

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 18-T2N-R68W**

**RINN VALLEY EAST N17-20-15C**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**19 March, 2018**



Project: Weld County  
Site: Sec 18-T2N-R68W  
Well: RINN VALLEY EAST N17-20-15C  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

PROJECT DETAILS: Weld County

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 8.33°

Magnetic Field  
Strength: 52224.1snT  
Dip Angle: 66.60°  
Date: 6/12/2017  
Model: IGRF2015

WELL DETAILS: RINN VALLEY EAST N17-20-15C

+N/-S	+E/-W	Northing	Easting	4939.00	Latitude	Longitude	Slot
0.00	0.00	1291282.74	3128963.07		40° 7' 55.358 N	105° 2' 19.590 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	1253.25	11.07	105.54	1249.82	-14.27	51.31	2.00	105.54	-14.41	
4	6477.74	11.07	105.54	6377.18	-282.94	1017.34	0.00	0.00	-285.75	
5	7030.99	0.00	0.00	6927.00	-297.21	1068.65	2.00	180.00	-300.17	
6	7060.99	0.00	0.00	6957.00	-297.21	1068.65	0.00	0.00	-300.17	
7	7961.06	90.00	0.03	7530.00	275.79	1068.94	10.00	0.03	272.83	RVE N17-15C - LP
8	17652.00	90.00	0.03	7530.00	9966.74	1074.11	0.00	0.00	9963.73	RVE N17-15C - PBHL

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
3477.00	3522.62	PARKMAN
4047.00	4103.42	SUSSEX
4452.00	4516.09	SHANNON
7242.00	7359.28	NIOBRARA
7270.00	7392.11	NIO B TARGET
7510.00	7809.22	FORT HAYS
7530.00	7961.06	CODELL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	Start Build 2.00
1253.25	11.07	105.54	1249.82	-14.27	51.31	-14.41	53.26	Start 5224.49 hold at 1253.25 MD
6477.74	11.07	105.54	6377.18	-282.94	1017.34	-285.75	1055.95	Start Drop -2.00
7030.99	0.00	0.00	6927.00	-297.21	1068.65	-300.17	1109.21	Start 30.00 hold at 7030.99 MD
7060.99	0.00	0.00	6957.00	-297.21	1068.65	-300.17	1109.21	Start DLS 10.00 TFO 0.03
7961.06	90.00	0.03	7530.00	275.79	1068.94	272.83	1682.21	Start 9690.95 hold at 7961.06 MD
17652.00	90.00	0.03	7529.98	9966.74	1073.87	9963.73	11373.16	TD at 17652.00

