

VERDAD RESOURCES

**WATTENBERG FIELD
2N-64W-24 ARNOLD PAD
HELEN 2536-10H**

Plan B

Plan: Design #2

Standard Planning Report

14 December, 2021

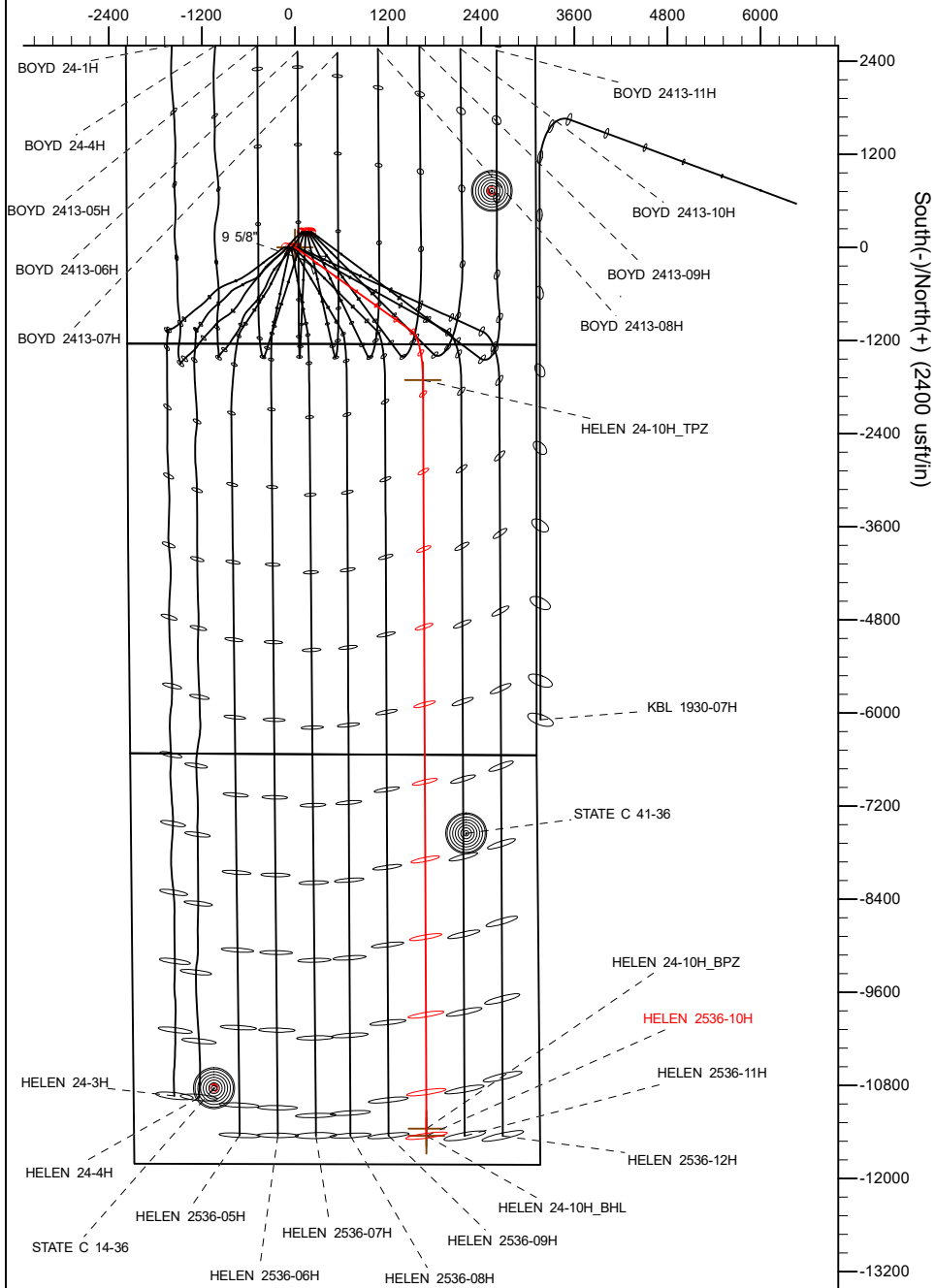
Project: WATTENBERG FIELD
Site: 2N-64W-24 ARNOLD PAD
Well: HELEN 2536-10H
Wellbore: Plan B
Design: Design #2

