

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Simonsen 1Q-241**

Surface Location: Simonsen NENW-12 Pad Sec.12-T6N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

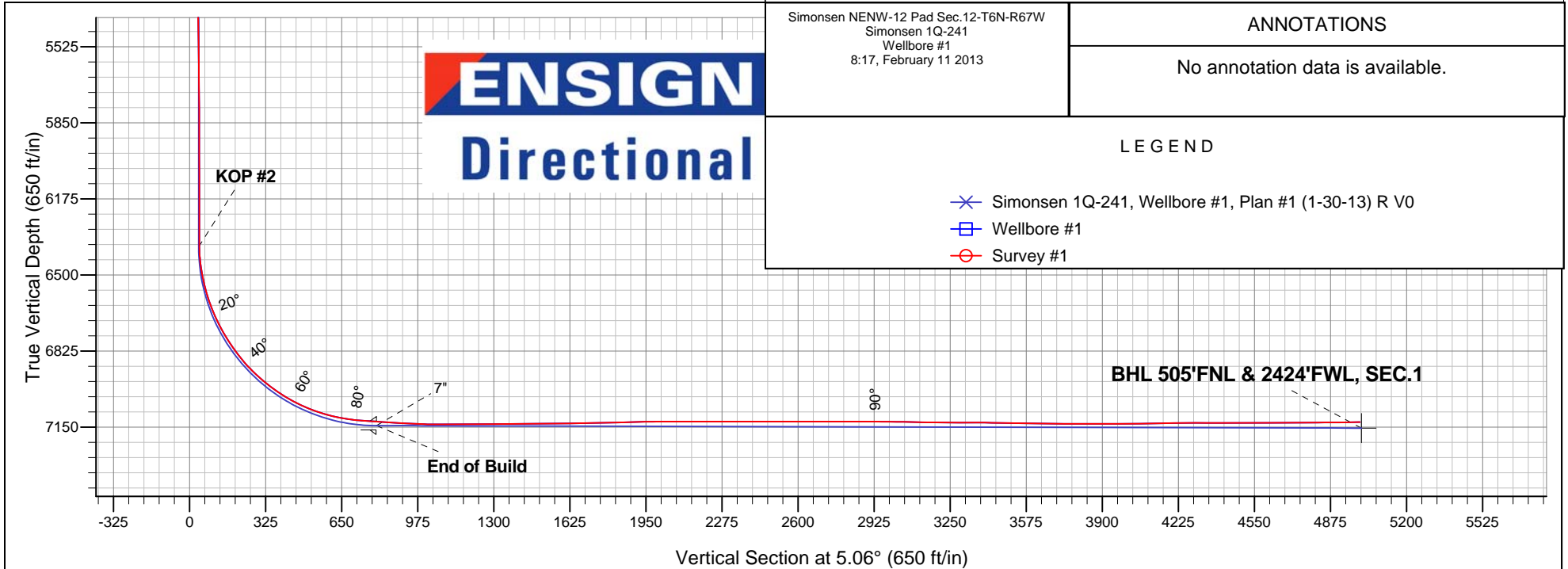
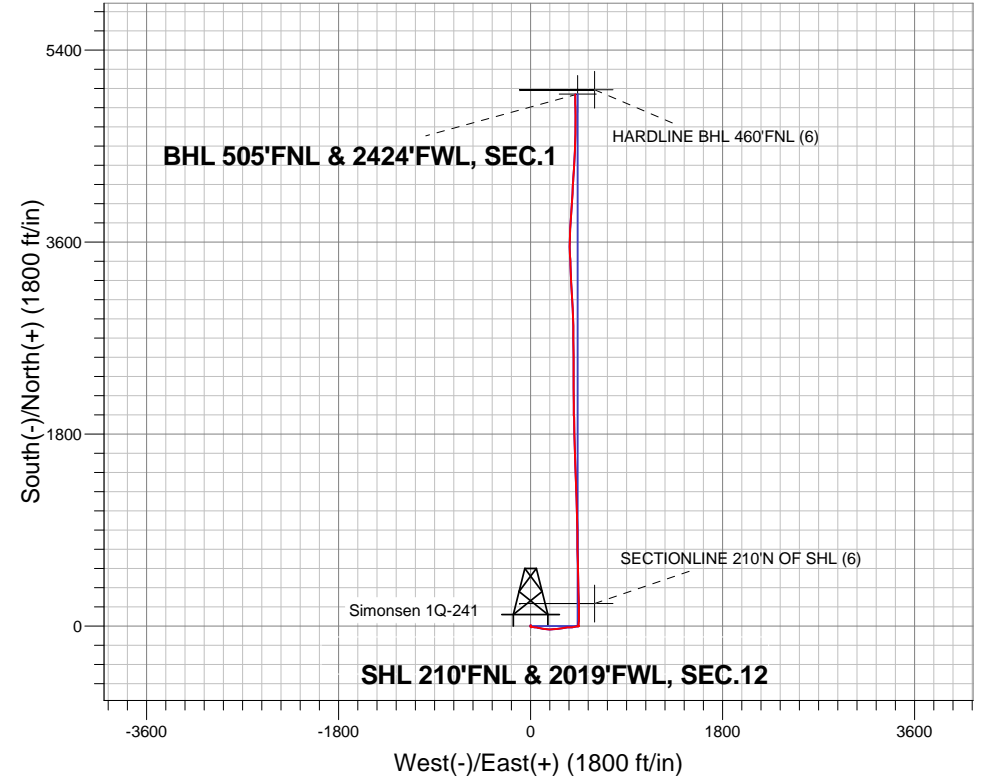
Ground Elevation: 4879.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1428710.91	3182423.00	40.508360	-104.843950	

