

Occidental Petroleum

Weld County, CO (UTM-NAD83)

BERRY FARMS 8-8HZ PAD

BERRY FARMS 8-3HZ

OH

Design: OH

Standard Survey Report

21 March, 2023



Project: Weld County, CO (UTM-NAD83)
Site: BERRY FARMS 8-8HZ PAD
Well: BERRY FARMS 8-3HZ
Wellbore: OH
Design: OH
Lat: 40.243721
Long: -104.908236
GL: 4817.00
KB: PD 461 @ 4837.00usft



Azimuths to True North
Magnetic North: 7.98°
Magnetic Field
Strength: 51722.0nT
Dip Angle: 66.43°
Date: 12/31/2022
Model: HDGM2022_FILE

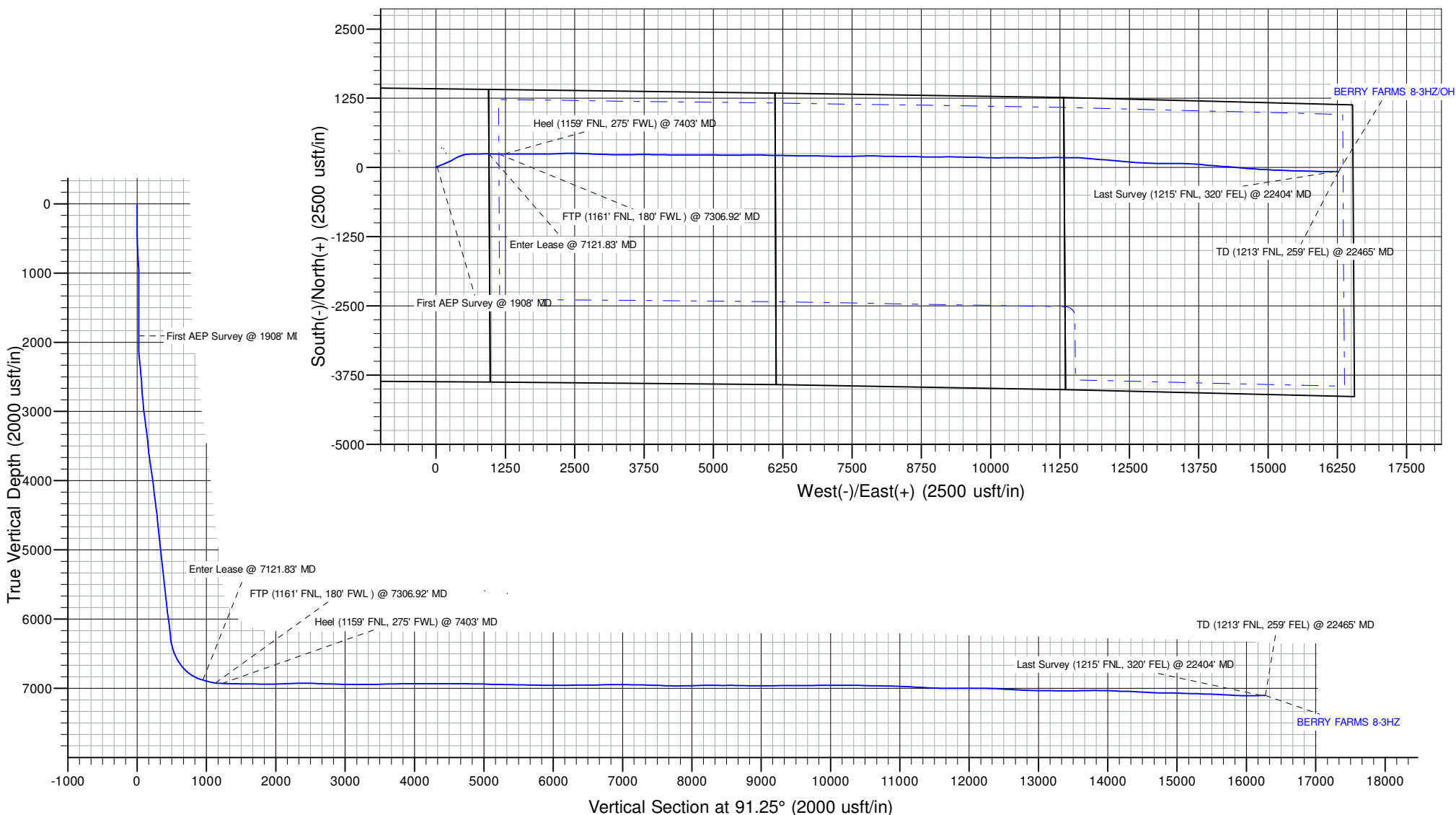
WELL DETAILS: BERRY FARMS 8-3HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14615497.27	1666023.62	40.243721	-104.908236

