

VERDAD RESOURCES

**WATTENBERG FIELD
2N-64W-24 ARNOLD PAD
HELEN 2536-08H**

Plan B

Plan: Design #2

Standard Planning Report

14 December, 2021

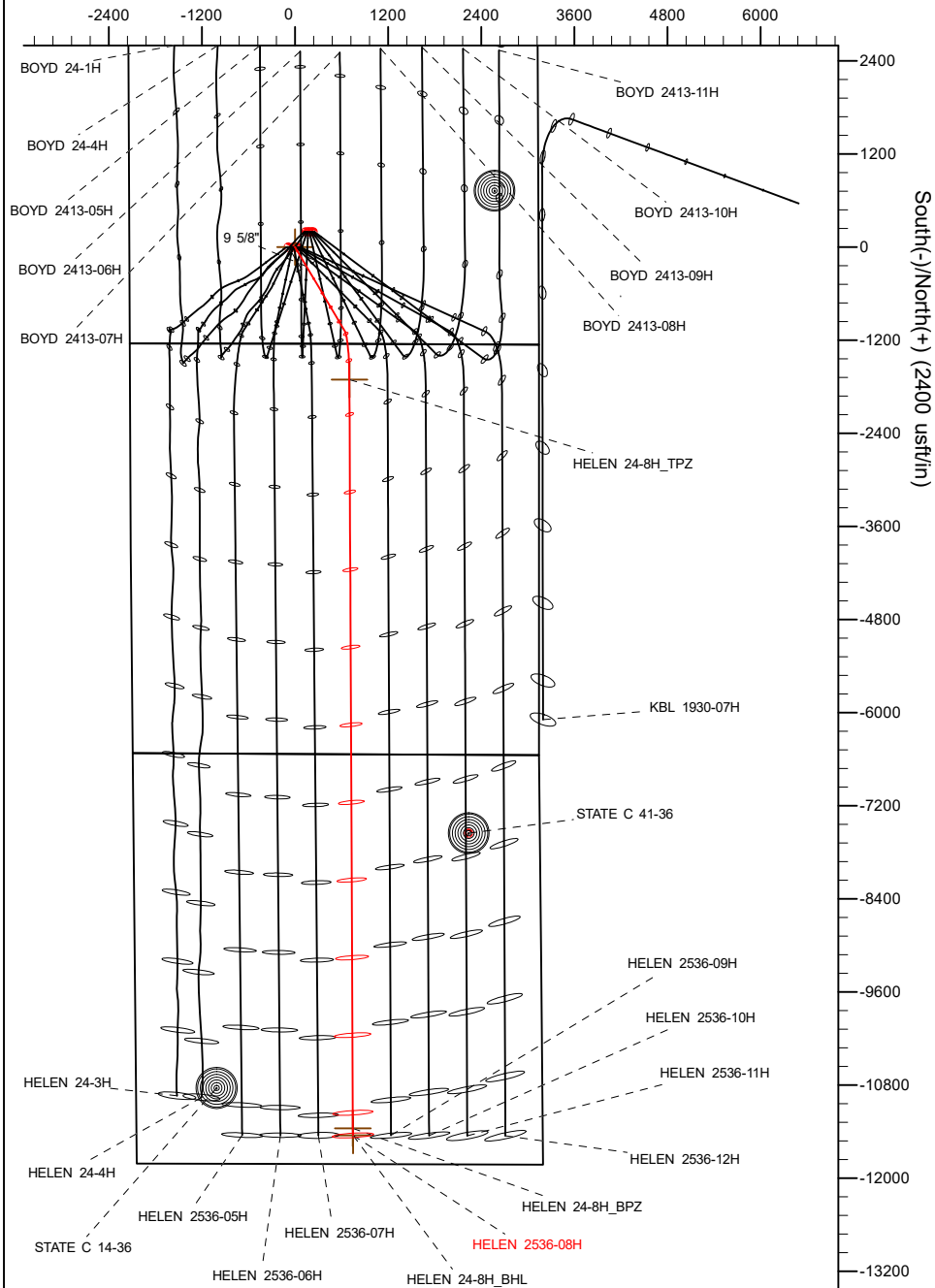
Project: WATTENBERG FIELD
Site: 2N-64W-24 ARNOLD PAD
Well: HELEN 2536-08H
Wellbore: Plan B
Design: Design #2

