

EXTRACTION OIL & GAS

WELD COUNTY

Sec 20-T7N-R67W

VIC 20W-20-9N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

22 May, 2018



Project: WELD COUNTY
Site: Sec 20-T7N-R67W
Well: VIC 20W-20-9N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1



Azimuths to True North
Magnetic North: 8.30°
Magnetic Field
Strength: 52455.4nT
Dip Angle: 66.96°
Date: 6/29/2017
Model: IGRF2015

WELL DETAILS: VIC 20W-20-9N

	+N/-S	+E/-W	Northing	Easting	5005.00	Latitude	Longitude	Slot
	0.00	0.00	1447843.59	3164265.29	40° 33'	40.417 N	104° 54'	31.644 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	1531.83	16.64	164.37	1520.19	-115.48	32.32	2.00	164.37	-32.00	
4	5711.20	16.64	164.37	5524.61	-1267.77	354.79	0.00	0.00	-351.31	
5	6543.03	0.00	0.00	6344.80	-1383.25	387.11	2.00	180.00	-383.31	
6	6573.03	0.00	0.00	6374.80	-1383.25	387.11	0.00	0.00	-383.31	
7	7473.41	90.00	268.47	6948.00	-1398.59	-185.89	10.00	268.47	189.73	
8	16654.08	90.00	268.47	6948.00	-1644.17	-9363.27	0.00	0.00	9367.74	

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
1531.83	16.64	164.37	1520.19	-115.48	32.32	-32.00	119.92	Start 4179.37 hold at 1531.83 MD
5711.20	16.64	164.37	5524.61	-1267.77	354.79	-351.31	1316.48	Start Drop -2.00
6543.03	0.00	0.00	6344.80	-1383.25	387.11	-383.31	1436.40	Start 30.00 hold at 6543.03 MD
6573.03	0.00	0.00	6374.80	-1383.25	387.11	-383.31	1436.40	Start DLS 10.00 TFO 268.47
7473.41	90.00	268.47	6948.00	-1398.59	-185.89	189.73	2009.60	Start 9180.66 hold at 7473.41 MD
16654.08	90.00	268.47	6948.00	-1644.17	-9363.27	9367.74	11190.27	TD at 16654.08

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
VIC 20W-20-9N - LP	6948.00	-1398.59	-185.89	1446443.80	3164088.73	40° 33' 26.597 N	104° 54' 34.052 W	Point
- plan hits target center								
VIC 20W-20-9N - PBHL	6948.00	-1644.17	-9363.27	1446137.03	3154913.19	40° 33' 24.152 N	104° 56' 32.953 W	Point
- plan hits target center								

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3488.00	3585.61	PARKMAN
4220.00	4349.59	SUSSEX
4594.00	4739.93	SHANNON
6798.00	7049.11	SHARON SPRINGS
6836.00	7108.98	NIOBRARA
6938.00	7366.18	NIO B

