

EXTRACTION OIL & GAS

Weld County

Sec 18-T2N-R68W

RINN VALLEY WEST N18-20-10N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

19 March, 2018



Project: Weld County
Site: Sec 18-T2N-R68W
Well: RINN VALLEY WEST N18-20-10N
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 N18-20-10N

+N/-S	+E/-W	Northing	Easting	4942.00	Latitude	Longitude	Slot
0.00	0.00	1291281.14	3128655.23		40° 7' 55.358 N	105° 2' 23.554 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	2549.47	36.99	316.83	2423.65	420.47	-394.48	2.00	316.83	479.31	
4	5716.56	36.99	316.83	4953.35	1810.14	-1698.27	0.00	0.00	2063.45	
5	7566.03	0.00	0.00	6677.00	2230.61	-2092.75	2.00	180.00	2542.76	
6	7596.03	0.00	0.00	6707.00	2230.61	-2092.75	0.00	0.00	2542.76	
7	8496.08	90.00	0.12	7280.00	2803.59	-2091.53	10.00	0.12	3107.83	RVW N18-10N - LP
8	18189.60	90.00	0.12	7280.00	12497.10	-2071.15	0.00	0.00	12667.56	RVW N18-10N - PBHL

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3477.00	3868.22	PARKMAN
4047.00	4581.84	SUSSEX
4452.00	5088.89	SHANNON
7242.00	8286.24	NIOBRARA
7270.00	8388.89	NIO B TARGET

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
2549.47	36.99	316.83	2423.65	420.47	-394.48	479.31	576.55	Start 3167.10 hold at 2549.47 MD
5716.56	36.99	316.83	4953.35	1810.14	-1698.27	2063.45	2482.08	Start Drop -2.00
7566.03	0.00	0.00	6677.00	2230.61	-2092.75	2542.76	3058.63	Start 30.00 hold at 7566.03 MD
7596.03	0.00	0.00	6707.00	2230.61	-2092.75	2542.76	3058.63	Start DLS 10.00 TFO 0.12
8496.08	90.00	0.12	7280.00	2803.59	-2091.53	3107.83	3631.62	Start 9693.53 hold at 8496.08 MD
18189.60	90.00	0.12	7280.26	12497.10	-2070.97	12667.53	13325.14	TD at 18189.60