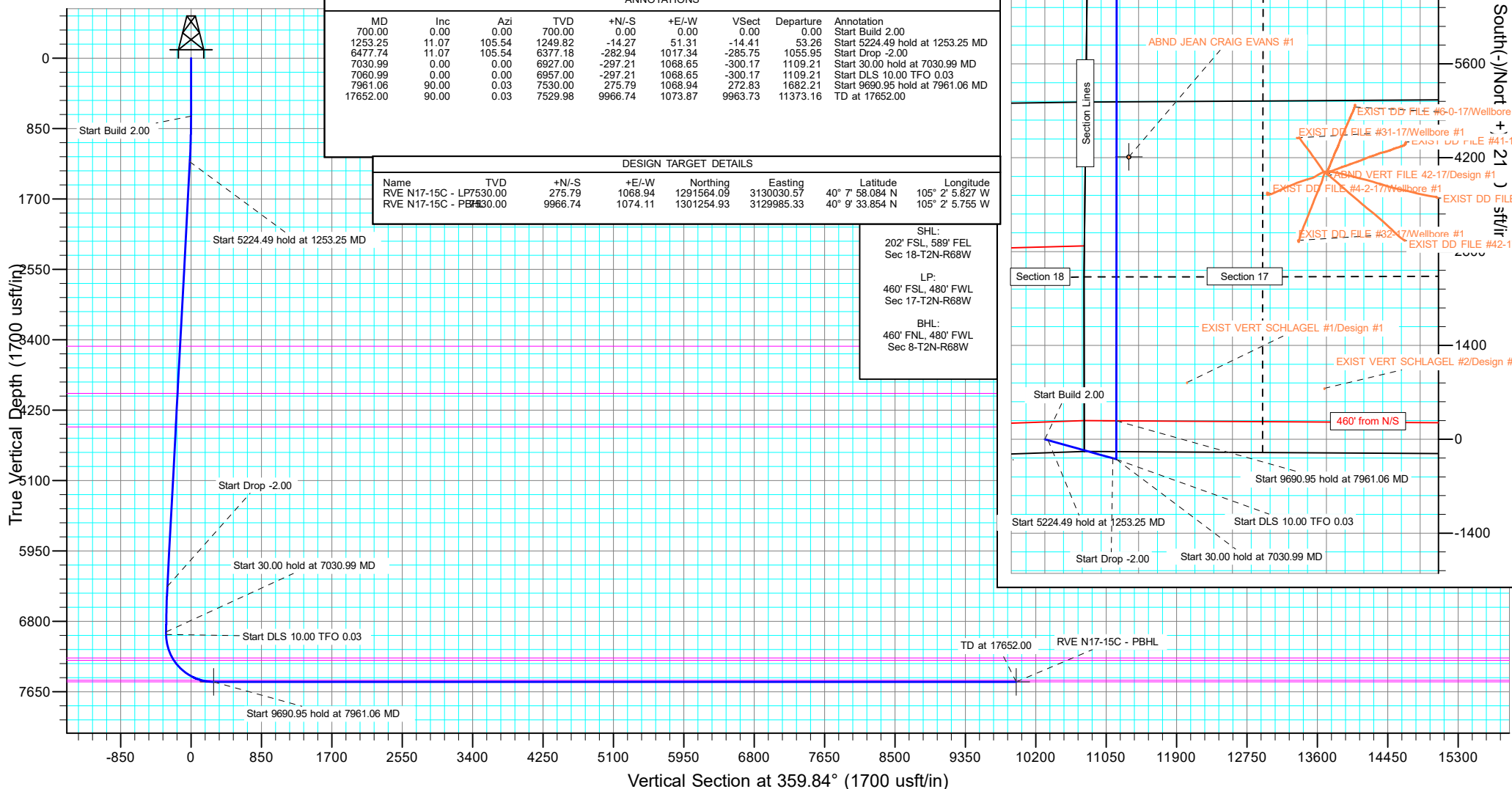
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RVE N17-15C - LP	7530.00	275.79	1068.94	1291564.09	3130030.57	40° 7' 58.084 N	105° 2' 5.827 W
RVE N17-15C - PBHL	7530.00	9966.74	1074.11	1301254.93	3129985.33	40° 9' 33.854 N	105° 2' 5.755 W

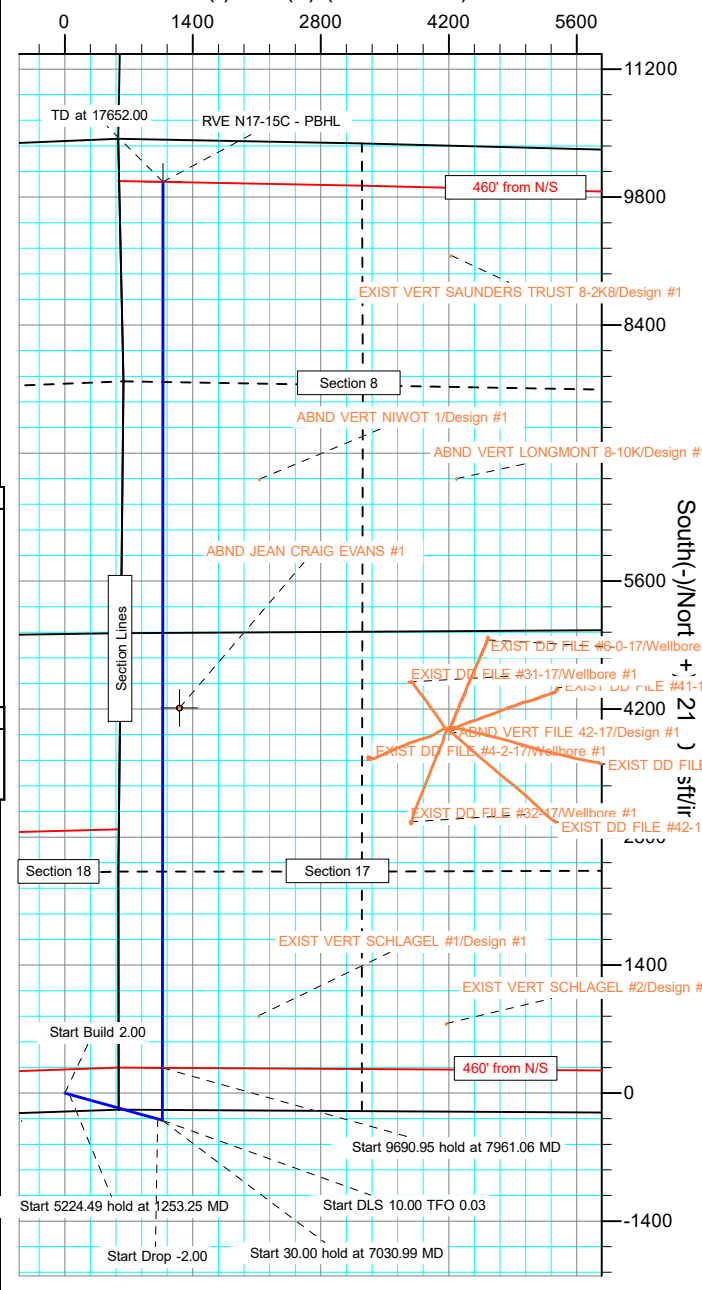
SHL:  
202' FSL, 589' FEL  
Sec 18-T2N-R68W

