,690.5	46.6	-542.0	86.4	7.50	7.50	0.00
6,840.0	49.86	360.00	6,717.1	76.5	-542.0	116.2	7.50	7.50	0.00
6,880.0	52.86	360.00	6,742.0	107.7	-542.0	147.4	7.50	7.50	0.00
6,920.0	55.86	360.00	6,765.3	140.2	-542.0	179.8	7.50	7.50	0.00
6,960.0	58.86	360.00	6,786.9	173.9	-542.0	213.4	7.50	7.50	0.00
7,000.0	61.86	360.00	6,806.7	208.6	-542.0	248.1	7.50	7.50	0.00
7,040.0	64.86	360.00	6,824.6	244.4	-542.0	283.7	7.50	7.50	0.00
7,080.0	67.86	360.00	6,840.7	281.0	-542.0	320.3	7.50	7.50	0.00
7,120.0	70.86	360.00	6,854.8	318.5	-542.0	357.6	7.50	7.50	0.00
7,160.0	73.86	360.00	6,866.9	356.6	-542.0	395.6	7.50	7.50	0.00
7,200.0	76.86	360.00	6,877.0	395.3	-542.0	434.2	7.50	7.50	0.00
7,240.0	79.86	360.00	6,885.1	434.5	-542.0	473.3	7.50	7.50	0.00
7,280.0	82.86	360.00	6,891.1	474.0	-542.0	512.7	7.50	7.50	0.00
7,320.0	85.86	360.00	6,895.0	513.8	-542.0	552.4	7.50	7.50	0.00
7,360.0	88.86	360.00	6,896.8	553.7	-542.0	592.2	7.50	7.50	0.00
7,375.2	90.00	360.00	6,897.0	568.9	-542.0	607.4	7.50	7.50	0.00
End of Build - 7"									
7,400.0	90.00	360.00	6,897.0	593.7	-542.0	632.1	0.00	0.00	0.00
7,440.0	90.00	360.00	6,897.0	633.7	-542.0	672.0	0.00	0.00	0.00
7,480.0	90.00	360.00	6,897.0	673.7	-542.0	711.9	0.00	0.00	0.00
7,520.0	90.00	360.00	6,897.0	713.7	-542.0	751.8	0.00	0.00	0.00
7,560.0	90.00	360.00	6,897.0	753.7	-542.0	791.7	0.00	0.00	0.00
7,600.0	90.00	360.00	6,897.0	793.7	-542.0	831.6	0.00	0.00	0.00
7,640.0	90.00	360.00	6,897.0	833.7	-542.0	871.5	0.00	0.00	0.00
7,680.0	90.00	360.00	6,897.0	873.7	-542.0	911.4	0.00	0.00	0.00
7,720.0	90.00	360.00	6,897.0	913.7	-542.0	951.2	0.00	0.00	0.00
7,760.0	90.00	360.00	6,897.0	953.7	-542.0	991.1	0.00	0.00	0.00
7,800.0	90.00	360.00	6,897.0	993.7	-542.0	1,031.0	0.00	0.00	0.00
7,840.0	90.00	360.00	6,897.0	1,033.7	-542.0	1,070.9	0.00	0.00	0.00
7,880.0	90.00	360.00	6,897.0	1,073.7	-542.0	1,110.8	0.00	0.00	0.00
7,920.0	90.00	360.00	6,897.0	1,113.7	-542.0	1,150.7	0.00	0.00	0.00
7,960.0	90.00	360.00	6,897.0	1,153.7	-542.0	1,190.6	0.00	0.00	0.00
8,000.0	90.00	360.00	6,897.0	1,193.7	-542.0	1,230.5	0.00	0.00	0.00
8,040.0	90.00	360.00	6,897.0	1,233.7	-542.0	1,270.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,080.0	90.00	360.00	6,897.0	1,273.7	-542.0	1,310.3	0.00	0.00	0.00
8,120.0	90.00	360.00	6,897.0	1,313.7	-542.0	1,350.2	0.00	0.00	0.00
8,160.0	90.00	360.00	6,897.0	1,353.7	-542.0	1,390.0	0.00	0.00	0.00
8,200.0	90.00	360.00	6,897.0	1,393.7	-542.0	1,429.9	0.00	0.00	0.00
8,240.0	90.00	360.00	6,897.0	1,433.7	-542.0	1,469.8	0.00	0.00	0.00
8,280.0	90.00	360.00	6,897.0	1,473.7	-542.0	1,509.7	0.00	0.00	0.00
8,320.0	90.00	360.00	6,897.0	1,513.7	-542.0	1,549.6	0.00	0.00	0.00
8,360.0	90.00	360.00	6,897.0	1,553.7	-542.0	1,589.5	0.00	0.00	0.00
8,400.0	90.00	360.00	6,897.0	1,593.7	-542.0	1,629.4	0.00	0.00	0.00
8,440.0	90.00	360.00	6,897.0	1,633.7	-542.0	1,669.3	0.00	0.00	0.00
8,480.0	90.00	360.00	6,897.0	1,673.7	-542.0	1,709.2	0.00	0.00	0.00
8,520.0	90.00	360.00	6,897.0	1,713.7	-542.0	1,749.1	0.00	0.00	0.00
8,560.0	90.00	360.00	6,897.0	1,753.7	-542.0	1,789.0	0.00	0.00	0.00
8,600.0	90.00	360.00	6,897.0	1,793.7	-542.0	1,828.8	0.00	0.00	0.00
8,640.0	90.00	360.00	6,897.0	1,833.7	-542.0	1,868.7	0.00	0.00	0.00
8,680.0	90.00	360.00	6,897.0	1,873.7	-542.0	1,908.6	0.00	0.00	0.00
8,720.0	90.00	360.00	6,897.0	1,913.7	-542.0	1,948.5	0.00	0.00	0.00
8,760.0	90.00	360.00	6,897.0	1,953.7	-542.0	1,988.4	0.00	0.00	0.00
8,800.0	90.00	360.00	6,897.0	1,993.7	-542.0	2,028.3	0.00	0.00	0.00
8,840.0	90.00	360.00	6,897.0	2,033.7	-542.0	2,068.2	0.00	0.00	0.00
8,880.0	90.00	360.00	6,897.0	2,073.7	-542.0	2,108.1	0.00	0.00	0.00
8,920.0	90.00	360.00	6,897.0	2,113.7	-542.0	2,148.0	0.00	0.00	0.00
8,960.0	90.00	360.00	6,897.0	2,153.7	-542.0	2,187.9	0.00	0.00	0.00
9,000.0	90.00	360.00	6,897.0	2,193.7	-542.0	2,227.8	0.00	0.00	0.00
9,040.0	90.00	360.00	6,897.0	2,233.7	-542.0	2,267.6	0.00	0.00	0.00
9,080.0	90.00	360.00	6,897.0	2,273.7	-542.0	2,307.5	0.00	0.00	0.00
9,120.0	90.00	360.00	6,897.0	2,313.7	-542.0	2,347.4	0.00	0.00	0.00
9,160.0	90.00	360.00	6,897.0	2,353.7	-542.0	2,387.3	0.00	0.00	0.00
9,200.0	90.00	360.00	6,897.0	2,393.7	-542.0	2,427.2	0.00	0.00	0.00
9,240.0	90.00	360.00	6,897.0	2,433.7	-542.0	2,467.1	0.00	0.00	0.00
9,280.0	90.00	360.00	6,897.0	2,473.7	-542.0	2,507.0	0.00	0.00	0.00
9,320.0	90.00	360.00	6,897.0	2,513.7	-542.0	2,546.9	0.00	0.00	0.00
9,360.0	90.00	360.00	6,897.0	2,553.7	-542.0	2,586.8	0.00	0.00	0.00
9,400.0	90.00	360.00	6,897.0	2,593.7	-542.0	2,626.7	0.00	0.00	0.00
9,440.0	90.00	360.00	6,897.0	2,633.7	-542.0	2,666.6	0.00	0.00	0.00
9,480.0	90.00	360.00	6,897.0	2,673.7	-542.0	2,706.4	0.00	0.00	0.00
9,520.0	90.00	360.00	6,897.0	2,713.7	-542.0	2,746.3	0.00	0.00	0.00
9,560.0	90.00	360.00	6,897.0	2,753.7	-542.0	2,786.2	0.00	0.00	0.00
9,600.0	90.00	360.00	6,897.0	2,793.7	-542.0	2,826.1	0.00	0.00	0.00
9,640.0	90.00	360.00	6,897.0	2,833.7	-542.0	2,866.0	0.00	0.00	0.00
9,680.0	90.00	360.00	6,897.0	2,873.7	-542.0	2,905.9	0.00	0.00	0.00
9,720.0	90.00	360.00	6,897.0	2,913.7	-542.0	2,945.8	0.00	0.00	0.00
9,760.0	90.00	360.00	6,897.0	2,953.7	-542.0	2,985.7	0.00	0.00	0.00
9,800.0	90.00	360.00	6,897.0	2,993.7	-542.0	3,025.6	0.00	0.00	0.00
9,840.0	90.00	360.00	6,897.0	3,033.7	-542.0	3,065.5	0.00	0.00	0.00
9,880.0	90.00	360.00	6,897.0	3,073.7	-542.0	3,105.4	0.00	0.00	0.00
9,920.0	90.00	360.00	6,897.0	3,113.7	-542.0	3,145.2	0.00	0.00	0.00
9,960.0	90.00	360.00	6,897.0	3,153.7	-542.0	3,185.1	0.00	0.00	0.00
10,000.0	90.00	360.00	6,897.0	3,193.7	-542.0	3,225.0	0.00	0.00	0.00
10,040.0	90.00	360.00	6,897.0	3,233.7	-542.0	3,264.9	0.00	0.00	0.00
10,080.0	90.00	360.00	6,897.0	3,273.7	-542.0	3,304.8	0.00	0.00	0.00
10,120.0	90.00	360.00	6,897.0	3,313.7	-542.0	3,344.7	0.00	0.00	0.00
