

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 18-T2N-R68W**

**RINN VALLEY WEST N18-20-9N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**03 May, 2018**



Project: Weld County  
Site: Sec 18-T2N-R68W  
Well: RINN VALLEY WEST N18-20-9N  
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: 8.27°

Magnetic Field  
Strength: 52149.2snT  
Dip Angle: 66.58°  
Date: 2/7/2018  
Model: IGRF2015

WELL DETAILS: RINN VALLEY WEST N18-20-9N

+N/-S	+E/-W	Northing	Easting	4941.00	Latitude	Longitude	Slot
0.00	0.00	1291281.29	3128683.19		40° 7' 55.358 N	105° 2' 23.194 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	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
3	2567.92	35.36	321.21	2457.92	411.88	-331.03	2.00	321.21	454.39	
4	5708.58	35.36	321.21	5019.18	1828.53	-1469.57	0.00	0.00	2017.23	
5	7476.50	0.00	0.00	6677.00	2240.41	-1800.60	2.00	180.00	2471.62	
6	7506.50	0.00	0.00	6707.00	2240.41	-1800.60	0.00	0.00	2471.62	
7	8406.56	90.00	0.12	7280.00	2813.41	-1799.37	10.00	0.12	3038.74	RVW N18-9N - LP
8	18102.64	90.00	0.12	7280.00	12509.46	-1779.11	0.00	-84.35	12635.34	RVW N18-9N - PBHL

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3477.00	3817.61	PARKMAN
4047.00	4516.52	SUSSEX
4452.00	5013.12	SHANNON
7242.00	8196.71	NIOBRARA
7270.00	8299.36	NIO B TARGET

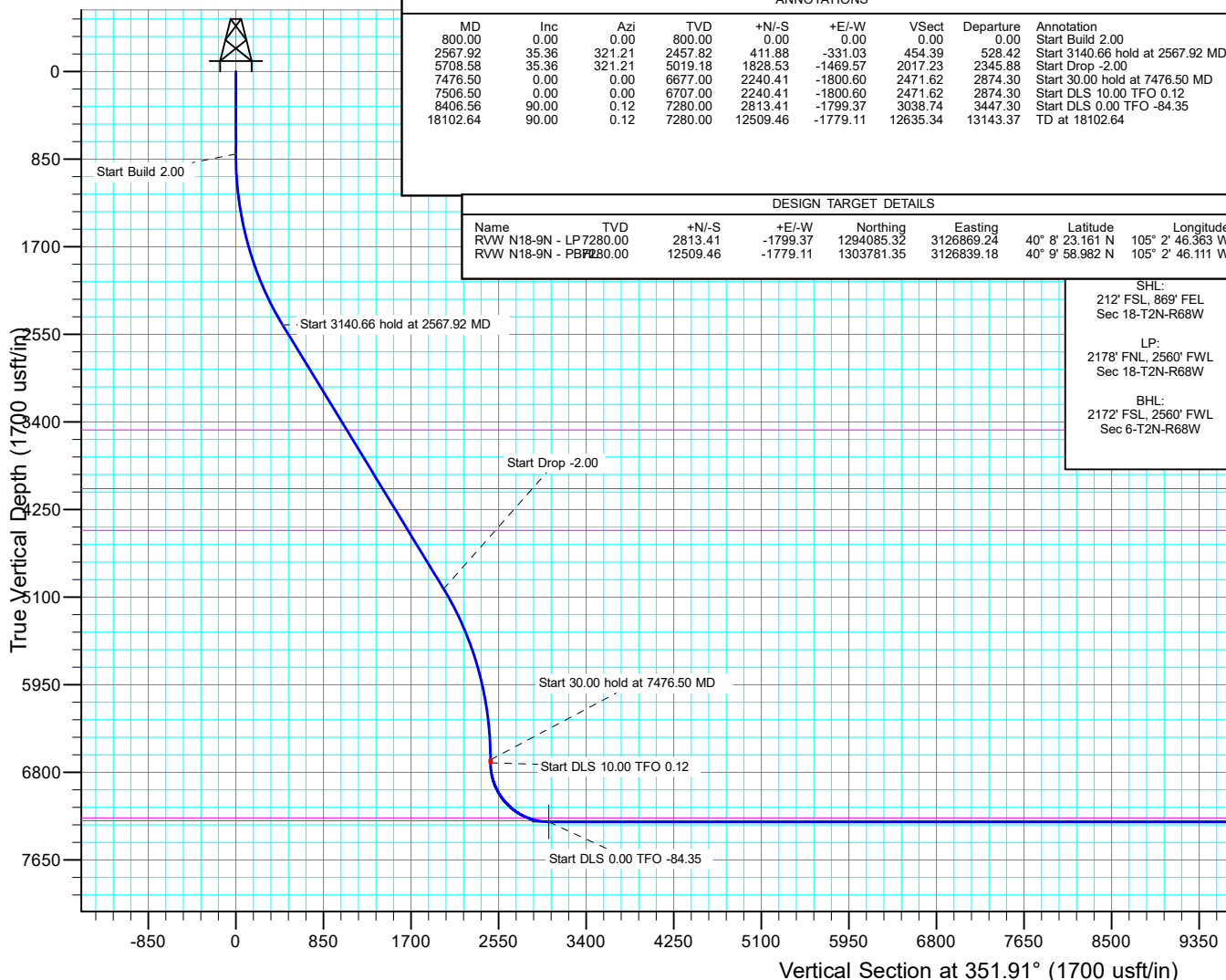
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	Start Build 2.00
2567.92	35.36	321.21	2457.92	411.88	-331.03	454.39	528.42	Start 3140.66 hold at 2567.92 MD
5708.58	35.36	321.21	5019.18	1828.53	-1469.57	2017.23	2345.68	Start Drop -2.00
7476.50	0.00	0.00	6677.00	2240.41	-1800.60	2471.62	2874.30	Start 30.00 hold at 7476.50 MD
7506.50	0.00	0.00	6707.00	2240.41	-1800.60	2471.62	2874.30	Start DLS 10.00 TFO 0.12
8406.56	90.00	0.12	7280.00	2813.41	-1799.37	3038.74	3447.30	Start DLS 0.00 TFO -84.35
18102.64	90.00	0.12	7280.00	12509.46	-1779.11	12635.34	13143.37	TD at 18102.64

