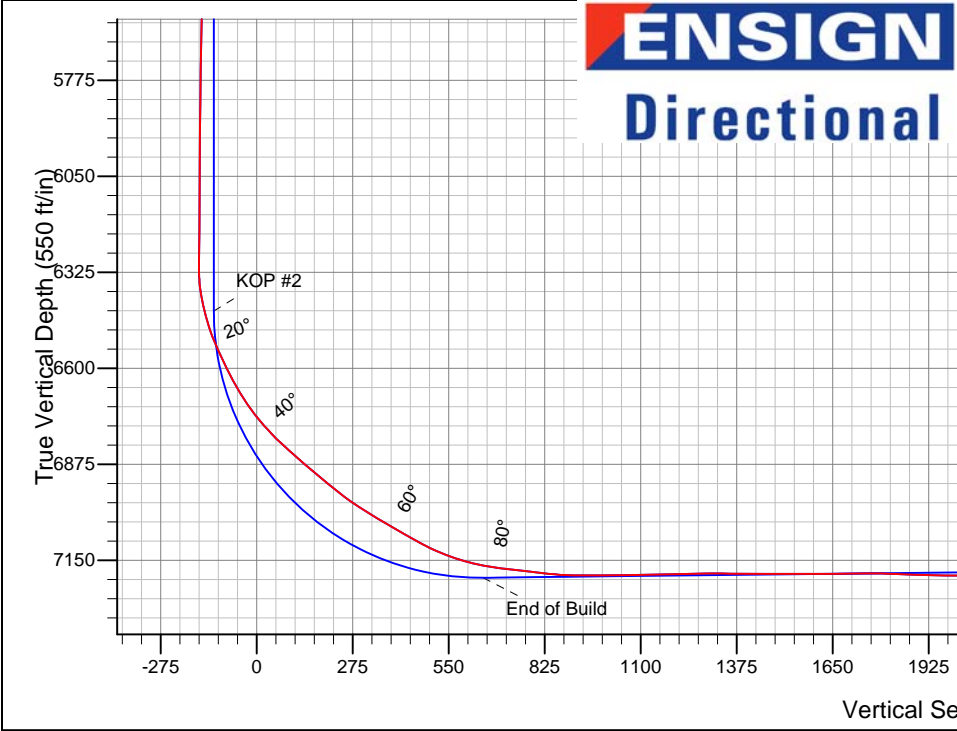
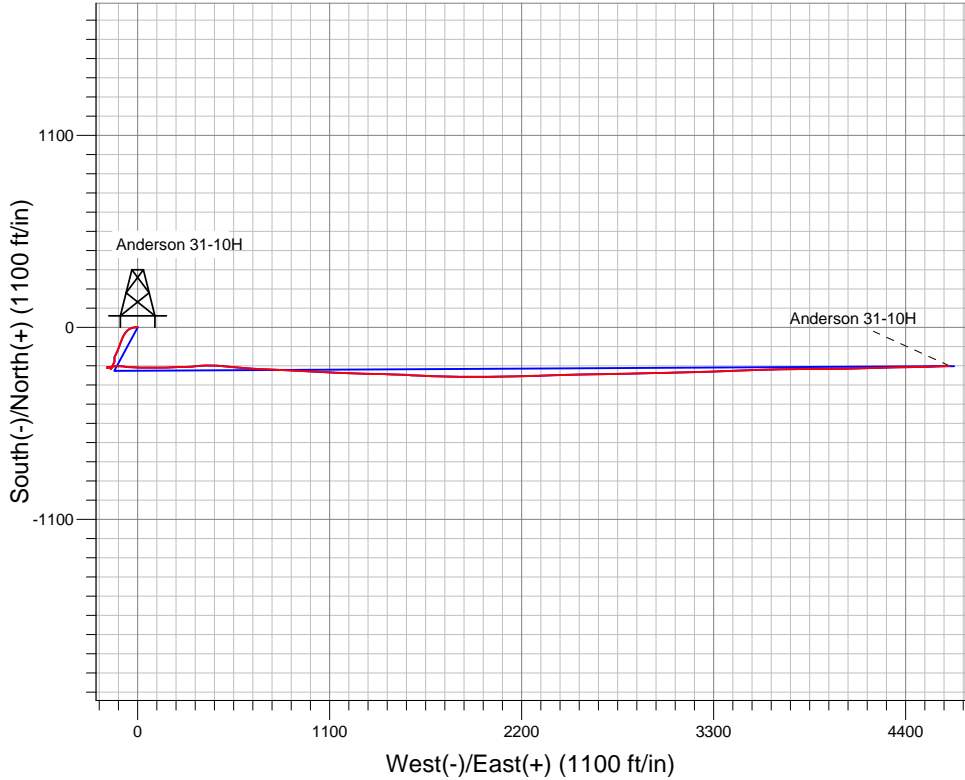


