

PETROLEUM DEVELOPMENT CORP Weld County CO

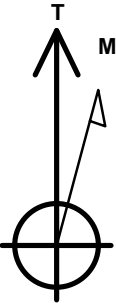
Well Name: **Stonebraker 28V-314**

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	6972.0	874.7	-4491.9	Point



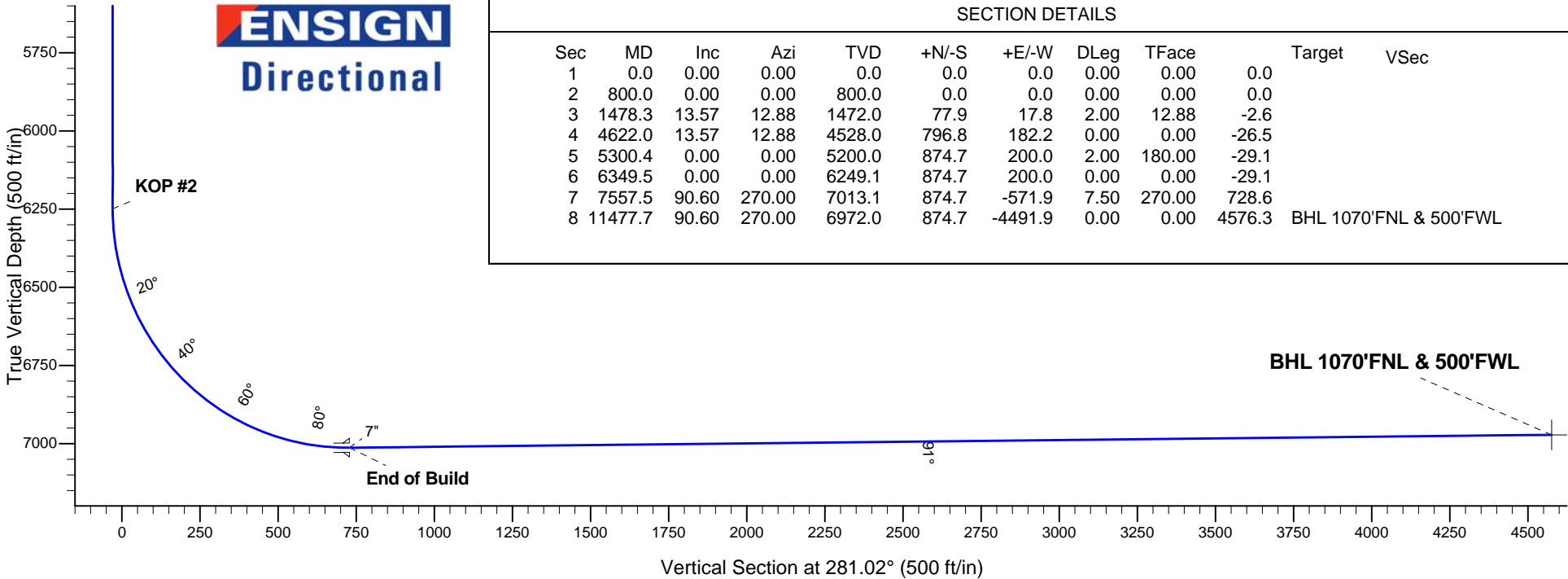
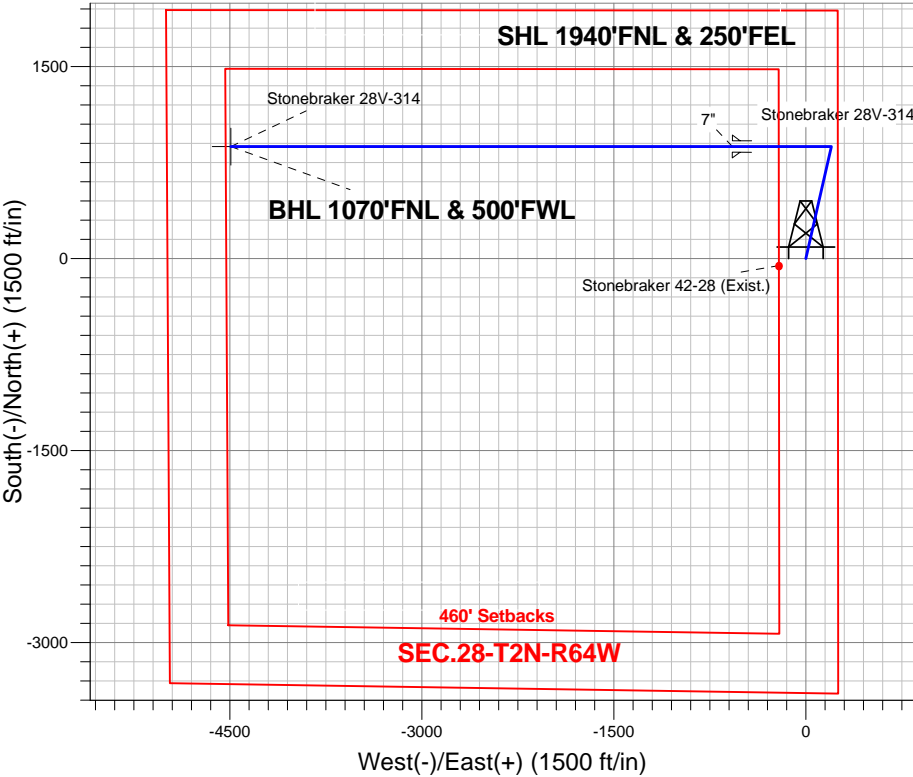
Azimuths to True North
Magnetic North: 8.44°

