

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

Jesser 3E 10-3N

Wellbore #1

Survey: Survey #2

Standard Survey Report

04 December, 2017

Survey Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well Jesser 3E 10-3N
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 10-3N	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 10-3N					
Well Position	+N/-S	0.0 usft	Northing:	1,367,718.07 usft	Latitude:	40° 20' 30.116 N
	+E/-W	0.0 usft	Easting:	3,139,991.90 usft	Longitude:	104° 59' 52.022 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	52,287

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	64.90	

Survey Program	Date	12/4/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
125.0	1,538.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
1,667.0	12,055.0	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)	
1,538.0	18.60	340.69	1,512.1	205.6	-67.1	26.5	0.00	0.00	0.00	
1,667.0	18.12	339.49	1,634.6	243.8	-80.9	30.1	0.47	-0.37	-0.93	
1,762.0	19.71	339.98	1,724.4	272.7	-91.6	32.7	1.68	1.67	0.52	
1,857.0	21.70	339.98	1,813.3	304.2	-103.0	35.7	2.09	2.09	0.00	
1,953.0	21.30	338.39	1,902.6	337.1	-115.5	38.4	0.74	-0.42	-1.66	
2,048.0	21.21	338.87	1,991.1	369.2	-128.1	40.6	0.21	-0.09	0.51	
2,144.0	20.68	338.87	2,080.8	401.2	-140.5	43.0	0.55	-0.55	0.00	
2,239.0	21.30	344.16	2,169.5	433.4	-151.2	46.9	2.10	0.65	5.57	
2,335.0	21.04	343.59	2,259.0	466.7	-160.9	52.3	0.35	-0.27	-0.59	

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Well:	Jesser 3E 10-3N	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)	
2,430.0	20.99	343.50	2,347.7	499.4	-170.5	57.4	0.06	-0.05	-0.09	
2,526.0	20.99	343.59	2,437.3	532.4	-180.2	62.6	0.03	0.00	0.09	
2,621.0	20.81	343.19	2,526.1	564.9	-189.9	67.6	0.24	-0.19	-0.42	
2,717.0	19.62	340.59	2,616.2	596.4	-200.2	71.7	1.55	-1.24	-2.71	
2,813.0	18.91	340.59	2,706.8	626.3	-210.7	74.8	0.74	-0.74	0.00	
2,908.0	19.80	344.56	2,796.4	656.3	-220.1	79.0	1.67	0.94	4.18	
3,004.0	18.69	343.28	2,887.1	686.7	-228.9	84.0	1.24	-1.16	-1.33	
3,100.0	20.02	340.59	2,977.6	716.9	-238.8	87.9	1.67	1.39	-2.80	
3,195.0	20.02	341.30	3,066.9	747.7	-249.4	91.3	0.26	0.00	0.75	
3,290.0	19.89	342.80	3,156.2	778.5	-259.4	95.3	0.56	-0.14	1.58	
3,386.0	20.50	338.87	3,246.3	809.8	-270.3	98.7	1.55	0.64	-4.09	
3,481.0	20.59	340.77	3,335.3	841.1	-281.8	101.6	0.71	0.09	2.00	
3,577.0	21.52	340.68	3,424.8	873.6	-293.2	105.1	0.97	0.97	-0.09	
3,673.0	20.28	338.48	3,514.5	905.7	-305.1	107.9	1.53	-1.29	-2.29	
3,768.0	22.89	343.06	3,602.9	938.7	-316.5	111.5	3.27	2.75	4.82	
3,959.0	23.20	341.30	3,778.6	1,009.9	-339.4	121.0	0.40	0.16	-0.92	
4,054.0	21.79	345.09	3,866.4	1,044.7	-349.9	126.2	2.13	-1.48	3.99	
4,150.0	18.52	342.09	3,956.5	1,076.4	-359.2	131.3	3.57	-3.41	-3.13	
4,245.0	16.39	341.39	4,047.1	1,103.5	-368.1	134.7	2.25	-2.24	-0.74	
4,341.0	15.82	346.28	4,139.4	1,129.0	-375.6	138.8	1.53	-0.59	5.09	
4,436.0	18.38	345.88	4,230.2	1,156.1	-382.3	144.2	2.70	2.69	-0.42	
4,531.0	21.21	345.97	4,319.5	1,187.3	-390.1	150.4	2.98	2.98	0.09	
4,627.0	20.81	345.18	4,409.2	1,220.7	-398.7	156.7	0.51	-0.42	-0.82	
4,722.0	20.42	339.09	4,498.1	1,252.5	-408.9	161.0	2.29	-0.41	-6.41	
4,817.0	21.08	333.89	4,586.9	1,283.3	-422.4	161.9	2.06	0.69	-5.47	
4,913.0	20.90	339.49	4,676.6	1,314.8	-436.0	162.9	2.10	-0.19	5.83	
5,008.0	21.52	339.67	4,765.1	1,347.0	-447.9	165.7	0.66	0.65	0.19	
5,104.0	21.21	336.49	4,854.5	1,379.5	-461.0	167.7	1.25	-0.32	-3.31	
5,199.0	20.81	339.18	4,943.2	1,411.0	-473.8	169.4	1.10	-0.42	2.83	
5,295.0	22.40	340.77	5,032.5	1,444.2	-485.9	172.6	1.76	1.66	1.66	
5,390.0	20.02	338.57	5,121.0	1,476.5	-497.8	175.4	2.64	-2.51	-2.32	
5,486.0	21.30	337.20	5,210.9	1,507.8	-510.6	177.2	1.43	1.33	-1.43	
5,582.0	20.02	339.67	5,300.7	1,539.3	-523.1	179.3	1.61	-1.33	2.57	
5,677.0	21.30	342.84	5,389.6	1,571.1	-533.8	183.0	1.79	1.35	3.34	
5,773.0	19.89	336.58	5,479.4	1,602.7	-545.4	185.9	2.72	-1.47	-6.52	
5,868.0	21.21	344.69	5,568.4	1,634.1	-556.4	189.3	3.30	1.39	8.54	
5,987.0	21.70	348.48	5,679.2	1,676.4	-566.5	198.1	1.24	0.41	3.18	
6,083.0	18.91	347.47	5,769.2	1,709.0	-573.4	205.7	2.93	-2.91	-1.05	
6,178.0	19.18	341.69	5,859.0	1,738.9	-581.6	210.8	2.00	0.28	-6.08	
6,273.0	20.28	343.50	5,948.4	1,769.5	-591.2	215.2	1.32	1.16	1.91	
6,369.0	20.50	343.06	6,038.4	1,801.5	-600.8	220.0	0.28	0.23	-0.46	
6,464.0	19.71	341.69	6,127.6	1,832.6	-610.7	224.3	0.97	-0.83	-1.44	

