

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Harvesters Resources 15R-243**

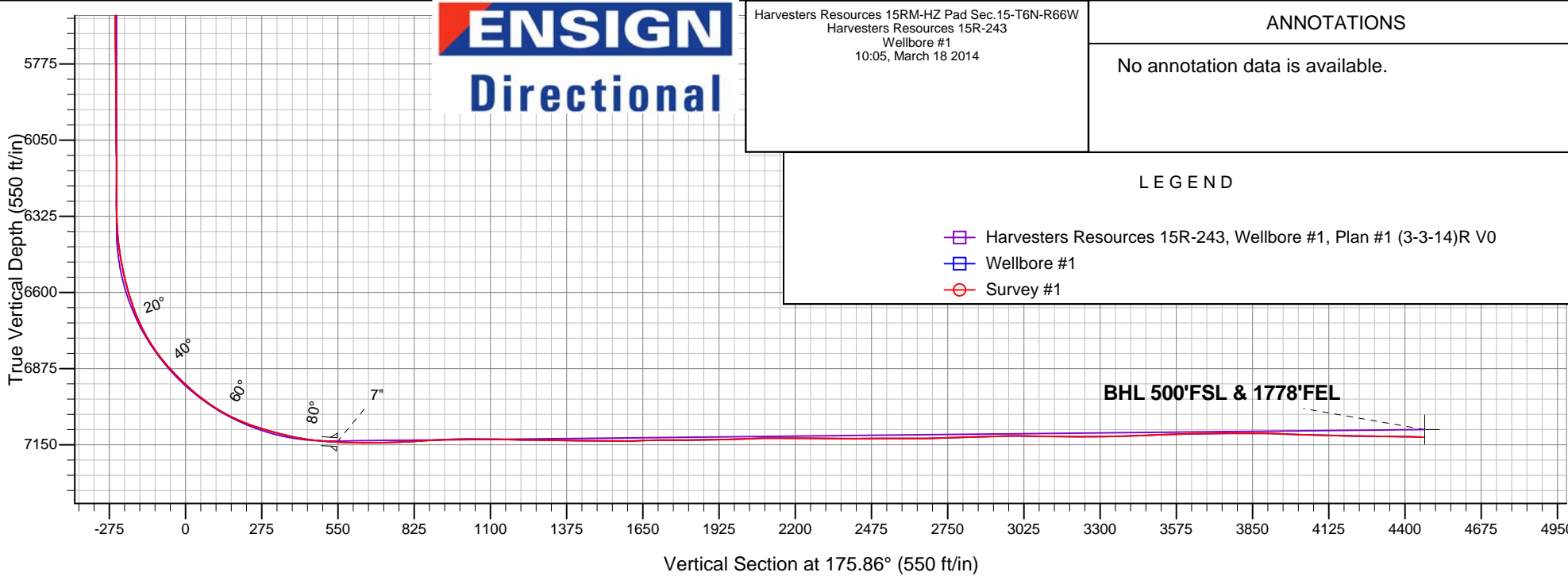
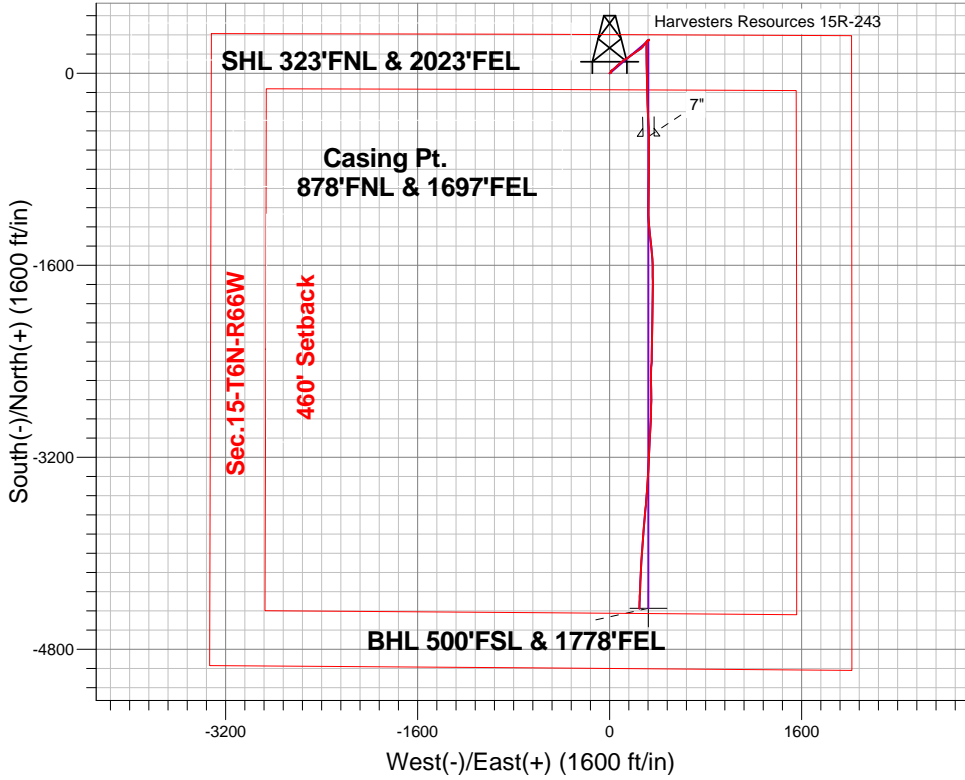
Surface Location: Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4820.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1423918.81	3205417.99	40.494710	-104.761400	
RKB-15' WELL @ 4835.0ft (RKB-15')						