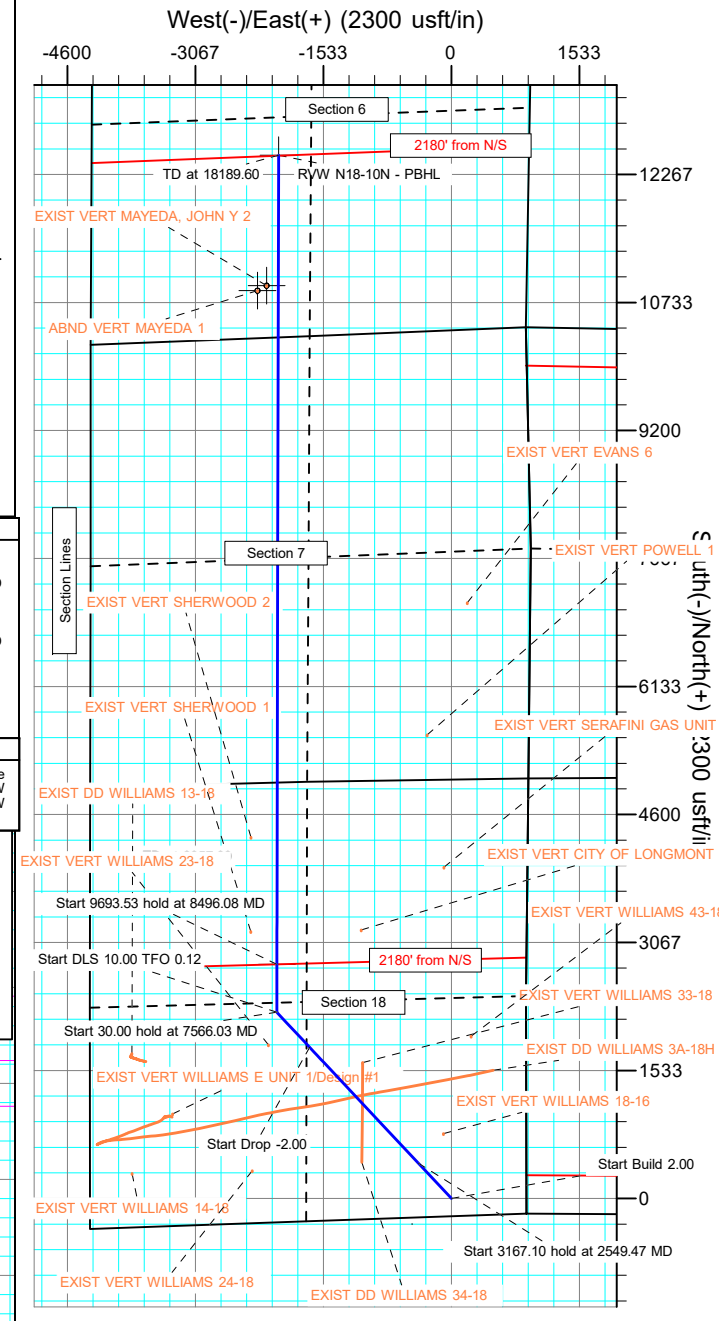
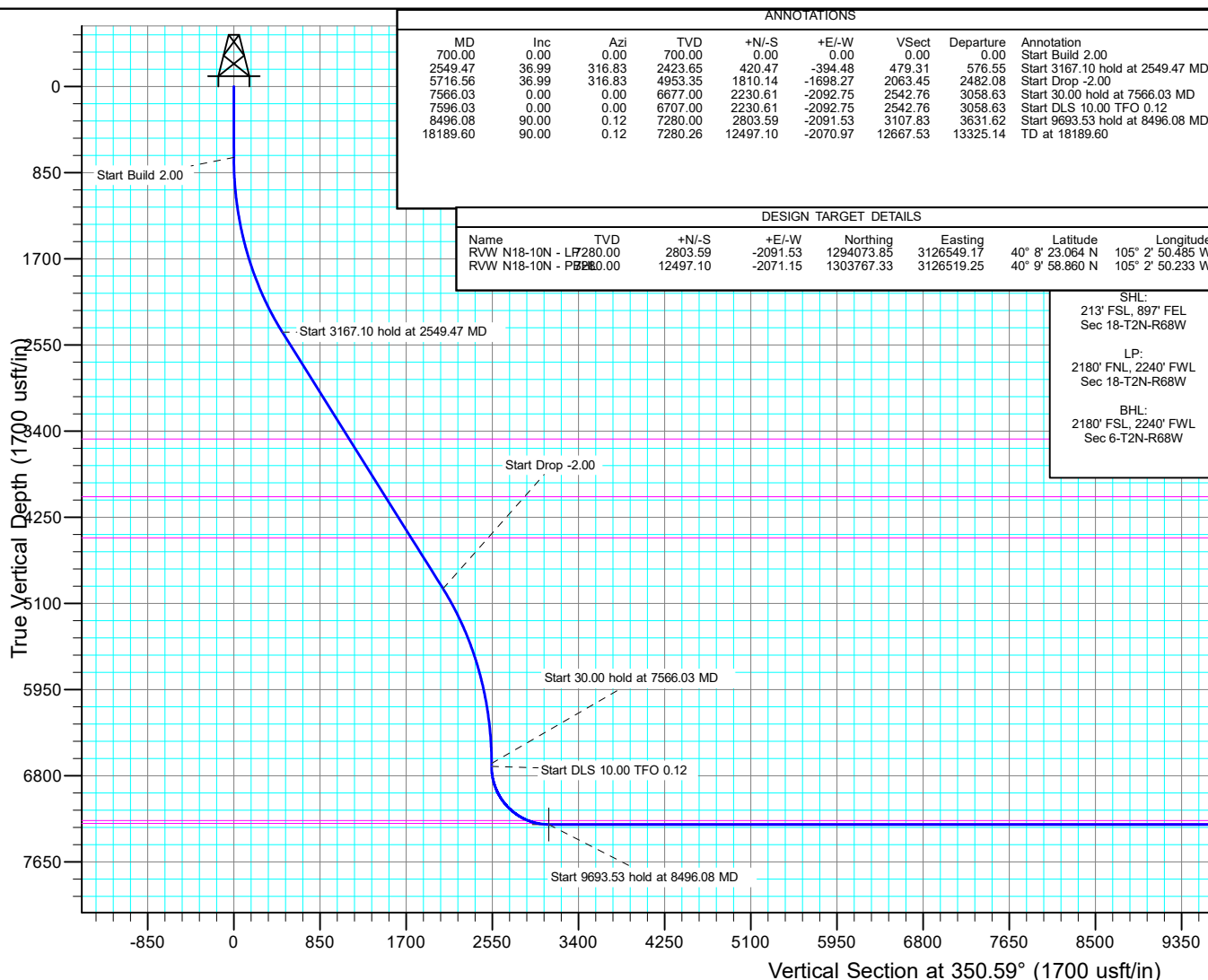
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RVW N18-10N - LP	7280.00	2803.59	-2091.53	1294073.85	3126549.17	40° 8' 23.064 N	105° 2' 50.485 W
RVW N18-10N - PBHL	7280.00	12497.10	-2071.15	1303767.33	3126519.25	40° 9' 58.860 N	105° 2' 50.233 W