SHL: 1423' FNL, 954' FEL - Sec 8-T3N-R67W
Heel: 1159' FNL, 275' FWL - Sec 9-T3N-R67W
BHL: 1213' FNL, 259' FEL - Sec 11-T3N-R67W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1908.00	0.16	198.21	1907.29	14.95	21.76	21.42	37.06	First AEP Survey @ 1908' MD
7121.83	74.65	90.67	6881.29	249.08	952.12	946.46	1018.65	Enter Lease @ 7121.83' MD
7306.92	83.73	89.13	6924.16	247.12	1131.91	1126.25	1198.42	FTP (1161' FNL, 180' FWL) @ 7306.92' MD
7403.00	88.61	90.84	6930.42	247.24	1227.76	1222.07	1294.22	Heel (1159' FNL, 275' FWL) @ 7403' MD
22404.00	91.31	89.66	7105.77	-72.63	16213.47	16211.19	16290.41	Last Survey (1215' FNL, 320' FEL) @ 22404' MD
22465.00	91.31	89.66	7104.38	-72.27	16274.45	16272.15	16351.39	TD (1213' FNL, 259' FEL) @ 22465' MD



Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-3HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Project	Weld County, CO (UTM-NAD83)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		BERRY FARMS 8-8HZ PAD			
Site Position:		Northing:	14,615,497.59 usft	Latitude:	40.243722
From:	Lat/Long	Easting:	1,665,993.52 usft	Longitude:	-104.908344
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well		BERRY FARMS 8-3HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,615,497.27 usft	Latitude:	40.243721
	+E/-W	0.00 usft	Easting:	1,666,023.62 usft	Longitude:	-104.908236
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,817.00 usft
Grid Convergence:		0.06 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2022_FILE	12/31/2022	7.98	66.43	51,722.00000000

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	91.25	

Survey Program	Date	3/21/2023			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
7.00	1,825.00	Surface MWD (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,908.00	22,465.00	MWD Surveys (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	
86.00	0.45	248.08	86.00	-0.12	-0.29	-0.29	0.57	0.57	0.00	
178.00	0.17	58.55	178.00	-0.18	-0.51	-0.50	0.67	-0.30	185.29	
270.00	0.53	74.05	270.00	0.01	0.02	0.02	0.40	0.39	16.85	
360.00	0.32	39.97	359.99	0.32	0.58	0.57	0.36	-0.23	-37.87	
449.00	0.69	36.60	448.99	0.94	1.06	1.04	0.42	0.42	-3.79	
539.00	1.33	60.95	538.98	1.88	2.30	2.25	0.84	0.71	27.06	
628.00	3.23	53.23	627.90	3.88	5.21	5.12	2.16	2.13	-8.67	