FINAL SURVEY

Projected Bottom Hole Location
11565'MD 7122'TVD 4460'S & 248'E of SHL
88.8 degree Incl @ 181.9 degree AZM



Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W
Harvesters Resources 15R-243
Wellbore #1
10:05, March 18 2014

ANNOTATIONS

No annotation data is available.

LEGEND

- Harvesters Resources 15R-243, Wellbore #1, Plan #1 (3-3-14)R V0
- Wellbore #1
- Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.15-T6N-R66W

Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W

Harvesters Resources 15R-243

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 March, 2014

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-243
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Well:	Harvesters Resources 15R-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.15-T6N-R66W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W				
Site Position:		Northing:	1,423,918.59 ft	Latitude:	40.494710
From:	Lat/Long	Easting:	3,205,390.18 ft	Longitude:	-104.761500
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.48 °

Well	Harvesters Resources 15R-243					
Well Position	+N-S	0.0 ft	Northing:	1,423,918.81 ft	Latitude:	40.494710
	+E-W	0.0 ft	Easting:	3,205,417.99 ft	Longitude:	-104.761400
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,820.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/3/2014	8.50	67.03	52,895

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	175.86	

Survey Program	Date	3/18/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
146.0	11,565.0	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
146.0	2.00	56.60	146.0	1.4	2.1	-1.2	1.37	1.37	0.00
238.0	1.90	66.00	237.9	2.9	4.9	-2.5	0.36	-0.11	10.22
330.0	1.90	95.30	329.9	3.4	7.8	-2.8	1.04	0.00	31.85
422.0	1.70	13.80	421.8	4.6	9.6	-3.9	2.56	-0.22	-88.59
513.0	0.60	348.50	512.8	6.3	9.8	-5.6	1.30	-1.21	-27.80
605.0	0.20	18.20	604.8	7.0	9.8	-6.2	0.48	-0.43	32.28
697.0	0.80	39.10	696.8	7.6	10.3	-6.9	0.67	0.65	22.72
789.0	1.00	21.40	788.8	8.9	11.0	-8.1	0.37	0.22	-19.24
871.0	0.70	47.20	870.8	9.9	11.6	-9.0	0.58	-0.37	31.46
971.0	0.60	18.40	970.8	10.8	12.2	-9.9	0.34	-0.10	-28.80