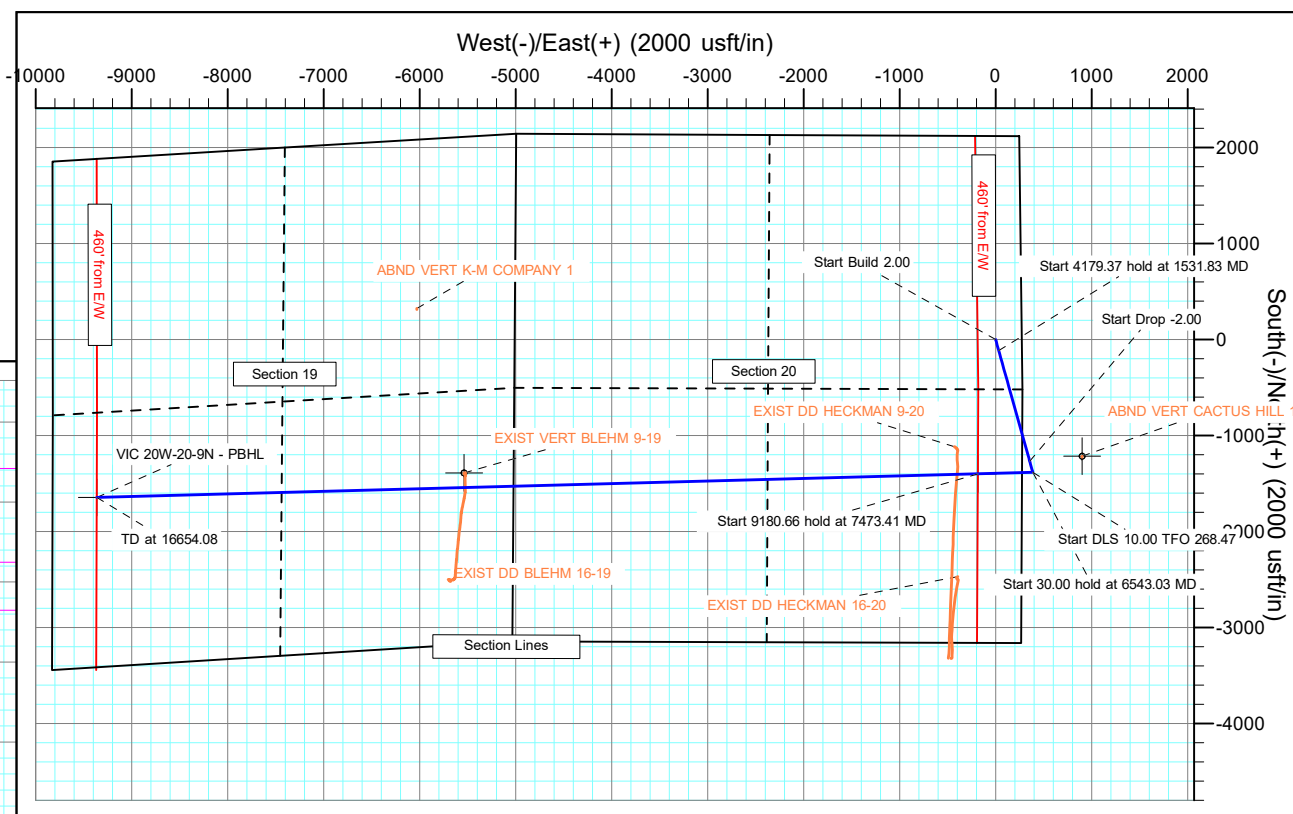
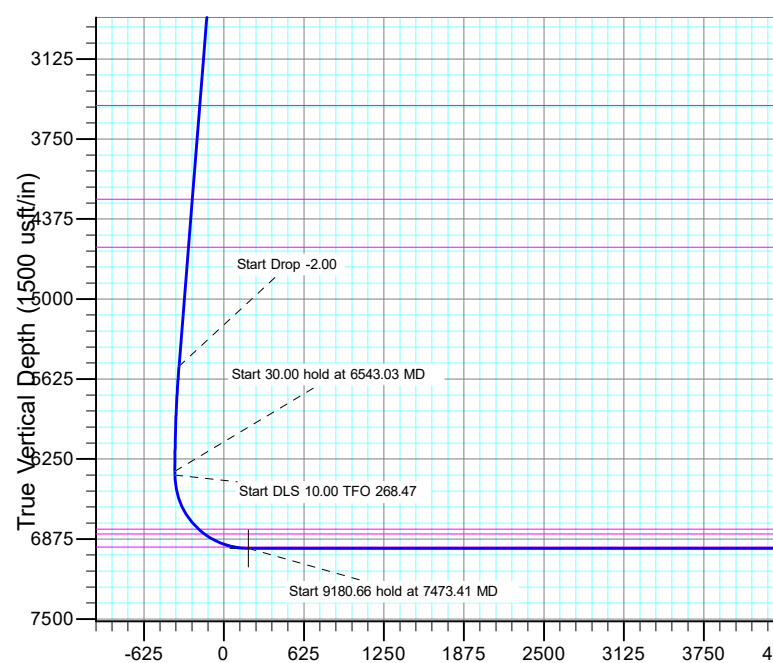
PROJECT DETAILS: WELD COUNTY

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

SHL:
2120' FNL, 272' FEL
Sec 20-T7N-R67W

LP:
1762' FSL, 460' FEL
Sec 20-T7N-R67W

BHL:
1767' FSL, 460' FWL
Sec 19-T7N-R67W



TD at 16654.08 VIC 20W-20-9N - PBHL

Vertical Section at 269.84° (1500 usft/in)

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well VIC 20W-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5030.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5030.00usft
Site:	Sec 20-T7N-R67W	North Reference:	True
Well:	VIC 20W-20-9N	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 20-T7N-R67W			
Site Position:		Northing:	1,449,964.02 usft	Latitude:	40° 34' 1.355 N
From:	Lat/Long	Easting:	3,164,495.92 usft	Longitude:	104° 54' 28.472 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.38 °

