

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14W-434**

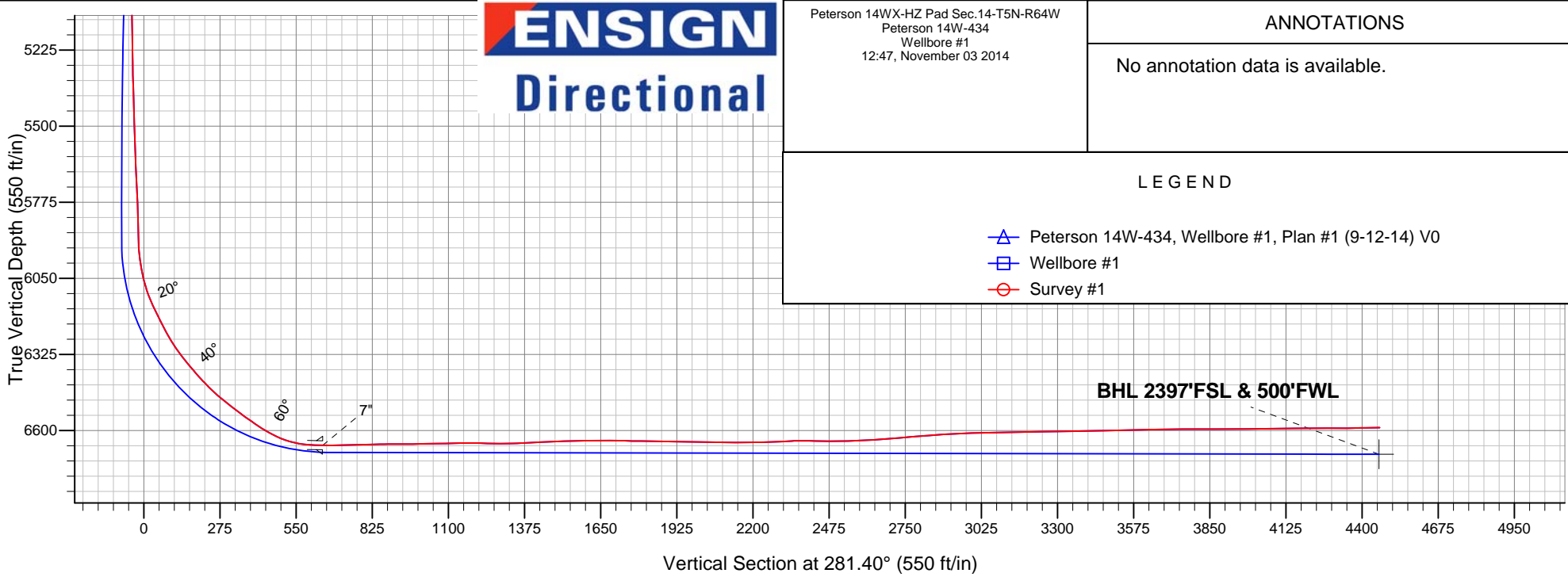
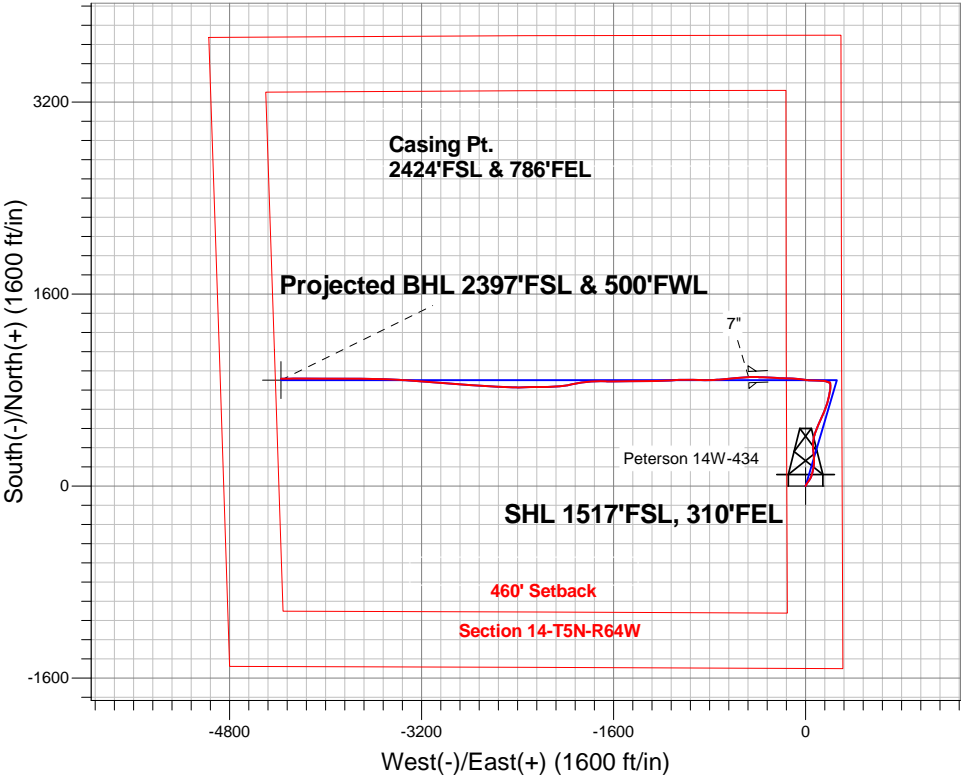
Surface Location: Peterson 14WX-HZ Pad Sec.14-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4571.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1388714.09	3275955.04	40.396190	-104.509210	
Ensign Rig - RKB - 15' WELL @ 4586.0ft (Ensign Rig - RKB - 15')						

