



Extraction Oil & Gas

WELD COUNTY, CO

Hester Farms PAD

Hester Farms D-36HN

Hester Farms D-36HN

Survey: Survey #1

Standard Survey Report

07 February, 2017



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Hester Farms D-36HN
Project:	WELD COUNTY, CO	TVD Reference:	New KB @ 4943.00ft (Cyclone 37)
Site:	Hester Farms PAD	MD Reference:	New KB @ 4943.00ft (Cyclone 37)
Well:	Hester Farms D-36HN	North Reference:	True
Wellbore:	Hester Farms D-36HN	Survey Calculation Method:	Minimum Curvature
Design:	Hester Farms D-36HN	Database:	EDM 5000.1 Single User Db

Project	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		

Site	Hester Farms PAD				
Site Position:		Northing:	1,437,864.48 usft	Latitude:	40° 32' 0.294 N
From:	Lat/Long	Easting:	3,185,849.36 usft	Longitude:	104° 49' 52.968 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16"	Grid Convergence:	0.43 °

Well	Hester Farms D-36HN					
Well Position	+N/-S	0.00 ft	Northing:	1,437,894.33 usft	Latitude:	40° 32' 0.589 N
	+E/-W	0.00 ft	Easting:	3,185,849.13 usft	Longitude:	104° 49' 52.968 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,915.00 ft

Wellbore	Hester Farms D-36HN				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/02/16	8.32	66.97	52,525

Design	Hester Farms D-36HN				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	278.96	

Survey Program	Date	01/18/17			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
127.00	11,874.00	Survey #1 (Hester Farms D-36HN)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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	
127.00	1.10	161.20	126.99	-1.15	0.39	-0.57	0.87	0.87	0.00	
159.00	1.20	141.70	158.99	-1.71	0.70	-0.96	1.26	0.31	-60.94	
191.00	0.60	107.30	190.98	-2.02	1.07	-1.37	2.44	-1.88	-107.50	
254.00	0.90	78.30	253.98	-2.02	1.87	-2.16	0.75	0.48	-46.03	
350.00	0.90	62.60	349.97	-1.52	3.27	-3.47	0.26	0.00	-16.35	
445.00	0.90	63.20	444.95	-0.84	4.60	-4.68	0.01	0.00	0.63	
541.00	0.90	44.90	540.94	0.04	5.81	-5.73	0.30	0.00	-19.06	
636.00	0.80	30.00	635.93	1.14	6.67	-6.41	0.25	-0.11	-15.68	
700.00	2.00	14.90	699.91	2.60	7.18	-6.68	1.95	1.88	-23.59	
732.00	2.30	9.30	731.89	3.78	7.42	-6.74	1.14	0.94	-17.50	
764.00	2.30	8.10	763.86	5.05	7.62	-6.74	0.15	0.00	-3.75	
795.00	2.90	0.40	794.83	6.45	7.71	-6.61	2.24	1.94	-24.84	

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Wellbore:	Hester Farms D-36HN	Survey Calculation Method:	Minimum Curvature
Design:	Hester Farms D-36HN	Database:	EDM 5000.1 Single User Db