Well	VIC 20W-20-9N					
Well Position	+N/-S	-2,118.84 usft	Northing:	1,447,843.59 usft	Latitude:	40° 33' 40.417 N
	+E/-W	-244.78 usft	Easting:	3,164,265.29 usft	Longitude:	104° 54' 31.644 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,005.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/29/2017	8.30	66.96	52,455.38365531

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	269.84

Plan Survey Tool Program	Date	5/22/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,654.08	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	
1,531.83	16.64	164.37	1,520.19	-115.48	32.32	2.00	2.00	0.00	164.37	
5,711.20	16.64	164.37	5,524.61	-1,267.77	354.79	0.00	0.00	0.00	0.00	
6,543.03	0.00	0.00	6,344.80	-1,383.25	387.11	2.00	-2.00	0.00	180.00	
6,573.03	0.00	0.00	6,374.80	-1,383.25	387.11	0.00	0.00	0.00	0.00	
7,473.41	90.00	268.47	6,948.00	-1,398.59	-185.89	10.00	10.00	-10.17	268.47	VIC 20W-20-9N - LP
16,654.08	90.00	268.47	6,948.00	-1,644.17	-9,363.27	0.00	0.00	0.00	0.00	VIC 20W-20-9N - PBH

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5030.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5030.00usft
Site:	Sec 20-T7N-R67W	North Reference:	True
Well:	VIC 20W-20-9N	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	164.37	799.98	-1.68	0.47	-0.47	2.00	2.00	0.00
900.00	4.00	164.37	899.84	-6.72	1.88	-1.86	2.00	2.00	0.00
1,000.00	6.00	164.37	999.45	-15.11	4.23	-4.19	2.00	2.00	0.00
1,100.00	8.00	164.37	1,098.70	-26.85	7.51	-7.44	2.00	2.00	0.00
1,200.00	10.00	164.37	1,197.47	-41.91	11.73	-11.61	2.00	2.00	0.00
1,300.00	12.00	164.37	1,295.62	-60.29	16.87	-16.71	2.00	2.00	0.00
1,400.00	14.00	164.37	1,393.06	-81.95	22.93	-22.71	2.00	2.00	0.00
1,500.00	16.00	164.37	1,489.64	-106.87	29.91	-29.62	2.00	2.00	0.00
1,531.83	16.64	164.37	1,520.19	-115.48	32.32	-32.00	2.00	2.00	0.00
Start 4179.37 hold at 1531.83 MD									
1,600.00	16.64	164.37	1,585.51	-134.28	37.58	-37.21	0.00	0.00	0.00
1,700.00	16.64	164.37	1,681.32	-161.85	45.29	-44.85	0.00	0.00	0.00
1,800.00	16.64	164.37	1,777.13	-189.42	53.01	-52.49	0.00	0.00	0.00
1,900.00	16.64	164.37	1,872.95	-216.99	60.73	-60.13	0.00	0.00	0.00
2,000.00	16.64	164.37	1,968.76	-244.56	68.44	-67.77	0.00	0.00	0.00
2,100.00	16.64	164.37	2,064.58	-272.13	76.16	-75.41	0.00	0.00	0.00
2,200.00	16.64	164.37	2,160.39	-299.70	83.87	-83.05	0.00	0.00	0.00
2,300.00	16.64	164.37	2,256.20	-327.27	91.59	-90.69	0.00	0.00	0.00
2,400.00	16.64	164.37	2,352.02	-354.84	99.31	-98.33	0.00	0.00	0.00
2,500.00	16.64	164.37	2,447.83	-382.42	107.02	-105.97	0.00	0.00	0.00
2,600.00	16.64	164.37	2,543.65	-409.99	114.74	-113.61	0.00	0.00	0.00
2,700.00	16.64	164.37	2,639.46	-437.56	122.45	-121.25	0.00	0.00	0.00
2,800.00	16.64	164.37	2,735.27	-465.13	130.17	-128.89	0.00	0.00	0.00
2,900.00	16.64	164.37	2,831.09	-492.70	137.88	-136.53	0.00	0.00	0.00
3,000.00	16.64	164.37	2,926.90	-520.27	145.60	-144.17	0.00	0.00	0.00
3,100.00	16.64	164.37	3,022.72	-547.84	153.32	-151.81	0.00	0.00	0.00
3,200.00	16.64	164.37	3,118.53	-575.41	161.03	-159.45	0.00	0.00	0.00
3,300.00	16.64	164.37	3,214.34	-602.98	168.75	-167.09	0.00	0.00	0.00
3,400.00	16.64	164.37	3,310.16	-630.55	176.46	-174.73	0.00	0.00	0.00
3,500.00	16.64	164.37	3,405.97	-658.12	184.18	-182.37	0.00	0.00	0.00
3,585.61	16.64	164.37	3,488.00	-681.73	190.78	-188.91	0.00	0.00	0.00
PARKMAN									
3,600.00	16.64	164.37	3,501.79	-685.69	191.90	-190.01	0.00	0.00	0.00
3,700.00	16.64	164.37	3,597.60	-713.26	199.61	-197.65	0.00	0.00	0.00
3,800.00	16.64	164.37	3,693.41	-740.83	207.33	-205.29	0.00	0.00	0.00
3,900.00	16.64	164.37	3,789.23	-768.41	215.04	-212.93	0.00	0.00	0.00
4,000.00	16.64	164.37	3,885.04	-795.98	222.76	-220.57	0.00	0.00	0.00
4,100.00	16.64	164.37	3,980.86	-823.55	230.47	-228.21	0.00	0.00	0.00
4,200.00	16.64	164.37	4,076.67	-851.12	238.19	-235.85	0.00	0.00	0.00
4,300.00	16.64	164.37	4,172.48	-878.69	245.91	-243.49	0.00	0.00	0.00
4,349.59	16.64	164.37	4,220.00	-892.36	249.73	-247.28	0.00	0.00	0.00
SUSSEX									
4,400.00	16.64	164.37	4,268.30	-906.26	253.62	-251.13	0.00	0.00	0.00
4,500.00	16.64	164.37	4,364.11	-933.83	261.34	-258.77	0.00	0.00	0.00