10,160.0	90.00	360.00	6,897.0	3,353.7	-542.0	3,384.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,200.0	90.00	360.00	6,897.0	3,393.7	-542.0	3,424.5	0.00	0.00	0.00
10,240.0	90.00	360.00	6,897.0	3,433.7	-542.0	3,464.4	0.00	0.00	0.00
10,280.0	90.00	360.00	6,897.0	3,473.7	-542.0	3,504.3	0.00	0.00	0.00
10,320.0	90.00	360.00	6,897.0	3,513.7	-542.0	3,544.2	0.00	0.00	0.00
10,360.0	90.00	360.00	6,897.0	3,553.7	-542.0	3,584.1	0.00	0.00	0.00
10,400.0	90.00	360.00	6,897.0	3,593.7	-542.0	3,623.9	0.00	0.00	0.00
10,440.0	90.00	360.00	6,897.0	3,633.7	-542.0	3,663.8	0.00	0.00	0.00
10,480.0	90.00	360.00	6,897.0	3,673.7	-542.0	3,703.7	0.00	0.00	0.00
10,520.0	90.00	360.00	6,897.0	3,713.7	-542.0	3,743.6	0.00	0.00	0.00
10,560.0	90.00	360.00	6,897.0	3,753.7	-542.0	3,783.5	0.00	0.00	0.00
10,600.0	90.00	360.00	6,897.0	3,793.7	-542.0	3,823.4	0.00	0.00	0.00
10,640.0	90.00	360.00	6,897.0	3,833.7	-542.0	3,863.3	0.00	0.00	0.00
10,680.0	90.00	360.00	6,897.0	3,873.7	-542.0	3,903.2	0.00	0.00	0.00
10,720.0	90.00	360.00	6,897.0	3,913.7	-542.0	3,943.1	0.00	0.00	0.00
10,760.0	90.00	360.00	6,897.0	3,953.7	-542.0	3,983.0	0.00	0.00	0.00
10,800.0	90.00	360.00	6,897.0	3,993.7	-542.0	4,022.9	0.00	0.00	0.00
10,840.0	90.00	360.00	6,897.0	4,033.7	-542.0	4,062.7	0.00	0.00	0.00
10,880.0	90.00	360.00	6,897.0	4,073.7	-542.0	4,102.6	0.00	0.00	0.00
10,920.0	90.00	360.00	6,897.0	4,113.7	-542.0	4,142.5	0.00	0.00	0.00
10,960.0	90.00	360.00	6,897.0	4,153.7	-542.0	4,182.4	0.00	0.00	0.00
11,000.0	90.00	360.00	6,897.0	4,193.7	-542.0	4,222.3	0.00	0.00	0.00
11,040.0	90.00	360.00	6,897.0	4,233.7	-542.0	4,262.2	0.00	0.00	0.00
11,080.0	90.00	360.00	6,897.0	4,273.7	-542.0	4,302.1	0.00	0.00	0.00
11,120.0	90.00	360.00	6,897.0	4,313.7	-542.0	4,342.0	0.00	0.00	0.00
11,160.0	90.00	360.00	6,897.0	4,353.7	-542.0	4,381.9	0.00	0.00	0.00
11,200.0	90.00	360.00	6,897.0	4,393.7	-542.0	4,421.8	0.00	0.00	0.00
11,240.0	90.00	360.00	6,897.0	4,433.7	-542.0	4,461.7	0.00	0.00	0.00
11,280.0	90.00	360.00	6,897.0	4,473.7	-542.0	4,501.5	0.00	0.00	0.00
11,320.0	90.00	360.00	6,897.0	4,513.7	-542.0	4,541.4	0.00	0.00	0.00
11,360.0	90.00	360.00	6,897.0	4,553.7	-542.0	4,581.3	0.00	0.00	0.00
11,400.0	90.00	360.00	6,897.0	4,593.7	-542.0	4,621.2	0.00	0.00	0.00
11,440.0	90.00	360.00	6,897.0	4,633.7	-542.0	4,661.1	0.00	0.00	0.00
11,480.0	90.00	360.00	6,897.0	4,673.7	-542.0	4,701.0	0.00	0.00	0.00
11,520.0	90.00	360.00	6,897.0	4,713.7	-542.0	4,740.9	0.00	0.00	0.00
11,560.0	90.00	360.00	6,897.0	4,753.7	-542.0	4,780.8	0.00	0.00	0.00
11,600.0	90.00	360.00	6,897.0	4,793.7	-542.0	4,820.7	0.00	0.00	0.00
11,640.0	90.00	360.00	6,897.0	4,833.7	-542.0	4,860.6	0.00	0.00	0.00
11,680.0	90.00	360.00	6,897.0	4,873.7	-542.0	4,900.5	0.00	0.00	0.00
11,720.0	90.00	360.00	6,897.0	4,913.7	-542.0	4,940.3	0.00	0.00	0.00
11,760.0	90.00	360.00	6,897.0	4,953.7	-542.0	4,980.2	0.00	0.00	0.00
11,800.0	90.00	360.00	6,897.0	4,993.7	-542.0	5,020.1	0.00	0.00	0.00
11,840.0	90.00	360.00	6,897.0	5,033.7	-542.0	5,060.0	0.00	0.00	0.00
11,880.0	90.00	360.00	6,897.0	5,073.7	-542.0	5,099.9	0.00	0.00	0.00
11,920.0	90.00	360.00	6,897.0	5,113.7	-542.0	5,139.8	0.00	0.00	0.00
11,960.0	90.00	360.00	6,897.0	5,153.7	-542.0	5,179.7	0.00	0.00	0.00
12,000.0	90.00	360.00	6,897.0	5,193.7	-542.0	5,219.6	0.00	0.00	0.00
12,040.0	90.00	360.00	6,897.0	5,233.7	-542.0	5,259.5	0.00	0.00	0.00
12,080.0	90.00	360.00	6,897.0	5,273.7	-542.0	5,299.4	0.00	0.00	0.00
12,120.0	90.00	360.00	6,897.0	5,313.7	-542.0	5,339.3	0.00	0.00	0.00
12,160.0	90.00	360.00	6,897.0	5,353.7	-542.0	5,379.1	0.00	0.00	0.00
12,200.0	90.00	360.00	6,897.0	5,393.7	-542.0	5,419.0	0.00	0.00	0.00
12,240.0	90.00	360.00	6,897.0	5,433.7	-542.0	5,458.9	0.00	0.00	0.00
12,280.0	90.00	360.00	6,897.0	5,473.7	-542.0	5,498.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,320.0	90.00	360.00	6,897.0	5,513.7	-542.0	5,538.7	0.00	0.00	0.00
12,360.0	90.00	360.00	6,897.0	5,553.7	-542.0	5,578.6	0.00	0.00	0.00
12,400.0	90.00	360.00	6,897.0	5,593.7	-542.0	5,618.5	0.00	0.00	0.00
12,440.0	90.00	360.00	6,897.0	5,633.7	-542.0	5,658.4	0.00	0.00	0.00
12,480.0	90.00	360.00	6,897.0	5,673.7	-542.0	5,698.3	0.00	0.00	0.00
12,520.0	90.00	360.00	6,897.0	5,713.7	-542.0	5,738.2	0.00	0.00	0.00
12,560.0	90.00	360.00	6,897.0	5,753.7	-542.0	5,778.1	0.00	0.00	0.00
12,600.0	90.00	360.00	6,897.0	5,793.7	-542.0	5,817.9	0.00	0.00	0.00
12,640.0	90.00	360.00	6,897.0	5,833.7	-542.0	5,857.8	0.00	0.00	0.00
12,680.0	90.00	360.00	6,897.0	5,873.7	-542.0	5,897.7	0.00	0.00	0.00
12,720.0	90.00	360.00	6,897.0	5,913.7	-542.0	5,937.6	0.00	0.00	0.00
12,760.0	90.00	360.00	6,897.0	5,953.7	-542.0	5,977.5	0.00	0.00	0.00
12,800.0	90.00	360.00	6,897.0	5,993.7	-542.0	6,017.4	0.00	0.00	0.00
12,840.0	90.00	360.00	6,897.0	6,033.7	-542.0	6,057.3	0.00	0.00	0.00
12,880.0	90.00	360.00	6,897.0	6,073.7	-542.0	6,097.2	0.00	0.00	0.00
12,920.0	90.00	360.00	6,897.0	6,113.7	-542.0	6,137.1	0.00	0.00	0.00
12,960.0	90.00	360.00	6,897.0	6,153.7	-542.0	6,177.0	0.00	0.00	0.00
13,000.0	90.00	360.00	6,897.0	6,193.7	-542.0	6,216.9	0.00	0.00	0.00
13,040.0	90.00	360.00	6,897.0	6,233.7	-542.0	6,256.7	0.00	0.00	0.00
13,080.0	90.00	360.00	6,897.0	6,273.7	-542.0	6,296.6	0.00	0.00	0.00
13,120.0	90.00	360.00	6,897.0	6,313.7	-542.0	6,336.5	0.00	0.00	0.00
13,160.0	90.00	360.00	6,897.0	6,353.7	-542.0	6,376.4	0.00	0.00	0.00
13,200.0	90.00	360.00	6,897.0	6,393.7	-542.0	6,416.3	0.00	0.00	0.00
13,240.0	90.00	360.00	6,897.0	6,433.7	-542.0	6,456.2	0.00	0.00	0.00
13,280.0	90.00	360.00	6,897.0	6,473.7	-542.0	6,496.1	0.00	0.00	0.00
13,320.0	90.00	360.00	6,897.0	6,513.7	-542.0	6,536.0	0.00	0.00	0.00
13,360.0	90.00	360.00	6,897.0	6,553.7	-542.0	6,575.9	0.00	0.00	0.00
13,400.0	90.00	360.00	6,897.0	6,593.7	-542.0	6,615.8	0.00	0.00	0.00
13,440.0	90.00	360.00	6,897.0	6,633.7	-542.0	6,655.7	0.00	0.00	0.00