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1908.00	1964.13	9 5/8"	9-5/8

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



SHL
1243' FSL
2169' FWL

TPZ
460' FNL
1463' FEL

BPZ
460' FSL
1463' FEL

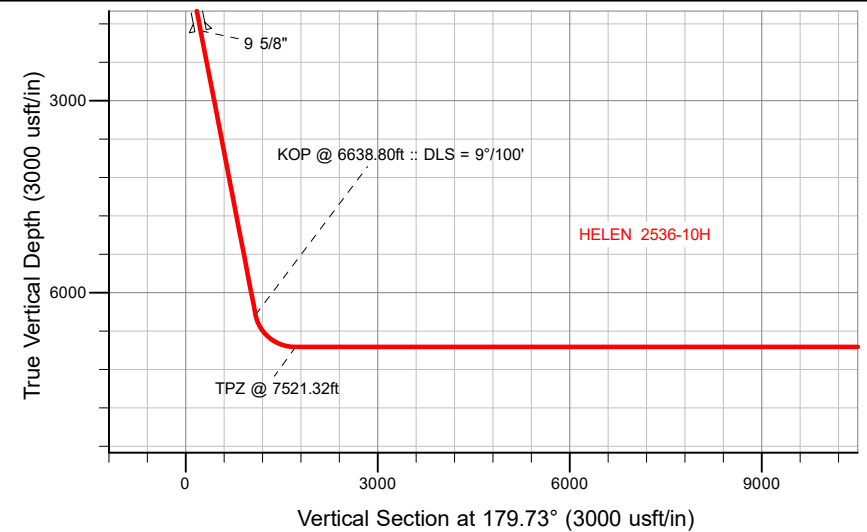
BHL
370' FSL
1463' FEL

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	240.00	0.00	0.00	240.00	0.00	0.00	0.00	0.00	0.00	
3	1152.00	18.24	125.62	1136.67	-83.83	117.01	2.00	125.62	84.38	
4	6638.80	18.24	125.62	6347.78	-1084.04	1513.05	0.00	0.00	1091.15	
5	7521.32	90.00	179.73	6850.00	-1709.21	1650.07	9.00	55.50	1716.97	
6	17261.05	90.00	179.73	6850.00	-11448.83	1695.80	0.00	0.00	11456.69	HELEN 24-10H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
HELEN 24-10H_SHL	0.00	0.00	0.00	40.120058	-104.501376
HELEN 24-10H_TPZ	6850.00	-1709.21	1650.07	40.115366	-104.495476
HELEN 24-10H_BPZ	6850.00	-11358.85	1695.24	40.088876	-104.495317
HELEN 24-10H_BHL	6850.00	-11448.83	1695.80	40.088629	-104.495315



Azimuths to True North
Magnetic North: 7.63°
Magnetic Field
Strength: 51781.7nT
Dip Angle: 66.45°
Date: 12/12/2021
Model: IGRF2020

WELL DETAILS: HELEN 2536-10H

GL = 4924'

RKB = 20' @ 4944.00usft (Drilling Rig)

Plan: Design #2 (HELEN 2536-10H/Plan B)

Date: 12/14/2021

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-10H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-10H	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 2536-10H				
Well Position	+N/-S	0.00 usft	Northing:	1,288,153.63 usft	Latitude:	40.120058
	+E/-W	0.00 usft	Easting:	3,279,269.68 usft	Longitude:	-104.501376
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,924.00 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	51,781.66151583

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	17,261.05	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 2536-10H	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	
240.00	0.00	0.00	240.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,152.00	18.24	125.62	1,136.67	-83.83	117.01	2.00	2.00	0.00	125.62	
6,638.80	18.24	125.62	6,347.78	-1,084.04	1,513.05	0.00	0.00	0.00	0.00	
7,521.32	90.00	179.73	6,850.00	-1,709.21	1,650.07	9.00	8.13	6.13	55.50	
17,261.05	90.00	179.73	6,850.00	-11,448.83	1,695.80	0.00	0.00	0.00	0.00	HELEN 24-10H_BHL