RKB Ensign 32 - 15' WELL @ 4894.0ft (RKB Ensign 32 - 15')

FINAL SURVEY

Projected Bottom Hole Location
11813' MD 7129' TVD 4983' N & 416' E of SHL
91.2 degree Incl @ 359.4 degree AZM





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.12-T6N-R67W

Simonsen NENW-12 Pad Sec.12-T6N-R67W

Simonsen 1Q-241

Wellbore #1

Survey: Survey #1

Standard Survey Report

11 February, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonsen 1Q-241
Project:	SEC.12-T6N-R67W	TVD Reference:	WELL @ 4894.0ft (RKB Ensign 32 - 15')
Site:	Simonsen NENW-12 Pad Sec.12-T6N-R67W	MD Reference:	WELL @ 4894.0ft (RKB Ensign 32 - 15')
Well:	Simonsen 1Q-241	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
793.0	0.80	104.20	793.0	7.0	1.0	7.0	1.06	-0.11	75.76
884.0	1.80	165.30	883.9	5.4	2.0	5.6	1.73	1.10	67.14
972.0	3.40	194.00	971.8	1.6	1.7	1.7	2.29	1.82	32.61
1,063.0	3.10	191.70	1,062.7	-3.4	0.5	-3.4	0.36	-0.33	-2.53
1,155.0	1.60	168.40	1,154.6	-7.1	0.3	-7.1	1.90	-1.63	-25.33
1,249.0	1.20	126.30	1,248.6	-9.0	1.3	-8.9	1.14	-0.43	-44.79
1,344.0	2.30	110.00	1,343.5	-10.3	3.9	-9.9	1.26	1.16	-17.16
1,441.0	3.50	86.20	1,440.4	-10.7	8.7	-9.9	1.73	1.24	-24.54
1,536.0	4.20	86.70	1,535.2	-10.3	15.1	-9.0	0.74	0.74	0.53
1,631.0	4.70	94.10	1,629.9	-10.4	22.4	-8.4	0.80	0.53	7.79
1,726.0	5.00	101.10	1,724.6	-11.5	30.4	-8.8	0.70	0.32	7.37
1,822.0	5.90	98.40	1,820.1	-13.0	39.4	-9.5	0.97	0.94	-2.81
1,917.0	6.90	93.80	1,914.6	-14.1	49.9	-9.6	1.18	1.05	-4.84
2,012.0	7.30	101.00	2,008.8	-15.6	61.5	-10.1	1.03	0.42	7.58
2,107.0	8.60	102.20	2,102.9	-18.3	74.4	-11.6	1.38	1.37	1.26
2,202.0	8.30	101.50	2,196.9	-21.1	88.0	-13.3	0.33	-0.32	-0.74
2,297.0	7.70	101.20	2,291.0	-23.8	101.0	-14.7	0.63	-0.63	-0.32
2,392.0	8.00	99.10	2,385.1	-26.0	113.8	-15.9	0.44	0.32	-2.21
2,487.0	7.60	98.70	2,479.2	-28.0	126.5	-16.8	0.42	-0.42	-0.42
2,583.0	8.10	97.90	2,574.3	-29.9	139.5	-17.5	0.53	0.52	-0.83
2,678.0	9.10	97.60	2,668.2	-31.8	153.6	-18.2	1.05	1.05	-0.32
