

VERDAD RESOURCES

WATTENBERG FIELD

1N-64W-19 ONION 1918 PAD

ONION 1918-04H

Plan A

Plan: Permit Rev-1

Standard Planning Report

10 March, 2022

Project: WATTENBERG FIELD
Site: 1N-64W-19 ONION 1918 PAD
Well: ONION 1918-04H
Wellbore: Plan A
Design: Permit Rev-1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
2156.00	2161.13	9 5/8"	9-5/8

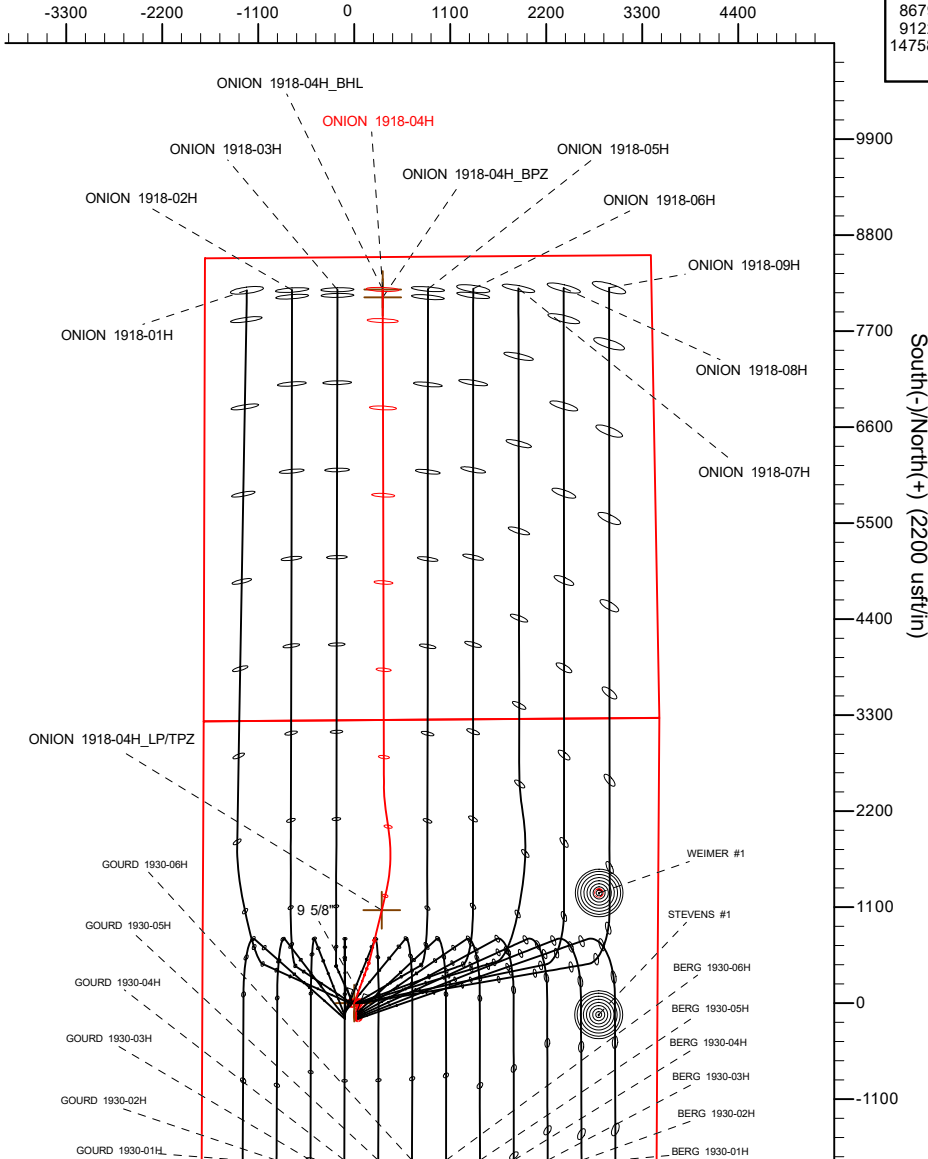
SHL
2075' FSL
1739' FWL

TPZ
2180' FNL
2051' FWL

BPZ
460' FNL
2038' FWL

BHL
370' FNL
2038' FWL

West(-)/East(+) (2200 usft/in)