Planning Report

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Project:	WELD COUNTY	MD Reference:	KB 25' @ 5030.00usft
Site:	Sec 20-T7N-R67W	North Reference:	True
Well:	VIC 20W-20-9N	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	16.64	164.37	4,459.93	-961.40	269.05	-266.41	0.00	0.00	0.00
4,700.00	16.64	164.37	4,555.74	-988.97	276.77	-274.05	0.00	0.00	0.00
4,739.93	16.64	164.37	4,594.00	-999.98	279.85	-277.11	0.00	0.00	0.00
SHANNON									
4,800.00	16.64	164.37	4,651.55	-1,016.54	284.48	-281.69	0.00	0.00	0.00
4,900.00	16.64	164.37	4,747.37	-1,044.11	292.20	-289.33	0.00	0.00	0.00
5,000.00	16.64	164.37	4,843.18	-1,071.68	299.92	-296.98	0.00	0.00	0.00
5,100.00	16.64	164.37	4,939.00	-1,099.25	307.63	-304.62	0.00	0.00	0.00
5,200.00	16.64	164.37	5,034.81	-1,126.83	315.35	-312.26	0.00	0.00	0.00
5,300.00	16.64	164.37	5,130.62	-1,154.40	323.06	-319.90	0.00	0.00	0.00
5,400.00	16.64	164.37	5,226.44	-1,181.97	330.78	-327.54	0.00	0.00	0.00
5,500.00	16.64	164.37	5,322.25	-1,209.54	338.50	-335.18	0.00	0.00	0.00
5,600.00	16.64	164.37	5,418.07	-1,237.11	346.21	-342.82	0.00	0.00	0.00
5,700.00	16.64	164.37	5,513.88	-1,264.68	353.93	-350.46	0.00	0.00	0.00
5,711.20	16.64	164.37	5,524.61	-1,267.77	354.79	-351.31	0.00	0.00	0.00
Start Drop -2.00									
5,800.00	14.86	164.37	5,610.07	-1,290.98	361.29	-357.74	2.00	-2.00	0.00
5,900.00	12.86	164.37	5,707.16	-1,314.04	367.74	-364.14	2.00	-2.00	0.00
6,000.00	10.86	164.37	5,805.02	-1,333.84	373.28	-369.62	2.00	-2.00	0.00
6,100.00	8.86	164.37	5,903.54	-1,350.33	377.90	-374.19	2.00	-2.00	0.00
6,200.00	6.86	164.37	6,002.59	-1,363.50	381.58	-377.84	2.00	-2.00	0.00
6,300.00	4.86	164.37	6,102.06	-1,373.33	384.33	-380.56	2.00	-2.00	0.00
6,400.00	2.86	164.37	6,201.83	-1,379.81	386.15	-382.36	2.00	-2.00	0.00
6,500.00	0.86	164.37	6,301.77	-1,382.94	387.02	-383.23	2.00	-2.00	0.00
6,543.03	0.00	0.00	6,344.80	-1,383.25	387.11	-383.31	2.00	-2.00	-382.00
Start 30.00 hold at 6543.03 MD									
6,573.03	0.00	0.00	6,374.80	-1,383.25	387.11	-383.31	0.00	0.00	0.00
Start DLS 10.00 TFO 268.47									
6,600.00	2.70	268.47	6,401.76	-1,383.27	386.48	-382.68	10.00	10.00	0.00
6,650.00	7.69	268.47	6,451.54	-1,383.39	381.95	-378.15	10.00	10.00	0.00
6,700.00	12.69	268.47	6,500.74	-1,383.62	373.11	-369.31	10.00	10.00	0.00
6,750.00	17.69	268.47	6,548.97	-1,383.98	360.02	-356.22	10.00	10.00	0.00
6,800.00	22.69	268.47	6,595.89	-1,384.44	342.77	-338.97	10.00	10.00	0.00
6,850.00	27.69	268.47	6,641.12	-1,385.01	321.51	-317.71	10.00	10.00	0.00
6,900.00	32.68	268.47	6,684.33	-1,385.68	296.39	-292.58	10.00	10.00	0.00