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1908.00	1936.65	9 5/8"	9-5/8

West(-)/East(+) (2400 usft/in)



SHL
1243' FSL
2137' FWL

TPZ
460' FNL
2445' FEL

BPZ
460' FSL
2445' FEL

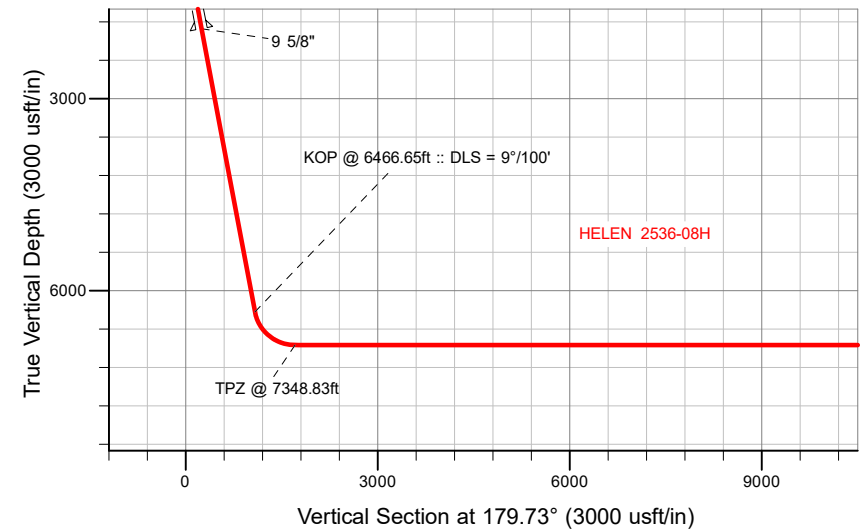
BHL
370' FSL
2445' FEL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	282.00	0.00	0.00	282.00	0.00	0.00	0.00	0.00	0.00	
3	898.00	12.32	149.32	893.26	-56.74	33.66	2.00	149.32	56.90	
4	6466.65	12.32	149.32	6333.67	-1078.62	639.93	0.00	0.00	1081.62	
5	7348.83	90.00	179.73	6850.00	-1704.09	699.94	9.00	31.00	1707.37	
6	17091.53	90.00	179.73	6850.00	-11446.69	745.64	0.00	0.00	11450.08	HELEN 24-8H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
HELEN 24-8H_SHL	0.00	0.00	0.00	40.120058	-104.501490
HELEN 24-8H_TPZ	6850.00	-1704.09	699.94	40.115380	-104.498987
HELEN 24-8H_BPZ	6850.00	-11356.35	745.08	40.088883	-104.498827
HELEN 24-8H_BHL	6850.00	-11446.69	745.64	40.088635	-104.498825



Azimuths to True North
Magnetic North: 7.63°
Magnetic Field
Strength: 51781.6nT
Dip Angle: 66.45°
Date: 12/12/2021
Model: IGRF2020

WELL DETAILS: HELEN 2536-08H

GL = 4925'

RKB = 20' @ 4945.00usft (Drilling Rig)

Plan: Design #2 (HELEN 2536-08H/Plan B)

Date: 12/14/2021

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

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		2N-64W-24 ARNOLD PAD			
Site Position:		Northing:	1,288,352.75 usft	Latitude:	40.120602
From:	Lat/Long	Easting:	3,279,352.74 usft	Longitude:	-104.501071
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well		HELEN 2536-08H				
Well Position	+N/-S	0.00 usft	Northing:	1,288,153.27 usft	Latitude:	40.120058
	+E/-W	0.00 usft	Easting:	3,279,237.80 usft	Longitude:	-104.501490
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,925.00 usft
Grid Convergence:		0.65 °				