13,480.0	90.00	360.00	6,897.0	6,673.7	-542.0	6,695.5	0.00	0.00	0.00
13,520.0	90.00	360.00	6,897.0	6,713.7	-542.0	6,735.4	0.00	0.00	0.00
13,560.0	90.00	360.00	6,897.0	6,753.7	-542.0	6,775.3	0.00	0.00	0.00
13,600.0	90.00	360.00	6,897.0	6,793.7	-542.0	6,815.2	0.00	0.00	0.00
13,640.0	90.00	360.00	6,897.0	6,833.7	-542.0	6,855.1	0.00	0.00	0.00
13,680.0	90.00	360.00	6,897.0	6,873.7	-542.0	6,895.0	0.00	0.00	0.00
13,720.0	90.00	360.00	6,897.0	6,913.7	-542.0	6,934.9	0.00	0.00	0.00
13,760.0	90.00	360.00	6,897.0	6,953.7	-542.0	6,974.8	0.00	0.00	0.00
13,800.0	90.00	360.00	6,897.0	6,993.7	-542.0	7,014.7	0.00	0.00	0.00
13,840.0	90.00	360.00	6,897.0	7,033.7	-542.0	7,054.6	0.00	0.00	0.00
13,880.0	90.00	360.00	6,897.0	7,073.7	-542.0	7,094.5	0.00	0.00	0.00
13,920.0	90.00	360.00	6,897.0	7,113.7	-542.0	7,134.3	0.00	0.00	0.00
13,960.0	90.00	360.00	6,897.0	7,153.7	-542.0	7,174.2	0.00	0.00	0.00
14,000.0	90.00	360.00	6,897.0	7,193.7	-542.0	7,214.1	0.00	0.00	0.00
14,040.0	90.00	360.00	6,897.0	7,233.7	-542.0	7,254.0	0.00	0.00	0.00
14,080.0	90.00	360.00	6,897.0	7,273.7	-542.0	7,293.9	0.00	0.00	0.00
14,120.0	90.00	360.00	6,897.0	7,313.7	-542.0	7,333.8	0.00	0.00	0.00
14,132.8	90.00	360.00	6,897.0	7,326.5	-542.0	7,346.5	0.00	0.00	0.00
BHL 500'FNL & 1960'FWL									

Database:	Landmark	Local Co-ordinate Reference:	Well Ochsner 5K-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Project:	SEC.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	North Reference:	True
Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-28-12)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
BHL 500'FNL & 1960'	0.00	0.00	6,897.0	7,326.5	-542.0	1,438,876.86	3,161,209.20	40.536670	-104.920000
- plan hits target center									
- Point									
460' HALF SECTIONI	0.00	0.00	1.0	215.0	197.3	1,431,770.61	3,161,995.11	40.517150	-104.917341
- plan misses target center by 291.8ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,431,770.61	3,161,995.11		
Point 2			1.0	-64.0	-2,638.0	1,431,689.30	3,159,357.68		

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
7,375.2	6,897.0	7"		7	7-1/2

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
1,000.0	1,000.0	0.0	0.0	KOP #1	
6,175.2	6,133.1	-195.0	-542.0	KOP #2	
7,375.2	6,897.0	568.9	-542.0	End of Build	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T6N-R67W

Ochsner 5Q-HZ Pad Sec.5-T6N-R67W

Ochsner 5K-221

Wellbore #1

Plan #1 (6-28-12)

Anticollision Report

18 July, 2012



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (6-28-12)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 7/18/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,132.8	Plan #1 (6-28-12) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Ochsner 5Q-HZ Pad Sec.5-T6N-R67W						
Ochsner 5K-401 - Wellbore #1 - Plan #1 (6-28-12)	400.0	400.0	30.6	29.0	19.439	CC, ES
Ochsner 5K-401 - Wellbore #1 - Plan #1 (6-28-12)	14,132.8	14,379.2	482.6	221.2	1.846	SF
Ochsner 5O-441 - Wellbore #1 - Plan #1 (6-28-12)	1,000.0	1,001.0	69.5	65.3	16.275	CC, ES
Ochsner 5O-441 - Wellbore #1 - Plan #1 (6-28-12)	14,132.8	14,295.8	484.7	221.2	1.839	SF

Offset Design		Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5K-401 - Wellbore #1 - Plan #1 (6-28-12)										Offset Site Error:		0.0 ft
Survey Program: 0-MWVD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-30.6	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-30.6	30.6	30.4	0.22	136.073		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-30.6	30.6	29.9	0.67	45.358		
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-30.6	30.6	29.5	1.12	27.215		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-30.6	30.6	29.0	1.57	19.439	CC, ES	
500.0	500.0	498.9	498.9	1.0	1.0	-90.61	-0.3	-32.3	32.3	30.3	2.01	16.087		
600.0	600.0	597.6	597.5	1.2	1.2	-92.10	-1.4	-37.3	37.4	34.9	2.44	15.324		
700.0	700.0	695.8	695.3	1.5	1.4	-93.84	-3.1	-45.5	45.9	43.0	2.89	15.871		
800.0	800.0	793.4	792.1	1.7	1.7	-95.41	-5.4	-57.0	57.8	54.4	3.37	17.152		
900.0	900.0	890.0	887.6	1.9	2.0	-96.67	-8.4	-71.5	73.1	69.2	3.88	18.825		
1,000.0	1,000.0	985.5	981.4	2.1	2.3	-97.63	-11.9	-89.0	91.7	87.3	4.44	20.665		
1,100.0	1,100.0	1,082.8	1,076.6	2.3	2.7	11.53	-16.0	-109.0	111.0	106.3	4.67	23.749		
1,200.0	1,199.8	1,181.5	1,173.1	2.5	3.2	11.39	-20.2	-129.5	127.0	121.9	5.10	24.924		
1,300.0	1,299.5	1,280.7	1,270.0	2.8	3.6	11.56	-24.4	-150.0	139.7	134.2	5.53	25.252		
1,400.0	1,398.7	1,380.3	1,367.3	3.0	4.0	11.99	-28.6	-170.6	149.0	143.0	5.98	24.909		
1,435.0	1,433.3	1,415.2	1,401.5	3.1	4.2	12.19	-30.1	-177.8	151.4	145.3	6.14	24.674		
1,500.0	1,497.6	1,480.0	1,464.8	3.3	4.5	12.60	-32.8	-191.2	155.5	149.1	6.45	24.132		
1,600.0	1,596.4	1,579.8	1,562.4	3.5	4.9	13.19	-37.0	-211.9	161.9	155.0	6.93	23.363		
1,700.0	1,695.3	1,679.6	1,659.9	3.8	5.4	13.74	-41.2	-232.5	168.4	160.9	7.43	22.674		
1,800.0	1,794.1	1,779.4	1,757.4	4.1	5.8	14.25	-45.5	-253.2	174.8	166.9	7.93	22.052		
1,900.0	1,893.0	1,879.2	1,855.0	4.5	6.3	14.72	-49.7	-273.8	181.2	172.8	8.43	21.489		
2,000.0	1,991.8	1,978.9	1,952.5	4.8	6.8	15.16	-53.9	-294.4	187.7	178.7	8.95	20.978		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5K-401 - Wellbore #1 - Plan #1 (6-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,100.0	2,090.7	2,078.7	2,050.0	5.1	7.2	15.57	15.57	-58.1	-315.1	194.2	184.7	9.47	20.512	
2,200.0	2,189.5	2,178.5	2,147.6	5.5	7.7	15.95	15.95	-62.3	-335.7	200.6	190.6	9.99	20.087	
2,300.0	2,288.4	2,278.3	2,245.1	5.8	8.2	16.31	16.31	-66.5	-356.4	207.1	196.6	10.52	19.697	
2,400.0	2,387.2	2,378.1	2,342.6	6.2	8.6	16.65	16.65	-70.7	-377.0	213.6	202.6	11.05	19.338	
2,500.0	2,486.1	2,477.9	2,440.2	6.5	9.1	16.96	16.96	-75.0	-397.7	220.1	208.5	11.58	19.008	
2,600.0	2,584.9	2,577.6	2,537.7	6.9	9.6	17.26	17.26	-79.2	-418.3	226.6	214.5	12.12	18.702	