Magnetic Field
Strength: 52779.3snT
Dip Angle: 66.78°
Date: 7/25/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP #1
6249.1	6349.5	KOP #2
7013.1	7557.5	End of Build

Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W
Stonebraker 28V-314
Plan #2 (7-25-13)
13:33, July 25 2013





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T2N-R64W

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

Stonebraker 28V-314

Wellbore #1

Plan: Plan #2 (7-25-13)

Standard Planning Report

25 July, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-314
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-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-25-13)		

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-314					
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	7/25/2013	8.44	66.78	52,779

Design	Plan #2 (7-25-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	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	
6,349.5	0.00	0.00	6,249.1	874.7	200.0	0.00	0.00	0.00	0.00	
7,557.5	90.60	270.00	7,013.1	874.7	-571.9	7.50	7.50	0.00	270.00	
11,477.7	90.60	270.00	6,972.0	874.7	-4,491.9	0.00	0.00	0.00	0.00	BHL 1070'FNL & 5C

Database:	Landmark	Local Co-ordinate Reference:	Well Stonebraker 28V-314
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-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-25-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
900.0	2.00	12.88	900.0	1.7	0.4	-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
1,100.0	6.00	12.88	1,099.5	15.3	3.5	-0.5	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
1,300.0	10.00	12.88	1,297.5	42.4	9.7	-1.4	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
1,478.3	13.57	12.88	1,472.0	77.9	17.8	-2.6	2.00	2.00	0.00
1,500.0	13.57	12.88	1,493.1	82.9	18.9	-2.8	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
1,700.0	13.57	12.88	1,687.5	128.6	29.4	-4.3	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
1,900.0	13.57	12.88	1,881.9	174.3	39.9	-5.8	0.00	0.00	0.00
2,000.0	13.57	12.88	1,979.1	197.2	45.1	-6.6	0.00	0.00	0.00
2,100.0	13.57	12.88	2,076.3	220.1	50.3	-7.3	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
2,300.0	13.57	12.88	2,270.8	265.8	60.8	-8.8	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
2,500.0	13.57	12.88	2,465.2	311.5	71.2	-10.4	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
2,700.0	13.57	12.88	2,659.6	357.3	81.7	-11.9	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
2,900.0	13.57	12.88	2,854.0	403.0	92.1	-13.4	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
3,100.0	13.57	12.88	3,048.4	448.7	102.6	-14.9	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
3,300.0	13.57	12.88	3,242.9	494.5	113.1	-16.5	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
3,500.0	13.57	12.88	3,437.3	540.2	123.5	-18.0	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
3,700.0	13.57	12.88	3,631.7	585.9	134.0	-19.5	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
3,900.0	13.57	12.88	3,826.1	631.7	144.4	-21.0	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
4,100.0	13.57	12.88	4,020.5	677.4	154.9	-22.6	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
4,300.0	13.57	12.88	4,215.0	723.1	165.3	-24.1	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
4,500.0	13.57	12.88	4,409.4	768.9	175.8	-25.6	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
4,700.0	12.01	12.88	4,604.0	813.6	186.0	-27.1	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