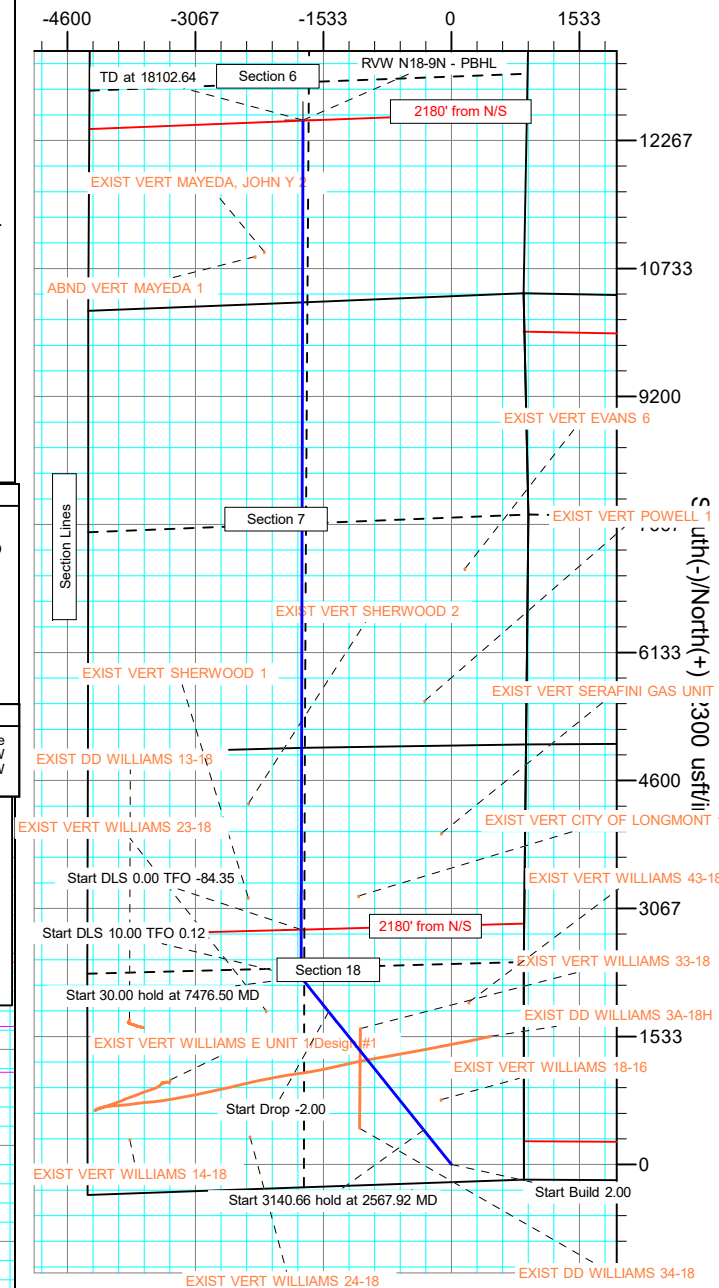
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RVW N18-9N - LP	7280.00	2813.41	-1799.37	1294085.32	3126869.24	40° 8' 23.161 N	105° 2' 46.363 W
RVW N18-9N - PBHL	7280.00	12509.46	-1779.11	1303781.35	3126839.18	40° 9' 58.982 N	105° 2' 46.111 W

