

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

Jesser 3E 10-15N

Wellbore #1

Survey: Survey #2

Standard Survey Report

08 January, 2018

Survey Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well Jesser 3E 10-15N
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5138.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5138.0usft
Well:	Jesser 3E 10-15N	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 10-15N					
Well Position	+N/-S	0.0 usft	Northing:	1,367,722.71 usft	Latitude:	40° 20' 30.149 N
	+E/-W	0.0 usft	Easting:	3,140,231.88 usft	Longitude:	104° 59' 48.923 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,109.0 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	110.39	

Survey Program	Date	1/8/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
215.0	1,537.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
1,667.0	11,900.0	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	17.01	205.09	1,524.3	-115.0	-57.4	-13.7	0.00	0.00	0.00	
1,667.0	16.31	205.00	1,648.8	-148.7	-73.2	-16.8	0.54	-0.54	-0.07	
1,762.0	18.91	203.67	1,739.4	-174.9	-85.0	-18.7	2.77	2.74	-1.40	
1,857.0	18.78	200.99	1,829.3	-203.3	-96.7	-19.8	0.92	-0.14	-2.82	
1,953.0	17.99	199.18	1,920.4	-231.7	-107.1	-19.6	1.02	-0.82	-1.89	
2,048.0	16.48	198.08	2,011.1	-258.4	-116.1	-18.8	1.63	-1.59	-1.16	
2,144.0	16.62	204.38	2,103.1	-283.8	-126.0	-19.2	1.87	0.15	6.56	
2,239.0	15.60	203.67	2,194.4	-307.9	-136.7	-20.8	1.09	-1.07	-0.75	
2,334.0	17.19	209.80	2,285.5	-331.8	-148.8	-23.9	2.47	1.67	6.45	

