

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)

Jesser 3E 10-14C

Wellbore #1

Survey: Survey #2

Standard Survey Report

04 January, 2018

Survey Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well Jesser 3E 10-14C
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5139.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5139.0usft
Well:	Jesser 3E 10-14C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Project	WELD COUNTY, COLORADO (NAD 83)		
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	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)				
Site Position:		Northing:	1,367,717.12 usft	Latitude:	40° 20' 30.109 N
From:	Map	Easting:	3,139,952.04 usft	Longitude:	104° 59' 52.537 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	Jesser 3E 10-14C					
Well Position	+N/-S	0.0 usft	Northing:	1,367,722.23 usft	Latitude:	40° 20' 30.145 N
	+E/-W	0.0 usft	Easting:	3,140,211.81 usft	Longitude:	104° 59' 49.182 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,110.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/22/2017	8.27	66.76	52,276

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	106.38	

Survey Program	Date	1/4/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
215.0	1,537.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
1,667.0	12,176.0	Survey #2 (Wellbore #1)	MWD	MWD - Standard	

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)	
1,537.0	14.80	208.88	1,523.5	-124.5	-71.2	-33.2	0.00	0.00	0.00	
1,667.0	14.72	207.68	1,649.2	-153.6	-86.9	-40.1	0.24	-0.06	-0.92	
1,762.0	14.58	202.48	1,741.1	-175.4	-97.1	-43.7	1.39	-0.15	-5.47	
1,857.0	17.99	206.27	1,832.3	-199.6	-108.2	-47.5	3.76	3.59	3.99	
1,952.0	19.00	211.08	1,922.4	-226.0	-122.7	-53.9	1.93	1.06	5.06	
2,048.0	20.11	211.47	2,012.8	-253.4	-139.3	-62.2	1.16	1.16	0.41	
2,143.0	20.99	212.27	2,101.8	-281.8	-157.0	-71.1	0.97	0.93	0.84	
2,239.0	22.40	209.27	2,191.0	-312.3	-175.1	-79.9	1.87	1.47	-3.13	
2,334.0	21.70	208.17	2,279.0	-343.5	-192.2	-87.5	0.86	-0.74	-1.16	