SHL:  
212' FSL, 869' FEL  
Sec 18-T2N-R68W  
  
LP:  
2178' FNL, 2560' FWL  
Sec 18-T2N-R68W  
  
BHL:  
2172' FSL, 2560' FWL  
Sec 6-T2N-R68W



West(-)/East(+) (2300 usft/in)



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY WEST N18-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4966.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4966.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY WEST N18-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Project	Weld County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 WEST N18-20-9N					
Well Position	+N/-S	181.42 usft	Northing:	1,291,281.29 usft	Latitude:	40° 7' 55.358 N
	+E/-W	-869.31 usft	Easting:	3,128,683.19 usft	Longitude:	105° 2' 23.194 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,941.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/7/2018	8.27	66.58	52,149.22794467

Design	PROPOSAL 1			
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	351.91

Plan Survey Tool Program			Date	5/3/2018	
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,102.64	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG	
			OWSG MWD - Standard		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
2,567.92	35.36	321.21	2,457.82	411.88	-331.03	2.00	2.00	0.00	321.21	
5,708.58	35.36	321.21	5,019.18	1,828.53	-1,469.57	0.00	0.00	0.00	0.00	
7,476.50	0.00	0.00	6,677.00	2,240.41	-1,800.60	2.00	-2.00	0.00	180.00	
7,506.50	0.00	0.00	6,707.00	2,240.41	-1,800.60	0.00	0.00	0.00	0.00	
8,406.56	90.00	0.12	7,280.00	2,813.41	-1,799.37	10.00	10.00	0.01	0.12	RVW N18-9N - LP
18,102.64	90.00	0.12	7,280.00	12,509.46	-1,779.11	0.00	0.00	0.00	-84.35	RVW N18-9N - PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY WEST N18-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4966.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4966.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY WEST N18-20-9N	<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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	2.00	321.21	899.98	1.36	-1.09	1.50	2.00	2.00	0.00
1,000.00	4.00	321.21	999.84	5.44	-4.37	6.00	2.00	2.00	0.00
1,100.00	6.00	321.21	1,099.45	12.23	-9.83	13.50	2.00	2.00	0.00
1,200.00	8.00	321.21	1,198.70	21.73	-17.47	23.97	2.00	2.00	0.00
1,300.00	10.00	321.21	1,297.47	33.92	-27.26	37.43	2.00	2.00	0.00
1,400.00	12.00	321.21	1,395.62	48.80	-39.22	53.83	2.00	2.00	0.00
1,500.00	14.00	321.21	1,493.06	66.33	-53.31	73.17	2.00	2.00	0.00
1,600.00	16.00	321.21	1,589.64	86.50	-69.52	95.43	2.00	2.00	0.00
1,700.00	18.00	321.21	1,685.27	109.29	-87.84	120.57	2.00	2.00	0.00
1,800.00	20.00	321.21	1,779.82	134.67	-108.23	148.56	2.00	2.00	0.00
1,900.00	22.00	321.21	1,873.17	162.60	-130.68	179.38	2.00	2.00	0.00
2,000.00	24.00	321.21	1,965.21	193.05	-155.16	212.98	2.00	2.00	0.00
2,100.00	26.00	321.21	2,055.84	225.99	-181.63	249.32	2.00	2.00	0.00
2,200.00	28.00	321.21	2,144.94	261.38	-210.07	288.35	2.00	2.00	0.00
2,300.00	30.00	321.21	2,232.39	299.17	-240.44	330.04	2.00	2.00	0.00
2,400.00	32.00	321.21	2,318.11	339.31	-272.70	374.33	2.00	2.00	0.00
2,500.00	34.00	321.21	2,401.97	381.76	-306.82	421.16	2.00	2.00	0.00
2,567.92	35.36	321.21	2,457.82	411.88	-331.03	454.39	2.00	2.00	0.00
Start 3140.66 hold at 2567.92 MD									
2,600.00	35.36	321.21	2,483.98	426.35	-342.66	470.35	0.00	0.00	0.00
2,700.00	35.36	321.21	2,565.54	471.46	-378.91	520.11	0.00	0.00	0.00
2,800.00	35.36	321.21	2,647.09	516.56	-415.16	569.87	0.00	0.00	0.00
2,900.00	35.36	321.21	2,728.65	561.67	-451.41	619.64	0.00	0.00	0.00
3,000.00	35.36	321.21	2,810.20	606.78	-487.66	669.40	0.00	0.00	0.00
3,100.00	35.36	321.21	2,891.76	651.89	-523.91	719.16	0.00	0.00	0.00
3,200.00	35.36	321.21	2,973.31	696.99	-560.17	768.92	0.00	0.00	0.00
3,300.00	35.36	321.21	3,054.87	742.10	-596.42	818.68	0.00	0.00	0.00
3,400.00	35.36	321.21	3,136.42	787.21	-632.67	868.45	0.00	0.00	0.00
3,500.00	35.36	321.21	3,217.98	832.31	-668.92	918.21	0.00	0.00	0.00
3,600.00	35.36	321.21	3,299.53	877.42	-705.17	967.97	0.00	0.00	0.00
3,700.00	35.36	321.21	3,381.09	922.53	-741.43	1,017.73	0.00	0.00	0.00
3,800.00	35.36	321.21	3,462.64	967.63	-777.68	1,067.49	0.00	0.00	0.00
3,817.61	35.36	321.21	3,477.00	975.57	-784.06	1,076.25	0.00	0.00	0.00
PARKMAN									
3,900.00	35.36	321.21	3,544.20	1,012.74	-813.93	1,117.25	0.00	0.00	0.00
4,000.00	35.36	321.21	3,625.75	1,057.85	-850.18	1,167.02	0.00	0.00	0.00
4,100.00	35.36	321.21	3,707.31	1,102.95	-886.43	1,216.78	0.00	0.00	0.00
4,200.00	35.36	321.21	3,788.86	1,148.06	-922.69	1,266.54	0.00	0.00	0.00
4,300.00	35.36	321.21	3,870.42	1,193.17	-958.94	1,316.30	0.00	0.00	0.00
4,400.00	35.36	321.21	3,951.97	1,238.27	-995.19	1,366.06	0.00	0.00	0.00
4,500.00	35.36	321.21	4,033.53	1,283.38	-1,031.44	1,415.82	0.00	0.00	0.00
4,516.52	35.36	321.21	4,047.00	1,290.83	-1,037.43	1,424.05	0.00	0.00	0.00
SUSSEX									