2,700.0	2,683.8	2,677.4	2,635.2	7.2	10.0	17.55	17.55	-83.4	-439.0	233.1	220.5	12.66	18.419	
2,800.0	2,782.6	2,777.2	2,732.7	7.6	10.5	17.81	17.81	-87.6	-459.6	239.6	226.4	13.20	18.156	
2,900.0	2,881.5	2,877.0	2,830.3	7.9	11.0	18.07	18.07	-91.8	-480.2	246.2	232.4	13.74	17.912	
3,000.0	2,980.3	2,976.8	2,927.8	8.3	11.4	18.31	18.31	-96.0	-500.9	252.7	238.4	14.29	17.683	
3,100.0	3,079.2	3,076.5	3,025.3	8.6	11.9	18.53	18.53	-100.3	-521.5	259.2	244.4	14.84	17.470	
3,200.0	3,178.0	3,176.3	3,122.9	9.0	12.4	18.75	18.75	-104.5	-542.2	265.7	250.4	15.39	17.269	
3,300.0	3,276.9	3,276.1	3,220.4	9.4	12.8	18.96	18.96	-108.7	-562.8	272.3	256.3	15.94	17.082	
3,400.0	3,375.7	3,375.9	3,317.9	9.7	13.3	19.15	19.15	-112.9	-583.5	278.8	262.3	16.49	16.905	
3,500.0	3,474.6	3,475.7	3,415.5	10.1	13.8	19.34	19.34	-117.1	-604.1	285.4	268.3	17.05	16.739	
3,600.0	3,573.4	3,575.4	3,513.0	10.4	14.2	19.52	19.52	-121.3	-624.8	291.9	274.3	17.60	16.582	
3,700.0	3,672.3	3,675.2	3,610.5	10.8	14.7	19.69	19.69	-125.6	-645.4	298.5	280.3	18.16	16.433	
3,800.0	3,771.1	3,775.0	3,708.1	11.2	15.2	19.86	19.86	-129.8	-666.0	305.0	286.3	18.72	16.293	
3,900.0	3,870.0	3,874.8	3,805.6	11.5	15.6	20.01	20.01	-134.0	-686.7	311.6	292.3	19.28	16.160	
4,000.0	3,968.8	3,974.6	3,903.1	11.9	16.1	20.16	20.16	-138.2	-707.3	318.1	298.3	19.84	16.034	
4,100.0	4,067.7	4,074.4	4,000.7	12.3	16.6	20.31	20.31	-142.4	-728.0	324.7	304.3	20.40	15.914	
4,200.0	4,166.5	4,174.1	4,098.2	12.6	17.1	20.45	20.45	-146.6	-748.6	331.2	310.3	20.96	15.800	
4,300.0	4,265.4	4,273.9	4,195.7	13.0	17.5	20.58	20.58	-150.8	-769.3	337.8	316.3	21.53	15.691	
4,400.0	4,364.2	4,373.7	4,293.3	13.4	18.0	20.71	20.71	-155.1	-789.9	344.4	322.3	22.09	15.587	
4,500.0	4,463.1	4,473.5	4,390.8	13.7	18.5	20.83	20.83	-159.3	-810.6	350.9	328.3	22.66	15.488	
4,600.0	4,561.9	4,573.3	4,488.3	14.1	18.9	20.95	20.95	-163.5	-831.2	357.5	334.3	23.22	15.394	
4,700.0	4,660.8	4,673.0	4,585.8	14.5	19.4	21.07	21.07	-167.7	-851.8	364.1	340.3	23.79	15.304	
4,807.1	4,766.7	4,779.9	4,690.3	14.9	19.9	21.18	21.18	-172.2	-874.0	371.1	346.7	24.40	15.211	
4,900.0	4,868.7	4,872.5	4,780.8	15.1	20.3	21.25	21.25	-176.1	-893.1	378.6	353.7	24.87	15.223	
5,000.0	4,968.1	4,971.9	4,877.9	15.4	20.8	21.17	21.17	-180.3	-913.7	389.8	364.5	25.30	15.409	
5,100.0	5,067.9	5,083.7	4,987.6	15.5	21.2	20.94	20.94	-184.8	-935.3	402.9	377.3	25.65	15.711	
5,200.0	5,167.9	5,199.0	5,101.4	15.7	21.5	20.65	20.65	-188.4	-953.3	415.5	389.5	25.93	16.021	
5,242.1	5,200.0	5,247.8	5,149.7	15.8	21.7	-89.27	-89.27	-189.7	-959.5	420.6	394.5	26.04	16.151	
5,300.0	5,257.9	5,315.0	5,216.5	15.8	21.8	-89.49	-89.49	-191.2	-966.8	426.8	400.6	26.24	16.265	
5,400.0	5,357.9	5,431.9	5,333.1	16.0	22.0	-89.74	-89.74	-193.0	-975.8	434.5	407.9	26.59	16.341	
5,500.0	5,457.9	5,549.4	5,450.4	16.1	22.2	-89.86	-89.86	-193.9	-980.2	438.2	411.3	26.95	16.260	
5,600.0	5,557.9	5,656.8	5,557.9	16.3	22.3	-89.87	-89.87	-194.0	-980.6	438.6	411.3	27.31	16.060	
5,700.0	5,657.9	5,756.8	5,657.9	16.4	22.4	-89.87	-89.87	-194.0	-980.6	438.6	410.9	27.66	15.857	
5,800.0	5,757.9	5,856.8	5,757.9	16.6	22.5	-89.87	-89.87	-194.0	-980.6	438.6	410.6	28.01	15.658	
5,900.0	5,857.9	5,956.8	5,857.9	16.8	22.7	-89.87	-89.87	-194.0	-980.6	438.6	410.2	28.37	15.462	
6,000.0	5,957.9	6,056.8	5,957.9	16.9	22.8	-89.87	-89.87	-194.0	-980.6	438.6	409.9	28.72	15.270	
6,100.0	6,057.9	6,156.8	6,057.9	17.1	22.9	-89.87	-89.87	-194.0	-980.6	438.6	409.5	29.08	15.081	
6,175.2	6,133.1	6,232.0	6,133.1	17.2	23.0	-89.87	-89.87	-194.0	-980.6	438.6	409.2	29.35	14.941	
6,200.0	6,157.9	6,256.8	6,157.9	17.2	23.0	-89.92	-89.92	-194.0	-980.6	438.6	409.1	29.44	14.899	
6,214.2	6,172.1	6,271.0	6,172.1	17.3	23.0	-90.00	-90.00	-194.0	-980.6	438.6	409.1	29.48	14.880	
6,250.0	6,207.7	6,306.7	6,207.7	17.3	23.1	-90.35	-90.35	-194.0	-980.6	438.6	409.0	29.55	14.841	
6,300.0	6,257.3	6,356.2	6,257.3	17.4	23.1	-91.18	-91.18	-194.0	-980.6	438.7	409.1	29.61	14.816	
6,350.0	6,306.3	6,405.3	6,306.3	17.4	23.2	-92.40	-92.40	-194.0	-980.6	439.0	409.4	29.61	14.824	
6,400.0	6,354.6	6,454.9	6,356.0	17.5	23.3	-93.94	-93.94	-193.3	-980.6	439.7	410.1	29.59	14.861	
6,450.0	6,402.0	6,505.8	6,406.7	17.5	23.3	-95.50	-95.50	-189.4	-980.6	440.7	411.2	29.56	14.910	
6,500.0	6,448.2	6,557.7	6,458.0	17.5	23.4	-97.05	-97.05	-182.0	-980.6	442.1	412.6	29.54	14.967	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design		Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5K-401 - Wellbore #1 - Plan #1 (6-28-12)											Offset Site Error:		0.0 ft	
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
6,550.0	6,493.0	6,610.4	6,509.6	17.5	23.4	-98.57	-170.9	-980.6	443.8	414.3	29.53	15.029				
6,600.0	6,536.3	6,664.2	6,561.2	17.6	23.4	-100.06	-156.0	-980.6	445.8	416.3	29.54	15.093				
6,650.0	6,577.9	6,719.0	6,612.6	17.6	23.5	-101.51	-137.1	-980.6	448.1	418.5	29.56	15.157				
6,700.0	6,617.5	6,774.8	6,663.5	17.6	23.5	-102.91	-114.1	-980.6	450.5	420.9	29.61	15.218				
6,750.0	6,655.1	6,831.7	6,713.4	17.6	23.5	-104.26	-86.9	-980.6	453.2	423.5	29.67	15.273				
6,800.0	6,690.5	6,889.6	6,762.1	17.7	23.5	-105.54	-55.4	-980.6	455.9	426.2	29.76	15.318				
6,850.0	6,723.5	6,948.6	6,809.0	17.7	23.5	-106.75	-19.7	-980.6	458.8	428.9	29.88	15.351				
6,900.0	6,753.9	7,008.7	6,853.8	17.8	23.6	-107.88	20.3	-980.6	461.6	431.5	30.05	15.363				
6,950.0	6,781.7	7,069.8	6,896.1	17.9	23.6	-108.93	64.4	-980.6	464.3	434.1	30.26	15.345				
7,000.0	6,806.7	7,131.9	6,935.2	18.0	23.7	-109.88	112.6	-980.6	467.0	436.5	30.48	15.323				
7,050.0	6,828.8	7,194.9	6,970.8	18.1	23.7	-110.73	164.6	-980.6	469.5	438.7	30.78	15.251				
7,100.0	6,848.0	7,258.8	7,002.4	18.3	23.8	-111.48	220.1	-980.6	471.7	440.6	31.15	15.143				
7,150.0	6,864.0	7,323.5	7,029.6	18.6	24.0	-112.11	278.8	-980.6	473.7	442.1	31.59	14.994				