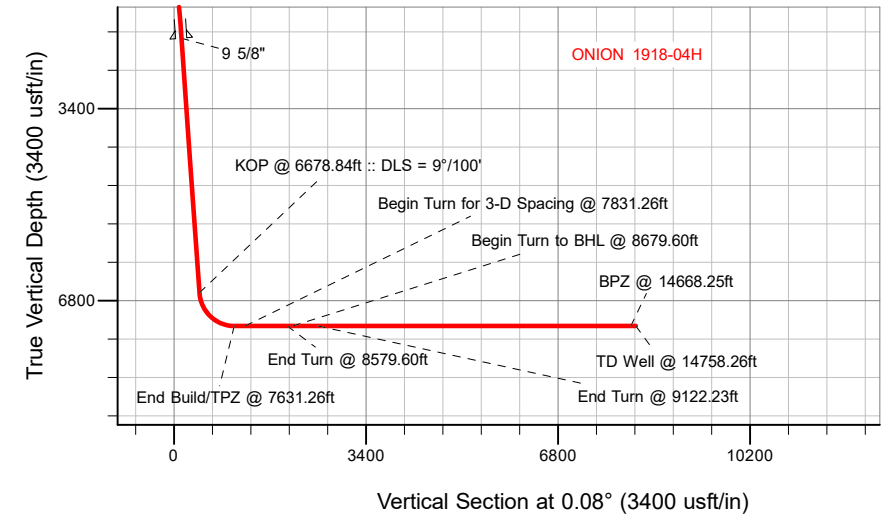



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
204.00	0.00	0.00	204.00	0.00	0.00	0.00	0.00	0.00	
419.50	4.31	20.00	419.30	7.61	2.77	2.00	20.00	7.62	
6678.84	4.31	20.00	6660.94	449.65	163.66	0.00	0.00	449.88	
7631.26	90.00	13.45	7250.00	1065.90	316.25	9.00	-6.57	1066.34	
7831.26	90.00	13.45	7250.00	1260.42	362.77	0.00	0.00	1260.92	
8579.60	90.00	351.00	7250.00	2003.41	391.63	3.00	-90.00	2003.96	
8679.60	90.00	351.00	7250.00	2102.18	375.99	0.00	0.00	2102.71	
9122.23	90.00	359.85	7250.00	2542.97	340.73	2.00	90.00	2543.44	
14758.26	90.00	359.85	7250.00	8178.98	326.24	0.00	0.00	8179.43	ONION 1918-04H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
ONION 1918-04H_SHL	0.00	0.00	0.00	40.035251	-104.596597
ONION 1918-04H_LP/TPZ	7250.00	1065.90	316.25	40.038177	-104.595468
ONION 1918-04H_BPZ	7250.00	8088.97	326.13	40.057457	-104.595432
ONION 1918-04H_BHL	7250.00	8178.98	326.24	40.057704	-104.595432