2,773.0	8.70	93.20	2,762.1	-33.2	168.2	-18.3	0.83	-0.42	-4.63
2,869.0	7.40	85.50	2,857.1	-33.1	181.6	-17.0	1.76	-1.35	-8.02
2,964.0	7.50	87.80	2,951.3	-32.4	193.9	-15.2	0.33	0.11	2.42
3,059.0	7.40	83.30	3,045.5	-31.5	206.2	-13.2	0.62	-0.11	-4.74
3,154.0	6.50	83.60	3,139.8	-30.2	217.6	-10.8	0.95	-0.95	0.32
3,250.0	6.00	85.40	3,235.3	-29.2	228.0	-8.9	0.56	-0.52	1.88
3,345.0	6.20	82.10	3,329.7	-28.1	238.0	-6.9	0.42	0.21	-3.47
3,440.0	5.60	89.60	3,424.2	-27.3	247.7	-5.3	1.03	-0.63	7.89
3,535.0	5.50	87.10	3,518.8	-27.1	256.9	-4.3	0.28	-0.11	-2.63
3,631.0	6.00	81.70	3,614.3	-26.1	266.5	-2.5	0.77	0.52	-5.63
3,726.0	6.50	81.70	3,708.7	-24.6	276.7	-0.1	0.53	0.53	0.00
3,821.0	7.20	80.90	3,803.0	-22.9	287.9	2.6	0.74	0.74	-0.84
3,917.0	8.20	79.80	3,898.2	-20.7	300.6	5.9	1.05	1.04	-1.15
4,012.0	8.70	79.50	3,992.1	-18.2	314.3	9.6	0.53	0.53	-0.32
4,107.0	7.30	79.50	4,086.2	-15.8	327.3	13.2	1.47	-1.47	0.00
4,202.0	7.00	82.60	4,180.5	-14.0	339.0	16.0	0.51	-0.32	3.26
4,295.0	7.40	90.50	4,272.7	-13.3	350.6	17.7	1.15	0.43	8.49
4,391.0	7.40	89.60	4,368.0	-13.3	363.0	18.8	0.12	0.00	-0.94
4,486.0	7.80	87.20	4,462.1	-12.9	375.5	20.3	0.54	0.42	-2.53
4,581.0	7.60	85.80	4,556.3	-12.2	388.2	22.2	0.29	-0.21	-1.47
4,676.0	7.30	80.00	4,650.5	-10.7	400.4	24.7	0.85	-0.32	-6.11
4,772.0	7.10	77.80	4,745.7	-8.3	412.2	28.1	0.35	-0.21	-2.29
4,867.0	6.10	78.00	4,840.1	-6.0	422.9	31.3	1.05	-1.05	0.21
4,961.0	5.10	88.10	4,933.6	-4.9	432.0	33.3	1.49	-1.06	10.74
5,057.0	3.20	87.80	5,029.4	-4.6	438.9	34.1	1.98	-1.98	-0.31
5,153.0	2.40	89.80	5,125.3	-4.5	443.6	34.7	0.84	-0.83	2.08
5,248.0	1.70	76.30	5,220.2	-4.2	447.0	35.3	0.89	-0.74	-14.21
5,439.0	0.80	44.70	5,411.1	-2.6	450.7	37.2	0.58	-0.47	-16.54
5,534.0	0.90	15.60	5,506.1	-1.4	451.3	38.5	0.46	0.11	-30.63
5,629.0	0.90	48.70	5,601.1	-0.2	452.1	39.8	0.54	0.00	34.84
5,723.0	0.40	65.00	5,695.1	0.5	452.9	40.5	0.56	-0.53	17.34
5,819.0	0.20	355.80	5,791.1	0.8	453.2	40.8	0.39	-0.21	-72.08
5,914.0	0.10	237.80	5,886.1	0.9	453.1	40.9	0.28	-0.11	-124.21