SHL:
213' FSL, 897' FEL
Sec 18-T2N-R68W

LP:
2180' FNL, 2240' FWL
Sec 18-T2N-R68W

BHL:
2180' FSL, 2240' FWL
Sec 6-T2N-R68W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY WEST N18-20-10N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4967.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4967.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY WEST N18-20-10N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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 N18-20-10N					
Well Position	+N/-S	181.42 usft	Northing:	1,291,281.14 usft	Latitude:	40° 7' 55.358 N
	+E/-W	-897.27 usft	Easting:	3,128,655.23 usft	Longitude:	105° 2' 23.554 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,942.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/7/2018	8.27	66.58	52,149.20918800

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	350.59

Plan Survey Tool Program	Date	3/19/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,189.56	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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,549.47	36.99	316.83	2,423.65	420.47	-394.48	2.00	2.00	0.00	316.83	
5,716.56	36.99	316.83	4,953.35	1,810.14	-1,698.27	0.00	0.00	0.00	0.00	
7,566.03	0.00	0.00	6,677.00	2,230.61	-2,092.75	2.00	-2.00	0.00	180.00	
7,596.03	0.00	0.00	6,707.00	2,230.61	-2,092.75	0.00	0.00	0.00	0.00	
8,496.08	90.00	0.12	7,280.00	2,803.59	-2,091.53	10.00	10.00	0.01	0.12	RVW N18-10N - LP
18,189.61	90.00	0.12	7,280.00	12,497.10	-2,071.15	0.00	0.00	0.00	0.00	RVW N18-10N - PBH

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY WEST N18-20-10N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4967.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4967.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY WEST N18-20-10N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	316.83	799.98	1.27	-1.19	1.45	2.00	2.00	0.00
900.00	4.00	316.83	899.84	5.09	-4.77	5.80	2.00	2.00	0.00
1,000.00	6.00	316.83	999.45	11.45	-10.74	13.05	2.00	2.00	0.00
1,100.00	8.00	316.83	1,098.70	20.33	-19.08	23.18	2.00	2.00	0.00
1,200.00	10.00	316.83	1,197.47	31.74	-29.78	36.18	2.00	2.00	0.00
1,300.00	12.00	316.83	1,295.62	45.66	-42.83	52.04	2.00	2.00	0.00
1,400.00	14.00	316.83	1,393.06	62.06	-58.22	70.74	2.00	2.00	0.00
1,500.00	16.00	316.83	1,489.64	80.93	-75.93	92.26	2.00	2.00	0.00
1,600.00	18.00	316.83	1,585.27	102.26	-95.94	116.56	2.00	2.00	0.00
1,700.00	20.00	316.83	1,679.82	126.00	-118.21	143.63	2.00	2.00	0.00
1,800.00	22.00	316.83	1,773.17	152.13	-142.73	173.42	2.00	2.00	0.00
1,900.00	24.00	316.83	1,865.21	180.63	-169.46	205.90	2.00	2.00	0.00
2,000.00	26.00	316.83	1,955.84	211.44	-198.38	241.03	2.00	2.00	0.00
2,100.00	28.00	316.83	2,044.94	244.55	-229.44	278.77	2.00	2.00	0.00
2,200.00	30.00	316.83	2,132.39	279.91	-262.61	319.08	2.00	2.00	0.00
2,300.00	32.00	316.83	2,218.11	317.47	-297.84	361.89	2.00	2.00	0.00
2,400.00	34.00	316.83	2,301.97	357.18	-335.11	407.17	2.00	2.00	0.00
2,500.00	36.00	316.83	2,383.88	399.01	-374.35	454.85	2.00	2.00	0.00
2,549.47	36.99	316.83	2,423.65	420.47	-394.48	479.31	2.00	2.00	0.00
Start 3167.10 hold at 2549.47 MD									
2,600.00	36.99	316.83	2,464.01	442.64	-415.28	504.58	0.00	0.00	0.00
2,700.00	36.99	316.83	2,543.88	486.52	-456.45	554.60	0.00	0.00	0.00
2,800.00	36.99	316.83	2,623.76	530.40	-497.62	604.62	0.00	0.00	0.00
2,900.00	36.99	316.83	2,703.63	574.28	-538.78	654.64	0.00	0.00	0.00
3,000.00	36.99	316.83	2,783.51	618.15	-579.95	704.66	0.00	0.00	0.00
3,100.00	36.99	316.83	2,863.38	662.03	-621.12	754.68	0.00	0.00	0.00
3,200.00	36.99	316.83	2,943.26	705.91	-662.28	804.70	0.00	0.00	0.00
3,300.00	36.99	316.83	3,023.13	749.79	-703.45	854.71	0.00	0.00	0.00
3,400.00	36.99	316.83	3,103.01	793.67	-744.62	904.73	0.00	0.00	0.00
3,500.00	36.99	316.83	3,182.88	837.55	-785.78	954.75	0.00	0.00	0.00
3,600.00	36.99	316.83	3,262.76	881.43	-826.95	1,004.77	0.00	0.00	0.00
3,700.00	36.99	316.83	3,342.63	925.30	-868.12	1,054.79	0.00	0.00	0.00
3,800.00	36.99	316.83	3,422.51	969.18	-909.28	1,104.81	0.00	0.00	0.00
3,868.22	36.99	316.83	3,477.00	999.12	-937.37	1,138.93	0.00	0.00	0.00
PARKMAN									
3,900.00	36.99	316.83	3,502.38	1,013.06	-950.45	1,154.83	0.00	0.00	0.00
4,000.00	36.99	316.83	3,582.26	1,056.94	-991.62	1,204.85	0.00	0.00	0.00
4,100.00	36.99	316.83	3,662.13	1,100.82	-1,032.78	1,254.87	0.00	0.00	0.00
4,200.00	36.99	316.83	3,742.00	1,144.70	-1,073.95	1,304.89	0.00	0.00	0.00
4,300.00	36.99	316.83	3,821.88	1,188.58	-1,115.12	1,354.90	0.00	0.00	0.00
4,400.00	36.99	316.83	3,901.75	1,232.45	-1,156.28	1,404.92	0.00	0.00	0.00
4,500.00	36.99	316.83	3,981.63	1,276.33	-1,197.45	1,454.94	0.00	0.00	0.00
4,581.84	36.99	316.83	4,047.00	1,312.24	-1,231.14	1,495.88	0.00	0.00	0.00
SUSSEX									