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	12/12/2021	7.63	66.45	51,781.64186417

Design	Design #2				
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	179.73	

Plan Survey Tool Program	Date	12/14/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,908.00	Design #2 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	
2	1,908.00	17,091.54	Design #2 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	

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Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

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	
282.00	0.00	0.00	282.00	0.00	0.00	0.00	0.00	0.00	0.00	
898.00	12.32	149.32	893.26	-56.74	33.66	2.00	2.00	0.00	149.32	
6,466.65	12.32	149.32	6,333.67	-1,078.62	639.93	0.00	0.00	0.00	0.00	
7,348.83	90.00	179.73	6,850.00	-1,704.09	699.94	9.00	8.81	3.45	31.00	
17,091.54	90.00	179.73	6,850.00	-11,446.69	745.64	0.00	0.00	0.00	0.00	HELEN 24-8H_BHL

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
282.00	0.00	0.00	282.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 282.00ft									
300.00	0.36	149.32	300.00	-0.05	0.03	0.05	2.00	2.00	0.00
400.00	2.36	149.32	399.97	-2.09	1.24	2.10	2.00	2.00	0.00
500.00	4.36	149.32	499.79	-7.13	4.23	7.15	2.00	2.00	0.00
600.00	6.36	149.32	599.35	-15.16	9.00	15.21	2.00	2.00	0.00
700.00	8.36	149.32	698.52	-26.18	15.53	26.25	2.00	2.00	0.00
800.00	10.36	149.32	797.18	-40.17	23.83	40.28	2.00	2.00	0.00
898.00	12.32	149.32	893.26	-56.74	33.66	56.90	2.00	2.00	0.00
Hold Tangent @ 898.00ft									
900.00	12.32	149.32	895.22	-57.11	33.88	57.26	0.00	0.00	0.00
1,000.00	12.32	149.32	992.92	-75.46	44.77	75.67	0.00	0.00	0.00
1,100.00	12.32	149.32	1,090.61	-93.81	55.65	94.07	0.00	0.00	0.00
1,200.00	12.32	149.32	1,188.31	-112.16	66.54	112.47	0.00	0.00	0.00
1,300.00	12.32	149.32	1,286.01	-130.51	77.43	130.87	0.00	0.00	0.00
1,400.00	12.32	149.32	1,383.70	-148.86	88.32	149.27	0.00	0.00	0.00
1,500.00	12.32	149.32	1,481.40	-167.21	99.20	167.67	0.00	0.00	0.00
1,600.00	12.32	149.32	1,579.10	-185.56	110.09	186.08	0.00	0.00	0.00
1,700.00	12.32	149.32	1,676.80	-203.91	120.98	204.48	0.00	0.00	0.00
1,800.00	12.32	149.32	1,774.49	-222.26	131.86	222.88	0.00	0.00	0.00
1,900.00	12.32	149.32	1,872.19	-240.61	142.75	241.28	0.00	0.00	0.00
1,936.65	12.32	149.32	1,908.00	-247.34	146.74	248.03	0.00	0.00	0.00
9 5/8"									
2,000.00	12.32	149.32	1,969.89	-258.96	153.64	259.68	0.00	0.00	0.00
2,100.00	12.32	149.32	2,067.58	-277.31	164.53	278.08	0.00	0.00	0.00
2,200.00	12.32	149.32	2,165.28	-295.66	175.41	296.49	0.00	0.00	0.00
2,300.00	12.32	149.32	2,262.98	-314.01	186.30	314.89	0.00	0.00	0.00
2,400.00	12.32	149.32	2,360.67	-332.36	197.19	333.29	0.00	0.00	0.00
2,500.00	12.32	149.32	2,458.37	-350.72	208.07	351.69	0.00	0.00	0.00
2,600.00	12.32	149.32	2,556.07	-369.07	218.96	370.09	0.00	0.00	0.00
2,700.00	12.32	149.32	2,653.77	-387.42	229.85	388.50	0.00	0.00	0.00
2,800.00	12.32	149.32	2,751.46	-405.77	240.74	406.90	0.00	0.00	0.00
2,900.00	12.32	149.32	2,849.16	-424.12	251.62	425.30	0.00	0.00	0.00
3,000.00	12.32	149.32	2,946.86	-442.47	262.51	443.70	0.00	0.00	0.00
3,100.00	12.32	149.32	3,044.55	-460.82	273.40	462.10	0.00	0.00	0.00
3,200.00	12.32	149.32	3,142.25	-479.17	284.28	480.50	0.00	0.00	0.00
3,300.00	12.32	149.32	3,239.95	-497.52	295.17	498.91	0.00	0.00	0.00
3,400.00	12.32	149.32	3,337.65	-515.87	306.06	517.31	0.00	0.00	0.00
3,500.00	12.32	149.32	3,435.34	-534.22	316.95	535.71	0.00	0.00	0.00
3,600.00	12.32	149.32	3,533.04	-552.57	327.83	554.11	0.00	0.00	0.00
3,700.00	12.32	149.32	3,630.74	-570.92	338.72	572.51	0.00	0.00	0.00
3,800.00	12.32	149.32	3,728.43	-589.27	349.61	590.91	0.00	0.00	0.00
3,900.00	12.32	149.32	3,826.13	-607.62	360.49	609.32	0.00	0.00	0.00
4,000.00	12.32	149.32	3,923.83	-625.97	371.38	627.72	0.00	0.00	0.00
4,100.00	12.32	149.32	4,021.53	-644.32	382.27	646.12	0.00	0.00	0.00
4,200.00	12.32	149.32	4,119.22	-662.68	393.15	664.52	0.00	0.00	0.00
4,300.00	12.32	149.32	4,216.92	-681.03	404.04	682.92	0.00	0.00	0.00
4,400.00	12.32	149.32	4,314.62	-699.38	414.93	701.32	0.00	0.00	0.00
4,500.00	12.32	149.32	4,412.31	-717.73	425.82	719.73	0.00	0.00	0.00
4,600.00	12.32	149.32	4,510.01	-736.08	436.70	738.13	0.00	0.00	0.00