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-10H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-10H	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
240.00	0.00	0.00	240.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 240.00ft									
300.00	1.20	125.62	300.00	-0.37	0.51	0.37	2.00	2.00	0.00
400.00	3.20	125.62	399.92	-2.60	3.63	2.62	2.00	2.00	0.00
500.00	5.20	125.62	499.64	-6.87	9.58	6.91	2.00	2.00	0.00
600.00	7.20	125.62	599.05	-13.16	18.36	13.24	2.00	2.00	0.00
700.00	9.20	125.62	698.03	-21.46	29.96	21.60	2.00	2.00	0.00
800.00	11.20	125.62	796.44	-31.78	44.35	31.98	2.00	2.00	0.00
900.00	13.20	125.62	894.18	-44.08	61.53	44.37	2.00	2.00	0.00
1,000.00	15.20	125.62	991.12	-58.37	81.47	58.75	2.00	2.00	0.00
1,100.00	17.20	125.62	1,087.14	-74.62	104.15	75.11	2.00	2.00	0.00
1,152.00	18.24	125.62	1,136.67	-83.83	117.01	84.38	2.00	2.00	0.00
Hold Tangent @ 1152.00ft									
1,200.00	18.24	125.62	1,182.26	-92.58	129.23	93.19	0.00	0.00	0.00
1,300.00	18.24	125.62	1,277.24	-110.81	154.67	111.54	0.00	0.00	0.00
1,400.00	18.24	125.62	1,372.21	-129.04	180.11	129.89	0.00	0.00	0.00
1,500.00	18.24	125.62	1,467.19	-147.27	205.56	148.24	0.00	0.00	0.00
1,600.00	18.24	125.62	1,562.16	-165.50	231.00	166.59	0.00	0.00	0.00
1,700.00	18.24	125.62	1,657.14	-183.73	256.44	184.94	0.00	0.00	0.00
1,800.00	18.24	125.62	1,752.11	-201.96	281.89	203.29	0.00	0.00	0.00
1,900.00	18.24	125.62	1,847.09	-220.19	307.33	221.63	0.00	0.00	0.00
1,964.13	18.24	125.62	1,908.00	-231.88	323.65	233.40	0.00	0.00	0.00
9 5/8"									
2,000.00	18.24	125.62	1,942.06	-238.42	332.77	239.98	0.00	0.00	0.00
2,100.00	18.24	125.62	2,037.04	-256.65	358.22	258.33	0.00	0.00	0.00
2,200.00	18.24	125.62	2,132.02	-274.88	383.66	276.68	0.00	0.00	0.00
2,300.00	18.24	125.62	2,226.99	-293.11	409.10	295.03	0.00	0.00	0.00
2,400.00	18.24	125.62	2,321.97	-311.34	434.55	313.38	0.00	0.00	0.00
2,500.00	18.24	125.62	2,416.94	-329.56	459.99	331.73	0.00	0.00	0.00
2,600.00	18.24	125.62	2,511.92	-347.79	485.43	350.08	0.00	0.00	0.00
2,700.00	18.24	125.62	2,606.89	-366.02	510.88	368.43	0.00	0.00	0.00
2,800.00	18.24	125.62	2,701.87	-384.25	536.32	386.78	0.00	0.00	0.00
2,900.00	18.24	125.62	2,796.84	-402.48	561.77	405.12	0.00	0.00	0.00
3,000.00	18.24	125.62	2,891.82	-420.71	587.21	423.47	0.00	0.00	0.00
3,100.00	18.24	125.62	2,986.79	-438.94	612.65	441.82	0.00	0.00	0.00
3,200.00	18.24	125.62	3,081.77	-457.17	638.10	460.17	0.00	0.00	0.00
3,300.00	18.24	125.62	3,176.74	-475.40	663.54	478.52	0.00	0.00	0.00
3,400.00	18.24	125.62	3,271.72	-493.63	688.98	496.87	0.00	0.00	0.00
3,500.00	18.24	125.62	3,366.70	-511.86	714.43	515.22	0.00	0.00	0.00
3,600.00	18.24	125.62	3,461.67	-530.09	739.87	533.57	0.00	0.00	0.00
3,700.00	18.24	125.62	3,556.65	-548.31	765.31	551.92	0.00	0.00	0.00
3,800.00	18.24	125.62	3,651.62	-566.54	790.76	570.26	0.00	0.00	0.00
3,900.00	18.24	125.62	3,746.60	-584.77	816.20	588.61	0.00	0.00	0.00
4,000.00	18.24	125.62	3,841.57	-603.00	841.64	606.96	0.00	0.00	0.00
4,100.00	18.24	125.62	3,936.55	-621.23	867.09	625.31	0.00	0.00	0.00
4,200.00	18.24	125.62	4,031.52	-639.46	892.53	643.66	0.00	0.00	0.00
4,300.00	18.24	125.62	4,126.50	-657.69	917.97	662.01	0.00	0.00	0.00
4,400.00	18.24	125.62	4,221.47	-675.92	943.42	680.36	0.00	0.00	0.00
4,500.00	18.24	125.62	4,316.45	-694.15	968.86	698.71	0.00	0.00	0.00
4,600.00	18.24	125.62	4,411.42	-712.38	994.31	717.06	0.00	0.00	0.00