Planning Report

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Well:	RINN VALLEY WEST N18-20-10N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	36.99	316.83	4,061.50	1,320.21	-1,238.62	1,504.96	0.00	0.00	0.00
4,700.00	36.99	316.83	4,141.38	1,364.09	-1,279.78	1,554.98	0.00	0.00	0.00
4,800.00	36.99	316.83	4,221.25	1,407.97	-1,320.95	1,605.00	0.00	0.00	0.00
4,900.00	36.99	316.83	4,301.13	1,451.85	-1,362.12	1,655.02	0.00	0.00	0.00
5,000.00	36.99	316.83	4,381.00	1,495.73	-1,403.29	1,705.04	0.00	0.00	0.00
5,088.89	36.99	316.83	4,452.00	1,534.73	-1,439.88	1,749.50	0.00	0.00	0.00
SHANNON									
5,100.00	36.99	316.83	4,460.88	1,539.61	-1,444.45	1,755.06	0.00	0.00	0.00
5,200.00	36.99	316.83	4,540.75	1,583.48	-1,485.62	1,805.07	0.00	0.00	0.00
5,300.00	36.99	316.83	4,620.63	1,627.36	-1,526.79	1,855.09	0.00	0.00	0.00
5,400.00	36.99	316.83	4,700.50	1,671.24	-1,567.95	1,905.11	0.00	0.00	0.00
5,500.00	36.99	316.83	4,780.38	1,715.12	-1,609.12	1,955.13	0.00	0.00	0.00
5,600.00	36.99	316.83	4,860.25	1,759.00	-1,650.29	2,005.15	0.00	0.00	0.00
5,700.00	36.99	316.83	4,940.13	1,802.88	-1,691.45	2,055.17	0.00	0.00	0.00
5,716.56	36.99	316.83	4,953.35	1,810.14	-1,698.27	2,063.45	0.00	0.00	0.00
Start Drop -2.00									
5,800.00	35.32	316.83	5,020.72	1,846.04	-1,731.95	2,104.38	2.00	-2.00	0.00
5,900.00	33.32	316.83	5,103.31	1,887.16	-1,770.53	2,151.25	2.00	-2.00	0.00
6,000.00	31.32	316.83	5,187.81	1,926.15	-1,807.11	2,195.69	2.00	-2.00	0.00
6,100.00	29.32	316.83	5,274.13	1,962.96	-1,841.65	2,237.66	2.00	-2.00	0.00
6,200.00	27.32	316.83	5,362.15	1,997.56	-1,874.10	2,277.10	2.00	-2.00	0.00
6,300.00	25.32	316.83	5,451.78	2,029.89	-1,904.44	2,313.96	2.00	-2.00	0.00
6,400.00	23.32	316.83	5,542.90	2,059.93	-1,932.62	2,348.19	2.00	-2.00	0.00
6,500.00	21.32	316.83	5,635.40	2,087.62	-1,958.60	2,379.76	2.00	-2.00	0.00
6,600.00	19.32	316.83	5,729.18	2,112.95	-1,982.36	2,408.63	2.00	-2.00	0.00
6,700.00	17.32	316.83	5,824.10	2,135.87	-2,003.87	2,434.76	2.00	-2.00	0.00
6,800.00	15.32	316.83	5,920.07	2,156.36	-2,023.09	2,458.12	2.00	-2.00	0.00
6,900.00	13.32	316.83	6,016.96	2,174.40	-2,040.02	2,478.68	2.00	-2.00	0.00
7,000.00	11.32	316.83	6,114.65	2,189.96	-2,054.61	2,496.42	2.00	-2.00	0.00
7,100.00	9.32	316.83	6,213.02	2,203.03	-2,066.87	2,511.32	2.00	-2.00	0.00
7,200.00	7.32	316.83	6,311.97	2,213.58	-2,076.77	2,523.35	2.00	-2.00	0.00
7,300.00	5.32	316.83	6,411.35	2,221.61	-2,084.30	2,532.50	2.00	-2.00	0.00
7,400.00	3.32	316.83	6,511.07	2,227.10	-2,089.46	2,538.76	2.00	-2.00	0.00
7,500.00	1.32	316.83	6,610.98	2,230.06	-2,092.23	2,542.13	2.00	-2.00	0.00
7,566.03	0.00	0.00	6,677.00	2,230.61	-2,092.75	2,542.76	2.00	-2.00	0.00
Start 30.00 hold at 7566.03 MD									
7,596.03	0.00	0.00	6,707.00	2,230.61	-2,092.75	2,542.76	0.00	0.00	0.00