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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)
1,062.0	1.10	22.80	1,061.8	12.0	12.7	-11.1	0.55	0.55	4.84
1,154.0	1.10	9.00	1,153.8	13.7	13.2	-12.7	0.29	0.00	-15.00
1,251.0	0.90	336.30	1,250.7	15.3	13.0	-14.4	0.61	-0.21	-33.71
1,347.0	1.10	333.80	1,346.7	16.9	12.3	-15.9	0.21	0.21	-2.60
1,442.0	1.00	330.30	1,441.7	18.4	11.5	-17.5	0.13	-0.11	-3.68
1,537.0	2.00	42.50	1,536.7	20.3	12.2	-19.4	2.05	1.05	76.00
1,632.0	3.60	49.90	1,631.6	23.5	15.6	-22.3	1.72	1.68	7.79
1,727.0	4.90	58.90	1,726.3	27.5	21.3	-25.9	1.53	1.37	9.47
1,822.0	6.20	56.80	1,820.9	32.4	29.1	-30.2	1.38	1.37	-2.21
1,917.0	6.90	49.00	1,915.2	39.0	37.7	-36.1	1.19	0.74	-8.21
2,012.0	7.30	49.90	2,009.5	46.6	46.6	-43.1	0.44	0.42	0.95
2,107.0	6.80	39.20	2,103.8	54.8	54.8	-50.7	1.48	-0.53	-11.26
2,202.0	7.20	45.20	2,198.1	63.4	62.6	-58.7	0.88	0.42	6.32
2,298.0	7.50	50.60	2,293.3	71.6	71.7	-66.3	0.78	0.31	5.63
2,393.0	6.70	53.80	2,387.6	78.8	81.0	-72.8	0.94	-0.84	3.37
2,488.0	6.60	50.60	2,481.9	85.6	89.7	-78.9	0.40	-0.11	-3.37
2,583.0	7.00	49.90	2,576.3	92.8	98.3	-85.4	0.43	0.42	-0.74
2,678.0	7.60	48.20	2,670.5	100.7	107.4	-92.7	0.67	0.63	-1.79
2,773.0	7.60	52.50	2,764.7	108.7	117.1	-99.9	0.60	0.00	4.53
2,868.0	7.50	63.30	2,858.8	115.3	127.6	-105.8	1.50	-0.11	11.37
2,963.0	6.90	60.10	2,953.1	120.9	138.1	-110.6	0.76	-0.63	-3.37
3,058.0	5.80	52.40	3,047.5	126.7	146.8	-115.8	1.46	-1.16	-8.11
3,152.0	6.70	55.90	3,141.0	132.7	155.1	-121.1	1.04	0.96	3.72
3,246.0	7.20	54.30	3,234.3	139.2	164.5	-126.9	0.57	0.53	-1.70
3,341.0	5.80	52.20	3,328.6	145.6	173.1	-132.7	1.49	-1.47	-2.21
3,437.0	6.10	52.90	3,424.1	151.6	181.0	-138.2	0.32	0.31	0.73
3,532.0	6.40	54.80	3,518.6	157.7	189.3	-143.7	0.38	0.32	2.00
3,627.0	6.40	50.30	3,613.0	164.2	197.7	-149.5	0.53	0.00	-4.74
3,722.0	6.80	56.20	3,707.3	170.7	206.5	-155.3	0.83	0.42	6.21
3,817.0	6.90	58.50	3,801.7	176.8	216.0	-160.7	0.31	0.11	2.42
3,912.0	8.40	58.50	3,895.8	183.4	226.8	-166.6	1.58	1.58	0.00
4,007.0	8.70	58.00	3,989.8	190.8	238.8	-173.1	0.33	0.32	-0.53
4,102.0	8.60	52.00	4,083.7	199.0	250.5	-180.4	0.96	-0.11	-6.32
4,197.0	7.70	47.80	4,177.7	207.7	260.8	-188.3	1.14	-0.95	-4.42
4,292.0	6.40	43.60	4,272.0	215.8	269.2	-195.8	1.47	-1.37	-4.42
4,387.0	6.30	39.00	4,366.4	223.7	276.1	-203.2	0.55	-0.11	-4.84
4,482.0	6.20	38.50	4,460.9	231.7	282.6	-210.7	0.12	-0.11	-0.53
4,577.0	6.70	41.60	4,555.3	239.9	289.5	-218.4	0.64	0.53	3.26
4,672.0	6.20	37.80	4,649.7	248.1	296.3	-226.1	0.69	-0.53	-4.00
4,767.0	6.20	44.50	4,744.1	255.8	303.0	-233.3	0.76	0.00	7.05
4,862.0	5.40	40.20	4,838.6	262.9	309.5	-239.8	0.96	-0.84	-4.53
4,957.0	5.10	48.00	4,933.2	269.1	315.5	-245.6	0.81	-0.32	8.21
5,053.0	4.00	64.80	5,028.9	273.4	321.7	-249.5	1.79	-1.15	17.50
5,148.0	2.20	36.70	5,123.8	276.3	325.8	-252.0	2.43	-1.89	-29.58
5,242.0	2.10	26.90	5,217.7	279.2	327.7	-254.9	0.40	-0.11	-10.43
5,337.0	1.00	227.30	5,312.7	280.2	327.9	-255.8	3.22	-1.16	-168.00
5,432.0	0.80	225.30	5,407.7	279.2	326.8	-254.9	0.21	-0.21	-2.11
5,527.0	0.60	225.00	5,502.7	278.4	326.0	-254.1	0.21	-0.21	-0.32
5,623.0	0.70	228.70	5,598.7	277.6	325.2	-253.5	0.11	0.10	3.85
5,718.0	1.00	229.20	5,693.7	276.7	324.1	-252.6	0.32	0.32	0.53
5,813.0	1.10	252.60	5,788.6	275.9	322.6	-251.9	0.46	0.11	24.63
5,908.0	1.20	241.90	5,883.6	275.2	320.9	-251.3	0.25	0.11	-11.26
6,003.0	1.20	250.10	5,978.6	274.4	319.0	-250.6	0.18	0.00	8.63