FINAL SURVEY

Projected Bottom Hole Location
10990'MD 6589.8'TVD 894'N & 4373'W of
SHL 91.0 degree Incl @ 269.5 degree AZM



Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14W-434
Wellbore #1
12:47, November 03 2014

ANNOTATIONS

No annotation data is available.

LEGEND

- Peterson 14W-434, Wellbore #1, Plan #1 (9-12-14) V0
- Wellbore #1
- Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

Peterson 14WX-HZ Pad Sec.14-T5N-R64W

Peterson 14W-434

Wellbore #1

Survey: Survey #1

Standard Survey Report

03 November, 2014

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14W-434
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Well:	Peterson 14W-434	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.14-T5N-R64W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Peterson 14WX-HZ Pad Sec.14-T5N-R64W			
Site Position:		Northing:	1,388,684.96 ft	Latitude:	40.396110
From:	Lat/Long	Easting:	3,275,955.37 ft	Longitude:	-104.509210
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.64 °

Well	Peterson 14W-434					
Well Position	+N-S	0.0 ft	Northing:	1,388,714.09 ft	Latitude:	40.396190
	+E-W	0.0 ft	Easting:	3,275,955.04 ft	Longitude:	-104.509210
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,571.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/14/2014	8.28	66.97	52,807

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	281.40	

Survey Program	Date	11/3/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
117.0	10,990.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	24.80	1.0	0.0	0.0	0.0	0.34	0.34	0.00	
SHL 1517'FSL, 310'FEL										
117.0	0.40	24.80	117.0	0.4	0.2	-0.1	0.34	0.34	0.00	
210.0	0.20	204.10	210.0	0.5	0.2	-0.1	0.65	-0.22	192.80	
334.0	0.30	310.80	334.0	0.5	-0.1	0.2	0.33	0.08	86.05	
459.0	0.50	359.30	459.0	1.3	-0.3	0.6	0.30	0.16	38.80	
583.0	0.40	331.20	583.0	2.2	-0.6	1.0	0.19	-0.08	-22.66	
707.0	0.90	50.80	707.0	3.2	0.0	0.6	0.74	0.40	64.19	
832.0	1.80	20.90	832.0	5.7	1.4	-0.3	0.89	0.72	-23.92	
886.0	2.10	28.70	885.9	7.3	2.2	-0.7	0.74	0.56	14.44	
987.0	1.80	40.10	986.9	10.2	4.1	-2.0	0.48	-0.30	11.29	