Start DLS 10.00 TFO 0.12									
7,600.00	0.40	0.12	6,710.97	2,230.62	-2,092.75	2,542.77	10.00	10.00	0.00
7,650.00	5.40	0.12	6,760.89	2,233.15	-2,092.74	2,545.26	10.00	10.00	0.00
7,700.00	10.40	0.12	6,810.40	2,240.02	-2,092.73	2,552.04	10.00	10.00	0.00
7,750.00	15.40	0.12	6,859.13	2,251.17	-2,092.71	2,563.04	10.00	10.00	0.00
7,800.00	20.40	0.12	6,906.69	2,266.53	-2,092.67	2,578.19	10.00	10.00	0.00
7,850.00	25.40	0.12	6,952.74	2,285.98	-2,092.63	2,597.36	10.00	10.00	0.00
7,900.00	30.39	0.12	6,996.91	2,309.36	-2,092.58	2,620.43	10.00	10.00	0.00
7,950.00	35.39	0.12	7,038.88	2,336.51	-2,092.53	2,647.20	10.00	10.00	0.00
8,000.00	40.39	0.12	7,078.33	2,367.21	-2,092.46	2,677.47	10.00	10.00	0.00
8,050.00	45.39	0.12	7,114.95	2,401.23	-2,092.39	2,711.03	10.00	10.00	0.00
8,100.00	50.39	0.12	7,148.46	2,438.32	-2,092.31	2,747.60	10.00	10.00	0.00
8,150.00	55.39	0.12	7,178.62	2,478.18	-2,092.22	2,786.91	10.00	10.00	0.00
8,200.00	60.39	0.12	7,205.18	2,520.52	-2,092.14	2,828.66	10.00	10.00	0.00
8,250.00	65.39	0.12	7,227.96	2,565.01	-2,092.04	2,872.54	10.00	10.00	0.00
8,286.24	69.02	0.12	7,242.00	2,598.42	-2,091.97	2,905.49	10.00	10.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY WEST N18-20-10N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4967.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4967.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY WEST N18-20-10N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
NIOBRARA									
8,300.00	70.39	0.12	7,246.77	2,611.32	-2,091.94	2,918.21	10.00	10.00	0.00
8,350.00	75.39	0.12	7,261.48	2,659.09	-2,091.84	2,965.33	10.00	10.00	0.00
8,388.89	79.28	0.12	7,270.00	2,697.03	-2,091.76	3,002.74	10.00	10.00	0.00
NIO B TARGET									
8,400.00	80.39	0.12	7,271.96	2,707.96	-2,091.74	3,013.52	10.00	10.00	0.00
8,450.00	85.39	0.12	7,278.15	2,757.56	-2,091.63	3,062.44	10.00	10.00	0.00
8,496.08	90.00	0.12	7,280.00	2,803.59	-2,091.53	3,107.83	10.00	10.00	0.00
Start 9693.53 hold at 8496.08 MD									
8,500.00	90.00	0.12	7,280.00	2,807.51	-2,091.53	3,111.70	0.00	0.00	0.00
8,600.00	90.00	0.12	7,280.00	2,907.51	-2,091.31	3,210.32	0.00	0.00	0.00
8,700.00	90.00	0.12	7,280.01	3,007.51	-2,091.10	3,308.94	0.00	0.00	0.00
8,800.00	90.00	0.12	7,280.01	3,107.51	-2,090.89	3,407.56	0.00	0.00	0.00
8,900.00	90.00	0.12	7,280.01	3,207.51	-2,090.68	3,506.18	0.00	0.00	0.00
9,000.00	90.00	0.12	7,280.01	3,307.51	-2,090.47	3,604.80	0.00	0.00	0.00
9,100.00	90.00	0.12	7,280.02	3,407.51	-2,090.25	3,703.42	0.00	0.00	0.00
9,200.00	90.00	0.12	7,280.02	3,507.51	-2,090.04	3,802.04	0.00	0.00	0.00
9,300.00	90.00	0.12	7,280.02	3,607.51	-2,089.83	3,900.66	0.00	0.00	0.00
9,400.00	90.00	0.12	7,280.02	3,707.51	-2,089.62	3,999.27	0.00	0.00	0.00