Survey Report

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Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5139.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5139.0usft
Well:	Jesser 3E 10-14C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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)	
2,430.0	24.22	211.96	2,367.4	-375.9	-211.0	-96.4	3.04	2.63	3.95	
2,525.0	25.01	210.28	2,453.8	-409.8	-231.5	-106.5	1.11	0.83	-1.77	
2,621.0	22.71	210.46	2,541.6	-443.3	-251.1	-115.9	2.40	-2.40	0.19	
2,716.0	20.99	208.87	2,629.7	-474.0	-268.6	-124.0	1.91	-1.81	-1.67	
2,812.0	19.89	208.08	2,719.7	-503.4	-284.6	-131.0	1.18	-1.15	-0.82	
2,908.0	18.69	207.20	2,810.3	-531.5	-299.3	-137.2	1.29	-1.25	-0.92	
3,004.0	18.60	207.86	2,901.3	-558.7	-313.5	-143.2	0.24	-0.09	0.69	
3,099.0	19.89	213.19	2,991.0	-585.7	-329.4	-150.9	2.29	1.36	5.61	
3,195.0	17.90	212.58	3,081.8	-611.8	-346.3	-159.7	2.08	-2.07	-0.64	
3,290.0	19.09	211.30	3,171.9	-637.3	-362.2	-167.8	1.32	1.25	-1.35	
3,386.0	19.71	205.70	3,262.4	-665.3	-377.4	-174.4	2.04	0.65	-5.83	
3,481.0	20.19	208.70	3,351.7	-694.2	-392.2	-180.5	1.19	0.51	3.16	
3,577.0	21.92	208.79	3,441.3	-724.4	-408.8	-187.9	1.80	1.80	0.09	
3,672.0	20.59	207.60	3,529.9	-754.7	-425.1	-195.0	1.47	-1.40	-1.25	
3,768.0	21.08	206.76	3,619.6	-785.1	-440.7	-201.4	0.60	0.51	-0.88	
3,863.0	21.21	207.20	3,708.2	-815.7	-456.3	-207.7	0.22	0.14	0.46	
3,959.0	20.99	205.48	3,797.8	-846.6	-471.6	-213.6	0.68	-0.23	-1.79	
4,084.0	20.02	213.06	3,914.9	-884.8	-492.9	-223.3	2.26	-0.78	6.06	
4,150.0	19.40	212.80	3,977.0	-903.5	-505.0	-229.7	0.95	-0.94	-0.39	
4,245.0	22.32	207.38	4,065.8	-932.8	-521.8	-237.6	3.68	3.07	-5.71	
4,340.0	19.62	205.88	4,154.5	-963.1	-537.1	-243.6	2.90	-2.84	-1.58	
4,436.0	22.80	207.68	4,243.9	-994.1	-552.8	-249.9	3.38	3.31	1.88	
4,531.0	20.68	207.38	4,332.2	-1,025.3	-569.1	-256.7	2.23	-2.23	-0.32	
4,626.0	21.08	210.20	4,420.9	-1,055.0	-585.4	-264.0	1.14	0.42	2.97	
4,722.0	23.91	209.27	4,509.6	-1,086.9	-603.6	-272.5	2.97	2.95	-0.97	
4,817.0	22.98	207.60	4,596.8	-1,120.1	-621.6	-280.4	1.20	-0.98	-1.76	
4,912.0	21.79	205.39	4,684.6	-1,152.5	-637.7	-286.8	1.53	-1.25	-2.33	
5,031.0	17.28	209.80	4,796.8	-1,187.8	-656.0	-294.3	3.98	-3.79	3.71	
5,127.0	12.28	205.97	4,889.6	-1,209.3	-667.5	-299.3	5.30	-5.21	-3.99	
5,223.0	10.52	204.38	4,983.7	-1,226.5	-675.6	-302.3	1.86	-1.83	-1.66	
5,318.0	9.41	203.90	5,077.2	-1,241.5	-682.4	-304.5	1.17	-1.17	-0.51	
5,414.0	8.31	211.17	5,172.1	-1,254.6	-689.1	-307.3	1.63	-1.15	7.57	
5,509.0	7.29	208.30	5,266.2	-1,265.8	-695.5	-310.3	1.15	-1.07	-3.02	
5,605.0	6.32	198.08	5,361.5	-1,276.2	-700.1	-311.7	1.61	-1.01	-10.65	
5,701.0	4.60	203.28	5,457.1	-1,284.7	-703.2	-312.3	1.86	-1.79	5.42	
5,796.0	3.71	209.89	5,551.8	-1,290.9	-706.3	-313.5	1.06	-0.94	6.96	
5,891.0	3.49	210.99	5,646.6	-1,296.0	-709.3	-314.9	0.24	-0.23	1.16	
5,987.0	2.92	209.98	5,742.5	-1,300.7	-712.0	-316.2	0.60	-0.59	-1.05	
6,083.0	2.70	216.76	5,838.4	-1,304.6	-714.6	-317.6	0.41	-0.23	7.06	
6,178.0	2.30	269.60	5,933.3	-1,306.4	-717.8	-320.2	2.37	-0.42	55.62	
6,273.0	1.90	262.06	6,028.2	-1,306.6	-721.3	-323.5	0.51	-0.42	-7.94	
6,369.0	1.90	259.07	6,124.2	-1,307.2	-724.4	-326.3	0.10	0.00	-3.11	

