

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

Jesser 3E 10-11N

Wellbore #1

Survey: Survey #2

Standard Survey Report

09 March, 2018

Survey Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well Jesser 3E 10-11N
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5140.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5140.0usft
Well:	Jesser 3E 10-11N	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 10-11N					
Well Position	+N/-S	0.0 usft	Northing:	1,367,721.16 usft	Latitude:	40° 20' 30.138 N
	+E/-W	0.0 usft	Easting:	3,140,151.88 usft	Longitude:	104° 59' 49.956 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,111.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/6/2017	8.28	66.76	52,281

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	93.70	

Survey Program	Date	3/9/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
215.0	1,537.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
1,667.0	11,885.0	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	7.91	251.67	1,526.5	-72.2	-148.2	-143.3	0.00	0.00	0.00	
1,667.0	7.38	251.97	1,655.3	-77.6	-164.7	-159.3	0.41	-0.41	0.23	
1,762.0	10.30	247.96	1,749.2	-82.7	-178.3	-172.6	3.14	3.07	-4.22	
1,857.0	13.39	246.46	1,842.1	-90.3	-196.3	-190.1	3.27	3.25	-1.58	
1,953.0	13.39	245.36	1,935.5	-99.4	-216.6	-209.7	0.27	0.00	-1.15	
2,048.0	12.99	243.86	2,028.0	-108.7	-236.2	-228.7	0.55	-0.42	-1.58	
2,144.0	13.52	246.46	2,121.5	-117.9	-256.1	-248.0	0.83	0.55	2.71	
2,239.0	13.39	247.17	2,213.8	-126.6	-276.5	-267.7	0.22	-0.14	0.75	
2,335.0	15.82	245.58	2,306.7	-136.3	-298.6	-289.2	2.57	2.53	-1.66	

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Well:	Jesser 3E 10-11N	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	16.00	244.17	2,398.1	-147.4	-322.2	-312.0	0.45	0.19	-1.48
2,526.0	16.00	244.17	2,490.4	-158.9	-346.0	-335.1	0.00	0.00	0.00
2,621.0	14.89	243.16	2,581.9	-170.1	-368.7	-357.0	1.20	-1.17	-1.06
2,717.0	13.92	242.19	2,674.9	-181.1	-389.9	-377.4	1.04	-1.01	-1.01
2,813.0	13.30	241.88	2,768.2	-191.7	-409.9	-396.7	0.65	-0.65	-0.32
2,908.0	12.28	240.69	2,860.9	-201.8	-428.3	-414.4	1.11	-1.07	-1.25
3,004.0	12.51	244.79	2,954.6	-211.2	-446.6	-432.1	0.95	0.24	4.27
3,099.0	11.89	245.19	3,047.5	-219.7	-464.8	-449.7	0.66	-0.65	0.42
3,195.0	13.39	247.08	3,141.2	-228.2	-484.0	-468.3	1.62	1.56	1.97
3,290.0	14.58	246.77	3,233.3	-237.2	-505.2	-488.8	1.26	1.25	-0.33
3,386.0	13.08	245.10	3,326.6	-246.5	-526.1	-509.1	1.62	-1.56	-1.74
3,481.0	14.41	241.79	3,418.8	-256.6	-546.3	-528.6	1.63	1.40	-3.48
3,577.0	12.90	239.28	3,512.1	-267.7	-566.0	-547.6	1.69	-1.57	-2.61
3,673.0	14.58	245.89	3,605.4	-278.2	-586.3	-567.1	2.39	1.75	6.89
3,768.0	14.58	245.67	3,697.3	-288.0	-608.1	-588.2	0.06	0.00	-0.23
3,864.0	13.21	242.28	3,790.5	-298.0	-628.8	-608.3	1.66	-1.43	-3.53
3,959.0	8.40	235.80	3,883.8	-307.0	-644.2	-623.0	5.21	-5.06	-6.82
4,054.0	5.92	240.29	3,978.1	-313.3	-654.2	-632.6	2.67	-2.61	4.73
4,150.0	2.52	255.50	4,073.8	-316.3	-660.5	-638.7	3.70	-3.54	15.84
4,245.0	1.41	263.47	4,168.7	-317.0	-663.7	-641.8	1.20	-1.17	8.39
4,341.0	1.10	142.29	4,264.7	-317.8	-664.3	-642.4	2.28	-0.32	-126.23
4,436.0	0.49	196.18	4,359.7	-318.9	-663.8	-641.9	0.95	-0.64	56.73
4,531.0	0.88	247.57	4,454.7	-319.6	-664.6	-642.6	0.73	0.41	54.09
4,627.0	1.02	262.37	4,550.7	-320.0	-666.2	-644.1	0.29	0.15	15.42
4,722.0	1.28	270.26	4,645.7	-320.1	-668.1	-646.0	0.32	0.27	8.31
4,817.0	0.40	109.19	4,740.7	-320.2	-668.8	-646.8	1.75	-0.93	-169.55
4,913.0	0.22	99.59	4,836.7	-320.4	-668.3	-646.3	0.19	-0.19	-10.00
5,032.0	0.09	230.78	4,955.7	-320.5	-668.2	-646.1	0.24	-0.11	110.24
5,128.0	0.49	262.59	5,051.7	-320.6	-668.6	-646.6	0.43	0.42	33.14
5,223.0	0.71	265.99	5,146.6	-320.7	-669.6	-647.5	0.23	0.23	3.58
5,319.0	1.19	254.48	5,242.6	-321.0	-671.2	-649.1	0.54	0.50	-11.99
5,414.0	1.28	249.77	5,337.6	-321.6	-673.1	-651.0	0.14	0.09	-4.96
5,510.0	0.80	68.56	5,433.6	-321.7	-673.5	-651.3	2.17	-0.50	186.24
5,606.0	0.80	68.78	5,529.6	-321.2	-672.2	-650.1	0.00	0.00	0.23
5,701.0	0.40	76.28	5,624.6	-320.9	-671.3	-649.2	0.43	-0.42	7.89
5,797.0	0.22	26.39	5,720.6	-320.7	-670.9	-648.8	0.32	-0.19	-51.97
5,892.0	0.22	339.67	5,815.6	-320.3	-670.9	-648.8	0.18	0.00	-49.18
5,988.0	0.22	118.98	5,911.6	-320.2	-670.8	-648.7	0.43	0.00	145.11
6,083.0	0.22	160.67	6,006.6	-320.5	-670.6	-648.5	0.16	0.00	43.88
6,178.0	0.31	205.70	6,101.6	-320.9	-670.6	-648.5	0.23	0.09	47.40
6,274.0	0.49	206.36	6,197.6	-321.5	-670.9	-648.8	0.19	0.19	0.69
6,369.0	0.62	214.87	6,292.6	-322.3	-671.4	-649.2	0.16	0.14	8.96