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-10H	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	18.24	125.62	4,506.40	-730.61	1,019.75	735.40	0.00	0.00	0.00
4,800.00	18.24	125.62	4,601.38	-748.84	1,045.19	753.75	0.00	0.00	0.00
4,900.00	18.24	125.62	4,696.35	-767.07	1,070.64	772.10	0.00	0.00	0.00
5,000.00	18.24	125.62	4,791.33	-785.29	1,096.08	790.45	0.00	0.00	0.00
5,100.00	18.24	125.62	4,886.30	-803.52	1,121.52	808.80	0.00	0.00	0.00
5,200.00	18.24	125.62	4,981.28	-821.75	1,146.97	827.15	0.00	0.00	0.00
5,300.00	18.24	125.62	5,076.25	-839.98	1,172.41	845.50	0.00	0.00	0.00
5,400.00	18.24	125.62	5,171.23	-858.21	1,197.85	863.85	0.00	0.00	0.00
5,500.00	18.24	125.62	5,266.20	-876.44	1,223.30	882.20	0.00	0.00	0.00
5,600.00	18.24	125.62	5,361.18	-894.67	1,248.74	900.54	0.00	0.00	0.00
5,700.00	18.24	125.62	5,456.15	-912.90	1,274.18	918.89	0.00	0.00	0.00
5,800.00	18.24	125.62	5,551.13	-931.13	1,299.63	937.24	0.00	0.00	0.00
5,900.00	18.24	125.62	5,646.10	-949.36	1,325.07	955.59	0.00	0.00	0.00
6,000.00	18.24	125.62	5,741.08	-967.59	1,350.51	973.94	0.00	0.00	0.00
6,100.00	18.24	125.62	5,836.06	-985.82	1,375.96	992.29	0.00	0.00	0.00
6,200.00	18.24	125.62	5,931.03	-1,004.05	1,401.40	1,010.64	0.00	0.00	0.00
6,300.00	18.24	125.62	6,026.01	-1,022.27	1,426.85	1,028.99	0.00	0.00	0.00
6,400.00	18.24	125.62	6,120.98	-1,040.50	1,452.29	1,047.34	0.00	0.00	0.00
6,500.00	18.24	125.62	6,215.96	-1,058.73	1,477.73	1,065.68	0.00	0.00	0.00
6,600.00	18.24	125.62	6,310.93	-1,076.96	1,503.18	1,084.03	0.00	0.00	0.00
6,638.80	18.24	125.62	6,347.78	-1,084.04	1,513.05	1,091.15	0.00	0.00	0.00
KOP @ 6638.80ft :: DLS = 9°/100'									
6,650.00	18.83	128.19	6,358.40	-1,086.17	1,515.89	1,093.31	9.00	5.26	22.99
6,700.00	21.82	137.91	6,405.30	-1,098.06	1,528.47	1,105.25	9.00	5.98	19.43
6,750.00	25.24	145.24	6,451.14	-1,113.73	1,540.78	1,120.98	9.00	6.85	14.67
6,800.00	28.95	150.87	6,495.65	-1,133.07	1,552.76	1,140.37	9.00	7.41	11.25
6,850.00	32.84	155.29	6,538.56	-1,155.96	1,564.32	1,163.32	9.00	7.78	8.85
6,900.00	36.85	158.86	6,579.59	-1,182.28	1,575.40	1,189.69	9.00	8.03	7.14
6,950.00	40.95	161.81	6,618.50	-1,211.84	1,585.93	1,219.30	9.00	8.20	5.90
7,000.00	45.12	164.31	6,655.04	-1,244.48	1,595.84	1,251.98	9.00	8.33	5.00
7,050.00	49.33	166.47	6,688.99	-1,279.99	1,605.07	1,287.53	9.00	8.42	4.32