Survey Report

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Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
718.00	3.52	49.81	717.75	7.18	9.35	9.19	0.39	0.32	-3.80
807.00	3.86	58.05	806.56	10.53	13.98	13.75	0.71	0.38	9.26
897.00	2.90	63.61	896.40	13.15	18.59	18.30	1.13	-1.07	6.18
987.00	1.44	69.52	986.34	14.55	21.69	21.36	1.64	-1.62	6.57
1,076.00	0.50	240.94	1,075.33	14.76	22.40	22.07	2.18	-1.06	192.61
1,166.00	1.05	237.39	1,165.32	14.12	21.36	21.04	0.61	0.61	-3.94
1,255.00	0.60	6.39	1,254.32	14.14	20.72	20.41	1.69	-0.51	144.94
1,345.00	0.75	51.57	1,344.31	14.98	21.24	20.90	0.60	0.17	50.20
1,434.00	0.75	46.19	1,433.30	15.74	22.11	21.76	0.08	0.00	-6.04
1,523.00	0.35	83.98	1,522.30	16.18	22.80	22.45	0.58	-0.45	42.46
1,613.00	0.17	289.43	1,612.30	16.25	22.95	22.59	0.57	-0.20	-171.72
1,703.00	0.44	213.37	1,702.30	16.00	22.64	22.28	0.48	0.30	-84.51
1,792.00	0.39	235.40	1,791.30	15.55	22.20	21.85	0.19	-0.06	24.75
1,825.00	0.52	216.52	1,824.30	15.36	22.02	21.68	0.60	0.39	-57.21
1,908.00	0.16	198.21	1,907.29	14.95	21.76	21.42	0.45	-0.43	-22.06
First AEP Survey @ 1908' MD									
2,000.00	0.27	247.80	1,999.29	14.75	21.52	21.19	0.22	0.12	53.90
2,095.00	2.05	63.21	2,094.27	15.43	22.82	22.48	2.44	1.87	184.64
2,188.00	4.52	63.79	2,187.11	17.80	27.60	27.20	2.66	2.66	0.62
2,282.00	6.57	70.42	2,280.67	21.23	35.99	35.52	2.28	2.18	7.05
2,374.00	5.99	68.72	2,372.12	24.74	45.42	44.87	0.66	-0.63	-1.85
2,467.00	5.52	66.00	2,464.65	28.32	54.03	53.40	0.58	-0.51	-2.92
2,558.00	5.13	63.87	2,555.26	31.89	61.68	60.97	0.48	-0.43	-2.34
2,652.00	4.38	61.42	2,648.93	35.46	68.61	67.82	0.83	-0.80	-2.61
2,746.00	3.69	60.15	2,742.70	38.68	74.38	73.52	0.74	-0.73	-1.35
2,839.00	5.32	73.03	2,835.41	41.43	81.10	80.18	2.05	1.75	13.85
2,932.00	6.08	76.01	2,927.95	43.88	90.00	89.02	0.88	0.82	3.20
3,024.00	7.22	71.78	3,019.33	46.87	100.22	99.18	1.35	1.24	-4.60
3,116.00	8.40	69.67	3,110.48	51.01	112.02	110.88	1.32	1.28	-2.29
3,209.00	8.81	65.82	3,202.43	56.29	124.88	123.63	0.76	0.44	-4.14
3,303.00	6.71	65.08	3,295.56	61.55	136.43	135.06	2.24	-2.23	-0.79
3,395.00	7.41	65.74	3,386.87	66.25	146.71	145.23	0.77	0.76	0.72
3,488.00	5.75	61.07	3,479.25	70.97	156.26	154.68	1.87	-1.78	-5.02
3,580.00	7.24	71.02	3,570.66	75.09	165.78	164.10	2.02	1.62	10.82
3,673.00	9.27	66.45	3,662.69	79.98	178.19	176.40	2.29	2.18	-4.91
3,766.00	8.28	63.37	3,754.60	85.98	191.04	189.12	1.18	-1.06	-3.31
3,858.00	10.20	65.14	3,845.41	92.37	204.35	202.29	2.11	2.09	1.92
3,951.00	9.04	65.76	3,937.10	98.84	218.49	216.28	1.25	-1.25	0.67
4,044.00	7.39	63.69	4,029.14	104.49	230.51	228.18	1.80	-1.77	-2.23
4,137.00	6.50	66.03	4,121.46	109.28	240.68	238.24	1.00	-0.96	2.52
4,229.00	8.20	73.73	4,212.70	113.23	251.74	249.21	2.13	1.85	8.37
4,322.00	7.67	74.73	4,304.81	116.72	264.10	261.49	0.59	-0.57	1.08
4,415.00	8.75	59.39	4,396.87	121.96	276.17	273.45	2.62	1.16	-16.49

