

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

Jesser 3E 10-7N

Wellbore #1

Survey: Survey #2

Standard Survey Report

18 December, 2017

Survey Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well Jesser 3E 10-7N
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB=29 @ 5141.0usft
Site:	Sec 3, T4N-R68W 6th PM (KB 29' CORRECT 111917)	MD Reference:	KB=29 @ 5141.0usft
Well:	Jesser 3E 10-7N	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 10-7N					
Well Position	+N/-S	0.0 usft	Northing:	1,367,719.62 usft	Latitude:	40° 20' 30.127 N
	+E/-W	0.0 usft	Easting:	3,140,071.89 usft	Longitude:	104° 59' 50.989 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,112.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/28/2017	8.28	66.76	52,284

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	80.45	

Survey Program	Date	12/18/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
125.0	1,538.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
1,667.0	11,870.0	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	10.21	324.30	1,535.9	17.7	-19.3	-16.1	0.00	0.00	0.00	
1,667.0	10.21	322.00	1,662.8	36.0	-33.0	-26.6	0.32	0.00	-1.78	
1,762.0	9.50	318.78	1,756.4	48.6	-43.3	-34.7	0.95	-0.75	-3.39	
1,857.0	12.42	322.70	1,849.7	62.6	-54.7	-43.6	3.17	3.07	4.13	
1,953.0	12.11	320.28	1,943.5	78.5	-67.4	-53.4	0.63	-0.32	-2.52	
2,048.0	11.40	317.19	2,036.5	93.1	-80.1	-63.6	1.00	-0.75	-3.25	
2,144.0	10.52	315.39	2,130.7	106.3	-92.7	-73.8	0.98	-0.92	-1.88	
2,239.0	9.90	313.58	2,224.2	118.1	-104.8	-83.7	0.73	-0.65	-1.91	
2,335.0	11.80	319.97	2,318.5	131.3	-117.0	-93.6	2.34	1.98	6.66	

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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)	
2,430.0	12.02	319.26	2,411.5	146.2	-129.7	-103.7	0.28	0.23	-0.75	
2,526.0	12.02	318.78	2,505.4	161.3	-142.9	-114.1	0.10	0.00	-0.50	
2,621.0	11.18	316.58	2,598.4	175.5	-155.7	-124.4	1.00	-0.88	-2.32	
2,717.0	10.38	314.59	2,692.7	188.3	-168.3	-134.7	0.92	-0.83	-2.07	
2,812.0	9.99	312.57	2,786.2	199.9	-180.4	-144.8	0.56	-0.41	-2.13	
2,908.0	9.28	308.29	2,880.9	210.3	-192.6	-155.1	1.05	-0.74	-4.46	
3,004.0	9.41	319.26	2,975.6	221.1	-203.8	-164.3	1.86	0.14	11.43	
3,099.0	8.71	319.40	3,069.4	232.4	-213.6	-172.1	0.74	-0.74	0.15	
3,195.0	9.72	320.19	3,164.2	244.1	-223.5	-179.9	1.06	1.05	0.82	
3,290.0	11.89	319.57	3,257.5	257.8	-235.0	-189.0	2.29	2.28	-0.65	
3,386.0	10.91	315.39	3,351.6	271.8	-247.8	-199.3	1.33	-1.02	-4.35	
3,481.0	9.41	314.28	3,445.1	283.6	-259.7	-209.0	1.59	-1.58	-1.17	
3,577.0	10.52	320.10	3,539.7	295.8	-270.9	-218.1	1.56	1.16	6.06	
3,672.0	11.09	319.00	3,633.0	309.3	-282.5	-227.2	0.64	0.60	-1.16	
3,768.0	11.31	317.90	3,727.2	323.3	-294.8	-237.1	0.32	0.23	-1.15	
3,864.0	11.09	316.66	3,821.3	337.0	-307.5	-247.3	0.34	-0.23	-1.29	
3,959.0	9.81	315.39	3,914.7	349.4	-319.4	-257.0	1.37	-1.35	-1.34	
4,054.0	9.72	316.88	4,008.4	361.0	-330.6	-266.1	0.28	-0.09	1.57	
4,150.0	10.91	317.06	4,102.8	373.6	-342.3	-275.6	1.24	1.24	0.19	
4,245.0	10.12	312.17	4,196.2	385.8	-354.6	-285.7	1.25	-0.83	-5.15	
4,341.0	9.59	311.38	4,290.8	396.7	-366.9	-296.0	0.57	-0.55	-0.82	
4,436.0	10.52	309.17	4,384.3	407.4	-379.5	-306.7	1.06	0.98	-2.33	
4,531.0	12.28	311.86	4,477.5	419.6	-393.8	-318.7	1.93	1.85	2.83	
4,627.0	11.62	316.58	4,571.4	433.5	-408.0	-330.5	1.23	-0.69	4.92	
4,722.0	11.40	315.30	4,664.5	447.1	-421.2	-341.2	0.35	-0.23	-1.35	
4,817.0	10.38	312.57	4,757.8	459.6	-434.1	-351.9	1.20	-1.07	-2.87	
4,912.0	9.50	313.18	4,851.3	470.7	-446.1	-361.9	0.93	-0.93	0.64	
5,031.0	9.81	319.79	4,968.7	485.2	-459.9	-373.0	0.97	0.26	5.55	
5,127.0	11.18	322.48	5,063.1	498.8	-470.8	-381.5	1.52	1.43	2.80	
5,222.0	11.80	318.07	5,156.1	513.3	-482.9	-391.1	1.13	0.65	-4.64	
5,318.0	12.11	317.50	5,250.1	528.1	-496.3	-401.8	0.35	0.32	-0.59	
5,413.0	9.99	314.28	5,343.3	541.2	-508.9	-412.1	2.32	-2.23	-3.39	
5,509.0	9.72	321.16	5,437.9	553.3	-519.9	-421.0	1.26	-0.28	7.17	
5,605.0	11.09	325.87	5,532.3	567.2	-530.2	-428.8	1.68	1.43	4.91	
5,700.0	12.20	321.78	5,625.4	582.7	-541.5	-437.4	1.46	1.17	-4.31	
5,796.0	9.90	320.59	5,719.6	597.0	-553.1	-446.4	2.41	-2.40	-1.24	
5,891.0	11.80	317.28	5,812.9	610.5	-564.8	-455.7	2.10	2.00	-3.48	
5,987.0	15.11	317.59	5,906.2	626.9	-579.9	-467.9	3.45	3.45	0.32	
6,083.0	12.11	317.06	5,999.5	643.6	-595.2	-480.2	3.13	-3.13	-0.55	
6,178.0	11.62	317.68	6,092.5	657.9	-608.5	-490.9	0.53	-0.52	0.65	
6,273.0	9.72	321.60	6,185.8	671.3	-619.9	-500.0	2.14	-2.00	4.13	
6,368.0	10.30	321.47	6,279.4	684.2	-630.2	-507.9	0.61	0.61	-0.14	