7,100.00	53.58	168.37	6,720.14	-1,318.14	1,613.57	1,325.73	9.00	8.50	3.80
7,150.00	57.85	170.07	6,748.31	-1,358.72	1,621.28	1,366.34	9.00	8.55	3.40
7,200.00	62.15	171.62	6,773.30	-1,401.46	1,628.15	1,409.11	9.00	8.59	3.10
7,250.00	66.46	173.05	6,794.98	-1,446.10	1,634.15	1,453.78	9.00	8.62	2.86
7,300.00	70.78	174.39	6,813.20	-1,492.37	1,639.23	1,500.07	9.00	8.65	2.68
7,350.00	75.11	175.66	6,827.86	-1,539.98	1,643.37	1,547.70	9.00	8.67	2.54
7,400.00	79.45	176.88	6,838.86	-1,588.63	1,646.53	1,596.38	9.00	8.68	2.44
7,450.00	83.80	178.07	6,846.14	-1,638.04	1,648.71	1,645.79	9.00	8.69	2.37
7,500.00	88.15	179.24	6,849.66	-1,687.89	1,649.88	1,695.65	9.00	8.69	2.33
7,521.32	90.00	179.73	6,850.00	-1,709.21	1,650.07	1,716.97	9.00	8.70	2.32
TPZ @ 7521.32ft									
7,600.00	90.00	179.73	6,850.00	-1,787.89	1,650.44	1,795.64	0.00	0.00	0.00
7,700.00	90.00	179.73	6,850.00	-1,887.88	1,650.91	1,895.64	0.00	0.00	0.00
7,800.00	90.00	179.73	6,850.00	-1,987.88	1,651.38	1,995.64	0.00	0.00	0.00
7,900.00	90.00	179.73	6,850.00	-2,087.88	1,651.85	2,095.64	0.00	0.00	0.00
8,000.00	90.00	179.73	6,850.00	-2,187.88	1,652.32	2,195.64	0.00	0.00	0.00
8,100.00	90.00	179.73	6,850.00	-2,287.88	1,652.79	2,295.64	0.00	0.00	0.00
8,200.00	90.00	179.73	6,850.00	-2,387.88	1,653.26	2,395.64	0.00	0.00	0.00
8,300.00	90.00	179.73	6,850.00	-2,487.88	1,653.73	2,495.64	0.00	0.00	0.00
8,400.00	90.00	179.73	6,850.00	-2,587.88	1,654.20	2,595.64	0.00	0.00	0.00
8,500.00	90.00	179.73	6,850.00	-2,687.88	1,654.67	2,695.64	0.00	0.00	0.00
8,600.00	90.00	179.73	6,850.00	-2,787.87	1,655.14	2,795.64	0.00	0.00	0.00
8,700.00	90.00	179.73	6,850.00	-2,887.87	1,655.61	2,895.64	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-10H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-10H	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)	
8,800.00	90.00	179.73	6,850.00	-2,987.87	1,656.08	2,995.64	0.00	0.00	0.00	
8,900.00	90.00	179.73	6,850.00	-3,087.87	1,656.55	3,095.64	0.00	0.00	0.00	
9,000.00	90.00	179.73	6,850.00	-3,187.87	1,657.02	3,195.64	0.00	0.00	0.00	
9,100.00	90.00	179.73	6,850.00	-3,287.87	1,657.49	3,295.64	0.00	0.00	0.00	
9,200.00	90.00	179.73	6,850.00	-3,387.87	1,657.96	3,395.64	0.00	0.00	0.00	
9,300.00	90.00	179.73	6,850.00	-3,487.87	1,658.42	3,495.64	0.00	0.00	0.00	
9,400.00	90.00	179.73	6,850.00	-3,587.87	1,658.89	3,595.64	0.00	0.00	0.00	