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Well:	Peterson 14W-434	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)
1,049.0	3.70	34.30	1,048.8	12.6	5.9	-3.3	3.09	3.06	-9.35
1,173.0	7.50	29.90	1,172.2	22.9	12.2	-7.4	3.08	3.06	-3.55
1,298.0	9.60	36.10	1,295.8	38.4	22.4	-14.4	1.83	1.68	4.96
1,420.0	11.30	32.00	1,415.8	56.7	34.7	-22.8	1.52	1.39	-3.36
1,541.0	12.70	22.20	1,534.1	79.1	46.0	-29.5	2.04	1.16	-8.10
1,664.0	13.60	14.60	1,653.9	105.6	54.8	-32.8	1.58	0.73	-6.18
1,783.0	12.80	13.00	1,769.8	132.0	61.3	-34.0	0.74	-0.67	-1.34
1,904.0	12.20	7.80	1,887.9	157.7	66.0	-33.5	1.05	-0.50	-4.30
2,025.0	12.20	4.10	2,006.2	183.2	68.7	-31.1	0.65	0.00	-3.06
2,147.0	11.70	1.30	2,125.5	208.4	69.9	-27.3	0.63	-0.41	-2.30
2,268.0	10.40	354.20	2,244.3	231.5	69.0	-21.9	1.55	-1.07	-5.87
2,389.0	10.00	356.70	2,363.4	252.9	67.3	-16.0	0.49	-0.33	2.07
2,513.0	9.70	350.20	2,485.5	273.9	64.9	-9.5	0.93	-0.24	-5.24
2,639.0	11.30	353.30	2,609.4	296.6	61.7	-1.8	1.35	1.27	2.46
2,765.0	11.60	1.10	2,732.9	321.6	60.5	4.3	1.25	0.24	6.19
2,891.0	11.40	7.10	2,856.4	346.6	62.3	7.5	0.96	-0.16	4.76
3,017.0	10.10	0.60	2,980.2	370.0	63.9	10.5	1.41	-1.03	-5.16
3,144.0	10.60	7.20	3,105.1	392.7	65.5	13.4	1.01	0.39	5.20
3,270.0	10.00	16.40	3,229.1	414.7	70.1	13.3	1.39	-0.48	7.30
3,396.0	11.30	17.60	3,352.9	437.0	76.9	11.0	1.05	1.03	0.95
3,523.0	11.80	22.90	3,477.4	460.8	85.7	7.1	0.92	0.39	4.17
3,649.0	12.10	24.60	3,600.6	484.7	96.2	1.5	0.37	0.24	1.35
3,775.0	12.50	23.60	3,723.7	509.2	107.2	-4.4	0.36	0.32	-0.79
3,901.0	11.40	21.30	3,847.0	533.3	117.1	-9.4	0.95	-0.87	-1.83
4,027.0	10.80	21.10	3,970.7	555.9	125.9	-13.5	0.48	-0.48	-0.16
4,153.0	12.00	23.60	4,094.2	578.9	135.4	-18.3	1.03	0.95	1.98
4,279.0	11.00	23.60	4,217.6	601.9	145.5	-23.6	0.79	-0.79	0.00