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
6,009.0	0.40	324.20	5,981.1	1.1	452.9	41.1	0.43	0.32	90.95
6,104.0	0.30	293.20	6,076.1	1.5	452.5	41.4	0.22	-0.11	-32.63
6,200.0	0.40	275.00	6,172.1	1.6	451.9	41.5	0.15	0.10	-18.96
6,296.0	0.70	280.70	6,268.1	1.8	451.0	41.6	0.32	0.31	5.94
6,360.0	0.80	272.80	6,332.1	1.9	450.1	41.6	0.22	0.16	-12.34
6,392.0	0.70	278.00	6,364.1	1.9	449.7	41.6	0.38	-0.31	16.25
6,423.0	2.20	341.80	6,395.1	2.5	449.4	42.1	6.43	4.84	205.81
6,455.0	4.90	358.90	6,427.0	4.4	449.1	44.1	8.97	8.44	53.44
6,487.0	7.60	3.00	6,458.8	7.9	449.2	47.5	8.55	8.44	12.81
6,519.0	10.20	4.00	6,490.4	12.9	449.5	52.5	8.14	8.13	3.13
6,551.0	12.40	3.80	6,521.8	19.1	450.0	58.8	6.88	6.88	-0.63
6,582.0	14.50	4.70	6,552.0	26.3	450.5	66.0	6.81	6.77	2.90
6,614.0	16.40	4.30	6,582.8	34.8	451.2	74.5	5.95	5.94	-1.25
6,646.0	18.80	2.10	6,613.3	44.5	451.7	84.2	7.78	7.50	-6.88
6,677.0	21.30	0.60	6,642.4	55.1	451.9	94.8	8.23	8.06	-4.84
6,709.0	23.90	359.70	6,672.0	67.4	452.0	107.0	8.20	8.13	-2.81
6,741.0	26.40	359.50	6,700.9	81.0	451.9	120.5	7.82	7.81	-0.63
6,773.0	28.60	0.10	6,729.3	95.7	451.8	135.3	6.93	6.88	1.88
6,803.0	30.60	1.40	6,755.4	110.6	452.0	150.0	7.00	6.67	4.33
6,835.0	32.90	1.00	6,782.6	127.4	452.4	166.8	7.22	7.19	-1.25
6,867.0	34.90	359.70	6,809.2	145.2	452.5	184.6	6.65	6.25	-4.06
6,899.0	36.90	359.10	6,835.1	164.0	452.3	203.3	6.35	6.25	-1.88
6,931.0	39.70	358.20	6,860.2	183.8	451.8	223.0	8.92	8.75	-2.81
6,963.0	42.60	359.30	6,884.3	204.9	451.3	243.9	9.34	9.06	3.44
6,995.0	45.40	359.20	6,907.3	227.1	451.1	266.0	8.75	8.75	-0.31
7,026.0	47.70	357.80	6,928.6	249.6	450.5	288.4	8.11	7.42	-4.52
7,058.0	49.80	358.80	6,949.7	273.6	449.8	312.3	6.97	6.56	3.13
7,090.0	52.00	358.50	6,969.9	298.5	449.2	337.0	6.91	6.88	-0.94
7,122.0	54.50	359.40	6,989.1	324.1	448.7	362.5	8.13	7.81	2.81
7,153.0	56.80	359.40	7,006.5	349.7	448.4	387.9	7.42	7.42	0.00
7,185.0	59.50	359.20	7,023.4	376.9	448.1	415.0	8.45	8.44	-0.63
7,217.0	61.80	359.20	7,039.1	404.8	447.7	442.7	7.19	7.19	0.00
7,248.0	64.60	358.70	7,053.1	432.4	447.2	470.2	9.15	9.03	-1.61
7,280.0	66.90	358.50	7,066.2	461.6	446.5	499.2	7.21	7.19	-0.63
7,312.0	69.70	358.10	7,078.1	491.3	445.6	528.7	8.83	8.75	-1.25
7,344.0	72.40	358.20	7,088.5	521.6	444.6	558.8	8.44	8.44	0.31
7,375.0	74.80	358.50	7,097.2	551.3	443.8	588.3	7.80	7.74	0.97
7,407.0	77.30	358.60	7,104.9	582.3	443.0	619.2	7.82	7.81	0.31
7,439.0	79.70	358.70	7,111.3	613.7	442.2	650.3	7.51	7.50	0.31
7,470.0	82.20	358.10	7,116.2	644.3	441.4	680.7	8.29	8.06	-1.94
7,492.0	83.40	357.80	7,118.9	666.1	440.6	702.4	5.62	5.45	-1.36
7,541.0	86.90	359.80	7,123.1	714.9	439.6	750.9	8.22	7.14	4.08
7,564.0	85.80	358.00	7,124.5	737.8	439.1	773.7	9.16	-4.78	-7.83
7,594.0	86.10	358.60	7,126.7	767.7	438.3	803.4	2.23	1.00	2.00
7,625.0	86.40	358.50	7,128.7	798.7	437.5	834.2	1.02	0.97	-0.32
7,656.0	86.40	358.40	7,130.6	829.6	436.6	864.9	0.32	0.00	-0.32
7,686.0	87.10	359.50	7,132.3	859.5	436.1	894.7	4.34	2.33	3.67
7,717.0	87.50	359.90	7,133.8	890.5	435.9	925.5	1.82	1.29	1.29
7,747.0	87.30	358.40	7,135.2	920.5	435.5	955.3	5.04	-0.67	-5.00
7,778.0	87.60	358.30	7,136.5	951.4	434.6	986.1	1.02	0.97	-0.32
7,808.0	88.70	359.00	7,137.5	981.4	433.9	1,015.9	4.35	3.67	2.33
7,839.0	89.90	0.80	7,137.9	1,012.4	433.8	1,046.7	6.98	3.87	5.81
7,870.0	90.40	359.30	7,137.8	1,043.4	433.9	1,077.6	5.10	1.61	-4.84

