

VERDAD RESOURCES

**WATTENBERG FIELD
2N-64W-24 ARNOLD PAD
HELEN 2536-06H**

Plan B

Plan: Design #2

Standard Planning Report

14 December, 2021

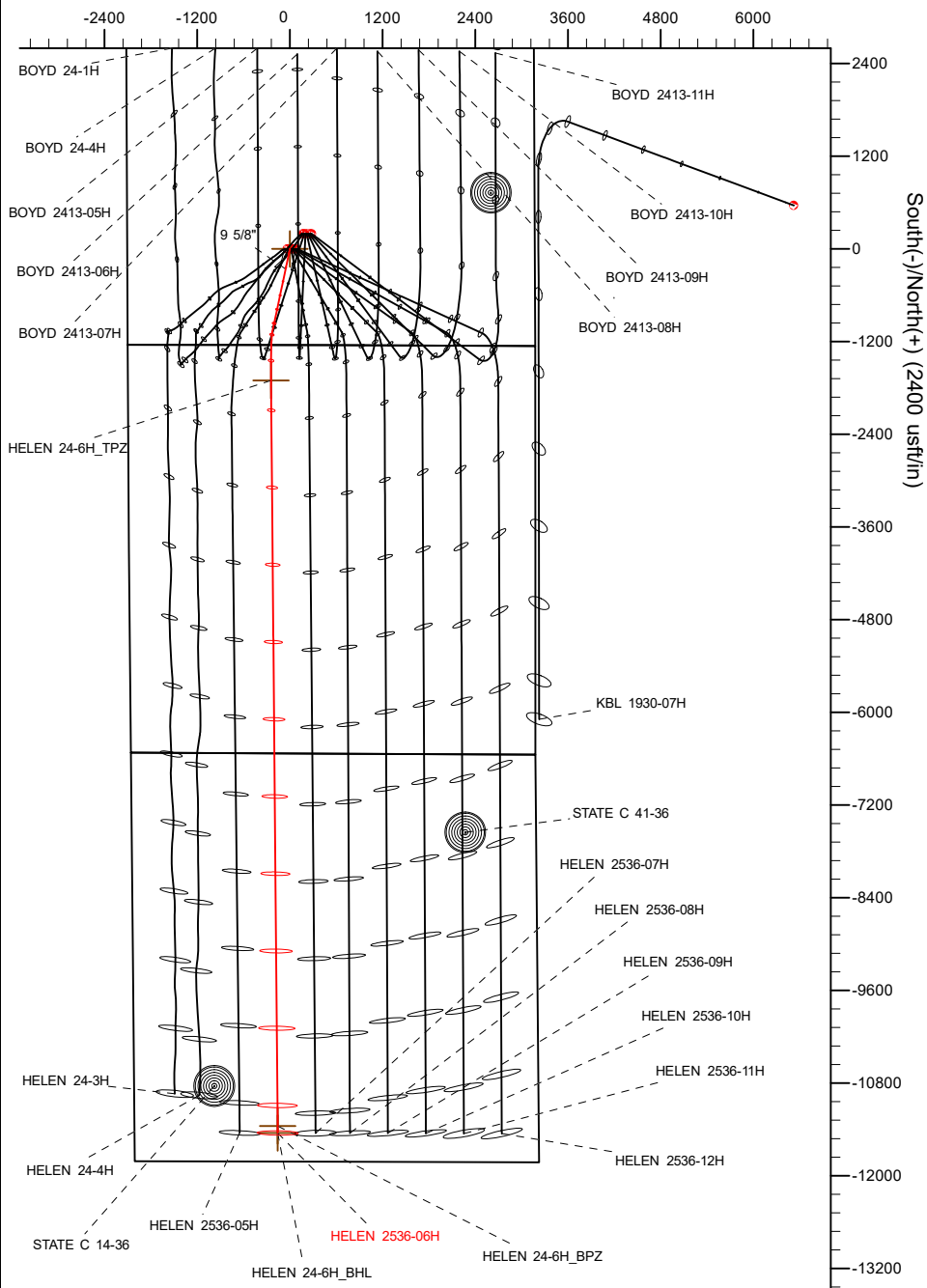
Project: WATTENBERG FIELD
Site: 2N-64W-24 ARNOLD PAD
Well: HELEN 2536-06H
Wellbore: Plan B
Design: Design #2

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1908.00	1931.39	9 5/8"	9-5/8

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



South(-)/North(+) (2400 usft/in)