9,500.00	90.00	179.73	6,850.00	-3,687.86	1,659.36	3,695.64	0.00	0.00	0.00	
9,600.00	90.00	179.73	6,850.00	-3,787.86	1,659.83	3,795.64	0.00	0.00	0.00	
9,700.00	90.00	179.73	6,850.00	-3,887.86	1,660.30	3,895.64	0.00	0.00	0.00	
9,800.00	90.00	179.73	6,850.00	-3,987.86	1,660.77	3,995.64	0.00	0.00	0.00	
9,900.00	90.00	179.73	6,850.00	-4,087.86	1,661.24	4,095.64	0.00	0.00	0.00	
10,000.00	90.00	179.73	6,850.00	-4,187.86	1,661.71	4,195.64	0.00	0.00	0.00	
10,100.00	90.00	179.73	6,850.00	-4,287.86	1,662.18	4,295.64	0.00	0.00	0.00	
10,200.00	90.00	179.73	6,850.00	-4,387.86	1,662.65	4,395.64	0.00	0.00	0.00	
10,300.00	90.00	179.73	6,850.00	-4,487.86	1,663.12	4,495.64	0.00	0.00	0.00	
10,400.00	90.00	179.73	6,850.00	-4,587.85	1,663.59	4,595.64	0.00	0.00	0.00	
10,500.00	90.00	179.73	6,850.00	-4,687.85	1,664.06	4,695.64	0.00	0.00	0.00	
10,600.00	90.00	179.73	6,850.00	-4,787.85	1,664.53	4,795.64	0.00	0.00	0.00	
10,700.00	90.00	179.73	6,850.00	-4,887.85	1,665.00	4,895.64	0.00	0.00	0.00	
10,800.00	90.00	179.73	6,850.00	-4,987.85	1,665.47	4,995.64	0.00	0.00	0.00	
10,900.00	90.00	179.73	6,850.00	-5,087.85	1,665.94	5,095.64	0.00	0.00	0.00	
11,000.00	90.00	179.73	6,850.00	-5,187.85	1,666.41	5,195.64	0.00	0.00	0.00	
11,100.00	90.00	179.73	6,850.00	-5,287.85	1,666.88	5,295.64	0.00	0.00	0.00	
11,200.00	90.00	179.73	6,850.00	-5,387.85	1,667.35	5,395.64	0.00	0.00	0.00	
11,300.00	90.00	179.73	6,850.00	-5,487.84	1,667.82	5,495.64	0.00	0.00	0.00	
11,400.00	90.00	179.73	6,850.00	-5,587.84	1,668.28	5,595.64	0.00	0.00	0.00	
11,500.00	90.00	179.73	6,850.00	-5,687.84	1,668.75	5,695.64	0.00	0.00	0.00	
11,600.00	90.00	179.73	6,850.00	-5,787.84	1,669.22	5,795.64	0.00	0.00	0.00	
11,700.00	90.00	179.73	6,850.00	-5,887.84	1,669.69	5,895.64	0.00	0.00	0.00	
11,800.00	90.00	179.73	6,850.00	-5,987.84	1,670.16	5,995.64	0.00	0.00	0.00	
11,900.00	90.00	179.73	6,850.00	-6,087.84	1,670.63	6,095.64	0.00	0.00	0.00	
12,000.00	90.00	179.73	6,850.00	-6,187.84	1,671.10	6,195.64	0.00	0.00	0.00	
12,100.00	90.00	179.73	6,850.00	-6,287.84	1,671.57	6,295.64	0.00	0.00	0.00	
12,200.00	90.00	179.73	6,850.00	-6,387.83	1,672.04	6,395.64	0.00	0.00	0.00	
12,300.00	90.00	179.73	6,850.00	-6,487.83	1,672.51	6,495.64	0.00	0.00	0.00	
12,400.00	90.00	179.73	6,850.00	-6,587.83	1,672.98	6,595.64	0.00	0.00	0.00	