7,200.0	6,877.0	7,388.8	7,051.8	18.9	24.2	-112.63	340.1	-980.6	475.4	443.2	32.11	14.804				
7,250.0	6,886.8	7,454.6	7,068.9	19.3	24.4	-113.02	403.7	-980.6	476.6	443.9	32.72	14.569				
7,300.0	6,893.3	7,520.8	7,080.5	19.7	24.8	-113.29	468.9	-980.6	477.5	444.1	33.41	14.291				
7,350.0	6,896.6	7,576.1	7,086.6	20.2	25.1	-113.48	523.8	-980.6	478.4	444.3	34.08	14.035				
7,375.2	6,897.0	7,601.2	7,089.2	20.5	25.2	-113.66	548.7	-980.6	479.3	444.9	34.38	13.939				
7,400.0	6,897.0	7,627.8	7,091.9	20.7	25.4	-113.96	575.3	-980.6	480.3	445.5	34.83	13.791				
7,500.0	6,897.0	7,746.4	7,097.1	21.9	26.4	-114.52	693.7	-980.6	482.1	445.0	37.05	13.011				
7,600.0	6,897.0	7,846.4	7,097.1	23.1	27.3	-114.52	793.7	-980.6	482.1	442.6	39.45	12.219				
7,700.0	6,897.0	7,946.4	7,097.1	24.5	28.4	-114.52	893.7	-980.6	482.1	440.1	42.01	11.475				
7,800.0	6,897.0	8,046.4	7,097.0	25.9	29.6	-114.52	993.7	-980.6	482.1	437.4	44.70	10.784				
7,900.0	6,897.0	8,146.4	7,097.0	27.4	30.8	-114.52	1,093.7	-980.6	482.1	434.6	47.51	10.147				
8,000.0	6,897.0	8,246.4	7,097.0	29.0	32.2	-114.52	1,193.7	-980.6	482.1	431.7	50.42	9.563				
8,100.0	6,897.0	8,346.4	7,097.0	30.6	33.6	-114.52	1,293.7	-980.6	482.1	428.7	53.40	9.029				
8,200.0	6,897.0	8,446.4	7,097.0	32.2	35.0	-114.52	1,393.7	-980.7	482.1	425.7	56.44	8.541				
8,300.0	6,897.0	8,546.4	7,097.0	33.8	36.5	-114.51	1,493.7	-980.7	482.1	422.6	59.55	8.096				
8,400.0	6,897.0	8,646.4	7,097.0	35.5	38.1	-114.51	1,593.7	-980.7	482.1	419.4	62.70	7.689				
8,500.0	6,897.0	8,746.4	7,097.0	37.2	39.7	-114.51	1,693.7	-980.7	482.1	416.2	65.89	7.317				
8,600.0	6,897.0	8,846.4	7,097.0	38.9	41.3	-114.51	1,793.7	-980.7	482.1	413.0	69.12	6.975				
8,700.0	6,897.0	8,946.4	7,097.0	40.7	42.9	-114.51	1,893.7	-980.7	482.2	409.8	72.38	6.661				
8,800.0	6,897.0	9,046.4	7,097.0	42.4	44.6	-114.51	1,993.7	-980.7	482.2	406.5	75.67	6.372				
8,900.0	6,897.0	9,146.4	7,097.0	44.2	46.3	-114.51	2,093.7	-980.7	482.2	403.2	78.98	6.105				
9,000.0	6,897.0	9,246.4	7,097.0	46.0	48.0	-114.51	2,193.7	-980.7	482.2	399.9	82.31	5.858				
9,100.0	6,897.0	9,346.4	7,097.0	47.8	49.7	-114.51	2,293.7	-980.7	482.2	396.5	85.66	5.629				
9,200.0	6,897.0	9,446.4	7,097.0	49.6	51.4	-114.51	2,393.7	-980.7	482.2	393.2	89.02	5.417				
9,300.0	6,897.0	9,546.4	7,097.0	51.4	53.2	-114.51	2,493.7	-980.8	482.2	389.8	92.40	5.219				
9,400.0	6,897.0	9,646.4	7,097.0	53.2	54.9	-114.51	2,593.7	-980.8	482.2	386.4	95.79	5.034				
9,500.0	6,897.0	9,746.4	7,097.0	55.1	56.7	-114.51	2,693.7	-980.8	482.2	383.0	99.19	4.861				
9,600.0	6,897.0	9,846.4	7,097.0	56.9	58.5	-114.51	2,793.7	-980.8	482.2	379.6	102.61	4.700				
9,700.0	6,897.0	9,946.4	7,097.0	58.7	60.3	-114.51	2,893.7	-980.8	482.2	376.2	106.03	4.548				
9,800.0	6,897.0	10,046.4	7,097.0	60.6	62.1	-114.51	2,993.7	-980.8	482.2	372.8	109.46	4.406				
9,900.0	6,897.0	10,146.4	7,097.0	62.4	63.9	-114.51	3,093.7	-980.8	482.2	369.3	112.90	4.272				
10,000.0	6,897.0	10,246.4	7,097.0	64.3	65.7	-114.51	3,193.7	-980.8	482.3	365.9	116.34	4.145				
10,100.0	6,897.0	10,346.4	7,097.0	66.1	67.5	-114.51	3,293.7	-980.8	482.3	362.5	119.80	4.026				
10,200.0	6,897.0	10,446.4	7,097.0	68.0	69.3	-114.50	3,393.7	-980.8	482.3	359.0	123.25	3.913				
10,300.0	6,897.0	10,546.4	7,097.0	69.9	71.1	-114.50	3,493.7	-980.8	482.3	355.6	126.72	3.806				
10,400.0	6,897.0	10,646.4	7,097.0	71.7	73.0	-114.50	3,593.7	-980.9	482.3	352.1	130.19	3.705				
10,500.0	6,897.0	10,746.4	7,097.0	73.6	74.8	-114.50	3,693.7	-980.9	482.3	348.6	133.66	3.608				
10,600.0	6,897.0	10,846.4	7,097.0	75.5	76.7	-114.50	3,793.7	-980.9	482.3	345.2	137.14	3.517				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5K-401 - Wellbore #1 - Plan #1 (6-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,700.0	6,897.0	10,946.4	7,097.0	77.4	78.5	-114.50	3,893.7	-980.9	482.3	341.7	140.62	3.430		
10,800.0	6,897.0	11,046.4	7,097.0	79.2	80.4	-114.50	3,993.7	-980.9	482.3	338.2	144.10	3.347		
10,900.0	6,897.0	11,146.4	7,097.0	81.1	82.2	-114.50	4,093.7	-980.9	482.3	334.7	147.59	3.268		
11,000.0	6,897.0	11,246.4	7,097.0	83.0	84.1	-114.50	4,193.7	-980.9	482.3	331.2	151.08	3.193		
11,100.0	6,897.0	11,346.4	7,097.0	84.9	85.9	-114.50	4,293.7	-980.9	482.3	327.8	154.58	3.120		
11,200.0	6,897.0	11,446.4	7,097.0	86.8	87.8	-114.50	4,393.7	-980.9	482.3	324.3	158.07	3.051		
11,300.0	6,897.0	11,546.4	7,097.0	88.6	89.6	-114.50	4,493.7	-980.9	482.4	320.8	161.57	2.985		
11,400.0	6,897.0	11,646.4	7,097.0	90.5	91.5	-114.50	4,593.7	-981.0	482.4	317.3	165.08	2.922		
11,500.0	6,897.0	11,746.4	7,097.0	92.4	93.4	-114.50	4,693.7	-981.0	482.4	313.8	168.58	2.861		
11,600.0	6,897.0	11,846.4	7,097.0	94.3	95.3	-114.50	4,793.7	-981.0	482.4	310.3	172.09	2.803		
11,700.0	6,897.0	11,946.4	7,097.0	96.2	97.1	-114.50	4,893.7	-981.0	482.4	306.8	175.60	2.747		
11,800.0	6,897.0	12,046.4	7,097.0	98.1	99.0	-114.50	4,993.7	-981.0	482.4	303.3	179.11	2.693		
11,900.0	6,897.0	12,146.4	7,097.0	100.0	100.9	-114.50	5,093.7	-981.0	482.4	299.8	182.62	2.642		
12,000.0	6,897.0	12,246.4	7,097.0	101.9	102.8	-114.50	5,193.7	-981.0	482.4	296.3	186.13	2.592		
12,100.0	6,897.0	12,346.4	7,097.0	103.8	104.6	-114.49	5,293.7	-981.0	482.4	292.8	189.65	2.544		
12,200.0	6,897.0	12,446.4	7,097.0	105.7	106.5	-114.49	5,393.7	-981.0	482.4	289.3	193.17	2.497		
12,300.0	6,897.0	12,546.4	7,097.0	107.6	108.4	-114.49	5,493.7	-981.0	482.4	285.8	196.68	2.453		
12,400.0	6,897.0	12,646.4	7,097.0	109.5	110.3	-114.49	5,593.7	-981.0	482.4	282.2	200.20	2.410		
12,500.0	6,897.0	12,746.4	7,097.0	111.4	112.2	-114.49	5,693.7	-981.1	482.5	278.7	203.73	2.368		
12,600.0	6,897.0	12,846.4	7,097.0	113.3	114.1	-114.49	5,793.7	-981.1	482.5	275.2	207.25	2.328		
12,700.0	6,897.0	12,946.4	7,097.0	115.2	115.9	-114.49	5,893.7	-981.1	482.5	271.7	210.77	2.289		