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

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)
4,700.00	12.32	149.32	4,607.71	-754.43	447.59	756.53	0.00	0.00	0.00
4,800.00	12.32	149.32	4,705.41	-772.78	458.48	774.93	0.00	0.00	0.00
4,900.00	12.32	149.32	4,803.10	-791.13	469.36	793.33	0.00	0.00	0.00
5,000.00	12.32	149.32	4,900.80	-809.48	480.25	811.73	0.00	0.00	0.00
5,100.00	12.32	149.32	4,998.50	-827.83	491.14	830.14	0.00	0.00	0.00
5,200.00	12.32	149.32	5,096.19	-846.18	502.03	848.54	0.00	0.00	0.00
5,300.00	12.32	149.32	5,193.89	-864.53	512.91	866.94	0.00	0.00	0.00
5,400.00	12.32	149.32	5,291.59	-882.88	523.80	885.34	0.00	0.00	0.00
5,500.00	12.32	149.32	5,389.29	-901.23	534.69	903.74	0.00	0.00	0.00
5,600.00	12.32	149.32	5,486.98	-919.58	545.57	922.14	0.00	0.00	0.00
5,700.00	12.32	149.32	5,584.68	-937.93	556.46	940.55	0.00	0.00	0.00
5,800.00	12.32	149.32	5,682.38	-956.28	567.35	958.95	0.00	0.00	0.00
5,900.00	12.32	149.32	5,780.07	-974.64	578.24	977.35	0.00	0.00	0.00
6,000.00	12.32	149.32	5,877.77	-992.99	589.12	995.75	0.00	0.00	0.00
6,100.00	12.32	149.32	5,975.47	-1,011.34	600.01	1,014.15	0.00	0.00	0.00
6,200.00	12.32	149.32	6,073.17	-1,029.69	610.90	1,032.55	0.00	0.00	0.00
6,300.00	12.32	149.32	6,170.86	-1,048.04	621.78	1,050.96	0.00	0.00	0.00
6,400.00	12.32	149.32	6,268.56	-1,066.39	632.67	1,069.36	0.00	0.00	0.00
6,466.65	12.32	149.32	6,333.67	-1,078.62	639.93	1,081.62	0.00	0.00	0.00
KOP @ 6466.65ft :: DLS = 9°/100'									
6,500.00	14.97	155.31	6,366.08	-1,085.59	643.54	1,088.62	9.00	7.95	17.97
6,550.00	19.14	161.15	6,413.88	-1,099.23	648.89	1,102.27	9.00	8.33	11.69
6,600.00	23.42	164.95	6,460.46	-1,116.59	654.12	1,119.66	9.00	8.57	7.59
6,650.00	27.78	167.61	6,505.54	-1,137.58	659.21	1,140.67	9.00	8.70	5.33
6,700.00	32.16	169.61	6,548.85	-1,162.06	664.11	1,165.18	9.00	8.78	3.98
6,750.00	36.58	171.16	6,590.11	-1,189.88	668.80	1,193.02	9.00	8.83	3.11
