

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Stonebraker 28V-214**

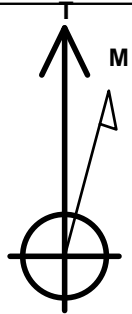
Surface Location: Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4957.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1284853.80	3266354.98	40.111390	-104.547680	

RKB Ensign 32 - 15' WELL @ 4972.0ft (RKB Ensign 32 - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 1070'FNL & 500'FWL	6892.0	874.7	-4491.9	Point



Azimuths to True North
 Magnetic North: 8.57°

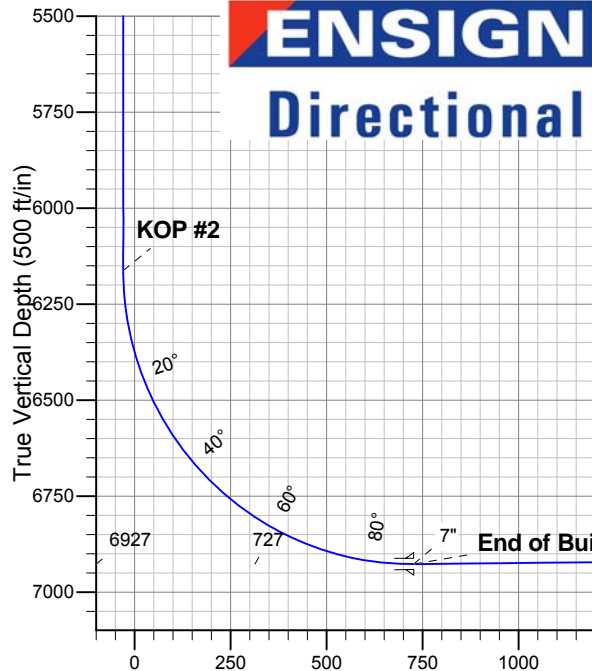
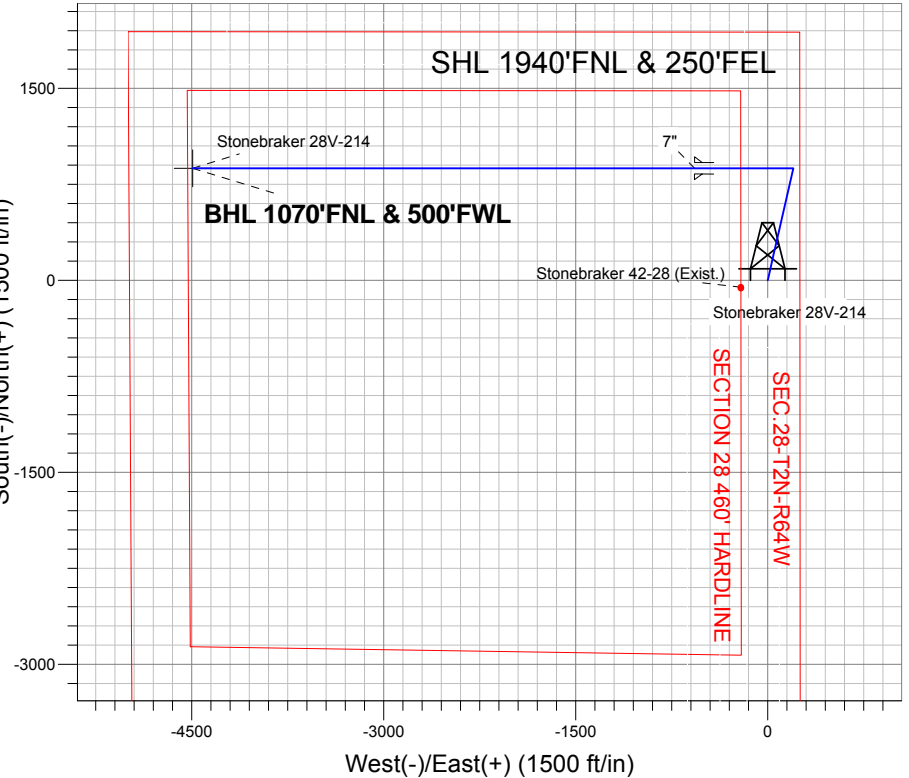
Magnetic Field
 Strength: 52885.0nT
 Dip Angle: 66.81°
 Date: 7/24/2012
 Model: IGRF2010

Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W
 Stonebraker 28V-214
 Plan #1 (7-24-12)
 8:25, July 31 2012

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP #1
6162.9	6263.3	KOP #2
6926.9	7470.1	End of Build

South(-)/North(+) (1500 ft/in)



ENSIGN
 Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1478.3	13.57	12.88	1472.0	77.9	17.8	2.00	12.88	-2.6	
4	4622.0	13.57	12.88	4528.0	796.8	182.2	0.00	0.00	-26.5	
5	5300.4	0.00	0.00	5200.0	874.7	200.0	2.00	180.00	-29.1	
6	6263.3	0.00	0.00	6163.0	874.7	200.0	0.00	0.00	-29.1	
7	7470.1	90.51	270.00	6926.9	874.7	-570.7	7.50	270.00	727.4	
8	11391.5	90.51	270.00	6892.0	874.7	-4491.9	0.00	0.00	4576.3	BHL 1070'FNL & 500'FWL

BHL 1070'FNL & 500'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T2N-R64W

Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W

Stonebraker 28V-214

Wellbore #1

Plan: Plan #1 (7-24-12)

Standard Planning Report

31 July, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

Project	SEC.28-T2N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W											
Site Position:						Northing:			1,284,762.75 ft			Latitude:			40.111140		
From:			Lat/Long			Easting:			3,266,355.95 ft			Longitude:			-104.547680		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.62 °		

Well	Stonebraker 28V-214					
Well Position	+N/-S	91.1 ft	Northing:	1,284,853.80 ft	Latitude:	40.111390
	+E/-W	0.0 ft	Easting:	3,266,354.98 ft	Longitude:	-104.547680
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,957.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/24/2012	8.57	66.81	52,885

Design	Plan #1 (7-24-12)			
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	281.02

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,478.3	13.57	12.88	1,472.0	77.9	17.8	2.00	2.00	0.00	12.88	
4,622.0	13.57	12.88	4,528.0	796.8	182.2	0.00	0.00	0.00	0.00	
5,300.4	0.00	0.00	5,200.0	874.7	200.0	2.00	-2.00	0.00	180.00	
6,263.3	0.00	0.00	6,163.0	874.7	200.0	0.00	0.00	0.00	0.00	
7,470.1	90.51	270.00	6,926.9	874.7	-570.7	7.50	7.50	0.00	270.00	
11,391.5	90.51	270.00	6,892.0	874.7	-4,491.9	0.00	0.00	0.00	0.00	BHL 1070'FNL & 5C

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Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

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
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
KOP #1									
840.0	0.80	12.88	840.0	0.3	0.1	0.0	2.00	2.00	0.00
880.0	1.60	12.88	880.0	1.1	0.2	0.0	2.00	2.00	0.00
920.0	2.40	12.88	920.0	2.4	0.6	-0.1	2.00	2.00	0.00
960.0	3.20	12.88	959.9	4.4	1.0	-0.1	2.00	2.00	0.00
1,000.0	4.00	12.88	999.8	6.8	1.6	-0.2	2.00	2.00	0.00
1,040.0	4.80	12.88	1,039.7	9.8	2.2	-0.3	2.00	2.00	0.00
1,080.0	5.60	12.88	1,079.6	13.3	3.0	-0.4	2.00	2.00	0.00
1,120.0	6.40	12.88	1,119.3	17.4	4.0	-0.6	2.00	2.00	0.00
1,160.0	7.20	12.88	1,159.1	22.0	5.0	-0.7	2.00	2.00	0.00
1,200.0	8.00	12.88	1,198.7	27.2	6.2	-0.9	2.00	2.00	0.00
1,240.0	8.80	12.88	1,238.3	32.9	7.5	-1.1	2.00	2.00	0.00
1,280.0	9.60	12.88	1,277.8	39.1	8.9	-1.3	2.00	2.00	0.00
1,320.0	10.40	12.88	1,317.1	45.9	10.5	-1.5	2.00	2.00	0.00
1,360.0	11.20	12.88	1,356.4	53.2	12.2	-1.8	2.00	2.00	0.00
1,400.0	12.00	12.88	1,395.6	61.0	14.0	-2.0	2.00	2.00	0.00
1,440.0	12.80	12.88	1,434.7	69.4	15.9	-2.3	2.00	2.00	0.00
1,478.3	13.57	12.88	1,472.0	77.9	17.8	-2.6	2.00	2.00	0.00
1,480.0	13.57	12.88	1,473.6	78.3	17.9	-2.6	0.00	0.00	0.00
1,520.0	13.57	12.88	1,512.5	87.5	20.0	-2.9	0.00	0.00	0.00
1,560.0	13.57	12.88	1,551.4	96.6	22.1	-3.2	0.00	0.00	0.00
1,600.0	13.57	12.88	1,590.3	105.7	24.2	-3.5	0.00	0.00	0.00
1,640.0	13.57	12.88	1,629.2	114.9	26.3	-3.8	0.00	0.00	0.00
1,680.0	13.57	12.88	1,668.1	124.0	28.4	-4.1	0.00	0.00	0.00
1,720.0	13.57	12.88	1,706.9	133.2	30.5	-4.4	0.00	0.00	0.00
1,760.0	13.57	12.88	1,745.8	142.3	32.5	-4.7	0.00	0.00	0.00
1,800.0	13.57	12.88	1,784.7	151.5	34.6	-5.0	0.00	0.00	0.00
1,840.0	13.57	12.88	1,823.6	160.6	36.7	-5.3	0.00	0.00	0.00
1,880.0	13.57	12.88	1,862.5	169.8	38.8	-5.7	0.00	0.00	0.00
1,920.0	13.57	12.88	1,901.4	178.9	40.9	-6.0	0.00	0.00	0.00
1,960.0	13.57	12.88	1,940.2	188.1	43.0	-6.3	0.00	0.00	0.00

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Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

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)
2,000.0	13.57	12.88	1,979.1	197.2	45.1	-6.6	0.00	0.00	0.00
2,040.0	13.57	12.88	2,018.0	206.4	47.2	-6.9	0.00	0.00	0.00
2,080.0	13.57	12.88	2,056.9	215.5	49.3	-7.2	0.00	0.00	0.00
2,120.0	13.57	12.88	2,095.8	224.7	51.4	-7.5	0.00	0.00	0.00
2,160.0	13.57	12.88	2,134.7	233.8	53.5	-7.8	0.00	0.00	0.00
2,200.0	13.57	12.88	2,173.5	242.9	55.5	-8.1	0.00	0.00	0.00
2,240.0	13.57	12.88	2,212.4	252.1	57.6	-8.4	0.00	0.00	0.00
2,280.0	13.57	12.88	2,251.3	261.2	59.7	-8.7	0.00	0.00	0.00
2,320.0	13.57	12.88	2,290.2	270.4	61.8	-9.0	0.00	0.00	0.00
2,360.0	13.57	12.88	2,329.1	279.5	63.9	-9.3	0.00	0.00	0.00
2,400.0	13.57	12.88	2,368.0	288.7	66.0	-9.6	0.00	0.00	0.00
2,440.0	13.57	12.88	2,406.8	297.8	68.1	-9.9	0.00	0.00	0.00
2,480.0	13.57	12.88	2,445.7	307.0	70.2	-10.2	0.00	0.00	0.00
2,520.0	13.57	12.88	2,484.6	316.1	72.3	-10.5	0.00	0.00	0.00
2,560.0	13.57	12.88	2,523.5	325.3	74.4	-10.8	0.00	0.00	0.00
2,600.0	13.57	12.88	2,562.4	334.4	76.5	-11.1	0.00	0.00	0.00
2,640.0	13.57	12.88	2,601.3	343.6	78.6	-11.4	0.00	0.00	0.00
2,680.0	13.57	12.88	2,640.2	352.7	80.6	-11.7	0.00	0.00	0.00
2,720.0	13.57	12.88	2,679.0	361.9	82.7	-12.0	0.00	0.00	0.00
2,760.0	13.57	12.88	2,717.9	371.0	84.8	-12.4	0.00	0.00	0.00
2,800.0	13.57	12.88	2,756.8	380.1	86.9	-12.7	0.00	0.00	0.00
2,840.0	13.57	12.88	2,795.7	389.3	89.0	-13.0	0.00	0.00	0.00
2,880.0	13.57	12.88	2,834.6	398.4	91.1	-13.3	0.00	0.00	0.00
2,920.0	13.57	12.88	2,873.5	407.6	93.2	-13.6	0.00	0.00	0.00
2,960.0	13.57	12.88	2,912.3	416.7	95.3	-13.9	0.00	0.00	0.00
3,000.0	13.57	12.88	2,951.2	425.9	97.4	-14.2	0.00	0.00	0.00
3,040.0	13.57	12.88	2,990.1	435.0	99.5	-14.5	0.00	0.00	0.00
3,080.0	13.57	12.88	3,029.0	444.2	101.6	-14.8	0.00	0.00	0.00
3,120.0	13.57	12.88	3,067.9	453.3	103.7	-15.1	0.00	0.00	0.00
3,160.0	13.57	12.88	3,106.8	462.5	105.7	-15.4	0.00	0.00	0.00
3,200.0	13.57	12.88	3,145.6	471.6	107.8	-15.7	0.00	0.00	0.00
3,240.0	13.57	12.88	3,184.5	480.8	109.9	-16.0	0.00	0.00	0.00
3,280.0	13.57	12.88	3,223.4	489.9	112.0	-16.3	0.00	0.00	0.00
3,320.0	13.57	12.88	3,262.3	499.0	114.1	-16.6	0.00	0.00	0.00
3,360.0	13.57	12.88	3,301.2	508.2	116.2	-16.9	0.00	0.00	0.00
3,400.0	13.57	12.88	3,340.1	517.3	118.3	-17.2	0.00	0.00	0.00
3,440.0	13.57	12.88	3,378.9	526.5	120.4	-17.5	0.00	0.00	0.00
3,480.0	13.57	12.88	3,417.8	535.6	122.5	-17.8	0.00	0.00	0.00
3,520.0	13.57	12.88	3,456.7	544.8	124.6	-18.1	0.00	0.00	0.00
3,560.0	13.57	12.88	3,495.6	553.9	126.7	-18.4	0.00	0.00	0.00
3,600.0	13.57	12.88	3,534.5	563.1	128.7	-18.7	0.00	0.00	0.00
3,640.0	13.57	12.88	3,573.4	572.2	130.8	-19.1	0.00	0.00	0.00
3,680.0	13.57	12.88	3,612.3	581.4	132.9	-19.4	0.00	0.00	0.00
3,720.0	13.57	12.88	3,651.1	590.5	135.0	-19.7	0.00	0.00	0.00
3,760.0	13.57	12.88	3,690.0	599.7	137.1	-20.0	0.00	0.00	0.00
3,800.0	13.57	12.88	3,728.9	608.8	139.2	-20.3	0.00	0.00	0.00
3,840.0	13.57	12.88	3,767.8	618.0	141.3	-20.6	0.00	0.00	0.00
3,880.0	13.57	12.88	3,806.7	627.1	143.4	-20.9	0.00	0.00	0.00
3,920.0	13.57	12.88	3,845.6	636.2	145.5	-21.2	0.00	0.00	0.00
3,960.0	13.57	12.88	3,884.4	645.4	147.6	-21.5	0.00	0.00	0.00
4,000.0	13.57	12.88	3,923.3	654.5	149.7	-21.8	0.00	0.00	0.00
4,040.0	13.57	12.88	3,962.2	663.7	151.8	-22.1	0.00	0.00	0.00