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY WEST N18-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4966.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4966.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY WEST N18-20-9N	<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)
4,600.00	35.36	321.21	4,115.08	1,328.49	-1,067.69	1,465.59	0.00	0.00	0.00
4,700.00	35.36	321.21	4,196.64	1,373.59	-1,103.95	1,515.35	0.00	0.00	0.00
4,800.00	35.36	321.21	4,278.19	1,418.70	-1,140.20	1,565.11	0.00	0.00	0.00
4,900.00	35.36	321.21	4,359.74	1,463.81	-1,176.45	1,614.87	0.00	0.00	0.00
5,000.00	35.36	321.21	4,441.30	1,508.91	-1,212.70	1,664.63	0.00	0.00	0.00
5,013.12	35.36	321.21	4,452.00	1,514.83	-1,217.46	1,671.16	0.00	0.00	0.00
SHANNON									
5,100.00	35.36	321.21	4,522.85	1,554.02	-1,248.95	1,714.40	0.00	0.00	0.00
5,200.00	35.36	321.21	4,604.41	1,599.13	-1,285.21	1,764.16	0.00	0.00	0.00
5,300.00	35.36	321.21	4,685.96	1,644.23	-1,321.46	1,813.92	0.00	0.00	0.00
5,400.00	35.36	321.21	4,767.52	1,689.34	-1,357.71	1,863.68	0.00	0.00	0.00
5,500.00	35.36	321.21	4,849.07	1,734.45	-1,393.96	1,913.44	0.00	0.00	0.00
5,600.00	35.36	321.21	4,930.63	1,779.55	-1,430.21	1,963.20	0.00	0.00	0.00
5,708.58	35.36	321.21	5,019.18	1,828.53	-1,469.57	2,017.23	0.00	0.00	0.00
Start Drop -2.00									
5,800.00	33.53	321.21	5,094.57	1,868.83	-1,501.97	2,061.70	2.00	-2.00	0.00
5,900.00	31.53	321.21	5,178.88	1,910.75	-1,535.65	2,107.94	2.00	-2.00	0.00
6,000.00	29.53	321.21	5,265.01	1,950.34	-1,567.47	2,151.62	2.00	-2.00	0.00
6,100.00	27.53	321.21	5,352.86	1,987.57	-1,597.39	2,192.68	2.00	-2.00	0.00
6,200.00	25.53	321.21	5,442.33	2,022.38	-1,625.37	2,231.09	2.00	-2.00	0.00
6,300.00	23.53	321.21	5,533.30	2,054.74	-1,651.38	2,266.79	2.00	-2.00	0.00
6,400.00	21.53	321.21	5,625.66	2,084.60	-1,675.38	2,299.74	2.00	-2.00	0.00
6,500.00	19.53	321.21	5,719.30	2,111.94	-1,697.35	2,329.89	2.00	-2.00	0.00
6,600.00	17.53	321.21	5,814.11	2,136.71	-1,717.26	2,357.22	2.00	-2.00	0.00
6,700.00	15.53	321.21	5,909.98	2,158.88	-1,735.08	2,381.68	2.00	-2.00	0.00
6,800.00	13.53	321.21	6,006.77	2,178.44	-1,750.79	2,403.26	2.00	-2.00	0.00
6,900.00	11.53	321.21	6,104.39	2,195.35	-1,764.38	2,421.91	2.00	-2.00	0.00
7,000.00	9.53	321.21	6,202.70	2,209.59	-1,775.83	2,437.62	2.00	-2.00	0.00
7,100.00	7.53	321.21	6,301.59	2,221.15	-1,785.12	2,450.38	2.00	-2.00	0.00
7,200.00	5.53	321.21	6,400.93	2,230.02	-1,792.25	2,460.16	2.00	-2.00	0.00
7,300.00	3.53	321.21	6,500.61	2,236.17	-1,797.20	2,466.95	2.00	-2.00	0.00
7,400.00	1.53	321.21	6,600.51	2,239.61	-1,799.96	2,470.74	2.00	-2.00	0.00
7,476.50	0.00	0.00	6,677.00	2,240.41	-1,800.60	2,471.62	2.00	-2.00	0.00
Start 30.00 hold at 7476.50 MD									
7,506.50	0.00	0.00	6,707.00	2,240.41	-1,800.60	2,471.62	0.00	0.00	0.00
Start DLS 10.00 TFO 0.12									
7,550.00	4.35	0.12	6,750.46	2,242.06	-1,800.60	2,473.26	10.00	10.00	0.00
7,600.00	9.35	0.12	6,800.09	2,248.02	-1,800.58	2,479.16	10.00	10.00	0.00
7,650.00	14.35	0.12	6,849.01	2,258.29	-1,800.56	2,489.31	10.00	10.00	0.00
7,700.00	19.35	0.12	6,896.85	2,272.77	-1,800.53	2,503.65	10.00	10.00	0.00