PETROLEUM DEVELOPMENT CORP Weld County CO

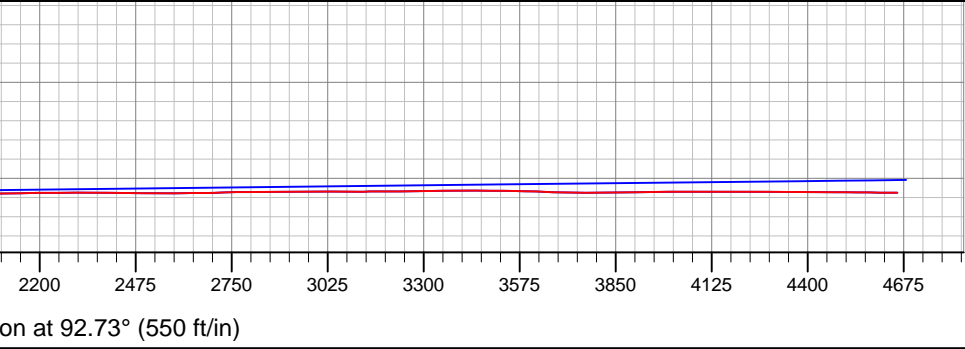
Well Name: Anderson 31-10H					
Surface Location: Anderson 31-10H Pad Sec.10-T6N-R66W					
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone					
Ground Elevation: 4885.0					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1428187.97	3204901.35	40.506440	-104.763130
Original Well Elev WELL @ 4900.0ft (Original Well Elev)					
Slot					

FINAL SURVEY

Projected Bottom Hole Location
11597'MD 7192'TVD 221'S & 4651'E of SHL
89.6 degree Incl @ 87.7 degree AZM



Anderson 31-10H Pad Sec.10-T6N-R66W Anderson 31-10H Wellbore #1 16:30, March 07 2012	ANNOTATIONS
	No annotation data is available.
LEGEND	
Anderson 31-10H, Wellbore #1, Plan #3 (2-9-12) V0	
Survey #1	





PETROLEUM DEVELOPMENT CORP Weld County CO

Sec.10-T6N-R66W

Anderson 31-10H Pad Sec.10-T6N-R66W

Anderson 31-10H

Wellbore #1

Survey: Survey #1

Standard Survey Report

07 March, 2012

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Anderson 31-10H
Project:	Sec.10-T6N-R66W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Anderson 31-10H Pad Sec.10-T6N-R66W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Anderson 31-10H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	Sec.10-T6N-R66W, 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	Anderson 31-10H Pad Sec.10-T6N-R66W				
Site Position:		Northing:	1,428,187.98 ft	Latitude:	40.506440
From:	Lat/Long	Easting:	3,204,901.35 ft	Longitude:	-104.763130
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.48 °

Well	Anderson 31-10H					
Well Position	+N-S	0.0 ft	Northing:	1,428,187.97 ft	Latitude:	40.506440
	+E-W	0.0 ft	Easting:	3,204,901.35 ft	Longitude:	-104.763130
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,885.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/17/2012	8.79	67.12	53,124

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 (°)	
	7,155.0	0.0	0.0	92.73	

Survey Program	Date 3/7/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
914.0	11,597.0	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
HARD LINES 2498'E OF SHL - HARDLINE BHL 460'FEL - HARD LINES 122'N OF BHL - HARDLINE SHL 460'FWL									
5.2	0.01	267.80	5.2	0.0	0.0	0.0	0.26	0.26	0.00
HALF SECTION LINE 185'W OF SHL									
914.0	2.40	267.80	913.7	-0.7	-19.1	-19.1	0.26	0.26	0.00
1,007.0	3.20	254.80	1,006.6	-1.5	-23.6	-23.5	1.09	0.86	-13.98
1,099.0	4.30	258.30	1,098.4	-2.9	-29.4	-29.3	1.22	1.20	3.80
1,191.0	5.10	249.80	1,190.1	-5.0	-36.6	-36.4	1.15	0.87	-9.24
1,284.0	5.70	241.10	1,282.7	-8.6	-44.6	-44.1	1.09	0.65	-9.35
1,377.0	6.20	234.90	1,375.2	-13.8	-52.7	-52.0	0.87	0.54	-6.67
1,470.0	6.80	228.20	1,467.6	-20.3	-60.9	-59.9	1.04	0.65	-7.20
1,563.0	7.30	219.90	1,559.9	-28.5	-68.8	-67.4	1.22	0.54	-8.92