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Well:	Jesser 3E 10-15N	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	17.72	209.80	2,377.1	-356.8	-163.1	-28.6	0.55	0.55	0.00	
2,526.0	17.99	209.27	2,468.5	-382.4	-177.6	-33.2	0.33	0.28	-0.55	
2,621.0	16.70	207.29	2,559.2	-407.3	-191.1	-37.1	1.49	-1.36	-2.08	
2,717.0	15.11	205.48	2,651.5	-430.9	-202.8	-39.9	1.73	-1.66	-1.89	
2,812.0	16.62	210.46	2,742.9	-453.8	-215.0	-43.4	2.14	1.59	5.24	
2,908.0	18.60	207.20	2,834.4	-479.2	-228.9	-47.6	2.30	2.06	-3.40	
3,004.0	16.00	204.07	2,926.0	-504.9	-241.3	-50.3	2.88	-2.71	-3.26	
3,099.0	18.12	204.29	3,016.9	-530.4	-252.8	-52.1	2.23	2.23	0.23	
3,195.0	18.21	202.18	3,108.1	-557.9	-264.6	-53.6	0.69	0.09	-2.20	
3,290.0	16.08	201.47	3,198.8	-583.8	-275.0	-54.3	2.25	-2.24	-0.75	
3,386.0	16.88	201.87	3,290.9	-609.2	-285.0	-54.9	0.84	0.83	0.42	
3,481.0	19.09	204.29	3,381.2	-636.1	-296.6	-56.3	2.46	2.33	2.55	
3,577.0	16.79	203.90	3,472.6	-663.1	-308.6	-58.2	2.40	-2.40	-0.41	
3,672.0	16.08	202.79	3,563.7	-687.8	-319.3	-59.6	0.82	-0.75	-1.17	
3,768.0	17.81	200.50	3,655.5	-713.8	-329.6	-60.2	1.93	1.80	-2.39	
3,864.0	18.38	200.59	3,746.8	-741.7	-340.1	-60.3	0.59	0.59	0.09	
3,959.0	17.72	199.27	3,837.1	-769.4	-350.1	-60.1	0.82	-0.69	-1.39	
4,054.0	17.50	209.18	3,927.7	-795.5	-361.8	-62.0	3.16	-0.23	10.43	
4,150.0	15.82	212.49	4,019.6	-819.1	-375.9	-66.9	2.01	-1.75	3.45	
4,245.0	18.12	212.97	4,110.5	-842.5	-390.9	-72.8	2.43	2.42	0.51	
4,341.0	19.18	210.90	4,201.5	-868.5	-407.1	-79.0	1.30	1.10	-2.16	
4,436.0	20.90	209.98	4,290.7	-896.6	-423.6	-84.6	1.84	1.81	-0.97	
4,531.0	19.31	200.50	4,379.9	-926.0	-437.6	-87.5	3.81	-1.67	-9.98	
4,626.0	17.19	198.39	4,470.1	-954.0	-447.5	-87.0	2.34	-2.23	-2.22	
4,722.0	18.69	200.59	4,561.5	-981.9	-457.4	-86.6	1.71	1.56	2.29	
4,817.0	20.11	201.38	4,651.1	-1,011.4	-468.7	-86.9	1.52	1.49	0.83	
4,912.0	18.29	200.19	4,740.8	-1,040.6	-479.8	-87.1	1.96	-1.92	-1.25	
5,032.0	14.58	196.18	4,855.9	-1,072.7	-490.5	-86.0	3.23	-3.09	-3.34	
5,127.0	14.32	197.99	4,947.9	-1,095.4	-497.5	-84.6	0.55	-0.27	1.91	
5,223.0	15.51	203.90	5,040.6	-1,118.4	-506.3	-84.9	2.01	1.24	6.16	
5,318.0	15.91	202.48	5,132.1	-1,142.1	-516.5	-86.1	0.58	0.42	-1.49	
5,414.0	17.17	207.38	5,224.1	-1,166.8	-528.0	-88.3	1.96	1.31	5.10	
5,509.0	16.62	205.70	5,315.0	-1,191.5	-540.4	-91.3	0.77	-0.58	-1.77	
5,605.0	14.98	204.60	5,407.4	-1,215.2	-551.5	-93.5	1.74	-1.71	-1.15	
5,701.0	17.41	209.10	5,499.6	-1,239.0	-563.6	-96.6	2.85	2.53	4.69	
5,796.0	17.99	209.58	5,590.1	-1,264.2	-577.8	-101.1	0.63	0.61	0.51	
5,892.0	18.29	204.38	5,681.3	-1,290.8	-591.3	-104.5	1.71	0.31	-5.42	
5,987.0	18.38	201.69	5,771.5	-1,318.3	-603.0	-105.9	0.90	0.09	-2.83	
6,083.0	17.72	203.28	5,862.8	-1,345.8	-614.4	-106.9	0.86	-0.69	1.66	
6,178.0	17.01	205.26	5,953.4	-1,371.6	-626.0	-108.8	0.97	-0.75	2.08	
6,273.0	17.41	204.07	6,044.2	-1,397.2	-637.7	-110.9	0.56	0.42	-1.25	
6,369.0	17.50	202.97	6,135.8	-1,423.6	-649.2	-112.5	0.36	0.09	-1.15	

