

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

Jesser 3E 10-2C

Wellbore #1

Survey: Survey #2

Standard Survey Report

18 January, 2018

Survey Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well Jesser 3E 10-2C
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5143.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5143.0usft
Well:	Jesser 3E 10-2C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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 10-2C					
Well Position	+N/-S	0.0 usft	Northing:	1,367,717.59 usft	Latitude:	40° 20' 30.113 N
	+E/-W	0.0 usft	Easting:	3,139,971.83 usft	Longitude:	104° 59' 52.282 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,114.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/19/2017	8.28	66.76	52,286

Design	Surveys				
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	61.20	

Survey Program	Date	1/18/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
125.0	1,443.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
1,537.0	12,415.0	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)	
1,443.0	20.28	347.17	1,409.7	231.0	-71.6	48.6	0.00	0.00	0.00	
1,537.0	20.02	342.58	1,498.0	262.2	-80.0	56.2	1.70	-0.28	-4.88	
1,667.0	18.21	335.57	1,620.8	301.9	-95.1	62.2	2.25	-1.39	-5.39	
1,762.0	19.71	339.09	1,710.7	330.4	-106.9	65.5	1.98	1.58	3.71	
1,857.0	21.21	343.37	1,799.7	361.9	-117.6	71.3	2.23	1.58	4.51	
1,953.0	22.40	344.16	1,888.8	396.1	-127.5	79.1	1.28	1.24	0.82	
2,048.0	22.98	345.79	1,976.5	431.5	-137.0	87.8	0.90	0.61	1.72	
2,144.0	21.70	343.59	2,065.3	466.7	-146.6	96.3	1.59	-1.33	-2.29	
2,239.0	23.20	346.89	2,153.1	501.8	-155.8	105.2	2.06	1.58	3.47	