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Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

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	13.57	12.88	4,001.1	672.8	153.8	-22.4	0.00	0.00	0.00
4,120.0	13.57	12.88	4,040.0	682.0	155.9	-22.7	0.00	0.00	0.00
4,160.0	13.57	12.88	4,078.9	691.1	158.0	-23.0	0.00	0.00	0.00
4,200.0	13.57	12.88	4,117.7	700.3	160.1	-23.3	0.00	0.00	0.00
4,240.0	13.57	12.88	4,156.6	709.4	162.2	-23.6	0.00	0.00	0.00
4,280.0	13.57	12.88	4,195.5	718.6	164.3	-23.9	0.00	0.00	0.00
4,320.0	13.57	12.88	4,234.4	727.7	166.4	-24.2	0.00	0.00	0.00
4,360.0	13.57	12.88	4,273.3	736.9	168.5	-24.5	0.00	0.00	0.00
4,400.0	13.57	12.88	4,312.2	746.0	170.6	-24.8	0.00	0.00	0.00
4,440.0	13.57	12.88	4,351.0	755.2	172.7	-25.1	0.00	0.00	0.00
4,480.0	13.57	12.88	4,389.9	764.3	174.8	-25.4	0.00	0.00	0.00
4,520.0	13.57	12.88	4,428.8	773.4	176.8	-25.8	0.00	0.00	0.00
4,560.0	13.57	12.88	4,467.7	782.6	178.9	-26.1	0.00	0.00	0.00
4,600.0	13.57	12.88	4,506.6	791.7	181.0	-26.4	0.00	0.00	0.00
4,622.0	13.57	12.88	4,528.0	796.8	182.2	-26.5	0.00	0.00	0.00
4,640.0	13.21	12.88	4,545.5	800.8	183.1	-26.7	2.00	-2.00	0.00
4,680.0	12.41	12.88	4,584.5	809.5	185.1	-27.0	2.00	-2.00	0.00
4,720.0	11.61	12.88	4,623.6	817.6	186.9	-27.2	2.00	-2.00	0.00
4,760.0	10.81	12.88	4,662.8	825.2	188.7	-27.5	2.00	-2.00	0.00
4,800.0	10.01	12.88	4,702.2	832.2	190.3	-27.7	2.00	-2.00	0.00
4,840.0	9.21	12.88	4,741.6	838.7	191.8	-27.9	2.00	-2.00	0.00
4,880.0	8.41	12.88	4,781.2	844.7	193.1	-28.1	2.00	-2.00	0.00
4,920.0	7.61	12.88	4,820.8	850.1	194.4	-28.3	2.00	-2.00	0.00
4,960.0	6.81	12.88	4,860.4	855.0	195.5	-28.5	2.00	-2.00	0.00
5,000.0	6.01	12.88	4,900.2	859.4	196.5	-28.6	2.00	-2.00	0.00
5,040.0	5.21	12.88	4,940.0	863.2	197.4	-28.7	2.00	-2.00	0.00
5,080.0	4.41	12.88	4,979.9	866.4	198.1	-28.8	2.00	-2.00	0.00
5,120.0	3.61	12.88	5,019.8	869.2	198.7	-28.9	2.00	-2.00	0.00
5,160.0	2.81	12.88	5,059.7	871.3	199.2	-29.0	2.00	-2.00	0.00
5,200.0	2.01	12.88	5,099.7	873.0	199.6	-29.1	2.00	-2.00	0.00
5,240.0	1.21	12.88	5,139.7	874.1	199.9	-29.1	2.00	-2.00	0.00
5,280.0	0.41	12.88	5,179.6	874.6	200.0	-29.1	2.00	-2.00	0.00
5,300.4	0.00	0.00	5,200.0	874.7	200.0	-29.1	2.00	-2.00	0.00
5,320.0	0.00	0.00	5,219.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,360.0	0.00	0.00	5,259.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,299.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,440.0	0.00	0.00	5,339.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,480.0	0.00	0.00	5,379.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,520.0	0.00	0.00	5,419.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,560.0	0.00	0.00	5,459.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,499.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,640.0	0.00	0.00	5,539.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,680.0	0.00	0.00	5,579.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,720.0	0.00	0.00	5,619.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,760.0	0.00	0.00	5,659.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,699.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,840.0	0.00	0.00	5,739.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,880.0	0.00	0.00	5,779.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,920.0	0.00	0.00	5,819.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,960.0	0.00	0.00	5,859.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,899.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,040.0	0.00	0.00	5,939.6	874.7	200.0	-29.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

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)
6,080.0	0.00	0.00	5,979.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,120.0	0.00	0.00	6,019.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,160.0	0.00	0.00	6,059.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,099.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,139.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,263.3	0.00	0.00	6,162.9	874.7	200.0	-29.1	0.00	0.00	0.00
KOP #2									
6,280.0	1.25	270.00	6,179.6	874.7	199.8	-28.9	7.48	7.48	0.00
6,320.0	4.25	270.00	6,219.6	874.7	197.9	-27.1	7.50	7.50	0.00
6,360.0	7.25	270.00	6,259.4	874.7	193.9	-23.1	7.50	7.50	0.00
6,400.0	10.25	270.00	6,298.9	874.7	187.8	-17.2	7.50	7.50	0.00
6,440.0	13.25	270.00	6,338.1	874.7	179.7	-9.2	7.50	7.50	0.00
6,480.0	16.25	270.00	6,376.8	874.7	169.5	0.8	7.50	7.50	0.00
6,520.0	19.25	270.00	6,414.8	874.7	157.3	12.8	7.50	7.50	0.00
6,560.0	22.25	270.00	6,452.2	874.7	143.1	26.7	7.50	7.50	0.00
6,600.0	25.25	270.00	6,488.9	874.7	127.0	42.5	7.50	7.50	0.00
6,640.0	28.25	270.00	6,524.6	874.7	109.0	60.2	7.50	7.50	0.00
6,680.0	31.25	270.00	6,559.3	874.7	89.2	79.7	7.50	7.50	0.00
6,720.0	34.25	270.00	6,592.9	874.7	67.5	100.9	7.50	7.50	0.00
6,760.0	37.25	270.00	6,625.4	874.7	44.2	123.8	7.50	7.50	0.00
6,800.0	40.25	270.00	6,656.6	874.7	19.1	148.4	7.50	7.50	0.00
6,840.0	43.25	270.00	6,686.4	874.7	-7.5	174.6	7.50	7.50	0.00
6,880.0	46.25	270.00	6,714.8	874.7	-35.7	202.2	7.50	7.50	0.00
6,920.0	49.25	270.00	6,741.7	874.7	-65.3	231.3	7.50	7.50	0.00
6,960.0	52.25	270.00	6,767.0	874.7	-96.2	261.7	7.50	7.50	0.00
7,000.0	55.25	270.00	6,790.7	874.7	-128.5	293.3	7.50	7.50	0.00
7,040.0	58.25	270.00	6,812.6	874.7	-161.9	326.1	7.50	7.50	0.00
7,080.0	61.25	270.00	6,832.8	874.7	-196.5	360.1	7.50	7.50	0.00
7,120.0	64.25	270.00	6,851.1	874.7	-232.0	395.0	7.50	7.50	0.00
7,160.0	67.25	270.00	6,867.5	874.7	-268.5	430.8	7.50	7.50	0.00
7,200.0	70.25	270.00	6,882.0	874.7	-305.8	467.3	7.50	7.50	0.00
7,240.0	73.25	270.00	6,894.5	874.7	-343.8	504.6	7.50	7.50	0.00
7,280.0	76.25	270.00	6,905.0	874.7	-382.4	542.5	7.50	7.50	0.00
7,320.0	79.25	270.00	6,913.5	874.7	-421.4	580.9	7.50	7.50	0.00
7,360.0	82.25	270.00	6,920.0	874.7	-460.9	619.6	7.50	7.50	0.00
7,400.0	85.25	270.00	6,924.3	874.7	-500.7	658.6	7.50	7.50	0.00
7,440.0	88.25	270.00	6,926.6	874.7	-540.6	697.8	7.50	7.50	0.00
7,470.1	90.51	270.00	6,926.9	874.7	-570.7	727.4	7.50	7.50	0.00
End of Build - 7"									
7,480.0	90.51	270.00	6,926.8	874.7	-580.6	737.1	0.03	0.03	0.00
7,520.0	90.51	270.00	6,926.5	874.7	-620.6	776.3	0.00	0.00	0.00
7,560.0	90.51	270.00	6,926.1	874.7	-660.6	815.6	0.00	0.00	0.00
7,600.0	90.51	270.00	6,925.7	874.7	-700.6	854.9	0.00	0.00	0.00
7,640.0	90.51	270.00	6,925.4	874.7	-740.6	894.1	0.00	0.00	0.00
7,680.0	90.51	270.00	6,925.0	874.7	-780.6	933.4	0.00	0.00	0.00
7,720.0	90.51	270.00	6,924.7	874.7	-820.6	972.7	0.00	0.00	0.00
7,760.0	90.51	270.00	6,924.3	874.7	-860.6	1,011.9	0.00	0.00	0.00
7,800.0	90.51	270.00	6,924.0	874.7	-900.6	1,051.2	0.00	0.00	0.00
7,840.0	90.51	270.00	6,923.6	874.7	-940.6	1,090.4	0.00	0.00	0.00
7,880.0	90.51	270.00	6,923.3	874.7	-980.6	1,129.7	0.00	0.00	0.00
7,920.0	90.51	270.00	6,922.9	874.7	-1,020.6	1,169.0	0.00	0.00	0.00
7,960.0	90.51	270.00	6,922.5	874.7	-1,060.6	1,208.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