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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)
7,899.0	90.30	0.40	7,137.6	1,072.4	433.8	1,106.5	3.81	-0.34	3.79
7,930.0	90.20	0.10	7,137.5	1,103.4	433.9	1,137.4	1.02	-0.32	-0.97
7,960.0	90.20	357.90	7,137.4	1,133.4	433.4	1,167.2	7.33	0.00	-7.33
7,991.0	90.20	359.10	7,137.3	1,164.4	432.6	1,198.0	3.87	0.00	3.87
8,021.0	90.00	357.50	7,137.2	1,194.4	431.7	1,227.8	5.37	-0.67	-5.33
8,051.0	89.80	358.50	7,137.3	1,224.3	430.6	1,257.6	3.40	-0.67	3.33
8,082.0	90.30	358.60	7,137.2	1,255.3	429.9	1,288.4	1.64	1.61	0.32
8,112.0	90.50	357.70	7,137.0	1,285.3	428.9	1,318.2	3.07	0.67	-3.00
8,144.0	90.60	357.40	7,136.7	1,317.3	427.5	1,349.9	0.99	0.31	-0.94
8,175.0	90.70	358.00	7,136.4	1,348.3	426.3	1,380.6	1.96	0.32	1.94
8,207.0	90.60	357.20	7,136.0	1,380.2	424.9	1,412.4	2.52	-0.31	-2.50
8,239.0	90.30	356.30	7,135.8	1,412.2	423.1	1,444.0	2.96	-0.94	-2.81
8,271.0	90.60	357.60	7,135.5	1,444.1	421.4	1,475.7	4.17	0.94	4.06
8,302.0	90.70	356.70	7,135.2	1,475.1	419.9	1,506.4	2.92	0.32	-2.90
8,334.0	90.20	357.30	7,134.9	1,507.0	418.2	1,538.1	2.44	-1.56	1.88
8,366.0	90.40	358.20	7,134.7	1,539.0	417.0	1,569.8	2.88	0.63	2.81
8,397.0	90.60	357.50	7,134.5	1,570.0	415.8	1,600.6	2.35	0.65	-2.26
8,429.0	90.60	357.60	7,134.1	1,602.0	414.4	1,632.3	0.31	0.00	0.31
8,461.0	90.70	357.50	7,133.8	1,633.9	413.1	1,664.0	0.44	0.31	-0.31
8,493.0	91.30	359.30	7,133.2	1,665.9	412.2	1,695.8	5.93	1.88	5.63
8,525.0	91.50	0.20	7,132.4	1,697.9	412.0	1,727.6	2.88	0.63	2.81
8,556.0	91.60	359.00	7,131.6	1,728.9	411.8	1,758.5	3.88	0.32	-3.87
8,589.0	91.60	359.70	7,130.7	1,761.9	411.4	1,791.3	2.12	0.00	2.12
8,620.0	91.80	358.40	7,129.8	1,792.9	410.9	1,822.1	4.24	0.65	-4.19
8,652.0	91.40	357.90	7,128.9	1,824.8	409.9	1,853.9	2.00	-1.25	-1.56
8,684.0	91.70	359.60	7,128.0	1,856.8	409.2	1,885.7	5.39	0.94	5.31
8,715.0	90.70	358.40	7,127.3	1,887.8	408.6	1,916.5	5.04	-3.23	-3.87
8,747.0	90.60	358.70	7,127.0	1,919.8	407.8	1,948.3	0.99	-0.31	0.94
8,779.0	90.60	357.60	7,126.6	1,951.8	406.8	1,980.1	3.44	0.00	-3.44
8,810.0	90.40	359.60	7,126.4	1,982.7	406.0	2,010.9	6.48	-0.65	6.45
8,842.0	90.50	359.80	7,126.1	2,014.7	405.9	2,042.7	0.70	0.31	0.63
8,874.0	90.60	358.90	7,125.8	2,046.7	405.5	2,074.6	2.83	0.31	-2.81
8,906.0	90.20	359.40	7,125.6	2,078.7	405.0	2,106.4	2.00	-1.25	1.56
8,937.0	89.90	0.00	7,125.6	2,109.7	404.9	2,137.2	2.16	-0.97	1.94
8,969.0	90.20	359.80	7,125.5	2,141.7	404.8	2,169.1	1.13	0.94	-0.63
9,001.0	90.10	359.50	7,125.5	2,173.7	404.6	2,201.0	0.99	-0.31	-0.94
9,032.0	89.80	358.30	7,125.5	2,204.7	404.0	2,231.8	3.99	-0.97	-3.87
9,064.0	89.50	359.60	7,125.7	2,236.7	403.4	2,263.6	4.17	-0.94	4.06
9,096.0	89.70	359.30	7,125.9	2,268.7	403.1	2,295.5	1.13	0.63	-0.94
9,127.0	89.20	359.60	7,126.2	2,299.7	402.8	2,326.3	1.88	-1.61	0.97
9,159.0	89.60	359.70	7,126.5	2,331.7	402.6	2,358.2	1.29	1.25	0.31
9,191.0	90.20	0.80	7,126.6	2,363.7	402.8	2,390.0	3.92	1.88	3.44
9,223.0	90.30	0.90	7,126.5	2,395.7	403.3	2,422.0	0.44	0.31	0.31
9,255.0	89.80	0.40	7,126.4	2,427.7	403.6	2,453.9	2.21	-1.56	-1.56
9,286.0	89.80	359.70	7,126.5	2,458.7	403.7	2,484.7	2.26	0.00	-2.26
9,318.0	90.30	358.50	7,126.5	2,490.7	403.1	2,516.6	4.06	1.56	-3.75
9,350.0	90.30	359.60	7,126.3	2,522.7	402.6	2,548.4	3.44	0.00	3.44
9,382.0	90.10	358.90	7,126.2	2,554.7	402.2	2,580.2	2.28	-0.63	-2.19
9,413.0	90.10	358.60	7,126.2	2,585.7	401.5	2,611.0	0.97	0.00	-0.97
9,445.0	89.80	359.90	7,126.2	2,617.7	401.1	2,642.9	4.17	-0.94	4.06
9,477.0	90.20	0.30	7,126.2	2,649.7	401.2	2,674.8	1.77	1.25	1.25
9,509.0	90.60	359.10	7,126.0	2,681.7	401.0	2,706.6	3.95	1.25	-3.75
9,541.0	91.10	358.40	7,125.5	2,713.7	400.3	2,738.4	2.69	1.56	-2.19