4,405.0	11.60	25.20	4,341.2	624.4	155.7	-29.1	0.54	0.48	1.27
4,532.0	12.00	22.70	4,465.5	648.1	166.2	-34.8	0.51	0.31	-1.97
4,658.0	12.50	16.70	4,588.6	673.3	175.2	-38.6	1.08	0.40	-4.76
4,784.0	12.70	15.10	4,711.6	699.7	182.7	-40.8	0.32	0.16	-1.27
4,911.0	12.60	12.30	4,835.5	726.7	189.3	-41.9	0.49	-0.08	-2.20
5,038.0	12.20	12.90	4,959.6	753.3	195.2	-42.4	0.33	-0.31	0.47
5,164.0	12.00	10.90	5,082.8	779.2	200.7	-42.7	0.37	-0.16	-1.59
5,258.0	10.90	7.40	5,174.9	797.6	203.7	-42.0	1.38	-1.17	-3.72
5,353.0	9.50	4.60	5,268.4	814.3	205.5	-40.4	1.56	-1.47	-2.95
5,448.0	8.10	0.70	5,362.3	828.8	206.2	-38.2	1.60	-1.47	-4.11
5,543.0	7.60	357.00	5,456.4	841.8	205.9	-35.4	0.75	-0.53	-3.89
5,637.0	6.20	354.20	5,549.7	853.0	205.1	-32.4	1.53	-1.49	-2.98
5,732.0	3.80	338.40	5,644.3	861.1	203.4	-29.1	2.89	-2.53	-16.63
5,826.0	3.30	272.10	5,738.2	864.1	199.6	-24.8	4.15	-0.53	-70.53
5,921.0	1.20	266.50	5,833.1	864.1	195.8	-21.1	2.22	-2.21	-5.89
5,953.0	1.10	262.80	5,865.1	864.0	195.2	-20.5	0.39	-0.31	-11.56
5,984.0	1.20	257.90	5,896.1	863.9	194.6	-19.9	0.45	0.32	-15.81
6,016.0	2.50	277.20	5,928.1	864.0	193.6	-18.9	4.45	4.06	60.31
6,047.0	5.50	287.60	5,959.0	864.5	191.5	-16.8	9.92	9.68	33.55
6,079.0	8.70	292.00	5,990.8	865.9	187.8	-12.9	10.14	10.00	13.75
6,111.0	11.10	294.50	6,022.3	868.0	182.7	-7.5	7.62	7.50	7.81
6,142.0	13.70	290.20	6,052.6	870.6	176.6	-0.9	8.89	8.39	-13.87
6,174.0	17.30	284.60	6,083.4	873.1	168.4	7.5	12.17	11.25	-17.50
6,205.0	20.40	279.20	6,112.7	875.1	158.6	17.6	11.47	10.00	-17.42
6,237.0	24.40	273.90	6,142.3	876.4	146.5	29.7	13.99	12.50	-16.56
6,268.0	26.70	272.10	6,170.3	877.1	133.1	42.9	7.83	7.42	-5.81
6,299.0	27.30	272.80	6,197.9	877.7	119.1	56.8	2.19	1.94	2.26