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)
8,000.0	90.51	270.00	6,922.2	874.7	-1,100.6	1,247.5	0.00	0.00	0.00
8,040.0	90.51	270.00	6,921.8	874.7	-1,140.6	1,286.7	0.00	0.00	0.00
8,080.0	90.51	270.00	6,921.5	874.7	-1,180.6	1,326.0	0.00	0.00	0.00
8,120.0	90.51	270.00	6,921.1	874.7	-1,220.6	1,365.3	0.00	0.00	0.00
8,160.0	90.51	270.00	6,920.8	874.7	-1,260.6	1,404.5	0.00	0.00	0.00
8,200.0	90.51	270.00	6,920.4	874.7	-1,300.6	1,443.8	0.00	0.00	0.00
8,240.0	90.51	270.00	6,920.1	874.7	-1,340.6	1,483.0	0.00	0.00	0.00
8,280.0	90.51	270.00	6,919.7	874.7	-1,380.6	1,522.3	0.00	0.00	0.00
8,320.0	90.51	270.00	6,919.3	874.7	-1,420.6	1,561.6	0.00	0.00	0.00
8,360.0	90.51	270.00	6,919.0	874.7	-1,460.6	1,600.8	0.00	0.00	0.00
8,400.0	90.51	270.00	6,918.6	874.7	-1,500.6	1,640.1	0.00	0.00	0.00
8,440.0	90.51	270.00	6,918.3	874.7	-1,540.6	1,679.4	0.00	0.00	0.00
8,480.0	90.51	270.00	6,917.9	874.7	-1,580.6	1,718.6	0.00	0.00	0.00
8,520.0	90.51	270.00	6,917.6	874.7	-1,620.6	1,757.9	0.00	0.00	0.00
8,560.0	90.51	270.00	6,917.2	874.7	-1,660.6	1,797.1	0.00	0.00	0.00
8,600.0	90.51	270.00	6,916.8	874.7	-1,700.6	1,836.4	0.00	0.00	0.00
8,640.0	90.51	270.00	6,916.5	874.7	-1,740.6	1,875.7	0.00	0.00	0.00
8,680.0	90.51	270.00	6,916.1	874.7	-1,780.6	1,914.9	0.00	0.00	0.00
8,720.0	90.51	270.00	6,915.8	874.7	-1,820.6	1,954.2	0.00	0.00	0.00
8,760.0	90.51	270.00	6,915.4	874.7	-1,860.6	1,993.4	0.00	0.00	0.00
8,800.0	90.51	270.00	6,915.1	874.7	-1,900.6	2,032.7	0.00	0.00	0.00
8,840.0	90.51	270.00	6,914.7	874.7	-1,940.5	2,072.0	0.00	0.00	0.00
8,880.0	90.51	270.00	6,914.4	874.7	-1,980.5	2,111.2	0.00	0.00	0.00
8,920.0	90.51	270.00	6,914.0	874.7	-2,020.5	2,150.5	0.00	0.00	0.00
8,960.0	90.51	270.00	6,913.6	874.7	-2,060.5	2,189.7	0.00	0.00	0.00
9,000.0	90.51	270.00	6,913.3	874.7	-2,100.5	2,229.0	0.00	0.00	0.00
9,040.0	90.51	270.00	6,912.9	874.7	-2,140.5	2,268.3	0.00	0.00	0.00
9,080.0	90.51	270.00	6,912.6	874.7	-2,180.5	2,307.5	0.00	0.00	0.00
9,120.0	90.51	270.00	6,912.2	874.7	-2,220.5	2,346.8	0.00	0.00	0.00
9,160.0	90.51	270.00	6,911.9	874.7	-2,260.5	2,386.1	0.00	0.00	0.00
9,200.0	90.51	270.00	6,911.5	874.7	-2,300.5	2,425.3	0.00	0.00	0.00
9,240.0	90.51	270.00	6,911.2	874.7	-2,340.5	2,464.6	0.00	0.00	0.00
9,280.0	90.51	270.00	6,910.8	874.7	-2,380.5	2,503.8	0.00	0.00	0.00
9,320.0	90.51	270.00	6,910.4	874.7	-2,420.5	2,543.1	0.00	0.00	0.00
9,360.0	90.51	270.00	6,910.1	874.7	-2,460.5	2,582.4	0.00	0.00	0.00
9,400.0	90.51	270.00	6,909.7	874.7	-2,500.5	2,621.6	0.00	0.00	0.00
9,440.0	90.51	270.00	6,909.4	874.7	-2,540.5	2,660.9	0.00	0.00	0.00
9,480.0	90.51	270.00	6,909.0	874.7	-2,580.5	2,700.1	0.00	0.00	0.00
9,520.0	90.51	270.00	6,908.7	874.7	-2,620.5	2,739.4	0.00	0.00	0.00
9,560.0	90.51	270.00	6,908.3	874.7	-2,660.5	2,778.7	0.00	0.00	0.00
9,600.0	90.51	270.00	6,907.9	874.7	-2,700.5	2,817.9	0.00	0.00	0.00
9,640.0	90.51	270.00	6,907.6	874.7	-2,740.5	2,857.2	0.00	0.00	0.00
9,680.0	90.51	270.00	6,907.2	874.7	-2,780.5	2,896.4	0.00	0.00	0.00
9,720.0	90.51	270.00	6,906.9	874.7	-2,820.5	2,935.7	0.00	0.00	0.00
9,760.0	90.51	270.00	6,906.5	874.7	-2,860.5	2,975.0	0.00	0.00	0.00
9,800.0	90.51	270.00	6,906.2	874.7	-2,900.5	3,014.2	0.00	0.00	0.00
9,840.0	90.51	270.00	6,905.8	874.7	-2,940.5	3,053.5	0.00	0.00	0.00
9,880.0	90.51	270.00	6,905.5	874.7	-2,980.5	3,092.7	0.00	0.00	0.00
9,920.0	90.51	270.00	6,905.1	874.7	-3,020.5	3,132.0	0.00	0.00	0.00
9,960.0	90.51	270.00	6,904.7	874.7	-3,060.5	3,171.3	0.00	0.00	0.00
10,000.0	90.51	270.00	6,904.4	874.7	-3,100.5	3,210.5	0.00	0.00	0.00
10,040.0	90.51	270.00	6,904.0	874.7	-3,140.5	3,249.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

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)
10,080.0	90.51	270.00	6,903.7	874.7	-3,180.5	3,289.1	0.00	0.00	0.00
10,120.0	90.51	270.00	6,903.3	874.7	-3,220.5	3,328.3	0.00	0.00	0.00
10,160.0	90.51	270.00	6,903.0	874.7	-3,260.5	3,367.6	0.00	0.00	0.00
10,200.0	90.51	270.00	6,902.6	874.7	-3,300.5	3,406.8	0.00	0.00	0.00
10,240.0	90.51	270.00	6,902.2	874.7	-3,340.5	3,446.1	0.00	0.00	0.00
10,280.0	90.51	270.00	6,901.9	874.7	-3,380.5	3,485.4	0.00	0.00	0.00
10,320.0	90.51	270.00	6,901.5	874.7	-3,420.5	3,524.6	0.00	0.00	0.00
10,360.0	90.51	270.00	6,901.2	874.7	-3,460.5	3,563.9	0.00	0.00	0.00
10,400.0	90.51	270.00	6,900.8	874.7	-3,500.5	3,603.1	0.00	0.00	0.00
10,440.0	90.51	270.00	6,900.5	874.7	-3,540.5	3,642.4	0.00	0.00	0.00
10,480.0	90.51	270.00	6,900.1	874.7	-3,580.5	3,681.7	0.00	0.00	0.00
10,520.0	90.51	270.00	6,899.8	874.7	-3,620.5	3,720.9	0.00	0.00	0.00
10,560.0	90.51	270.00	6,899.4	874.7	-3,660.5	3,760.2	0.00	0.00	0.00
10,600.0	90.51	270.00	6,899.0	874.7	-3,700.5	3,799.4	0.00	0.00	0.00
10,640.0	90.51	270.00	6,898.7	874.7	-3,740.5	3,838.7	0.00	0.00	0.00
10,680.0	90.51	270.00	6,898.3	874.7	-3,780.5	3,878.0	0.00	0.00	0.00
10,720.0	90.51	270.00	6,898.0	874.7	-3,820.5	3,917.2	0.00	0.00	0.00
10,760.0	90.51	270.00	6,897.6	874.7	-3,860.5	3,956.5	0.00	0.00	0.00
10,800.0	90.51	270.00	6,897.3	874.7	-3,900.5	3,995.8	0.00	0.00	0.00
10,840.0	90.51	270.00	6,896.9	874.7	-3,940.5	4,035.0	0.00	0.00	0.00
10,880.0	90.51	270.00	6,896.6	874.7	-3,980.5	4,074.3	0.00	0.00	0.00
10,920.0	90.51	270.00	6,896.2	874.7	-4,020.5	4,113.5	0.00	0.00	0.00
10,960.0	90.51	270.00	6,895.8	874.7	-4,060.5	4,152.8	0.00	0.00	0.00
11,000.0	90.51	270.00	6,895.5	874.7	-4,100.5	4,192.1	0.00	0.00	0.00
11,040.0	90.51	270.00	6,895.1	874.7	-4,140.5	4,231.3	0.00	0.00	0.00
11,080.0	90.51	270.00	6,894.8	874.7	-4,180.5	4,270.6	0.00	0.00	0.00
11,120.0	90.51	270.00	6,894.4	874.7	-4,220.5	4,309.8	0.00	0.00	0.00
11,160.0	90.51	270.00	6,894.1	874.7	-4,260.5	4,349.1	0.00	0.00	0.00
11,200.0	90.51	270.00	6,893.7	874.7	-4,300.5	4,388.4	0.00	0.00	0.00
11,240.0	90.51	270.00	6,893.3	874.7	-4,340.5	4,427.6	0.00	0.00	0.00
11,280.0	90.51	270.00	6,893.0	874.7	-4,380.5	4,466.9	0.00	0.00	0.00
11,320.0	90.51	270.00	6,892.6	874.7	-4,420.5	4,506.1	0.00	0.00	0.00
11,360.0	90.51	270.00	6,892.3	874.7	-4,460.4	4,545.4	0.00	0.00	0.00
11,391.5	90.51	270.00	6,892.0	874.7	-4,491.9	4,576.3	0.00	0.00	0.00
BHL 1070'FNL & 500'FWL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 1070'FNL & 500'	0.00	0.00	6,892.0	874.7	-4,491.9	1,285,680.20	3,261,854.08	40.113790	-104.563740
- plan hits target center									
- Point									

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Project:	SEC.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-24-12)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,470.1	6,926.9	7"	7	7-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.0	800.0	0.0	0.0	KOP #1	
6,263.3	6,162.9	874.7	200.0	KOP #2	
7,470.1	6,926.9	874.7	-570.7	End of Build	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T2N-R64W

Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W

Stonebraker 28V-214

Wellbore #1

Plan #1 (7-24-12)

Anticollision Report

31 July, 2012



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (7-24-12)		
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 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/31/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,391.5	Plan #1 (7-24-12) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Stonebraker 28U-HZ Pad Sec.28-T2N-R64W						
Bryce 21-28 (Exist.) - Wellbore #1 - Design #1	9,948.1	6,875.8	498.9	395.6	4.833	CC, ES
Bryce 21-28 (Exist.) - Wellbore #1 - Design #1	10,000.0	6,875.4	501.5	396.9	4.793	SF
Stonebraker 28V-414 - Wellbore #1 - Plan #1 (7-23-12)	6,297.6	6,252.9	349.8	320.6	11.979	CC
Stonebraker 28V-414 - Wellbore #1 - Plan #1 (7-23-12)	11,391.5	11,494.6	420.2	204.9	1.952	ES, SF
Stonebraker 42-28 (Exist.) - Wellbore #1 - Design #1	800.0	797.0	216.8	213.4	64.427	CC, ES
Stonebraker 42-28 (Exist.) - Wellbore #1 - Design #1	7,470.1	6,900.0	997.3	958.2	25.549	SF
Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W						
Stonebraker 28V-234 - Wellbore #1 - Plan #1 (7-24-12)	800.0	801.0	61.9	58.6	18.356	CC, ES
Stonebraker 28V-234 - Wellbore #1 - Plan #1 (7-24-12)	11,391.5	11,325.8	732.3	476.9	2.868	SF
Stonebraker 28V-404 - Wellbore #1 - Plan #1 (7-24-12)	800.0	800.0	32.8	29.4	9.725	CC, ES
Stonebraker 28V-404 - Wellbore #1 - Plan #1 (7-24-12)	11,391.5	11,496.4	421.4	203.5	1.935	SF

Offset Design		Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Bryce 21-28 (Exist.) - Wellbore #1 - Design #1											Offset Site Error:		0.0 ft	
Survey Program:		0-MWVD											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				
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,100.0	6,912.4	6,883.4	6,883.4	65.3	15.4	90.87	1,373.6	-3,048.6	983.9	904.0	80.00	12.300				
9,200.0	6,911.5	6,882.5	6,882.5	68.0	15.4	90.76	1,373.6	-3,048.6	899.2	816.5	82.71	10.871				
9,300.0	6,910.6	6,881.6	6,881.6	70.7	15.4	90.66	1,373.6	-3,048.6	817.9	732.4	85.44	9.573				
9,400.0	6,909.7	6,880.7	6,880.7	73.4	15.4	90.56	1,373.6	-3,048.6	741.1	653.0	88.17	8.406				
9,500.0	6,908.8	6,879.8	6,879.8	76.1	15.4	90.46	1,373.6	-3,048.6	670.6	579.7	90.90	7.377				
9,600.0	6,907.9	6,878.9	6,878.9	78.8	15.3	90.36	1,373.6	-3,048.6	608.3	514.7	93.64	6.496				
9,700.0	6,907.1	6,878.1	6,878.1	81.5	15.3	90.25	1,373.6	-3,048.6	557.2	460.8	96.39	5.781				
9,800.0	6,906.2	6,877.2	6,877.2	84.3	15.3	90.15	1,373.6	-3,048.6	520.4	421.3	99.13	5.249				
9,900.0	6,905.3	6,876.3	6,876.3	87.0	15.3	90.05	1,373.6	-3,048.6	501.2	399.3	101.89	4.919				
9,948.1	6,904.8	6,875.8	6,875.8	88.3	15.3	90.00	1,373.6	-3,048.6	498.9	395.6	103.21	4.833 CC, ES				
10,000.0	6,904.4	6,875.4	6,875.4	89.8	15.3	89.95	1,373.6	-3,048.6	501.5	396.9	104.64	4.793 SF				
10,100.0	6,903.5	6,874.5	6,874.5	92.5	15.3	89.84	1,373.6	-3,048.6	521.5	414.1	107.40	4.855				
10,200.0	6,902.6	6,873.6	6,873.6	95.2	15.3	89.74	1,373.6	-3,048.6	558.8	448.7	110.16	5.073				
10,300.0	6,901.7	6,872.7	6,872.7	98.0	15.3	89.64	1,373.6	-3,048.6	610.5	497.5	112.92	5.406				