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonsen 1Q-241
Project:	SEC.12-T6N-R67W	TVD Reference:	WELL @ 4894.0ft (RKB Ensign 32 - 15')
Site:	Simonsen NENW-12 Pad Sec.12-T6N-R67W	MD Reference:	WELL @ 4894.0ft (RKB Ensign 32 - 15')
Well:	Simonsen 1Q-241	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
9,572.0	90.10	0.10	7,125.2	2,744.7	399.9	2,769.3	6.36	-3.23	5.48
9,604.0	89.90	0.70	7,125.2	2,776.7	400.1	2,801.1	1.98	-0.63	1.88
9,636.0	89.70	359.70	7,125.3	2,808.7	400.2	2,833.0	3.19	-0.63	-3.13
9,667.0	89.40	358.90	7,125.5	2,839.7	399.8	2,863.9	2.76	-0.97	-2.58
9,699.0	89.40	357.50	7,125.9	2,871.6	398.8	2,895.6	4.37	0.00	-4.38
9,730.0	89.20	358.30	7,126.2	2,902.6	397.7	2,926.4	2.66	-0.65	2.58
9,762.0	89.30	357.80	7,126.7	2,934.6	396.6	2,958.2	1.59	0.31	-1.56
9,794.0	89.40	356.00	7,127.0	2,966.5	394.9	2,989.8	5.63	0.31	-5.63
9,825.0	89.60	356.40	7,127.3	2,997.5	392.8	3,020.5	1.44	0.65	1.29
9,857.0	89.00	356.40	7,127.7	3,029.4	390.8	3,052.1	1.88	-1.88	0.00
9,889.0	89.00	358.00	7,128.2	3,061.4	389.3	3,083.8	5.00	0.00	5.00
9,920.0	89.00	357.00	7,128.8	3,092.3	387.9	3,114.5	3.23	0.00	-3.23
9,952.0	89.00	356.90	7,129.3	3,124.3	386.2	3,146.2	0.31	0.00	-0.31
9,984.0	89.30	357.40	7,129.8	3,156.2	384.6	3,177.9	1.82	0.94	1.56
10,016.0	89.50	356.40	7,130.2	3,188.2	382.9	3,209.5	3.19	0.63	-3.13
10,047.0	88.80	357.30	7,130.6	3,219.1	381.2	3,240.2	3.68	-2.26	2.90
10,078.0	89.90	357.80	7,131.0	3,250.1	379.9	3,271.0	3.90	3.55	1.61
10,110.0	90.80	357.60	7,130.8	3,282.1	378.6	3,302.7	2.88	2.81	-0.63
10,142.0	90.60	357.30	7,130.4	3,314.0	377.1	3,334.4	1.13	-0.63	-0.94
10,174.0	89.50	357.50	7,130.4	3,346.0	375.7	3,366.1	3.49	-3.44	0.63
10,205.0	88.60	355.80	7,130.9	3,377.0	373.9	3,396.8	6.20	-2.90	-5.48
10,236.0	88.70	358.40	7,131.6	3,407.9	372.3	3,427.5	8.39	0.32	8.39
10,268.0	88.80	357.60	7,132.3	3,439.9	371.2	3,459.2	2.52	0.31	-2.50
10,300.0	89.60	357.50	7,132.7	3,471.8	369.8	3,490.9	2.52	2.50	-0.31