7,750.00	24.35	0.12	6,943.24	2,291.38	-1,800.49	2,522.06	10.00	10.00	0.00
7,800.00	29.35	0.12	6,987.84	2,313.95	-1,800.44	2,544.41	10.00	10.00	0.00
7,850.00	34.35	0.12	7,030.29	2,340.32	-1,800.39	2,570.51	10.00	10.00	0.00
7,900.00	39.35	0.12	7,070.29	2,370.30	-1,800.32	2,600.18	10.00	10.00	0.00
7,950.00	44.35	0.12	7,107.53	2,403.65	-1,800.25	2,633.18	10.00	10.00	0.00
8,000.00	49.35	0.12	7,141.72	2,440.11	-1,800.17	2,669.27	10.00	10.00	0.00
8,050.00	54.35	0.12	7,172.59	2,479.42	-1,800.09	2,708.17	10.00	10.00	0.00
8,100.00	59.35	0.12	7,199.93	2,521.26	-1,800.00	2,749.59	10.00	10.00	0.00
8,150.00	64.35	0.12	7,223.51	2,565.33	-1,799.90	2,793.21	10.00	10.00	0.00
8,196.71	69.02	0.12	7,242.00	2,608.22	-1,799.81	2,835.65	10.00	10.00	0.00
NIOBRARA									
8,200.00	69.35	0.12	7,243.17	2,611.29	-1,799.81	2,838.70	10.00	10.00	0.00
8,250.00	74.34	0.12	7,258.74	2,658.79	-1,799.70	2,885.70	10.00	10.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY WEST N18-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4966.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4966.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY WEST N18-20-9N	<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)	
8,299.36	79.28	0.12	7,270.00	2,706.83	-1,799.60	2,933.25	10.00	10.00	0.00	
<b>NIO B TARGET</b>										
8,300.00	79.34	0.12	7,270.12	2,707.46	-1,799.60	2,933.88	10.00	10.00	0.00	
8,350.00	84.34	0.12	7,277.21	2,756.94	-1,799.49	2,982.85	10.00	10.00	0.00	
8,400.00	89.34	0.12	7,279.96	2,806.85	-1,799.39	3,032.24	10.00	10.00	0.00	
8,406.56	90.00	0.12	7,280.00	2,813.41	-1,799.37	3,038.74	10.00	10.00	0.00	
<b>Start DLS 0.00 TFO -84.35</b>										
8,500.00	90.00	0.12	7,280.00	2,906.84	-1,799.17	3,131.22	0.00	0.00	0.00	
8,600.00	90.00	0.12	7,280.00	3,006.84	-1,798.96	3,230.19	0.00	0.00	0.00	
8,700.00	90.00	0.12	7,280.00	3,106.84	-1,798.75	3,329.16	0.00	0.00	0.00	
8,800.00	90.00	0.12	7,280.00	3,206.84	-1,798.53	3,428.14	0.00	0.00	0.00	
8,900.00	90.00	0.12	7,280.00	3,306.84	-1,798.32	3,527.11	0.00	0.00	0.00	
9,000.00	90.00	0.12	7,280.00	3,406.84	-1,798.10	3,626.08	0.00	0.00	0.00	
9,100.00	90.00	0.12	7,280.00	3,506.84	-1,797.89	3,725.06	0.00	0.00	0.00	
9,200.00	90.00	0.12	7,280.00	3,606.84	-1,797.68	3,824.03	0.00	0.00	0.00	
9,300.00	90.00	0.12	7,280.00	3,706.84	-1,797.46	3,923.00	0.00	0.00	0.00	
9,400.00	90.00	0.12	7,280.00	3,806.84	-1,797.25	4,021.98	0.00	0.00	0.00	
9,500.00	90.00	0.12	7,280.01	3,906.84	-1,797.04	4,120.95	0.00	0.00	0.00	
9,600.00	90.00	0.12	7,280.01	4,006.84	-1,796.83	4,219.92	0.00	0.00	0.00	
9,700.00	90.00	0.12	7,280.01	4,106.84	-1,796.61	4,318.90	0.00	0.00	0.00	
9,800.00	90.00	0.12	7,280.01	4,206.84	-1,796.40	4,417.87	0.00	0.00	0.00	
9,900.00	90.00	0.12	7,280.01	4,306.84	-1,796.19	4,516.85	0.00	0.00	0.00	
10,000.00	90.00	0.12	7,280.01	4,406.84	-1,795.97	4,615.82	0.00	0.00	0.00	
10,100.00	90.00	0.12	7,280.01	4,506.84	-1,795.76	4,714.79	0.00	0.00	0.00	
10,200.00	90.00	0.12	7,280.01	4,606.84	-1,795.55	4,813.77	0.00	0.00	0.00	
10,300.00	90.00	0.12	7,280.01	4,706.84	-1,795.34	4,912.74	0.00	0.00	0.00	