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Anderson 31-10H
Project:	Sec.10-T6N-R66W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Anderson 31-10H Pad Sec.10-T6N-R66W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Anderson 31-10H	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)
1,656.0	7.30	211.20	1,652.2	-38.1	-75.7	-73.8	1.19	0.00	-9.35
1,749.0	6.80	210.70	1,744.5	-47.9	-81.6	-79.2	0.54	-0.54	-0.54
1,843.0	6.90	201.40	1,837.8	-57.9	-86.5	-83.6	1.18	0.11	-9.89
1,936.0	6.50	199.50	1,930.1	-68.1	-90.3	-86.9	0.49	-0.43	-2.04
2,029.0	5.80	200.20	2,022.6	-77.5	-93.6	-89.8	0.76	-0.75	0.75
2,122.0	5.30	201.50	2,115.2	-85.9	-96.8	-92.6	0.55	-0.54	1.40
2,215.0	4.50	204.30	2,207.8	-93.2	-99.9	-95.3	0.90	-0.86	3.01
2,308.0	4.90	199.20	2,300.5	-100.3	-102.7	-97.8	0.62	0.43	-5.48
2,402.0	4.20	199.20	2,394.2	-107.3	-105.2	-99.9	0.74	-0.74	0.00
2,495.0	4.60	200.20	2,487.0	-114.0	-107.6	-102.0	0.44	0.43	1.08
2,588.0	5.20	200.90	2,579.6	-121.5	-110.4	-104.4	0.65	0.65	0.75
2,681.0	4.80	202.10	2,672.3	-129.0	-113.3	-107.0	0.44	-0.43	1.29
2,775.0	4.40	203.00	2,766.0	-136.0	-116.2	-109.6	0.43	-0.43	0.96
2,868.0	4.40	204.30	2,858.7	-142.5	-119.1	-112.1	0.11	0.00	1.40
2,962.0	4.70	205.50	2,952.4	-149.3	-122.2	-115.0	0.33	0.32	1.28
3,053.0	4.70	208.70	3,043.1	-155.9	-125.6	-118.0	0.29	0.00	3.52
3,146.0	4.70	209.60	3,135.8	-162.6	-129.3	-121.4	0.08	0.00	0.97
3,239.0	5.00	200.40	3,228.4	-169.7	-132.6	-124.4	0.90	0.32	-9.89
3,331.0	4.10	182.30	3,320.1	-176.7	-134.2	-125.6	1.83	-0.98	-19.67
3,424.0	3.40	175.20	3,412.9	-182.8	-134.1	-125.2	0.90	-0.75	-7.63
3,517.0	3.00	169.50	3,505.8	-187.9	-133.4	-124.3	0.55	-0.43	-6.13
3,611.0	2.10	179.00	3,599.7	-192.1	-132.9	-123.6	1.05	-0.96	10.11
3,704.0	1.80	187.40	3,692.7	-195.2	-133.1	-123.6	0.44	-0.32	9.03
3,797.0	1.80	197.60	3,785.6	-198.1	-133.7	-124.1	0.34	0.00	10.97
3,891.0	3.50	205.10	3,879.5	-202.1	-135.4	-125.6	1.84	1.81	7.98
3,984.0	4.00	205.80	3,972.3	-207.6	-138.0	-127.9	0.54	0.54	0.75
4,077.0	4.60	204.00	4,065.0	-213.9	-140.9	-130.5	0.66	0.65	-1.94
4,170.0	5.10	204.10	4,157.7	-221.1	-144.1	-133.4	0.54	0.54	0.11
4,263.0	4.00	202.80	4,250.4	-227.8	-147.0	-136.0	1.19	-1.18	-1.40
4,356.0	2.60	203.40	4,343.3	-232.8	-149.1	-137.9	1.51	-1.51	0.65
4,449.0	2.00	223.30	4,436.2	-235.9	-151.1	-139.7	1.06	-0.65	21.40
4,543.0	0.40	156.40	4,530.2	-237.4	-152.1	-140.6	2.00	-1.70	-71.17
4,636.0	0.40	33.00	4,623.2	-237.4	-151.8	-140.3	0.76	0.00	-132.69
4,729.0	0.40	307.50	4,716.2	-236.9	-151.9	-140.4	0.58	0.00	-91.94
4,821.0	0.60	279.10	4,808.2	-236.6	-152.6	-141.1	0.34	0.22	-30.87
4,914.0	1.10	287.30	4,901.1	-236.3	-153.9	-142.5	0.55	0.54	8.82
5,008.0	1.40	290.50	4,995.1	-235.6	-155.9	-144.4	0.33	0.32	3.40
5,101.0	1.60	287.70	5,088.1	-234.8	-158.2	-146.8	0.23	0.22	-3.01
5,194.0	1.50	282.80	5,181.1	-234.2	-160.6	-149.2	0.18	-0.11	-5.27
5,288.0	1.40	285.50	5,275.0	-233.6	-162.9	-151.6	0.13	-0.11	2.87
5,381.0	1.30	280.00	5,368.0	-233.1	-165.0	-153.7	0.18	-0.11	-5.91
5,474.0	1.00	276.60	5,461.0	-232.8	-166.9	-155.6	0.33	-0.32	-3.66
5,567.0	0.70	265.70	5,554.0	-232.8	-168.2	-157.0	0.37	-0.32	-11.72
5,660.0	1.50	288.90	5,647.0	-232.4	-170.0	-158.7	0.97	0.86	24.95
5,754.0	1.00	298.40	5,740.9	-231.6	-171.8	-160.6	0.57	-0.53	10.11
5,847.0	0.60	298.80	5,833.9	-231.0	-173.0	-161.8	0.43	-0.43	0.43
5,940.0	0.40	278.40	5,926.9	-230.7	-173.7	-162.5	0.28	-0.22	-21.94
6,033.0	0.50	268.60	6,019.9	-230.7	-174.5	-163.3	0.14	0.11	-10.54
6,126.0	0.40	250.20	6,112.9	-230.8	-175.2	-164.0	0.19	-0.11	-19.78
6,219.0	0.40	250.10	6,205.9	-231.0	-175.8	-164.6	0.00	0.00	-0.11
6,281.0	0.50	235.50	6,267.9	-231.3	-176.2	-165.0	0.24	0.16	-23.55
6,323.0	0.50	235.50	6,309.9	-231.5	-176.5	-165.3	0.00	0.00	0.00
6,346.0	2.00	56.60	6,332.9	-231.3	-176.3	-165.0	10.87	6.52	-777.83
6,377.0	6.40	74.40	6,363.8	-230.6	-174.1	-163.0	14.64	14.19	57.42