 <p>Azimuths to True North Magnetic North: 7.65°</p> <p>Magnetic Field Strength: 51701.7nT Dip Angle: 66.36° Date: 3/8/2022 Model: IGRF2020</p>	WELL DETAILS: ONION 1918-04H	
	GL = 5011'	
	RKB = 24' @ 5035.00usft (RIG)	
	Plan: Permit Rev-1 (ONION 1918-04H/Plan A)	
	Date: 3/10/2022	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ONION 1918-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 5035.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 5035.00usft (RIG)
Site:	1N-64W-19 ONION 1918 PAD	North Reference:	True
Well:	ONION 1918-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Project	WATTENBERG FIELD		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		1N-64W-19 ONION 1918 PAD			
Site Position:		Northing:	1,256,565.51 usft	Latitude:	40.034126
From:	Lat/Long	Easting:	3,252,854.15 usft	Longitude:	-104.596977
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well		ONION 1918-04H				
Well Position	+N/-S	0.00 usft	Northing:	1,256,976.52 usft	Latitude:	40.035251
	+E/-W	0.00 usft	Easting:	3,252,956.40 usft	Longitude:	-104.596597
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	5,011.00 usft
Grid Convergence:		0.58 °				

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	3/8/2022	7.65	66.36	51,701.69099782

Design	Permit Rev-1				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	0.08	

Plan Survey Tool Program	Date	3/10/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,156.00	Permit Rev-1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	
2	2,156.00	14,758.26	Permit Rev-1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 5035.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 5035.00usft (RIG)
Site:	1N-64W-19 ONION 1918 PAD	North Reference:	True
Well:	ONION 1918-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
204.00	0.00	0.00	204.00	0.00	0.00	0.00	0.00	0.00	0.00	
419.50	4.31	20.00	419.30	7.61	2.77	2.00	2.00	0.00	20.00	
6,678.84	4.31	20.00	6,660.94	449.65	163.66	0.00	0.00	0.00	0.00	
7,631.26	90.00	13.45	7,250.00	1,065.90	316.25	9.00	9.00	-0.69	-6.57	
7,831.26	90.00	13.45	7,250.00	1,260.42	362.77	0.00	0.00	0.00	0.00	
8,579.60	90.00	351.00	7,250.00	2,003.41	391.63	3.00	0.00	-3.00	-90.00	
8,679.60	90.00	351.00	7,250.00	2,102.18	375.99	0.00	0.00	0.00	0.00	
9,122.23	90.00	359.85	7,250.00	2,542.97	340.73	2.00	0.00	2.00	90.00	
14,758.26	90.00	359.85	7,250.00	8,178.98	326.24	0.00	0.00	0.00	0.00	ONION 1918-04H_B+