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827.00	3.80	2.80	826.78	8.32	7.77	-6.38	2.85	2.81	7.50	
859.00	4.30	8.90	858.70	10.56	8.01	-6.26	2.06	1.56	19.06	
927.00	4.80	5.70	926.48	15.91	8.68	-6.10	0.82	0.74	-4.71	
986.00	4.80	359.60	985.28	20.83	8.91	-5.56	0.86	0.00	-10.34	
1,050.00	4.70	353.70	1,049.06	26.12	8.60	-4.43	0.78	-0.16	-9.22	
1,082.00	5.20	359.80	1,080.94	28.87	8.46	-3.85	2.27	1.56	19.06	
1,145.00	6.20	4.50	1,143.62	35.12	8.71	-3.13	1.75	1.59	7.46	
1,239.00	5.80	356.70	1,237.11	44.92	8.84	-1.73	0.97	-0.43	-8.30	
1,271.00	5.80	356.70	1,268.95	48.15	8.65	-1.04	0.00	0.00	0.00	
1,303.00	7.00	358.40	1,300.75	51.71	8.50	-0.34	3.80	3.75	5.31	
1,333.00	7.20	1.40	1,330.52	55.42	8.50	0.24	1.40	0.67	10.00	
1,364.00	7.50	4.10	1,361.26	59.38	8.69	0.67	1.48	0.97	8.71	
1,428.00	7.70	10.80	1,424.70	67.76	9.79	0.88	1.42	0.31	10.47	
1,491.00	7.50	7.90	1,487.15	75.98	11.15	0.83	0.69	-0.32	-4.60	
1,555.00	7.40	5.40	1,550.61	84.22	12.11	1.16	0.53	-0.16	-3.91	
1,657.00	7.20	359.06	1,651.78	97.15	12.62	2.67	0.81	-0.20	-6.22	
1,752.00	8.22	2.37	1,745.92	109.89	12.81	4.47	1.17	1.07	3.48	
1,846.00	10.12	6.86	1,838.72	124.80	14.07	5.55	2.16	2.02	4.78	
1,941.00	10.12	4.57	1,932.24	141.41	15.73	6.49	0.42	0.00	-2.41	
2,036.00	9.72	3.95	2,025.82	157.73	16.95	7.83	0.44	-0.42	-0.65	
2,131.00	9.01	2.28	2,119.55	173.16	17.80	9.40	0.80	-0.75	-1.76	
2,225.00	11.18	9.08	2,212.10	189.52	19.53	10.24	2.63	2.31	7.23	
2,320.00	10.78	6.46	2,305.36	207.44	21.98	10.61	0.67	-0.42	-2.76	
2,415.00	9.90	5.98	2,398.81	224.39	23.83	11.42	0.93	-0.93	-0.51	
2,604.00	11.18	1.44	2,584.62	258.87	25.99	14.67	0.81	0.68	-2.40	
2,699.00	10.52	0.65	2,677.93	276.75	26.32	17.13	0.71	-0.69	-0.83	
2,794.00	10.21	359.54	2,771.38	293.84	26.35	19.76	0.39	-0.33	-1.17	
2,889.00	10.12	358.84	2,864.88	310.60	26.11	22.61	0.16	-0.09	-0.74	
2,983.00	8.79	357.87	2,957.61	326.04	25.68	25.44	1.42	-1.41	-1.03	
3,078.00	10.38	0.25	3,051.28	341.85	25.44	28.13	1.72	1.67	2.51	
3,172.00	9.90	359.28	3,143.81	358.40	25.38	30.78	0.54	-0.51	-1.03	
3,267.00	10.38	0.25	3,237.32	375.12	25.32	33.45	0.54	0.51	1.02	
3,362.00	8.88	358.18	3,330.98	391.01	25.12	36.12	1.62	-1.58	-2.18	
3,457.00	8.88	21.77	3,424.88	405.15	27.61	35.86	3.81	0.00	24.83	
3,551.00	12.20	18.46	3,517.28	421.32	33.44	32.61	3.59	3.53	-3.52	
3,645.00	10.78	16.48	3,609.39	439.17	39.08	29.83	1.57	-1.51	-2.11	
3,740.00	9.10	15.55	3,702.96	454.93	43.62	27.80	1.78	-1.77	-0.98	
3,835.00	12.11	14.45	3,796.33	471.82	48.12	25.99	3.18	3.17	-1.16	
3,930.00	12.99	10.58	3,889.06	491.96	52.57	24.73	1.28	0.93	-4.07	
4,024.00	12.99	10.44	3,980.65	512.74	56.42	24.16	0.03	0.00	-0.15	
4,118.00	12.99	9.34	4,072.25	533.55	60.05	23.82	0.26	0.00	-1.17	
4,213.00	11.18	9.34	4,165.14	553.18	63.28	23.69	1.91	-1.91	0.00	
4,307.00	9.19	7.87	4,257.65	569.61	65.78	23.78	2.13	-2.12	-1.56	
4,402.00	7.60	4.35	4,351.63	583.39	67.30	24.43	1.76	-1.67	-3.71	
4,497.00	9.50	6.95	4,445.57	597.43	68.73	25.21	2.04	2.00	2.74	
4,592.00	9.01	7.17	4,539.34	612.60	70.60	25.72	0.52	-0.52	0.23	
4,687.00	10.78	358.36	4,632.93	628.86	71.28	27.58	2.45	1.86	-9.27	
4,782.00	9.28	354.96	4,726.47	645.37	70.35	31.07	1.70	-1.58	-3.58	
4,876.00	8.40	352.85	4,819.35	659.74	68.83	34.81	1.00	-0.94	-2.24	
4,971.00	9.90	354.17	4,913.14	674.75	67.14	38.82	1.59	1.58	1.39	
5,065.00	9.19	353.77	5,005.84	690.25	65.50	42.86	0.76	-0.76	-0.43	
5,160.00	8.71	351.88	5,099.68	704.91	63.66	46.96	0.59	-0.51	-1.99	
5,255.00	10.21	351.74	5,193.39	720.36	61.44	51.56	1.58	1.58	-0.15	
5,350.00	8.71	352.45	5,287.10	735.83	59.28	56.10	1.58	-1.58	0.75	