6,800.00	41.01	172.43	6,629.07	-1,220.88	673.25	1,224.04	9.00	8.86	2.53
6,850.00	45.45	173.48	6,665.49	-1,254.86	677.44	1,258.04	9.00	8.88	2.11
6,900.00	49.90	174.39	6,699.15	-1,291.61	681.33	1,294.81	9.00	8.90	1.81
6,950.00	54.36	175.18	6,729.84	-1,330.91	684.91	1,334.12	9.00	8.91	1.59
7,000.00	58.82	175.89	6,757.36	-1,372.51	688.15	1,375.74	9.00	8.92	1.42
7,050.00	63.28	176.54	6,781.56	-1,416.15	691.03	1,419.39	9.00	8.93	1.29
7,100.00	67.75	177.14	6,802.28	-1,461.58	693.53	1,464.83	9.00	8.93	1.20
7,150.00	72.22	177.70	6,819.39	-1,508.50	695.64	1,511.76	9.00	8.94	1.12
7,200.00	76.69	178.23	6,832.79	-1,556.62	697.35	1,559.89	9.00	8.94	1.07
7,250.00	81.16	178.75	6,842.39	-1,605.66	698.64	1,608.94	9.00	8.94	1.03
7,300.00	85.63	179.25	6,848.14	-1,655.31	699.51	1,658.59	9.00	8.94	1.00
7,348.83	90.00	179.73	6,850.00	-1,704.09	699.94	1,707.37	9.00	8.95	0.99
TPZ @ 7348.83ft									
7,400.00	90.00	179.73	6,850.00	-1,755.26	700.18	1,758.54	0.00	0.00	0.00
7,500.00	90.00	179.73	6,850.00	-1,855.26	700.65	1,858.54	0.00	0.00	0.00
7,600.00	90.00	179.73	6,850.00	-1,955.26	701.12	1,958.54	0.00	0.00	0.00
7,700.00	90.00	179.73	6,850.00	-2,055.26	701.59	2,058.54	0.00	0.00	0.00
7,800.00	90.00	179.73	6,850.00	-2,155.26	702.06	2,158.54	0.00	0.00	0.00
7,900.00	90.00	179.73	6,850.00	-2,255.26	702.53	2,258.54	0.00	0.00	0.00
8,000.00	90.00	179.73	6,850.00	-2,355.25	703.00	2,358.54	0.00	0.00	0.00
8,100.00	90.00	179.73	6,850.00	-2,455.25	703.47	2,458.54	0.00	0.00	0.00
8,200.00	90.00	179.73	6,850.00	-2,555.25	703.94	2,558.54	0.00	0.00	0.00
8,300.00	90.00	179.73	6,850.00	-2,655.25	704.41	2,658.54	0.00	0.00	0.00
8,400.00	90.00	179.73	6,850.00	-2,755.25	704.87	2,758.54	0.00	0.00	0.00
8,500.00	90.00	179.73	6,850.00	-2,855.25	705.34	2,858.54	0.00	0.00	0.00
8,600.00	90.00	179.73	6,850.00	-2,955.25	705.81	2,958.54	0.00	0.00	0.00
8,700.00	90.00	179.73	6,850.00	-3,055.25	706.28	3,058.54	0.00	0.00	0.00
8,800.00	90.00	179.73	6,850.00	-3,155.25	706.75	3,158.54	0.00	0.00	0.00