6,950.00	37.68	268.47	6,725.18	-1,386.45	267.60	-263.79	10.00	10.00	0.00
7,000.00	42.68	268.47	6,763.37	-1,387.31	235.36	-231.55	10.00	10.00	0.00
7,049.11	47.59	268.47	6,798.00	-1,388.24	200.58	-196.77	10.00	10.00	0.00
SHARON SPRINGS									
7,050.00	47.68	268.47	6,798.60	-1,388.26	199.92	-196.11	10.00	10.00	0.00
7,100.00	52.67	268.47	6,830.61	-1,389.29	161.54	-157.73	10.00	10.00	0.00
7,108.98	53.57	268.47	6,836.00	-1,389.48	154.36	-150.55	10.00	10.00	0.00
NIOBRARA									
7,150.00	57.67	268.47	6,859.16	-1,390.38	120.53	-116.71	10.00	10.00	0.00
7,200.00	62.67	268.47	6,884.02	-1,391.54	77.18	-73.36	10.00	10.00	0.00
7,250.00	67.67	268.47	6,905.01	-1,392.76	31.83	-28.01	10.00	10.00	0.00
7,300.00	72.67	268.47	6,921.97	-1,394.02	-15.17	19.00	10.00	10.00	0.00
7,350.00	77.66	268.47	6,934.77	-1,395.31	-63.47	67.30	10.00	10.00	0.00
7,366.18	79.28	268.47	6,938.00	-1,395.73	-79.32	83.15	10.00	10.00	0.00
NIO B									
7,400.00	82.66	268.47	6,943.31	-1,396.63	-112.70	116.53	10.00	10.00	0.00
7,450.00	87.66	268.47	6,947.52	-1,397.96	-162.49	166.33	10.00	10.00	0.00
7,473.41	90.00	268.47	6,948.00	-1,398.59	-185.89	189.73	10.00	10.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well VIC 20W-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5030.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5030.00usft
Site:	Sec 20-T7N-R67W	North Reference:	True
Well:	VIC 20W-20-9N	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)
Start 9180.66 hold at 7473.41 MD									
7,500.00	90.00	268.47	6,948.00	-1,399.30	-212.47	216.31	0.00	0.00	0.00
7,600.00	90.00	268.47	6,948.00	-1,401.97	-312.43	316.28	0.00	0.00	0.00
7,700.00	90.00	268.47	6,948.00	-1,404.65	-412.40	416.25	0.00	0.00	0.00
7,800.00	90.00	268.47	6,948.00	-1,407.32	-512.36	516.22	0.00	0.00	0.00
7,900.00	90.00	268.47	6,948.00	-1,410.00	-612.32	616.19	0.00	0.00	0.00
8,000.00	90.00	268.47	6,947.99	-1,412.67	-712.29	716.16	0.00	0.00	0.00
8,100.00	90.00	268.47	6,947.99	-1,415.35	-812.25	816.13	0.00	0.00	0.00
8,200.00	90.00	268.47	6,947.99	-1,418.02	-912.22	916.10	0.00	0.00	0.00
8,300.00	90.00	268.47	6,947.99	-1,420.70	-1,012.18	1,016.07	0.00	0.00	0.00
8,400.00	90.00	268.47	6,947.99	-1,423.37	-1,112.14	1,116.05	0.00	0.00	0.00
8,500.00	90.00	268.47	6,947.99	-1,426.05	-1,212.11	1,216.02	0.00	0.00	0.00
8,600.00	90.00	268.47	6,947.99	-1,428.73	-1,312.07	1,315.99	0.00	0.00	0.00
8,700.00	90.00	268.47	6,947.99	-1,431.40	-1,412.04	1,415.96	0.00	0.00	0.00
8,800.00	90.00	268.47	6,947.99	-1,434.08	-1,512.00	1,515.93	0.00	0.00	0.00