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Anderson 31-10H
Project:	Sec.10-T6N-R66W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Anderson 31-10H Pad Sec.10-T6N-R66W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Anderson 31-10H	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)
6,408.0	10.70	79.50	6,394.5	-229.6	-169.6	-158.5	14.07	13.87	16.45
6,439.0	13.70	79.10	6,424.8	-228.3	-163.2	-152.1	9.68	9.68	-1.29
6,471.0	15.30	80.50	6,455.7	-226.9	-155.3	-144.3	5.12	5.00	4.38
6,502.0	18.20	81.90	6,485.4	-225.6	-146.5	-135.6	9.44	9.35	4.52
6,533.0	21.30	84.60	6,514.6	-224.4	-136.1	-125.2	10.42	10.00	8.71
6,564.0	24.40	86.40	6,543.2	-223.4	-124.1	-113.3	10.25	10.00	5.81
6,595.0	25.90	91.10	6,571.2	-223.2	-110.9	-100.2	8.05	4.84	15.16
6,625.0	27.00	94.20	6,598.1	-223.8	-97.6	-86.8	5.88	3.67	10.33
6,657.0	27.50	96.30	6,626.5	-225.1	-83.0	-72.2	3.39	1.56	6.56
6,688.0	28.90	95.70	6,653.9	-226.7	-68.4	-57.6	4.61	4.52	-1.94
6,719.0	31.80	94.20	6,680.6	-228.0	-52.8	-41.9	9.67	9.35	-4.84
6,750.0	34.90	91.90	6,706.5	-228.9	-35.8	-24.9	10.80	10.00	-7.42
6,781.0	38.20	91.70	6,731.4	-229.5	-17.4	-6.4	10.65	10.65	-0.65
6,812.0	40.20	93.20	6,755.4	-230.3	2.2	13.2	7.14	6.45	4.84
6,843.0	42.80	92.60	6,778.6	-231.3	22.7	33.7	8.48	8.39	-1.94
6,874.0	45.50	91.70	6,800.9	-232.2	44.3	55.3	8.94	8.71	-2.90
6,904.0	47.70	89.00	6,821.5	-232.3	66.1	77.1	9.82	7.33	-9.00
6,935.0	47.90	89.50	6,842.3	-232.0	89.0	100.0	1.36	0.65	1.61
6,967.0	49.40	89.10	6,863.5	-231.7	113.1	124.0	4.78	4.69	-1.25
6,997.0	49.30	89.00	6,883.0	-231.3	135.8	146.7	0.42	-0.33	-0.33
7,029.0	50.30	88.00	6,903.7	-230.7	160.3	171.1	3.93	3.13	-3.13
7,060.0	50.20	88.20	6,923.5	-229.9	184.1	194.8	0.59	-0.32	0.65
7,091.0	51.40	88.60	6,943.1	-229.2	208.1	218.8	4.00	3.87	1.29
7,122.0	52.40	87.80	6,962.2	-228.4	232.5	243.1	3.81	3.23	-2.58
7,153.0	54.70	88.10	6,980.6	-227.5	257.4	267.9	7.46	7.42	0.97
7,184.0	57.10	87.80	6,998.0	-226.6	283.0	293.5	7.78	7.74	-0.97
7,215.0	57.90	87.10	7,014.6	-225.5	309.2	319.6	3.21	2.58	-2.26
7,246.0	59.60	86.10	7,030.7	-223.9	335.6	345.9	6.14	5.48	-3.23
7,277.0	60.00	85.30	7,046.3	-221.9	362.3	372.5	2.58	1.29	-2.58
7,308.0	60.30	86.80	7,061.8	-220.0	389.2	399.2	4.31	0.97	4.84
7,339.0	60.30	89.60	7,077.1	-219.2	416.1	426.0	7.85	0.00	9.03
7,371.0	60.90	92.10	7,092.8	-219.6	443.9	453.9	7.06	1.88	7.81
7,402.0	62.50	95.50	7,107.5	-221.4	471.2	481.2	10.95	5.16	10.97
7,433.0	65.50	95.50	7,121.1	-224.1	498.9	509.0	9.68	9.68	0.00
7,464.0	68.70	94.70	7,133.2	-226.6	527.3	537.5	10.59	10.32	-2.58
7,495.0	71.30	94.70	7,143.8	-229.0	556.4	566.7	8.39	8.39	0.00
7,526.0	74.10	95.10	7,153.0	-231.5	585.9	596.2	9.12	9.03	1.29
7,557.0	77.10	95.00	7,160.7	-234.2	615.8	626.2	9.68	9.68	-0.32
7,588.0	80.10	94.40	7,166.8	-236.7	646.0	656.6	9.86	9.68	-1.94
7,619.0	82.90	92.90	7,171.4	-238.6	676.6	687.2	10.22	9.03	-4.84
7,659.0	83.20	92.40	7,176.2	-240.5	716.3	726.9	1.45	0.75	-1.25
7,691.0	82.90	92.70	7,180.1	-241.9	748.0	758.7	1.32	-0.94	0.94
7,723.0	83.00	92.30	7,184.0	-243.2	779.8	790.5	1.28	0.31	-1.25
7,755.0	84.00	92.50	7,187.7	-244.6	811.5	822.3	3.19	3.13	0.63
7,786.0	85.30	92.20	7,190.6	-245.8	842.4	853.1	4.30	4.19	-0.97
7,817.0	87.10	92.90	7,192.6	-247.2	873.3	884.1	6.23	5.81	2.26
7,849.0	89.10	93.20	7,193.7	-248.9	905.2	916.0	6.32	6.25	0.94
7,880.0	90.10	93.00	7,193.9	-250.6	936.2	947.0	3.29	3.23	-0.65
7,912.0	90.30	93.10	7,193.8	-252.3	968.1	979.0	0.70	0.63	0.31
7,944.0	90.60	93.40	7,193.5	-254.1	1,000.1	1,011.0	1.33	0.94	0.94
7,976.0	90.90	93.30	7,193.1	-256.0	1,032.0	1,043.0	0.99	0.94	-0.31
8,008.0	91.20	92.90	7,192.5	-257.7	1,063.9	1,075.0	1.56	0.94	-1.25
8,039.0	90.80	92.30	7,192.0	-259.1	1,094.9	1,106.0	2.33	-1.29	-1.94