Survey Report

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Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5143.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5143.0usft
Well:	Jessor 3E 10-2C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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)
2,335.0	21.79	345.48	2,241.8	537.4	-164.6	114.7	1.57	-1.47	-1.47
2,430.0	23.51	348.96	2,329.4	573.1	-172.7	124.8	2.29	1.81	3.66
2,526.0	23.60	348.00	2,417.4	610.7	-180.3	136.2	0.41	0.09	-1.00
2,621.0	23.42	346.67	2,504.6	647.7	-188.6	146.7	0.59	-0.19	-1.40
2,717.0	21.79	344.38	2,593.2	683.4	-197.8	155.9	1.93	-1.70	-2.39
2,813.0	20.19	343.06	2,682.8	716.4	-207.4	163.3	1.74	-1.67	-1.38
2,908.0	21.61	345.09	2,771.6	749.0	-216.7	170.9	1.68	1.49	2.14
3,004.0	20.28	342.49	2,861.2	781.9	-226.3	178.4	1.69	-1.39	-2.71
3,100.0	20.68	342.66	2,951.1	814.0	-236.3	185.0	0.42	0.42	0.18
3,195.0	21.79	342.66	3,039.7	846.8	-246.6	191.9	1.17	1.17	0.00
3,290.0	22.01	345.00	3,127.8	880.9	-256.5	199.6	0.95	0.23	2.46
3,386.0	22.40	347.16	3,216.7	916.1	-265.2	208.9	0.94	0.41	2.25
3,481.0	19.71	346.19	3,305.4	949.3	-273.0	218.1	2.86	-2.83	-1.02
3,577.0	19.31	346.36	3,395.9	980.4	-280.6	226.4	0.42	-0.42	0.18
3,673.0	19.62	346.36	3,486.4	1,011.5	-288.2	234.8	0.32	0.32	0.00
3,768.0	22.01	344.07	3,575.2	1,044.1	-296.8	242.9	2.66	2.52	-2.41
3,864.0	22.58	343.59	3,664.0	1,079.1	-307.0	250.9	0.62	0.59	-0.50
3,959.0	22.80	342.49	3,751.6	1,114.2	-317.7	258.4	0.50	0.23	-1.16
4,055.0	22.18	341.56	3,840.3	1,149.1	-329.0	265.3	0.74	-0.65	-0.97
4,150.0	21.39	343.50	3,928.6	1,182.7	-339.6	272.2	1.13	-0.83	2.04
4,245.0	19.71	343.68	4,017.5	1,214.7	-349.0	279.4	1.77	-1.77	0.19
4,341.0	20.42	346.28	4,107.7	1,246.5	-357.5	287.2	1.19	0.74	2.71
4,436.0	20.42	347.78	4,196.7	1,278.8	-365.0	296.2	0.55	0.00	1.58
4,531.0	21.61	344.38	4,285.4	1,311.9	-373.2	305.0	1.79	1.25	-3.58
4,627.0	22.18	342.49	4,374.5	1,346.2	-383.4	312.5	0.94	0.59	-1.97
4,722.0	23.42	342.66	4,462.0	1,381.3	-394.4	319.8	1.31	1.31	0.18
4,817.0	22.32	341.39	4,549.6	1,416.4	-405.8	326.8	1.27	-1.16	-1.34
4,913.0	23.69	345.00	4,637.9	1,452.3	-416.6	334.6	2.05	1.43	3.76
5,008.0	22.49	345.67	4,725.3	1,488.4	-426.0	343.7	1.29	-1.26	0.71
5,104.0	21.52	346.19	4,814.3	1,523.2	-434.8	352.8	1.03	-1.01	0.54
5,199.0	20.99	346.89	4,902.9	1,556.7	-442.8	361.9	0.62	-0.56	0.74
5,295.0	20.68	343.99	4,992.6	1,589.8	-451.4	370.3	1.12	-0.32	-3.02
5,414.0	19.80	345.66	5,104.2	1,629.5	-462.2	380.0	0.88	-0.74	1.40
5,510.0	21.08	338.17	5,194.2	1,661.3	-472.6	386.2	3.03	1.33	-7.80
5,606.0	22.09	341.08	5,283.5	1,694.4	-484.9	391.4	1.53	1.05	3.03
5,701.0	22.18	343.68	5,371.5	1,728.5	-495.7	398.3	1.04	0.09	2.74
5,797.0	22.71	341.78	5,460.2	1,763.5	-506.6	405.6	0.94	0.55	-1.98
5,892.0	19.49	338.17	5,548.8	1,795.6	-518.2	410.9	3.65	-3.39	-3.80
5,988.0	20.42	336.67	5,639.1	1,825.9	-530.8	414.4	1.11	0.97	-1.56
6,083.0	22.09	341.08	5,727.6	1,858.0	-543.2	419.1	2.43	1.76	4.64
6,178.0	22.58	345.09	5,815.5	1,892.5	-553.7	426.5	1.68	0.52	4.22
6,273.0	21.08	347.86	5,903.7	1,926.9	-562.0	435.8	1.91	-1.58	2.92