Survey Report

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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)
6,464.0	1.41	247.48	6,219.1	-1,307.9	-727.1	-328.6	0.62	-0.52	-12.20
6,559.0	1.28	258.67	6,314.1	-1,308.6	-729.2	-330.5	0.31	-0.14	11.78
6,655.0	0.88	250.30	6,410.1	-1,309.0	-730.9	-332.0	0.45	-0.42	-8.72
6,750.0	0.80	246.07	6,505.1	-1,309.5	-732.2	-333.1	0.11	-0.08	-4.45
6,846.0	4.60	88.48	6,601.0	-1,309.7	-729.0	-330.0	5.57	3.96	-164.16
6,941.0	16.08	74.47	6,694.3	-1,306.1	-712.5	-315.1	12.28	12.08	-14.75
7,037.0	25.32	78.26	6,784.0	-1,298.3	-679.5	-285.7	9.72	9.63	3.95
7,132.0	36.72	82.09	6,865.3	-1,290.2	-631.3	-241.7	12.17	12.00	4.03
7,227.0	41.98	85.18	6,938.8	-1,283.7	-571.4	-186.2	5.91	5.54	3.25
7,323.0	48.08	84.87	7,006.6	-1,277.8	-503.8	-123.0	6.36	6.35	-0.32
7,418.0	57.40	92.49	7,064.1	-1,276.3	-428.4	-51.0	11.69	9.81	8.02
7,514.0	58.11	94.48	7,115.3	-1,281.3	-347.4	28.1	1.90	0.74	2.07
7,609.0	58.20	92.49	7,165.4	-1,286.2	-266.8	106.8	1.78	0.09	-2.09
7,705.0	67.70	92.67	7,209.0	-1,290.0	-181.5	189.7	9.90	9.90	0.19
7,787.1	76.92	90.96	7,234.0	-1,292.5	-103.4	265.3	11.40	11.23	-2.08
Cross 460' FWL 7787.1 MD/7234 TVD -1292.5 S -103.4 W N: 1366429.2 E: 3140115.7									
7,801.0	78.48	90.69	7,236.9	-1,292.7	-89.8	278.4	11.40	11.24	-1.97
7,896.0	84.89	90.26	7,250.7	-1,293.5	4.1	368.8	6.76	6.75	-0.45
7,991.0	89.88	90.86	7,255.0	-1,294.4	99.0	460.1	5.29	5.25	0.63
8,087.0	90.81	90.77	7,254.4	-1,295.7	195.0	552.5	0.97	0.97	-0.09
8,182.0	90.99	90.77	7,252.9	-1,297.0	289.9	644.0	0.19	0.19	0.00
8,277.0	91.38	90.38	7,251.0	-1,298.0	384.9	735.4	0.58	0.41	-0.41
8,373.0	90.50	92.18	7,249.4	-1,300.1	480.9	828.1	2.09	-0.92	1.88
8,563.0	87.58	93.37	7,252.6	-1,309.3	670.6	1,012.7	1.66	-1.54	0.63
8,659.0	89.48	92.89	7,255.0	-1,314.6	766.4	1,106.1	2.04	1.98	-0.50
8,754.0	90.10	92.58	7,255.4	-1,319.1	861.3	1,198.4	0.73	0.65	-0.33
8,849.0	89.48	92.49	7,255.7	-1,323.3	956.2	1,290.6	0.66	-0.65	-0.09
8,945.0	90.01	91.79	7,256.1	-1,326.9	1,052.2	1,383.7	0.91	0.55	-0.73
9,040.0	90.10	90.99	7,256.1	-1,329.2	1,147.1	1,475.5	0.85	0.09	-0.84
9,136.0	88.38	90.99	7,257.3	-1,330.8	1,243.1	1,568.0	1.79	-1.79	0.00
9,231.0	89.48	91.57	7,259.1	-1,333.0	1,338.1	1,659.7	1.31	1.16	0.61
9,326.0	89.62	92.10	7,259.8	-1,336.0	1,433.0	1,751.7	0.58	0.15	0.56
9,422.0	90.59	89.89	7,259.7	-1,337.7	1,529.0	1,844.2	2.51	1.01	-2.30
9,518.0	89.88	87.69	7,259.3	-1,335.6	1,625.0	1,935.7	2.41	-0.74	-2.29
9,613.0	90.59	87.69	7,258.9	-1,331.8	1,719.9	2,025.7	0.75	0.75	0.00
9,709.0	90.50	87.29	7,258.0	-1,327.6	1,815.8	2,116.5	0.43	-0.09	-0.42
9,805.0	90.90	86.98	7,256.8	-1,322.8	1,911.7	2,207.1	0.53	0.42	-0.32
9,900.0	89.22	86.98	7,256.7	-1,317.8	2,006.5	2,296.7	1.77	-1.77	0.00
9,996.0	90.41	85.66	7,257.0	-1,311.6	2,102.3	2,386.9	1.85	1.24	-1.38
10,091.0	90.19	87.29	7,256.5	-1,305.8	2,197.1	2,476.2	1.73	-0.23	1.72
10,187.0	89.48	86.68	7,256.8	-1,300.8	2,293.0	2,566.8	0.98	-0.74	-0.64
10,282.0	90.19	88.09	7,257.1	-1,296.4	2,387.9	2,656.6	1.66	0.75	1.48
10,377.0	90.01	87.60	7,256.9	-1,292.8	2,482.8	2,746.7	0.55	-0.19	-0.52