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Survey									
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6,464.0	11.49	341.87	6,373.7	700.0	-638.5	-513.5	4.18	1.24	21.25
6,559.0	18.21	17.97	6,465.6	723.2	-636.8	-508.1	11.72	7.07	38.00
6,655.0	17.99	46.79	6,557.1	747.7	-621.4	-488.8	9.24	-0.23	30.02
6,750.0	23.11	71.38	6,646.2	763.7	-593.0	-458.1	10.45	5.39	25.88
6,845.0	34.29	74.47	6,729.4	776.9	-549.4	-412.9	11.87	11.77	3.25
6,941.0	40.30	85.49	6,805.8	786.6	-492.2	-355.0	9.34	6.26	11.48
7,037.0	49.49	89.10	6,873.7	789.6	-424.6	-287.8	9.93	9.57	3.76
7,132.0	61.69	88.88	6,927.3	791.0	-346.4	-210.4	12.84	12.84	-0.23
7,227.0	71.90	90.99	6,964.7	791.0	-259.2	-124.4	10.94	10.75	2.22
7,322.0	81.49	94.08	6,986.5	786.9	-167.0	-34.2	10.58	10.09	3.25
7,418.0	88.60	92.49	6,994.8	781.4	-71.6	59.0	7.59	7.41	-1.66
7,514.0	90.28	92.80	6,995.8	777.0	24.3	152.9	1.78	1.75	0.32
7,550.1	90.21	92.68	6,995.6	775.3	60.4	188.1	0.38	-0.19	-0.33
Cross 460' FWL 7550.1 MD/6995.6 TVD 75.3 N 60.4 E N: 1368495.1 E: 3140127.8									
7,609.0	90.10	92.49	6,995.5	772.6	119.2	245.7	0.38	-0.19	-0.33
7,705.0	89.09	91.48	6,996.1	769.3	215.1	339.8	1.49	-1.05	-1.05
7,800.0	91.69	91.17	6,995.5	767.1	310.1	433.0	2.76	2.74	-0.33
7,896.0	91.69	90.77	6,992.7	765.5	406.1	527.4	0.42	0.00	-0.42
7,991.0	91.78	93.20	6,989.8	762.2	500.9	620.4	2.56	0.09	2.56
8,087.0	91.52	93.20	6,987.0	756.8	596.8	714.0	0.27	-0.27	0.00
8,182.0	90.41	94.08	6,985.4	750.8	691.5	806.5	1.49	-1.17	0.93
8,277.0	90.41	93.86	6,984.7	744.2	786.3	898.9	0.23	0.00	-0.23
8,373.0	90.59	93.59	6,983.9	738.0	882.1	992.3	0.34	0.19	-0.28
8,468.0	89.31	95.89	6,984.0	730.1	976.8	1,084.4	2.77	-1.35	2.42
8,563.0	89.48	96.06	6,985.0	720.2	1,071.3	1,175.9	0.25	0.18	0.18
8,659.0	88.91	95.67	6,986.3	710.4	1,166.7	1,268.4	0.72	-0.59	-0.41
8,754.0	89.62	96.06	6,987.6	700.7	1,261.2	1,360.0	0.85	0.75	0.41
8,849.0	90.19	98.57	6,987.7	688.6	1,355.5	1,450.9	2.71	0.60	2.64
8,945.0	89.79	91.88	6,987.7	679.9	1,451.0	1,543.7	6.98	-0.42	-6.97
9,040.0	90.10	91.57	6,987.8	677.0	1,546.0	1,636.8	0.46	0.33	-0.33
9,136.0	89.79	85.27	6,987.9	679.7	1,641.9	1,731.9	6.57	-0.32	-6.56
9,231.0	90.01	84.08	6,988.1	688.5	1,736.5	1,826.6	1.27	0.23	-1.25
9,327.0	89.70	81.78	6,988.3	700.3	1,831.7	1,922.5	2.42	-0.32	-2.40
9,422.0	89.79	81.30	6,988.7	714.3	1,925.7	2,017.5	0.51	0.09	-0.51
9,518.0	91.52	84.38	6,987.6	726.2	2,020.9	2,113.4	3.68	1.80	3.21
9,613.0	91.52	89.50	6,985.1	731.3	2,115.7	2,207.7	5.39	0.00	5.39
9,709.0	92.18	93.37	6,982.0	728.9	2,211.6	2,301.9	4.09	0.69	4.03
9,805.0	92.00	90.60	6,978.5	725.6	2,307.5	2,395.9	2.89	-0.19	-2.89
9,900.0	91.60	92.18	6,975.5	723.3	2,402.4	2,489.1	1.71	-0.42	1.66
9,996.0	90.41	92.67	6,973.9	719.2	2,498.3	2,583.0	1.34	-1.24	0.51
10,091.0	90.19	92.10	6,973.4	715.3	2,593.2	2,675.9	0.64	-0.23	-0.60
10,187.0	90.28	91.88	6,973.0	711.9	2,689.2	2,770.0	0.25	0.09	-0.23
10,282.0	90.28	91.26	6,972.5	709.3	2,784.1	2,863.2	0.65	0.00	-0.65