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Survey									
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6,464.0	0.80	222.49	6,387.6	-323.2	-672.1	-649.9	0.21	0.19	8.02
6,560.0	4.20	107.96	6,483.5	-324.8	-669.2	-646.9	4.78	3.54	-119.30
6,655.0	14.89	85.57	6,577.1	-324.9	-653.7	-631.4	11.70	11.25	-23.57
6,751.0	22.58	82.67	6,667.9	-321.6	-623.1	-601.0	8.07	8.01	-3.02
6,846.0	30.09	88.57	6,753.0	-318.7	-581.1	-559.3	8.36	7.91	6.21
6,942.0	38.49	90.38	6,832.2	-318.3	-527.1	-505.5	8.81	8.75	1.89
7,037.0	50.91	94.17	6,899.7	-321.2	-460.5	-438.8	13.37	13.07	3.99
7,132.0	66.28	95.97	6,949.0	-328.4	-380.0	-358.0	16.26	16.18	1.89
7,228.0	80.60	91.70	6,976.3	-334.4	-288.4	-266.2	15.51	14.92	-4.45
7,323.0	88.29	91.26	6,985.5	-336.9	-194.0	-171.8	8.11	8.09	-0.46
7,419.0	89.48	91.17	6,987.4	-338.9	-98.0	-75.9	1.24	1.24	-0.09
7,435.8	89.52	91.01	6,987.5	-339.2	-81.2	-59.1	0.95	0.23	-0.93
Cross 460' FWL 7435.8 MD/6987.5 TVD -339.2 S -81.2 W N: 1367381.5 E: 3140072.61									
7,514.0	89.70	90.29	6,988.0	-340.1	-3.0	18.9	0.95	0.23	-0.93
7,610.0	90.01	89.98	6,988.3	-340.3	93.0	114.7	0.46	0.32	-0.32
7,705.0	90.72	89.50	6,987.7	-339.9	188.0	209.5	0.90	0.75	-0.51
7,801.0	91.30	88.66	6,986.0	-338.4	283.9	305.2	1.06	0.60	-0.88
7,897.0	91.12	88.00	6,984.0	-335.6	379.9	400.7	0.71	-0.19	-0.69
7,992.0	89.88	88.09	6,983.1	-332.3	474.8	495.3	1.31	-1.31	0.09
8,087.0	89.22	86.98	6,983.9	-328.2	569.7	589.7	1.36	-0.69	-1.17
8,183.0	89.62	87.60	6,984.9	-323.7	665.6	685.1	0.77	0.42	0.65
8,278.0	89.70	87.78	6,985.4	-319.9	760.5	779.6	0.21	0.08	0.19
8,373.0	89.79	88.17	6,985.8	-316.5	855.5	874.1	0.42	0.09	0.41
8,469.0	89.70	87.69	6,986.3	-313.1	951.4	969.6	0.51	-0.09	-0.50
8,564.0	89.40	85.88	6,987.0	-307.7	1,046.3	1,063.9	1.93	-0.32	-1.91
8,659.0	89.31	86.50	6,988.1	-301.4	1,141.0	1,158.1	0.66	-0.09	0.65
8,754.0	90.01	88.09	6,988.6	-296.9	1,235.9	1,252.5	1.83	0.74	1.67
8,850.0	90.10	86.68	6,988.6	-292.5	1,331.8	1,347.9	1.47	0.09	-1.47
8,945.0	89.88	86.06	6,988.6	-286.5	1,426.6	1,442.1	0.69	-0.23	-0.65
9,041.0	89.09	87.07	6,989.4	-280.8	1,522.5	1,537.4	1.34	-0.82	1.05
9,136.0	91.21	89.28	6,989.2	-277.8	1,617.4	1,631.9	3.22	2.23	2.33
9,232.0	91.91	88.48	6,986.6	-275.9	1,713.3	1,727.6	1.11	0.73	-0.83
9,327.0	91.52	89.19	6,983.7	-274.0	1,808.3	1,822.2	0.85	-0.41	0.75
9,422.0	90.90	90.29	6,981.7	-273.5	1,903.3	1,916.9	1.33	-0.65	1.16
9,518.0	92.09	89.89	6,979.2	-273.7	1,999.2	2,012.7	1.31	1.24	-0.42
9,614.0	92.00	89.89	6,975.8	-273.5	2,095.2	2,108.4	0.09	-0.09	0.00
9,710.0	90.50	91.08	6,973.7	-274.3	2,191.1	2,204.3	1.99	-1.56	1.24
9,805.0	87.98	90.99	6,975.0	-276.0	2,286.1	2,299.1	2.65	-2.65	-0.09
9,901.0	88.11	90.29	6,978.2	-277.1	2,382.0	2,394.9	0.74	0.14	-0.73
9,996.0	88.60	89.98	6,981.0	-277.3	2,477.0	2,489.7	0.61	0.52	-0.33
10,092.0	90.41	91.57	6,981.8	-278.6	2,573.0	2,585.6	2.51	1.89	1.66
10,187.0	89.31	90.86	6,982.0	-280.6	2,667.9	2,680.5	1.38	-1.16	-0.75
10,283.0	90.59	91.96	6,982.1	-283.0	2,763.9	2,776.4	1.76	1.33	1.15