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6,098.0	1.40	254.00	6,073.6	273.7	317.0	-250.1	0.23	0.21	4.11
6,194.0	0.90	225.30	6,169.6	272.8	315.3	-249.4	0.78	-0.52	-29.90
6,288.0	1.00	256.60	6,263.6	272.1	314.0	-248.8	0.55	0.11	33.30
6,320.0	1.10	258.90	6,295.5	272.0	313.4	-248.7	0.34	0.31	7.19
6,352.0	1.60	226.00	6,327.5	271.6	312.8	-248.4	2.82	1.56	-102.81
6,384.0	3.50	206.00	6,359.5	270.5	312.1	-247.2	6.47	5.94	-62.50
6,415.0	5.80	202.50	6,390.4	268.2	311.0	-245.0	7.47	7.42	-11.29
6,447.0	7.70	199.70	6,422.2	264.6	309.7	-241.6	6.02	5.94	-8.75
6,479.0	8.70	194.20	6,453.9	260.3	308.4	-237.3	3.97	3.13	-17.19
6,511.0	9.80	189.30	6,485.4	255.2	307.4	-232.4	4.22	3.44	-15.31
6,542.0	11.70	183.30	6,515.9	249.5	306.7	-226.7	7.11	6.13	-19.35
6,574.0	13.60	180.70	6,547.1	242.5	306.5	-219.7	6.20	5.94	-8.13
6,606.0	14.90	180.50	6,578.1	234.6	306.4	-211.9	4.07	4.06	-0.63
6,637.0	17.10	179.50	6,607.9	226.1	306.4	-203.4	7.15	7.10	-3.23
6,669.0	18.50	178.90	6,638.4	216.3	306.6	-193.6	4.41	4.38	-1.88
6,701.0	20.30	178.20	6,668.6	205.7	306.8	-183.0	5.67	5.63	-2.19
6,732.0	23.20	177.90	6,697.4	194.2	307.2	-171.5	9.36	9.35	-0.97
6,764.0	26.40	177.90	6,726.4	180.8	307.7	-158.1	10.00	10.00	0.00
6,796.0	29.30	178.40	6,754.7	165.8	308.2	-143.2	9.09	9.06	1.56
6,828.0	32.00	179.80	6,782.2	149.5	308.5	-126.9	8.73	8.44	4.38
6,859.0	34.90	181.40	6,808.1	132.5	308.3	-109.9	9.78	9.35	5.16
6,891.0	37.70	181.20	6,833.9	113.5	307.8	-91.0	8.76	8.75	-0.63
6,923.0	41.00	180.20	6,858.6	93.2	307.6	-70.8	10.50	10.31	-3.13
6,954.0	43.00	178.90	6,881.7	72.5	307.8	-50.1	7.04	6.45	-4.19
6,986.0	44.70	178.90	6,904.7	50.3	308.2	-28.0	5.31	5.31	0.00
7,017.0	46.10	179.80	6,926.5	28.3	308.4	-5.9	4.97	4.52	2.90
7,049.0	48.20	180.00	6,948.3	4.8	308.5	17.5	6.58	6.56	0.63
7,080.0	50.60	178.10	6,968.4	-18.7	308.9	41.0	9.03	7.74	-6.13
7,111.0	53.30	177.70	6,987.5	-43.1	309.8	65.4	8.77	8.71	-1.29
7,143.0	55.80	177.50	7,006.1	-69.2	310.9	91.4	7.83	7.81	-0.63
7,174.0	58.60	177.40	7,022.9	-95.2	312.0	117.5	9.04	9.03	-0.32
7,206.0	61.60	178.60	7,038.8	-122.9	313.0	145.2	9.92	9.38	3.75
7,238.0	64.70	178.80	7,053.3	-151.5	313.6	173.7	9.70	9.69	0.63
7,270.0	67.60	178.60	7,066.2	-180.7	314.3	202.9	9.08	9.06	-0.63
7,301.0	70.30	178.60	7,077.4	-209.6	315.0	231.8	8.71	8.71	0.00
7,333.0	71.70	178.10	7,087.8	-239.9	315.9	262.0	4.62	4.38	-1.56
7,364.0	73.90	177.20	7,096.9	-269.5	317.1	291.6	7.62	7.10	-2.90
7,396.0	75.40	177.90	7,105.4	-300.3	318.4	322.5	5.14	4.69	2.19
7,428.0	76.20	177.90	7,113.3	-331.3	319.6	353.5	2.50	2.50	0.00
7,460.0	77.70	178.20	7,120.5	-362.4	320.6	384.6	4.78	4.69	0.94
7,492.0	80.00	177.90	7,126.7	-393.8	321.7	416.0	7.25	7.19	-0.94
7,524.0	82.30	177.70	7,131.6	-425.4	322.9	447.6	7.21	7.19	-0.63
7,556.0	84.10	177.70	7,135.4	-457.2	324.2	479.4	5.63	5.63	0.00
7,588.0	85.60	178.20	7,138.3	-489.0	325.3	511.2	4.94	4.69	1.56
7,654.0	88.00	179.80	7,141.9	-554.9	326.5	577.0	4.37	3.64	2.42
7,685.0	88.80	180.20	7,142.8	-585.9	326.5	607.9	2.89	2.58	1.29
7,715.0	89.50	180.00	7,143.3	-615.9	326.4	637.8	2.43	2.33	-0.67
7,746.0	90.50	179.80	7,143.3	-646.9	326.5	668.8	3.29	3.23	-0.65
7,776.0	90.90	180.00	7,142.9	-676.9	326.5	698.7	1.49	1.33	0.67
7,807.0	91.80	180.50	7,142.2	-707.9	326.4	729.6	3.32	2.90	1.61
7,837.0	92.30	180.70	7,141.1	-737.8	326.1	759.5	1.79	1.67	0.67
7,868.0	92.70	180.50	7,139.7	-768.8	325.7	790.3	1.44	1.29	-0.65

