



Company: Extraction Oil & Gas
Field: Weld Co., Co
Location: Sec.08-T07N-R66W
Well: Thornton 10
Borehole: Original Hole
Rig: Xtreme 7
Plan: Rev 0



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00
3	1197.49	7.95	224.21	1196.22	-19.74	-19.20	2.00	224.21	-18.11
4	6105.61	7.95	224.21	6057.16	-506.33	-492.50	0.00	0.00	-464.59
5	6503.10	0.00	0.00	6453.38	-526.07	-511.70	2.00	180.00	-482.69
6	6603.10	0.00	0.00	6553.38	-526.07	-511.70	0.00	0.00	-482.69
7	7603.10	90.00	90.00	7190.00	-526.07	124.92	9.00	90.00	153.01
8	17254.82	90.00	90.00	7190.00	-526.07	9776.65	0.00	0.00	9790.79

WELL DETAILS: Thornton 10

+N/-S	+E/-W	GL 5037.00	KB @ 5053.00usft (Xtreme 7 - 16')	Longitude
0.00	0.00	1456879.03	3191541.36	40° 35' 7.753 N
				104° 48' 37.336 W

WELLBORE TARGET DETAILS

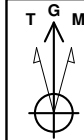
Name	TVD	+N/-S	+E/-W	Shape
KOP 10	6453.38	-526.07	-511.70	Point
LP 10	7190.00	-526.07	124.92	Point
PBHL Thornton 10	7190.00	-526.07	9776.65	Point

ANNOTATIONS

TVD	MD	Annotation
800.00	800.00	Begin Nudge
1196.22	1197.49	Hold Tangent
6057.17	6105.61	Begin Drop
6453.38	6503.10	Vertical Point
6553.38	6603.10	KOP, Build 9°/100' DLS
7190.00	7603.10	LP, Hold to TD
7190.00	17254.82	PBHL/TD