SHL
1243' FSL
2105' FWL

TPZ
460' FNL
1853' FWL

BPZ
460' FSL
1853' FWL

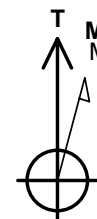
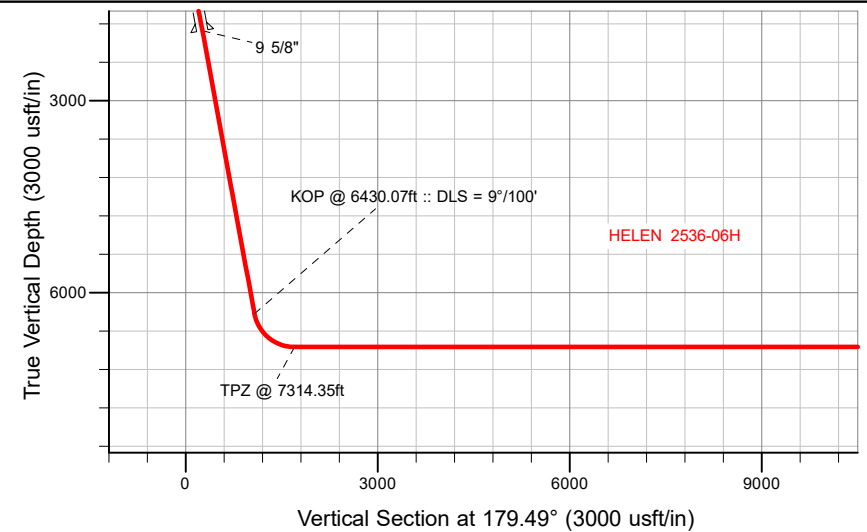
BHL
370' FSL
1853' FWL

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	223.00	0.00	0.00	223.00	0.00	0.00	0.00	0.00	0.00	
3	756.50	10.67	191.98	753.42	-48.45	-10.28	2.00	191.98	48.36	
4	6430.07	10.67	191.98	6328.89	-1076.05	-228.33	0.00	0.00	1073.97	
5	7314.35	90.00	179.49	6850.00	-1702.34	-244.02	9.00	-12.70	1700.10	
6	17056.54	90.00	179.49	6850.00	-11444.15	-157.80	0.00	0.00	11442.29	HELEN 24-6H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
HELEN 24-6H_SHL	0.00	0.00	0.00	40.120058	-104.501604
HELEN 24-6H_TPZ	6850.00	-1702.34	-244.02	40.115385	-104.502476
HELEN 24-6H_BPZ	6850.00	-11354.17	-158.64	40.088889	-104.502171
HELEN 24-6H_BHL	6850.00	-11444.15	-157.80	40.088642	-104.502168



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 2536-06H

GL = 4925'

RKB = 20' @ 4945.00usft (Drilling Rig)

Plan: Design #2 (HELEN 2536-06H/Plan B)

Date: 12/14/2021

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-06H
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 2536-06H	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 2536-06H				
Well Position	+N/-S	0.00 usft	Northing:	1,288,152.91 usft	Latitude:	40.120058
	+E/-W	0.00 usft	Easting:	3,279,205.92 usft	Longitude:	-104.501604
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	51,781.63017611

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	179.49	

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	17,056.54	Design #2 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	

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Well:	HELEN 2536-06H	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	
223.00	0.00	0.00	223.00	0.00	0.00	0.00	0.00	0.00	0.00	
756.50	10.67	191.98	753.42	-48.45	-10.28	2.00	2.00	0.00	191.98	
6,430.07	10.67	191.98	6,328.90	-1,076.05	-228.33	0.00	0.00	0.00	0.00	
7,314.35	90.00	179.49	6,850.00	-1,702.34	-244.02	9.00	8.97	-1.41	-12.70	
17,056.54	90.00	179.49	6,850.00	-11,444.15	-157.80	0.00	0.00	0.00	0.00	HELEN 24-6H_BHL