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7,899.0	93.50	180.50	7,138.1	-799.8	325.5	821.2	2.58	2.58	0.00
7,930.0	93.60	180.30	7,136.1	-830.7	325.3	852.0	0.72	0.32	-0.65
7,960.0	93.20	180.30	7,134.4	-860.7	325.1	881.9	1.33	-1.33	0.00
7,990.0	93.30	179.80	7,132.7	-890.6	325.1	911.7	1.70	0.33	-1.67
8,021.0	92.00	180.30	7,131.2	-921.6	325.0	942.6	4.49	-4.19	1.61
8,051.0	91.20	180.80	7,130.4	-951.6	324.8	972.5	3.14	-2.67	1.67
8,081.0	91.20	181.20	7,129.8	-981.5	324.2	1,002.4	1.33	0.00	1.33
8,112.0	90.30	181.00	7,129.4	-1,012.5	323.6	1,033.3	2.97	-2.90	-0.65
8,143.0	89.30	180.30	7,129.5	-1,043.5	323.3	1,064.1	3.94	-3.23	-2.26
8,173.0	88.40	180.20	7,130.1	-1,073.5	323.2	1,094.1	3.02	-3.00	-0.33
8,204.0	88.60	180.20	7,130.9	-1,104.5	323.0	1,125.0	0.65	0.65	0.00
8,234.0	89.10	180.30	7,131.5	-1,134.5	322.9	1,154.9	1.70	1.67	0.33
8,264.0	89.20	180.20	7,131.9	-1,164.5	322.8	1,184.8	0.47	0.33	-0.33
8,295.0	89.10	179.10	7,132.4	-1,195.5	323.0	1,215.7	3.56	-0.32	-3.55
8,325.0	89.30	176.80	7,132.8	-1,225.5	324.0	1,245.7	7.69	0.67	-7.67
8,356.0	89.10	174.40	7,133.2	-1,256.4	326.4	1,276.7	7.77	-0.65	-7.74
8,386.0	89.30	173.50	7,133.7	-1,286.2	329.6	1,306.6	3.07	0.67	-3.00
8,418.0	88.70	172.40	7,134.2	-1,318.0	333.5	1,338.6	3.92	-1.88	-3.44
8,449.0	89.20	173.50	7,134.8	-1,348.7	337.3	1,369.6	3.90	1.61	3.55
8,480.0	89.90	174.70	7,135.0	-1,379.6	340.5	1,400.5	4.48	2.26	3.87
8,512.0	89.80	174.70	7,135.1	-1,411.4	343.5	1,432.5	0.31	-0.31	0.00
8,544.0	89.50	174.90	7,135.3	-1,443.3	346.4	1,464.5	1.13	-0.94	0.63
8,576.0	89.20	175.10	7,135.7	-1,475.2	349.2	1,496.5	1.13	-0.94	0.63
8,607.0	89.10	175.10	7,136.1	-1,506.0	351.8	1,527.5	0.32	-0.32	0.00
8,639.0	89.60	175.80	7,136.5	-1,537.9	354.3	1,559.5	2.69	1.56	2.19
8,670.0	90.70	177.20	7,136.4	-1,568.9	356.2	1,590.5	5.74	3.55	4.52
8,702.0	91.60	177.90	7,135.8	-1,600.8	357.6	1,622.5	3.56	2.81	2.19
8,734.0	92.20	179.30	7,134.7	-1,632.8	358.4	1,654.4	4.76	1.88	4.38
8,765.0	91.70	179.60	7,133.7	-1,663.8	358.7	1,685.3	1.88	-1.61	0.97
8,797.0	90.80	179.80	7,133.0	-1,695.8	358.8	1,717.3	2.88	-2.81	0.63
8,828.0	90.20	178.90	7,132.7	-1,726.8	359.2	1,748.2	3.49	-1.94	-2.90
8,861.0	89.70	178.80	7,132.7	-1,759.8	359.9	1,781.2	1.55	-1.52	-0.30
8,892.0	89.60	179.30	7,132.9	-1,790.8	360.4	1,812.1	1.64	-0.32	1.61
8,924.0	90.00	179.80	7,133.0	-1,822.8	360.6	1,844.1	2.00	1.25	1.56
8,956.0	90.80	181.00	7,132.8	-1,854.8	360.4	1,875.9	4.51	2.50	3.75
8,988.0	91.50	181.90	7,132.1	-1,886.8	359.6	1,907.8	3.56	2.19	2.81
9,019.0	91.50	181.90	7,131.3	-1,917.7	358.6	1,938.6	0.00	0.00	0.00
9,051.0	91.90	182.40	7,130.4	-1,949.7	357.4	1,970.4	2.00	1.25	1.56
9,083.0	91.70	181.60	7,129.4	-1,981.7	356.2	2,002.2	2.58	-0.63	-2.50
9,114.0	91.90	181.60	7,128.4	-2,012.6	355.4	2,033.0	0.65	0.65	0.00
9,146.0	92.10	181.20	7,127.3	-2,044.6	354.6	2,064.9	1.40	0.63	-1.25
9,178.0	90.80	179.80	7,126.5	-2,076.6	354.3	2,096.7	5.97	-4.06	-4.38
9,209.0	90.00	179.30	7,126.3	-2,107.6	354.6	2,127.7	3.04	-2.58	-1.61
9,241.0	89.90	179.80	7,126.3	-2,139.6	354.8	2,159.6	1.59	-0.31	1.56
9,273.0	90.00	180.20	7,126.3	-2,171.6	354.8	2,191.5	1.29	0.31	1.25
9,305.0	89.40	180.70	7,126.5	-2,203.6	354.6	2,223.4	2.44	-1.88	1.56
9,336.0	89.30	181.20	7,126.8	-2,234.6	354.0	2,254.3	1.64	-0.32	1.61
9,368.0	89.30	181.60	7,127.2	-2,266.6	353.3	2,286.1	1.25	0.00	1.25
9,400.0	89.40	181.60	7,127.6	-2,298.5	352.4	2,318.0	0.31	0.31	0.00
9,432.0	90.00	181.40	7,127.8	-2,330.5	351.5	2,349.8	1.98	1.88	-0.63
9,464.0	90.00	181.60	7,127.8	-2,362.5	350.7	2,381.7	0.63	0.00	0.63
9,495.0	89.80	181.40	7,127.8	-2,393.5	349.9	2,412.5	0.91	-0.65	-0.65
9,527.0	90.40	183.90	7,127.8	-2,425.5	348.4	2,444.3	8.03	1.88	7.81