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Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,507.00	7.43	53.90	4,487.95	129.03	287.00	284.12	1.66	-1.43	-5.97
4,600.00	6.58	49.61	4,580.25	136.02	295.92	292.88	1.07	-0.91	-4.61
4,693.00	8.25	63.01	4,672.48	142.51	305.92	302.74	2.57	1.80	14.41
4,785.00	6.47	61.41	4,763.72	147.98	316.36	313.05	1.95	-1.93	-1.74
4,877.00	6.44	62.06	4,855.14	152.88	325.47	322.06	0.09	-0.03	0.71
5,002.00	6.92	63.51	4,979.29	159.52	338.40	334.84	0.41	0.38	1.16
5,094.00	7.33	61.81	5,070.58	164.77	348.53	344.86	0.50	0.45	-1.85
5,187.00	6.94	58.73	5,162.86	170.49	358.57	354.76	0.59	-0.42	-3.31
5,279.00	7.61	64.20	5,254.12	176.02	368.80	364.87	1.05	0.73	5.95
5,371.00	7.96	56.08	5,345.27	182.23	379.57	375.51	1.25	0.38	-8.83
5,463.00	7.17	61.01	5,436.47	188.57	389.88	385.67	1.11	-0.86	5.36
5,556.00	7.29	71.18	5,528.73	193.28	400.54	396.23	1.38	0.13	10.94
5,649.00	6.50	67.89	5,621.06	197.17	411.00	406.61	0.95	-0.85	-3.54
5,742.00	6.03	70.34	5,713.51	200.79	420.48	416.00	0.58	-0.51	2.63
5,834.00	7.26	69.53	5,804.89	204.45	430.48	425.92	1.34	1.34	-0.88
5,927.00	7.93	71.34	5,897.07	208.56	442.06	437.41	0.76	0.72	1.95
6,019.00	8.01	71.22	5,988.18	212.65	454.14	449.40	0.09	0.09	-0.13
6,111.00	7.52	65.43	6,079.34	217.22	465.69	460.84	1.00	-0.53	-6.29
6,203.00	7.22	66.35	6,170.58	222.04	476.46	471.50	0.35	-0.33	1.00
6,296.00	4.88	61.14	6,263.06	226.30	485.28	480.22	2.58	-2.52	-5.60
6,388.00	12.72	73.22	6,353.91	231.12	498.42	493.26	8.71	8.52	13.13
6,481.00	17.92	81.17	6,443.58	236.27	522.38	517.10	6.02	5.59	8.55
6,573.00	24.54	86.15	6,529.30	239.73	555.47	550.11	7.45	7.20	5.41
6,665.00	31.41	87.34	6,610.50	242.13	598.53	593.11	7.49	7.47	1.29
6,757.00	38.49	88.45	6,685.86	244.02	651.16	645.69	7.73	7.70	1.21
6,849.00	48.71	89.93	6,752.40	244.84	714.52	709.01	11.16	11.11	1.61
6,941.00	56.66	88.42	6,808.13	245.94	787.62	782.06	8.74	8.64	-1.64
7,034.00	66.66	88.24	6,852.22	248.33	869.33	863.71	10.75	10.75	-0.19
7,121.83	74.65	90.67	6,881.29	249.08	952.12	946.46	9.46	9.10	2.77
Enter Lease @ 7121.83' MD									
7,126.00	75.03	90.78	6,882.38	249.03	956.15	950.49	9.46	9.11	2.64
7,218.00	73.96	91.30	6,906.97	247.42	1,044.78	1,039.14	1.28	-1.16	0.57
7,306.92	83.73	89.13	6,924.16	247.12	1,131.91	1,126.25	11.25	10.99	-2.44
FTP (1161' FNL, 180' FWL) @ 7306.92' MD									
7,310.00	84.07	89.06	6,924.49	247.17	1,134.97	1,129.31	11.25	11.00	-2.37
7,403.00	88.61	90.84	6,930.42	247.24	1,227.76	1,222.07	5.24	4.88	1.91
Heel (1159' FNL, 275' FWL) @ 7403' MD									
7,495.00	88.76	90.78	6,932.53	245.94	1,319.72	1,314.04	0.18	0.16	-0.07
7,589.00	88.46	91.14	6,934.81	244.37	1,413.68	1,408.01	0.50	-0.32	0.38
7,681.00	88.95	90.06	6,936.89	243.41	1,505.65	1,499.98	1.29	0.53	-1.17
7,773.00	89.21	89.83	6,938.37	243.49	1,597.64	1,591.95	0.38	0.28	-0.25
7,866.00	88.83	89.50	6,939.96	244.04	1,690.62	1,684.90	0.54	-0.41	-0.35
7,958.00	89.73	89.81	6,941.12	244.59	1,782.61	1,776.85	1.03	0.98	0.34
8,050.00	90.15	89.73	6,941.21	244.96	1,874.61	1,868.82	0.46	0.46	-0.09