8,900.00	90.00	268.47	6,947.99	-1,436.75	-1,611.97	1,615.90	0.00	0.00	0.00
9,000.00	90.00	268.47	6,947.98	-1,439.43	-1,711.93	1,715.87	0.00	0.00	0.00
9,100.00	90.00	268.47	6,947.98	-1,442.10	-1,811.89	1,815.84	0.00	0.00	0.00
9,200.00	90.00	268.47	6,947.98	-1,444.78	-1,911.86	1,915.82	0.00	0.00	0.00
9,300.00	90.00	268.47	6,947.98	-1,447.45	-2,011.82	2,015.79	0.00	0.00	0.00
9,400.00	90.00	268.47	6,947.98	-1,450.13	-2,111.79	2,115.76	0.00	0.00	0.00
9,500.00	90.00	268.47	6,947.98	-1,452.80	-2,211.75	2,215.73	0.00	0.00	0.00
9,600.00	90.00	268.47	6,947.98	-1,455.48	-2,311.72	2,315.70	0.00	0.00	0.00
9,700.00	90.00	268.47	6,947.98	-1,458.15	-2,411.68	2,415.67	0.00	0.00	0.00
9,800.00	90.00	268.47	6,947.98	-1,460.83	-2,511.64	2,515.64	0.00	0.00	0.00
9,900.00	90.00	268.47	6,947.97	-1,463.50	-2,611.61	2,615.61	0.00	0.00	0.00
10,000.00	90.00	268.47	6,947.97	-1,466.18	-2,711.57	2,715.58	0.00	0.00	0.00
10,100.00	90.00	268.47	6,947.97	-1,468.86	-2,811.54	2,815.56	0.00	0.00	0.00
10,200.00	90.00	268.47	6,947.97	-1,471.53	-2,911.50	2,915.53	0.00	0.00	0.00
10,300.00	90.00	268.47	6,947.97	-1,474.21	-3,011.46	3,015.50	0.00	0.00	0.00
10,400.00	90.00	268.47	6,947.97	-1,476.88	-3,111.43	3,115.47	0.00	0.00	0.00
10,500.00	90.00	268.47	6,947.97	-1,479.56	-3,211.39	3,215.44	0.00	0.00	0.00
10,600.00	90.00	268.47	6,947.97	-1,482.23	-3,311.36	3,315.41	0.00	0.00	0.00
10,700.00	90.00	268.47	6,947.97	-1,484.91	-3,411.32	3,415.38	0.00	0.00	0.00
10,800.00	90.00	268.47	6,947.97	-1,487.58	-3,511.29	3,515.35	0.00	0.00	0.00
10,900.00	90.00	268.47	6,947.96	-1,490.26	-3,611.25	3,615.33	0.00	0.00	0.00
11,000.00	90.00	268.47	6,947.96	-1,492.93	-3,711.21	3,715.30	0.00	0.00	0.00
11,100.00	90.00	268.47	6,947.96	-1,495.61	-3,811.18	3,815.27	0.00	0.00	0.00
11,200.00	90.00	268.47	6,947.96	-1,498.28	-3,911.14	3,915.24	0.00	0.00	0.00
11,300.00	90.00	268.47	6,947.96	-1,500.96	-4,011.11	4,015.21	0.00	0.00	0.00
11,400.00	90.00	268.47	6,947.96	-1,503.63	-4,111.07	4,115.18	0.00	0.00	0.00
11,500.00	90.00	268.47	6,947.96	-1,506.31	-4,211.04	4,215.15	0.00	0.00	0.00
11,600.00	90.00	268.47	6,947.96	-1,508.99	-4,311.00	4,315.12	0.00	0.00	0.00
11,700.00	90.00	268.47	6,947.96	-1,511.66	-4,410.96	4,415.09	0.00	0.00	0.00
11,800.00	90.00	268.47	6,947.95	-1,514.34	-4,510.93	4,515.07	0.00	0.00	0.00
11,900.00	90.00	268.47	6,947.95	-1,517.01	-4,610.89	4,615.04	0.00	0.00	0.00
12,000.00	90.00	268.47	6,947.95	-1,519.69	-4,710.86	4,715.01	0.00	0.00	0.00
12,100.00	90.00	268.47	6,947.95	-1,522.36	-4,810.82	4,814.98	0.00	0.00	0.00