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design												Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Bryce 21-28 (Exist.) - Wellbore #1 - Design #1		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)						
10,400.0	6,900.8	6,871.8	6,871.8	100.7	15.3	89.54	1,373.6	-3,048.6	673.1	557.4	115.69	5.818					
10,500.0	6,899.9	6,870.9	6,870.9	103.5	15.3	89.44	1,373.6	-3,048.6	743.9	625.4	118.45	6.280					
10,600.0	6,899.0	6,870.0	6,870.0	106.3	15.3	89.33	1,373.6	-3,048.6	820.8	699.6	121.22	6.771					
10,700.0	6,898.2	6,869.2	6,869.2	109.0	15.3	89.23	1,373.6	-3,048.6	902.3	778.3	123.99	7.277					
10,800.0	6,897.3	6,868.3	6,868.3	111.8	15.3	89.13	1,373.6	-3,048.6	987.1	860.4	126.76	7.787					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-414 - Wellbore #1 - Plan #1 (7-23-12)														Offset Well Error:	0.0 ft
Survey Program: 0-MWD															
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		
3,400.0	3,340.1	3,550.8	3,526.4	12.2	8.8	-16.22	1,463.6	82.1	964.0	947.8	16.23	59.409			
3,500.0	3,437.3	3,642.2	3,615.9	12.7	9.2	-16.12	1,446.9	90.3	923.6	906.8	16.74	55.175			
3,600.0	3,534.5	3,733.7	3,705.5	13.2	9.6	-16.01	1,430.1	98.5	883.1	865.9	17.25	51.186			
3,700.0	3,631.7	3,825.1	3,795.0	13.7	9.9	-15.89	1,413.4	106.7	842.7	824.9	17.77	47.422			
3,800.0	3,728.9	3,916.6	3,884.5	14.2	10.3	-15.76	1,396.6	114.9	802.3	784.0	18.29	43.866			
3,900.0	3,826.1	4,008.0	3,974.1	14.7	10.7	-15.62	1,379.9	123.1	761.8	743.0	18.81	40.503			
4,000.0	3,923.3	4,099.5	4,063.6	15.1	11.1	-15.45	1,363.1	131.3	721.4	702.1	19.33	37.318			
4,100.0	4,020.5	4,190.9	4,153.1	15.6	11.4	-15.27	1,346.4	139.5	681.0	661.2	19.86	34.298			
4,200.0	4,117.7	4,282.4	4,242.6	16.1	11.8	-15.07	1,329.6	147.7	640.6	620.2	20.38	31.431			
4,300.0	4,215.0	4,373.8	4,332.2	16.6	12.2	-14.84	1,312.9	155.9	600.2	579.3	20.91	28.707			
4,400.0	4,312.2	4,465.3	4,421.7	17.1	12.6	-14.58	1,296.1	164.1	559.8	538.4	21.44	26.117			
4,500.0	4,409.4	4,556.7	4,511.2	17.5	13.0	-14.27	1,279.4	172.3	519.4	497.5	21.96	23.650			
4,600.0	4,506.6	4,636.8	4,589.8	18.0	13.3	-14.02	1,265.6	179.1	480.1	457.7	22.45	21.389			
4,622.0	4,528.0	4,654.5	4,607.2	18.1	13.3	-13.98	1,262.8	180.4	471.7	449.2	22.55	20.919			
4,700.0	4,604.0	4,718.2	4,670.1	18.5	13.5	-13.69	1,253.6	185.0	444.1	421.1	22.98	19.326			
4,800.0	4,702.2	4,800.0	4,751.1	18.8	13.7	-13.38	1,243.6	189.9	413.6	390.2	23.47	17.626			
4,900.0	4,801.0	4,888.2	4,838.8	19.1	14.0	-13.12	1,235.2	194.0	389.0	365.1	23.93	16.256			
5,000.0	4,900.2	4,976.0	4,926.4	19.3	14.2	-12.96	1,229.2	196.9	370.4	346.0	24.35	15.209			
5,100.0	4,999.8	5,065.0	5,015.3	19.5	14.3	-12.89	1,225.6	198.7	357.8	333.1	24.73	14.469			
5,200.0	5,099.7	5,155.4	5,105.7	19.7	14.5	-12.95	1,224.5	199.2	351.5	326.4	25.07	14.019			
5,300.4	5,200.0	5,255.7	5,206.0	19.8	14.6	-0.13	1,224.5	199.2	349.8	316.2	33.61	10.408			
5,400.0	5,299.6	5,355.4	5,305.6	20.0	14.8	-0.13	1,224.5	199.2	349.8	315.9	33.88	10.323			
5,500.0	5,399.6	5,455.4	5,405.6	20.1	14.9	-0.13	1,224.5	199.2	349.8	315.6	34.17	10.237			
5,600.0	5,499.6	5,555.4	5,505.6	20.2	15.1	-0.13	1,224.5	199.2	349.8	315.3	34.46	10.151			
5,700.0	5,599.6	5,655.4	5,605.6	20.3	15.3	-0.13	1,224.5	199.2	349.8	315.0	34.75	10.065			
5,800.0	5,699.6	5,755.4	5,705.6	20.5	15.4	-0.13	1,224.5	199.2	349.8	314.7	35.05	9.980			
5,900.0	5,799.6	5,855.4	5,805.6	20.6	15.6	-0.13	1,224.5	199.2	349.8	314.4	35.35	9.896			
6,000.0	5,899.6	5,955.4	5,905.6	20.7	15.7	-0.13	1,224.5	199.2	349.8	314.1	35.65	9.812			
6,100.0	5,999.6	6,055.4	6,005.6	20.9	15.9	-0.13	1,224.5	199.2	349.8	313.8	35.95	9.728			
6,200.0	6,099.6	6,155.4	6,105.6	21.0	16.1	-0.13	1,224.5	199.2	349.8	313.5	36.26	9.645			
6,263.3	6,163.0	6,218.7	6,169.0	21.1	16.2	-0.13	1,224.5	199.2	349.8	313.3	36.46	9.593			
6,297.6	6,197.2	6,252.9	6,203.2	21.1	16.2	90.00	1,224.5	199.2	349.8	320.6	29.20	11.979 CC			
6,300.0	6,199.6	6,255.4	6,205.6	21.1	16.3	90.02	1,224.5	199.2	349.8	320.6	29.21	11.976			
6,350.0	6,249.5	6,305.2	6,255.5	21.2	16.3	90.67	1,224.5	199.2	349.8	320.4	29.37	11.910			
6,400.0	6,298.9	6,354.6	6,304.9	21.2	16.4	91.84	1,224.5	199.2	350.0	320.4	29.52	11.856			
6,450.0	6,347.8	6,404.5	6,354.8	21.3	16.5	93.39	1,224.5	198.4	350.4	320.7	29.66	11.815			
6,500.0	6,395.9	6,455.3	6,405.4	21.3	16.6	94.96	1,224.5	194.4	351.1	321.3	29.79	11.787			
6,550.0	6,443.0	6,506.7	6,456.3	21.3	16.6	96.51	1,224.5	186.8	352.1	322.2	29.91	11.772			
6,600.0	6,488.9	6,558.9	6,507.2	21.3	16.7	98.03	1,224.5	175.7	353.4	323.3	30.03	11.768			
6,650.0	6,533.4	6,611.8	6,558.0	21.4	16.7	99.52	1,224.5	161.0	354.8	324.7	30.14	11.773			
6,700.0	6,576.3	6,665.5	6,608.4	21.4	16.7	100.97	1,224.5	142.4	356.5	326.2	30.25	11.784			
6,750.0	6,617.4	6,719.9	6,658.0	21.4	16.8	102.37	1,224.5	120.0	358.3	328.0	30.37	11.798			
6,800.0	6,656.6	6,775.1	6,706.5	21.4	16.8	103.72	1,224.5	93.8	360.3	329.8	30.51	11.809			
6,850.0	6,693.7	6,831.0	6,753.7	21.4	16.8	104.99	1,224.5	63.7	362.4	331.7	30.69	11.811			
6,900.0	6,728.5	6,887.8	6,799.1	21.5	16.8	106.20	1,224.5	29.7	364.6	333.7	30.91	11.797			
6,950.0	6,760.9	6,945.2	6,842.4	21.5	16.8	107.33	1,224.5	-8.0	366.7	335.5	31.19	11.757			
7,000.0	6,790.7	7,003.4	6,883.2	21.6	16.8	108.38	1,224.5	-49.4	368.9	337.3	31.58	11.681			
7,050.0	6,817.8	7,062.3	6,921.2	21.7	16.9	109.33	1,224.5	-94.4	371.0	338.9	32.09	11.562			
7,100.0	6,842.1	7,121.8	6,956.0	21.9	16.9	110.19	1,224.5	-142.7	372.9	340.2	32.74	11.391			
7,150.0	6,863.6	7,181.9	6,987.2	22.1	17.0	110.95	1,224.5	-194.0	374.8	341.2	33.55	11.170			
7,200.0	6,882.0	7,242.6	7,014.5	22.4	17.6	111.61	1,224.5	-248.2	376.4	341.8	34.53	10.899			