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Anderson 31-10H
Project:	Sec.10-T6N-R66W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Anderson 31-10H Pad Sec.10-T6N-R66W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Anderson 31-10H	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)
8,071.0	90.90	92.50	7,191.5	-260.5	1,126.9	1,138.0	0.70	0.31	0.63
8,103.0	91.30	92.10	7,190.9	-261.7	1,158.8	1,170.0	1.77	1.25	-1.25
8,135.0	91.90	91.90	7,190.0	-262.9	1,190.8	1,202.0	1.98	1.88	-0.63
8,167.0	91.10	92.10	7,189.2	-264.0	1,222.8	1,234.0	2.58	-2.50	0.63
8,199.0	90.90	91.70	7,188.6	-265.0	1,254.8	1,266.0	1.40	-0.63	-1.25
8,230.0	90.10	90.90	7,188.3	-265.7	1,285.7	1,297.0	3.65	-2.58	-2.58
8,262.0	89.80	91.00	7,188.4	-266.3	1,317.7	1,328.9	0.99	-0.94	0.31
8,294.0	89.40	91.10	7,188.6	-266.9	1,349.7	1,360.9	1.29	-1.25	0.31
8,326.0	89.70	91.80	7,188.8	-267.7	1,381.7	1,392.9	2.38	0.94	2.19
8,358.0	89.80	91.80	7,189.0	-268.7	1,413.7	1,424.9	0.31	0.31	0.00
8,390.0	89.70	91.80	7,189.1	-269.7	1,445.7	1,456.9	0.31	-0.31	0.00
8,422.0	89.90	92.00	7,189.2	-270.7	1,477.7	1,488.9	0.88	0.63	0.63
8,453.0	89.80	92.50	7,189.3	-272.0	1,508.7	1,519.9	1.64	-0.32	1.61
8,485.0	90.20	93.20	7,189.3	-273.5	1,540.6	1,551.9	2.52	1.25	2.19
8,516.0	90.30	92.80	7,189.2	-275.2	1,571.6	1,582.9	1.33	0.32	-1.29
8,548.0	89.60	92.10	7,189.2	-276.5	1,603.5	1,614.9	3.09	-2.19	-2.19
8,580.0	90.30	92.80	7,189.2	-277.9	1,635.5	1,646.9	3.09	2.19	2.19
8,612.0	91.30	93.30	7,188.8	-279.6	1,667.5	1,678.9	3.49	3.13	1.56
8,643.0	90.80	91.90	7,188.2	-281.0	1,698.4	1,709.9	4.79	-1.61	-4.52
8,675.0	90.40	91.80	7,187.9	-282.0	1,730.4	1,741.9	1.29	-1.25	-0.31
8,707.0	89.40	91.80	7,187.9	-283.1	1,762.4	1,773.9	3.13	-3.13	0.00
8,739.0	87.90	91.10	7,188.7	-283.9	1,794.4	1,805.9	5.17	-4.69	-2.19
8,771.0	88.10	90.40	7,189.8	-284.3	1,826.3	1,837.8	2.27	0.63	-2.19
8,803.0	88.20	89.90	7,190.8	-284.4	1,858.3	1,869.8	1.59	0.31	-1.56