12,800.0	6,897.0	13,046.4	7,097.0	117.1	117.8	-114.49	5,993.7	-981.1	482.5	268.2	214.30	2.251		
12,900.0	6,897.0	13,146.4	7,097.0	119.0	119.7	-114.49	6,093.7	-981.1	482.5	264.7	217.82	2.215		
13,000.0	6,897.0	13,246.4	7,097.0	120.9	121.6	-114.49	6,193.7	-981.1	482.5	261.1	221.35	2.180		
13,100.0	6,897.0	13,346.4	7,097.0	122.8	123.5	-114.49	6,293.7	-981.1	482.5	257.6	224.88	2.146		
13,200.0	6,897.0	13,446.4	7,097.0	124.7	125.4	-114.49	6,393.7	-981.1	482.5	254.1	228.40	2.113		
13,300.0	6,897.0	13,546.4	7,097.0	126.6	127.3	-114.49	6,493.7	-981.1	482.5	250.6	231.93	2.080		
13,400.0	6,897.0	13,646.4	7,097.0	128.5	129.2	-114.49	6,593.7	-981.1	482.5	247.1	235.46	2.049		
13,500.0	6,897.0	13,746.4	7,097.0	130.4	131.1	-114.49	6,693.7	-981.1	482.5	243.5	239.00	2.019		
13,600.0	6,897.0	13,846.4	7,097.0	132.3	133.0	-114.49	6,793.7	-981.2	482.5	240.0	242.53	1.990		
13,700.0	6,897.0	13,946.4	7,097.0	134.3	134.9	-114.49	6,893.7	-981.2	482.5	236.5	246.06	1.961		
13,800.0	6,897.0	14,046.4	7,097.0	136.2	136.8	-114.49	6,993.7	-981.2	482.6	233.0	249.59	1.933		
13,900.0	6,897.0	14,146.4	7,097.0	138.1	138.7	-114.49	7,093.7	-981.2	482.6	229.4	253.13	1.906		
14,000.0	6,897.0	14,246.4	7,097.0	140.0	140.6	-114.48	7,193.7	-981.2	482.6	225.9	256.66	1.880		
14,100.0	6,897.0	14,346.4	7,097.0	141.9	142.5	-114.48	7,293.7	-981.2	482.6	222.4	260.20	1.855		
14,132.8	6,897.0	14,379.2	7,097.0	142.5	143.1	-114.48	7,326.5	-981.2	482.6	221.2	261.35	1.846 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5O-441 - Wellbore #1 - Plan #1 (6-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	42.82	51.0	47.3	69.5	69.5	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	42.82	51.0	47.3	69.5	69.3	0.23	306.320		
200.0	200.0	201.0	201.0	0.3	0.3	42.82	51.0	47.3	69.5	68.9	0.68	102.785		
300.0	300.0	301.0	301.0	0.6	0.6	42.82	51.0	47.3	69.5	68.4	1.13	61.753		
400.0	400.0	401.0	401.0	0.8	0.8	42.82	51.0	47.3	69.5	68.0	1.58	44.135		
500.0	500.0	501.0	501.0	1.0	1.0	42.82	51.0	47.3	69.5	67.5	2.03	34.338		
600.0	600.0	601.0	601.0	1.2	1.2	42.82	51.0	47.3	69.5	67.1	2.47	28.100		
700.0	700.0	701.0	701.0	1.5	1.5	42.82	51.0	47.3	69.5	66.6	2.92	23.780		
800.0	800.0	801.0	801.0	1.7	1.7	42.82	51.0	47.3	69.5	66.2	3.37	20.612		
900.0	900.0	901.0	901.0	1.9	1.9	42.82	51.0	47.3	69.5	65.7	3.82	18.188		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	42.82	51.0	47.3	69.5	65.3	4.27	16.275 CC, ES		
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.4	153.24	51.0	47.3	71.1	66.4	4.70	15.115		
1,200.0	1,199.8	1,200.8	1,200.8	2.5	2.6	154.98	51.0	47.3	75.8	70.7	5.12	14.811		
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	157.44	51.0	47.3	83.8	78.3	5.53	15.139		
1,400.0	1,398.7	1,399.7	1,399.7	3.0	3.0	160.18	51.0	47.3	95.2	89.2	5.95	15.992		
1,435.0	1,433.3	1,434.3	1,434.3	3.1	3.1	161.13	51.0	47.3	100.0	93.9	6.10	16.399		
1,500.0	1,497.6	1,498.6	1,498.6	3.3	3.3	162.80	51.0	47.3	109.3	102.9	6.38	17.144		
1,600.0	1,596.4	1,597.4	1,597.4	3.5	3.5	164.87	51.0	47.3	123.9	117.1	6.81	18.181		
1,700.0	1,695.3	1,696.3	1,696.3	3.8	3.7	166.50	51.0	47.3	138.5	131.3	7.25	19.101		
1,800.0	1,794.1	1,795.1	1,795.1	4.1	3.9	167.82	51.0	47.3	153.3	145.6	7.70	19.919		
1,900.0	1,893.0	1,894.0	1,894.0	4.5	4.1	168.91	51.0	47.3	168.1	160.0	8.14	20.649		
2,000.0	1,991.8	1,992.8	1,992.8	4.8	4.4	169.82	51.0	47.3	183.0	174.4	8.59	21.303		
2,100.0	2,090.7	2,091.7	2,091.7	5.1	4.6	170.59	51.0	47.3	197.9	188.9	9.04	21.892		
2,200.0	2,189.5	2,190.5	2,190.5	5.5	4.8	171.26	51.0	47.3	212.8	203.3	9.49	22.424		
2,300.0	2,288.4	2,289.4	2,289.4	5.8	5.0	171.83	51.0	47.3	227.8	217.9	9.95	22.906		
2,400.0	2,387.2	2,388.2	2,388.2	6.2	5.3	172.34	51.0	47.3	242.8	232.4	10.40	23.345		
2,500.0	2,486.1	2,487.1	2,487.1	6.5	5.5	172.79	51.0	47.3	257.8	246.9	10.86	23.747		
2,600.0	2,584.9	2,593.4	2,593.4	6.9	5.7	173.39	49.7	46.5	271.6	260.3	11.30	24.034		
2,700.0	2,683.8	2,701.5	2,701.3	7.2	5.9	174.39	44.9	43.6	282.4	270.7	11.72	24.095		
2,800.0	2,782.6	2,809.9	2,809.3	7.6	6.1	175.77	36.6	38.7	290.2	278.0	12.14	23.893		
2,900.0	2,881.5	2,915.8	2,914.3	7.9	6.3	177.47	25.3	31.9	295.1	282.6	12.57	23.475		
3,000.0	2,980.3	3,015.3	3,013.0	8.3	6.5	179.14	13.8	25.0	299.6	286.6	13.00	23.043		
3,100.0	3,079.2	3,114.8	3,111.6	8.6	6.7	-179.25	2.3	18.2	304.4	290.9	13.45	22.637		
3,200.0	3,178.0	3,214.3	3,210.2	9.0	6.9	-177.69	-9.2	11.3	309.3	295.4	13.90	22.253		
3,300.0	3,276.9	3,313.9	3,308.8	9.4	7.2	-176.18	-20.6	4.5	314.5	300.1	14.37	21.891		
3,400.0	3,375.7	3,413.4	3,407.4	9.7	7.4	-174.72	-32.1	-2.4	319.9	305.1	14.85	21.547		
3,500.0	3,474.6	3,512.9	3,506.1	10.1	7.7	-173.30	-43.6	-9.3	325.5	310.2	15.34	21.221		
3,600.0	3,573.4	3,612.4	3,604.7	10.4	7.9	-171.94	-55.1	-16.1	331.3	315.4	15.84	20.911		
3,700.0	3,672.3	3,712.0	3,703.3	10.8	8.2	-170.62	-66.6	-23.0	337.3	320.9	16.36	20.617		
3,800.0	3,771.1	3,811.5	3,801.9	11.2	8.5	-169.35	-78.0	-29.8	343.4	326.5	16.89	20.338		
3,900.0	3,870.0	3,911.0	3,900.5	11.5	8.7	-168.13	-89.5	-36.7	349.7	332.3	17.42	20.072		
4,000.0	3,968.8	4,010.5	3,999.2	11.9	9.0	-166.94	-101.0	-43.6	356.2	338.2	17.97	19.819		
4,100.0	4,067.7	4,110.1	4,097.8	12.3	9.3	-165.80	-112.5	-50.4	362.8	344.3	18.53	19.579		
4,200.0	4,166.5	4,209.6	4,196.4	12.6	9.6	-164.71	-124.0	-57.3	369.5	350.4	19.10	19.350		
4,300.0	4,265.4	4,309.1	4,295.0	13.0	9.9	-163.65	-135.4	-64.1	376.4	356.7	19.67	19.133		
4,400.0	4,364.2	4,408.6	4,393.7	13.4	10.2	-162.63	-146.9	-71.0	383.4	363.2	20.26	18.927		
4,500.0	4,463.1	4,508.2	4,492.3	13.7	10.5	-161.64	-158.4	-77.9	390.5	369.7	20.85	18.731		
4,600.0	4,561.9	4,607.7	4,590.9	14.1	10.8	-160.69	-169.9	-84.7	397.8	376.3	21.45	18.545		
4,700.0	4,660.8	4,700.0	4,682.5	14.5	11.0	-159.94	-179.8	-90.7	405.6	383.6	22.01	18.427		