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5,445.00	6.89	351.66	5,381.21	748.60	57.51	59.84	1.92	-1.92	-0.83	
5,539.00	5.39	354.17	5,474.67	758.57	56.24	62.65	1.62	-1.60	2.67	
5,635.00	4.29	1.57	5,570.33	766.64	55.88	64.26	1.32	-1.15	7.71	
5,730.00	4.11	356.06	5,665.07	773.59	55.75	65.48	0.46	-0.19	-5.80	
5,824.00	3.31	346.46	5,758.88	779.59	54.88	67.27	1.07	-0.85	-10.21	
5,918.00	2.70	345.27	5,852.75	784.37	53.68	69.20	0.65	-0.65	-1.27	
6,013.00	2.30	337.07	5,947.66	788.29	52.37	71.10	0.56	-0.42	-8.63	
6,108.00	1.81	331.65	6,042.60	791.37	50.91	73.02	0.55	-0.52	-5.71	
6,203.00	1.41	333.15	6,137.56	793.73	49.67	74.61	0.42	-0.42	1.58	
6,297.00	0.88	323.76	6,231.54	795.34	48.72	75.80	0.60	-0.56	-9.99	
6,392.00	0.88	336.94	6,326.53	796.60	48.01	76.71	0.21	0.00	13.87	
6,487.00	4.42	280.36	6,421.42	797.93	44.12	80.75	4.21	3.73	-59.56	
6,581.00	14.49	273.48	6,514.02	799.30	28.78	96.12	10.76	10.71	-7.32	
6,697.00	18.52	284.76	6,625.25	804.88	-3.54	128.92	4.42	3.47	9.72	
6,792.00	26.51	282.65	6,712.94	813.38	-38.88	165.15	8.45	8.41	-2.22	
6,887.00	37.30	276.08	6,793.49	821.10	-88.35	215.22	11.92	11.36	-6.92	
6,981.00	45.12	273.75	6,864.16	826.30	-150.00	276.93	8.48	8.32	-2.48	
7,075.00	47.99	271.67	6,928.80	829.50	-218.16	344.75	3.45	3.05	-2.21	
7,170.00	57.49	269.25	6,986.25	830.00	-293.67	419.42	10.20	10.00	-2.55	
7,265.00	61.29	270.88	7,034.62	830.12	-375.42	500.18	4.26	4.00	1.72	
7,359.00	65.09	269.07	7,077.01	830.06	-459.29	583.02	4.39	4.04	-1.93	
7,454.00	72.38	267.75	7,111.44	827.58	-547.73	669.99	7.78	7.67	-1.39	
7,548.00	82.59	268.28	7,131.79	824.41	-639.32	759.97	10.88	10.86	0.56	
7,643.00	87.10	272.25	7,140.32	824.86	-733.89	853.45	6.31	4.75	4.18	
7,738.00	91.12	269.65	7,141.80	826.44	-828.83	947.49	5.04	4.23	-2.74	
7,833.00	91.60	269.56	7,139.54	825.78	-923.80	1,041.20	0.51	0.51	-0.09	
7,928.00	91.78	269.16	7,136.74	824.72	-1,018.76	1,134.82	0.46	0.19	-0.42	
8,022.00	91.60	269.25	7,133.97	823.42	-1,112.71	1,227.42	0.21	-0.19	0.10	
8,117.00	91.78	268.85	7,131.17	821.84	-1,207.65	1,320.96	0.46	0.19	-0.42	
8,212.00	91.69	268.68	7,128.29	819.80	-1,302.59	1,414.42	0.20	-0.09	-0.18	
8,307.00	91.91	268.15	7,125.31	817.17	-1,397.50	1,507.77	0.60	0.23	-0.56	
8,402.00	89.62	269.25	7,124.04	815.02	-1,492.46	1,601.23	2.67	-2.41	1.16	
8,497.00	89.79	269.07	7,124.53	813.62	-1,587.45	1,694.84	0.26	0.18	-0.19	
8,591.00	90.19	268.37	7,124.54	811.52	-1,681.43	1,787.34	0.86	0.43	-0.74	
8,686.00	90.10	267.84	7,124.30	808.38	-1,776.37	1,880.64	0.57	-0.09	-0.56	
8,780.00	89.79	267.97	7,124.39	804.95	-1,870.31	1,972.89	0.36	-0.33	0.14	
8,875.00	89.31	267.97	7,125.14	801.58	-1,965.25	2,066.15	0.51	-0.51	0.00	
8,969.00	88.91	268.37	7,126.60	798.58	-2,059.19	2,158.47	0.60	-0.43	0.43	
9,064.00	89.88	269.87	7,127.60	797.12	-2,154.17	2,252.06	1.88	1.02	1.58	
9,159.00	88.82	270.26	7,128.68	797.23	-2,249.16	2,345.91	1.19	-1.12	0.41	
9,253.00	91.69	268.94	7,128.26	796.57	-2,343.15	2,438.65	3.36	3.05	-1.40	
9,347.00	91.30	268.77	7,125.81	794.69	-2,437.09	2,531.16	0.45	-0.41	-0.18	
9,442.00	90.10	270.04	7,124.65	793.71	-2,532.08	2,624.83	1.84	-1.26	1.34	
9,537.00	88.69	270.18	7,125.65	793.89	-2,627.07	2,718.69	1.49	-1.48	0.15	
9,631.00	91.21	269.96	7,125.73	794.00	-2,721.06	2,811.55	2.69	2.68	-0.23	
9,726.00	90.50	270.26	7,124.32	794.19	-2,816.05	2,905.41	0.81	-0.75	0.32	
9,821.00	89.48	269.96	7,124.33	794.37	-2,911.05	2,999.27	1.12	-1.07	-0.32	
9,915.00	89.88	270.04	7,124.86	794.37	-3,005.05	3,092.12	0.43	0.43	0.09	
10,010.00	92.40	270.18	7,122.97	794.55	-3,100.02	3,185.96	2.66	2.65	0.15	
10,105.00	91.21	270.57	7,119.98	795.17	-3,194.97	3,279.85	1.32	-1.25	0.41	
10,200.00	90.01	270.26	7,118.97	795.86	-3,289.96	3,373.79	1.30	-1.26	-0.33	
10,294.00	91.91	269.87	7,117.39	795.97	-3,383.94	3,466.64	2.06	2.02	-0.41	
10,389.00	91.38	269.96	7,114.66	795.83	-3,478.90	3,560.42	0.57	-0.56	0.09	
10,484.00	90.28	269.65	7,113.29	795.50	-3,573.89	3,654.19	1.20	-1.16	-0.33	