8,835.0	88.10	89.70	7,191.9	-284.3	1,890.3	1,901.7	0.70	-0.31	-0.63
8,867.0	88.20	89.70	7,192.9	-284.1	1,922.3	1,933.7	0.31	0.31	0.00
8,900.0	89.00	89.20	7,193.7	-283.8	1,955.3	1,966.6	2.86	2.42	-1.52
8,933.0	89.30	90.00	7,194.2	-283.5	1,988.3	1,999.5	2.59	0.91	2.42
8,965.0	89.80	89.60	7,194.5	-283.4	2,020.3	2,031.5	2.00	1.56	-1.25
8,997.0	90.40	89.40	7,194.4	-283.1	2,052.3	2,063.4	1.98	1.88	-0.63
9,029.0	91.30	89.60	7,193.9	-282.9	2,084.3	2,095.4	2.88	2.81	0.63
9,061.0	91.80	90.20	7,193.1	-282.8	2,116.3	2,127.3	2.44	1.56	1.88
9,093.0	90.30	89.20	7,192.5	-282.6	2,148.3	2,159.3	5.63	-4.69	-3.13
9,125.0	90.50	88.40	7,192.2	-282.0	2,180.2	2,191.2	2.58	0.63	-2.50
9,158.0	90.00	87.90	7,192.1	-280.9	2,213.2	2,224.1	2.14	-1.52	-1.52
9,189.0	90.50	88.40	7,192.0	-279.9	2,244.2	2,255.0	2.28	1.61	1.61
9,221.0	91.20	88.90	7,191.5	-279.2	2,276.2	2,286.9	2.69	2.19	1.56
9,253.0	90.30	87.50	7,191.1	-278.2	2,308.2	2,318.8	5.20	-2.81	-4.38
9,285.0	88.90	88.00	7,191.3	-276.9	2,340.1	2,350.7	4.65	-4.38	1.56
9,317.0	88.70	87.90	7,192.0	-275.8	2,372.1	2,382.6	0.70	-0.63	-0.31
9,349.0	88.90	87.80	7,192.6	-274.6	2,404.1	2,414.4	0.70	0.63	-0.31
9,380.0	89.50	88.20	7,193.1	-273.5	2,435.1	2,445.3	2.33	1.94	1.29
9,412.0	90.00	88.60	7,193.2	-272.6	2,467.1	2,477.2	2.00	1.56	1.25
9,444.0	90.00	88.80	7,193.2	-271.8	2,499.0	2,509.2	0.63	0.00	0.63
9,475.0	89.90	88.60	7,193.2	-271.1	2,530.0	2,540.1	0.72	-0.32	-0.65
9,507.0	90.80	89.20	7,193.0	-270.5	2,562.0	2,572.0	3.38	2.81	1.88
9,539.0	90.50	88.90	7,192.7	-270.0	2,594.0	2,604.0	1.33	-0.94	-0.94
9,571.0	90.10	88.80	7,192.5	-269.4	2,626.0	2,635.9	1.29	-1.25	-0.31
9,603.0	90.70	88.70	7,192.3	-268.7	2,658.0	2,667.8	1.90	1.88	-0.31
9,634.0	91.40	88.70	7,191.7	-268.0	2,689.0	2,698.7	2.26	2.26	0.00
9,666.0	91.50	88.90	7,190.9	-267.3	2,721.0	2,730.6	0.70	0.31	0.63
9,698.0	91.60	89.10	7,190.0	-266.7	2,753.0	2,762.6	0.70	0.31	0.63
9,730.0	90.20	88.40	7,189.5	-266.0	2,785.0	2,794.5	4.89	-4.38	-2.19