CASING DETAILS

TVD	MD	Name	Size
7190.00	7603.10	7" Csg	7



Azimuths to Grid North
True North: -0.45°
Magnetic North: 8.05°

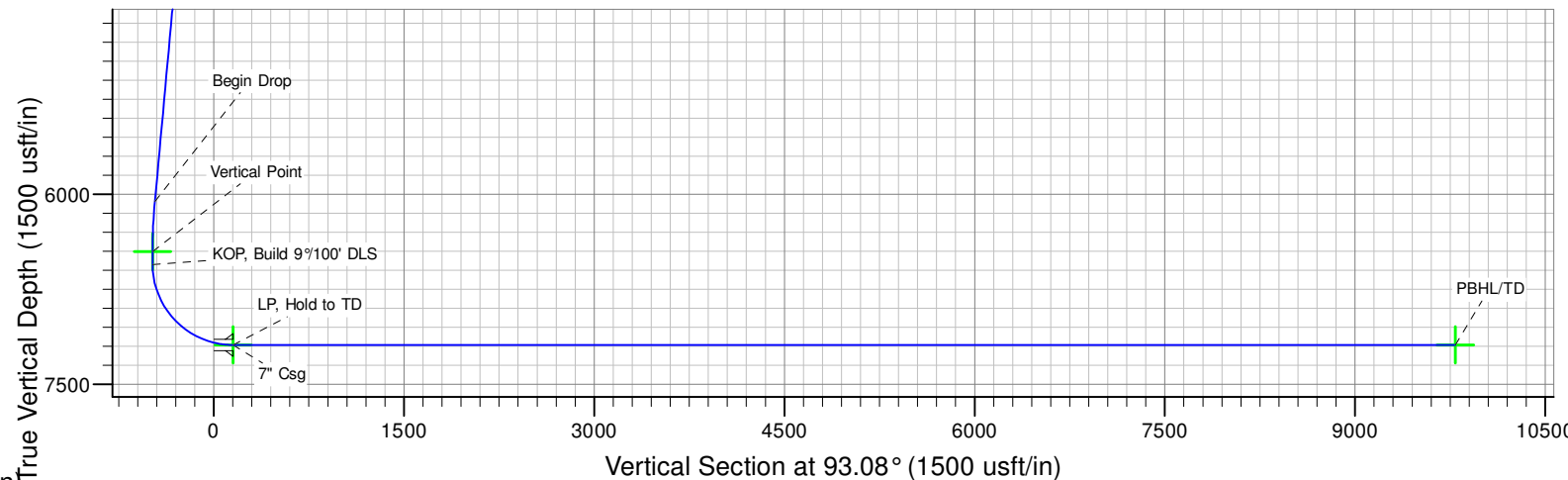