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Survey									
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6,331.0	27.70	272.30	6,226.3	878.4	104.3	71.4	1.44	1.25	-1.56
6,363.0	28.90	270.70	6,254.5	878.8	89.2	86.4	4.44	3.75	-5.00
6,394.0	32.40	271.10	6,281.1	879.0	73.4	101.9	11.31	11.29	1.29
6,426.0	35.50	272.00	6,307.7	879.5	55.5	119.5	9.81	9.69	2.81
6,457.0	37.90	273.70	6,332.5	880.4	37.0	137.8	8.41	7.74	5.48
6,489.0	39.60	276.00	6,357.5	882.1	17.0	157.7	6.96	5.31	7.19
6,521.0	40.60	277.60	6,381.9	884.6	-3.4	178.3	4.49	3.13	5.00
6,553.0	41.90	277.80	6,406.0	887.4	-24.3	199.3	4.08	4.06	0.63
6,584.0	43.80	276.40	6,428.7	890.0	-45.2	220.3	6.86	6.13	-4.52
6,616.0	46.00	275.10	6,451.4	892.3	-67.7	242.8	7.45	6.88	-4.06
6,647.0	49.20	273.40	6,472.3	894.0	-90.5	265.5	11.09	10.32	-5.48
6,679.0	51.50	272.80	6,492.7	895.3	-115.1	289.9	7.33	7.19	-1.88
6,710.0	52.90	272.30	6,511.7	896.4	-139.6	314.1	4.69	4.52	-1.61
6,742.0	53.10	272.10	6,531.0	897.4	-165.2	339.3	0.80	0.63	-0.63
6,774.0	54.20	272.10	6,549.9	898.3	-190.9	364.8	3.44	3.44	0.00
6,805.0	54.80	272.50	6,567.9	899.3	-216.1	389.7	2.20	1.94	1.29
6,837.0	57.20	272.80	6,585.8	900.5	-242.6	415.9	7.54	7.50	0.94
6,868.0	60.00	272.80	6,602.0	901.8	-269.0	442.1	9.03	9.03	0.00
6,899.0	63.40	272.70	6,616.7	903.1	-296.3	469.0	10.97	10.97	-0.32
6,931.0	68.20	272.70	6,629.8	904.5	-325.5	497.9	15.00	15.00	0.00
6,963.0	74.30	272.70	6,640.1	905.9	-355.7	527.8	19.06	19.06	0.00
6,994.0	79.80	272.50	6,647.0	907.3	-385.9	557.7	17.75	17.74	-0.65
7,026.0	84.90	271.10	6,651.3	908.3	-417.6	588.9	16.52	15.94	-4.38
7,050.0	87.50	269.10	6,652.9	908.4	-441.5	612.4	13.66	10.83	-8.33
7,084.0	89.33	267.62	6,653.8	907.4	-475.5	645.5	6.93	5.38	-4.36
7"									
7,089.0	89.60	267.40	6,653.9	907.2	-480.5	650.4	6.93	5.39	-4.36
7,119.0	90.60	265.60	6,653.8	905.3	-510.4	679.3	6.86	3.33	-6.00
7,150.0	91.00	265.10	6,653.4	902.8	-541.3	709.1	2.07	1.29	-1.61
7,180.0	91.40	264.80	6,652.7	900.2	-571.2	737.9	1.67	1.33	-1.00
7,211.0	91.50	264.60	6,652.0	897.3	-602.0	767.6	0.72	0.32	-0.65
7,241.0	91.40	264.20	6,651.2	894.4	-631.9	796.3	1.37	-0.33	-1.33
7,271.0	91.30	264.60	6,650.5	891.5	-661.7	824.9	1.37	-0.33	1.33
7,301.0	91.50	265.30	6,649.8	888.8	-691.6	853.7	2.43	0.67	2.33
7,332.0	90.50	265.80	6,649.2	886.4	-722.5	883.5	3.61	-3.23	1.61
7,362.0	89.90	267.20	6,649.1	884.6	-752.5	912.5	5.08	-2.00	4.67
7,392.0	89.80	268.40	6,649.2	883.4	-782.4	941.7	4.01	-0.33	4.00
7,423.0	90.50	269.70	6,649.1	882.9	-813.4	971.9	4.76	2.26	4.19
7,453.0	90.80	270.40	6,648.8	882.9	-843.4	1,001.4	2.54	1.00	2.33
7,483.0	91.60	271.30	6,648.1	883.4	-873.4	1,030.8	4.01	2.67	3.00
7,513.0	91.30	270.60	6,647.4	883.9	-903.4	1,060.3	2.54	-1.00	-2.33
7,544.0	91.00	270.60	6,646.8	884.2	-934.4	1,090.8	0.97	-0.97	0.00
7,574.0	91.40	270.40	6,646.1	884.5	-964.4	1,120.2	1.49	1.33	-0.67
7,604.0	90.30	270.40	6,645.7	884.7	-994.4	1,149.7	3.67	-3.67	0.00
7,635.0	89.80	269.00	6,645.7	884.5	-1,025.4	1,180.0	4.80	-1.61	-4.52
7,666.0	89.00	267.90	6,646.0	883.7	-1,056.4	1,210.2	4.39	-2.58	-3.55
7,698.0	88.70	266.50	6,646.6	882.1	-1,088.3	1,241.3	4.47	-0.94	-4.38
7,729.0	88.80	265.50	6,647.3	880.0	-1,119.2	1,271.1	3.24	0.32	-3.23
7,761.0	90.50	267.60	6,647.5	878.0	-1,151.2	1,302.1	8.44	5.31	6.56
7,792.0	91.40	268.30	6,647.0	876.9	-1,182.2	1,332.2	3.68	2.90	2.26
7,824.0	92.60	268.80	6,645.9	876.1	-1,214.1	1,363.4	4.06	3.75	1.56
7,855.0	92.90	269.10	6,644.4	875.5	-1,245.1	1,393.6	1.37	0.97	0.97
7,887.0	93.20	269.10	6,642.7	875.0	-1,277.0	1,424.8	0.94	0.94	0.00