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Anderson 31-10H
Project:	Sec.10-T6N-R66W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Anderson 31-10H Pad Sec.10-T6N-R66W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Anderson 31-10H	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)
9,762.0	90.10	89.00	7,189.5	-265.3	2,816.9	2,826.4	1.90	-0.31	1.88
9,794.0	90.50	89.80	7,189.3	-265.0	2,848.9	2,858.3	2.80	1.25	2.50
9,826.0	90.20	89.30	7,189.1	-264.7	2,880.9	2,890.3	1.82	-0.94	-1.56
9,858.0	90.60	88.90	7,188.9	-264.2	2,912.9	2,922.2	1.77	1.25	-1.25
9,890.0	90.90	88.70	7,188.5	-263.5	2,944.9	2,954.1	1.13	0.94	-0.63
9,922.0	90.10	88.20	7,188.2	-262.7	2,976.9	2,986.1	2.95	-2.50	-1.56
9,954.0	89.10	88.30	7,188.4	-261.7	3,008.9	3,018.0	3.14	-3.13	0.31
9,985.0	90.50	88.90	7,188.5	-260.9	3,039.9	3,048.9	4.91	4.52	1.94
10,017.0	89.80	88.00	7,188.4	-260.1	3,071.9	3,080.8	3.56	-2.19	-2.81
10,049.0	89.80	88.20	7,188.5	-259.0	3,103.9	3,112.7	0.62	0.00	0.63
10,081.0	91.30	88.90	7,188.2	-258.2	3,135.8	3,144.6	5.17	4.69	2.19
10,112.0	90.50	88.30	7,187.7	-257.5	3,166.8	3,175.5	3.23	-2.58	-1.94
10,144.0	89.60	88.10	7,187.7	-256.4	3,198.8	3,207.4	2.88	-2.81	-0.63
10,176.0	89.70	88.60	7,187.9	-255.5	3,230.8	3,239.3	1.59	0.31	1.56
10,208.0	91.30	88.70	7,187.6	-254.8	3,262.8	3,271.2	5.01	5.00	0.31
10,240.0	91.90	88.70	7,186.7	-254.0	3,294.8	3,303.1	1.88	1.88	0.00
10,272.0	90.80	87.50	7,186.0	-253.0	3,326.7	3,335.0	5.09	-3.44	-3.75
10,304.0	90.20	88.00	7,185.7	-251.7	3,358.7	3,366.9	2.44	-1.88	1.56
10,336.0	89.80	87.50	7,185.7	-250.5	3,390.7	3,398.8	2.00	-1.25	-1.56
10,368.0	90.70	87.90	7,185.6	-249.2	3,422.7	3,430.7	3.08	2.81	1.25
10,399.0	89.90	87.20	7,185.4	-247.9	3,453.6	3,461.5	3.43	-2.58	-2.26
10,430.0	89.10	87.90	7,185.7	-246.5	3,484.6	3,492.4	3.43	-2.58	2.26
10,463.0	89.30	88.20	7,186.1	-245.4	3,517.6	3,525.3	1.09	0.61	0.91
10,495.0	88.80	88.20	7,186.7	-244.4	3,549.6	3,557.2	1.56	-1.56	0.00
10,527.0	88.40	88.80	7,187.4	-243.6	3,581.5	3,589.1	2.25	-1.25	1.88
10,559.0	88.40	88.60	7,188.3	-242.8	3,613.5	3,621.0	0.62	0.00	-0.63
10,591.0	88.60	88.80	7,189.2	-242.1	3,645.5	3,652.9	0.88	0.63	0.63
10,623.0	88.70	88.90	7,189.9	-241.5	3,677.5	3,684.8	0.44	0.31	0.31
10,655.0	88.50	88.70	7,190.7	-240.8	3,709.5	3,716.7	0.88	-0.63	-0.63
10,687.0	88.50	89.20	7,191.5	-240.2	3,741.5	3,748.6	1.56	0.00	1.56