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-243
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Well:	Harvesters Resources 15R-243	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)
9,558.0	90.80	184.20	7,127.4	-2,456.4	346.2	2,475.0	1.61	1.29	0.97
9,590.0	90.00	182.10	7,127.2	-2,488.3	344.5	2,506.7	7.02	-2.50	-6.56
9,622.0	90.00	180.30	7,127.2	-2,520.3	343.8	2,538.6	5.63	0.00	-5.63
9,653.0	90.50	178.90	7,127.1	-2,551.3	344.0	2,569.5	4.80	1.61	-4.52
9,685.0	90.10	177.20	7,126.9	-2,583.3	345.1	2,601.5	5.46	-1.25	-5.31
9,717.0	89.80	177.00	7,126.9	-2,615.3	346.7	2,633.5	1.13	-0.94	-0.63
9,749.0	90.20	179.50	7,126.9	-2,647.3	347.7	2,665.5	7.91	1.25	7.81
9,780.0	91.30	181.60	7,126.5	-2,678.3	347.4	2,696.3	7.65	3.55	6.77
9,812.0	91.50	181.20	7,125.7	-2,710.2	346.6	2,728.2	1.40	0.63	-1.25
9,844.0	91.80	181.00	7,124.8	-2,742.2	346.0	2,760.0	1.13	0.94	-0.63
9,875.0	92.20	181.00	7,123.7	-2,773.2	345.5	2,790.9	1.29	1.29	0.00
9,907.0	92.20	181.00	7,122.5	-2,805.2	344.9	2,822.7	0.00	0.00	0.00
9,939.0	91.80	181.40	7,121.4	-2,837.1	344.2	2,854.6	1.77	-1.25	1.25
9,970.0	91.50	181.90	7,120.5	-2,868.1	343.3	2,885.4	1.88	-0.97	1.61
10,002.0	91.20	182.30	7,119.8	-2,900.1	342.2	2,917.2	1.56	-0.94	1.25
10,033.0	91.30	182.60	7,119.1	-2,931.0	340.8	2,948.0	1.02	0.32	0.97
10,065.0	91.30	183.00	7,118.4	-2,963.0	339.3	2,979.8	1.25	0.00	1.25
10,096.0	89.20	182.80	7,118.2	-2,994.0	337.7	3,010.5	6.80	-6.77	-0.65
10,128.0	89.00	182.60	7,118.7	-3,025.9	336.2	3,042.3	0.88	-0.63	-0.63
10,160.0	89.10	182.60	7,119.2	-3,057.9	334.8	3,074.1	0.31	0.31	0.00
10,191.0	89.20	183.00	7,119.7	-3,088.8	333.2	3,104.8	1.33	0.32	1.29
10,223.0	89.20	183.20	7,120.2	-3,120.8	331.5	3,136.6	0.62	0.00	0.63
10,255.0	89.30	182.80	7,120.6	-3,152.7	329.8	3,168.3	1.29	0.31	-1.25
10,286.0	89.60	182.80	7,120.9	-3,183.7	328.3	3,199.1	0.97	0.97	0.00
10,318.0	89.80	183.00	7,121.0	-3,215.7	326.7	3,230.9	0.88	0.63	0.63