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Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	North Reference:	True
Well:	Stonebraker 28V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-25-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,900.0	8.01	12.88	4,801.0	847.5	193.8	-28.2	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
5,100.0	4.01	12.88	4,999.8	867.9	198.4	-28.9	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
5,300.0	0.01	12.88	5,199.6	874.7	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
5,400.0	0.00	0.00	5,299.6	874.7	200.0	-29.1	0.00	0.00	0.00
5,500.0	0.00	0.00	5,399.6	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
5,700.0	0.00	0.00	5,599.6	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
5,900.0	0.00	0.00	5,799.6	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
6,100.0	0.00	0.00	5,999.6	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
6,300.0	0.00	0.00	6,199.6	874.7	200.0	-29.1	0.00	0.00	0.00
6,349.5	0.00	0.00	6,249.1	874.7	200.0	-29.1	0.00	0.00	0.00
KOP #2									
6,400.0	3.79	270.00	6,299.6	874.7	198.3	-27.5	7.50	7.50	0.00
6,500.0	11.29	270.00	6,398.7	874.7	185.2	-14.6	7.50	7.50	0.00
6,600.0	18.79	270.00	6,495.2	874.7	159.3	10.8	7.50	7.50	0.00
6,700.0	26.29	270.00	6,587.5	874.7	121.0	48.4	7.50	7.50	0.00
6,800.0	33.79	270.00	6,674.0	874.7	71.0	97.5	7.50	7.50	0.00
6,900.0	41.29	270.00	6,753.2	874.7	10.1	157.3	7.50	7.50	0.00
7,000.0	48.79	270.00	6,823.8	874.7	-60.6	226.7	7.50	7.50	0.00
7,100.0	56.29	270.00	6,884.6	874.7	-139.9	304.5	7.50	7.50	0.00
7,200.0	63.79	270.00	6,934.5	874.7	-226.5	389.5	7.50	7.50	0.00
7,300.0	71.29	270.00	6,972.7	874.7	-318.9	480.2	7.50	7.50	0.00
7,400.0	78.79	270.00	6,998.5	874.7	-415.4	574.9	7.50	7.50	0.00
7,500.0	86.29	270.00	7,011.5	874.7	-514.5	672.2	7.50	7.50	0.00
7,557.5	90.60	270.00	7,013.1	874.7	-571.9	728.6	7.50	7.50	0.00
End of Build - 7"									
7,600.0	90.60	270.00	7,012.6	874.7	-614.4	770.3	0.00	0.00	0.00
7,700.0	90.60	270.00	7,011.6	874.7	-714.4	868.5	0.00	0.00	0.00
7,800.0	90.60	270.00	7,010.5	874.7	-814.4	966.6	0.00	0.00	0.00
7,900.0	90.60	270.00	7,009.5	874.7	-914.4	1,064.8	0.00	0.00	0.00
8,000.0	90.60	270.00	7,008.4	874.7	-1,014.4	1,162.9	0.00	0.00	0.00
8,100.0	90.60	270.00	7,007.4	874.7	-1,114.4	1,261.1	0.00	0.00	0.00
8,200.0	90.60	270.00	7,006.3	874.7	-1,214.4	1,359.2	0.00	0.00	0.00
8,300.0	90.60	270.00	7,005.3	874.7	-1,314.4	1,457.4	0.00	0.00	0.00
8,400.0	90.60	270.00	7,004.2	874.7	-1,414.4	1,555.5	0.00	0.00	0.00