LP:  
460' FSL, 480' FWL  
Sec 17-T2N-R68W

BHL:  
460' FNL, 480' FWL  
Sec 8-T2N-R68W



West(-)/East(+) (2100 usft/in)



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-15C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4964.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4964.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY EAST N17-20-15C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Weld County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 18-T2N-R68W			
Site Position:		Northing:	1,291,104.41 usft	Latitude:	40° 7' 53.566 N
From:	Lat/Long	Easting:	3,129,553.43 usft	Longitude:	105° 2' 12.001 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.30 °

Well	RINN VALLEY EAST N17-20-15C					
Well Position	+N/-S	181.41 usft	Northing:	1,291,282.74 usft	Latitude:	40° 7' 55.358 N
	+E/-W	-589.42 usft	Easting:	3,128,963.07 usft	Longitude:	105° 2' 19.590 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,939.00 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	6/12/2017	8.33	66.60	52,224.09336099

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	359.84

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/19/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,651.98	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	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	
1,253.25	11.07	105.54	1,249.82	-14.27	51.31	2.00	2.00	0.00	105.54	
6,477.74	11.07	105.54	6,377.18	-282.94	1,017.34	0.00	0.00	0.00	0.00	
7,030.99	0.00	0.00	6,927.00	-297.21	1,068.65	2.00	-2.00	0.00	180.00	
7,060.99	0.00	0.00	6,957.00	-297.21	1,068.65	0.00	0.00	0.00	0.00	
7,961.06	90.00	0.03	7,530.00	275.79	1,068.94	10.00	10.00	0.00	0.03	RVE N17-15C - LP
17,652.00	90.00	0.03	7,530.00	9,966.74	1,074.11	0.00	0.00	0.00	0.00	RVE N17-15C - PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-15C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4964.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4964.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY EAST N17-20-15C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
Start Build 2.00									
800.00	2.00	105.54	799.98	-0.47	1.68	-0.47	2.00	2.00	0.00
900.00	4.00	105.54	899.84	-1.87	6.72	-1.89	2.00	2.00	0.00
1,000.00	6.00	105.54	999.45	-4.21	15.12	-4.25	2.00	2.00	0.00
1,100.00	8.00	105.54	1,098.70	-7.47	26.86	-7.54	2.00	2.00	0.00
1,200.00	10.00	105.54	1,197.47	-11.66	41.93	-11.78	2.00	2.00	0.00
1,253.25	11.07	105.54	1,249.82	-14.27	51.31	-14.41	2.00	2.00	0.00
Start 5224.49 hold at 1253.25 MD									
1,300.00	11.07	105.54	1,295.70	-16.67	59.95	-16.84	0.00	0.00	0.00
1,400.00	11.07	105.54	1,393.84	-21.82	78.44	-22.03	0.00	0.00	0.00
1,500.00	11.07	105.54	1,491.98	-26.96	96.93	-27.23	0.00	0.00	0.00
1,600.00	11.07	105.54	1,590.12	-32.10	115.42	-32.42	0.00	0.00	0.00
1,700.00	11.07	105.54	1,688.26	-37.24	133.92	-37.61	0.00	0.00	0.00
1,800.00	11.07	105.54	1,786.40	-42.39	152.41	-42.81	0.00	0.00	0.00
1,900.00	11.07	105.54	1,884.54	-47.53	170.90	-48.00	0.00	0.00	0.00
2,000.00	11.07	105.54	1,982.69	-52.67	189.39	-53.20	0.00	0.00	0.00
2,100.00	11.07	105.54	2,080.83	-57.81	207.88	-58.39	0.00	0.00	0.00
2,200.00	11.07	105.54	2,178.97	-62.96	226.37	-63.58	0.00	0.00	0.00
2,300.00	11.07	105.54	2,277.11	-68.10	244.86	-68.78	0.00	0.00	0.00
2,400.00	11.07	105.54	2,375.25	-73.24	263.35	-73.97	0.00	0.00	0.00
2,500.00	11.07	105.54	2,473.39	-78.38	281.84	-79.16	0.00	0.00	0.00
2,600.00	11.07	105.54	2,571.53	-83.53	300.33	-84.36	0.00	0.00	0.00
2,700.00	11.07	105.54	2,669.67	-88.67	318.82	-89.55	0.00	0.00	0.00
2,800.00	11.07	105.54	2,767.81	-93.81	337.31	-94.74	0.00	0.00	0.00
2,900.00	11.07	105.54	2,865.95	-98.95	355.80	-99.94	0.00	0.00	0.00
3,000.00	11.07	105.54	2,964.10	-104.10	374.29	-105.13	0.00	0.00	0.00
3,100.00	11.07	105.54	3,062.24	-109.24	392.78	-110.33	0.00	0.00	0.00
3,200.00	11.07	105.54	3,160.38	-114.38	411.27	-115.52	0.00	0.00	0.00
3,300.00	11.07	105.54	3,258.52	-119.52	429.76	-120.71	0.00	0.00	0.00
3,400.00	11.07	105.54	3,356.66	-124.67	448.25	-125.91	0.00	0.00	0.00
3,500.00	11.07	105.54	3,454.80	-129.81	466.74	-131.10	0.00	0.00	0.00
3,522.62	11.07	105.54	3,477.00	-130.97	470.93	-132.28	0.00	0.00	0.00
PARKMAN									
3,600.00	11.07	105.54	3,552.94	-134.95	485.23	-136.29	0.00	0.00	0.00
3,700.00	11.07	105.54	3,651.08	-140.09	503.72	-141.49	0.00	0.00	0.00
3,800.00	11.07	105.54	3,749.22	-145.24	522.21	-146.68	0.00	0.00	0.00
3,900.00	11.07	105.54	3,847.36	-150.38	540.71	-151.88	0.00	0.00	0.00
4,000.00	11.07	105.54	3,945.51	-155.52	559.20	-157.07	0.00	0.00	0.00
4,100.00	11.07	105.54	4,043.65	-160.66	577.69	-162.26	0.00	0.00	0.00
4,103.42	11.07	105.54	4,047.00	-160.84	578.32	-162.44	0.00	0.00	0.00
SUSSEX									
4,200.00	11.07	105.54	4,141.79	-165.81	596.18	-167.46	0.00	0.00	0.00
4,300.00	11.07	105.54	4,239.93	-170.95	614.67	-172.65	0.00	0.00	0.00
4,400.00	11.07	105.54	4,338.07	-176.09	633.16	-177.84	0.00	0.00	0.00
4,500.00	11.07	105.54	4,436.21	-181.23	651.65	-183.04	0.00	0.00	0.00