4,807.1	4,766.7	4,800.0	4,782.0	14.9	11.3	-159.55	-187.9	-95.5	415.8	393.2	22.56	18.432		
4,900.0	4,858.7	4,887.6	4,869.4	15.1	11.5	-159.55	-192.4	-98.2	424.7	401.7	23.00	18.469		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5O-441 - Wellbore #1 - Plan #1 (6-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,958.1	4,980.2	4,962.1	15.4	11.7	-159.73	-194.8	-99.6	432.8	409.4	23.38	18.510		
5,100.0	5,057.9	5,077.1	5,058.9	15.5	11.8	-160.03	-195.0	-99.7	439.0	415.2	23.73	18.501		
5,200.0	5,157.9	5,177.0	5,158.9	15.7	12.0	-160.20	-195.0	-99.7	442.0	417.9	24.06	18.373		
5,242.1	5,200.0	5,219.2	5,201.0	15.8	12.1	90.00	-195.0	-99.7	442.3	418.1	24.19	18.281		
5,300.0	5,257.9	5,277.0	5,258.9	15.8	12.2	90.00	-195.0	-99.7	442.3	417.9	24.41	18.117		
5,400.0	5,357.9	5,377.0	5,358.9	16.0	12.4	90.00	-195.0	-99.7	442.3	417.5	24.79	17.842		
5,500.0	5,457.9	5,477.0	5,458.9	16.1	12.6	90.00	-195.0	-99.7	442.3	417.1	25.17	17.574		
5,600.0	5,557.9	5,577.0	5,558.9	16.3	12.8	90.00	-195.0	-99.7	442.3	416.7	25.55	17.312		
5,700.0	5,657.9	5,677.0	5,658.9	16.4	13.0	90.00	-195.0	-99.7	442.3	416.3	25.93	17.056		
5,800.0	5,757.9	5,777.0	5,758.9	16.6	13.2	90.00	-195.0	-99.7	442.3	416.0	26.32	16.806		
5,900.0	5,857.9	5,877.0	5,858.9	16.8	13.4	90.00	-195.0	-99.7	442.3	415.6	26.70	16.563		
6,000.0	5,957.9	5,977.0	5,958.9	16.9	13.6	90.00	-195.0	-99.7	442.3	415.2	27.09	16.325		
6,100.0	6,057.9	6,077.0	6,058.9	17.1	13.8	90.00	-195.0	-99.7	442.3	414.8	27.48	16.093		
6,175.2	6,133.1	6,152.2	6,134.1	17.2	13.9	90.00	-195.0	-99.7	442.3	414.5	27.78	15.922		
6,178.1	6,135.9	6,155.1	6,136.9	17.2	13.9	90.00	-195.0	-99.7	442.3	414.5	27.79	15.915		
6,200.0	6,157.9	6,177.0	6,158.9	17.2	14.0	90.05	-195.0	-99.7	442.3	414.4	27.88	15.865		
6,250.0	6,207.7	6,226.9	6,208.7	17.3	14.1	90.47	-195.0	-99.7	442.3	414.2	28.08	15.748		
6,300.0	6,257.3	6,276.5	6,258.3	17.4	14.2	91.30	-195.0	-99.7	442.4	414.1	28.30	15.629		
6,350.0	6,306.3	6,325.5	6,307.3	17.4	14.3	92.51	-195.0	-99.7	442.7	414.2	28.53	15.515		
6,400.0	6,354.6	6,375.2	6,357.0	17.5	14.4	94.02	-194.2	-99.7	443.4	414.7	28.76	15.417		
6,450.0	6,402.0	6,426.2	6,407.9	17.5	14.5	95.57	-190.3	-99.7	444.5	415.5	28.96	15.348		
6,500.0	6,448.2	6,478.2	6,459.3	17.5	14.5	97.09	-182.8	-99.7	445.9	416.8	29.13	15.309		
6,550.0	6,493.0	6,531.0	6,510.9	17.5	14.6	98.59	-171.6	-99.7	447.6	418.3	29.25	15.300		
6,600.0	6,536.3	6,584.9	6,562.6	17.6	14.6	100.06	-156.5	-99.7	449.6	420.2	29.35	15.319		
6,650.0	6,577.9	6,639.7	6,614.0	17.6	14.7	101.48	-137.5	-99.7	451.8	422.4	29.41	15.362		
6,700.0	6,617.5	6,695.6	6,664.9	17.6	14.7	102.86	-114.4	-99.7	454.2	424.8	29.45	15.423		
6,750.0	6,655.1	6,752.5	6,714.8	17.6	14.7	104.19	-87.0	-99.7	456.8	427.4	29.48	15.495		
6,800.0	6,690.5	6,810.5	6,763.4	17.7	14.8	105.45	-55.4	-99.7	459.5	430.0	29.52	15.568		
6,850.0	6,723.5	6,869.6	6,810.3	17.7	14.8	106.64	-19.6	-99.7	462.3	432.7	29.58	15.631		
6,900.0	6,753.9	6,929.7	6,855.1	17.8	14.8	107.75	20.5	-99.7	465.1	435.4	29.67	15.673		
6,950.0	6,781.7	6,990.8	6,897.2	17.9	14.9	108.78	64.8	-99.7	467.8	438.0	29.84	15.679		
7,000.0	6,806.7	7,052.9	6,936.2	18.0	15.0	109.71	113.0	-99.7	470.4	440.3	30.08	15.638		
7,050.0	6,828.8	7,115.9	6,971.7	18.1	15.2	110.54	165.1	-99.7	472.8	442.4	30.44	15.533		
7,100.0	6,848.0	7,179.8	7,003.2	18.3	15.6	111.27	220.7	-99.7	475.0	444.1	30.92	15.362		
7,150.0	6,864.0	7,244.4	7,030.2	18.6	16.0	111.89	279.3	-99.7	476.9	445.4	31.54	15.122		
7,200.0	6,877.0	7,309.6	7,052.3	18.9	16.4	112.38	340.7	-99.7	478.5	446.2	32.31	14.809		
7,250.0	6,886.8	7,375.4	7,069.2	19.3	17.0	112.76	404.2	-99.7	479.7	446.5	33.24	14.432		
7,300.0	6,893.3	7,441.6	7,080.7	19.7	17.6	113.02	469.4	-99.7	480.6	446.2	34.32	14.004		
7,350.0	6,896.6	7,496.4	7,086.7	20.2	18.2	113.21	523.9	-99.7	481.4	446.0	35.41	13.595		
7,375.2	6,897.0	7,521.5	7,089.3	20.5	18.5	113.39	548.8	-99.7	482.3	446.3	35.96	13.413		
7,400.0	6,897.0	7,548.4	7,092.0	20.7	18.8	113.69	575.6	-99.7	483.3	446.8	36.46	13.255		
7,500.0	6,897.0	7,666.7	7,097.0	21.9	20.2	114.23	693.8	-99.7	485.0	446.1	38.85	12.485		
7,600.0	6,897.0	7,766.7	7,097.0	23.1	21.5	114.23	793.8	-99.7	485.0	443.7	41.31	11.739		
7,700.0	6,897.0	7,866.7	7,097.0	24.5	22.9	114.23	893.8	-99.7	485.0	441.1	43.92	11.042		
7,800.0	6,897.0	7,966.7	7,097.0	25.9	24.4	114.23	993.8	-99.8	485.0	438.3	46.66	10.394		
7,900.0	6,897.0	8,066.7	7,097.0	27.4	25.9	114.23	1,093.8	-99.8	485.0	435.5	49.50	9.798		
8,000.0	6,897.0	8,166.7	7,097.0	29.0	27.5	114.23	1,193.8	-99.8	485.0	432.5	52.43	9.250		
8,100.0	6,897.0	8,266.7	7,097.0	30.6	29.1	114.23	1,293.8	-99.8	485.0	429.5	55.43	8.749		
8,200.0	6,897.0	8,366.7	7,097.0	32.2	30.8	114.23	1,393.8	-99.8	485.0	426.5	58.50	8.290		
8,300.0	6,897.0	8,466.7	7,097.0	33.8	32.5	114.23	1,493.8	-99.8	485.0	423.3	61.61	7.871		
8,400.0	6,897.0	8,566.7	7,097.0	35.5	34.2	114.23	1,593.8	-99.8	484.9	420.2	64.78	7.486		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design		Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5O-441 - Wellbore #1 - Plan #1 (6-28-12)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,500.0	6,897.0	8,666.7	7,097.0	37.2	35.9	114.23	1,693.8	-99.8	484.9	417.0	67.98	7.133		
8,600.0	6,897.0	8,766.7	7,097.0	38.9	37.7	114.23	1,793.8	-99.8	484.9	413.7	71.22	6.809		
8,700.0	6,897.0	8,866.7	7,097.0	40.7	39.4	114.23	1,893.8	-99.8	484.9	410.4	74.48	6.511		
8,800.0	6,897.0	8,966.7	7,097.0	42.4	41.2	114.23	1,993.8	-99.8	484.9	407.2	77.78	6.235		
8,900.0	6,897.0	9,066.7	7,097.0	44.2	43.0	114.23	2,093.8	-99.8	484.9	403.8	81.09	5.980		
9,000.0	6,897.0	9,166.7	7,097.0	46.0	44.8	114.23	2,193.8	-99.8	484.9	400.5	84.43	5.744		
9,100.0	6,897.0	9,266.7	7,097.0	47.8	46.6	114.23	2,293.8	-99.8	484.9	397.1	87.78	5.524		
9,200.0	6,897.0	9,366.7	7,097.0	49.6	48.4	114.23	2,393.8	-99.8	484.9	393.8	91.15	5.320		