10,400.00	90.00	0.12	7,280.01	4,806.84	-1,795.13	5,011.71	0.00	0.00	0.00	
10,500.00	90.00	0.12	7,280.01	4,906.84	-1,794.91	5,110.69	0.00	0.00	0.00	
10,600.00	90.00	0.12	7,280.01	5,006.84	-1,794.70	5,209.66	0.00	0.00	0.00	
10,700.00	90.00	0.12	7,280.01	5,106.84	-1,794.49	5,308.63	0.00	0.00	0.00	
10,800.00	90.00	0.12	7,280.01	5,206.84	-1,794.28	5,407.61	0.00	0.00	0.00	
10,900.00	90.00	0.12	7,280.01	5,306.84	-1,794.07	5,506.58	0.00	0.00	0.00	
11,000.00	90.00	0.12	7,280.01	5,406.84	-1,793.86	5,605.56	0.00	0.00	0.00	
11,100.00	90.00	0.12	7,280.01	5,506.84	-1,793.64	5,704.53	0.00	0.00	0.00	
11,200.00	90.00	0.12	7,280.01	5,606.84	-1,793.43	5,803.50	0.00	0.00	0.00	
11,300.00	90.00	0.12	7,280.01	5,706.84	-1,793.22	5,902.48	0.00	0.00	0.00	
11,400.00	90.00	0.12	7,280.01	5,806.84	-1,793.01	6,001.45	0.00	0.00	0.00	
11,500.00	90.00	0.12	7,280.01	5,906.84	-1,792.80	6,100.42	0.00	0.00	0.00	
11,600.00	90.00	0.12	7,280.01	6,006.84	-1,792.59	6,199.40	0.00	0.00	0.00	
11,700.00	90.00	0.12	7,280.01	6,106.84	-1,792.38	6,298.37	0.00	0.00	0.00	
11,800.00	90.00	0.12	7,280.01	6,206.84	-1,792.17	6,397.35	0.00	0.00	0.00	
11,900.00	90.00	0.12	7,280.01	6,306.84	-1,791.96	6,496.32	0.00	0.00	0.00	
12,000.00	90.00	0.12	7,280.01	6,406.84	-1,791.75	6,595.29	0.00	0.00	0.00	
12,100.00	90.00	0.12	7,280.01	6,506.84	-1,791.54	6,694.27	0.00	0.00	0.00	
12,200.00	90.00	0.12	7,280.01	6,606.84	-1,791.33	6,793.24	0.00	0.00	0.00	
12,300.00	90.00	0.12	7,280.01	6,706.84	-1,791.12	6,892.22	0.00	0.00	0.00	
12,400.00	90.00	0.12	7,280.01	6,806.84	-1,790.91	6,991.19	0.00	0.00	0.00	
12,500.00	90.00	0.12	7,280.01	6,906.84	-1,790.70	7,090.16	0.00	0.00	0.00	
12,600.00	90.00	0.12	7,280.01	7,006.84	-1,790.49	7,189.14	0.00	0.00	0.00	
12,700.00	90.00	0.12	7,280.01	7,106.84	-1,790.28	7,288.11	0.00	0.00	0.00	
12,800.00	90.00	0.12	7,280.01	7,206.84	-1,790.07	7,387.09	0.00	0.00	0.00	
12,900.00	90.00	0.12	7,280.01	7,306.84	-1,789.86	7,486.06	0.00	0.00	0.00	
13,000.00	90.00	0.12	7,280.01	7,406.83	-1,789.65	7,585.03	0.00	0.00	0.00	
13,100.00	90.00	0.12	7,280.01	7,506.83	-1,789.44	7,684.01	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY WEST N18-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4966.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4966.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY WEST N18-20-9N	<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)
13,200.00	90.00	0.12	7,280.01	7,606.83	-1,789.23	7,782.98	0.00	0.00	0.00
13,300.00	90.00	0.12	7,280.01	7,706.83	-1,789.02	7,881.96	0.00	0.00	0.00
13,400.00	90.00	0.12	7,280.01	7,806.83	-1,788.81	7,980.93	0.00	0.00	0.00
13,500.00	90.00	0.12	7,280.01	7,906.83	-1,788.60	8,079.90	0.00	0.00	0.00
13,600.00	90.00	0.12	7,280.01	8,006.83	-1,788.40	8,178.88	0.00	0.00	0.00
13,700.00	90.00	0.12	7,280.01	8,106.83	-1,788.19	8,277.85	0.00	0.00	0.00
13,800.00	90.00	0.12	7,280.01	8,206.83	-1,787.98	8,376.83	0.00	0.00	0.00
13,900.00	90.00	0.12	7,280.01	8,306.83	-1,787.77	8,475.80	0.00	0.00	0.00
14,000.00	90.00	0.12	7,280.01	8,406.83	-1,787.56	8,574.78	0.00	0.00	0.00