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7,919.0	92.90	270.20	6,641.0	874.9	-1,309.0	1,456.1	3.56	-0.94	3.44
7,950.0	92.20	269.00	6,639.6	874.6	-1,340.0	1,486.4	4.48	-2.26	-3.87
7,982.0	91.50	269.50	6,638.6	874.2	-1,371.9	1,517.7	2.69	-2.19	1.56
8,013.0	90.90	269.70	6,637.9	874.0	-1,402.9	1,548.0	2.04	-1.94	0.65
8,045.0	90.90	269.70	6,637.4	873.8	-1,434.9	1,579.4	0.00	0.00	0.00
8,076.0	90.60	269.10	6,637.0	873.5	-1,465.9	1,609.7	2.16	-0.97	-1.94
8,108.0	91.00	269.00	6,636.6	873.0	-1,497.9	1,640.9	1.29	1.25	-0.31
8,140.0	89.70	269.10	6,636.4	872.4	-1,529.9	1,672.2	4.07	-4.06	0.31
8,171.0	89.90	269.70	6,636.5	872.1	-1,560.9	1,702.5	2.04	0.65	1.94
8,203.0	88.10	267.20	6,637.0	871.3	-1,592.9	1,733.7	9.63	-5.63	-7.81
8,234.0	88.90	271.40	6,637.8	870.9	-1,623.9	1,764.0	13.79	2.58	13.55
8,266.0	89.80	272.80	6,638.2	872.1	-1,655.8	1,795.6	5.20	2.81	4.38
8,298.0	88.50	269.90	6,638.7	872.8	-1,687.8	1,827.1	9.93	-4.06	-9.06
8,329.0	89.70	270.40	6,639.2	872.9	-1,718.8	1,857.5	4.19	3.87	1.61
8,361.0	88.50	267.90	6,639.7	872.4	-1,750.8	1,888.7	8.66	-3.75	-7.81
8,392.0	88.80	267.60	6,640.4	871.2	-1,781.8	1,918.9	1.37	0.97	-0.97
8,424.0	89.10	264.80	6,641.0	869.1	-1,813.7	1,949.7	8.80	0.94	-8.75
8,456.0	88.90	262.30	6,641.5	865.5	-1,845.5	1,980.2	7.84	-0.63	-7.81
8,487.0	89.30	260.00	6,642.0	860.7	-1,876.1	2,009.3	7.53	1.29	-7.42
8,519.0	89.20	260.50	6,642.5	855.3	-1,907.6	2,039.1	1.59	-0.31	1.56
8,550.0	89.60	258.40	6,642.8	849.6	-1,938.1	2,067.8	6.90	1.29	-6.77
8,581.0	89.00	256.80	6,643.2	843.0	-1,968.4	2,096.2	5.51	-1.94	-5.16
8,613.0	90.10	262.10	6,643.4	837.1	-1,999.8	2,125.9	16.91	3.44	16.56
8,645.0	90.70	264.90	6,643.2	833.5	-2,031.6	2,156.3	8.95	1.88	8.75
8,677.0	89.50	263.90	6,643.1	830.4	-2,063.5	2,186.9	4.88	-3.75	-3.13
8,708.0	90.70	266.50	6,643.1	827.8	-2,094.4	2,216.7	9.24	3.87	8.39