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
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Site:	2N-64W-24 ARNOLD PAD	North Reference:	True
Well:	HELEN 2536-06H	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
223.00	0.00	0.00	223.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 223.00ft									
300.00	1.54	191.98	299.99	-1.01	-0.21	1.01	2.00	2.00	0.00
400.00	3.54	191.98	399.89	-5.35	-1.13	5.34	2.00	2.00	0.00
500.00	5.54	191.98	499.57	-13.09	-2.78	13.06	2.00	2.00	0.00
600.00	7.54	191.98	598.91	-24.23	-5.14	24.18	2.00	2.00	0.00
700.00	9.54	191.98	697.80	-38.76	-8.22	38.68	2.00	2.00	0.00
756.50	10.67	191.98	753.42	-48.45	-10.28	48.36	2.00	2.00	0.00
Hold Tangent @ 756.50ft									
800.00	10.67	191.98	796.17	-56.33	-11.95	56.22	0.00	0.00	0.00
900.00	10.67	191.98	894.44	-74.44	-15.80	74.30	0.00	0.00	0.00
1,000.00	10.67	191.98	992.71	-92.56	-19.64	92.38	0.00	0.00	0.00
1,100.00	10.67	191.98	1,090.98	-110.67	-23.48	110.45	0.00	0.00	0.00
1,200.00	10.67	191.98	1,189.25	-128.78	-27.33	128.53	0.00	0.00	0.00
1,300.00	10.67	191.98	1,287.52	-146.89	-31.17	146.61	0.00	0.00	0.00
1,400.00	10.67	191.98	1,385.80	-165.00	-35.01	164.69	0.00	0.00	0.00
1,500.00	10.67	191.98	1,484.07	-183.12	-38.86	182.76	0.00	0.00	0.00
1,600.00	10.67	191.98	1,582.34	-201.23	-42.70	200.84	0.00	0.00	0.00
1,700.00	10.67	191.98	1,680.61	-219.34	-46.54	218.92	0.00	0.00	0.00
1,800.00	10.67	191.98	1,778.88	-237.45	-50.39	236.99	0.00	0.00	0.00
1,900.00	10.67	191.98	1,877.15	-255.56	-54.23	255.07	0.00	0.00	0.00
1,931.39	10.67	191.98	1,908.00	-261.25	-55.44	260.75	0.00	0.00	0.00
9 5/8"									
2,000.00	10.67	191.98	1,975.42	-273.68	-58.07	273.15	0.00	0.00	0.00
2,100.00	10.67	191.98	2,073.69	-291.79	-61.91	291.23	0.00	0.00	0.00
2,200.00	10.67	191.98	2,171.96	-309.90	-65.76	309.30	0.00	0.00	0.00
2,300.00	10.67	191.98	2,270.23	-328.01	-69.60	327.38	0.00	0.00	0.00
2,400.00	10.67	191.98	2,368.51	-346.12	-73.44	345.46	0.00	0.00	0.00
2,500.00	10.67	191.98	2,466.78	-364.24	-77.29	363.53	0.00	0.00	0.00
2,600.00	10.67	191.98	2,565.05	-382.35	-81.13	381.61	0.00	0.00	0.00
2,700.00	10.67	191.98	2,663.32	-400.46	-84.97	399.69	0.00	0.00	0.00
2,800.00	10.67	191.98	2,761.59	-418.57	-88.82	417.76	0.00	0.00	0.00
2,900.00	10.67	191.98	2,859.86	-436.68	-92.66	435.84	0.00	0.00	0.00
3,000.00	10.67	191.98	2,958.13	-454.80	-96.50	453.92	0.00	0.00	0.00
3,100.00	10.67	191.98	3,056.40	-472.91	-100.35	472.00	0.00	0.00	0.00
3,200.00	10.67	191.98	3,154.67	-491.02	-104.19	490.07	0.00	0.00	0.00
3,300.00	10.67	191.98	3,252.94	-509.13	-108.03	508.15	0.00	0.00	0.00
3,400.00	10.67	191.98	3,351.22	-527.24	-111.88	526.23	0.00	0.00	0.00
3,500.00	10.67	191.98	3,449.49	-545.36	-115.72	544.30	0.00	0.00	0.00
3,600.00	10.67	191.98	3,547.76	-563.47	-119.56	562.38	0.00	0.00	0.00
3,700.00	10.67	191.98	3,646.03	-581.58	-123.41	580.46	0.00	0.00	0.00
3,800.00	10.67	191.98	3,744.30	-599.69	-127.25	598.53	0.00	0.00	0.00
3,900.00	10.67	191.98	3,842.57	-617.80	-131.09	616.61	0.00	0.00	0.00