9,500.00	90.00	0.12	7,280.03	3,807.51	-2,089.40	4,097.89	0.00	0.00	0.00
9,600.00	90.00	0.12	7,280.03	3,907.51	-2,089.19	4,196.51	0.00	0.00	0.00
9,700.00	90.00	0.12	7,280.03	4,007.51	-2,088.98	4,295.13	0.00	0.00	0.00
9,800.00	90.00	0.12	7,280.04	4,107.51	-2,088.77	4,393.75	0.00	0.00	0.00
9,900.00	90.00	0.12	7,280.04	4,207.51	-2,088.56	4,492.37	0.00	0.00	0.00
10,000.00	90.00	0.12	7,280.04	4,307.51	-2,088.34	4,590.99	0.00	0.00	0.00
10,100.00	90.00	0.12	7,280.04	4,407.51	-2,088.13	4,689.61	0.00	0.00	0.00
10,200.00	90.00	0.12	7,280.05	4,507.51	-2,087.92	4,788.23	0.00	0.00	0.00
10,300.00	90.00	0.12	7,280.05	4,607.51	-2,087.71	4,886.85	0.00	0.00	0.00
10,400.00	90.00	0.12	7,280.05	4,707.51	-2,087.50	4,985.47	0.00	0.00	0.00
10,500.00	90.00	0.12	7,280.05	4,807.51	-2,087.28	5,084.09	0.00	0.00	0.00
10,600.00	90.00	0.12	7,280.06	4,907.51	-2,087.07	5,182.71	0.00	0.00	0.00
10,700.00	90.00	0.12	7,280.06	5,007.51	-2,086.86	5,281.33	0.00	0.00	0.00
10,800.00	90.00	0.12	7,280.06	5,107.51	-2,086.65	5,379.95	0.00	0.00	0.00
10,900.00	90.00	0.12	7,280.07	5,207.51	-2,086.44	5,478.57	0.00	0.00	0.00
11,000.00	90.00	0.12	7,280.07	5,307.51	-2,086.22	5,577.19	0.00	0.00	0.00
11,100.00	90.00	0.12	7,280.07	5,407.51	-2,086.01	5,675.81	0.00	0.00	0.00
11,200.00	90.00	0.12	7,280.07	5,507.51	-2,085.80	5,774.42	0.00	0.00	0.00
11,300.00	90.00	0.12	7,280.08	5,607.51	-2,085.59	5,873.04	0.00	0.00	0.00
11,400.00	90.00	0.12	7,280.08	5,707.51	-2,085.37	5,971.66	0.00	0.00	0.00
11,500.00	90.00	0.12	7,280.08	5,807.51	-2,085.16	6,070.28	0.00	0.00	0.00
11,600.00	90.00	0.12	7,280.08	5,907.51	-2,084.95	6,168.90	0.00	0.00	0.00
11,700.00	90.00	0.12	7,280.09	6,007.51	-2,084.74	6,267.52	0.00	0.00	0.00
11,800.00	90.00	0.12	7,280.09	6,107.51	-2,084.53	6,366.14	0.00	0.00	0.00
11,900.00	90.00	0.12	7,280.09	6,207.51	-2,084.31	6,464.76	0.00	0.00	0.00
12,000.00	90.00	0.12	7,280.10	6,307.51	-2,084.10	6,563.38	0.00	0.00	0.00
12,100.00	90.00	0.12	7,280.10	6,407.51	-2,083.89	6,662.00	0.00	0.00	0.00
12,200.00	90.00	0.12	7,280.10	6,507.51	-2,083.68	6,760.62	0.00	0.00	0.00
12,300.00	90.00	0.12	7,280.10	6,607.51	-2,083.47	6,859.24	0.00	0.00	0.00
12,400.00	90.00	0.12	7,280.11	6,707.51	-2,083.25	6,957.86	0.00	0.00	0.00
12,500.00	90.00	0.12	7,280.11	6,807.51	-2,083.04	7,056.48	0.00	0.00	0.00
12,600.00	90.00	0.12	7,280.11	6,907.51	-2,082.83	7,155.10	0.00	0.00	0.00
12,700.00	90.00	0.12	7,280.11	7,007.51	-2,082.62	7,253.72	0.00	0.00	0.00
12,800.00	90.00	0.12	7,280.12	7,107.50	-2,082.40	7,352.34	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY WEST N18-20-10N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4967.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4967.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY WEST N18-20-10N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)	