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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)
6,369.0	21.08	350.46	5,993.3	1,960.8	-568.5	446.5	0.97	0.00	2.71
6,464.0	21.70	345.18	6,081.7	1,994.6	-575.8	456.3	2.13	0.65	-5.56
6,560.0	21.61	345.40	6,170.9	2,028.9	-584.8	465.0	0.13	-0.09	0.23
6,655.0	21.52	342.40	6,259.3	2,062.4	-594.4	472.6	1.16	-0.09	-3.16
6,751.0	17.10	345.66	6,349.9	2,092.9	-603.3	479.6	4.74	-4.60	3.40
6,846.0	14.58	356.68	6,441.3	2,118.3	-607.4	488.2	4.12	-2.65	11.60
6,942.0	24.08	355.27	6,531.8	2,150.0	-609.7	501.4	9.91	9.90	-1.47
7,037.0	24.30	17.27	6,618.6	2,188.1	-605.5	523.5	9.44	0.23	23.16
7,132.0	22.01	41.07	6,706.1	2,220.2	-588.0	554.3	10.07	-2.41	25.05
7,228.0	22.40	57.46	6,795.1	2,243.6	-560.7	589.5	6.45	0.41	17.07
7,323.0	25.98	61.47	6,881.8	2,263.3	-527.2	628.4	4.14	3.77	4.22
7,419.0	33.01	67.86	6,965.3	2,283.2	-484.4	675.5	8.01	7.32	6.66
7,514.0	41.98	74.16	7,040.6	2,301.7	-429.8	732.3	10.26	9.44	6.63
7,610.0	52.59	77.38	7,105.6	2,318.9	-361.5	800.4	11.32	11.05	3.35
7,705.0	56.92	80.37	7,160.5	2,333.8	-285.3	874.2	5.23	4.56	3.15
7,801.0	68.80	83.59	7,204.2	2,345.5	-200.9	953.9	12.73	12.38	3.35
7,896.0	78.22	84.87	7,231.1	2,354.7	-110.4	1,037.6	10.00	9.92	1.35
7,957.0	82.20	86.28	7,241.5	2,359.3	-50.5	1,092.4	6.91	6.53	2.31
Cross 460' FWL 7957 MD/7241.5 TVD 2359.3 N -50.5 W N: 1370076.4 E: 3139908.0									
7,992.0	84.49	87.07	7,245.5	2,361.3	-15.8	1,123.8	6.91	6.54	2.27
8,087.0	84.00	85.88	7,255.1	2,367.1	78.6	1,209.2	1.35	-0.52	-1.25
8,182.0	87.32	86.59	7,262.3	2,373.3	173.1	1,295.0	3.57	3.49	0.75
8,278.0	90.01	88.00	7,264.5	2,377.9	269.0	1,381.2	3.16	2.80	1.47
8,373.0	90.90	86.68	7,263.7	2,382.3	363.8	1,466.5	1.68	0.94	-1.39
8,469.0	90.72	86.90	7,262.4	2,387.7	459.7	1,553.1	0.30	-0.19	0.23
8,564.0	91.12	85.97	7,260.9	2,393.6	554.5	1,639.0	1.07	0.42	-0.98
8,659.0	89.62	85.00	7,260.2	2,401.0	649.2	1,725.6	1.88	-1.58	-1.02
8,754.0	88.29	86.59	7,262.0	2,408.0	743.9	1,812.0	2.18	-1.40	1.67
8,850.0	87.32	90.20	7,265.7	2,410.7	839.8	1,897.3	3.89	-1.01	3.76
8,945.0	87.98	90.07	7,269.6	2,410.5	934.7	1,980.3	0.71	0.69	-0.14
9,041.0	89.00	89.58	7,272.1	2,410.8	1,030.7	2,064.6	1.18	1.06	-0.51
9,136.0	89.79	89.36	7,273.1	2,411.6	1,125.7	2,148.2	0.86	0.83	-0.23
9,232.0	89.09	88.97	7,274.0	2,413.0	1,221.6	2,233.0	0.83	-0.73	-0.41
9,327.0	89.00	89.50	7,275.6	2,414.3	1,316.6	2,316.9	0.57	-0.09	0.56
9,422.0	88.51	91.48	7,277.7	2,413.5	1,411.6	2,399.7	2.15	-0.52	2.08
9,518.0	91.30	92.10	7,277.8	2,410.5	1,507.5	2,482.3	2.98	2.91	0.65
9,614.0	92.40	92.10	7,274.7	2,407.0	1,603.4	2,564.7	1.15	1.15	0.00
9,709.0	90.99	91.57	7,271.9	2,403.9	1,698.3	2,646.4	1.59	-1.48	-0.56
9,805.0	90.41	90.20	7,270.7	2,402.5	1,794.3	2,729.7	1.55	-0.60	-1.43
9,901.0	90.90	88.79	7,269.7	2,403.3	1,890.3	2,814.3	1.55	0.51	-1.47
9,996.0	91.12	87.38	7,268.0	2,406.5	1,985.2	2,899.0	1.50	0.23	-1.48
10,092.0	89.09	87.29	7,267.8	2,410.9	2,081.1	2,985.2	2.12	-2.11	-0.09
10,187.0	87.10	88.97	7,271.0	2,414.0	2,176.0	3,069.8	2.74	-2.09	1.77