14,100.00	90.00	0.12	7,280.01	8,506.83	-1,787.35	8,673.75	0.00	0.00	0.00
14,200.00	90.00	0.12	7,280.01	8,606.83	-1,787.15	8,772.72	0.00	0.00	0.00
14,300.00	90.00	0.12	7,280.01	8,706.83	-1,786.94	8,871.70	0.00	0.00	0.00
14,400.00	90.00	0.12	7,280.01	8,806.83	-1,786.73	8,970.67	0.00	0.00	0.00
14,500.00	90.00	0.12	7,280.01	8,906.83	-1,786.52	9,069.65	0.00	0.00	0.00
14,600.00	90.00	0.12	7,280.01	9,006.83	-1,786.31	9,168.62	0.00	0.00	0.00
14,700.00	90.00	0.12	7,280.01	9,106.83	-1,786.11	9,267.60	0.00	0.00	0.00
14,800.00	90.00	0.12	7,280.01	9,206.83	-1,785.90	9,366.57	0.00	0.00	0.00
14,900.00	90.00	0.12	7,280.01	9,306.83	-1,785.69	9,465.54	0.00	0.00	0.00
15,000.00	90.00	0.12	7,280.01	9,406.83	-1,785.48	9,564.52	0.00	0.00	0.00
15,100.00	90.00	0.12	7,280.01	9,506.83	-1,785.28	9,663.49	0.00	0.00	0.00
15,200.00	90.00	0.12	7,280.01	9,606.83	-1,785.07	9,762.47	0.00	0.00	0.00
15,300.00	90.00	0.12	7,280.01	9,706.83	-1,784.86	9,861.44	0.00	0.00	0.00
15,400.00	90.00	0.12	7,280.01	9,806.83	-1,784.66	9,960.42	0.00	0.00	0.00
15,500.00	90.00	0.12	7,280.01	9,906.83	-1,784.45	10,059.39	0.00	0.00	0.00
15,600.00	90.00	0.12	7,280.01	10,006.83	-1,784.24	10,158.36	0.00	0.00	0.00
15,700.00	90.00	0.12	7,280.01	10,106.83	-1,784.04	10,257.34	0.00	0.00	0.00
15,800.00	90.00	0.12	7,280.01	10,206.83	-1,783.83	10,356.31	0.00	0.00	0.00
15,900.00	90.00	0.12	7,280.01	10,306.83	-1,783.62	10,455.29	0.00	0.00	0.00
16,000.00	90.00	0.12	7,280.01	10,406.83	-1,783.42	10,554.26	0.00	0.00	0.00
16,100.00	90.00	0.12	7,280.01	10,506.83	-1,783.21	10,653.24	0.00	0.00	0.00
16,200.00	90.00	0.12	7,280.01	10,606.83	-1,783.01	10,752.21	0.00	0.00	0.00
16,300.00	90.00	0.12	7,280.01	10,706.83	-1,782.80	10,851.19	0.00	0.00	0.00
16,400.00	90.00	0.12	7,280.01	10,806.83	-1,782.59	10,950.16	0.00	0.00	0.00
16,500.00	90.00	0.12	7,280.01	10,906.83	-1,782.39	11,049.14	0.00	0.00	0.00
16,600.00	90.00	0.12	7,280.01	11,006.83	-1,782.18	11,148.11	0.00	0.00	0.00
16,700.00	90.00	0.12	7,280.01	11,106.83	-1,781.98	11,247.08	0.00	0.00	0.00
16,800.00	90.00	0.12	7,280.01	11,206.83	-1,781.77	11,346.06	0.00	0.00	0.00
16,900.00	90.00	0.12	7,280.01	11,306.83	-1,781.57	11,445.03	0.00	0.00	0.00
17,000.00	90.00	0.12	7,280.01	11,406.83	-1,781.36	11,544.01	0.00	0.00	0.00
17,100.00	90.00	0.12	7,280.00	11,506.83	-1,781.16	11,642.98	0.00	0.00	0.00
17,200.00	90.00	0.12	7,280.00	11,606.83	-1,780.95	11,741.96	0.00	0.00	0.00
17,300.00	90.00	0.12	7,280.00	11,706.83	-1,780.75	11,840.93	0.00	0.00	0.00
17,400.00	90.00	0.12	7,280.00	11,806.83	-1,780.54	11,939.91	0.00	0.00	0.00
17,500.00	90.00	0.12	7,280.00	11,906.83	-1,780.34	12,038.88	0.00	0.00	0.00
17,600.00	90.00	0.12	7,280.00	12,006.83	-1,780.13	12,137.86	0.00	0.00	0.00
17,700.00	90.00	0.12	7,280.00	12,106.82	-1,779.93	12,236.83	0.00	0.00	0.00
17,800.00	90.00	0.12	7,280.00	12,206.82	-1,779.72	12,335.81	0.00	0.00	0.00
17,900.00	90.00	0.12	7,280.00	12,306.82	-1,779.52	12,434.78	0.00	0.00	0.00
18,000.00	90.00	0.12	7,280.00	12,406.82	-1,779.32	12,533.76	0.00	0.00	0.00
18,102.64	90.00	0.12	7,280.00	12,509.46	-1,779.11	12,635.34	0.00	0.00	0.00
TD at 18102.64									