12,200.00	90.00	268.47	6,947.95	-1,525.04	-4,910.78	4,914.95	0.00	0.00	0.00
12,300.00	90.00	268.47	6,947.95	-1,527.71	-5,010.75	5,014.92	0.00	0.00	0.00
12,400.00	90.00	268.47	6,947.95	-1,530.39	-5,110.71	5,114.89	0.00	0.00	0.00
12,500.00	90.00	268.47	6,947.95	-1,533.06	-5,210.68	5,214.86	0.00	0.00	0.00
12,600.00	90.00	268.47	6,947.95	-1,535.74	-5,310.64	5,314.83	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well VIC 20W-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5030.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5030.00usft
Site:	Sec 20-T7N-R67W	North Reference:	True
Well:	VIC 20W-20-9N	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)
12,700.00	90.00	268.47	6,947.95	-1,538.41	-5,410.61	5,414.81	0.00	0.00	0.00
12,800.00	90.00	268.47	6,947.94	-1,541.09	-5,510.57	5,514.78	0.00	0.00	0.00
12,900.00	90.00	268.47	6,947.94	-1,543.76	-5,610.53	5,614.75	0.00	0.00	0.00
13,000.00	90.00	268.47	6,947.94	-1,546.44	-5,710.50	5,714.72	0.00	0.00	0.00
13,100.00	90.00	268.47	6,947.94	-1,549.12	-5,810.46	5,814.69	0.00	0.00	0.00
13,200.00	90.00	268.47	6,947.94	-1,551.79	-5,910.43	5,914.66	0.00	0.00	0.00
13,300.00	90.00	268.47	6,947.94	-1,554.47	-6,010.39	6,014.63	0.00	0.00	0.00
13,400.00	90.00	268.47	6,947.94	-1,557.14	-6,110.36	6,114.60	0.00	0.00	0.00
13,500.00	90.00	268.47	6,947.94	-1,559.82	-6,210.32	6,214.58	0.00	0.00	0.00
13,600.00	90.00	268.47	6,947.94	-1,562.49	-6,310.28	6,314.55	0.00	0.00	0.00
13,700.00	90.00	268.47	6,947.93	-1,565.17	-6,410.25	6,414.52	0.00	0.00	0.00
13,800.00	90.00	268.47	6,947.93	-1,567.84	-6,510.21	6,514.49	0.00	0.00	0.00
13,900.00	90.00	268.47	6,947.93	-1,570.52	-6,610.18	6,614.46	0.00	0.00	0.00
14,000.00	90.00	268.47	6,947.93	-1,573.19	-6,710.14	6,714.43	0.00	0.00	0.00
14,100.00	90.00	268.47	6,947.93	-1,575.87	-6,810.10	6,814.40	0.00	0.00	0.00
14,200.00	90.00	268.47	6,947.93	-1,578.54	-6,910.07	6,914.37	0.00	0.00	0.00
14,300.00	90.00	268.47	6,947.93	-1,581.22	-7,010.03	7,014.34	0.00	0.00	0.00
14,400.00	90.00	268.47	6,947.93	-1,583.89	-7,110.00	7,114.32	0.00	0.00	0.00
14,500.00	90.00	268.47	6,947.93	-1,586.57	-7,209.96	7,214.29	0.00	0.00	0.00
14,600.00	90.00	268.47	6,947.93	-1,589.25	-7,309.93	7,314.26	0.00	0.00	0.00
14,700.00	90.00	268.47	6,947.92	-1,591.92	-7,409.89	7,414.23	0.00	0.00	0.00
14,800.00	90.00	268.47	6,947.92	-1,594.60	-7,509.85	7,514.20	0.00	0.00	0.00
14,900.00	90.00	268.47	6,947.92	-1,597.27	-7,609.82	7,614.17	0.00	0.00	0.00
15,000.00	90.00	268.47	6,947.92	-1,599.95	-7,709.78	7,714.14	0.00	0.00	0.00
15,100.00	90.00	268.47	6,947.92	-1,602.62	-7,809.75	7,814.11	0.00	0.00	0.00