8,740.0	92.20	267.60	6,642.3	826.1	-2,126.3	2,247.7	5.81	4.69	3.44
8,772.0	92.20	268.60	6,641.0	825.1	-2,158.3	2,278.8	3.12	0.00	3.13
8,804.0	92.90	270.20	6,639.6	824.7	-2,190.2	2,310.1	5.45	2.19	5.00
8,835.0	92.90	271.30	6,638.0	825.1	-2,221.2	2,340.5	3.54	0.00	3.55
8,867.0	89.80	269.50	6,637.3	825.4	-2,253.2	2,371.9	11.20	-9.69	-5.63
8,899.0	88.90	267.90	6,637.7	824.6	-2,285.2	2,403.1	5.74	-2.81	-5.00
8,930.0	89.50	268.80	6,638.1	823.7	-2,316.1	2,433.3	3.49	1.94	2.90
8,962.0	89.50	266.70	6,638.4	822.5	-2,348.1	2,464.4	6.56	0.00	-6.56
8,993.0	90.10	269.00	6,638.5	821.3	-2,379.1	2,494.5	7.67	1.94	7.42
9,025.0	90.90	270.40	6,638.2	821.1	-2,411.1	2,525.9	5.04	2.50	4.38
9,057.0	91.50	271.80	6,637.5	821.8	-2,443.1	2,557.3	4.76	1.88	4.38
9,088.0	92.00	272.10	6,636.6	822.8	-2,474.0	2,587.9	1.88	1.61	0.97
9,120.0	93.40	272.80	6,635.1	824.2	-2,506.0	2,619.5	4.89	4.38	2.19
9,151.0	94.40	273.20	6,633.0	825.8	-2,536.9	2,650.1	3.47	3.23	1.29
9,183.0	95.00	273.20	6,630.3	827.6	-2,568.7	2,681.6	1.88	1.88	0.00
9,215.0	94.80	273.40	6,627.6	829.4	-2,600.5	2,713.2	0.88	-0.63	0.63
9,246.0	94.40	273.00	6,625.1	831.1	-2,631.4	2,743.8	1.82	-1.29	-1.29
9,278.0	94.30	273.90	6,622.7	833.1	-2,663.2	2,775.4	2.82	-0.31	2.81
9,309.0	94.00	273.40	6,620.4	835.0	-2,694.1	2,806.0	1.88	-0.97	-1.61
9,341.0	94.20	273.20	6,618.2	836.9	-2,726.0	2,837.6	0.88	0.63	-0.63
9,373.0	94.00	273.40	6,615.9	838.7	-2,757.8	2,869.2	0.88	-0.63	0.63
9,404.0	94.10	273.20	6,613.7	840.5	-2,788.7	2,899.8	0.72	0.32	-0.65
9,436.0	93.40	274.10	6,611.6	842.5	-2,820.6	2,931.5	3.56	-2.19	2.81
9,468.0	91.80	274.40	6,610.1	844.9	-2,852.4	2,963.2	5.09	-5.00	0.94
9,499.0	91.60	274.10	6,609.2	847.2	-2,883.3	2,993.9	1.16	-0.65	-0.97
9,531.0	91.50	274.60	6,608.4	849.6	-2,915.2	3,025.7	1.59	-0.31	1.56
9,562.0	91.10	274.20	6,607.6	852.0	-2,946.1	3,056.4	1.82	-1.29	-1.29