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10,578.00	92.89	269.07	7,110.69	794.45	-3,667.84	3,746.83	2.84	2.78	-0.62
10,673.00	92.18	269.96	7,106.49	793.65	-3,762.74	3,840.45	1.20	-0.75	0.94
10,768.00	91.12	270.97	7,103.75	794.42	-3,857.70	3,934.37	1.54	-1.12	1.06
10,862.00	90.41	271.45	7,102.49	796.41	-3,951.67	4,027.50	0.91	-0.76	0.51
10,957.00	91.60	271.31	7,100.83	798.69	-4,046.62	4,121.65	1.26	1.25	-0.15
11,051.00	92.18	269.34	7,097.73	799.23	-4,140.57	4,214.53	2.18	0.62	-2.10
11,146.00	93.99	268.69	7,092.62	797.60	-4,235.41	4,307.96	2.02	1.91	-0.68
11,241.00	93.50	269.16	7,086.41	795.82	-4,330.19	4,401.30	0.71	-0.52	0.49
11,335.00	92.80	269.56	7,081.25	794.77	-4,424.04	4,493.85	0.86	-0.74	0.43
11,430.00	92.18	269.65	7,077.12	794.12	-4,518.95	4,587.49	0.66	-0.65	0.09
11,524.00	91.52	269.56	7,074.08	793.47	-4,612.90	4,680.19	0.71	-0.70	-0.10
11,619.00	92.40	269.07	7,070.83	792.33	-4,707.83	4,773.79	1.06	0.93	-0.52
11,714.00	91.91	268.68	7,067.26	790.47	-4,802.75	4,867.26	0.66	-0.52	-0.41
LAST SVY									
11,809.00	91.12	268.15	7,064.75	787.84	-4,897.68	4,960.62	1.00	-0.83	-0.56
Proj Svy									
11,874.00	91.12	268.15	7,063.48	785.75	-4,962.63	5,024.45	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Hester Farms D-36HN H	0.00	0.00	7,134.43	823.93	-661.20	1,438,713.25	3,185,181.74	40° 32' 8.731 N	104° 50' 1.532 W
- survey misses target center by 0.01ft at 7570.04ft MD (7134.43 TVD, 823.93 N, -661.19 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,809.00	7,064.75	787.84	-4,897.68	LAST SVY
11,874.00	7,063.48	785.75	-4,962.63	Proj Svy

Checked By: _____ Approved By: _____ Date: _____