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design		Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-414 - Wellbore #1 - Plan #1 (7-23-12)										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 (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			
7,250.0	6,897.3	7,303.7	7,037.6	22.7	18.4	112.16	1,224.5	-304.8	377.8	342.1	35.71	10.580			
7,300.0	6,909.5	7,365.3	7,056.2	23.2	19.3	112.60	1,224.5	-363.4	378.9	341.9	37.08	10.220			
7,350.0	6,918.5	7,427.1	7,070.1	23.8	20.4	112.93	1,224.5	-423.7	379.8	341.2	38.62	9.834			
7,400.0	6,924.3	7,489.2	7,079.0	24.5	21.5	113.14	1,224.5	-485.0	380.4	340.1	40.33	9.433			
7,450.0	6,926.8	7,539.1	7,084.2	25.3	22.5	113.44	1,224.5	-534.7	381.5	339.6	41.91	9.101			
7,470.1	6,926.9	7,559.1	7,086.3	25.6	22.9	113.66	1,224.5	-554.6	382.3	339.7	42.54	8.987			
7,500.0	6,926.6	7,592.9	7,089.5	26.1	23.6	114.14	1,224.5	-588.2	383.5	339.9	43.58	8.801			
7,600.0	6,925.7	7,703.7	7,093.3	28.0	26.0	114.79	1,224.5	-699.0	385.3	337.8	47.45	8.120			
7,700.0	6,924.9	7,803.7	7,094.3	30.1	28.2	115.04	1,224.5	-799.0	386.1	334.6	51.43	7.506			
7,800.0	6,924.0	7,903.7	7,095.3	32.2	30.6	115.29	1,224.5	-898.9	386.9	331.3	55.58	6.961			
7,900.0	6,923.1	8,003.7	7,096.3	34.5	33.0	115.54	1,224.5	-998.9	387.7	327.8	59.84	6.479			
8,000.0	6,922.2	8,103.7	7,097.3	36.9	35.4	115.80	1,224.5	-1,098.9	388.5	324.3	64.19	6.052			
8,100.0	6,921.3	8,203.6	7,098.2	39.3	38.0	116.05	1,224.5	-1,198.9	389.3	320.7	68.61	5.674			
8,200.0	6,920.4	8,303.6	7,099.2	41.8	40.5	116.29	1,224.5	-1,298.9	390.1	317.1	73.08	5.339			
8,300.0	6,919.5	8,403.6	7,100.2	44.3	43.1	116.54	1,224.5	-1,398.8	391.0	313.4	77.58	5.039			
8,400.0	6,918.6	8,503.6	7,101.2	46.9	45.7	116.79	1,224.5	-1,498.8	391.8	309.7	82.12	4.771			
8,500.0	6,917.7	8,603.6	7,102.2	49.4	48.3	117.03	1,224.5	-1,598.8	392.7	306.0	86.68	4.530			
8,600.0	6,916.8	8,703.6	7,103.2	52.0	51.0	117.28	1,224.5	-1,698.8	393.5	302.3	91.25	4.313			
8,700.0	6,916.0	8,803.5	7,104.2	54.7	53.7	117.52	1,224.5	-1,798.7	394.4	298.6	95.83	4.116			
8,800.0	6,915.1	8,903.5	7,105.2	57.3	56.3	117.76	1,224.5	-1,898.7	395.3	294.9	100.41	3.936			
8,900.0	6,914.2	9,003.5	7,106.2	60.0	59.0	118.01	1,224.5	-1,998.7	396.1	291.1	105.00	3.773			
9,000.0	6,913.3	9,103.5	7,107.2	62.6	61.7	118.25	1,224.5	-2,098.7	397.0	287.5	109.58	3.623			
9,100.0	6,912.4	9,203.5	7,108.2	65.3	64.4	118.48	1,224.5	-2,198.7	397.9	283.8	114.16	3.486			
9,200.0	6,911.5	9,303.4	7,109.2	68.0	67.1	118.72	1,224.5	-2,298.6	398.8	280.1	118.73	3.359			
9,300.0	6,910.6	9,403.4	7,110.2	70.7	69.9	118.96	1,224.5	-2,398.6	399.7	276.4	123.29	3.242			
9,400.0	6,909.7	9,503.4	7,111.2	73.4	72.6	119.20	1,224.5	-2,498.6	400.7	272.8	127.85	3.134			
9,500.0	6,908.8	9,603.4	7,112.2	76.1	75.3	119.43	1,224.5	-2,598.6	401.6	269.2	132.39	3.033			
9,600.0	6,907.9	9,703.4	7,113.2	78.8	78.1	119.66	1,224.5	-2,698.5	402.5	265.6	136.92	2.940			
9,700.0	6,907.1	9,803.4	7,114.2	81.5	80.8	119.90	1,224.5	-2,798.5	403.4	262.0	141.43	2.852			
9,800.0	6,906.2	9,903.3	7,115.2	84.3	83.6	120.13	1,224.4	-2,898.5	404.4	258.4	145.94	2.771			
9,900.0	6,905.3	10,003.3	7,116.1	87.0	86.3	120.36	1,224.4	-2,998.5	405.3	254.9	150.42	2.695			
10,000.0	6,904.4	10,103.3	7,117.1	89.8	89.1	120.59	1,224.4	-3,098.4	406.3	251.4	154.90	2.623			
10,100.0	6,903.5	10,203.3	7,118.1	92.5	91.8	120.82	1,224.4	-3,198.4	407.2	247.9	159.35	2.556			
10,200.0	6,902.6	10,303.3	7,119.1	95.2	94.6	121.04	1,224.4	-3,298.4	408.2	244.4	163.79	2.492			
10,300.0	6,901.7	10,403.3	7,120.1	98.0	97.4	121.27	1,224.4	-3,398.4	409.2	241.0	168.21	2.433			
10,400.0	6,900.8	10,503.2	7,121.1	100.7	100.1	121.49	1,224.4	-3,498.4	410.2	237.5	172.62	2.376			
10,500.0	6,899.9	10,603.2	7,122.1	103.5	102.9	121.72	1,224.4	-3,598.3	411.2	234.1	177.00	2.323			
10,600.0	6,899.0	10,703.2	7,123.1	106.3	105.7	121.94	1,224.4	-3,698.3	412.1	230.8	181.37	2.272			
10,700.0	6,898.2	10,803.2	7,124.1	109.0	108.4	122.16	1,224.4	-3,798.3	413.1	227.4	185.72	2.225			
10,800.0	6,897.3	10,903.2	7,125.1	111.8	111.2	122.38	1,224.4	-3,898.3	414.2	224.1	190.05	2.179			
10,900.0	6,896.4	11,003.1	7,126.1	114.5	114.0	122.60	1,224.4	-3,998.2	415.2	220.8	194.37	2.136			
11,000.0	6,895.5	11,103.1	7,127.1	117.3	116.7	122.82	1,224.4	-4,098.2	416.2	217.5	198.66	2.095			
11,100.0	6,894.6	11,203.1	7,128.1	120.1	119.5	123.04	1,224.4	-4,198.2	417.2	214.3	202.94	2.056			
11,200.0	6,893.7	11,303.1	7,129.1	122.9	122.3	123.26	1,224.4	-4,298.2	418.2	211.0	207.19	2.019			
11,300.0	6,892.8	11,403.1	7,130.1	125.6	125.1	123.47	1,224.4	-4,398.2	419.3	207.8	211.43	1.983			
11,391.5	6,892.0	11,494.6	7,131.0	128.2	127.6	123.67	1,224.4	-4,489.6	420.2	204.9	215.29	1.952 ES, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design		Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Stonebraker 42-28 (Exist.) - Wellbore #1 - Design #1											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-104.60	-54.6	-209.8	216.8						
100.0	100.0	97.0	97.0	0.1	0.1	-104.60	-54.6	-209.8	216.8	216.6	0.22	979.136			
200.0	200.0	197.0	197.0	0.3	0.3	-104.60	-54.6	-209.8	216.8	216.1	0.67	324.739			
300.0	300.0	297.0	297.0	0.6	0.6	-104.60	-54.6	-209.8	216.8	215.7	1.12	194.059			
400.0	400.0	397.0	397.0	0.8	0.8	-104.60	-54.6	-209.8	216.8	215.2	1.57	138.375			
500.0	500.0	497.0	497.0	1.0	1.0	-104.60	-54.6	-209.8	216.8	214.8	2.02	107.522			
600.0	600.0	597.0	597.0	1.2	1.2	-104.60	-54.6	-209.8	216.8	214.3	2.47	87.919			
700.0	700.0	697.0	697.0	1.5	1.5	-104.60	-54.6	-209.8	216.8	213.9	2.92	74.362			
800.0	800.0	797.0	797.0	1.7	1.7	-104.60	-54.6	-209.8	216.8	213.4	3.36	64.427 CC, ES			
900.0	900.0	897.0	897.0	1.9	1.9	-117.87	-54.6	-209.8	217.6	213.8	3.81	57.064			
1,000.0	999.8	996.8	996.8	2.1	2.1	-119.03	-54.6	-209.8	220.1	215.8	4.26	51.651			
1,100.0	1,099.5	1,096.5	1,096.5	2.4	2.4	-120.90	-54.6	-209.8	224.5	219.7	4.71	47.622			
1,200.0	1,198.7	1,195.7	1,195.7	2.6	2.6	-123.37	-54.6	-209.8	231.0	225.8	5.17	44.635			
1,300.0	1,297.5	1,294.5	1,294.5	2.9	2.8	-126.32	-54.6	-209.8	240.0	234.3	5.65	42.487			
1,400.0	1,395.6	1,392.6	1,392.6	3.2	3.0	-129.60	-54.6	-209.8	251.9	245.7	6.14	41.052			
1,478.3	1,472.0	1,469.0	1,469.0	3.5	3.2	-132.29	-54.6	-209.8	263.4	256.9	6.52	40.371			
1,500.0	1,493.1	1,490.1	1,490.1	3.6	3.2	-133.09	-54.6	-209.8	266.9	260.3	6.64	40.223			
1,600.0	1,590.3	1,587.3	1,587.3	4.0	3.5	-136.50	-54.6	-209.8	283.7	276.5	7.15	39.685			
1,700.0	1,687.5	1,684.5	1,684.5	4.4	3.7	-139.54	-54.6	-209.8	301.3	293.7	7.66	39.343			
1,800.0	1,784.7	1,781.7	1,781.7	4.8	3.9	-142.24	-54.6	-209.8	319.7	311.6	8.17	39.151			
1,900.0	1,881.9	1,878.9	1,878.9	5.2	4.1	-144.65	-54.6	-209.8	338.8	330.1	8.67	39.072			
2,000.0	1,979.1	1,976.1	1,976.1	5.7	4.3	-146.80	-54.6	-209.8	358.3	349.1	9.17	39.075			
2,100.0	2,076.3	2,073.3	2,073.3	6.1	4.5	-148.73	-54.6	-209.8	378.3	368.7	9.67	39.138			
2,200.0	2,173.5	2,170.5	2,170.5	6.6	4.8	-150.47	-54.6	-209.8	398.7	388.5	10.16	39.244			
2,300.0	2,270.8	2,267.8	2,267.8	7.0	5.0	-152.04	-54.6	-209.8	419.4	408.7	10.65	39.379			
2,400.0	2,368.0	2,365.0	2,365.0	7.5	5.2	-153.46	-54.6	-209.8	440.4	429.2	11.14	39.535			
2,500.0	2,465.2	2,462.2	2,462.2	8.0	5.4	-154.76	-54.6	-209.8	461.6	450.0	11.63	39.704			
2,600.0	2,562.4	2,559.4	2,559.4	8.4	5.6	-155.94	-54.6	-209.8	483.0	470.9	12.11	39.880			
2,700.0	2,659.6	2,656.6	2,656.6	8.9	5.9	-157.02	-54.6	-209.8	504.6	492.0	12.60	40.060			
2,800.0	2,756.8	2,753.8	2,753.8	9.4	6.1	-158.01	-54.6	-209.8	526.4	513.3	13.08	40.242			
2,900.0	2,854.0	2,851.0	2,851.0	9.9	6.3	-158.93	-54.6	-209.8	548.3	534.7	13.56	40.422			
3,000.0	2,951.2	2,948.2	2,948.2	10.3	6.5	-159.77	-54.6	-209.8	570.3	556.3	14.05	40.599			
3,100.0	3,048.4	3,045.4	3,045.4	10.8	6.7	-160.55	-54.6	-209.8	592.4	577.9	14.53	40.773			
3,200.0	3,145.6	3,142.6	3,142.6	11.3	7.0	-161.28	-54.6	-209.8	614.7	599.7	15.01	40.943			
3,300.0	3,242.9	3,239.9	3,239.9	11.8	7.2	-161.95	-54.6	-209.8	637.0	621.5	15.50	41.107			
3,400.0	3,340.1	3,337.1	3,337.1	12.2	7.4	-162.58	-54.6	-209.8	659.4	643.4	15.98	41.267			
3,500.0	3,437.3	3,434.3	3,434.3	12.7	7.6	-163.17	-54.6	-209.8	681.9	665.4	16.46	41.421			
3,600.0	3,534.5	3,531.5	3,531.5	13.2	7.8	-163.72	-54.6	-209.8	704.4	687.5	16.94	41.570			
3,700.0	3,631.7	3,628.7	3,628.7	13.7	8.0	-164.24	-54.6	-209.8	727.0	709.6	17.43	41.714			
3,800.0	3,728.9	3,725.9	3,725.9	14.2	8.3	-164.73	-54.6	-209.8	749.6	731.7	17.91	41.852			
3,900.0	3,826.1	3,823.1	3,823.1	14.7	8.5	-165.18	-54.6	-209.8	772.3	753.9	18.40	41.985			
4,000.0	3,923.3	3,920.3	3,920.3	15.1	8.7	-165.62	-54.6	-209.8	795.1	776.2	18.88	42.113			
4,100.0	4,020.5	4,017.5	4,017.5	15.6	8.9	-166.02	-54.6	-209.8	817.9	798.5	19.36	42.236			
4,200.0	4,117.7	4,114.7	4,114.7	16.1	9.1	-166.41	-54.6	-209.8	840.7	820.8	19.85	42.354			
4,300.0	4,215.0	4,212.0	4,212.0	16.6	9.4	-166.77	-54.6	-209.8	863.5	843.2	20.33	42.468			
4,400.0	4,312.2	4,309.2	4,309.2	17.1	9.6	-167.12	-54.6	-209.8	886.4	865.6	20.82	42.578			
4,500.0	4,409.4	4,406.4	4,406.4	17.5	9.8	-167.45	-54.6	-209.8	909.3	888.0	21.30	42.683			
4,600.0	4,506.6	4,503.6	4,503.6	18.0	10.0	-167.76	-54.6	-209.8	932.3	910.5	21.79	42.784			
4,622.0	4,528.0	4,525.0	4,525.0	18.1	10.1	-167.83	-54.6	-209.8	937.3	915.4	21.90	42.806			
4,700.0	4,604.0	4,601.0	4,601.0	18.5	10.2	-168.12	-54.6	-209.8	954.2	931.9	22.31	42.779			
4,800.0	4,702.2	4,699.2	4,699.2	18.8	10.4	-168.43	-54.6	-209.8	972.9	950.1	22.78	42.707			