4,000.00	10.67	191.98	3,940.84	-635.91	-134.94	634.69	0.00	0.00	0.00
4,100.00	10.67	191.98	4,039.11	-654.03	-138.78	652.77	0.00	0.00	0.00
4,200.00	10.67	191.98	4,137.38	-672.14	-142.62	670.84	0.00	0.00	0.00
4,300.00	10.67	191.98	4,235.65	-690.25	-146.47	688.92	0.00	0.00	0.00
4,400.00	10.67	191.98	4,333.93	-708.36	-150.31	707.00	0.00	0.00	0.00
4,500.00	10.67	191.98	4,432.20	-726.47	-154.15	725.07	0.00	0.00	0.00
4,600.00	10.67	191.98	4,530.47	-744.59	-158.00	743.15	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 2536-06H	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	10.67	191.98	4,628.74	-762.70	-161.84	761.23	0.00	0.00	0.00
4,800.00	10.67	191.98	4,727.01	-780.81	-165.68	779.30	0.00	0.00	0.00
4,900.00	10.67	191.98	4,825.28	-798.92	-169.52	797.38	0.00	0.00	0.00
5,000.00	10.67	191.98	4,923.55	-817.03	-173.37	815.46	0.00	0.00	0.00
5,100.00	10.67	191.98	5,021.82	-835.15	-177.21	833.54	0.00	0.00	0.00
5,200.00	10.67	191.98	5,120.09	-853.26	-181.05	851.61	0.00	0.00	0.00
5,300.00	10.67	191.98	5,218.36	-871.37	-184.90	869.69	0.00	0.00	0.00
5,400.00	10.67	191.98	5,316.64	-889.48	-188.74	887.77	0.00	0.00	0.00
5,500.00	10.67	191.98	5,414.91	-907.59	-192.58	905.84	0.00	0.00	0.00
5,600.00	10.67	191.98	5,513.18	-925.71	-196.43	923.92	0.00	0.00	0.00
5,700.00	10.67	191.98	5,611.45	-943.82	-200.27	942.00	0.00	0.00	0.00
5,800.00	10.67	191.98	5,709.72	-961.93	-204.11	960.08	0.00	0.00	0.00
5,900.00	10.67	191.98	5,807.99	-980.04	-207.96	978.15	0.00	0.00	0.00
6,000.00	10.67	191.98	5,906.26	-998.15	-211.80	996.23	0.00	0.00	0.00
6,100.00	10.67	191.98	6,004.53	-1,016.27	-215.64	1,014.31	0.00	0.00	0.00
6,200.00	10.67	191.98	6,102.80	-1,034.38	-219.49	1,032.38	0.00	0.00	0.00
6,300.00	10.67	191.98	6,201.07	-1,052.49	-223.33	1,050.46	0.00	0.00	0.00
6,400.00	10.67	191.98	6,299.35	-1,070.60	-227.17	1,068.54	0.00	0.00	0.00
6,430.07	10.67	191.98	6,328.90	-1,076.05	-228.33	1,073.97	0.00	0.00	0.00
KOP @ 6430.07ft :: DLS = 9°/100'									
6,450.00	12.43	190.15	6,348.42	-1,079.96	-229.09	1,077.88	9.00	8.81	-9.20
6,500.00	16.87	187.22	6,396.78	-1,092.46	-230.95	1,090.36	9.00	8.88	-5.86
6,550.00	21.33	185.48	6,444.02	-1,108.72	-232.73	1,106.60	9.00	8.93	-3.47
6,600.00	25.81	184.33	6,489.84	-1,128.63	-234.42	1,126.50	9.00	8.95	-2.31
6,650.00	30.29	183.49	6,533.96	-1,152.08	-236.01	1,149.94	9.00	8.97	-1.67
6,700.00	34.78	182.86	6,576.10	-1,178.92	-237.49	1,176.76	9.00	8.97	-1.27
6,750.00	39.27	182.35	6,616.01	-1,208.99	-238.85	1,206.82	9.00	8.98	-1.01
6,800.00	43.76	181.93	6,653.44	-1,242.10	-240.08	1,239.91	9.00	8.98	-0.84
6,850.00	48.25	181.58	6,688.16	-1,278.04	-241.18	1,275.85	9.00	8.99	-0.71
6,900.00	52.74	181.27	6,719.96	-1,316.60	-242.13	1,314.39	9.00	8.99	-0.62
6,950.00	57.24	181.00	6,748.64	-1,357.54	-242.94	1,355.32	9.00	8.99	-0.55
7,000.00	61.73	180.75	6,774.02	-1,400.60	-243.59	1,398.37	9.00	8.99	-0.49
7,050.00	66.23	180.52	6,795.94	-1,445.51	-244.09	1,443.28	9.00	8.99	-0.45