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

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)
8,900.00	90.00	179.73	6,850.00	-3,255.24	707.22	3,258.54	0.00	0.00	0.00
9,000.00	90.00	179.73	6,850.00	-3,355.24	707.69	3,358.54	0.00	0.00	0.00
9,100.00	90.00	179.73	6,850.00	-3,455.24	708.16	3,458.54	0.00	0.00	0.00
9,200.00	90.00	179.73	6,850.00	-3,555.24	708.63	3,558.54	0.00	0.00	0.00
9,300.00	90.00	179.73	6,850.00	-3,655.24	709.10	3,658.54	0.00	0.00	0.00
9,400.00	90.00	179.73	6,850.00	-3,755.24	709.56	3,758.54	0.00	0.00	0.00
9,500.00	90.00	179.73	6,850.00	-3,855.24	710.03	3,858.54	0.00	0.00	0.00
9,600.00	90.00	179.73	6,850.00	-3,955.24	710.50	3,958.54	0.00	0.00	0.00
9,700.00	90.00	179.73	6,850.00	-4,055.24	710.97	4,058.54	0.00	0.00	0.00
9,800.00	90.00	179.73	6,850.00	-4,155.23	711.44	4,158.54	0.00	0.00	0.00
9,900.00	90.00	179.73	6,850.00	-4,255.23	711.91	4,258.54	0.00	0.00	0.00
10,000.00	90.00	179.73	6,850.00	-4,355.23	712.38	4,358.54	0.00	0.00	0.00
10,100.00	90.00	179.73	6,850.00	-4,455.23	712.85	4,458.54	0.00	0.00	0.00
10,200.00	90.00	179.73	6,850.00	-4,555.23	713.32	4,558.54	0.00	0.00	0.00
10,300.00	90.00	179.73	6,850.00	-4,655.23	713.79	4,658.54	0.00	0.00	0.00
10,400.00	90.00	179.73	6,850.00	-4,755.23	714.26	4,758.54	0.00	0.00	0.00
10,500.00	90.00	179.73	6,850.00	-4,855.23	714.72	4,858.54	0.00	0.00	0.00
10,600.00	90.00	179.73	6,850.00	-4,955.23	715.19	4,958.54	0.00	0.00	0.00
10,700.00	90.00	179.73	6,850.00	-5,055.22	715.66	5,058.54	0.00	0.00	0.00
10,800.00	90.00	179.73	6,850.00	-5,155.22	716.13	5,158.54	0.00	0.00	0.00
10,900.00	90.00	179.73	6,850.00	-5,255.22	716.60	5,258.54	0.00	0.00	0.00
11,000.00	90.00	179.73	6,850.00	-5,355.22	717.07	5,358.54	0.00	0.00	0.00
11,100.00	90.00	179.73	6,850.00	-5,455.22	717.54	5,458.54	0.00	0.00	0.00
11,200.00	90.00	179.73	6,850.00	-5,555.22	718.01	5,558.54	0.00	0.00	0.00
11,300.00	90.00	179.73	6,850.00	-5,655.22	718.48	5,658.54	0.00	0.00	0.00
11,400.00	90.00	179.73	6,850.00	-5,755.22	718.95	5,758.54	0.00	0.00	0.00
11,500.00	90.00	179.73	6,850.00	-5,855.22	719.41	5,858.54	0.00	0.00	0.00