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design										Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Stonebraker 42-28 (Exist.) - Wellbore #1 - Design #1				Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,801.0	4,798.0	4,798.0	19.1	10.7	-168.67	-54.6	-209.8	988.3	965.0	23.23	42.543				
6,550.0	6,443.0	6,440.0	6,440.0	21.3	14.4	-70.35	-54.6	-209.8	995.4	966.1	29.30	33.976				
6,600.0	6,488.9	6,485.9	6,485.9	21.3	14.5	-71.85	-54.6	-209.8	988.5	959.1	29.42	33.602				
6,650.0	6,533.4	6,530.4	6,530.4	21.4	14.6	-73.54	-54.6	-209.8	981.0	951.4	29.57	33.174				
6,700.0	6,576.3	6,573.3	6,573.3	21.4	14.7	-75.37	-54.6	-209.8	973.0	943.3	29.77	32.690				
6,750.0	6,617.4	6,614.4	6,614.4	21.4	14.8	-77.33	-54.6	-209.8	965.0	935.0	30.01	32.157				
6,800.0	6,656.6	6,653.6	6,653.6	21.4	14.8	-79.35	-54.6	-209.8	957.1	926.8	30.30	31.586				
6,850.0	6,693.7	6,690.7	6,690.7	21.4	14.9	-81.40	-54.6	-209.8	949.7	919.0	30.65	30.988				
6,900.0	6,728.5	6,725.5	6,725.5	21.5	15.0	-83.42	-54.6	-209.8	942.9	911.9	31.04	30.379				
6,950.0	6,760.9	6,757.9	6,757.9	21.5	15.1	-85.35	-54.6	-209.8	937.2	905.8	31.48	29.775				
7,000.0	6,790.7	6,787.7	6,787.7	21.6	15.1	-87.15	-54.6	-209.8	932.9	900.9	31.96	29.185				
7,050.0	6,817.8	6,814.8	6,814.8	21.7	15.2	-88.75	-54.6	-209.8	930.2	897.7	32.50	28.620				
7,095.1	6,839.9	6,836.9	6,836.9	21.9	15.3	-90.00	-54.6	-209.8	929.3	896.3	33.03	28.134				
7,100.0	6,842.1	6,839.1	6,839.1	21.9	15.3	-90.12	-54.6	-209.8	929.4	896.3	33.09	28.086				
7,150.0	6,863.6	6,860.6	6,860.6	22.1	15.3	-91.22	-54.6	-209.8	930.7	896.9	33.74	27.585				
7,200.0	6,882.0	6,879.0	6,879.0	22.4	15.3	-92.00	-54.6	-209.8	934.3	899.8	34.45	27.122				
7,250.0	6,897.3	6,894.3	6,894.3	22.7	15.4	-92.44	-54.6	-209.8	940.4	905.1	35.22	26.698				
7,300.0	6,909.5	6,900.0	6,900.0	23.2	15.4	-92.12	-54.6	-209.8	949.0	913.0	36.04	26.332				
7,350.0	6,918.5	6,900.0	6,900.0	23.8	15.4	-91.25	-54.6	-209.8	960.3	923.4	36.89	26.028				
7,400.0	6,924.3	6,900.0	6,900.0	24.5	15.4	-90.18	-54.6	-209.8	974.0	936.3	37.78	25.783				
7,450.0	6,926.8	6,900.0	6,900.0	25.3	15.4	-88.90	-54.6	-209.8	990.2	951.5	38.67	25.602				
7,470.1	6,926.9	6,900.0	6,900.0	25.6	15.4	-88.33	-54.6	-209.8	997.3	958.2	39.03	25.549 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-61.9	0.0	61.9	61.9	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-61.9	0.0	61.9	61.7	0.23	272.803		
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-61.9	0.0	61.9	61.3	0.68	91.538		
300.0	300.0	301.0	301.0	0.6	0.6	-180.00	-61.9	0.0	61.9	60.8	1.13	54.996		
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-61.9	0.0	61.9	60.4	1.58	39.305		
500.0	500.0	501.0	501.0	1.0	1.0	-180.00	-61.9	0.0	61.9	59.9	2.03	30.581		
600.0	600.0	601.0	601.0	1.2	1.2	-180.00	-61.9	0.0	61.9	59.5	2.47	25.026		
700.0	700.0	701.0	701.0	1.5	1.5	-180.00	-61.9	0.0	61.9	59.0	2.92	21.178		
800.0	800.0	801.0	801.0	1.7	1.7	-180.00	-61.9	0.0	61.9	58.6	3.37	18.356 CC, ES		
900.0	900.0	901.0	901.0	1.9	1.9	167.46	-61.9	0.0	63.6	59.8	3.82	16.644		
1,000.0	999.8	1,000.8	1,000.8	2.1	2.1	168.39	-61.9	0.0	68.8	64.5	4.27	16.097		
1,100.0	1,099.5	1,100.5	1,100.5	2.4	2.4	169.66	-61.9	0.0	77.3	72.6	4.72	16.394		
1,200.0	1,198.7	1,199.7	1,199.7	2.6	2.6	171.02	-61.9	0.0	89.3	84.2	5.16	17.323		
1,300.0	1,297.5	1,298.5	1,298.5	2.9	2.8	172.32	-61.9	0.0	104.8	99.2	5.59	18.739		
1,400.0	1,395.6	1,396.6	1,396.6	3.2	3.0	173.45	-61.9	0.0	123.7	117.7	6.03	20.536		
1,478.3	1,472.0	1,473.0	1,473.0	3.5	3.2	174.22	-61.9	0.0	141.0	134.6	6.36	22.159		
1,500.0	1,493.1	1,494.1	1,494.1	3.6	3.2	174.42	-61.9	0.0	146.0	139.6	6.46	22.603		
1,600.0	1,590.3	1,591.3	1,591.3	4.0	3.5	175.19	-61.9	0.0	169.4	162.5	6.92	24.476		
1,700.0	1,687.5	1,688.5	1,688.5	4.4	3.7	175.78	-61.9	0.0	192.8	185.4	7.39	26.102		
1,800.0	1,784.7	1,785.7	1,785.7	4.8	3.9	176.23	-61.9	0.0	216.2	208.3	7.85	27.525		
1,900.0	1,881.9	1,882.9	1,882.9	5.2	4.1	176.60	-61.9	0.0	239.6	231.3	8.33	28.779		
2,000.0	1,979.1	1,980.1	1,980.1	5.7	4.3	176.91	-61.9	0.0	263.0	254.2	8.80	29.891		
2,100.0	2,076.3	2,084.3	2,084.3	6.1	4.6	177.03	-61.0	0.9	285.5	276.2	9.29	30.747		
2,200.0	2,173.5	2,191.4	2,191.3	6.6	4.8	176.72	-57.4	4.5	305.1	295.3	9.78	31.202		
2,300.0	2,270.8	2,299.7	2,299.2	7.0	5.0	176.03	-50.7	11.0	321.6	311.3	10.28	31.284		
2,400.0	2,368.0	2,408.7	2,407.3	7.5	5.3	174.99	-41.1	20.4	335.2	324.4	10.80	31.035		
2,500.0	2,465.2	2,507.8	2,505.4	8.0	5.5	173.94	-31.1	30.2	347.3	336.0	11.31	30.704		
2,600.0	2,562.4	2,606.9	2,603.5	8.4	5.8	172.96	-21.1	40.1	359.6	347.7	11.83	30.384		
2,700.0	2,659.6	2,705.9	2,701.5	8.9	6.1	172.04	-11.0	49.9	371.9	359.5	12.37	30.077		
2,800.0	2,756.8	2,805.0	2,799.6	9.4	6.3	171.18	-1.0	59.8	384.3	371.4	12.91	29.782		
2,900.0	2,854.0	2,904.0	2,897.6	9.9	6.6	170.37	9.1	69.6	396.9	383.4	13.45	29.499		
3,000.0	2,951.2	3,003.1	2,995.7	10.3	6.9	169.62	19.1	79.5	409.4	395.4	14.01	29.228		
3,100.0	3,048.4	3,102.2	3,093.8	10.8	7.2	168.90	29.2	89.3	422.1	407.5	14.57	28.967		
3,200.0	3,145.6	3,201.2	3,191.8	11.3	7.5	168.23	39.2	99.2	434.8	419.7	15.14	28.718		
3,300.0	3,242.9	3,300.3	3,289.9	11.8	7.8	167.60	49.3	109.0	447.6	431.9	15.72	28.479		
3,400.0	3,340.1	3,399.4	3,387.9	12.2	8.1	167.01	59.3	118.9	460.4	444.1	16.30	28.250		
3,500.0	3,437.3	3,498.4	3,486.0	12.7	8.4	166.44	69.4	128.7	473.3	456.4	16.88	28.031		
3,600.0	3,534.5	3,597.5	3,584.1	13.2	8.7	165.91	79.4	138.6	486.2	468.7	17.48	27.820		
3,700.0	3,631.7	3,696.6	3,682.1	13.7	9.0	165.40	89.5	148.4	499.1	481.1	18.07	27.619		
3,800.0	3,728.9	3,795.6	3,780.2	14.2	9.3	164.92	99.5	158.3	512.1	493.5	18.67	27.426		
3,900.0	3,826.1	3,894.7	3,878.2	14.7	9.6	164.46	109.6	168.1	525.1	505.9	19.28	27.241		
4,000.0	3,923.3	3,993.7	3,976.3	15.1	9.9	164.03	119.6	178.0	538.2	518.3	19.89	27.064		
4,100.0	4,020.5	4,083.4	4,065.1	15.6	10.2	163.72	128.0	186.3	552.0	531.5	20.43	27.013		
4,200.0	4,117.7	4,170.6	4,151.9	16.1	10.4	163.64	134.4	192.5	567.8	546.9	20.92	27.138		
4,300.0	4,215.0	4,257.2	4,238.3	16.6	10.6	163.75	138.8	196.8	585.6	564.2	21.38	27.393		
4,400.0	4,312.2	4,343.1	4,324.1	17.1	10.7	164.04	141.4	199.3	605.4	583.6	21.81	27.765		
4,500.0	4,409.4	4,429.4	4,410.4	17.5	10.9	164.50	142.1	200.0	627.3	605.1	22.21	28.238		
4,600.0	4,506.6	4,526.6	4,507.6	18.0	11.1	165.05	142.1	200.0	649.9	627.3	22.64	28.705		
4,622.0	4,528.0	4,548.0	4,529.0	18.1	11.1	165.17	142.1	200.0	655.0	632.2	22.74	28.801		
4,700.0	4,604.0	4,624.0	4,605.0	18.5	11.2	165.63	142.1	200.0	671.7	648.6	23.11	29.069		
4,800.0	4,702.2	4,722.2	4,703.2	18.8	11.4	166.11	142.1	200.0	690.2	666.7	23.53	29.333		

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design										Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-234 - Wellbore #1 - Plan #1 (7-24-12)				Offset Site Error:		0.0 ft
Survey Program: 0-MWD												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			
4,900.0	4,801.0	4,821.0	4,802.0	19.1	11.6	166.49	142.1	200.0	705.4	681.5	23.93	29.476				
5,000.0	4,900.2	4,920.2	4,901.2	19.3	11.8	166.77	142.1	200.0	717.3	693.0	24.31	29.507				
5,100.0	4,999.8	5,019.8	5,000.8	19.5	12.0	166.97	142.1	200.0	725.8	701.1	24.66	29.432				
5,200.0	5,099.7	5,119.7	5,100.7	19.7	12.2	167.08	142.1	200.0	730.9	705.9	24.98	29.258				
5,300.4	5,200.0	5,220.0	5,201.0	19.8	12.4	-180.00	142.1	200.0	732.6	701.2	31.45	23.296				
5,400.0	5,299.6	5,319.7	5,300.6	20.0	12.6	-180.00	142.1	200.0	732.6	700.9	31.77	23.058				
5,500.0	5,399.6	5,419.7	5,400.6	20.1	12.8	-180.00	142.1	200.0	732.6	700.5	32.11	22.817				
5,600.0	5,499.6	5,519.7	5,500.6	20.2	13.0	-180.00	142.1	200.0	732.6	700.2	32.45	22.580				
5,700.0	5,599.6	5,619.7	5,600.6	20.3	13.2	-180.00	142.1	200.0	732.6	699.8	32.79	22.346				
5,800.0	5,699.6	5,719.7	5,700.6	20.5	13.5	-180.00	142.1	200.0	732.6	699.5	33.13	22.116				
5,900.0	5,799.6	5,819.7	5,800.6	20.6	13.7	-180.00	142.1	200.0	732.6	699.2	33.47	21.888				
6,000.0	5,899.6	5,919.7	5,900.6	20.7	13.9	-180.00	142.1	200.0	732.6	698.8	33.82	21.664				
6,100.0	5,999.6	6,019.7	6,000.6	20.9	14.1	-180.00	142.1	200.0	732.6	698.5	34.16	21.444				
6,200.0	6,099.6	6,119.7	6,100.6	21.0	14.3	-180.00	142.1	200.0	732.6	698.1	34.51	21.227				
6,263.3	6,163.0	6,183.0	6,164.0	21.1	14.4	-180.00	142.1	200.0	732.6	697.9	34.74	21.091				
6,300.0	6,199.6	6,219.7	6,200.7	21.1	14.5	-90.05	142.1	199.8	732.6	703.3	29.29	25.016				
6,350.0	6,249.5	6,269.7	6,250.6	21.2	14.6	-90.16	142.1	197.1	732.6	703.2	29.46	24.872				
6,400.0	6,298.9	6,319.9	6,300.4	21.2	14.6	-90.26	142.1	191.1	732.6	703.0	29.60	24.750				
6,450.0	6,347.8	6,370.1	6,349.8	21.3	14.7	-90.36	142.1	181.8	732.6	702.9	29.73	24.644				
6,500.0	6,395.9	6,420.5	6,398.5	21.3	14.7	-90.46	142.1	169.2	732.7	702.8	29.84	24.549				
6,550.0	6,443.0	6,470.9	6,446.4	21.3	14.8	-90.55	142.1	153.5	732.7	702.7	29.95	24.459				
6,600.0	6,488.9	6,521.4	6,493.2	21.3	14.8	-90.65	142.1	134.6	732.7	702.6	30.07	24.367				
6,650.0	6,533.4	6,572.0	6,538.8	21.4	14.9	-90.74	142.1	112.6	732.7	702.5	30.20	24.263				
6,700.0	6,576.3	6,622.6	6,582.8	21.4	14.9	-90.83	142.1	87.6	732.7	702.3	30.36	24.137				
6,750.0	6,617.4	6,673.4	6,625.2	21.4	15.0	-90.92	142.1	59.7	732.7	702.2	30.56	23.976				
6,800.0	6,656.6	6,724.2	6,665.7	21.4	15.0	-91.00	142.1	29.0	732.7	701.9	30.83	23.767				
6,850.0	6,693.7	6,775.0	6,704.1	21.4	15.1	-91.07	142.1	-4.4	732.7	701.6	31.18	23.498				
6,900.0	6,728.5	6,826.0	6,740.2	21.5	15.3	-91.15	142.1	-40.3	732.8	701.1	31.64	23.158				
6,950.0	6,760.9	6,877.0	6,773.9	21.5	15.6	-91.21	142.1	-78.5	732.8	700.5	32.22	22.741				
7,000.0	6,790.7	6,928.1	6,805.0	21.6	16.0	-91.28	142.1	-119.0	732.8	699.8	32.94	22.243				
7,050.0	6,817.8	6,979.2	6,833.3	21.7	16.5	-91.33	142.1	-161.5	732.8	699.0	33.82	21.669				
7,100.0	6,842.1	7,030.3	6,858.8	21.9	17.0	-91.38	142.1	-205.9	732.8	698.0	34.85	21.026				
7,150.0	6,863.6	7,081.5	6,881.3	22.1	17.6	-91.43	142.1	-251.9	732.8	696.8	36.05	20.327				
7,200.0	6,882.0	7,132.8	6,900.6	22.4	18.3	-91.47	142.1	-299.3	732.8	695.4	37.41	19.587				
7,250.0	6,897.3	7,184.1	6,916.8	22.7	19.1	-91.50	142.1	-348.0	732.8	693.9	38.93	18.825				
7,300.0	6,909.5	7,235.4	6,929.6	23.2	20.0	-91.53	142.1	-397.7	732.8	692.3	40.59	18.056				
7,350.0	6,918.5	7,286.7	6,939.1	23.8	20.9	-91.54	142.1	-448.1	732.8	690.5	42.37	17.296				
7,400.0	6,924.3	7,338.0	6,945.2	24.5	21.9	-91.56	142.1	-499.0	732.8	688.6	44.26	16.556				
7,450.0	6,926.8	7,389.3	6,947.8	25.3	22.9	-91.56	142.1	-550.3	732.8	686.6	46.24	15.847				
7,470.1	6,926.9	7,410.0	6,947.9	25.6	23.3	-91.56	142.1	-571.0	732.8	685.8	47.06	15.572				
7,500.0	6,926.6	7,440.0	6,947.5	26.1	23.9	-91.55	142.1	-600.9	732.8	684.5	48.29	15.177				
7,600.0	6,925.7	7,540.0	6,946.2	28.0	26.1	-91.52	142.2	-700.9	732.8	680.3	52.53	13.949				
7,700.0	6,924.9	7,640.0	6,945.0	30.1	28.3	-91.49	142.2	-800.9	732.8	675.8	57.01	12.853				
7,800.0	6,924.0	7,740.0	6,943.7	32.2	30.7	-91.46	142.2	-900.9	732.8	671.1	61.68	11.881				
7,900.0	6,923.1	7,840.0	6,942.4	34.5	33.1	-91.43	142.2	-1,000.9	732.8	666.3	66.49	11.021				
8,000.0	6,922.2	7,940.0	6,941.1	36.9	35.6	-91.40	142.2	-1,100.9	732.7	661.3	71.41	10.261				
8,100.0	6,921.3	8,040.0	6,939.9	39.3	38.1	-91.37	142.2	-1,200.9	732.7	656.3	76.43	9.586				
8,200.0	6,920.4	8,140.0	6,938.6	41.8	40.7	-91.34	142.2	-1,300.9	732.7	651.2	81.53	8.987				
8,300.0	6,919.5	8,240.0	6,937.3	44.3	43.3	-91.31	142.2	-1,400.8	732.7	646.0	86.69	8.451				
8,400.0	6,918.6	8,340.0	6,936.0	46.9	45.9	-91.28	142.2	-1,500.8	732.7	640.8	91.91	7.972				