8,500.0	90.60	270.00	7,003.2	874.7	-1,514.4	1,653.7	0.00	0.00	0.00
8,600.0	90.60	270.00	7,002.1	874.7	-1,614.4	1,751.8	0.00	0.00	0.00
8,700.0	90.60	270.00	7,001.1	874.7	-1,714.4	1,850.0	0.00	0.00	0.00
8,800.0	90.60	270.00	7,000.0	874.7	-1,814.4	1,948.1	0.00	0.00	0.00
8,900.0	90.60	270.00	6,999.0	874.7	-1,914.4	2,046.3	0.00	0.00	0.00
9,000.0	90.60	270.00	6,997.9	874.7	-2,014.4	2,144.4	0.00	0.00	0.00
9,100.0	90.60	270.00	6,996.9	874.7	-2,114.4	2,242.6	0.00	0.00	0.00
9,200.0	90.60	270.00	6,995.9	874.7	-2,214.4	2,340.7	0.00	0.00	0.00
9,300.0	90.60	270.00	6,994.8	874.7	-2,314.3	2,438.9	0.00	0.00	0.00
9,400.0	90.60	270.00	6,993.8	874.7	-2,414.3	2,537.0	0.00	0.00	0.00
9,500.0	90.60	270.00	6,992.7	874.7	-2,514.3	2,635.2	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-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-25-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,600.0	90.60	270.00	6,991.7	874.7	-2,614.3	2,733.3	0.00	0.00	0.00
9,700.0	90.60	270.00	6,990.6	874.7	-2,714.3	2,831.5	0.00	0.00	0.00
9,800.0	90.60	270.00	6,989.6	874.7	-2,814.3	2,929.6	0.00	0.00	0.00
9,900.0	90.60	270.00	6,988.5	874.7	-2,914.3	3,027.8	0.00	0.00	0.00
10,000.0	90.60	270.00	6,987.5	874.7	-3,014.3	3,125.9	0.00	0.00	0.00
10,100.0	90.60	270.00	6,986.4	874.7	-3,114.3	3,224.1	0.00	0.00	0.00
10,200.0	90.60	270.00	6,985.4	874.7	-3,214.3	3,322.2	0.00	0.00	0.00
10,300.0	90.60	270.00	6,984.3	874.7	-3,314.3	3,420.4	0.00	0.00	0.00
10,400.0	90.60	270.00	6,983.3	874.7	-3,414.3	3,518.5	0.00	0.00	0.00
10,500.0	90.60	270.00	6,982.2	874.7	-3,514.3	3,616.7	0.00	0.00	0.00
10,600.0	90.60	270.00	6,981.2	874.7	-3,614.3	3,714.8	0.00	0.00	0.00
10,700.0	90.60	270.00	6,980.1	874.7	-3,714.3	3,813.0	0.00	0.00	0.00
10,800.0	90.60	270.00	6,979.1	874.7	-3,814.3	3,911.1	0.00	0.00	0.00
10,900.0	90.60	270.00	6,978.0	874.7	-3,914.3	4,009.3	0.00	0.00	0.00
11,000.0	90.60	270.00	6,977.0	874.7	-4,014.3	4,107.4	0.00	0.00	0.00
11,100.0	90.60	270.00	6,976.0	874.7	-4,114.2	4,205.6	0.00	0.00	0.00
11,200.0	90.60	270.00	6,974.9	874.7	-4,214.2	4,303.7	0.00	0.00	0.00
11,300.0	90.60	270.00	6,973.9	874.7	-4,314.2	4,401.9	0.00	0.00	0.00
11,400.0	90.60	270.00	6,972.8	874.7	-4,414.2	4,500.0	0.00	0.00	0.00
11,477.7	90.60	270.00	6,972.0	874.7	-4,491.9	4,576.3	0.00	0.00	0.00
BHL 1070'FNL & 500'FWL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,557.5	7,013.1	7"	7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.0	800.0	0.0	0.0	KOP #1
6,349.5	6,249.1	874.7	200.0	KOP #2
7,557.5	7,013.1	874.7	-571.9	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T2N-R64W