Survey Report

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Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,144.00	91.05	89.46	6,940.23	245.62	1,968.60	1,962.78	1.00	0.96	-0.29	
8,237.00	91.70	88.75	6,938.00	247.08	2,061.57	2,055.68	1.03	0.70	-0.76	
8,330.00	93.10	88.39	6,934.10	249.40	2,154.45	2,148.50	1.55	1.51	-0.39	
8,422.00	91.19	87.90	6,930.66	252.37	2,246.34	2,240.30	2.14	-2.08	-0.53	
8,514.00	91.19	88.61	6,928.75	255.17	2,338.27	2,332.15	0.77	0.00	0.77	
8,607.00	89.28	89.88	6,928.37	256.40	2,431.26	2,425.09	2.47	-2.05	1.37	
8,700.00	88.76	91.74	6,929.96	255.08	2,524.23	2,518.06	2.08	-0.56	2.00	
8,792.00	87.44	90.56	6,933.01	253.24	2,616.16	2,610.01	1.92	-1.43	-1.28	
8,886.00	88.50	92.83	6,936.34	250.46	2,710.05	2,703.94	2.66	1.13	2.41	
8,978.00	88.57	92.79	6,938.69	245.95	2,801.91	2,795.88	0.09	0.08	-0.04	
9,071.00	88.70	92.28	6,940.90	241.84	2,894.79	2,888.83	0.57	0.14	-0.55	
9,164.00	88.80	91.37	6,942.93	238.88	2,987.72	2,981.80	0.98	0.11	-0.98	
9,256.00	88.88	91.25	6,944.80	236.77	3,079.68	3,073.78	0.16	0.09	-0.13	
9,349.00	90.67	91.42	6,945.16	234.61	3,172.65	3,166.78	1.93	1.92	0.18	
9,442.00	90.22	90.96	6,944.44	232.68	3,265.62	3,259.77	0.69	-0.48	-0.49	
9,535.00	90.73	90.61	6,943.67	231.40	3,358.61	3,352.77	0.67	0.55	-0.38	
9,628.00	90.62	89.51	6,942.57	231.30	3,451.60	3,445.74	1.19	-0.12	-1.18	
9,721.00	90.61	88.87	6,941.57	232.62	3,544.59	3,538.67	0.69	-0.01	-0.69	
9,815.00	91.62	88.15	6,939.74	235.06	3,638.54	3,632.54	1.32	1.07	-0.77	
9,909.00	92.16	89.85	6,936.64	236.70	3,732.47	3,726.42	1.90	0.57	1.81	
10,001.00	91.09	90.36	6,934.04	236.53	3,824.43	3,818.36	1.29	-1.16	0.55	
10,093.00	89.95	91.68	6,933.20	234.90	3,916.41	3,910.35	1.90	-1.24	1.43	
10,186.00	91.05	91.09	6,932.39	232.65	4,009.38	4,003.35	1.34	1.18	-0.63	
10,278.00	88.60	91.44	6,932.67	230.62	4,101.35	4,095.34	2.69	-2.66	0.38	
10,370.00	89.34	90.64	6,934.32	228.95	4,193.31	4,187.32	1.18	0.80	-0.87	
10,463.00	89.61	90.53	6,935.18	228.00	4,286.31	4,280.31	0.31	0.29	-0.12	
10,557.00	90.08	90.19	6,935.43	227.41	4,380.30	4,374.30	0.62	0.50	-0.36	
10,651.00	89.74	89.98	6,935.58	227.27	4,474.30	4,468.28	0.43	-0.36	-0.22	
10,743.00	90.81	89.71	6,935.14	227.52	4,566.30	4,560.25	1.20	1.16	-0.29	
10,838.00	90.05	90.69	6,934.42	227.19	4,661.29	4,655.23	1.31	-0.80	1.03	
10,930.00	88.29	90.85	6,935.76	225.95	4,753.27	4,747.21	1.92	-1.91	0.17	
11,023.00	89.10	90.17	6,937.87	225.12	4,846.24	4,840.18	1.14	0.87	-0.73	
11,117.00	89.82	89.92	6,938.76	225.05	4,940.24	4,934.15	0.81	0.77	-0.27	
11,210.00	88.14	89.96	6,940.42	225.15	5,033.22	5,027.11	1.81	-1.81	0.04	
11,302.00	88.47	90.54	6,943.14	224.74	5,125.18	5,119.06	0.73	0.36	0.63	
11,394.00	88.48	89.99	6,945.59	224.32	5,217.14	5,211.01	0.60	0.01	-0.60	
11,488.00	88.80	90.21	6,947.82	224.16	5,311.12	5,304.96	0.41	0.34	0.23	
11,580.00	89.41	90.01	6,949.25	223.98	5,403.11	5,396.93	0.70	0.66	-0.22	
11,673.00	89.34	89.34	6,950.27	224.51	5,496.10	5,489.89	0.72	-0.08	-0.72	
11,766.00	88.96	88.87	6,951.65	225.96	5,589.08	5,582.82	0.65	-0.41	-0.51	
11,859.00	88.22	88.96	6,953.94	227.72	5,682.03	5,675.71	0.80	-0.80	0.10	
11,951.00	89.71	91.29	6,955.60	227.52	5,774.01	5,767.67	3.01	1.62	2.53	
12,044.00	89.67	91.06	6,956.10	225.61	5,866.99	5,860.67	0.25	-0.04	-0.25	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-3HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,137.00	89.34	90.99	6,956.90	223.95	5,959.97	5,953.66	0.36	-0.35	-0.08	