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Design:	Wellbore #1	Database:	EDM 5000.1

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10,378.0	90.10	90.69	6,972.2	707.7	2,880.1	2,957.6	0.62	-0.19	-0.59
10,473.0	90.81	91.17	6,971.4	706.2	2,975.1	3,051.0	0.90	0.75	0.51
10,568.0	89.48	89.19	6,971.2	705.9	3,070.1	3,144.6	2.51	-1.40	-2.08
10,664.0	92.09	91.17	6,969.9	705.6	3,166.1	3,239.2	3.41	2.72	2.06
10,759.0	93.11	90.99	6,965.6	703.8	3,260.9	3,332.5	1.09	1.07	-0.19
10,855.0	91.69	89.50	6,961.5	703.4	3,356.9	3,427.0	2.14	-1.48	-1.55
10,950.0	88.82	87.07	6,961.1	706.2	3,451.8	3,521.1	3.96	-3.02	-2.56
11,046.0	90.19	85.79	6,961.9	712.2	3,547.6	3,616.6	1.95	1.43	-1.33
11,141.0	90.50	83.59	6,961.4	721.0	3,642.2	3,711.3	2.34	0.33	-2.32
11,236.0	90.81	89.10	6,960.3	727.0	3,737.0	3,805.8	5.81	0.33	5.80
11,332.0	89.48	87.60	6,960.0	729.8	3,832.9	3,900.9	2.09	-1.39	-1.56
11,427.0	90.28	86.50	6,960.2	734.7	3,927.8	3,995.2	1.43	0.84	-1.16
11,523.0	90.10	86.06	6,959.9	740.9	4,023.6	4,090.7	0.50	-0.19	-0.46
11,619.0	90.99	85.40	6,959.0	748.0	4,119.3	4,186.3	1.15	0.93	-0.69
11,714.0	92.18	85.40	6,956.4	755.7	4,214.0	4,280.9	1.25	1.25	0.00
11,802.0	90.94	85.00	6,954.0	763.0	4,301.6	4,368.6	1.48	-1.41	-0.45
Last MWD Survey 11802 MD/6954 TVD 763.0 N 4301.6 E N: 1368506.9 E: 3144368.9									
11,870.0	90.94	85.00	6,952.9	769.0	4,369.3	4,436.4	0.00	0.00	0.00
PTB 515' FEL 11870 MD/6952.9 TVD 468.9 N 4369.3 E N: 1368513.2 E: 3144436.6									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,550.1	6,995.6	775.3	60.4	Cross 460' FWL 7550.1 MD/6995.6 TVD 75.3 N 60.4 E N: 1368495.1 E: 314012
11,802.0	6,954.0	763.0	4,301.6	Last MWD Survey 11802 MD/6954 TVD 763.0 N 4301.6 E N: 1368506.9 E: 314
11,870.0	6,952.9	769.0	4,369.3	PTB 515' FEL 11870 MD/6952.9 TVD 468.9 N 4369.3 E N: 1368513.2 E: 31444

Checked By: _____	Approved By: _____	Date: _____
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