10,332.0	89.60	358.90	7,133.0	3,503.8	368.8	3,522.7	4.37	0.00	4.38
10,363.0	89.20	359.30	7,133.3	3,534.8	368.3	3,553.5	1.82	-1.29	1.29
10,395.0	89.50	358.40	7,133.7	3,566.8	367.7	3,585.3	2.96	0.94	-2.81
10,427.0	89.20	0.40	7,134.0	3,598.8	367.4	3,617.2	6.32	-0.94	6.25
10,458.0	88.90	0.30	7,134.5	3,629.8	367.6	3,648.1	1.02	-0.97	-0.32
10,490.0	89.20	0.80	7,135.1	3,661.8	367.9	3,680.0	1.82	0.94	1.56
10,522.0	89.20	2.50	7,135.5	3,693.8	368.8	3,711.9	5.31	0.00	5.31
10,553.0	89.80	4.20	7,135.8	3,724.7	370.6	3,742.9	5.82	1.94	5.48
10,585.0	90.00	4.70	7,135.8	3,756.6	373.1	3,774.9	1.68	0.63	1.56
10,617.0	90.00	4.70	7,135.8	3,788.5	375.7	3,806.9	0.00	0.00	0.00
10,649.0	89.40	3.10	7,136.0	3,820.4	377.9	3,838.9	5.34	-1.88	-5.00
10,680.0	90.10	3.40	7,136.1	3,851.4	379.6	3,869.9	2.46	2.26	0.97
10,712.0	90.10	4.10	7,136.1	3,883.3	381.7	3,901.9	2.19	0.00	2.19
10,744.0	90.50	3.90	7,135.9	3,915.2	384.0	3,933.9	1.40	1.25	-0.63
10,775.0	90.60	4.00	7,135.6	3,946.2	386.1	3,964.8	0.46	0.32	0.32
10,807.0	90.50	3.80	7,135.3	3,978.1	388.3	3,996.8	0.70	-0.31	-0.63
10,839.0	90.20	3.70	7,135.1	4,010.0	390.4	4,028.8	0.99	-0.94	-0.31
10,870.0	90.00	3.20	7,135.1	4,041.0	392.2	4,059.8	1.74	-0.65	-1.61
10,902.0	91.00	2.40	7,134.8	4,072.9	393.8	4,091.8	4.00	3.13	-2.50
10,934.0	91.60	2.60	7,134.1	4,104.9	395.2	4,123.8	1.98	1.88	0.63
10,966.0	91.40	3.50	7,133.2	4,136.8	396.9	4,155.7	2.88	-0.63	2.81
10,997.0	90.70	3.80	7,132.6	4,167.8	398.9	4,186.7	2.46	-2.26	0.97
11,029.0	90.50	3.50	7,132.3	4,199.7	400.9	4,218.7	1.13	-0.63	-0.94
11,061.0	90.70	3.90	7,132.0	4,231.6	403.0	4,250.7	1.40	0.63	1.25
11,092.0	90.40	4.00	7,131.7	4,262.6	405.1	4,281.7	1.02	-0.97	0.32
11,124.0	89.90	3.30	7,131.6	4,294.5	407.1	4,313.7	2.69	-1.56	-2.19
11,156.0	89.70	3.30	7,131.7	4,326.4	409.0	4,345.7	0.63	-0.63	0.00
11,187.0	89.70	2.90	7,131.9	4,357.4	410.7	4,376.6	1.29	0.00	-1.29
11,219.0	90.00	2.90	7,132.0	4,389.4	412.3	4,408.6	0.94	0.94	0.00
11,251.0	89.80	1.80	7,132.0	4,421.3	413.6	4,440.6	3.49	-0.63	-3.44