10,719.0	89.30	89.30	7,192.2	-239.8	3,773.4	3,780.6	2.52	2.50	0.31
10,751.0	90.80	89.90	7,192.1	-239.6	3,805.4	3,812.5	5.05	4.69	1.88
10,782.0	91.50	89.60	7,191.5	-239.4	3,836.4	3,843.5	2.46	2.26	-0.97
10,814.0	91.40	89.90	7,190.7	-239.3	3,868.4	3,875.4	0.99	-0.31	0.94
10,845.0	91.30	90.00	7,190.0	-239.3	3,899.4	3,906.4	0.46	-0.32	0.32
10,877.0	91.00	89.90	7,189.3	-239.3	3,931.4	3,938.3	0.99	-0.94	-0.31
10,909.0	90.50	89.50	7,188.9	-239.1	3,963.4	3,970.3	2.00	-1.56	-1.25
10,941.0	89.60	88.50	7,188.9	-238.5	3,995.4	4,002.2	4.20	-2.81	-3.13
10,972.0	90.50	89.50	7,188.9	-238.0	4,026.4	4,033.2	4.34	2.90	3.23
11,004.0	89.90	88.70	7,188.7	-237.5	4,058.4	4,065.1	3.12	-1.88	-2.50
11,036.0	89.80	88.90	7,188.8	-236.8	4,090.4	4,097.0	0.70	-0.31	0.63
11,068.0	90.20	88.80	7,188.8	-236.2	4,122.4	4,128.9	1.29	1.25	-0.31
11,100.0	89.80	88.50	7,188.8	-235.4	4,154.4	4,160.9	1.56	-1.25	-0.94
11,132.0	89.90	88.20	7,188.9	-234.5	4,186.4	4,192.8	0.99	0.31	-0.94
11,164.0	90.00	88.70	7,188.9	-233.6	4,218.3	4,224.7	1.59	0.31	1.56
11,196.0	89.90	88.00	7,189.0	-232.7	4,250.3	4,256.6	2.21	-0.31	-2.19
11,228.0	89.80	88.10	7,189.1	-231.6	4,282.3	4,288.5	0.44	-0.31	0.31
11,260.0	89.80	88.70	7,189.2	-230.7	4,314.3	4,320.4	1.87	0.00	1.88
11,292.0	89.60	88.60	7,189.3	-230.0	4,346.3	4,352.3	0.70	-0.63	-0.31
11,324.0	89.50	88.90	7,189.6	-229.3	4,378.3	4,384.2	0.99	-0.31	0.94
11,356.0	89.60	88.90	7,189.8	-228.7	4,410.3	4,416.2	0.31	0.31	0.00
11,387.0	89.80	88.90	7,190.0	-228.1	4,441.3	4,447.1	0.65	0.65	0.00
11,419.0	89.60	88.80	7,190.2	-227.4	4,473.3	4,479.0	0.70	-0.63	-0.31
11,451.0	89.50	88.90	7,190.4	-226.8	4,505.3	4,510.9	0.44	-0.31	0.31

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Anderson 31-10H
Project:	Sec.10-T6N-R66W	TVD Reference:	WELL @ 4900.0ft (Original Well Elev)
Site:	Anderson 31-10H Pad Sec.10-T6N-R66W	MD Reference:	WELL @ 4900.0ft (Original Well Elev)
Well:	Anderson 31-10H	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)
11,483.0	89.30	88.20	7,190.7	-226.0	4,537.2	4,542.9	2.27	-0.63	-2.19
11,515.0	89.80	88.30	7,191.0	-225.0	4,569.2	4,574.8	1.59	1.56	0.31
11,547.0	89.60	87.70	7,191.2	-223.9	4,601.2	4,606.6	1.98	-0.63	-1.88
11,597.0	89.60	87.70	7,191.5	-221.9	4,651.2	4,656.4	0.00	0.00	0.00
BHL 1450'FNL, 2178'FWL									

Checked By: _____	Approved By: _____	Date: _____
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