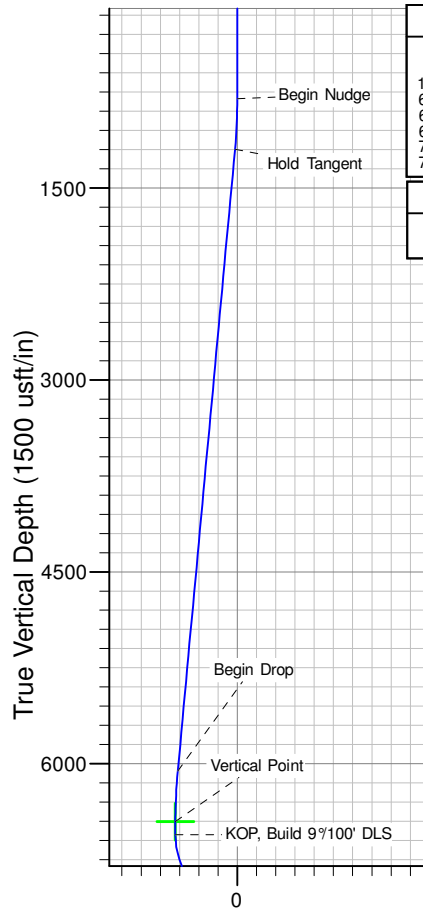
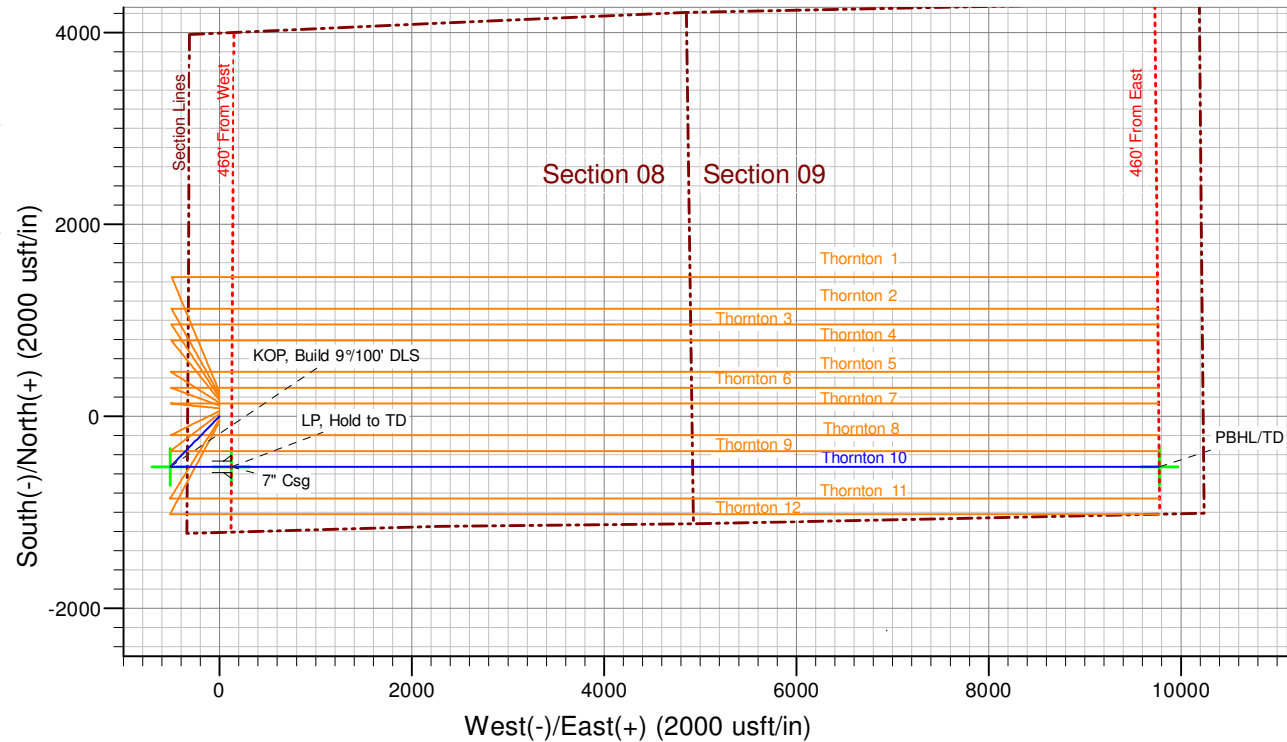
Magnetic Field
Strength: 52904.0nT
Dip Angle: 67.09°
Date: 6/20/2014
Model: IGRF2010