# Planning Report

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<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4964.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4964.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY EAST N17-20-15C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,516.09	11.07	105.54	4,452.00	-182.06	654.62	-183.87	0.00	0.00	0.00
<b>SHANNON</b>									
4,600.00	11.07	105.54	4,534.35	-186.38	670.14	-188.23	0.00	0.00	0.00
4,700.00	11.07	105.54	4,632.49	-191.52	688.63	-193.42	0.00	0.00	0.00
4,800.00	11.07	105.54	4,730.63	-196.66	707.12	-198.62	0.00	0.00	0.00
4,900.00	11.07	105.54	4,828.77	-201.80	725.61	-203.81	0.00	0.00	0.00
5,000.00	11.07	105.54	4,926.92	-206.95	744.10	-209.01	0.00	0.00	0.00
5,100.00	11.07	105.54	5,025.06	-212.09	762.59	-214.20	0.00	0.00	0.00
5,200.00	11.07	105.54	5,123.20	-217.23	781.08	-219.39	0.00	0.00	0.00
5,300.00	11.07	105.54	5,221.34	-222.37	799.57	-224.59	0.00	0.00	0.00
5,400.00	11.07	105.54	5,319.48	-227.52	818.06	-229.78	0.00	0.00	0.00
5,500.00	11.07	105.54	5,417.62	-232.66	836.55	-234.97	0.00	0.00	0.00
5,600.00	11.07	105.54	5,515.76	-237.80	855.04	-240.17	0.00	0.00	0.00
5,700.00	11.07	105.54	5,613.90	-242.94	873.53	-245.36	0.00	0.00	0.00
5,800.00	11.07	105.54	5,712.04	-248.09	892.02	-250.55	0.00	0.00	0.00
5,900.00	11.07	105.54	5,810.18	-253.23	910.51	-255.75	0.00	0.00	0.00
6,000.00	11.07	105.54	5,908.33	-258.37	929.01	-260.94	0.00	0.00	0.00
6,100.00	11.07	105.54	6,006.47	-263.51	947.50	-266.14	0.00	0.00	0.00
6,200.00	11.07	105.54	6,104.61	-268.66	965.99	-271.33	0.00	0.00	0.00
6,300.00	11.07	105.54	6,202.75	-273.80	984.48	-276.52	0.00	0.00	0.00
6,400.00	11.07	105.54	6,300.89	-278.94	1,002.97	-281.72	0.00	0.00	0.00
6,477.74	11.07	105.54	6,377.18	-282.94	1,017.34	-285.75	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,500.00	10.62	105.54	6,399.05	-284.06	1,021.38	-286.89	2.00	-2.00	0.00
6,600.00	8.62	105.54	6,497.64	-288.54	1,037.47	-291.41	2.00	-2.00	0.00
6,700.00	6.62	105.54	6,596.75	-292.09	1,050.25	-295.00	2.00	-2.00	0.00
6,800.00	4.62	105.54	6,696.26	-294.72	1,059.68	-297.65	2.00	-2.00	0.00
6,900.00	2.62	105.54	6,796.06	-296.41	1,065.77	-299.36	2.00	-2.00	0.00
7,000.00	0.62	105.54	6,896.01	-297.17	1,068.49	-300.12	2.00	-2.00	0.00
7,030.99	0.00	0.00	6,927.00	-297.21	1,068.65	-300.17	2.00	-2.00	0.00
<b>Start 30.00 hold at 7030.99 MD</b>									
7,060.99	0.00	0.00	6,957.00	-297.21	1,068.65	-300.17	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 0.03</b>									
7,100.00	3.90	0.03	6,995.98	-295.88	1,068.65	-298.84	10.00	10.00	0.00
7,150.00	8.90	0.03	7,045.65	-290.31	1,068.65	-293.27	10.00	10.00	0.00
7,200.00	13.90	0.03	7,094.65	-280.43	1,068.66	-283.39	10.00	10.00	0.00
7,250.00	18.90	0.03	7,142.60	-266.32	1,068.67	-269.27	10.00	10.00	0.00
7,300.00	23.90	0.03	7,189.14	-248.08	1,068.68	-251.04	10.00	10.00	0.00
7,350.00	28.90	0.03	7,233.91	-225.86	1,068.69	-228.81	10.00	10.00	0.00
7,359.28	29.83	0.03	7,242.00	-221.31	1,068.69	-224.26	10.00	10.00	0.00