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ONION 1918-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 5035.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 5035.00usft (RIG)
Site:	1N-64W-19 ONION 1918 PAD	North Reference:	True
Well:	ONION 1918-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
204.00	0.00	0.00	204.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 204.00ft									
300.00	1.92	20.00	299.98	1.51	0.55	1.51	2.00	2.00	0.00
400.00	3.92	20.00	399.85	6.30	2.29	6.30	2.00	2.00	0.00
419.50	4.31	20.00	419.30	7.61	2.77	7.62	2.00	2.00	0.00
Hold Tangent @ 419.50ft									
500.00	4.31	20.00	499.57	13.30	4.84	13.30	0.00	0.00	0.00
600.00	4.31	20.00	599.29	20.36	7.41	20.37	0.00	0.00	0.00
700.00	4.31	20.00	699.00	27.42	9.98	27.44	0.00	0.00	0.00
800.00	4.31	20.00	798.72	34.48	12.55	34.50	0.00	0.00	0.00
900.00	4.31	20.00	898.44	41.55	15.12	41.57	0.00	0.00	0.00
1,000.00	4.31	20.00	998.16	48.61	17.69	48.63	0.00	0.00	0.00
1,100.00	4.31	20.00	1,097.87	55.67	20.26	55.70	0.00	0.00	0.00
1,200.00	4.31	20.00	1,197.59	62.73	22.83	62.76	0.00	0.00	0.00
1,300.00	4.31	20.00	1,297.31	69.79	25.40	69.83	0.00	0.00	0.00
1,400.00	4.31	20.00	1,397.02	76.86	27.97	76.90	0.00	0.00	0.00
1,500.00	4.31	20.00	1,496.74	83.92	30.54	83.96	0.00	0.00	0.00
1,600.00	4.31	20.00	1,596.46	90.98	33.11	91.03	0.00	0.00	0.00
1,700.00	4.31	20.00	1,696.18	98.04	35.68	98.09	0.00	0.00	0.00
1,800.00	4.31	20.00	1,795.89	105.10	38.25	105.16	0.00	0.00	0.00
1,900.00	4.31	20.00	1,895.61	112.17	40.83	112.22	0.00	0.00	0.00
2,000.00	4.31	20.00	1,995.33	119.23	43.40	119.29	0.00	0.00	0.00
2,100.00	4.31	20.00	2,095.04	126.29	45.97	126.35	0.00	0.00	0.00
2,161.13	4.31	20.00	2,156.00	130.61	47.54	130.67	0.00	0.00	0.00
9 5/8"									
2,200.00	4.31	20.00	2,194.76	133.35	48.54	133.42	0.00	0.00	0.00
2,300.00	4.31	20.00	2,294.48	140.41	51.11	140.49	0.00	0.00	0.00
2,400.00	4.31	20.00	2,394.20	147.48	53.68	147.55	0.00	0.00	0.00
2,500.00	4.31	20.00	2,493.91	154.54	56.25	154.62	0.00	0.00	0.00
2,600.00	4.31	20.00	2,593.63	161.60	58.82	161.68	0.00	0.00	0.00
2,700.00	4.31	20.00	2,693.35	168.66	61.39	168.75	0.00	0.00	0.00
2,800.00	4.31	20.00	2,793.06	175.73	63.96	175.81	0.00	0.00	0.00
2,900.00	4.31	20.00	2,892.78	182.79	66.53	182.88	0.00	0.00	0.00
3,000.00	4.31	20.00	2,992.50	189.85	69.10	189.95	0.00	0.00	0.00
3,100.00	4.31	20.00	3,092.22	196.91	71.67	197.01	0.00	0.00	0.00
3,200.00	4.31	20.00	3,191.93	203.97	74.24	204.08	0.00	0.00	0.00
3,300.00	4.31	20.00	3,291.65	211.04	76.81	211.14	0.00	0.00	0.00
3,400.00	4.31	20.00	3,391.37	218.10	79.38	218.21	0.00	0.00	0.00
3,500.00	4.31	20.00	3,491.09	225.16	81.95	225.27	0.00	0.00	0.00
3,600.00	4.31	20.00	3,590.80	232.22	84.52	232.34	0.00	0.00	0.00