12,500.00	90.00	179.73	6,850.00	-6,687.83	1,673.45	6,695.64	0.00	0.00	0.00	
12,600.00	90.00	179.73	6,850.00	-6,787.83	1,673.92	6,795.64	0.00	0.00	0.00	
12,700.00	90.00	179.73	6,850.00	-6,887.83	1,674.39	6,895.64	0.00	0.00	0.00	
12,800.00	90.00	179.73	6,850.00	-6,987.83	1,674.86	6,995.64	0.00	0.00	0.00	
12,900.00	90.00	179.73	6,850.00	-7,087.83	1,675.33	7,095.64	0.00	0.00	0.00	
13,000.00	90.00	179.73	6,850.00	-7,187.83	1,675.80	7,195.64	0.00	0.00	0.00	
13,100.00	90.00	179.73	6,850.00	-7,287.82	1,676.27	7,295.64	0.00	0.00	0.00	
13,200.00	90.00	179.73	6,850.00	-7,387.82	1,676.74	7,395.64	0.00	0.00	0.00	
13,300.00	90.00	179.73	6,850.00	-7,487.82	1,677.21	7,495.64	0.00	0.00	0.00	
13,400.00	90.00	179.73	6,850.00	-7,587.82	1,677.68	7,595.64	0.00	0.00	0.00	
13,500.00	90.00	179.73	6,850.00	-7,687.82	1,678.14	7,695.64	0.00	0.00	0.00	
13,600.00	90.00	179.73	6,850.00	-7,787.82	1,678.61	7,795.64	0.00	0.00	0.00	
13,700.00	90.00	179.73	6,850.00	-7,887.82	1,679.08	7,895.64	0.00	0.00	0.00	
13,800.00	90.00	179.73	6,850.00	-7,987.82	1,679.55	7,995.64	0.00	0.00	0.00	
13,900.00	90.00	179.73	6,850.00	-8,087.82	1,680.02	8,095.64	0.00	0.00	0.00	
14,000.00	90.00	179.73	6,850.00	-8,187.81	1,680.49	8,195.64	0.00	0.00	0.00	
14,100.00	90.00	179.73	6,850.00	-8,287.81	1,680.96	8,295.64	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-10H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-10H	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)	
14,200.00	90.00	179.73	6,850.00	-8,387.81	1,681.43	8,395.64	0.00	0.00	0.00	
14,300.00	90.00	179.73	6,850.00	-8,487.81	1,681.90	8,495.64	0.00	0.00	0.00	
14,400.00	90.00	179.73	6,850.00	-8,587.81	1,682.37	8,595.64	0.00	0.00	0.00	
14,500.00	90.00	179.73	6,850.00	-8,687.81	1,682.84	8,695.64	0.00	0.00	0.00	
14,600.00	90.00	179.73	6,850.00	-8,787.81	1,683.31	8,795.64	0.00	0.00	0.00	
14,700.00	90.00	179.73	6,850.00	-8,887.81	1,683.78	8,895.64	0.00	0.00	0.00	
14,800.00	90.00	179.73	6,850.00	-8,987.81	1,684.25	8,995.64	0.00	0.00	0.00	
14,900.00	90.00	179.73	6,850.00	-9,087.80	1,684.72	9,095.64	0.00	0.00	0.00	
15,000.00	90.00	179.73	6,850.00	-9,187.80	1,685.19	9,195.64	0.00	0.00	0.00	
15,100.00	90.00	179.73	6,850.00	-9,287.80	1,685.66	9,295.64	0.00	0.00	0.00	
15,200.00	90.00	179.73	6,850.00	-9,387.80	1,686.13	9,395.64	0.00	0.00	0.00	
15,300.00	90.00	179.73	6,850.00	-9,487.80	1,686.60	9,495.64	0.00	0.00	0.00	