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

Stonebraker 28V-314

Wellbore #1

Plan #2 (7-25-13)

Anticollision Report

25 July, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-314
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-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-25-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (7-25-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 7/25/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,477.7	Plan #2 (7-25-13) (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						
Stonebraker 32-28 (Exist.) - Wellbore #1 - Design #1						Out of range
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	7,500.0	6,900.0	984.0	946.2	26.026	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	18.355	CC, ES
Stonebraker 28V-234 - Wellbore #1 - Plan #1 (7-24-12)	11,477.7	11,325.8	736.1	482.2	2.900	SF

Offset Design Stonebraker 28U-HZ Pad Sec.28-T2N-R64W - Stonebraker 42-28 (Exist.) - Wellbore #1 - Design #1												
Survey Program: 0-MWD												
Reference	Offset	Semi Major Axis										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
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	979.131
200.0	200.0	197.0	197.0	0.3	0.3	-104.60	-54.6	-209.8	216.8	216.1	0.67	324.737
300.0	300.0	297.0	297.0	0.6	0.6	-104.60	-54.6	-209.8	216.8	215.7	1.12	194.058
400.0	400.0	397.0	397.0	0.8	0.8	-104.60	-54.6	-209.8	216.8	215.2	1.57	138.374
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	47.621
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	-129.59	-54.6	-209.8	251.9	245.7	6.14	41.051
1,500.0	1,493.1	1,490.1	1,490.1	3.6	3.2	-133.08	-54.6	-209.8	266.9	260.3	6.64	40.222
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	39.684
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	39.342
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	39.150

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-314
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-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-25-13)	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							
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
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	39.071	
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	39.074	
2,100.0	2,076.3	2,073.3	2,073.3	6.1	4.5	-148.73	-54.6	-209.8	378.3	368.6	9.67	39.137	
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	39.243	
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	39.534	
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	39.703	
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	39.879	
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	40.241	
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	40.421	
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	40.942	
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	12.3	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	41.713	
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	41.851	
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	17.6	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	
4,700.0	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	42.706	
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	
6,600.0	6,495.2	6,492.2	6,492.2	21.4	14.5	-69.40	-54.6	-209.8	999.9	970.4	29.59	33.791	
6,700.0	6,587.5	6,584.5	6,584.5	21.5	14.7	-72.30	-54.6	-209.8	986.5	956.6	29.82	33.076	
6,800.0	6,674.0	6,671.0	6,671.0	21.5	14.9	-75.91	-54.6	-209.8	970.8	940.6	30.20	32.150	
6,900.0	6,753.2	6,750.2	6,750.2	21.6	15.1	-79.92	-54.6	-209.8	955.0	924.2	30.76	31.046	
7,000.0	6,823.8	6,820.8	6,820.8	21.6	15.2	-83.96	-54.6	-209.8	941.2	909.7	31.52	29.860	
7,100.0	6,884.6	6,881.6	6,881.6	21.8	15.4	-87.61	-54.6	-209.8	932.0	899.5	32.47	28.703	
7,170.3	6,920.9	6,900.0	6,900.0	21.9	15.4	-88.75	-54.6	-209.8	929.6	896.3	33.22	27.981	
7,200.0	6,934.5	6,900.0	6,900.0	22.1	15.4	-88.71	-54.6	-209.8	930.0	896.5	33.51	27.757	
7,300.0	6,972.7	6,900.0	6,900.0	22.6	15.4	-88.09	-54.6	-209.8	938.3	903.6	34.75	27.000	
7,400.0	6,998.5	6,900.0	6,900.0	23.5	15.4	-86.69	-54.6	-209.8	956.6	920.4	36.22	26.408	
7,500.0	7,011.5	6,900.0	6,900.0	24.8	15.4	-84.56	-54.6	-209.8	984.0	946.2	37.81	26.026 SF	