10,350.0	90.00	183.00	7,121.1	-3,247.6	325.0	3,262.6	0.63	0.63	0.00
10,381.0	90.80	183.50	7,120.9	-3,278.6	323.3	3,293.3	3.04	2.58	1.61
10,412.0	91.30	183.20	7,120.3	-3,309.5	321.5	3,324.1	1.88	1.61	-0.97
10,444.0	91.50	182.80	7,119.5	-3,341.5	319.8	3,355.8	1.40	0.63	-1.25
10,476.0	91.80	183.20	7,118.6	-3,373.4	318.1	3,387.6	1.56	0.94	1.25
10,508.0	91.90	183.70	7,117.6	-3,405.3	316.2	3,419.3	1.59	0.31	1.56
10,540.0	92.10	183.00	7,116.5	-3,437.2	314.3	3,451.0	2.27	0.63	-2.19
10,572.0	92.20	184.40	7,115.3	-3,469.2	312.3	3,482.6	4.38	0.31	4.38
10,604.0	92.20	184.70	7,114.0	-3,501.0	309.7	3,514.3	0.94	0.00	0.94
10,635.0	92.00	185.30	7,112.9	-3,531.9	307.0	3,544.8	2.04	-0.65	1.94
10,667.0	91.80	184.70	7,111.8	-3,563.8	304.2	3,576.4	1.98	-0.63	-1.88
10,699.0	91.40	184.00	7,110.9	-3,595.7	301.8	3,608.1	2.52	-1.25	-2.19
10,730.0	90.90	184.70	7,110.3	-3,626.6	299.4	3,638.7	2.77	-1.61	2.26
10,762.0	90.80	185.10	7,109.8	-3,658.4	296.7	3,670.3	1.29	-0.31	1.25
10,794.0	90.80	185.30	7,109.4	-3,690.3	293.8	3,701.9	0.62	0.00	0.63
10,826.0	90.10	185.10	7,109.1	-3,722.2	290.9	3,733.5	2.28	-2.19	-0.63
10,857.0	90.10	185.10	7,109.1	-3,753.0	288.2	3,764.1	0.00	0.00	0.00
10,889.0	90.20	185.40	7,109.0	-3,784.9	285.2	3,795.6	0.99	0.31	0.94
10,921.0	90.40	185.10	7,108.8	-3,816.8	282.3	3,827.2	1.13	0.63	-0.94
10,953.0	90.10	184.90	7,108.7	-3,848.7	279.5	3,858.8	1.13	-0.94	-0.63
10,985.0	89.40	184.70	7,108.8	-3,880.5	276.8	3,890.4	2.28	-2.19	-0.63
11,017.0	88.50	184.20	7,109.4	-3,912.4	274.4	3,922.0	3.22	-2.81	-1.56
11,048.0	87.80	183.70	7,110.4	-3,943.3	272.2	3,952.7	2.77	-2.26	-1.61
11,080.0	87.60	183.70	7,111.7	-3,975.3	270.2	3,984.4	0.63	-0.63	0.00
11,112.0	87.80	183.30	7,113.0	-4,007.2	268.2	4,016.1	1.40	0.63	-1.25
11,143.0	87.60	183.30	7,114.2	-4,038.1	266.4	4,046.8	0.65	-0.65	0.00
11,175.0	87.90	183.70	7,115.5	-4,070.0	264.5	4,078.5	1.56	0.94	1.25