Survey Report

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Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5143.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5143.0usft
Well:	Jesser 3E 10-2C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	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)	
10,283.0	86.48	90.07	7,276.3	2,414.8	2,271.8	3,154.2	1.31	-0.65	1.15	
10,378.0	89.31	91.96	7,279.8	2,413.2	2,366.8	3,236.5	3.58	2.98	1.99	
10,473.0	90.41	92.27	7,280.1	2,409.7	2,461.7	3,318.0	1.20	1.16	0.33	
10,569.0	90.81	92.49	7,279.0	2,405.7	2,557.6	3,400.2	0.48	0.42	0.23	
10,664.0	91.38	92.10	7,277.2	2,401.9	2,652.5	3,481.5	0.73	0.60	-0.41	
10,760.0	91.12	90.47	7,275.1	2,399.7	2,748.5	3,564.6	1.72	-0.27	-1.70	
10,855.0	90.90	87.29	7,273.4	2,401.6	2,843.4	3,648.7	3.35	-0.23	-3.35	
10,951.0	89.22	88.17	7,273.3	2,405.4	2,939.3	3,734.5	1.98	-1.75	0.92	
11,046.0	86.92	87.38	7,276.5	2,409.1	3,034.2	3,819.5	2.56	-2.42	-0.83	
11,142.0	87.58	88.26	7,281.2	2,412.7	3,130.0	3,905.2	1.14	0.69	0.92	
11,237.0	88.91	90.07	7,284.1	2,414.1	3,225.0	3,989.0	2.36	1.40	1.91	
11,332.0	89.48	92.49	7,285.4	2,412.0	3,319.9	4,071.2	2.62	0.60	2.55	
11,428.0	89.88	94.08	7,285.9	2,406.5	3,415.7	4,152.6	1.71	0.42	1.66	
11,523.0	90.59	94.87	7,285.5	2,399.1	3,510.5	4,232.0	1.12	0.75	0.83	
11,619.0	91.21	94.17	7,284.0	2,391.5	3,606.1	4,312.2	0.97	0.65	-0.73	
11,714.0	91.38	92.98	7,281.9	2,385.6	3,700.9	4,392.4	1.27	0.18	-1.25	
11,809.0	90.90	90.77	7,280.0	2,382.5	3,795.9	4,474.1	2.38	-0.51	-2.33	
11,905.0	91.12	90.29	7,278.3	2,381.6	3,891.8	4,557.8	0.55	0.23	-0.50	
12,000.0	90.10	89.89	7,277.3	2,381.4	3,986.8	4,640.9	1.15	-1.07	-0.42	
12,095.0	88.69	89.10	7,278.3	2,382.3	4,081.8	4,724.6	1.70	-1.48	-0.83	
12,191.0	88.29	88.66	7,280.8	2,384.1	4,177.8	4,809.6	0.62	-0.42	-0.46	
12,286.0	87.58	87.07	7,284.3	2,387.7	4,272.6	4,894.4	1.83	-0.75	-1.67	
Last MWD Survey 12286 MD/7284.3 TVD 2387.7 N 4272.6 E N: 1370129.3 E: 3144230.7										
12,415.0	87.58	87.07	7,289.7	2,394.3	4,401.4	5,010.4	0.00	0.00	0.00	
PTB 418' FEL 12415 MD/7289.7 TVD 2394.3 N 4401.4 E N: 1370136.6 E: 3144359.37										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,957.0	7,241.5	2,359.3	-50.5	Cross 460' FWL 7957 MD/7241.5 TVD 2359.3 N -50.5 W N: 1370076.4 E: 3139	
12,286.0	7,284.3	2,387.7	4,272.6	Last MWD Survey 12286 MD/7284.3 TVD 2387.7 N 4272.6 E N: 1370129.3 E: :	
12,415.0	7,289.7	2,394.3	4,401.4	PTB 418' FEL 12415 MD/7289.7 TVD 2394.3 N 4401.4 E N: 1370136.6 E: 3144	

Checked By: _____	Approved By: _____	Date: _____
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