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Reference Well:	Stonebraker 28V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-25-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
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	272.784		
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-61.9	0.0	61.9	61.2	0.68	91.532		
300.0	300.0	301.0	301.0	0.6	0.6	-180.00	-61.9	0.0	61.9	60.8	1.13	54.992		
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-61.9	0.0	61.9	60.4	1.58	39.303		
500.0	500.0	501.0	501.0	1.0	1.0	-180.00	-61.9	0.0	61.9	59.9	2.03	30.578		
600.0	600.0	601.0	601.0	1.2	1.2	-180.00	-61.9	0.0	61.9	59.5	2.47	25.024		
700.0	700.0	701.0	701.0	1.5	1.5	-180.00	-61.9	0.0	61.9	59.0	2.92	21.177		
800.0	800.0	801.0	801.0	1.7	1.7	-180.00	-61.9	0.0	61.9	58.6	3.37	18.355 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	16.642		
1,000.0	999.8	1,000.8	1,000.8	2.1	2.1	168.39	-61.9	0.0	68.7	64.5	4.27	16.096		
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	16.393		
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	17.322		
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	18.738		
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	20.535		
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	22.602		
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	24.475		
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	28.778		
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	29.890		
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	30.746		
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	2,299.1	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	31.034		
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	-21.0	40.1	359.6	347.7	11.83	30.383		
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	30.076		
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	29.781		
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	29.498		
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	29.227		
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	28.717		
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	28.478		
3,400.0	3,340.1	3,399.4	3,387.9	12.3	8.1	167.01	59.3	118.9	460.4	444.1	16.30	28.249		
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	28.030		
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	27.618		
3,800.0	3,728.9	3,795.6	3,780.2	14.2	9.3	164.92	99.5	158.3	512.1	493.4	18.67	27.425		
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	27.240		
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	27.063		
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	27.012		
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	27.137		
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	27.392		
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	27.764		
4,500.0	4,409.4	4,429.4	4,410.4	17.6	10.9	164.50	142.1	200.0	627.3	605.1	22.21	28.237		
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	28.704		
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	29.068		
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	29.332		
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	29.475		
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	29.506		

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-314
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-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-25-13)	Offset TVD Reference:	Offset Datum