3,700.00	4.31	20.00	3,690.52	239.28	87.09	239.40	0.00	0.00	0.00
3,800.00	4.31	20.00	3,790.24	246.35	89.66	246.47	0.00	0.00	0.00
3,900.00	4.31	20.00	3,889.95	253.41	92.23	253.54	0.00	0.00	0.00
4,000.00	4.31	20.00	3,989.67	260.47	94.80	260.60	0.00	0.00	0.00
4,100.00	4.31	20.00	4,089.39	267.53	97.37	267.67	0.00	0.00	0.00
4,200.00	4.31	20.00	4,189.11	274.59	99.94	274.73	0.00	0.00	0.00
4,300.00	4.31	20.00	4,288.82	281.66	102.51	281.80	0.00	0.00	0.00
4,400.00	4.31	20.00	4,388.54	288.72	105.08	288.86	0.00	0.00	0.00
4,500.00	4.31	20.00	4,488.26	295.78	107.66	295.93	0.00	0.00	0.00
4,600.00	4.31	20.00	4,587.97	302.84	110.23	303.00	0.00	0.00	0.00
4,700.00	4.31	20.00	4,687.69	309.90	112.80	310.06	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ONION 1918-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 5035.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 5035.00usft (RIG)
Site:	1N-64W-19 ONION 1918 PAD	North Reference:	True
Well:	ONION 1918-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.00	4.31	20.00	4,787.41	316.97	115.37	317.13	0.00	0.00	0.00
4,900.00	4.31	20.00	4,887.13	324.03	117.94	324.19	0.00	0.00	0.00
5,000.00	4.31	20.00	4,986.84	331.09	120.51	331.26	0.00	0.00	0.00
5,100.00	4.31	20.00	5,086.56	338.15	123.08	338.32	0.00	0.00	0.00
5,200.00	4.31	20.00	5,186.28	345.21	125.65	345.39	0.00	0.00	0.00
5,300.00	4.31	20.00	5,286.00	352.28	128.22	352.45	0.00	0.00	0.00
5,400.00	4.31	20.00	5,385.71	359.34	130.79	359.52	0.00	0.00	0.00
5,500.00	4.31	20.00	5,485.43	366.40	133.36	366.59	0.00	0.00	0.00
5,600.00	4.31	20.00	5,585.15	373.46	135.93	373.65	0.00	0.00	0.00
5,700.00	4.31	20.00	5,684.86	380.52	138.50	380.72	0.00	0.00	0.00
5,800.00	4.31	20.00	5,784.58	387.59	141.07	387.78	0.00	0.00	0.00
5,900.00	4.31	20.00	5,884.30	394.65	143.64	394.85	0.00	0.00	0.00
6,000.00	4.31	20.00	5,984.02	401.71	146.21	401.91	0.00	0.00	0.00
6,100.00	4.31	20.00	6,083.73	408.77	148.78	408.98	0.00	0.00	0.00
6,200.00	4.31	20.00	6,183.45	415.83	151.35	416.05	0.00	0.00	0.00
6,300.00	4.31	20.00	6,283.17	422.90	153.92	423.11	0.00	0.00	0.00
6,400.00	4.31	20.00	6,382.88	429.96	156.49	430.18	0.00	0.00	0.00
6,500.00	4.31	20.00	6,482.60	437.02	159.06	437.24	0.00	0.00	0.00
6,600.00	4.31	20.00	6,582.32	444.08	161.63	444.31	0.00	0.00	0.00
6,678.84	4.31	20.00	6,660.94	449.65	163.66	449.88	0.00	0.00	0.00
KOP @ 6678.84ft :: DLS = 9°/100'									
6,700.00	6.21	17.98	6,682.01	451.49	164.28	451.71	9.00	8.96	-9.52
6,750.00	10.70	16.06	6,731.45	458.52	166.40	458.75	9.00	8.98	-3.85
6,800.00	15.19	15.26	6,780.17	469.31	169.41	469.54	9.00	8.99	-1.59
6,850.00	19.69	14.83	6,827.86	483.78	173.30	484.02	9.00	9.00	-0.88
6,900.00	24.19	14.55	6,874.22	501.85	178.03	502.09	9.00	9.00	-0.56