15,400.00	90.00	179.73	6,850.00	-9,587.80	1,687.07	9,595.64	0.00	0.00	0.00	
15,500.00	90.00	179.73	6,850.00	-9,687.80	1,687.54	9,695.64	0.00	0.00	0.00	
15,600.00	90.00	179.73	6,850.00	-9,787.80	1,688.01	9,795.64	0.00	0.00	0.00	
15,700.00	90.00	179.73	6,850.00	-9,887.80	1,688.47	9,895.64	0.00	0.00	0.00	
15,800.00	90.00	179.73	6,850.00	-9,987.79	1,688.94	9,995.64	0.00	0.00	0.00	
15,900.00	90.00	179.73	6,850.00	-10,087.79	1,689.41	10,095.64	0.00	0.00	0.00	
16,000.00	90.00	179.73	6,850.00	-10,187.79	1,689.88	10,195.64	0.00	0.00	0.00	
16,100.00	90.00	179.73	6,850.00	-10,287.79	1,690.35	10,295.64	0.00	0.00	0.00	
16,200.00	90.00	179.73	6,850.00	-10,387.79	1,690.82	10,395.64	0.00	0.00	0.00	
16,300.00	90.00	179.73	6,850.00	-10,487.79	1,691.29	10,495.64	0.00	0.00	0.00	
16,400.00	90.00	179.73	6,850.00	-10,587.79	1,691.76	10,595.64	0.00	0.00	0.00	
16,500.00	90.00	179.73	6,850.00	-10,687.79	1,692.23	10,695.64	0.00	0.00	0.00	
16,600.00	90.00	179.73	6,850.00	-10,787.79	1,692.70	10,795.64	0.00	0.00	0.00	
16,700.00	90.00	179.73	6,850.00	-10,887.78	1,693.17	10,895.64	0.00	0.00	0.00	
16,800.00	90.00	179.73	6,850.00	-10,987.78	1,693.64	10,995.64	0.00	0.00	0.00	
16,900.00	90.00	179.73	6,850.00	-11,087.78	1,694.11	11,095.64	0.00	0.00	0.00	
17,000.00	90.00	179.73	6,850.00	-11,187.78	1,694.58	11,195.64	0.00	0.00	0.00	
17,100.00	90.00	179.73	6,850.00	-11,287.78	1,695.05	11,295.64	0.00	0.00	0.00	
17,171.07	90.00	179.73	6,850.00	-11,358.85	1,695.38	11,366.71	0.00	0.00	0.00	
BPZ @ 17171.07ft										
17,200.00	90.00	179.73	6,850.00	-11,387.78	1,695.52	11,395.64	0.00	0.00	0.00	
17,261.05	90.00	179.73	6,850.00	-11,448.83	1,695.80	11,456.69	0.00	0.00	0.00	
TD Well @ 17261.05ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,964.13	1,908.00	9 5/8"		9-5/8	13-1/2

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-10H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Design #2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
240.00	240.00	0.00	0.00	Begin Nudge @ 240.00ft
1,152.00	1,136.67	-83.83	117.01	Hold Tangent @ 1152.00ft
6,638.80	6,347.78	-1,084.04	1,513.05	KOP @ 6638.80ft :: DLS = 9°/100'
7,521.32	6,850.00	-1,709.21	1,650.07	TPZ @ 7521.32ft
17,171.07	6,850.00	-11,358.85	1,695.38	BPZ @ 17171.07ft
17,261.05	6,850.00	-11,448.83	1,695.80	TD Well @ 17261.05ft