<b>NIOBRARA</b>									
7,392.11	33.11	0.03	7,270.00	-204.17	1,068.70	-207.12	10.00	10.00	0.00
<b>NIO B TARGET</b>									
7,400.00	33.90	0.03	7,276.58	-199.81	1,068.70	-202.77	10.00	10.00	0.00
7,450.00	38.90	0.03	7,316.81	-170.15	1,068.71	-173.11	10.00	10.00	0.00
7,500.00	43.90	0.03	7,354.30	-137.10	1,068.73	-140.06	10.00	10.00	0.00
7,550.00	48.90	0.03	7,388.78	-100.90	1,068.75	-103.86	10.00	10.00	0.00
7,600.00	53.90	0.03	7,419.96	-61.84	1,068.77	-64.80	10.00	10.00	0.00
7,650.00	58.90	0.03	7,447.62	-20.21	1,068.79	-23.17	10.00	10.00	0.00
7,700.00	63.90	0.03	7,471.55	23.67	1,068.81	20.72	10.00	10.00	0.00
7,750.00	68.90	0.03	7,491.57	69.48	1,068.84	66.52	10.00	10.00	0.00
7,800.00	73.90	0.03	7,507.51	116.85	1,068.86	113.89	10.00	10.00	0.00
7,809.22	74.82	0.03	7,510.00	125.72	1,068.87	122.77	10.00	10.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-15C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4964.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4964.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY EAST N17-20-15C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>FORT HAYS</b>									
7,850.00	78.90	0.03	7,519.27	165.43	1,068.89	162.47	10.00	10.00	0.00
7,900.00	83.90	0.03	7,526.75	214.85	1,068.91	211.89	10.00	10.00	0.00
7,950.00	88.89	0.03	7,529.89	264.74	1,068.94	261.78	10.00	10.00	0.00
7,961.06	90.00	0.03	7,530.00	275.79	1,068.94	272.83	10.00	10.00	0.00
<b>Start 9690.95 hold at 7961.06 MD - CODELL</b>									
8,000.00	90.00	0.03	7,530.00	314.74	1,068.96	311.78	0.00	0.00	0.00
8,100.00	90.00	0.03	7,530.00	414.74	1,069.01	411.78	0.00	0.00	0.00
8,200.00	90.00	0.03	7,530.00	514.74	1,069.06	511.78	0.00	0.00	0.00
8,300.00	90.00	0.03	7,530.00	614.74	1,069.11	611.77	0.00	0.00	0.00
8,400.00	90.00	0.03	7,530.00	714.74	1,069.16	711.77	0.00	0.00	0.00
8,500.00	90.00	0.03	7,530.00	814.74	1,069.22	811.77	0.00	0.00	0.00
8,600.00	90.00	0.03	7,530.00	914.74	1,069.27	911.77	0.00	0.00	0.00
8,700.00	90.00	0.03	7,530.00	1,014.74	1,069.32	1,011.77	0.00	0.00	0.00
8,800.00	90.00	0.03	7,530.00	1,114.74	1,069.37	1,111.77	0.00	0.00	0.00
8,900.00	90.00	0.03	7,530.00	1,214.74	1,069.42	1,211.77	0.00	0.00	0.00
9,000.00	90.00	0.03	7,530.00	1,314.74	1,069.47	1,311.77	0.00	0.00	0.00
9,100.00	90.00	0.03	7,530.00	1,414.74	1,069.52	1,411.77	0.00	0.00	0.00
9,200.00	90.00	0.03	7,530.00	1,514.74	1,069.57	1,511.77	0.00	0.00	0.00
9,300.00	90.00	0.03	7,530.00	1,614.74	1,069.62	1,611.77	0.00	0.00	0.00
9,400.00	90.00	0.03	7,530.00	1,714.74	1,069.67	1,711.77	0.00	0.00	0.00
9,500.00	90.00	0.03	7,530.00	1,814.74	1,069.72	1,811.77	0.00	0.00	0.00
9,600.00	90.00	0.03	7,530.00	1,914.74	1,069.78	1,911.77	0.00	0.00	0.00
9,700.00	90.00	0.03	7,530.00	2,014.74	1,069.83	2,011.77	0.00	0.00	0.00
9,800.00	90.00	0.03	7,530.00	2,114.74	1,069.88	2,111.77	0.00	0.00	0.00
9,900.00	90.00	0.03	7,530.00	2,214.74	1,069.93	2,211.77	0.00	0.00	0.00
10,000.00	90.00	0.03	7,530.00	2,314.74	1,069.98	2,311.77	0.00	0.00	0.00