Survey Report

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Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5140.0usft
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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Survey									
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10,378.0	90.28	91.26	6,981.4	-285.7	2,858.9	2,871.3	0.81	-0.33	-0.74
10,473.0	91.60	91.26	6,979.8	-287.7	2,953.8	2,966.2	1.39	1.39	0.00
10,569.0	91.52	91.26	6,977.2	-289.9	3,049.8	3,062.1	0.08	-0.08	0.00
10,664.0	91.38	89.67	6,974.8	-290.6	3,144.7	3,156.9	1.68	-0.15	-1.67
10,760.0	90.10	89.98	6,973.6	-290.3	3,240.7	3,252.7	1.37	-1.33	0.32
10,855.0	87.41	90.69	6,975.6	-290.9	3,335.7	3,347.5	2.93	-2.83	0.75
10,951.0	87.98	91.57	6,979.5	-292.8	3,431.6	3,443.3	1.09	0.59	0.92
11,046.0	88.11	90.86	6,982.7	-294.8	3,526.5	3,538.2	0.76	0.14	-0.75
11,142.0	89.40	91.26	6,984.8	-296.6	3,622.5	3,634.1	1.41	1.34	0.42
11,237.0	88.82	90.69	6,986.3	-298.2	3,717.5	3,728.9	0.86	-0.61	-0.60
11,332.0	90.59	91.39	6,986.8	-299.9	3,812.4	3,823.8	2.00	1.86	0.74
11,428.0	90.90	91.08	6,985.5	-302.0	3,908.4	3,919.7	0.46	0.32	-0.32
11,523.0	91.91	90.77	6,983.2	-303.5	4,003.4	4,014.6	1.11	1.06	-0.33
11,619.0	89.88	90.47	6,981.7	-304.5	4,099.3	4,110.4	2.14	-2.11	-0.31
11,714.0	90.72	90.38	6,981.2	-305.3	4,194.3	4,205.3	0.89	0.88	-0.09
11,809.0	90.90	89.89	6,979.9	-305.5	4,289.3	4,300.1	0.55	0.19	-0.52
Last MWD Survey 11809 MD/6979.9 TVD -305.5 S 4289.3 E N: 136440.0 E: 3144442.7									
11,885.0	90.90	89.89	6,978.7	-305.3	4,365.3	4,375.9	0.00	0.00	0.00
PTB 485' FEL 11885 MD/6978.7 TVD -305.3 S 4365.3 E N: 1367440.6 E: 3144518.6									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,435.8	6,987.5	-339.2	-81.2	Cross 460' FWL 7435.8 MD/6987.5 TVD -339.2 S -81.2 W N: 1367381.5 E: 314
11,809.0	6,979.9	-305.5	4,289.3	Last MWD Survey 11809 MD/6979.9 TVD -305.5 S 4289.3 E N: 136440.0 E: 31
11,885.0	6,978.7	-305.3	4,365.3	PTB 485' FEL 11885 MD/6978.7 TVD -305.3 S 4365.3 E N: 1367440.6 E: 3144

Checked By: _____	Approved By: _____	Date: _____
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