SHL: 1213' FSL & 331' FWL
(Sec.08-T07N-R66W)
PBHL: 495' FSL & 460' FEL
(Sec.09-T07N-R66W)

Notice:
Section Lines and Hardlines
are estimates only and are
subject to customer approval

Thornton 10 Rev 0

Created By: J Rieke Date: 13:14, June 21 2014





Extraction Oil & Gas

**Weld Co., Co
Sec.08-T07N-R66W
Thornton 10**

Original Hole

Plan: Rev 0

Standard Planning Report

21 June, 2014



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Thornton 10
Company:	Extraction Oil & Gas	TVD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Project:	Weld Co., Co	MD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Site:	Sec.08-T07N-R66W	North Reference:	Grid
Well:	Thornton 10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Project	Weld Co., Co		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec.08-T07N-R66W			
Site Position:		Northing:	1,457,130.79 usft	Latitude: 40° 35' 10.241 N
From:	Lat/Long	Easting:	3,191,541.35 usft	Longitude: 104° 48' 37.310 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.45 °

Well	Thornton 10			
Well Position	+N/-S	-251.76 usft	Northing:	1,456,879.03 usft
	+E/-W	0.01 usft	Easting:	3,191,541.36 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	5,053.00 usft
			Ground Level:	5,037.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/20/2014	8.50	67.09	52,904

Design	Rev 0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	93.08

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,197.49	7.95	224.21	1,196.22	-19.74	-19.20	2.00	2.00	0.00	224.21	
6,105.61	7.95	224.21	6,057.16	-506.33	-492.50	0.00	0.00	0.00	0.00	
6,503.10	0.00	0.00	6,453.38	-526.07	-511.70	2.00	-2.00	0.00	180.00	KOP 10
6,603.10	0.00	0.00	6,553.38	-526.07	-511.70	0.00	0.00	0.00	0.00	
7,603.10	90.00	90.00	7,190.00	-526.07	124.92	9.00	9.00	0.00	90.00	
17,254.82	90.00	90.00	7,190.00	-526.07	9,776.65	0.00	0.00	0.00	0.00	PBHL Thornton 10