10,100.00	90.00	0.03	7,530.00	2,414.74	1,070.03	2,411.77	0.00	0.00	0.00
10,200.00	90.00	0.03	7,530.00	2,514.74	1,070.08	2,511.76	0.00	0.00	0.00
10,300.00	90.00	0.03	7,530.00	2,614.74	1,070.13	2,611.76	0.00	0.00	0.00
10,400.00	90.00	0.03	7,530.00	2,714.74	1,070.18	2,711.76	0.00	0.00	0.00
10,500.00	90.00	0.03	7,530.00	2,814.74	1,070.23	2,811.76	0.00	0.00	0.00
10,600.00	90.00	0.03	7,530.00	2,914.74	1,070.28	2,911.76	0.00	0.00	0.00
10,700.00	90.00	0.03	7,530.00	3,014.74	1,070.34	3,011.76	0.00	0.00	0.00
10,800.00	90.00	0.03	7,529.99	3,114.74	1,070.39	3,111.76	0.00	0.00	0.00
10,900.00	90.00	0.03	7,529.99	3,214.74	1,070.44	3,211.76	0.00	0.00	0.00
11,000.00	90.00	0.03	7,529.99	3,314.74	1,070.49	3,311.76	0.00	0.00	0.00
11,100.00	90.00	0.03	7,529.99	3,414.74	1,070.54	3,411.76	0.00	0.00	0.00
11,200.00	90.00	0.03	7,529.99	3,514.74	1,070.59	3,511.76	0.00	0.00	0.00
11,300.00	90.00	0.03	7,529.99	3,614.74	1,070.64	3,611.76	0.00	0.00	0.00
11,400.00	90.00	0.03	7,529.99	3,714.74	1,070.69	3,711.76	0.00	0.00	0.00
11,500.00	90.00	0.03	7,529.99	3,814.74	1,070.74	3,811.76	0.00	0.00	0.00
11,600.00	90.00	0.03	7,529.99	3,914.74	1,070.79	3,911.76	0.00	0.00	0.00
11,700.00	90.00	0.03	7,529.99	4,014.74	1,070.84	4,011.76	0.00	0.00	0.00
11,800.00	90.00	0.03	7,529.99	4,114.74	1,070.89	4,111.76	0.00	0.00	0.00
11,900.00	90.00	0.03	7,529.99	4,214.74	1,070.95	4,211.76	0.00	0.00	0.00
12,000.00	90.00	0.03	7,529.99	4,314.74	1,071.00	4,311.76	0.00	0.00	0.00
12,100.00	90.00	0.03	7,529.99	4,414.74	1,071.05	4,411.75	0.00	0.00	0.00
12,200.00	90.00	0.03	7,529.99	4,514.74	1,071.10	4,511.75	0.00	0.00	0.00
12,300.00	90.00	0.03	7,529.99	4,614.74	1,071.15	4,611.75	0.00	0.00	0.00
12,400.00	90.00	0.03	7,529.99	4,714.74	1,071.20	4,711.75	0.00	0.00	0.00
12,500.00	90.00	0.03	7,529.99	4,814.74	1,071.25	4,811.75	0.00	0.00	0.00
12,600.00	90.00	0.03	7,529.99	4,914.74	1,071.30	4,911.75	0.00	0.00	0.00
12,700.00	90.00	0.03	7,529.99	5,014.74	1,071.35	5,011.75	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-15C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4964.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4964.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY EAST N17-20-15C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,800.00	90.00	0.03	7,529.99	5,114.74	1,071.40	5,111.75	0.00	0.00	0.00	
12,900.00	90.00	0.03	7,529.99	5,214.74	1,071.45	5,211.75	0.00	0.00	0.00	
13,000.00	90.00	0.03	7,529.99	5,314.74	1,071.51	5,311.75	0.00	0.00	0.00	
13,100.00	90.00	0.03	7,529.99	5,414.74	1,071.56	5,411.75	0.00	0.00	0.00	
13,200.00	90.00	0.03	7,529.99	5,514.74	1,071.61	5,511.75	0.00	0.00	0.00	
13,300.00	90.00	0.03	7,529.99	5,614.74	1,071.66	5,611.75	0.00	0.00	0.00	
13,400.00	90.00	0.03	7,529.99	5,714.74	1,071.71	5,711.75	0.00	0.00	0.00	
13,500.00	90.00	0.03	7,529.99	5,814.74	1,071.76	5,811.75	0.00	0.00	0.00	
13,600.00	90.00	0.03	7,529.99	5,914.73	1,071.81	5,911.75	0.00	0.00	0.00	
13,700.00	90.00	0.03	7,529.99	6,014.73	1,071.86	6,011.75	0.00	0.00	0.00	