15,200.00	90.00	268.47	6,947.92	-1,605.30	-7,909.71	7,914.09	0.00	0.00	0.00
15,300.00	90.00	268.47	6,947.92	-1,607.97	-8,009.68	8,014.06	0.00	0.00	0.00
15,400.00	90.00	268.47	6,947.92	-1,610.65	-8,109.64	8,114.03	0.00	0.00	0.00
15,500.00	90.00	268.47	6,947.92	-1,613.32	-8,209.60	8,214.00	0.00	0.00	0.00
15,600.00	90.00	268.47	6,947.91	-1,616.00	-8,309.57	8,313.97	0.00	0.00	0.00
15,700.00	90.00	268.47	6,947.91	-1,618.67	-8,409.53	8,413.94	0.00	0.00	0.00
15,800.00	90.00	268.47	6,947.91	-1,621.35	-8,509.50	8,513.91	0.00	0.00	0.00
15,900.00	90.00	268.47	6,947.91	-1,624.02	-8,609.46	8,613.88	0.00	0.00	0.00
16,000.00	90.00	268.47	6,947.91	-1,626.70	-8,709.42	8,713.85	0.00	0.00	0.00
16,100.00	90.00	268.47	6,947.91	-1,629.38	-8,809.39	8,813.83	0.00	0.00	0.00
16,200.00	90.00	268.47	6,947.91	-1,632.05	-8,909.35	8,913.80	0.00	0.00	0.00
16,300.00	90.00	268.47	6,947.91	-1,634.73	-9,009.32	9,013.77	0.00	0.00	0.00
16,400.00	90.00	268.47	6,947.91	-1,637.40	-9,109.28	9,113.74	0.00	0.00	0.00
16,500.00	90.00	268.47	6,947.91	-1,640.08	-9,209.25	9,213.71	0.00	0.00	0.00
16,600.00	90.00	268.47	6,947.90	-1,642.75	-9,309.21	9,313.68	0.00	0.00	0.00
16,654.08	90.00	268.47	6,948.00	-1,644.17	-9,363.27	9,367.74	0.00	0.00	0.00
TD at 16654.08									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well VIC 20W-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5030.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5030.00usft
Site:	Sec 20-T7N-R67W	North Reference:	True
Well:	VIC 20W-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
VIC 20W-20-9N - LP	0.00	0.00	6,948.00	-1,398.59	-185.89	1,446,443.80	3,164,088.73	40° 33' 26.597 N	104° 54' 34.052 W
- plan hits target center									
- Point									
VIC 20W-20-9N - PBHL	0.00	0.00	6,948.00	-1,644.17	-9,363.27	1,446,137.03	3,154,913.19	40° 33' 24.152 N	104° 56' 32.953 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
3,585.61	3,488.00	PARKMAN				
4,349.59	4,220.00	SUSSEX				
4,739.93	4,594.00	SHANNON				
7,049.11	6,798.00	SHARON SPRINGS				
7,108.98	6,836.00	NIOBRARA				
7,366.18	6,938.00	NIO B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
700.00	700.00	0.00	0.00	Start Build 2.00	
1,531.83	1,520.19	-115.48	32.32	Start 4179.37 hold at 1531.83 MD	
5,711.20	5,524.61	-1,267.77	354.79	Start Drop -2.00	
6,543.03	6,344.80	-1,383.25	387.11	Start 30.00 hold at 6543.03 MD	
6,573.03	6,374.80	-1,383.25	387.11	Start DLS 10.00 TFO 268.47	
7,473.41	6,948.00	-1,398.59	-185.89	Start 9180.66 hold at 7473.41 MD	
16,654.08	6,948.00	-1,644.17	-9,363.27	TD at 16654.08	