12,900.00	90.00	0.12	7,280.12	7,207.50	-2,082.19	7,450.95	0.00	0.00	0.00	
13,000.00	90.00	0.12	7,280.12	7,307.50	-2,081.98	7,549.57	0.00	0.00	0.00	
13,100.00	90.00	0.12	7,280.13	7,407.50	-2,081.77	7,648.19	0.00	0.00	0.00	
13,200.00	90.00	0.12	7,280.13	7,507.50	-2,081.56	7,746.81	0.00	0.00	0.00	
13,300.00	90.00	0.12	7,280.13	7,607.50	-2,081.34	7,845.43	0.00	0.00	0.00	
13,400.00	90.00	0.12	7,280.13	7,707.50	-2,081.13	7,944.05	0.00	0.00	0.00	
13,500.00	90.00	0.12	7,280.14	7,807.50	-2,080.92	8,042.67	0.00	0.00	0.00	
13,600.00	90.00	0.12	7,280.14	7,907.50	-2,080.71	8,141.29	0.00	0.00	0.00	
13,700.00	90.00	0.12	7,280.14	8,007.50	-2,080.50	8,239.91	0.00	0.00	0.00	
13,800.00	90.00	0.12	7,280.14	8,107.50	-2,080.28	8,338.53	0.00	0.00	0.00	
13,900.00	90.00	0.12	7,280.15	8,207.50	-2,080.07	8,437.15	0.00	0.00	0.00	
14,000.00	90.00	0.12	7,280.15	8,307.50	-2,079.86	8,535.77	0.00	0.00	0.00	
14,100.00	90.00	0.12	7,280.15	8,407.50	-2,079.65	8,634.39	0.00	0.00	0.00	
14,200.00	90.00	0.12	7,280.15	8,507.50	-2,079.43	8,733.01	0.00	0.00	0.00	
14,300.00	90.00	0.12	7,280.16	8,607.50	-2,079.22	8,831.63	0.00	0.00	0.00	
14,400.00	90.00	0.12	7,280.16	8,707.50	-2,079.01	8,930.25	0.00	0.00	0.00	
14,500.00	90.00	0.12	7,280.16	8,807.50	-2,078.80	9,028.87	0.00	0.00	0.00	
14,600.00	90.00	0.12	7,280.17	8,907.50	-2,078.59	9,127.48	0.00	0.00	0.00	
14,700.00	90.00	0.12	7,280.17	9,007.50	-2,078.37	9,226.10	0.00	0.00	0.00	
14,800.00	90.00	0.12	7,280.17	9,107.50	-2,078.16	9,324.72	0.00	0.00	0.00	
14,900.00	90.00	0.12	7,280.17	9,207.50	-2,077.95	9,423.34	0.00	0.00	0.00	
15,000.00	90.00	0.12	7,280.18	9,307.50	-2,077.74	9,521.96	0.00	0.00	0.00	
15,100.00	90.00	0.12	7,280.18	9,407.50	-2,077.53	9,620.58	0.00	0.00	0.00	
15,200.00	90.00	0.12	7,280.18	9,507.50	-2,077.31	9,719.20	0.00	0.00	0.00	
15,300.00	90.00	0.12	7,280.18	9,607.50	-2,077.10	9,817.82	0.00	0.00	0.00	
15,400.00	90.00	0.12	7,280.19	9,707.50	-2,076.89	9,916.44	0.00	0.00	0.00	
15,500.00	90.00	0.12	7,280.19	9,807.50	-2,076.68	10,015.06	0.00	0.00	0.00	
15,600.00	90.00	0.12	7,280.19	9,907.50	-2,076.46	10,113.68	0.00	0.00	0.00	
15,700.00	90.00	0.12	7,280.20	10,007.50	-2,076.25	10,212.30	0.00	0.00	0.00	
15,800.00	90.00	0.12	7,280.20	10,107.50	-2,076.04	10,310.92	0.00	0.00	0.00	
15,900.00	90.00	0.12	7,280.20	10,207.50	-2,075.83	10,409.54	0.00	0.00	0.00	
16,000.00	90.00	0.12	7,280.20	10,307.50	-2,075.62	10,508.16	0.00	0.00	0.00	
16,100.00	90.00	0.12	7,280.21	10,407.50	-2,075.40	10,606.78	0.00	0.00	0.00	
16,200.00	90.00	0.12	7,280.21	10,507.50	-2,075.19	10,705.40	0.00	0.00	0.00	
16,300.00	90.00	0.12	7,280.21	10,607.50	-2,074.98	10,804.01	0.00	0.00	0.00	
16,400.00	90.00	0.12	7,280.21	10,707.50	-2,074.77	10,902.63	0.00	0.00	0.00	