Survey Report

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Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5139.0usft
Well:	Jessor 3E 10-14C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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)
10,473.0	89.62	86.68	7,257.2	-1,288.1	2,578.7	2,837.3	1.04	-0.41	-0.96
10,568.0	88.69	88.26	7,258.6	-1,283.9	2,673.6	2,927.2	1.93	-0.98	1.66
10,664.0	89.31	87.60	7,260.3	-1,280.4	2,769.5	3,018.2	0.94	0.65	-0.69
10,759.0	89.40	86.76	7,261.4	-1,275.7	2,864.4	3,107.9	0.89	0.09	-0.88
10,855.0	90.19	86.76	7,261.7	-1,270.3	2,960.2	3,198.3	0.82	0.82	0.00
10,950.0	89.62	87.38	7,261.9	-1,265.4	3,055.1	3,288.0	0.89	-0.60	0.65
11,046.0	90.01	87.78	7,262.2	-1,261.4	3,151.0	3,378.9	0.58	0.41	0.42
11,141.0	90.10	89.36	7,262.1	-1,259.0	3,246.0	3,469.3	1.67	0.09	1.66
11,236.0	88.60	89.28	7,263.2	-1,257.9	3,341.0	3,560.1	1.58	-1.58	-0.08
11,332.0	88.91	90.60	7,265.2	-1,257.8	3,437.0	3,652.2	1.41	0.32	1.38
11,427.0	90.01	92.58	7,266.1	-1,260.4	3,531.9	3,744.0	2.38	1.16	2.08
11,523.0	90.81	92.49	7,265.4	-1,264.7	3,627.8	3,837.2	0.84	0.83	-0.09
11,618.0	90.28	92.18	7,264.5	-1,268.5	3,722.7	3,929.4	0.65	-0.56	-0.33
11,713.0	89.62	92.89	7,264.6	-1,272.7	3,817.6	4,021.6	1.02	-0.69	0.75
11,809.0	88.82	93.86	7,265.9	-1,278.4	3,913.5	4,115.1	1.31	-0.83	1.01
11,904.0	89.09	93.86	7,267.7	-1,284.8	4,008.2	4,207.9	0.28	0.28	0.00
12,000.0	90.90	92.27	7,267.7	-1,289.9	4,104.1	4,301.3	2.51	1.89	-1.66
12,095.0	90.59	91.26	7,266.4	-1,292.8	4,199.0	4,393.2	1.11	-0.33	-1.06
Last MWD Survey 12095 MD/7266.4 TVD -1292.8 S 4199.0 E N: 1366453.2 E: 3144417.9									
12,176.0	90.59	91.26	7,265.6	-1,294.6	4,280.0	4,471.4	0.00	0.00	0.00
PTB 515' FEL 12176 MD/7265.6 TVD -1294.6 S 4280.0 E N: 1366451.9 E: 3144498.9									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,787.1	7,234.0	-1,292.5	-103.4	Cross 460' FWL 7787.1 MD/7234 TVD -1292.5 S -103.4 W N: 1366429.2 E: 3144417.9
12,095.0	7,266.4	-1,292.8	4,199.0	Last MWD Survey 12095 MD/7266.4 TVD -1292.8 S 4199.0 E N: 1366453.2 E: 3144417.9
12,176.0	7,265.6	-1,294.6	4,280.0	PTB 515' FEL 12176 MD/7265.6 TVD -1294.6 S 4280.0 E N: 1366451.9 E: 3144498.9

Checked By: _____ Approved By: _____ Date: _____