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Survey									
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6,560.0	20.68	339.98	6,217.7	1,863.9	-621.6	227.7	1.18	1.01	-1.78
6,655.0	19.89	348.08	6,306.9	1,895.5	-630.7	232.9	3.07	-0.83	8.53
6,750.0	25.59	13.39	6,394.6	1,931.4	-629.3	249.4	11.79	6.00	26.64
6,846.0	30.80	36.39	6,479.5	1,971.5	-609.8	284.0	12.46	5.43	23.96
6,941.0	34.60	57.06	6,559.6	2,005.9	-572.6	332.3	12.36	4.00	21.76
7,037.0	38.09	72.09	6,637.1	2,029.8	-521.5	388.8	9.94	3.64	15.66
7,132.0	44.19	74.38	6,708.6	2,047.8	-461.6	450.6	6.61	6.42	2.41
7,227.0	47.90	83.99	6,774.6	2,060.4	-394.6	516.6	8.26	3.91	10.12
7,323.0	56.12	85.66	6,833.7	2,067.2	-319.3	587.7	8.67	8.56	1.74
7,418.0	58.51	86.19	6,885.0	2,072.8	-239.6	662.3	2.56	2.52	0.56
7,514.0	63.19	86.28	6,931.7	2,078.3	-155.9	740.4	4.88	4.88	0.09
7,610.0	72.29	87.47	6,968.1	2,083.1	-67.3	822.7	9.55	9.48	1.24
7,624.1	74.28	87.87	6,972.1	2,083.7	-53.8	835.1	14.35	14.08	2.86
Cross 460' 7624.1 MD/6972.1 TVD 2083.7 N -53.8 W N: 1369801.3 E: 3139926.3									
7,705.0	85.68	90.07	6,986.2	2,085.1	25.7	907.7	14.35	14.10	2.72
7,801.0	91.21	91.48	6,988.8	2,083.8	121.6	994.0	5.94	5.76	1.47
7,896.0	89.79	91.39	6,987.9	2,081.4	216.6	1,079.0	1.50	-1.49	-0.09
7,992.0	90.28	92.10	6,987.9	2,078.5	312.5	1,164.7	0.90	0.51	0.74
8,087.0	90.59	91.96	6,987.2	2,075.1	407.5	1,249.2	0.36	0.33	-0.15
8,182.0	90.72	91.70	6,986.1	2,072.1	502.4	1,333.9	0.31	0.14	-0.27
8,278.0	91.12	91.48	6,984.5	2,069.4	598.4	1,419.7	0.48	0.42	-0.23
8,373.0	90.41	91.57	6,983.3	2,066.9	693.3	1,504.6	0.75	-0.75	0.09
8,468.0	90.01	90.08	6,982.9	2,065.5	788.3	1,590.0	1.62	-0.42	-1.57
8,564.0	90.01	89.76	6,982.9	2,065.7	884.3	1,677.0	0.33	0.00	-0.33
8,659.0	90.41	90.07	6,982.6	2,065.8	979.3	1,763.1	0.53	0.42	0.33
8,754.0	89.70	88.48	6,982.5	2,067.0	1,074.3	1,849.6	1.83	-0.75	-1.67
8,850.0	90.10	88.26	6,982.6	2,069.7	1,170.3	1,937.7	0.48	0.42	-0.23
8,945.0	89.88	88.17	6,982.6	2,072.7	1,265.2	2,024.9	0.25	-0.23	-0.09
9,040.0	88.29	88.17	6,984.2	2,075.7	1,360.2	2,112.2	1.67	-1.67	0.00
9,136.0	88.29	87.47	6,987.0	2,079.4	1,456.0	2,200.6	0.73	0.00	-0.73
9,231.0	89.62	88.09	6,988.8	2,083.1	1,551.0	2,288.1	1.54	1.40	0.65
9,327.0	89.88	87.38	6,989.2	2,086.9	1,646.9	2,376.6	0.79	0.27	-0.74
9,422.0	90.41	88.48	6,988.9	2,090.3	1,741.8	2,464.0	1.29	0.56	1.16
9,518.0	88.51	88.79	6,989.8	2,092.6	1,837.8	2,551.9	2.01	-1.98	0.32
9,614.0	88.20	87.78	6,992.6	2,095.5	1,933.7	2,640.0	1.10	-0.32	-1.05
9,709.0	89.22	89.67	6,994.7	2,097.6	2,028.6	2,726.8	2.26	1.07	1.99
9,805.0	89.31	89.67	6,996.0	2,098.1	2,124.6	2,814.0	0.09	0.09	0.00
9,900.0	89.00	89.50	6,997.4	2,098.8	2,219.6	2,900.3	0.37	-0.33	-0.18
9,996.0	90.28	92.27	6,998.0	2,097.3	2,315.6	2,986.6	3.18	1.33	2.89
10,091.0	90.41	92.10	6,997.4	2,093.7	2,410.5	3,071.0	0.23	0.14	-0.18
10,187.0	90.59	91.17	6,996.6	2,091.0	2,506.5	3,156.8	0.99	0.19	-0.97
10,282.0	90.90	90.69	6,995.3	2,089.4	2,601.5	3,242.1	0.60	0.33	-0.51
10,378.0	90.01	92.18	6,994.6	2,087.0	2,697.4	3,328.0	1.81	-0.93	1.55