6,950.00	28.69	14.35	6,918.98	523.40	183.58	523.66	9.00	9.00	-0.39
7,000.00	33.19	14.20	6,961.85	548.31	189.91	548.57	9.00	9.00	-0.29
7,050.00	37.69	14.09	7,002.58	576.41	197.00	576.69	9.00	9.00	-0.23
7,100.00	42.19	13.99	7,040.91	607.55	204.78	607.83	9.00	9.00	-0.19
7,150.00	46.69	13.91	7,076.60	641.51	213.22	641.81	9.00	9.00	-0.16
7,200.00	51.19	13.85	7,109.43	678.10	222.26	678.41	9.00	9.00	-0.14
7,250.00	55.69	13.79	7,139.21	717.09	231.85	717.41	9.00	9.00	-0.12
7,300.00	60.19	13.73	7,165.75	758.24	241.92	758.57	9.00	9.00	-0.11
7,350.00	64.69	13.68	7,188.88	801.29	252.42	801.64	9.00	9.00	-0.10
7,400.00	69.19	13.64	7,208.46	845.98	263.28	846.35	9.00	9.00	-0.09
7,450.00	73.69	13.59	7,224.37	892.03	274.44	892.42	9.00	9.00	-0.09
7,500.00	78.19	13.55	7,236.52	939.17	285.82	939.57	9.00	9.00	-0.08
7,550.00	82.69	13.51	7,244.82	987.09	297.35	987.51	9.00	9.00	-0.08
7,600.00	87.19	13.47	7,249.23	1,035.51	308.97	1,035.94	9.00	9.00	-0.08
7,631.26	90.00	13.45	7,250.00	1,065.90	316.25	1,066.34	9.00	9.00	-0.08
End Build/TPZ @ 7631.26ft									
7,700.00	90.00	13.45	7,250.00	1,132.75	332.23	1,133.22	0.00	0.00	0.00
7,800.00	90.00	13.45	7,250.00	1,230.01	355.49	1,230.51	0.00	0.00	0.00
7,831.26	90.00	13.45	7,250.00	1,260.42	362.77	1,260.92	0.00	0.00	0.00
Begin Turn for 3-D Spacing @ 7831.26ft									
7,900.00	90.00	11.39	7,250.00	1,327.54	377.55	1,328.07	3.00	0.00	-3.00
8,000.00	90.00	8.39	7,250.00	1,426.05	394.72	1,426.60	3.00	0.00	-3.00
8,100.00	90.00	5.39	7,250.00	1,525.31	406.71	1,525.88	3.00	0.00	-3.00
8,200.00	90.00	2.39	7,250.00	1,625.07	413.49	1,625.65	3.00	0.00	-3.00
8,300.00	90.00	359.39	7,250.00	1,725.05	415.04	1,725.63	3.00	0.00	-3.00
8,400.00	90.00	356.39	7,250.00	1,824.97	411.35	1,825.54	3.00	0.00	-3.00
8,500.00	90.00	353.39	7,250.00	1,924.56	402.44	1,925.12	3.00	0.00	-3.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ONION 1918-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 5035.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 5035.00usft (RIG)
Site:	1N-64W-19 ONION 1918 PAD	North Reference:	True
Well:	ONION 1918-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,579.60	90.00	351.00	7,250.00	2,003.41	391.63	2,003.96	3.00	0.00	-3.00
End Turn @ 8579.60ft									
8,600.00	90.00	351.00	7,250.00	2,023.56	388.44	2,024.11	0.00	0.00	0.00
8,679.60	90.00	351.00	7,250.00	2,102.18	375.99	2,102.71	0.00	0.00	0.00
Begin Turn to BHL @ 8679.60ft									
8,700.00	90.00	351.41	7,250.00	2,122.34	372.87	2,122.86	2.00	0.00	2.00
8,800.00	90.00	353.41	7,250.00	2,221.46	359.66	2,221.96	2.00	0.00	2.00
8,900.00	90.00	355.41	7,250.00	2,320.98	349.92	2,321.47	2.00	0.00	2.00
9,000.00	90.00	357.41	7,250.00	2,420.78	343.65	2,421.26	2.00	0.00	2.00