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Thornton 10
Company:	Extraction Oil & Gas	TVD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Project:	Weld Co., Co	MD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Site:	Sec.08-T07N-R66W	North Reference:	Grid
Well:	Thornton 10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge									
900.00	2.00	224.21	899.98	-1.25	-1.22	-1.15	2.00	2.00	0.00
1,000.00	4.00	224.21	999.84	-5.00	-4.87	-4.59	2.00	2.00	0.00
1,100.00	6.00	224.21	1,099.45	-11.25	-10.94	-10.32	2.00	2.00	0.00
1,197.49	7.95	224.21	1,196.22	-19.74	-19.20	-18.11	2.00	2.00	0.00
Hold Tangent									
1,200.00	7.95	224.21	1,198.70	-19.98	-19.44	-18.34	0.00	0.00	0.00
1,300.00	7.95	224.21	1,297.74	-29.90	-29.08	-27.43	0.00	0.00	0.00
1,400.00	7.95	224.21	1,396.78	-39.81	-38.73	-36.53	0.00	0.00	0.00
1,500.00	7.95	224.21	1,495.82	-49.73	-48.37	-45.63	0.00	0.00	0.00
1,600.00	7.95	224.21	1,594.86	-59.64	-58.01	-54.72	0.00	0.00	0.00
1,700.00	7.95	224.21	1,693.90	-69.56	-67.66	-63.82	0.00	0.00	0.00
1,800.00	7.95	224.21	1,792.94	-79.47	-77.30	-72.92	0.00	0.00	0.00
1,900.00	7.95	224.21	1,891.97	-89.38	-86.94	-82.01	0.00	0.00	0.00
2,000.00	7.95	224.21	1,991.01	-99.30	-96.59	-91.11	0.00	0.00	0.00
2,100.00	7.95	224.21	2,090.05	-109.21	-106.23	-100.21	0.00	0.00	0.00
2,200.00	7.95	224.21	2,189.09	-119.13	-115.87	-109.30	0.00	0.00	0.00
2,300.00	7.95	224.21	2,288.13	-129.04	-125.52	-118.40	0.00	0.00	0.00
2,400.00	7.95	224.21	2,387.17	-138.95	-135.16	-127.50	0.00	0.00	0.00
2,500.00	7.95	224.21	2,486.21	-148.87	-144.80	-136.59	0.00	0.00	0.00
2,600.00	7.95	224.21	2,585.25	-158.78	-154.45	-145.69	0.00	0.00	0.00
2,700.00	7.95	224.21	2,684.29	-168.70	-164.09	-154.79	0.00	0.00	0.00
2,800.00	7.95	224.21	2,783.33	-178.61	-173.73	-163.88	0.00	0.00	0.00
2,900.00	7.95	224.21	2,882.36	-188.53	-183.38	-172.98	0.00	0.00	0.00
3,000.00	7.95	224.21	2,981.40	-198.44	-193.02	-182.08	0.00	0.00	0.00
3,100.00	7.95	224.21	3,080.44	-208.35	-202.66	-191.17	0.00	0.00	0.00
3,200.00	7.95	224.21	3,179.48	-218.27	-212.31	-200.27	0.00	0.00	0.00
3,300.00	7.95	224.21	3,278.52	-228.18	-221.95	-209.37	0.00	0.00	0.00
3,400.00	7.95	224.21	3,377.56	-238.10	-231.59	-218.46	0.00	0.00	0.00
3,500.00	7.95	224.21	3,476.60	-248.01	-241.24	-227.56	0.00	0.00	0.00
3,600.00	7.95	224.21	3,575.64	-257.92	-250.88	-236.66	0.00	0.00	0.00
3,700.00	7.95	224.21	3,674.68	-267.84	-260.52	-245.75	0.00	0.00	0.00
3,800.00	7.95	224.21	3,773.71	-277.75	-270.17	-254.85	0.00	0.00	0.00
3,900.00	7.95	224.21	3,872.75	-287.67	-279.81	-263.95	0.00	0.00	0.00
3,937.61	7.95	224.21	3,910.00	-291.40	-283.44	-267.37	0.00	0.00	0.00
Parkman									
4,000.00	7.95	224.21	3,971.79	-297.58	-289.45	-273.04	0.00	0.00	0.00
4,100.00	7.95	224.21	4,070.83	-307.50	-299.10	-282.14	0.00	0.00	0.00
4,200.00	7.95	224.21	4,169.87	-317.41	-308.74	-291.24	0.00	0.00	0.00
4,300.00	7.95	224.21	4,268.91	-327.32	-318.38	-300.34	0.00	0.00	0.00
4,400.00	7.95	224.21	4,367.95	-337.24	-328.03	-309.43	0.00	0.00	0.00
4,500.00	7.95	224.21	4,466.99	-347.15	-337.67	-318.53	0.00	0.00	0.00
4,600.00	7.95	224.21	4,566.03	-357.07	-347.31	-327.63	0.00	0.00	0.00
4,677.72	7.95	224.21	4,643.00	-364.77	-354.81	-334.70	0.00	0.00	0.00
Sussex									