13,800.00	90.00	0.03	7,529.99	6,114.73	1,071.91	6,111.75	0.00	0.00	0.00	
13,900.00	90.00	0.03	7,529.99	6,214.73	1,071.96	6,211.74	0.00	0.00	0.00	
14,000.00	90.00	0.03	7,529.99	6,314.73	1,072.01	6,311.74	0.00	0.00	0.00	
14,100.00	90.00	0.03	7,529.99	6,414.73	1,072.07	6,411.74	0.00	0.00	0.00	
14,200.00	90.00	0.03	7,529.99	6,514.73	1,072.12	6,511.74	0.00	0.00	0.00	
14,300.00	90.00	0.03	7,529.99	6,614.73	1,072.17	6,611.74	0.00	0.00	0.00	
14,400.00	90.00	0.03	7,529.99	6,714.73	1,072.22	6,711.74	0.00	0.00	0.00	
14,500.00	90.00	0.03	7,529.99	6,814.73	1,072.27	6,811.74	0.00	0.00	0.00	
14,600.00	90.00	0.03	7,529.99	6,914.73	1,072.32	6,911.74	0.00	0.00	0.00	
14,700.00	90.00	0.03	7,529.99	7,014.73	1,072.37	7,011.74	0.00	0.00	0.00	
14,800.00	90.00	0.03	7,529.99	7,114.73	1,072.42	7,111.74	0.00	0.00	0.00	
14,900.00	90.00	0.03	7,529.99	7,214.73	1,072.47	7,211.74	0.00	0.00	0.00	
15,000.00	90.00	0.03	7,529.99	7,314.73	1,072.52	7,311.74	0.00	0.00	0.00	
15,100.00	90.00	0.03	7,529.99	7,414.73	1,072.57	7,411.74	0.00	0.00	0.00	
15,200.00	90.00	0.03	7,529.99	7,514.73	1,072.62	7,511.74	0.00	0.00	0.00	
15,300.00	90.00	0.03	7,529.99	7,614.73	1,072.68	7,611.74	0.00	0.00	0.00	
15,400.00	90.00	0.03	7,529.99	7,714.73	1,072.73	7,711.74	0.00	0.00	0.00	
15,500.00	90.00	0.03	7,529.99	7,814.73	1,072.78	7,811.74	0.00	0.00	0.00	
15,600.00	90.00	0.03	7,529.99	7,914.73	1,072.83	7,911.74	0.00	0.00	0.00	
15,700.00	90.00	0.03	7,529.99	8,014.73	1,072.88	8,011.74	0.00	0.00	0.00	
15,800.00	90.00	0.03	7,529.99	8,114.73	1,072.93	8,111.73	0.00	0.00	0.00	
15,900.00	90.00	0.03	7,529.99	8,214.73	1,072.98	8,211.73	0.00	0.00	0.00	
16,000.00	90.00	0.03	7,529.99	8,314.73	1,073.03	8,311.73	0.00	0.00	0.00	
16,100.00	90.00	0.03	7,529.98	8,414.73	1,073.08	8,411.73	0.00	0.00	0.00	
16,200.00	90.00	0.03	7,529.98	8,514.73	1,073.13	8,511.73	0.00	0.00	0.00	
16,300.00	90.00	0.03	7,529.98	8,614.73	1,073.18	8,611.73	0.00	0.00	0.00	
16,400.00	90.00	0.03	7,529.98	8,714.73	1,073.24	8,711.73	0.00	0.00	0.00	
16,500.00	90.00	0.03	7,529.98	8,814.73	1,073.29	8,811.73	0.00	0.00	0.00	
16,600.00	90.00	0.03	7,529.98	8,914.73	1,073.34	8,911.73	0.00	0.00	0.00	
16,700.00	90.00	0.03	7,529.98	9,014.73	1,073.39	9,011.73	0.00	0.00	0.00	
16,800.00	90.00	0.03	7,529.98	9,114.73	1,073.44	9,111.73	0.00	0.00	0.00	
16,900.00	90.00	0.03	7,529.98	9,214.73	1,073.49	9,211.73	0.00	0.00	0.00	
17,000.00	90.00	0.03	7,529.98	9,314.73	1,073.54	9,311.73	0.00	0.00	0.00	
17,100.00	90.00	0.03	7,529.98	9,414.73	1,073.59	9,411.73	0.00	0.00	0.00	
17,200.00	90.00	0.03	7,529.98	9,514.73	1,073.64	9,511.73	0.00	0.00	0.00	
17,300.00	90.00	0.03	7,529.98	9,614.73	1,073.69	9,611.73	0.00	0.00	0.00	
17,400.00	90.00	0.03	7,529.98	9,714.73	1,073.74	9,711.73	0.00	0.00	0.00	
17,500.00	90.00	0.03	7,529.98	9,814.73	1,073.80	9,811.73	0.00	0.00	0.00	
17,600.00	90.00	0.03	7,529.98	9,914.73	1,073.85	9,911.73	0.00	0.00	0.00	
17,652.00	90.00	0.03	7,530.00	9,966.74	1,074.11	9,963.73	0.00	0.00	0.00	
TD at 17652.00										