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

Survey										
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10,473.0	89.09	92.18	6,995.3	2,083.4	2,792.4	3,412.4	0.97	-0.97	0.00	
10,569.0	90.19	92.67	6,995.9	2,079.3	2,888.3	3,497.6	1.25	1.15	0.51	
10,664.0	87.41	91.48	6,997.9	2,075.9	2,983.2	3,582.0	3.18	-2.93	-1.25	
10,760.0	86.92	91.96	7,002.7	2,073.0	3,079.0	3,667.6	0.71	-0.51	0.50	
10,855.0	86.30	91.79	7,008.3	2,069.9	3,173.8	3,752.1	0.68	-0.65	-0.18	
10,951.0	87.50	92.67	7,013.5	2,066.2	3,269.6	3,837.3	1.55	1.25	0.92	
11,046.0	90.90	91.39	7,014.8	2,062.8	3,364.5	3,921.8	3.82	3.58	-1.35	
11,141.0	90.90	89.28	7,013.3	2,062.3	3,459.5	4,007.6	2.22	0.00	-2.22	
11,237.0	88.91	89.67	7,013.5	2,063.1	3,555.5	4,094.9	2.11	-2.07	0.41	
11,332.0	89.79	89.67	7,014.5	2,063.7	3,650.5	4,181.1	0.93	0.93	0.00	
11,427.0	87.89	89.19	7,016.5	2,064.6	3,745.4	4,267.5	2.06	-2.00	-0.51	
11,523.0	88.20	90.69	7,019.7	2,064.7	3,841.4	4,354.5	1.59	0.32	1.56	
11,619.0	91.78	89.36	7,019.8	2,064.7	3,937.3	4,441.4	3.98	3.73	-1.39	
11,714.0	91.78	88.66	7,016.8	2,066.3	4,032.3	4,528.0	0.74	0.00	-0.74	
11,809.0	91.38	88.88	7,014.2	2,068.4	4,127.2	4,614.9	0.48	-0.42	0.23	
11,905.0	90.99	88.48	7,012.2	2,070.6	4,223.2	4,702.7	0.58	-0.41	-0.42	
Last MWD Survey 11905 MD/7012.2 TVD 2070.6 N 4223.2 E N: 1369812.4 E: 3144203.1										
12,055.0	90.99	88.48	7,009.6	2,074.6	4,373.1	4,840.2	0.00	0.00	0.00	
PTB 12055 MD/7009.6 TVD 2074.6 N 4373.1 E N: 1369817.2 E: 3144353.0										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,624.1	6,972.1	2,083.7	-53.8	Cross 460' 7624.1 MD/6972.1 TVD 2083.7 N -53.8 W N: 1369801.3 E: 3139926	
11,905.0	7,012.2	2,070.6	4,223.2	Last MWD Survey 11905 MD/7012.2 TVD 2070.6 N 4223.2 E N: 1369812.4 E: 3144203.1	
12,055.0	7,009.6	2,074.6	4,373.1	PTB 12055 MD/7009.6 TVD 2074.6 N 4373.1 E N: 1369817.2 E: 3144353.0	

Checked By: _____	Approved By: _____	Date: _____
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