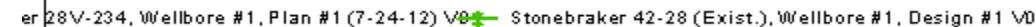
Offset Design										Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W - Stonebraker 28V-234 - Wellbore #1 - Plan #1 (7-24-12)				Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
							+N/-S (ft)	+E/-W (ft)								
5,100.0	4,999.8	5,019.8	5,000.8	19.6	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	29.257				
5,300.0	5,199.6	5,219.7	5,200.6	19.8	12.4	167.12	142.1	200.0	732.6	707.4	25.28	28.986				
5,400.0	5,299.6	5,319.7	5,300.6	20.0	12.6	-180.00	142.1	200.0	732.6	700.8	31.78	23.056				
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	22.815				
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	22.578				
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	22.344				
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	22.114				
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	21.886				
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	21.663				
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	34.17	21.442				
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	34.52	21.225				
6,265.4	6,165.1	6,185.1	6,166.1	21.1	14.4	-180.00	142.1	200.0	732.6	697.9	34.75	21.084				
6,300.0	6,199.6	6,219.7	6,200.6	21.1	14.5	-179.99	142.1	199.8	732.6	697.8	34.87	21.012				
6,400.0	6,299.6	6,319.0	6,299.5	21.3	14.6	-89.44	142.1	191.2	732.7	703.1	29.60	24.756				
6,500.0	6,398.7	6,417.2	6,395.4	21.4	14.7	-88.78	142.1	170.2	732.8	703.0	29.80	24.586				
6,600.0	6,495.2	6,514.3	6,486.8	21.4	14.8	-88.14	142.1	137.4	733.0	703.0	29.98	24.446				
6,700.0	6,587.5	6,610.5	6,572.5	21.5	14.9	-87.54	142.1	93.8	733.3	703.1	30.20	24.280				
6,800.0	6,674.0	6,705.9	6,651.4	21.5	15.0	-86.98	142.1	40.3	733.6	703.1	30.55	24.015				
6,900.0	6,753.2	6,800.0	6,722.1	21.6	15.2	-86.48	142.1	-21.7	734.0	702.9	31.14	23.572				
7,000.0	6,823.8	6,894.4	6,784.8	21.6	15.8	-86.03	142.1	-92.1	734.4	702.3	32.11	22.871				
7,100.0	6,884.6	6,987.8	6,837.8	21.8	16.6	-85.64	142.1	-168.9	734.7	701.2	33.56	21.895				
7,200.0	6,934.5	7,080.6	6,880.9	22.1	17.6	-85.33	142.1	-251.1	735.0	699.5	35.54	20.679				
7,300.0	6,972.7	7,173.2	6,913.6	22.6	19.0	-85.09	142.1	-337.6	735.3	697.2	38.08	19.308				
7,400.0	6,998.5	7,265.4	6,935.6	23.5	20.5	-84.93	142.1	-427.1	735.5	694.3	41.12	17.886				
7,500.0	7,011.5	7,357.5	6,946.6	24.8	22.3	-84.85	142.1	-518.5	735.5	691.0	44.56	16.506				
7,600.0	7,012.6	7,452.7	6,947.3	26.5	24.2	-84.83	142.1	-613.7	735.5	687.1	48.41	15.194				
7,700.0	7,011.6	7,552.7	6,946.1	28.4	26.4	-84.81	142.2	-713.7	735.6	682.9	52.67	13.966				
7,800.0	7,010.5	7,652.7	6,944.8	30.5	28.6	-84.80	142.2	-813.6	735.6	678.4	57.15	12.870				
7,900.0	7,009.5	7,752.7	6,943.5	32.7	31.0	-84.78	142.2	-913.6	735.6	673.8	61.82	11.899				
8,000.0	7,008.4	7,852.7	6,942.2	34.9	33.4	-84.76	142.2	-1,013.6	735.6	669.0	66.62	11.041				
8,100.0	7,007.4	7,952.7	6,941.0	37.3	35.9	-84.74	142.2	-1,113.6	735.6	664.1	71.54	10.282				
8,200.0	7,006.3	8,052.7	6,939.7	39.7	38.4	-84.73	142.2	-1,213.6	735.6	659.1	76.55	9.609				
8,300.0	7,005.3	8,152.7	6,938.4	42.2	41.0	-84.71	142.2	-1,313.6	735.6	654.0	81.64	9.011				
8,400.0	7,004.2	8,252.7	6,937.2	44.7	43.6	-84.69	142.2	-1,413.6	735.6	648.9	86.78	8.477				
8,500.0	7,003.2	8,352.7	6,935.9	47.3	46.2	-84.67	142.2	-1,513.6	735.7	643.7	91.98	7.998				
8,600.0	7,002.1	8,452.7	6,934.6	49.9	48.9	-84.65	142.2	-1,613.6	735.7	638.5	97.22	7.567				
8,700.0	7,001.1	8,552.7	6,933.3	52.5	51.5	-84.64	142.2	-1,713.6	735.7	633.2	102.50	7.178				
8,800.0	7,000.0	8,652.7	6,932.1	55.1	54.2	-84.62	142.3	-1,813.6	735.7	627.9	107.80	6.824				
8,900.0	6,999.0	8,752.7	6,930.8	57.7	56.9	-84.60	142.3	-1,913.6	735.7	622.6	113.14	6.503				
9,000.0	6,997.9	8,852.7	6,929.5	60.4	59.6	-84.58	142.3	-2,013.5	735.7	617.2	118.49	6.209				
9,100.0	6,996.9	8,952.7	6,928.2	63.0	62.3	-84.57	142.3	-2,113.5	735.7	611.9	123.87	5.940				
9,200.0	6,995.9	9,052.7	6,927.0	65.7	65.0	-84.55	142.3	-2,213.5	735.8	606.5	129.26	5.692				
9,300.0	6,994.8	9,152.7	6,925.7	68.4	67.7	-84.53	142.3	-2,313.5	735.8	601.1	134.67	5.463				
9,400.0	6,993.8	9,252.7	6,924.4	71.1	70.4	-84.51	142.3	-2,413.5	735.8	595.7	140.09	5.252				
9,500.0	6,992.7	9,352.7	6,923.1	73.8	73.2	-84.50	142.3	-2,513.5	735.8	590.3	145.52	5.056				
9,600.0	6,991.7	9,452.7	6,921.9	76.5	75.9	-84.48	142.3	-2,613.5	735.8	584.8	150.97	4.874				
9,700.0	6,990.6	9,552.7	6,920.6	79.3	78.7	-84.46	142.3	-2,713.5	735.8	579.4	156.42	4.704				
9,800.0	6,989.6	9,652.7	6,919.3	82.0	81.4	-84.44	142.3	-2,813.5	735.8	573.9	161.88	4.545				
9,900.0	6,988.5	9,752.7	6,918.0	84.7	84.2	-84.43	142.4	-2,913.5	735.8	568.5	167.35	4.397				