12,229.00	88.84	90.83	6,958.37	222.49	6,051.94	6,045.65	0.57	-0.54	-0.17	
12,321.00	90.81	91.31	6,958.65	220.77	6,143.92	6,137.64	2.20	2.14	0.52	
12,414.00	91.52	90.92	6,956.76	218.96	6,236.89	6,230.62	0.87	0.76	-0.42	
12,506.00	90.28	91.66	6,955.31	216.89	6,328.85	6,322.61	1.57	-1.35	0.80	
12,600.00	90.39	91.34	6,954.76	214.43	6,422.81	6,416.61	0.36	0.12	-0.34	
12,693.00	90.43	91.40	6,954.10	212.20	6,515.79	6,509.61	0.08	0.04	0.06	
12,785.00	90.85	90.92	6,953.07	210.34	6,607.76	6,601.60	0.69	0.46	-0.52	
12,877.00	90.84	90.88	6,951.71	208.90	6,699.74	6,693.59	0.04	-0.01	-0.04	
12,970.00	91.35	90.08	6,949.93	208.12	6,792.72	6,786.56	1.02	0.55	-0.86	
13,063.00	91.21	90.63	6,947.86	207.54	6,885.69	6,879.53	0.61	-0.15	0.59	
13,155.00	89.27	90.87	6,947.47	206.34	6,977.68	6,971.52	2.12	-2.11	0.26	
13,247.00	88.94	90.79	6,948.91	205.00	7,069.66	7,063.50	0.37	-0.36	-0.09	
13,340.00	88.93	90.80	6,950.64	203.71	7,162.63	7,156.48	0.02	-0.01	0.01	
13,432.00	89.96	90.06	6,951.53	203.02	7,254.62	7,248.47	1.38	1.12	-0.80	
13,524.00	88.24	90.07	6,952.97	202.92	7,346.61	7,340.43	1.87	-1.87	0.01	
13,616.00	87.92	89.95	6,956.06	202.90	7,438.56	7,432.36	0.37	-0.35	-0.13	
13,708.00	87.41	89.10	6,959.80	203.67	7,530.48	7,524.24	1.08	-0.55	-0.92	
13,801.00	88.25	88.98	6,963.32	205.22	7,623.40	7,617.11	0.91	0.90	-0.13	
13,893.00	88.76	88.65	6,965.73	207.12	7,715.34	7,708.99	0.66	0.55	-0.36	
13,986.00	90.55	89.93	6,966.29	208.28	7,808.33	7,801.93	2.37	1.92	1.38	
14,079.00	91.31	90.36	6,964.78	208.04	7,901.32	7,894.90	0.94	0.82	0.46	
14,171.00	90.83	91.36	6,963.06	206.66	7,993.29	7,986.88	1.21	-0.52	1.09	
14,263.00	91.41	90.87	6,961.26	204.87	8,085.25	8,078.86	0.83	0.63	-0.53	
14,355.00	90.42	91.60	6,959.79	202.89	8,177.22	8,170.85	1.34	-1.08	0.79	
14,447.00	90.68	91.20	6,958.91	200.64	8,269.19	8,262.84	0.52	0.28	-0.43	
14,539.00	89.08	90.64	6,959.10	199.16	8,361.17	8,354.84	1.84	-1.74	-0.61	
14,632.00	89.78	90.76	6,960.02	198.03	8,454.16	8,447.83	0.76	0.75	0.13	
14,725.00	90.65	90.94	6,959.68	196.65	8,547.15	8,540.82	0.96	0.94	0.19	
14,818.00	88.93	90.88	6,960.02	195.17	8,640.13	8,633.82	1.85	-1.85	-0.06	
14,912.00	89.41	90.84	6,961.38	193.76	8,734.11	8,727.81	0.51	0.51	-0.04	
15,004.00	89.72	90.80	6,962.08	192.44	8,826.10	8,819.80	0.34	0.34	-0.04	
15,097.00	89.78	90.38	6,962.48	191.49	8,919.09	8,912.79	0.46	0.06	-0.45	
15,189.00	89.87	90.29	6,962.76	190.95	9,011.09	9,004.78	0.14	0.10	-0.10	
15,281.00	90.17	88.77	6,962.73	191.70	9,103.08	9,096.74	1.68	0.33	-1.65	
15,375.00	90.68	89.22	6,962.03	193.35	9,197.07	9,190.66	0.72	0.54	0.48	
15,468.00	90.78	91.47	6,960.85	192.79	9,290.05	9,283.63	2.42	0.11	2.42	
15,560.00	89.44	91.62	6,960.67	190.31	9,382.02	9,375.63	1.47	-1.46	0.16	
15,653.00	89.87	90.95	6,961.23	188.23	9,474.99	9,468.63	0.86	0.46	-0.72	
15,746.00	89.83	91.07	6,961.48	186.59	9,567.98	9,561.63	0.14	-0.04	0.13	
15,838.00	90.07	91.13	6,961.56	184.82	9,659.96	9,653.63	0.27	0.26	0.07	
15,930.00	90.48	91.52	6,961.11	182.69	9,751.93	9,745.63	0.62	0.45	0.42	
16,022.00	91.73	91.27	6,959.34	180.45	9,843.89	9,837.61	1.39	1.36	-0.27	
16,114.00	90.66	91.80	6,957.42	177.99	9,935.83	9,929.58	1.30	-1.16	0.58	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-3HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,206.00	88.93	90.83	6,957.75	175.88	10,027.80	10,021.58	2.16	-1.88	-1.05	