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Thornton 10
Company:	Extraction Oil & Gas	TVD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Project:	Weld Co., Co	MD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Site:	Sec.08-T07N-R66W	North Reference:	Grid
Well:	Thornton 10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned 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)
4,700.00	7.95	224.21	4,665.07	-366.98	-356.96	-336.72	0.00	0.00	0.00
4,800.00	7.95	224.21	4,764.10	-376.89	-366.60	-345.82	0.00	0.00	0.00
4,900.00	7.95	224.21	4,863.14	-386.81	-376.24	-354.92	0.00	0.00	0.00
5,000.00	7.95	224.21	4,962.18	-396.72	-385.89	-364.01	0.00	0.00	0.00
5,100.00	7.95	224.21	5,061.22	-406.64	-395.53	-373.11	0.00	0.00	0.00
5,103.82	7.95	224.21	5,065.00	-407.02	-395.90	-373.46	0.00	0.00	0.00
Shannon									
5,200.00	7.95	224.21	5,160.26	-416.55	-405.17	-382.21	0.00	0.00	0.00
5,300.00	7.95	224.21	5,259.30	-426.47	-414.82	-391.30	0.00	0.00	0.00
5,400.00	7.95	224.21	5,358.34	-436.38	-424.46	-400.40	0.00	0.00	0.00
5,500.00	7.95	224.21	5,457.38	-446.29	-434.10	-409.50	0.00	0.00	0.00
5,600.00	7.95	224.21	5,556.42	-456.21	-443.75	-418.59	0.00	0.00	0.00
5,700.00	7.95	224.21	5,655.45	-466.12	-453.39	-427.69	0.00	0.00	0.00
5,800.00	7.95	224.21	5,754.49	-476.04	-463.03	-436.79	0.00	0.00	0.00
5,900.00	7.95	224.21	5,853.53	-485.95	-472.68	-445.88	0.00	0.00	0.00
6,000.00	7.95	224.21	5,952.57	-495.86	-482.32	-454.98	0.00	0.00	0.00
6,100.00	7.95	224.21	6,051.61	-505.78	-491.96	-464.08	0.00	0.00	0.00
6,105.61	7.95	224.21	6,057.17	-506.33	-492.50	-464.59	0.00	0.00	0.00
Begin Drop									
6,200.00	6.06	224.21	6,150.85	-514.59	-500.53	-472.16	2.00	-2.00	0.00
6,300.00	4.06	224.21	6,250.45	-520.91	-506.68	-477.96	2.00	-2.00	0.00
6,400.00	2.06	224.21	6,350.30	-524.74	-510.41	-481.47	2.00	-2.00	0.00
6,500.00	0.06	224.21	6,450.28	-526.07	-511.70	-482.69	2.00	-2.00	0.00
6,503.10	0.00	0.00	6,453.38	-526.07	-511.70	-482.69	2.00	-2.00	0.00
Vertical Point									
6,600.00	0.00	0.00	6,550.28	-526.07	-511.70	-482.69	0.00	0.00	0.00
6,603.10	0.00	0.00	6,553.38	-526.07	-511.70	-482.69	0.00	0.00	0.00
KOP, Build 9°/100' DLS									
6,700.00	8.72	90.00	6,649.91	-526.07	-504.34	-475.34	9.00	9.00	0.00
6,800.00	17.72	90.00	6,747.16	-526.07	-481.49	-452.53	9.00	9.00	0.00
6,900.00	26.72	90.00	6,839.64	-526.07	-443.71	-414.80	9.00	9.00	0.00
7,000.00	35.72	90.00	6,925.07	-526.07	-391.93	-363.10	9.00	9.00	0.00
7,100.00	44.72	90.00	7,001.34	-526.07	-327.42	-298.68	9.00	9.00	0.00
7,200.00	53.72	90.00	7,066.59	-526.07	-251.78	-223.15	9.00	9.00	0.00
7,300.00	62.72	90.00	7,119.20	-526.07	-166.86	-138.35	9.00	9.00	0.00
7,400.00	71.72	90.00	7,157.88	-526.07	-74.75	-46.38	9.00	9.00	0.00
7,500.00	80.72	90.00	7,181.67	-526.07	22.27	50.51	9.00	9.00	0.00
7,600.00	89.72	90.00	7,189.99	-526.07	121.82	149.91	9.00	9.00	0.00
7,603.10	90.00	90.00	7,190.00	-526.07	124.92	153.01	8.99	8.99	0.00
LP, Hold to TD - Niobrara - 7" Csg									
7,700.00	90.00	90.00	7,190.00	-526.07	221.82	249.77	0.00	0.00	0.00
7,800.00	90.00	90.00	7,190.00	-526.07	321.82	349.62	0.00	0.00	0.00
7,900.00	90.00	90.00	7,190.00	-526.07	421.82	449.48	0.00	0.00	0.00
8,000.00	90.00	90.00	7,190.00	-526.07	521.82	549.33	0.00	0.00	0.00
8,100.00	90.00	90.00	7,190.00	-526.07	621.82	649.19	0.00	0.00	0.00
8,200.00	90.00	90.00	7,190.00	-526.07	721.82	749.05	0.00	0.00	0.00
8,300.00	90.00	90.00	7,190.00	-526.07	821.82	848.90	0.00	0.00	0.00
8,400.00	90.00	90.00	7,190.00	-526.07	921.82	948.76	0.00	0.00	0.00
8,500.00	90.00	90.00	7,190.00	-526.07	1,021.82	1,048.61	0.00	0.00	0.00
8,600.00	90.00	90.00	7,190.00	-526.07	1,121.82	1,148.47	0.00	0.00	0.00
8,700.00	90.00	90.00	7,190.00	-526.07	1,221.82	1,248.32	0.00	0.00	0.00
8,800.00	90.00	90.00	7,190.00	-526.07	1,321.82	1,348.18	0.00	0.00	0.00
8,900.00	90.00	90.00	7,190.00	-526.07	1,421.82	1,448.03	0.00	0.00	0.00