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY EAST N17-20-15C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4964.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4964.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY EAST N17-20-15C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RVE N17-15C - LP - plan hits target center - Point	0.00	0.00	7,530.00	275.79	1,068.94	1,291,564.09	3,130,030.57	40° 7' 58.084 N	105° 2' 5.827 W
RVE N17-15C - PBHL - plan hits target center - Point	0.00	0.00	7,530.00	9,966.74	1,074.11	1,301,254.93	3,129,985.33	40° 9' 33.854 N	105° 2' 5.755 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,522.62	3,477.00	PARKMAN				
4,103.42	4,047.00	SUSSEX				
4,516.09	4,452.00	SHANNON				
7,359.28	7,242.00	NIOBRARA				
7,392.11	7,270.00	NIO B TARGET				
7,809.22	7,510.00	FORT HAYS				
7,961.06	7,530.00	CODELL				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
700.00	700.00	0.00	0.00	Start Build 2.00
1,253.25	1,249.82	-14.27	51.31	Start 5224.49 hold at 1253.25 MD
6,477.74	6,377.18	-282.94	1,017.34	Start Drop -2.00
7,030.99	6,927.00	-297.21	1,068.65	Start 30.00 hold at 7030.99 MD
7,060.99	6,957.00	-297.21	1,068.65	Start DLS 10.00 TFO 0.03
7,961.06	7,530.00	275.79	1,068.94	Start 9690.95 hold at 7961.06 MD
17,652.00	7,530.00	9,966.74	1,074.11	TD at 17652.00