9,100.00	90.00	359.41	7,250.00	2,520.74	340.87	2,521.21	2.00	0.00	2.00
9,122.23	90.00	359.85	7,250.00	2,542.97	340.73	2,543.44	2.00	0.00	2.00
End Turn @ 9122.23ft									
9,200.00	90.00	359.85	7,250.00	2,620.74	340.53	2,621.21	0.00	0.00	0.00
9,300.00	90.00	359.85	7,250.00	2,720.74	340.27	2,721.21	0.00	0.00	0.00
9,400.00	90.00	359.85	7,250.00	2,820.74	340.02	2,821.21	0.00	0.00	0.00
9,500.00	90.00	359.85	7,250.00	2,920.74	339.76	2,921.21	0.00	0.00	0.00
9,600.00	90.00	359.85	7,250.00	3,020.73	339.50	3,021.21	0.00	0.00	0.00
9,700.00	90.00	359.85	7,250.00	3,120.73	339.24	3,121.21	0.00	0.00	0.00
9,800.00	90.00	359.85	7,250.00	3,220.73	338.99	3,221.20	0.00	0.00	0.00
9,900.00	90.00	359.85	7,250.00	3,320.73	338.73	3,321.20	0.00	0.00	0.00
10,000.00	90.00	359.85	7,250.00	3,420.73	338.47	3,421.20	0.00	0.00	0.00
10,100.00	90.00	359.85	7,250.00	3,520.73	338.22	3,521.20	0.00	0.00	0.00
10,200.00	90.00	359.85	7,250.00	3,620.73	337.96	3,621.20	0.00	0.00	0.00
10,300.00	90.00	359.85	7,250.00	3,720.73	337.70	3,721.20	0.00	0.00	0.00
10,400.00	90.00	359.85	7,250.00	3,820.73	337.45	3,821.20	0.00	0.00	0.00
10,500.00	90.00	359.85	7,250.00	3,920.73	337.19	3,921.20	0.00	0.00	0.00
10,600.00	90.00	359.85	7,250.00	4,020.73	336.93	4,021.20	0.00	0.00	0.00
10,700.00	90.00	359.85	7,250.00	4,120.73	336.67	4,121.20	0.00	0.00	0.00
10,800.00	90.00	359.85	7,250.00	4,220.73	336.42	4,221.20	0.00	0.00	0.00
10,900.00	90.00	359.85	7,250.00	4,320.73	336.16	4,321.20	0.00	0.00	0.00
11,000.00	90.00	359.85	7,250.00	4,420.73	335.90	4,421.20	0.00	0.00	0.00
11,100.00	90.00	359.85	7,250.00	4,520.73	335.65	4,521.19	0.00	0.00	0.00
11,200.00	90.00	359.85	7,250.00	4,620.73	335.39	4,621.19	0.00	0.00	0.00
11,300.00	90.00	359.85	7,250.00	4,720.73	335.13	4,721.19	0.00	0.00	0.00
11,400.00	90.00	359.85	7,250.00	4,820.73	334.87	4,821.19	0.00	0.00	0.00
11,500.00	90.00	359.85	7,250.00	4,920.73	334.62	4,921.19	0.00	0.00	0.00
11,600.00	90.00	359.85	7,250.00	5,020.73	334.36	5,021.19	0.00	0.00	0.00
11,700.00	90.00	359.85	7,250.00	5,120.73	334.10	5,121.19	0.00	0.00	0.00
11,800.00	90.00	359.85	7,250.00	5,220.73	333.85	5,221.19	0.00	0.00	0.00
11,900.00	90.00	359.85	7,250.00	5,320.73	333.59	5,321.19	0.00	0.00	0.00
12,000.00	90.00	359.85	7,250.00	5,420.73	333.33	5,421.19	0.00	0.00	0.00
12,100.00	90.00	359.85	7,250.00	5,520.73	333.08	5,521.19	0.00	0.00	0.00
12,200.00	90.00	359.85	7,250.00	5,620.73	332.82	5,621.19	0.00	0.00	0.00
12,300.00	90.00	359.85	7,250.00	5,720.73	332.56	5,721.18	0.00	0.00	0.00
12,400.00	90.00	359.85	7,250.00	5,820.73	332.30	5,821.18	0.00	0.00	0.00
12,500.00	90.00	359.85	7,250.00	5,920.73	332.05	5,921.18	0.00	0.00	0.00
12,600.00	90.00	359.85	7,250.00	6,020.73	331.79	6,021.18	0.00	0.00	0.00