16,299.00	89.39	90.30	6,959.11	174.96	10,120.79	10,114.56	0.75	0.49	-0.57	
16,391.00	89.54	89.31	6,959.97	175.27	10,212.78	10,206.53	1.09	0.16	-1.08	
16,484.00	90.90	89.37	6,959.62	176.35	10,305.77	10,299.47	1.46	1.46	0.06	
16,576.00	89.01	90.34	6,959.69	176.58	10,397.77	10,391.44	2.31	-2.05	1.05	
16,668.00	89.27	90.07	6,961.07	176.25	10,489.76	10,483.41	0.41	0.28	-0.29	
16,760.00	89.03	90.95	6,962.43	175.43	10,581.74	10,575.40	0.99	-0.26	0.96	
16,853.00	88.06	90.59	6,964.80	174.18	10,674.70	10,668.36	1.11	-1.04	-0.39	
16,945.00	88.35	90.30	6,967.68	173.47	10,766.65	10,760.31	0.45	0.32	-0.32	
17,038.00	89.10	88.57	6,969.75	174.38	10,859.62	10,853.23	2.03	0.81	-1.86	
17,131.00	89.29	89.09	6,971.05	176.28	10,952.59	10,946.14	0.60	0.20	0.56	
17,223.00	87.22	88.63	6,973.86	178.11	11,044.53	11,038.01	2.30	-2.25	-0.50	
17,316.00	86.85	88.74	6,978.67	180.24	11,137.38	11,130.79	0.42	-0.40	0.12	
17,408.00	87.17	90.43	6,983.46	180.91	11,229.25	11,222.63	1.87	0.35	1.84	
17,500.00	86.99	91.22	6,988.15	179.59	11,321.12	11,314.50	0.88	-0.20	0.86	
17,593.00	87.10	90.18	6,992.95	178.45	11,413.98	11,407.37	1.12	0.12	-1.12	
17,687.00	86.92	90.17	6,997.85	178.16	11,507.86	11,501.23	0.19	-0.19	-0.01	
17,779.00	88.90	92.93	7,001.20	175.68	11,599.75	11,593.15	3.69	2.15	3.00	
17,871.00	90.11	95.14	7,002.00	169.20	11,691.51	11,685.03	2.74	1.32	2.40	
17,964.00	90.67	95.27	7,001.37	160.77	11,784.12	11,777.81	0.62	0.60	0.14	
18,056.00	89.79	94.98	7,001.00	152.55	11,875.75	11,869.60	1.01	-0.96	-0.32	
18,149.00	89.97	94.82	7,001.19	144.61	11,968.41	11,962.41	0.26	0.19	-0.17	
18,242.00	90.54	93.90	7,000.78	137.54	12,061.14	12,055.27	1.16	0.61	-0.99	
18,334.00	90.34	94.64	7,000.07	130.69	12,152.88	12,147.14	0.83	-0.22	0.80	
18,427.00	88.30	95.22	7,001.18	122.69	12,245.53	12,239.94	2.28	-2.19	0.62	
18,519.00	89.27	94.72	7,003.13	114.73	12,337.16	12,331.72	1.19	1.05	-0.54	
18,613.00	86.42	94.59	7,006.66	107.10	12,430.77	12,425.48	3.04	-3.03	-0.14	
18,707.00	86.32	94.68	7,012.61	99.52	12,524.28	12,519.13	0.14	-0.11	0.10	
18,800.00	86.80	94.50	7,018.19	92.09	12,616.81	12,611.80	0.55	0.52	-0.19	
18,893.00	86.63	93.87	7,023.52	85.32	12,709.41	12,704.53	0.70	-0.18	-0.68	
18,985.00	88.10	92.08	7,027.75	80.55	12,801.18	12,796.38	2.52	1.60	-1.95	
19,078.00	88.54	92.41	7,030.48	76.91	12,894.07	12,889.33	0.59	0.47	0.35	
19,171.00	88.87	91.41	7,032.58	73.81	12,987.00	12,982.29	1.13	0.35	-1.08	
19,263.00	89.17	90.75	7,034.15	72.08	13,078.96	13,074.28	0.79	0.33	-0.72	
19,355.00	89.44	90.68	7,035.27	70.93	13,170.95	13,166.27	0.30	0.29	-0.08	
19,448.00	89.12	89.38	7,036.44	70.88	13,263.94	13,259.24	1.44	-0.34	-1.40	
19,541.00	89.64	88.93	7,037.44	72.25	13,356.93	13,352.17	0.74	0.56	-0.48	
19,633.00	90.45	90.56	7,037.37	72.66	13,448.92	13,444.13	1.98	0.88	1.77	
19,727.00	90.74	92.72	7,036.40	69.97	13,542.87	13,538.12	2.32	0.31	2.30	
19,819.00	90.61	94.28	7,035.31	64.35	13,634.69	13,630.04	1.70	-0.14	1.70	
19,911.00	91.80	94.21	7,033.38	57.55	13,726.42	13,721.89	1.30	1.29	-0.08	
20,004.00	90.00	95.07	7,031.92	50.02	13,819.09	13,814.72	2.14	-1.94	0.92	
20,097.00	88.87	95.76	7,032.83	41.25	13,911.67	13,907.46	1.42	-1.22	0.74	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well BERRY FARMS 8-3HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4837.00usft
Site:	BERRY FARMS 8-8HZ PAD	MD Reference:	PD 461 @ 4837.00usft
Well:	BERRY FARMS 8-3HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	FHartmann