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Survey									
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6,464.0	16.00	201.87	6,226.7	-1,448.9	-659.7	-113.5	1.61	-1.58	-1.16
6,559.0	13.39	177.28	6,318.7	-1,472.0	-664.0	-109.5	7.05	-2.75	-25.88
6,655.0	17.28	148.46	6,411.4	-1,495.3	-656.0	-93.9	8.79	4.05	-30.02
6,750.0	20.90	114.57	6,501.4	-1,514.5	-633.2	-65.8	12.08	3.81	-35.67
6,846.0	24.61	102.10	6,590.0	-1,525.8	-598.0	-28.9	6.32	3.86	-12.99
6,941.0	27.22	107.30	6,675.5	-1,536.4	-557.9	12.4	3.64	2.75	5.47
7,037.0	36.41	108.40	6,756.9	-1,552.0	-509.8	62.9	9.59	9.57	1.15
7,132.0	44.98	103.77	6,828.9	-1,568.9	-450.3	124.6	9.56	9.02	-4.87
7,227.0	55.02	99.68	6,889.9	-1,583.5	-379.2	196.4	11.07	10.57	-4.31
7,323.0	67.39	95.18	6,936.1	-1,594.1	-295.9	278.1	13.52	12.89	-4.69
7,418.0	80.91	89.10	6,962.0	-1,597.4	-204.8	364.6	15.50	14.23	-6.40
7,513.0	89.39	95.73	6,970.0	-1,601.4	-110.4	454.5	11.31	8.93	6.98
Cross 460' FWL 7513 MD/6970 TVD -1601.4 S -110.4 W N: 1366120.8 E: 3140130.5									
7,514.0	89.48	95.80	6,970.0	-1,601.5	-109.4	455.5	11.31	8.95	6.92
7,609.0	89.48	95.18	6,970.9	-1,610.6	-14.8	547.3	0.65	0.00	-0.65
7,705.0	91.60	93.99	6,970.0	-1,618.2	80.8	639.6	2.53	2.21	-1.24
7,801.0	90.50	93.99	6,968.2	-1,624.9	176.6	731.7	1.15	-1.15	0.00
7,896.0	90.41	93.77	6,967.5	-1,631.3	271.4	822.8	0.25	-0.09	-0.23
7,992.0	90.90	93.07	6,966.4	-1,637.1	367.2	914.6	0.89	0.51	-0.73
8,087.0	89.70	91.70	6,965.9	-1,641.0	462.1	1,005.0	1.92	-1.26	-1.44
8,182.0	89.40	89.76	6,966.6	-1,642.2	557.1	1,094.4	2.07	-0.32	-2.04
8,277.0	90.10	90.69	6,967.1	-1,642.6	652.1	1,183.6	1.23	0.74	0.98
8,373.0	90.59	89.67	6,966.5	-1,642.9	748.1	1,273.7	1.18	0.51	-1.06
8,468.0	90.28	89.19	6,965.8	-1,642.0	843.1	1,362.4	0.60	-0.33	-0.51
8,563.0	89.31	87.60	6,966.1	-1,639.3	938.0	1,450.5	1.96	-1.02	-1.67
8,659.0	90.28	88.39	6,966.4	-1,635.9	1,034.0	1,539.2	1.30	1.01	0.82
8,754.0	92.00	90.69	6,964.5	-1,635.2	1,128.9	1,628.0	3.02	1.81	2.42
8,849.0	91.52	92.49	6,961.6	-1,637.8	1,223.8	1,717.8	1.96	-0.51	1.89
8,945.0	90.90	93.59	6,959.6	-1,642.9	1,319.7	1,809.4	1.32	-0.65	1.15
9,040.0	90.19	92.80	6,958.7	-1,648.2	1,414.5	1,900.2	1.12	-0.75	-0.83
9,136.0	89.22	90.77	6,959.2	-1,651.2	1,510.5	1,991.2	2.34	-1.01	-2.11
9,231.0	90.28	90.29	6,959.6	-1,652.1	1,605.5	2,080.5	1.22	1.12	-0.51
9,327.0	88.91	90.29	6,960.3	-1,652.6	1,701.5	2,170.7	1.43	-1.43	0.00
9,422.0	88.91	90.38	6,962.1	-1,653.1	1,796.4	2,259.9	0.09	0.00	0.09
9,518.0	89.79	88.48	6,963.2	-1,652.2	1,892.4	2,349.5	2.18	0.92	-1.98
9,613.0	90.90	88.79	6,962.6	-1,649.9	1,987.4	2,437.8	1.21	1.17	0.33
9,709.0	89.40	86.19	6,962.4	-1,645.7	2,083.3	2,526.2	3.13	-1.56	-2.71
9,805.0	89.88	91.08	6,963.0	-1,643.4	2,179.2	2,615.3	5.12	0.50	5.09
9,900.0	90.10	91.79	6,963.0	-1,645.8	2,274.2	2,705.2	0.78	0.23	0.75
9,996.0	89.62	87.07	6,963.2	-1,644.8	2,370.2	2,794.8	4.94	-0.50	-4.92
10,091.0	89.48	82.80	6,964.0	-1,636.4	2,464.8	2,880.5	4.50	-0.15	-4.49
10,187.0	89.79	82.27	6,964.6	-1,624.0	2,560.0	2,965.4	0.64	0.32	-0.55
10,282.0	89.48	81.78	6,965.2	-1,610.8	2,654.0	3,049.0	0.61	-0.33	-0.52