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-314
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-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-25-13)	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		
10,000.0	6,987.5	9,852.7	6,916.8	87.4	86.9	-84.41	142.4	-3,013.5	735.9	563.0	172.83	4.258			
10,100.0	6,986.4	9,952.7	6,915.5	90.2	89.7	-84.39	142.4	-3,113.5	735.9	557.6	178.31	4.127			
10,200.0	6,985.4	10,052.7	6,914.2	92.9	92.4	-84.37	142.4	-3,213.4	735.9	552.1	183.80	4.004			
10,300.0	6,984.3	10,152.7	6,912.9	95.7	95.2	-84.35	142.4	-3,313.4	735.9	546.6	189.29	3.888			
10,400.0	6,983.3	10,252.7	6,911.7	98.4	98.0	-84.34	142.4	-3,413.4	735.9	541.1	194.78	3.778			
10,500.0	6,982.2	10,352.7	6,910.4	101.2	100.7	-84.32	142.4	-3,513.4	735.9	535.6	200.29	3.674			
10,600.0	6,981.2	10,452.7	6,909.1	103.9	103.5	-84.30	142.4	-3,613.4	735.9	530.2	205.79	3.576			
10,700.0	6,980.1	10,552.7	6,907.9	106.7	106.3	-84.28	142.4	-3,713.4	736.0	524.7	211.30	3.483			
10,800.0	6,979.1	10,652.7	6,906.6	109.5	109.0	-84.27	142.4	-3,813.4	736.0	519.2	216.81	3.395			
10,900.0	6,978.0	10,752.7	6,905.3	112.2	111.8	-84.25	142.4	-3,913.4	736.0	513.7	222.32	3.310			
11,000.0	6,977.0	10,852.7	6,904.0	115.0	114.6	-84.23	142.5	-4,013.4	736.0	508.2	227.84	3.230			
11,100.0	6,976.0	10,952.7	6,902.8	117.8	117.4	-84.21	142.5	-4,113.4	736.0	502.7	233.36	3.154			
11,200.0	6,974.9	11,052.7	6,901.5	120.5	120.2	-84.20	142.5	-4,213.4	736.0	497.1	238.88	3.081			
11,300.0	6,973.9	11,152.7	6,900.2	123.3	122.9	-84.18	142.5	-4,313.4	736.0	491.6	244.41	3.012			
11,400.0	6,972.8	11,252.7	6,898.9	126.1	125.7	-84.16	142.5	-4,413.3	736.1	486.1	249.93	2.945			
11,443.6	6,972.4	11,296.3	6,898.4	127.3	126.9	-84.15	142.5	-4,457.0	736.1	483.7	252.34	2.917			
11,477.7	6,972.0	11,325.8	6,898.0	128.2	127.5	-84.15	142.5	-4,486.5	736.1	482.2	253.85	2.900 SF			

Reference Depths are relative to WELL @ 4972.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Stonebraker 28V-314
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.62°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-314
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-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-25-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4972.0ft (RKB Ensign 32 - 1 Coordinates are relative to: Stonebraker 28V-314
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°