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14W-434
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Well:	Peterson 14W-434	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)
9,594.0	90.90	274.60	6,607.1	854.4	-2,978.0	3,088.2	1.40	-0.63	1.25
9,626.0	90.90	274.60	6,606.6	857.0	-3,009.9	3,120.0	0.00	0.00	0.00
9,657.0	90.70	274.60	6,606.2	859.5	-3,040.8	3,150.7	0.65	-0.65	0.00
9,689.0	90.80	274.80	6,605.7	862.1	-3,072.7	3,182.5	0.70	0.31	0.63
9,721.0	90.80	274.40	6,605.3	864.7	-3,104.6	3,214.3	1.25	0.00	-1.25
9,752.0	91.20	274.60	6,604.7	867.1	-3,135.5	3,245.1	1.44	1.29	0.65
9,784.0	91.00	274.20	6,604.1	869.6	-3,167.4	3,276.8	1.40	-0.63	-1.25
9,815.0	91.20	274.80	6,603.5	872.0	-3,198.3	3,307.6	2.04	0.65	1.94
9,847.0	91.10	274.40	6,602.9	874.6	-3,230.2	3,339.4	1.29	-0.31	-1.25
9,878.0	91.20	274.20	6,602.3	876.9	-3,261.1	3,370.1	0.72	0.32	-0.65
9,910.0	91.20	274.60	6,601.6	879.3	-3,293.0	3,401.9	1.25	0.00	1.25
9,941.0	90.90	273.90	6,601.0	881.6	-3,323.9	3,432.6	2.46	-0.97	-2.26
9,973.0	90.90	272.50	6,600.5	883.4	-3,355.9	3,464.3	4.37	0.00	-4.38
10,004.0	91.10	273.00	6,600.0	884.9	-3,386.8	3,494.9	1.74	0.65	1.61
10,036.0	91.10	273.00	6,599.4	886.6	-3,418.8	3,526.6	0.00	0.00	0.00
10,068.0	91.50	272.70	6,598.7	888.2	-3,450.7	3,558.2	1.56	1.25	-0.94
10,099.0	91.70	272.50	6,597.8	889.6	-3,481.7	3,588.8	0.91	0.65	-0.65
10,131.0	90.90	271.40	6,597.1	890.7	-3,513.7	3,620.4	4.25	-2.50	-3.44
10,163.0	90.80	270.90	6,596.6	891.3	-3,545.6	3,651.9	1.59	-0.31	-1.56
10,195.0	90.70	270.90	6,596.2	891.8	-3,577.6	3,683.3	0.31	-0.31	0.00
10,226.0	90.70	271.30	6,595.8	892.4	-3,608.6	3,713.8	1.29	0.00	1.29
10,258.0	90.60	271.10	6,595.4	893.1	-3,640.6	3,745.3	0.70	-0.31	-0.63
10,289.0	90.20	271.10	6,595.2	893.7	-3,671.6	3,775.8	1.29	-1.29	0.00
10,321.0	90.10	270.60	6,595.1	894.2	-3,703.6	3,807.3	1.59	-0.31	-1.56
10,352.0	90.00	270.40	6,595.1	894.4	-3,734.6	3,837.7	0.72	-0.32	-0.65
10,384.0	89.90	270.70	6,595.1	894.7	-3,766.6	3,869.2	0.99	-0.31	0.94
10,416.0	90.00	270.00	6,595.2	894.9	-3,798.6	3,900.6	2.21	0.31	-2.19
10,447.0	90.30	269.10	6,595.1	894.7	-3,829.6	3,930.9	3.06	0.97	-2.90
10,479.0	90.70	269.90	6,594.8	894.4	-3,861.6	3,962.2	2.80	1.25	2.50
10,511.0	90.70	270.00	6,594.4	894.4	-3,893.6	3,993.6	0.31	0.00	0.31
10,542.0	90.70	270.20	6,594.0	894.4	-3,924.6	4,024.0	0.65	0.00	0.65
10,574.0	90.60	269.90	6,593.7	894.5	-3,956.6	4,055.3	0.99	-0.31	-0.94
10,606.0	90.60	270.00	6,593.3	894.4	-3,988.6	4,086.7	0.31	0.00	0.31
10,637.0	90.80	270.90	6,592.9	894.7	-4,019.6	4,117.1	2.97	0.65	2.90
10,669.0	90.70	271.10	6,592.5	895.2	-4,051.6	4,148.6	0.70	-0.31	0.63
10,701.0	90.60	270.60	6,592.2	895.7	-4,083.6	4,180.1	1.59	-0.31	-1.56
10,732.0	90.00	270.40	6,592.0	896.0	-4,114.6	4,210.5	2.04	-1.94	-0.65
10,764.0	90.10	269.90	6,592.0	896.1	-4,146.6	4,241.9	1.59	0.31	-1.56
10,795.0	90.20	270.00	6,591.9	896.0	-4,177.6	4,272.3	0.46	0.32	0.32
10,827.0	90.10	269.80	6,591.8	896.0	-4,209.6	4,303.6	0.70	-0.31	-0.63
10,858.0	90.00	269.10	6,591.8	895.7	-4,240.6	4,334.0	2.28	-0.32	-2.26
10,890.0	91.00	269.00	6,591.5	895.2	-4,272.6	4,365.2	3.14	3.13	-0.31
10,922.0	90.90	268.80	6,591.0	894.5	-4,304.6	4,396.4	0.70	-0.31	-0.63
10,937.0	91.00	269.50	6,590.7	894.3	-4,319.6	4,411.1	4.71	0.67	4.67
10,988.8	91.00	269.50	6,589.8	893.9	-4,371.3	4,461.7	0.00	0.00	0.00
BHL 2385'FSL & 500'FWL									
10,990.0	91.00	269.50	6,589.8	893.9	-4,372.5	4,463.0	0.00	0.00	0.00

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14W-434
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Well:	Peterson 14W-434	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
	7,084.0	6,653.8	7"	7	7-1/2

Checked By: _____	Approved By: _____	Date: _____
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