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
20,190.00	87.59	94.30	7,035.71	33.10	14,004.27	14,000.21	2.09	-1.38	-1.57	
20,283.00	87.82	94.75	7,039.43	25.77	14,096.90	14,092.99	0.54	0.25	0.48	
20,376.00	88.18	93.80	7,042.68	18.84	14,189.59	14,185.80	1.09	0.39	-1.02	
20,468.00	88.88	93.55	7,045.04	12.94	14,281.37	14,277.68	0.81	0.76	-0.27	
20,560.00	86.62	94.67	7,048.65	6.36	14,373.05	14,369.49	2.74	-2.46	1.22	
20,652.00	86.90	95.26	7,053.85	-1.59	14,464.56	14,461.15	0.71	0.30	0.64	
20,746.00	87.03	94.96	7,058.82	-9.95	14,558.05	14,554.81	0.35	0.14	-0.32	
20,838.00	87.64	94.54	7,063.10	-17.56	14,649.64	14,646.53	0.80	0.66	-0.46	
20,930.00	88.40	94.04	7,066.28	-24.44	14,741.32	14,738.35	0.99	0.83	-0.54	
21,023.00	89.23	94.65	7,068.20	-31.49	14,834.04	14,831.19	1.11	0.89	0.66	
21,115.00	88.67	92.26	7,069.89	-37.03	14,925.85	14,923.10	2.67	-0.61	-2.60	
21,207.00	89.40	93.00	7,071.44	-41.25	15,017.74	15,015.06	1.13	0.79	0.80	
21,299.00	88.46	92.65	7,073.16	-45.78	15,109.61	15,107.01	1.09	-1.02	-0.38	
21,391.00	87.50	92.08	7,076.40	-49.58	15,201.47	15,198.93	1.21	-1.04	-0.62	
21,484.00	88.23	91.95	7,079.87	-52.85	15,294.35	15,291.86	0.80	0.78	-0.14	
21,576.00	88.93	91.32	7,082.14	-55.47	15,386.28	15,383.83	1.02	0.76	-0.68	
21,669.00	88.18	91.74	7,084.49	-57.95	15,479.22	15,476.80	0.92	-0.81	0.45	
21,761.00	86.44	92.17	7,088.81	-61.09	15,571.06	15,568.68	1.95	-1.89	0.47	
21,853.00	86.75	91.61	7,094.27	-64.12	15,662.84	15,660.52	0.69	0.34	-0.61	
21,946.00	87.21	91.14	7,099.17	-66.34	15,755.69	15,753.39	0.71	0.49	-0.51	
22,038.00	87.86	91.23	7,103.13	-68.25	15,847.58	15,845.30	0.71	0.71	0.10	
22,131.00	88.42	91.01	7,106.15	-70.06	15,940.52	15,938.25	0.65	0.60	-0.24	
22,224.00	89.70	90.73	7,107.67	-71.47	16,033.49	16,031.23	1.41	1.38	-0.30	
22,318.00	90.74	90.52	7,107.31	-72.50	16,127.48	16,125.23	1.13	1.11	-0.22	
22,404.00	91.31	89.66	7,105.77	-72.63	16,213.47	16,211.19	1.20	0.66	-1.00	
Last Survey (1215' FNL, 320' FEL) @ 22404' MD										
22,465.00	91.31	89.66	7,104.38	-72.27	16,274.45	16,272.15	0.00	0.00	0.00	
TD (1213' FNL, 259' FEL) @ 22465' MD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,908.00	1,907.29	14.95	21.76	First AEP Survey @ 1908' MD	
7,121.83	6,881.29	249.08	952.12	Enter Lease @ 7121.83' MD	
7,306.92	6,924.16	247.12	1,131.91	FTP (1161' FNL, 180' FWL) @ 7306.92' MD	
7,403.00	6,930.42	247.24	1,227.76	Heel (1159' FNL, 275' FWL) @ 7403' MD	
22,404.00	7,105.77	-72.63	16,213.47	Last Survey (1215' FNL, 320' FEL) @ 22404' MD	
22,465.00	7,104.38	-72.27	16,274.45	TD (1213' FNL, 259' FEL) @ 22465' MD	

Checked By: _____	Approved By: _____	Date: _____
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