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonsen 1Q-241
Project:	SEC.12-T6N-R67W	TVD Reference:	WELL @ 4894.0ft (RKB Ensign 32 - 15')
Site:	Simonsen NENW-12 Pad Sec.12-T6N-R67W	MD Reference:	WELL @ 4894.0ft (RKB Ensign 32 - 15')
Well:	Simonsen 1Q-241	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
11,283.0	90.40	2.50	7,132.0	4,453.3	414.8	4,472.5	2.88	1.88	2.19
11,314.0	90.50	2.30	7,131.7	4,484.3	416.1	4,503.5	0.72	0.32	-0.65
11,346.0	90.40	2.70	7,131.5	4,516.2	417.5	4,535.5	1.29	-0.31	1.25
11,378.0	90.20	0.80	7,131.3	4,548.2	418.5	4,567.4	5.97	-0.63	-5.94
11,409.0	90.20	0.90	7,131.2	4,579.2	418.9	4,598.3	0.32	0.00	0.32
11,441.0	90.20	1.00	7,131.1	4,611.2	419.4	4,630.2	0.31	0.00	0.31
11,473.0	90.00	1.50	7,131.0	4,643.2	420.1	4,662.2	1.68	-0.63	1.56
11,504.0	90.20	0.90	7,131.0	4,674.2	420.8	4,693.1	2.04	0.65	-1.94
11,536.0	90.30	0.90	7,130.8	4,706.2	421.3	4,725.0	0.31	0.31	0.00
11,568.0	90.10	359.60	7,130.7	4,738.2	421.4	4,756.9	4.11	-0.63	-4.06
11,600.0	90.40	0.70	7,130.6	4,770.2	421.5	4,788.8	3.56	0.94	3.44
11,631.0	90.50	0.40	7,130.3	4,801.2	421.8	4,819.7	1.02	0.32	-0.97
11,662.0	90.00	358.10	7,130.2	4,832.2	421.4	4,850.5	7.59	-1.61	-7.42
11,694.0	90.10	357.60	7,130.2	4,864.2	420.2	4,882.3	1.59	0.31	-1.56
11,726.0	90.60	357.70	7,130.0	4,896.1	418.9	4,914.0	1.59	1.56	0.31
11,757.0	91.20	359.40	7,129.5	4,927.1	418.1	4,944.8	5.81	1.94	5.48
11,813.0	91.20	359.40	7,128.3	4,983.1	417.5	5,000.5	0.00	0.00	0.00
BHL 500'FNL & 2450'FWL									

Design 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									
HARDLINE BHL 460'f	0.00	0.00	1.0	5,027.5	600.0	1,433,742.53	3,182,985.77	40.522160	-104.841792
- survey misses target center by 5063.2ft at 1.9ft MD (1.9 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,433,742.53	3,182,985.77		
Point 2			1.0	0.0	-700.0	1,433,737.35	3,182,285.81		
SECTIONLINE 210'N	0.00	0.00	1.0	210.0	600.0	1,428,925.33	3,183,021.41	40.508936	-104.841792
- survey misses target center by 635.7ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,428,925.33	3,183,021.41		
Point 2			1.0	0.0	-700.0	1,428,920.15	3,182,321.45		
BHL 500'FNL & 2450'	0.00	0.00	7,154.0	4,987.5	442.0	1,433,701.41	3,182,828.12	40.522050	-104.842360
- survey misses target center by 35.8ft at 11813.0ft MD (7128.3 TVD, 4983.1 N, 417.5 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____