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well RINN VALLEY WEST N18-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 4966.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 4966.00usft
<b>Site:</b>	Sec 18-T2N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	RINN VALLEY WEST N18-20-9N	<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
RVW N18-9N - LP - plan hits target center - Point	0.00	0.00	7,280.00	2,813.41	-1,799.37	1,294,085.32	3,126,869.24	40° 8' 23.161 N	105° 2' 46.363 W
RVW N18-9N - PBHL - plan hits target center - Point	0.00	0.00	7,280.00	12,509.46	-1,779.11	1,303,781.35	3,126,839.18	40° 9' 58.982 N	105° 2' 46.111 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,817.61	3,477.00	PARKMAN				
4,516.52	4,047.00	SUSSEX				
5,013.12	4,452.00	SHANNON				
8,196.71	7,242.00	NIOBRARA				
8,299.36	7,270.00	NIO B TARGET				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
800.00	800.00	0.00	0.00	Start Build 2.00
2,567.92	2,457.82	411.88	-331.03	Start 3140.66 hold at 2567.92 MD
5,708.58	5,019.18	1,828.53	-1,469.57	Start Drop -2.00
7,476.50	6,677.00	2,240.41	-1,800.60	Start 30.00 hold at 7476.50 MD
7,506.50	6,707.00	2,240.41	-1,800.60	Start DLS 10.00 TFO 0.12
8,406.56	7,280.00	2,813.41	-1,799.37	Start DLS 0.00 TFO -84.35
18,102.64	7,280.00	12,509.46	-1,779.11	TD at 18102.64