11,600.00	90.00	179.73	6,850.00	-5,955.21	719.88	5,958.54	0.00	0.00	0.00
11,700.00	90.00	179.73	6,850.00	-6,055.21	720.35	6,058.54	0.00	0.00	0.00
11,800.00	90.00	179.73	6,850.00	-6,155.21	720.82	6,158.54	0.00	0.00	0.00
11,900.00	90.00	179.73	6,850.00	-6,255.21	721.29	6,258.54	0.00	0.00	0.00
12,000.00	90.00	179.73	6,850.00	-6,355.21	721.76	6,358.54	0.00	0.00	0.00
12,100.00	90.00	179.73	6,850.00	-6,455.21	722.23	6,458.54	0.00	0.00	0.00
12,200.00	90.00	179.73	6,850.00	-6,555.21	722.70	6,558.54	0.00	0.00	0.00
12,300.00	90.00	179.73	6,850.00	-6,655.21	723.17	6,658.54	0.00	0.00	0.00
12,400.00	90.00	179.73	6,850.00	-6,755.21	723.64	6,758.54	0.00	0.00	0.00
12,500.00	90.00	179.73	6,850.00	-6,855.20	724.10	6,858.54	0.00	0.00	0.00
12,600.00	90.00	179.73	6,850.00	-6,955.20	724.57	6,958.54	0.00	0.00	0.00
12,700.00	90.00	179.73	6,850.00	-7,055.20	725.04	7,058.54	0.00	0.00	0.00
12,800.00	90.00	179.73	6,850.00	-7,155.20	725.51	7,158.54	0.00	0.00	0.00
12,900.00	90.00	179.73	6,850.00	-7,255.20	725.98	7,258.54	0.00	0.00	0.00
13,000.00	90.00	179.73	6,850.00	-7,355.20	726.45	7,358.54	0.00	0.00	0.00
13,100.00	90.00	179.73	6,850.00	-7,455.20	726.92	7,458.54	0.00	0.00	0.00
13,200.00	90.00	179.73	6,850.00	-7,555.20	727.39	7,558.54	0.00	0.00	0.00
13,300.00	90.00	179.73	6,850.00	-7,655.20	727.86	7,658.54	0.00	0.00	0.00
13,400.00	90.00	179.73	6,850.00	-7,755.20	728.33	7,758.54	0.00	0.00	0.00
13,500.00	90.00	179.73	6,850.00	-7,855.19	728.79	7,858.54	0.00	0.00	0.00
13,600.00	90.00	179.73	6,850.00	-7,955.19	729.26	7,958.54	0.00	0.00	0.00
13,700.00	90.00	179.73	6,850.00	-8,055.19	729.73	8,058.54	0.00	0.00	0.00
13,800.00	90.00	179.73	6,850.00	-8,155.19	730.20	8,158.54	0.00	0.00	0.00
13,900.00	90.00	179.73	6,850.00	-8,255.19	730.67	8,258.54	0.00	0.00	0.00
14,000.00	90.00	179.73	6,850.00	-8,355.19	731.14	8,358.54	0.00	0.00	0.00
14,100.00	90.00	179.73	6,850.00	-8,455.19	731.61	8,458.54	0.00	0.00	0.00
14,200.00	90.00	179.73	6,850.00	-8,555.19	732.08	8,558.54	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