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design		Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-234 - Wellbore #1 - Plan #1 (7-24-12)										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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,500.0	6,917.7	8,440.0	6,934.8	49.4	48.5	-91.25	142.2	-1,600.8	732.7	635.5	97.17	7.540			
8,600.0	6,916.8	8,540.0	6,933.5	52.0	51.2	-91.22	142.2	-1,700.8	732.6	630.2	102.46	7.150			
8,700.0	6,916.0	8,639.9	6,932.2	54.7	53.9	-91.19	142.2	-1,800.8	732.6	624.8	107.79	6.797			
8,800.0	6,915.1	8,739.9	6,930.9	57.3	56.5	-91.16	142.3	-1,900.8	732.6	619.5	113.14	6.475			
8,900.0	6,914.2	8,839.9	6,929.7	60.0	59.2	-91.13	142.3	-2,000.8	732.6	614.1	118.52	6.181			
9,000.0	6,913.3	8,939.9	6,928.4	62.6	61.9	-91.10	142.3	-2,100.8	732.6	608.7	123.92	5.912			
9,100.0	6,912.4	9,039.9	6,927.1	65.3	64.6	-91.07	142.3	-2,200.8	732.6	603.2	129.34	5.664			
9,200.0	6,911.5	9,139.9	6,925.8	68.0	67.4	-91.04	142.3	-2,300.8	732.5	597.8	134.77	5.436			
9,300.0	6,910.6	9,239.9	6,924.6	70.7	70.1	-91.01	142.3	-2,400.8	732.5	592.3	140.21	5.224			
9,400.0	6,909.7	9,339.9	6,923.3	73.4	72.8	-90.98	142.3	-2,500.8	732.5	586.8	145.67	5.028			
9,500.0	6,908.8	9,439.9	6,922.0	76.1	75.6	-90.95	142.3	-2,600.7	732.5	581.4	151.14	4.846			
9,600.0	6,907.9	9,539.9	6,920.8	78.8	78.3	-90.92	142.3	-2,700.7	732.5	575.9	156.62	4.677			
9,700.0	6,907.1	9,639.9	6,919.5	81.5	81.1	-90.89	142.3	-2,800.7	732.5	570.4	162.11	4.518			
9,800.0	6,906.2	9,739.9	6,918.2	84.3	83.8	-90.86	142.3	-2,900.7	732.4	564.8	167.61	4.370			
9,900.0	6,905.3	9,839.9	6,916.9	87.0	86.6	-90.83	142.4	-3,000.7	732.4	559.3	173.11	4.231			
10,000.0	6,904.4	9,939.9	6,915.7	89.8	89.3	-90.80	142.4	-3,100.7	732.4	553.8	178.62	4.100			
10,100.0	6,903.5	10,039.9	6,914.4	92.5	92.1	-90.77	142.4	-3,200.7	732.4	548.3	184.14	3.977			
10,200.0	6,902.6	10,139.9	6,913.1	95.2	94.8	-90.74	142.4	-3,300.7	732.4	542.7	189.66	3.862			
10,300.0	6,901.7	10,239.9	6,911.8	98.0	97.6	-90.71	142.4	-3,400.7	732.4	537.2	195.19	3.752			
10,400.0	6,900.8	10,339.9	6,910.6	100.7	100.4	-90.68	142.4	-3,500.7	732.4	531.6	200.72	3.649			
10,500.0	6,899.9	10,439.9	6,909.3	103.5	103.1	-90.65	142.4	-3,600.7	732.4	526.1	206.26	3.551			
10,600.0	6,899.0	10,539.9	6,908.0	106.3	105.9	-90.62	142.4	-3,700.6	732.3	520.5	211.80	3.458			
10,700.0	6,898.2	10,639.9	6,906.7	109.0	108.7	-90.59	142.4	-3,800.6	732.3	515.0	217.34	3.370			
10,800.0	6,897.3	10,739.9	6,905.5	111.8	111.5	-90.56	142.4	-3,900.6	732.3	509.4	222.89	3.286			
10,900.0	6,896.4	10,839.9	6,904.2	114.5	114.2	-90.53	142.4	-4,000.6	732.3	503.9	228.44	3.206			
11,000.0	6,895.5	10,939.9	6,902.9	117.3	117.0	-90.50	142.5	-4,100.6	732.3	498.3	233.99	3.130			
11,100.0	6,894.6	11,039.9	6,901.6	120.1	119.8	-90.47	142.5	-4,200.6	732.3	492.7	239.54	3.057			
11,200.0	6,893.7	11,139.9	6,900.4	122.9	122.6	-90.44	142.5	-4,300.6	732.3	487.2	245.10	2.988			
11,300.0	6,892.8	11,239.9	6,899.1	125.6	125.4	-90.41	142.5	-4,400.6	732.3	481.6	250.66	2.921			
11,364.7	6,892.2	11,304.7	6,898.3	127.4	127.1	-90.39	142.5	-4,465.3	732.3	478.0	254.22	2.880			
11,391.5	6,892.0	11,325.8	6,898.0	128.2	127.5	-90.39	142.5	-4,486.5	732.3	476.9	255.34	2.868 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-404 - Wellbore #1 - Plan #1 (7-24-12)										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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-32.8	0.0	32.8	32.6	0.22	145.869	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-32.8	0.0	32.8	32.1	0.67	48.623	
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-32.8	0.0	32.8	31.7	1.12	29.174	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-32.8	0.0	32.8	31.2	1.57	20.838	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-32.8	0.0	32.8	30.8	2.02	16.208	
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-32.8	0.0	32.8	30.3	2.47	13.261	
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-32.8	0.0	32.8	29.9	2.92	11.221	
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-32.8	0.0	32.8	29.4	3.37	9.725 CC, ES	
900.0	900.0	900.0	900.0	1.9	1.9	167.76	-32.8	0.0	34.5	30.7	3.82	9.026	
1,000.0	999.8	999.8	999.8	2.1	2.1	169.35	-32.8	0.0	39.6	35.4	4.27	9.281	
1,100.0	1,099.5	1,101.0	1,101.0	2.4	2.4	170.68	-31.1	0.6	46.5	41.8	4.71	9.871	
1,200.0	1,198.7	1,202.5	1,202.3	2.6	2.6	171.20	-26.1	2.4	53.5	48.3	5.15	10.382	
1,300.0	1,297.5	1,304.2	1,303.6	2.9	2.8	171.20	-17.6	5.4	60.5	54.9	5.59	10.817	
1,400.0	1,395.6	1,406.2	1,404.8	3.2	3.1	170.83	-5.7	9.7	67.5	61.5	6.04	11.186	
1,478.3	1,472.0	1,485.9	1,483.6	3.5	3.3	170.35	5.9	13.9	73.1	66.7	6.39	11.436	
1,500.0	1,493.1	1,507.6	1,505.0	3.6	3.3	170.23	9.3	15.1	74.6	68.2	6.49	11.496	
1,600.0	1,590.3	1,607.3	1,603.3	4.0	3.6	169.71	24.9	20.7	82.0	75.0	6.99	11.733	
1,700.0	1,687.5	1,707.0	1,701.6	4.4	3.9	169.28	40.4	26.3	89.4	81.9	7.49	11.923	
1,800.0	1,784.7	1,806.8	1,800.0	4.8	4.3	168.91	56.0	31.8	96.7	88.7	8.01	12.078	
1,900.0	1,881.9	1,906.5	1,898.3	5.2	4.6	168.59	71.6	37.4	104.1	95.5	8.53	12.204	
2,000.0	1,979.1	2,006.2	1,996.7	5.7	4.9	168.32	87.2	43.0	111.4	102.4	9.05	12.308	
2,100.0	2,076.3	2,105.9	2,095.0	6.1	5.3	168.08	102.8	48.6	118.8	109.2	9.59	12.394	
2,200.0	2,173.5	2,205.7	2,193.4	6.6	5.6	167.87	118.3	54.2	126.2	116.1	10.12	12.466	
2,300.0	2,270.8	2,305.4	2,291.7	7.0	5.9	167.68	133.9	59.8	133.6	122.9	10.66	12.526	
2,400.0	2,368.0	2,405.1	2,390.0	7.5	6.3	167.51	149.5	65.4	140.9	129.7	11.20	12.578	
2,500.0	2,465.2	2,504.8	2,488.4	8.0	6.7	167.36	165.1	70.9	148.3	136.6	11.75	12.621	
2,600.0	2,562.4	2,604.6	2,586.7	8.4	7.0	167.22	180.6	76.5	155.7	143.4	12.30	12.658	
2,700.0	2,659.6	2,704.3	2,685.1	8.9	7.4	167.10	196.2	82.1	163.1	150.2	12.85	12.690	
2,800.0	2,756.8	2,804.0	2,783.4	9.4	7.7	166.98	211.8	87.7	170.4	157.0	13.40	12.718	
2,900.0	2,854.0	2,903.8	2,881.8	9.9	8.1	166.88	227.4	93.3	177.8	163.9	13.95	12.742	
3,000.0	2,951.2	3,003.5	2,980.1	10.3	8.5	166.78	243.0	98.9	185.2	170.7	14.51	12.763	
3,100.0	3,048.4	3,103.2	3,078.5	10.8	8.8	166.69	258.5	104.5	192.6	177.5	15.07	12.781	
3,200.0	3,145.6	3,202.9	3,176.8	11.3	9.2	166.61	274.1	110.0	199.9	184.3	15.62	12.796	
3,300.0	3,242.9	3,302.7	3,275.1	11.8	9.6	166.53	289.7	115.6	207.3	191.1	16.18	12.810	
3,400.0	3,340.1	3,402.4	3,373.5	12.2	9.9	166.46	305.3	121.2	214.7	198.0	16.74	12.823	
3,500.0	3,437.3	3,502.1	3,471.8	12.7	10.3	166.40	320.9	126.8	222.1	204.8	17.31	12.833	
3,600.0	3,534.5	3,601.8	3,570.2	13.2	10.7	166.33	336.4	132.4	229.5	211.6	17.87	12.843	
3,700.0	3,631.7	3,701.6	3,668.5	13.7	11.0	166.28	352.0	138.0	236.8	218.4	18.43	12.851	
3,800.0	3,728.9	3,801.3	3,766.9	14.2	11.4	166.22	367.6	143.6	244.2	225.2	18.99	12.859	
3,900.0	3,826.1	3,901.0	3,865.2	14.7	11.8	166.17	383.2	149.1	251.6	232.0	19.56	12.866	
4,000.0	3,923.3	4,000.8	3,963.6	15.1	12.1	166.12	398.7	154.7	259.0	238.9	20.12	12.872	
4,100.0	4,020.5	4,100.5	4,061.9	15.6	12.5	166.07	414.3	160.3	266.4	245.7	20.69	12.877	
4,200.0	4,117.7	4,200.2	4,160.2	16.1	12.9	166.03	429.9	165.9	273.8	252.5	21.25	12.882	
4,300.0	4,215.0	4,299.9	4,258.6	16.6	13.2	165.99	445.5	171.5	281.1	259.3	21.82	12.886	
4,400.0	4,312.2	4,399.7	4,356.9	17.1	13.6	165.95	461.1	177.1	288.5	266.1	22.38	12.890	
4,500.0	4,409.4	4,499.4	4,455.3	17.5	14.0	165.91	476.6	182.7	295.9	272.9	22.95	12.893	
4,600.0	4,506.6	4,596.5	4,551.0	18.0	14.3	165.89	491.7	188.1	303.4	279.9	23.50	12.910	
4,622.0	4,528.0	4,616.4	4,570.8	18.1	14.4	165.90	494.6	189.1	305.3	281.7	23.61	12.933	
4,700.0	4,604.0	4,687.0	4,640.6	18.5	14.6	166.00	503.7	192.4	312.1	288.1	23.98	13.018	
4,800.0	4,702.2	4,777.3	4,730.4	18.8	14.8	166.16	513.0	195.7	320.5	296.1	24.38	13.146	