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15R-243
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Well:	Harvesters Resources 15R-243	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)
11,206.0	88.50	183.70	7,116.5	-4,100.9	262.5	4,109.2	1.94	1.94	0.00
11,238.0	89.10	182.80	7,117.1	-4,132.9	260.7	4,140.9	3.38	1.88	-2.81
11,270.0	89.30	182.30	7,117.6	-4,164.8	259.2	4,172.7	1.68	0.63	-1.56
11,302.0	89.30	182.60	7,118.0	-4,196.8	257.9	4,204.5	0.94	0.00	0.94
11,334.0	89.10	182.30	7,118.4	-4,228.8	256.5	4,236.3	1.13	-0.63	-0.94
11,366.0	89.30	182.40	7,118.9	-4,260.7	255.2	4,268.0	0.70	0.63	0.31
11,397.0	89.40	182.30	7,119.2	-4,291.7	253.9	4,298.8	0.46	0.32	-0.32
11,429.0	88.90	181.90	7,119.7	-4,323.7	252.7	4,330.7	2.00	-1.56	-1.25
11,461.0	89.00	181.90	7,120.3	-4,355.7	251.7	4,362.5	0.31	0.31	0.00
11,492.0	88.80	181.90	7,120.9	-4,386.6	250.7	4,393.3	0.65	-0.65	0.00
11,511.0	88.80	181.90	7,121.3	-4,405.6	250.0	4,412.2	0.00	0.00	0.00
11,561.6	88.80	181.90	7,122.3	-4,456.2	248.3	4,462.5	0.00	0.00	0.00
BHL 500'FSL & 1704'FEL									
11,565.0	88.80	181.90	7,122.4	-4,459.6	248.2	4,465.9	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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