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Project:	Weld Co., Co	MD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Site:	Sec.08-T07N-R66W	North Reference:	Grid
Well:	Thornton 10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned 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)	
9,000.00	90.00	90.00	7,190.00	-526.07	1,521.82	1,547.89	0.00	0.00	0.00	
9,100.00	90.00	90.00	7,190.00	-526.07	1,621.82	1,647.75	0.00	0.00	0.00	
9,200.00	90.00	90.00	7,190.00	-526.07	1,721.82	1,747.60	0.00	0.00	0.00	
9,300.00	90.00	90.00	7,190.00	-526.07	1,821.82	1,847.46	0.00	0.00	0.00	
9,400.00	90.00	90.00	7,190.00	-526.07	1,921.82	1,947.31	0.00	0.00	0.00	
9,500.00	90.00	90.00	7,190.00	-526.07	2,021.82	2,047.17	0.00	0.00	0.00	
9,600.00	90.00	90.00	7,190.00	-526.07	2,121.82	2,147.02	0.00	0.00	0.00	
9,700.00	90.00	90.00	7,190.00	-526.07	2,221.82	2,246.88	0.00	0.00	0.00	
9,800.00	90.00	90.00	7,190.00	-526.07	2,321.82	2,346.73	0.00	0.00	0.00	
9,900.00	90.00	90.00	7,190.00	-526.07	2,421.82	2,446.59	0.00	0.00	0.00	
10,000.00	90.00	90.00	7,190.00	-526.07	2,521.82	2,546.45	0.00	0.00	0.00	
10,100.00	90.00	90.00	7,190.00	-526.07	2,621.82	2,646.30	0.00	0.00	0.00	
10,200.00	90.00	90.00	7,190.00	-526.07	2,721.82	2,746.16	0.00	0.00	0.00	
10,300.00	90.00	90.00	7,190.00	-526.07	2,821.82	2,846.01	0.00	0.00	0.00	
10,400.00	90.00	90.00	7,190.00	-526.07	2,921.82	2,945.87	0.00	0.00	0.00	
10,500.00	90.00	90.00	7,190.00	-526.07	3,021.82	3,045.72	0.00	0.00	0.00	
10,600.00	90.00	90.00	7,190.00	-526.07	3,121.82	3,145.58	0.00	0.00	0.00	
10,700.00	90.00	90.00	7,190.00	-526.07	3,221.82	3,245.43	0.00	0.00	0.00	
10,800.00	90.00	90.00	7,190.00	-526.07	3,321.82	3,345.29	0.00	0.00	0.00	
10,900.00	90.00	90.00	7,190.00	-526.07	3,421.82	3,445.15	0.00	0.00	0.00	
11,000.00	90.00	90.00	7,190.00	-526.07	3,521.82	3,545.00	0.00	0.00	0.00	
11,100.00	90.00	90.00	7,190.00	-526.07	3,621.82	3,644.86	0.00	0.00	0.00	
11,200.00	90.00	90.00	7,190.00	-526.07	3,721.82	3,744.71	0.00	0.00	0.00	
11,300.00	90.00	90.00	7,190.00	-526.07	3,821.82	3,844.57	0.00	0.00	0.00	
11,400.00	90.00	90.00	7,190.00	-526.07	3,921.82	3,944.42	0.00	0.00	0.00	
11,500.00	90.00	90.00	7,190.00	-526.07	4,021.82	4,044.28	0.00	0.00	0.00	
11,600.00	90.00	90.00	7,190.00	-526.07	4,121.82	4,144.13	0.00	0.00	0.00	
11,700.00	90.00	90.00	7,190.00	-526.07	4,221.82	4,243.99	0.00	0.00	0.00	
11,800.00	90.00	90.00	7,190.00	-526.07	4,321.82	4,343.85	0.00	0.00	0.00	
11,900.00	90.00	90.00	7,190.00	-526.07	4,421.82	4,443.70	0.00	0.00	0.00	
12,000.00	90.00	90.00	7,190.00	-526.07	4,521.82	4,543.56	0.00	0.00	0.00	
12,100.00	90.00	90.00	7,190.00	-526.07	4,621.82	4,643.41	0.00	0.00	0.00	
12,200.00	90.00	90.00	7,190.00	-526.07	4,721.82	4,743.27	0.00	0.00	0.00	
12,300.00	90.00	90.00	7,190.00	-526.07	4,821.82	4,843.12	0.00	0.00	0.00	
12,400.00	90.00	90.00	7,190.00	-526.07	4,921.82	4,942.98	0.00	0.00	0.00	
12,500.00	90.00	90.00	7,190.00	-526.07	5,021.82	5,042.83	0.00	0.00	0.00	
12,600.00	90.00	90.00	7,190.00	-526.07	5,121.82	5,142.69	0.00	0.00	0.00	
12,700.00	90.00	90.00	7,190.00	-526.07	5,221.82	5,242.55	0.00	0.00	0.00	
12,800.00	90.00	90.00	7,190.00	-526.07	5,321.82	5,342.40	0.00	0.00	0.00	
12,900.00	90.00	90.00	7,190.00	-526.07	5,421.82	5,442.26	0.00	0.00	0.00	
13,000.00	90.00	90.00	7,190.00	-526.07	5,521.82	5,542.11	0.00	0.00	0.00	
13,100.00	90.00	90.00	7,190.00	-526.07	5,621.82	5,641.97	0.00	0.00	0.00	
13,200.00	90.00	90.00	7,190.00	-526.07	5,721.82	5,741.82	0.00	0.00	0.00	
13,300.00	90.00	90.00	7,190.00	-526.07	5,821.82	5,841.68	0.00	0.00	0.00	
13,400.00	90.00	90.00	7,190.00	-526.07	5,921.82	5,941.53	0.00	0.00	0.00	
13,500.00	90.00	90.00	7,190.00	-526.07	6,021.82	6,041.39	0.00	0.00	0.00	
13,600.00	90.00	90.00	7,190.00	-526.07	6,121.82	6,141.25	0.00	0.00	0.00	
13,700.00	90.00	90.00	7,190.00	-526.07	6,221.82	6,241.10	0.00	0.00	0.00	
13,800.00	90.00	90.00	7,190.00	-526.07	6,321.82	6,340.96	0.00	0.00	0.00	
13,900.00	90.00	90.00	7,190.00	-526.07	6,421.82	6,440.81	0.00	0.00	0.00	
14,000.00	90.00	90.00	7,190.00	-526.07	6,521.82	6,540.67	0.00	0.00	0.00	
14,100.00	90.00	90.00	7,190.00	-526.07	6,621.82	6,640.52	0.00	0.00	0.00	
14,200.00	90.00	90.00	7,190.00	-526.07	6,721.82	6,740.38	0.00	0.00	0.00	
14,300.00	90.00	90.00	7,190.00	-526.07	6,821.82	6,840.23	0.00	0.00	0.00	