9,300.0	6,897.0	9,466.7	7,097.0	51.4	50.3	114.23	2,493.8	-99.8	484.9	390.4	94.53	5.130		
9,400.0	6,897.0	9,566.7	7,097.0	53.2	52.1	114.23	2,593.8	-99.8	484.9	387.0	97.92	4.952		
9,500.0	6,897.0	9,666.7	7,097.0	55.1	53.9	114.23	2,693.8	-99.8	484.9	383.6	101.33	4.785		
9,600.0	6,897.0	9,766.7	7,097.0	56.9	55.8	114.23	2,793.8	-99.8	484.9	380.2	104.75	4.629		
9,700.0	6,897.0	9,866.7	7,097.0	58.7	57.6	114.23	2,893.8	-99.8	484.9	376.7	108.17	4.483		
9,800.0	6,897.0	9,966.7	7,097.0	60.6	59.5	114.23	2,993.8	-99.8	484.9	373.3	111.60	4.345		
9,900.0	6,897.0	10,066.7	7,097.0	62.4	61.4	114.23	3,093.8	-99.9	484.9	369.8	115.05	4.215		
10,000.0	6,897.0	10,166.7	7,097.0	64.3	63.2	114.23	3,193.8	-99.9	484.9	366.4	118.49	4.092		
10,100.0	6,897.0	10,266.7	7,097.0	66.1	65.1	114.23	3,293.8	-99.9	484.9	362.9	121.95	3.976		
10,200.0	6,897.0	10,366.7	7,097.0	68.0	67.0	114.23	3,393.8	-99.9	484.9	359.5	125.41	3.866		
10,300.0	6,897.0	10,466.7	7,097.0	69.9	68.8	114.23	3,493.8	-99.9	484.9	356.0	128.88	3.762		
10,400.0	6,897.0	10,566.7	7,097.0	71.7	70.7	114.23	3,593.8	-99.9	484.9	352.5	132.35	3.664		
10,500.0	6,897.0	10,666.7	7,097.0	73.6	72.6	114.23	3,693.8	-99.9	484.9	349.0	135.82	3.570		
10,600.0	6,897.0	10,766.7	7,097.0	75.5	74.5	114.23	3,793.8	-99.9	484.9	345.6	139.30	3.481		
10,700.0	6,897.0	10,866.7	7,097.0	77.4	76.4	114.23	3,893.8	-99.9	484.8	342.1	142.78	3.396		
10,800.0	6,897.0	10,966.7	7,097.0	79.2	78.3	114.23	3,993.8	-99.9	484.8	338.6	146.27	3.315		
10,900.0	6,897.0	11,066.7	7,097.0	81.1	80.1	114.23	4,093.8	-99.9	484.8	335.1	149.76	3.237		
11,000.0	6,897.0	11,166.7	7,097.0	83.0	82.0	114.23	4,193.8	-99.9	484.8	331.6	153.26	3.164		
11,100.0	6,897.0	11,266.7	7,097.0	84.9	83.9	114.23	4,293.8	-99.9	484.8	328.1	156.75	3.093		
11,200.0	6,897.0	11,366.7	7,097.0	86.8	85.8	114.24	4,393.8	-99.9	484.8	324.6	160.25	3.025		
11,300.0	6,897.0	11,466.7	7,097.0	88.6	87.7	114.24	4,493.8	-99.9	484.8	321.1	163.75	2.961		
11,400.0	6,897.0	11,566.7	7,097.0	90.5	89.6	114.24	4,593.8	-99.9	484.8	317.6	167.26	2.899		
11,500.0	6,897.0	11,666.7	7,097.0	92.4	91.5	114.24	4,693.8	-99.9	484.8	314.0	170.77	2.839		
11,600.0	6,897.0	11,766.7	7,097.0	94.3	93.4	114.24	4,793.8	-99.9	484.8	310.5	174.27	2.782		
11,700.0	6,897.0	11,866.7	7,097.0	96.2	95.3	114.24	4,893.8	-99.9	484.8	307.0	177.78	2.727		
11,800.0	6,897.0	11,966.7	7,097.0	98.1	97.2	114.24	4,993.8	-99.9	484.8	303.5	181.30	2.674		
11,900.0	6,897.0	12,066.7	7,097.0	100.0	99.1	114.24	5,093.8	-99.9	484.8	300.0	184.81	2.623		
12,000.0	6,897.0	12,166.7	7,097.0	101.9	101.0	114.24	5,193.8	-100.0	484.8	296.5	188.33	2.574		
12,100.0	6,897.0	12,266.7	7,097.0	103.8	102.9	114.24	5,293.8	-100.0	484.8	292.9	191.85	2.527		
12,200.0	6,897.0	12,366.7	7,097.0	105.7	104.8	114.24	5,393.8	-100.0	484.8	289.4	195.36	2.481		
12,300.0	6,897.0	12,466.7	7,097.0	107.6	106.7	114.24	5,493.8	-100.0	484.8	285.9	198.89	2.437		
12,400.0	6,897.0	12,566.7	7,097.0	109.5	108.6	114.24	5,593.8	-100.0	484.8	282.4	202.41	2.395		
12,500.0	6,897.0	12,666.7	7,097.0	111.4	110.5	114.24	5,693.8	-100.0	484.8	278.8	205.93	2.354		
12,600.0	6,897.0	12,766.7	7,097.0	113.3	112.4	114.24	5,793.8	-100.0	484.8	275.3	209.45	2.314		
12,700.0	6,897.0	12,866.7	7,097.0	115.2	114.3	114.24	5,893.8	-100.0	484.8	271.8	212.98	2.276		
12,800.0	6,897.0	12,966.7	7,097.0	117.1	116.2	114.24	5,993.8	-100.0	484.8	268.3	216.51	2.239		
12,900.0	6,897.0	13,066.7	7,097.0	119.0	118.1	114.24	6,093.8	-100.0	484.8	264.7	220.03	2.203		
13,000.0	6,897.0	13,166.7	7,097.0	120.9	120.1	114.24	6,193.8	-100.0	484.8	261.2	223.56	2.168		
13,100.0	6,897.0	13,266.7	7,097.0	122.8	122.0	114.24	6,293.8	-100.0	484.7	257.7	227.09	2.135		
13,200.0	6,897.0	13,366.7	7,097.0	124.7	123.9	114.24	6,393.8	-100.0	484.7	254.1	230.62	2.102		
13,300.0	6,897.0	13,466.7	7,097.0	126.6	125.8	114.24	6,493.8	-100.0	484.7	250.6	234.15	2.070		
13,400.0	6,897.0	13,566.7	7,097.0	128.5	127.7	114.24	6,593.8	-100.0	484.7	247.0	237.69	2.039		
13,500.0	6,897.0	13,666.7	7,097.0	130.4	129.6	114.24	6,693.8	-100.0	484.7	243.5	241.22	2.009		

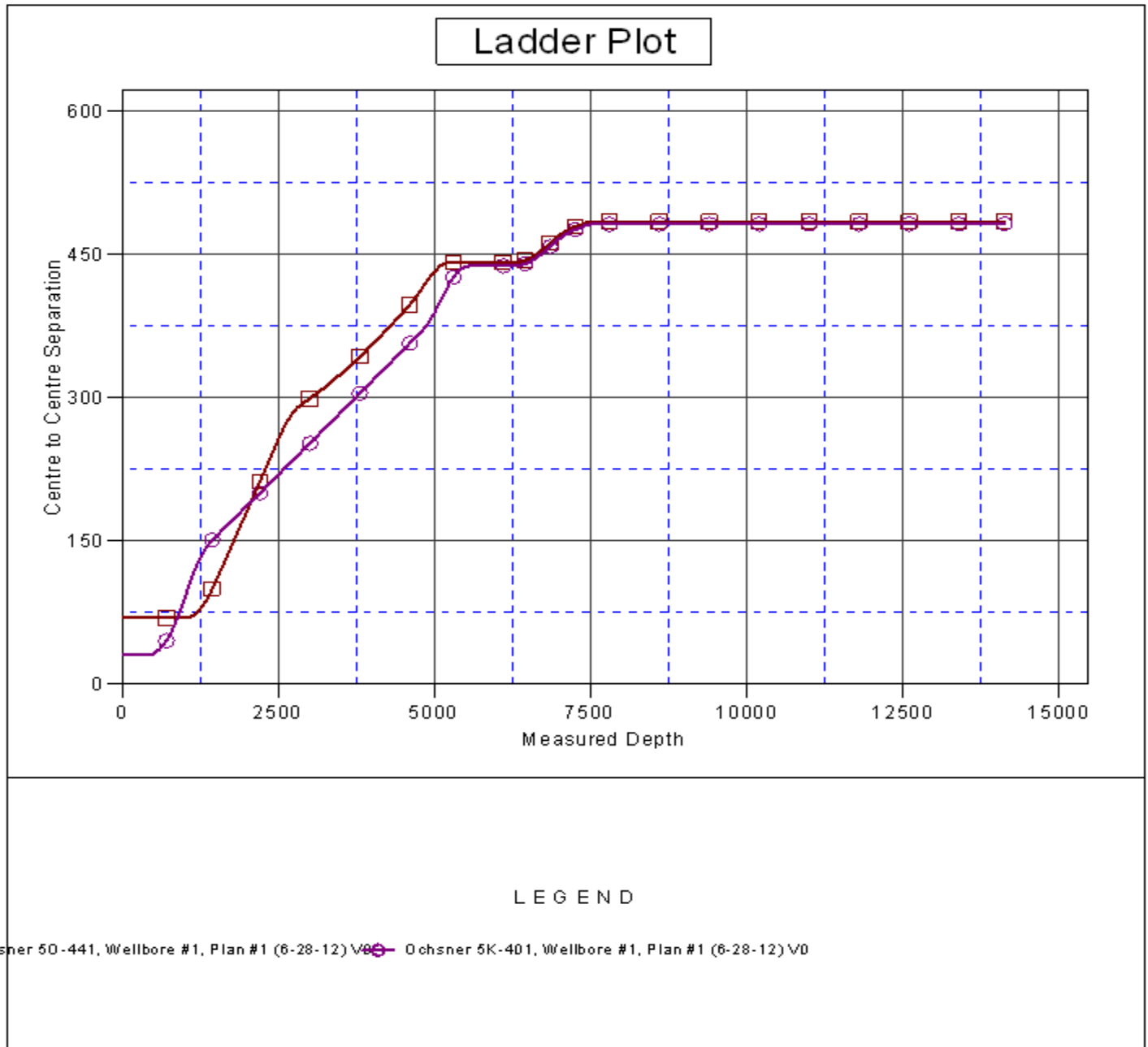
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Offset Design											Ochsner 5Q-HZ Pad Sec.5-T6N-R67W - Ochsner 5O-441 - Wellbore #1 - Plan #1 (6-28-12)			Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
13,600.0	6,897.0	13,766.7	7,097.0	132.3	131.5	114.24	6,793.8	-100.0	484.7	240.0	244.75	1.980				
13,700.0	6,897.0	13,866.7	7,097.0	134.3	133.4	114.24	6,893.8	-100.0	484.7	236.4	248.29	1.952				
13,800.0	6,897.0	13,966.7	7,097.0	136.2	135.3	114.24	6,993.8	-100.0	484.7	232.9	251.82	1.925				
13,900.0	6,897.0	14,066.7	7,097.0	138.1	137.2	114.24	7,093.8	-100.0	484.7	229.4	255.36	1.898				
14,000.0	6,897.0	14,166.7	7,097.0	140.0	139.2	114.24	7,193.8	-100.0	484.7	225.8	258.89	1.872				
14,100.0	6,897.0	14,266.7	7,097.0	141.9	141.1	114.24	7,293.8	-100.0	484.7	222.3	262.43	1.847				
14,125.6	6,897.0	14,292.3	7,097.0	142.4	141.6	114.24	7,319.3	-100.1	484.7	221.4	263.34	1.841				
14,132.8	6,897.0	14,295.8	7,097.0	142.5	141.6	114.24	7,322.8	-100.1	484.7	221.2	263.52	1.839 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4898.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Ochsner 5K-221
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Ochsner 5K-221
Project:	SEC.5-T6N-R67W	TVD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Reference Site:	Ochsner 5Q-HZ Pad Sec.5-T6N-R67W	MD Reference:	WELL @ 4898.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Ochsner 5K-221	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-28-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4898.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Ochsner 5K-221
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°