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Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5138.0usft
Well:	Jesser 3E 10-15N	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)	
10,378.0	89.48	83.68	6,966.0	-1,598.6	2,749.3	3,134.0	1.98	0.00	1.98	
10,473.0	90.90	88.39	6,965.7	-1,592.1	2,844.0	3,220.5	5.18	1.49	4.96	
10,569.0	92.31	90.60	6,963.0	-1,591.2	2,940.0	3,310.2	2.73	1.47	2.30	
10,664.0	91.52	90.99	6,959.9	-1,592.5	3,034.9	3,399.6	0.93	-0.83	0.41	
10,759.0	91.30	91.26	6,957.5	-1,594.4	3,129.8	3,489.3	0.37	-0.23	0.28	
10,855.0	90.59	91.79	6,955.9	-1,597.0	3,225.8	3,580.1	0.92	-0.74	0.55	
10,950.0	88.51	90.77	6,956.7	-1,599.1	3,320.8	3,669.8	2.44	-2.19	-1.07	
11,046.0	89.88	91.08	6,958.0	-1,600.6	3,416.7	3,760.3	1.46	1.43	0.32	
11,141.0	89.70	91.08	6,958.4	-1,602.4	3,511.7	3,850.0	0.19	-0.19	0.00	
11,237.0	89.79	90.20	6,958.8	-1,603.5	3,607.7	3,940.3	0.92	0.09	-0.92	
11,332.0	89.31	90.07	6,959.6	-1,603.7	3,702.7	4,029.5	0.52	-0.51	-0.14	
11,427.0	90.90	90.07	6,959.4	-1,603.8	3,797.7	4,118.6	1.67	1.67	0.00	
11,523.0	88.51	88.17	6,959.9	-1,602.4	3,893.7	4,208.0	3.18	-2.49	-1.98	
11,619.0	88.82	87.87	6,962.1	-1,599.0	3,989.6	4,296.8	0.45	0.32	-0.31	
11,714.0	89.48	87.47	6,963.5	-1,595.2	4,084.5	4,384.4	0.81	0.69	-0.42	
11,809.0	89.40	86.37	6,964.5	-1,590.1	4,179.4	4,471.5	1.16	-0.08	-1.16	
Last MWD Survey 11809 MD/6964.5 TVD -1590.1 S 4179.4 E N: 1366156.4 E: 3144720.0										
11,900.0	89.40	86.37	6,965.4	-1,584.3	4,270.2	4,554.6	0.00	0.00	0.00	
PTB 505' FEL 11900 MD/6965.4 TVD -1584.3 S 4270.2 E N: 1366162.7 E: 3144510.8										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,513.0	6,970.0	-1,601.4	-110.4	Cross 460' FWL 7513 MD/6970 TVD -1601.4 S -110.4 W N: 1366120.8 E: 3140	
11,809.0	6,964.5	-1,590.1	4,179.4	Last MWD Survey 11809 MD/6964.5 TVD -1590.1 S 4179.4 E N: 1366156.4 E:	
11,900.0	6,965.4	-1,584.3	4,270.2	PTB 505' FEL 11900 MD/6965.4 TVD -1584.3 S 4270.2 E N: 1366162.7 E: 3144	

Checked By: _____	Approved By: _____	Date: _____
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