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design		Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-404 - Wellbore #1 - Plan #1 (7-24-12)										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 (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		
4,900.0	4,801.0	4,867.4	4,820.3	19.1	15.0	166.35	519.7	198.1	328.4	303.6	24.73	13.278		
5,000.0	4,900.2	4,957.4	4,910.1	19.3	15.2	166.57	523.7	199.5	335.8	310.8	25.03	13.417		
5,100.0	4,999.8	5,047.3	5,000.0	19.5	15.3	166.83	525.0	200.0	342.9	317.6	25.28	13.560		
5,200.0	5,099.7	5,147.0	5,099.7	19.7	15.4	167.05	525.0	200.0	348.0	322.4	25.54	13.622		
5,300.4	5,200.0	5,247.3	5,200.0	19.8	15.6	-180.00	525.0	200.0	349.7	314.9	34.76	10.060		
5,400.0	5,299.6	5,346.9	5,299.6	20.0	15.8	-180.00	525.0	200.0	349.7	314.6	35.04	9.980		
5,500.0	5,399.6	5,446.9	5,399.6	20.1	15.9	-180.00	525.0	200.0	349.7	314.4	35.33	9.899		
5,600.0	5,499.6	5,546.9	5,499.6	20.2	16.1	-180.00	525.0	200.0	349.7	314.1	35.62	9.818		
5,700.0	5,599.6	5,646.9	5,599.6	20.3	16.2	-180.00	525.0	200.0	349.7	313.8	35.91	9.737		
5,800.0	5,699.6	5,746.9	5,699.6	20.5	16.4	-180.00	525.0	200.0	349.7	313.5	36.21	9.657		
5,900.0	5,799.6	5,846.9	5,799.6	20.6	16.6	-180.00	525.0	200.0	349.7	313.2	36.51	9.578		
6,000.0	5,899.6	5,946.9	5,899.6	20.7	16.7	-180.00	525.0	200.0	349.7	312.9	36.81	9.499		
6,100.0	5,999.6	6,046.9	5,999.6	20.9	16.9	-180.00	525.0	200.0	349.7	312.6	37.12	9.420		
6,200.0	6,099.6	6,146.9	6,099.6	21.0	17.1	-180.00	525.0	200.0	349.7	312.3	37.43	9.342		
6,263.3	6,163.0	6,210.3	6,163.0	21.1	17.2	-180.00	525.0	200.0	349.7	312.1	37.63	9.293		
6,270.0	6,169.6	6,216.9	6,169.6	21.1	17.2	-90.00	525.0	200.0	349.7	320.1	29.61	11.812		
6,300.0	6,199.6	6,246.9	6,199.6	21.1	17.2	-90.14	525.0	200.0	349.7	320.0	29.73	11.761		
6,350.0	6,249.5	6,296.8	6,249.5	21.2	17.3	-90.80	525.0	200.0	349.7	319.7	29.98	11.666		
6,400.0	6,298.9	6,346.2	6,298.9	21.2	17.4	-91.97	525.0	200.0	349.9	319.6	30.27	11.560		
6,450.0	6,347.8	6,395.8	6,348.5	21.3	17.5	-93.57	525.0	199.6	350.4	319.8	30.60	11.452		
6,500.0	6,395.9	6,446.6	6,399.1	21.3	17.6	-95.23	525.0	196.2	351.2	320.3	30.91	11.363		
6,550.0	6,443.0	6,498.0	6,450.1	21.3	17.6	-96.88	525.0	189.4	352.3	321.2	31.19	11.297		
6,600.0	6,488.9	6,550.3	6,501.3	21.3	17.7	-98.51	525.0	179.0	353.7	322.3	31.43	11.255		
6,650.0	6,533.4	6,603.3	6,552.4	21.4	17.7	-100.09	525.0	164.8	355.4	323.8	31.64	11.235		
6,700.0	6,576.3	6,657.1	6,603.2	21.4	17.7	-101.64	525.0	146.9	357.3	325.5	31.80	11.235		
6,750.0	6,617.4	6,711.8	6,653.3	21.4	17.8	-103.13	525.0	125.1	359.4	327.5	31.94	11.251		
6,800.0	6,656.6	6,767.3	6,702.4	21.4	17.8	-104.55	525.0	99.3	361.7	329.6	32.07	11.277		
6,850.0	6,693.7	6,823.6	6,750.2	21.4	17.8	-105.91	525.0	69.5	364.0	331.8	32.20	11.304		
6,900.0	6,728.5	6,880.8	6,796.4	21.5	17.9	-107.20	525.0	35.9	366.5	334.1	32.37	11.322		
6,950.0	6,760.9	6,938.8	6,840.5	21.5	17.9	-108.39	525.0	-1.8	369.0	336.4	32.60	11.318		
7,000.0	6,790.7	6,997.6	6,882.2	21.6	17.9	-109.50	525.0	-43.2	371.4	338.5	32.93	11.279		
7,050.0	6,817.8	7,057.1	6,921.1	21.7	18.0	-110.52	525.0	-88.3	373.8	340.4	33.40	11.192		
7,100.0	6,842.1	7,117.4	6,956.7	21.9	18.2	-111.43	525.0	-136.9	376.0	342.0	34.04	11.047		
7,150.0	6,863.6	7,178.4	6,988.7	22.1	18.4	-112.23	525.0	-188.7	378.1	343.2	34.87	10.841		
7,200.0	6,882.0	7,239.9	7,016.8	22.4	18.9	-112.93	525.0	-243.5	379.9	344.0	35.93	10.573		
7,250.0	6,897.3	7,302.0	7,040.5	22.7	19.6	-113.51	525.0	-300.8	381.5	344.3	37.22	10.250		
7,300.0	6,909.5	7,364.5	7,059.6	23.2	20.4	-113.97	525.0	-360.4	382.8	344.0	38.75	9.877		
7,350.0	6,918.5	7,427.4	7,073.8	23.8	21.4	-114.31	525.0	-421.6	383.8	343.2	40.51	9.473		
7,400.0	6,924.3	7,490.5	7,083.0	24.5	22.5	-114.53	525.0	-484.0	384.4	341.9	42.46	9.052		
7,450.0	6,926.8	7,540.4	7,088.3	25.3	23.4	-114.82	525.0	-533.6	385.5	341.2	44.33	8.696		
7,470.1	6,926.9	7,560.4	7,090.3	25.6	23.8	-115.03	525.0	-553.6	386.4	341.3	45.09	8.570		
7,500.0	6,926.6	7,594.5	7,093.5	26.1	24.5	-115.49	525.0	-587.5	387.7	341.6	46.14	8.403		
7,600.0	6,925.7	7,706.4	7,097.3	28.0	26.8	-116.12	525.0	-699.3	389.5	339.5	49.99	7.791		
7,700.0	6,924.9	7,806.4	7,098.0	30.1	29.0	-116.35	525.0	-799.2	390.2	336.3	53.91	7.238		
7,800.0	6,924.0	7,906.3	7,098.8	32.2	31.3	-116.57	525.0	-899.2	391.0	333.0	57.99	6.742		
7,900.0	6,923.1	8,006.3	7,099.6	34.5	33.7	-116.78	525.0	-999.2	391.7	329.5	62.19	6.299		
8,000.0	6,922.2	8,106.3	7,100.4	36.9	36.1	-117.00	525.0	-1,099.2	392.5	326.0	66.48	5.904		
8,100.0	6,921.3	8,206.3	7,101.2	39.3	38.6	-117.22	525.0	-1,199.2	393.3	322.4	70.84	5.551		
8,200.0	6,920.4	8,306.3	7,102.0	41.8	41.1	-117.44	525.0	-1,299.1	394.0	318.8	75.26	5.235		
8,300.0	6,919.5	8,406.3	7,102.8	44.3	43.7	-117.65	525.0	-1,399.1	394.8	315.1	79.73	4.952		

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 Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Offset Design		Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-404 - Wellbore #1 - Plan #1 (7-24-12)										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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,400.0	6,918.6	8,506.3	7,103.5	46.9	46.3	-117.87	525.0	-1,499.1	395.6	311.4	84.22	4.697			
8,500.0	6,917.7	8,606.2	7,104.3	49.4	48.9	-118.08	525.0	-1,599.1	396.4	307.6	88.74	4.467			
8,600.0	6,916.8	8,706.2	7,105.1	52.0	51.5	-118.29	525.0	-1,699.1	397.2	303.9	93.28	4.258			
8,700.0	6,916.0	8,806.2	7,105.9	54.7	54.1	-118.51	525.0	-1,799.1	398.0	300.1	97.83	4.068			
8,800.0	6,915.1	8,906.2	7,106.7	57.3	56.8	-118.72	525.0	-1,899.0	398.8	296.4	102.39	3.894			
8,900.0	6,914.2	9,006.2	7,107.5	60.0	59.5	-118.93	525.0	-1,999.0	399.6	292.6	106.96	3.736			
9,000.0	6,913.3	9,106.2	7,108.2	62.6	62.2	-119.14	525.0	-2,099.0	400.4	288.9	111.52	3.590			
9,100.0	6,912.4	9,206.2	7,109.0	65.3	64.9	-119.35	525.0	-2,199.0	401.2	285.1	116.09	3.456			
9,200.0	6,911.5	9,306.1	7,109.8	68.0	67.6	-119.55	525.0	-2,299.0	402.0	281.4	120.65	3.332			
9,300.0	6,910.6	9,406.1	7,110.6	70.7	70.3	-119.76	525.0	-2,399.0	402.9	277.6	125.21	3.217			
9,400.0	6,909.7	9,506.1	7,111.4	73.4	73.0	-119.97	525.0	-2,498.9	403.7	273.9	129.76	3.111			
9,500.0	6,908.8	9,606.1	7,112.2	76.1	75.7	-120.17	525.0	-2,598.9	404.5	270.2	134.31	3.012			
9,600.0	6,907.9	9,706.1	7,113.0	78.8	78.5	-120.38	525.0	-2,698.9	405.4	266.5	138.84	2.920			
9,700.0	6,907.1	9,806.1	7,113.7	81.5	81.2	-120.58	525.0	-2,798.9	406.2	262.9	143.37	2.833			
9,800.0	6,906.2	9,906.1	7,114.5	84.3	83.9	-120.78	525.0	-2,898.9	407.1	259.2	147.88	2.753			
9,900.0	6,905.3	10,006.0	7,115.3	87.0	86.7	-120.99	525.0	-2,998.9	407.9	255.6	152.38	2.677			
10,000.0	6,904.4	10,106.0	7,116.1	89.8	89.4	-121.19	525.0	-3,098.8	408.8	251.9	156.87	2.606			
10,100.0	6,903.5	10,206.0	7,116.9	92.5	92.2	-121.39	525.0	-3,198.8	409.7	248.3	161.35	2.539			
10,200.0	6,902.6	10,306.0	7,117.7	95.2	94.9	-121.59	525.0	-3,298.8	410.5	244.7	165.81	2.476			
10,300.0	6,901.7	10,406.0	7,118.4	98.0	97.7	-121.79	525.0	-3,398.8	411.4	241.2	170.26	2.416			
10,400.0	6,900.8	10,506.0	7,119.2	100.7	100.5	-121.98	525.0	-3,498.8	412.3	237.6	174.70	2.360			
10,500.0	6,899.9	10,606.0	7,120.0	103.5	103.2	-122.18	525.0	-3,598.8	413.2	234.1	179.12	2.307			
10,600.0	6,899.0	10,705.9	7,120.8	106.3	106.0	-122.38	525.0	-3,698.7	414.1	230.6	183.52	2.256			
10,700.0	6,898.2	10,805.9	7,121.6	109.0	108.8	-122.57	525.0	-3,798.7	415.0	227.1	187.91	2.208			
10,800.0	6,897.3	10,905.9	7,122.4	111.8	111.5	-122.77	525.0	-3,898.7	415.9	223.6	192.29	2.163			
10,900.0	6,896.4	11,005.9	7,123.2	114.5	114.3	-122.96	525.0	-3,998.7	416.8	220.2	196.64	2.120			
11,000.0	6,895.5	11,105.9	7,123.9	117.3	117.1	-123.15	525.0	-4,098.7	417.7	216.7	200.99	2.078			
11,100.0	6,894.6	11,205.9	7,124.7	120.1	119.8	-123.34	525.0	-4,198.7	418.6	213.3	205.31	2.039			
11,200.0	6,893.7	11,305.9	7,125.5	122.9	122.6	-123.53	525.0	-4,298.6	419.6	209.9	209.62	2.002			
11,300.0	6,892.8	11,405.8	7,126.3	125.6	125.4	-123.72	525.0	-4,398.6	420.5	206.6	213.91	1.966			
11,391.5	6,892.0	11,496.4	7,127.0	128.2	127.9	-123.90	525.0	-4,489.2	421.4	203.5	217.81	1.935 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	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 (7-24-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4972.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Stonebraker 28V-214
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: 0.62°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-214
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Reference Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4972.0ft (RKB Ensign 32 - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stonebraker 28V-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
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Reference Depths are relative to WELL @ 4972.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Stonebraker 28V-214
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