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)	
14,300.00	90.00	179.73	6,850.00	-8,655.19	732.55	8,658.54	0.00	0.00	0.00	
14,400.00	90.00	179.73	6,850.00	-8,755.18	733.02	8,758.54	0.00	0.00	0.00	
14,500.00	90.00	179.73	6,850.00	-8,855.18	733.48	8,858.54	0.00	0.00	0.00	
14,600.00	90.00	179.73	6,850.00	-8,955.18	733.95	8,958.54	0.00	0.00	0.00	
14,700.00	90.00	179.73	6,850.00	-9,055.18	734.42	9,058.54	0.00	0.00	0.00	
14,800.00	90.00	179.73	6,850.00	-9,155.18	734.89	9,158.54	0.00	0.00	0.00	
14,900.00	90.00	179.73	6,850.00	-9,255.18	735.36	9,258.54	0.00	0.00	0.00	
15,000.00	90.00	179.73	6,850.00	-9,355.18	735.83	9,358.54	0.00	0.00	0.00	
15,100.00	90.00	179.73	6,850.00	-9,455.18	736.30	9,458.54	0.00	0.00	0.00	
15,200.00	90.00	179.73	6,850.00	-9,555.18	736.77	9,558.54	0.00	0.00	0.00	
15,300.00	90.00	179.73	6,850.00	-9,655.17	737.24	9,658.54	0.00	0.00	0.00	
15,400.00	90.00	179.73	6,850.00	-9,755.17	737.71	9,758.54	0.00	0.00	0.00	
15,500.00	90.00	179.73	6,850.00	-9,855.17	738.17	9,858.54	0.00	0.00	0.00	
15,600.00	90.00	179.73	6,850.00	-9,955.17	738.64	9,958.54	0.00	0.00	0.00	
15,700.00	90.00	179.73	6,850.00	-10,055.17	739.11	10,058.54	0.00	0.00	0.00	
15,800.00	90.00	179.73	6,850.00	-10,155.17	739.58	10,158.54	0.00	0.00	0.00	
15,900.00	90.00	179.73	6,850.00	-10,255.17	740.05	10,258.54	0.00	0.00	0.00	
16,000.00	90.00	179.73	6,850.00	-10,355.17	740.52	10,358.54	0.00	0.00	0.00	
16,100.00	90.00	179.73	6,850.00	-10,455.17	740.99	10,458.54	0.00	0.00	0.00	
16,200.00	90.00	179.73	6,850.00	-10,555.16	741.46	10,558.54	0.00	0.00	0.00	
16,300.00	90.00	179.73	6,850.00	-10,655.16	741.93	10,658.54	0.00	0.00	0.00	
16,400.00	90.00	179.73	6,850.00	-10,755.16	742.40	10,758.54	0.00	0.00	0.00	
16,500.00	90.00	179.73	6,850.00	-10,855.16	742.86	10,858.54	0.00	0.00	0.00	
16,600.00	90.00	179.73	6,850.00	-10,955.16	743.33	10,958.54	0.00	0.00	0.00	
16,700.00	90.00	179.73	6,850.00	-11,055.16	743.80	11,058.54	0.00	0.00	0.00	
16,800.00	90.00	179.73	6,850.00	-11,155.16	744.27	11,158.54	0.00	0.00	0.00	
16,900.00	90.00	179.73	6,850.00	-11,255.16	744.74	11,258.54	0.00	0.00	0.00	
17,000.00	90.00	179.73	6,850.00	-11,355.16	745.21	11,358.54	0.00	0.00	0.00	
17,001.19	90.00	179.73	6,850.00	-11,356.35	745.22	11,359.73	0.00	0.00	0.00	
BPZ @ 17001.19ft										
17,091.54	90.00	179.73	6,850.00	-11,446.69	745.64	11,450.08	0.00	0.00	0.00	
TD Well @ 17091.53ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,936.65	1,908.00	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)		
282.00	282.00	0.00	0.00	Begin Nudge @ 282.00ft	
898.00	893.26	-56.74	33.66	Hold Tangent @ 898.00ft	
6,466.65	6,333.67	-1,078.62	639.93	KOP @ 6466.65ft :: DLS = 9°/100'	
7,348.83	6,850.00	-1,704.09	699.94	TPZ @ 7348.83ft	
17,001.19	6,850.00	-11,356.35	745.22	BPZ @ 17001.19ft	
17,091.54	6,850.00	-11,446.69	745.64	TD Well @ 17091.53ft	