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Thornton 10
Company:	Extraction Oil & Gas	TVD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Project:	Weld Co., Co	MD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Site:	Sec.08-T07N-R66W	North Reference:	Grid
Well:	Thornton 10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned 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)	
14,400.00	90.00	90.00	7,190.00	-526.07	6,921.82	6,940.09	0.00	0.00	0.00	
14,500.00	90.00	90.00	7,190.00	-526.07	7,021.82	7,039.95	0.00	0.00	0.00	
14,600.00	90.00	90.00	7,190.00	-526.07	7,121.82	7,139.80	0.00	0.00	0.00	
14,700.00	90.00	90.00	7,190.00	-526.07	7,221.82	7,239.66	0.00	0.00	0.00	
14,800.00	90.00	90.00	7,190.00	-526.07	7,321.82	7,339.51	0.00	0.00	0.00	
14,900.00	90.00	90.00	7,190.00	-526.07	7,421.82	7,439.37	0.00	0.00	0.00	
15,000.00	90.00	90.00	7,190.00	-526.07	7,521.82	7,539.22	0.00	0.00	0.00	
15,100.00	90.00	90.00	7,190.00	-526.07	7,621.82	7,639.08	0.00	0.00	0.00	
15,200.00	90.00	90.00	7,190.00	-526.07	7,721.82	7,738.93	0.00	0.00	0.00	
15,300.00	90.00	90.00	7,190.00	-526.07	7,821.82	7,838.79	0.00	0.00	0.00	
15,400.00	90.00	90.00	7,190.00	-526.07	7,921.82	7,938.65	0.00	0.00	0.00	
15,500.00	90.00	90.00	7,190.00	-526.07	8,021.82	8,038.50	0.00	0.00	0.00	
15,600.00	90.00	90.00	7,190.00	-526.07	8,121.82	8,138.36	0.00	0.00	0.00	
15,700.00	90.00	90.00	7,190.00	-526.07	8,221.82	8,238.21	0.00	0.00	0.00	
15,800.00	90.00	90.00	7,190.00	-526.07	8,321.82	8,338.07	0.00	0.00	0.00	
15,900.00	90.00	90.00	7,190.00	-526.07	8,421.82	8,437.92	0.00	0.00	0.00	
16,000.00	90.00	90.00	7,190.00	-526.07	8,521.82	8,537.78	0.00	0.00	0.00	
16,100.00	90.00	90.00	7,190.00	-526.07	8,621.82	8,637.63	0.00	0.00	0.00	
16,200.00	90.00	90.00	7,190.00	-526.07	8,721.82	8,737.49	0.00	0.00	0.00	
16,300.00	90.00	90.00	7,190.00	-526.07	8,821.82	8,837.35	0.00	0.00	0.00	
16,400.00	90.00	90.00	7,190.00	-526.07	8,921.82	8,937.20	0.00	0.00	0.00	
16,500.00	90.00	90.00	7,190.00	-526.07	9,021.82	9,037.06	0.00	0.00	0.00	
16,600.00	90.00	90.00	7,190.00	-526.07	9,121.82	9,136.91	0.00	0.00	0.00	
16,700.00	90.00	90.00	7,190.00	-526.07	9,221.82	9,236.77	0.00	0.00	0.00	
16,800.00	90.00	90.00	7,190.00	-526.07	9,321.82	9,336.62	0.00	0.00	0.00	
16,900.00	90.00	90.00	7,190.00	-526.07	9,421.82	9,436.48	0.00	0.00	0.00	
17,000.00	90.00	90.00	7,190.00	-526.07	9,521.82	9,536.33	0.00	0.00	0.00	
17,100.00	90.00	90.00	7,190.00	-526.07	9,621.82	9,636.19	0.00	0.00	0.00	
17,200.00	90.00	90.00	7,190.00	-526.07	9,721.82	9,736.05	0.00	0.00	0.00	
17,254.82	90.00	90.00	7,190.00	-526.07	9,776.65	9,790.79	0.00	0.00	0.00	
PBHL/TD										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP 10 - plan hits target center - Point	0.00	0.00	6,453.38	-526.07	-511.70	1,456,352.96	3,191,029.66	40° 35' 2.594 N	104° 48' 44.021 W
PBHL Thornton 10 - plan hits target center - Point	0.00	0.00	7,190.00	-526.07	9,776.65	1,456,352.96	3,201,318.01	40° 35' 1.784 N	104° 46' 30.677 W
LP 10 - plan hits target center - Point	0.00	0.00	7,190.00	-526.07	124.92	1,456,352.96	3,191,666.28	40° 35' 2.545 N	104° 48' 35.770 W



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Thornton 10
Company:	Extraction Oil & Gas	TVD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Project:	Weld Co., Co	MD Reference:	KB @ 5053.00usft (Xtreme 7 - 16')
Site:	Sec.08-T07N-R66W	North Reference:	Grid
Well:	Thornton 10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
7,603.10	7,190.00	7" Csg	7	7-1/2	

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,937.61	3,910.00	Parkman		0.00	
4,677.72	4,643.00	Sussex		0.00	
5,103.82	5,065.00	Shannon		0.00	
7,603.10	7,190.00	Niobrara		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
800.00	800.00	0.00	0.00	Begin Nudge	
1,197.49	1,196.22	-19.74	-19.20	Hold Tangent	
6,105.61	6,057.17	-506.33	-492.50	Begin Drop	
6,503.10	6,453.38	-526.07	-511.70	Vertical Point	
6,603.10	6,553.38	-526.07	-511.70	KOP, Build 9°/100' DLS	
7,603.10	7,190.00	-526.07	124.92	LP, Hold to TD	
17,254.82	7,190.00	-526.07	9,776.65	PBHL/TD	