16,500.00	90.00	0.12	7,280.22	10,807.50	-2,074.56	11,001.25	0.00	0.00	0.00	
16,600.00	90.00	0.12	7,280.22	10,907.50	-2,074.34	11,099.87	0.00	0.00	0.00	
16,700.00	90.00	0.12	7,280.22	11,007.50	-2,074.13	11,198.49	0.00	0.00	0.00	
16,800.00	90.00	0.12	7,280.23	11,107.50	-2,073.92	11,297.11	0.00	0.00	0.00	
16,900.00	90.00	0.12	7,280.23	11,207.50	-2,073.71	11,395.73	0.00	0.00	0.00	
17,000.00	90.00	0.12	7,280.23	11,307.50	-2,073.50	11,494.35	0.00	0.00	0.00	
17,100.00	90.00	0.12	7,280.23	11,407.50	-2,073.28	11,592.97	0.00	0.00	0.00	
17,200.00	90.00	0.12	7,280.24	11,507.50	-2,073.07	11,691.59	0.00	0.00	0.00	
17,300.00	90.00	0.12	7,280.24	11,607.49	-2,072.86	11,790.21	0.00	0.00	0.00	
17,400.00	90.00	0.12	7,280.24	11,707.49	-2,072.65	11,888.83	0.00	0.00	0.00	
17,500.00	90.00	0.12	7,280.24	11,807.49	-2,072.43	11,987.45	0.00	0.00	0.00	
17,600.00	90.00	0.12	7,280.25	11,907.49	-2,072.22	12,086.07	0.00	0.00	0.00	
17,700.00	90.00	0.12	7,280.25	12,007.49	-2,072.01	12,184.69	0.00	0.00	0.00	
17,800.00	90.00	0.12	7,280.25	12,107.49	-2,071.80	12,283.31	0.00	0.00	0.00	
17,900.00	90.00	0.12	7,280.26	12,207.49	-2,071.59	12,381.93	0.00	0.00	0.00	
18,000.00	90.00	0.12	7,280.26	12,307.49	-2,071.37	12,480.55	0.00	0.00	0.00	
18,100.00	90.00	0.12	7,280.26	12,407.49	-2,071.16	12,579.16	0.00	0.00	0.00	
18,189.61	90.00	0.12	7,280.26	12,497.10	-2,070.97	12,667.53	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY WEST N18-20-10N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4967.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4967.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY WEST N18-20-10N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
TD at 18189.60									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
RVW N18-10N - LP	0.00	0.00	7,280.00	2,803.59	-2,091.53	1,294,073.84	3,126,549.17	40° 8' 23.064 N	105° 2' 50.485 W
- plan hits target center									
- Point									
RVW N18-10N - PBHL	0.00	0.00	7,280.00	12,497.10	-2,071.15	1,303,767.32	3,126,519.25	40° 9' 58.860 N	105° 2' 50.233 W
- plan misses target center by 0.32usft at 18189.60usft MD (7280.26 TVD, 12497.10 N, -2070.97 E)									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,868.22	3,477.00	PARKMAN				
4,581.84	4,047.00	SUSSEX				
5,088.89	4,452.00	SHANNON				
8,286.24	7,242.00	NIOBRARA				
8,388.89	7,270.00	NIO B TARGET				

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
2,549.47	2,423.65	420.47	-394.48	Start 3167.10 hold at 2549.47 MD
5,716.56	4,953.35	1,810.14	-1,698.27	Start Drop -2.00
7,566.03	6,677.00	2,230.61	-2,092.75	Start 30.00 hold at 7566.03 MD
7,596.03	6,707.00	2,230.61	-2,092.75	Start DLS 10.00 TFO 0.12
8,496.08	7,280.00	2,803.59	-2,091.53	Start 9693.53 hold at 8496.08 MD
18,189.61	7,280.26	12,497.10	-2,070.97	TD at 18189.60