12,700.00	90.00	359.85	7,250.00	6,120.72	331.53	6,121.18	0.00	0.00	0.00
12,800.00	90.00	359.85	7,250.00	6,220.72	331.28	6,221.18	0.00	0.00	0.00
12,900.00	90.00	359.85	7,250.00	6,320.72	331.02	6,321.18	0.00	0.00	0.00
13,000.00	90.00	359.85	7,250.00	6,420.72	330.76	6,421.18	0.00	0.00	0.00
13,100.00	90.00	359.85	7,250.00	6,520.72	330.51	6,521.18	0.00	0.00	0.00
13,200.00	90.00	359.85	7,250.00	6,620.72	330.25	6,621.18	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well ONION 1918-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 5035.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 5035.00usft (RIG)
Site:	1N-64W-19 ONION 1918 PAD	North Reference:	True
Well:	ONION 1918-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,300.00	90.00	359.85	7,250.00	6,720.72	329.99	6,721.18	0.00	0.00	0.00
13,400.00	90.00	359.85	7,250.00	6,820.72	329.73	6,821.18	0.00	0.00	0.00
13,500.00	90.00	359.85	7,250.00	6,920.72	329.48	6,921.18	0.00	0.00	0.00
13,600.00	90.00	359.85	7,250.00	7,020.72	329.22	7,021.17	0.00	0.00	0.00
13,700.00	90.00	359.85	7,250.00	7,120.72	328.96	7,121.17	0.00	0.00	0.00
13,800.00	90.00	359.85	7,250.00	7,220.72	328.71	7,221.17	0.00	0.00	0.00
13,900.00	90.00	359.85	7,250.00	7,320.72	328.45	7,321.17	0.00	0.00	0.00
14,000.00	90.00	359.85	7,250.00	7,420.72	328.19	7,421.17	0.00	0.00	0.00
14,100.00	90.00	359.85	7,250.00	7,520.72	327.93	7,521.17	0.00	0.00	0.00
14,200.00	90.00	359.85	7,250.00	7,620.72	327.68	7,621.17	0.00	0.00	0.00
14,300.00	90.00	359.85	7,250.00	7,720.72	327.42	7,721.17	0.00	0.00	0.00
14,400.00	90.00	359.85	7,250.00	7,820.72	327.16	7,821.17	0.00	0.00	0.00
14,500.00	90.00	359.85	7,250.00	7,920.72	326.91	7,921.17	0.00	0.00	0.00
14,600.00	90.00	359.85	7,250.00	8,020.72	326.65	8,021.17	0.00	0.00	0.00
14,668.25	90.00	359.85	7,250.00	8,088.97	326.47	8,089.42	0.00	0.00	0.00
BPZ @ 14668.25ft									
14,700.00	90.00	359.85	7,250.00	8,120.72	326.39	8,121.17	0.00	0.00	0.00
14,758.26	90.00	359.85	7,250.00	8,178.98	326.24	8,179.43	0.00	0.00	0.00
TD Well @ 14758.26ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,161.13	2,156.00	9 5/8"		9-5/8	13-1/2

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
204.00	204.00	0.00	0.00	Begin Nudge @ 204.00ft
419.50	419.30	7.61	2.77	Hold Tangent @ 419.50ft
6,678.84	6,660.94	449.65	163.66	KOP @ 6678.84ft :: DLS = 9°/100'
7,631.26	7,250.00	1,065.90	316.25	End Build/TPZ @ 7631.26ft
7,831.26	7,250.00	1,260.42	362.77	Begin Turn for 3-D Spacing @ 7831.26ft
8,579.60	7,250.00	2,003.41	391.63	End Turn @ 8579.60ft
8,679.60	7,250.00	2,102.18	375.99	Begin Turn to BHL @ 8679.60ft
9,122.23	7,250.00	2,542.97	340.73	End Turn @ 9122.23ft
14,668.25	7,250.00	8,088.97	326.47	BPZ @ 14668.25ft
14,758.26	7,250.00	8,178.98	326.24	TD Well @ 14758.26ft