7,100.00	70.73	180.31	6,814.28	-1,492.01	-244.42	1,489.78	9.00	8.99	-0.42
7,150.00	75.22	180.11	6,828.92	-1,539.81	-244.59	1,537.57	9.00	8.99	-0.40
7,200.00	79.72	179.92	6,839.77	-1,588.61	-244.60	1,586.37	9.00	8.99	-0.38
7,250.00	84.21	179.73	6,846.75	-1,638.10	-244.45	1,635.86	9.00	8.99	-0.37
7,300.00	88.71	179.55	6,849.84	-1,687.99	-244.14	1,685.75	9.00	8.99	-0.37
7,314.35	90.00	179.49	6,850.00	-1,702.34	-244.02	1,700.10	9.00	8.99	-0.37
TPZ @ 7314.35ft									
7,400.00	90.00	179.49	6,850.00	-1,787.99	-243.26	1,785.75	0.00	0.00	0.00
7,500.00	90.00	179.49	6,850.00	-1,887.98	-242.37	1,885.75	0.00	0.00	0.00
7,600.00	90.00	179.49	6,850.00	-1,987.98	-241.49	1,985.75	0.00	0.00	0.00
7,700.00	90.00	179.49	6,850.00	-2,087.98	-240.60	2,085.75	0.00	0.00	0.00
7,800.00	90.00	179.49	6,850.00	-2,187.97	-239.72	2,185.75	0.00	0.00	0.00
7,900.00	90.00	179.49	6,850.00	-2,287.97	-238.83	2,285.75	0.00	0.00	0.00
8,000.00	90.00	179.49	6,850.00	-2,387.97	-237.95	2,385.75	0.00	0.00	0.00
8,100.00	90.00	179.49	6,850.00	-2,487.96	-237.06	2,485.75	0.00	0.00	0.00
8,200.00	90.00	179.49	6,850.00	-2,587.96	-236.18	2,585.75	0.00	0.00	0.00
8,300.00	90.00	179.49	6,850.00	-2,687.95	-235.29	2,685.75	0.00	0.00	0.00
8,400.00	90.00	179.49	6,850.00	-2,787.95	-234.41	2,785.75	0.00	0.00	0.00
8,500.00	90.00	179.49	6,850.00	-2,887.95	-233.52	2,885.75	0.00	0.00	0.00
8,600.00	90.00	179.49	6,850.00	-2,987.94	-232.64	2,985.75	0.00	0.00	0.00
8,700.00	90.00	179.49	6,850.00	-3,087.94	-231.75	3,085.75	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-06H
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 2536-06H	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	179.49	6,850.00	-3,187.93	-230.87	3,185.75	0.00	0.00	0.00	
8,900.00	90.00	179.49	6,850.00	-3,287.93	-229.98	3,285.75	0.00	0.00	0.00	
9,000.00	90.00	179.49	6,850.00	-3,387.93	-229.10	3,385.75	0.00	0.00	0.00	
9,100.00	90.00	179.49	6,850.00	-3,487.92	-228.21	3,485.75	0.00	0.00	0.00	
9,200.00	90.00	179.49	6,850.00	-3,587.92	-227.33	3,585.75	0.00	0.00	0.00	
9,300.00	90.00	179.49	6,850.00	-3,687.91	-226.44	3,685.75	0.00	0.00	0.00	
9,400.00	90.00	179.49	6,850.00	-3,787.91	-225.56	3,785.75	0.00	0.00	0.00	
9,500.00	90.00	179.49	6,850.00	-3,887.91	-224.67	3,885.75	0.00	0.00	0.00	
9,600.00	90.00	179.49	6,850.00	-3,987.90	-223.79	3,985.75	0.00	0.00	0.00	
9,700.00	90.00	179.49	6,850.00	-4,087.90	-222.90	4,085.75	0.00	0.00	0.00	
9,800.00	90.00	179.49	6,850.00	-4,187.89	-222.02	4,185.75	0.00	0.00	0.00	
9,900.00	90.00	179.49	6,850.00	-4,287.89	-221.13	4,285.75	0.00	0.00	0.00	
10,000.00	90.00	179.49	6,850.00	-4,387.89	-220.25	4,385.75	0.00	0.00	0.00	
10,100.00	90.00	179.49	6,850.00	-4,487.88	-219.36	4,485.75	0.00	0.00	0.00	
10,200.00	90.00	179.49	6,850.00	-4,587.88	-218.48	4,585.75	0.00	0.00	0.00	
10,300.00	90.00	179.49	6,850.00	-4,687.88	-217.59	4,685.75	0.00	0.00	0.00	
10,400.00	90.00	179.49	6,850.00	-4,787.87	-216.71	4,785.75	0.00	0.00	0.00	
10,500.00	90.00	179.49	6,850.00	-4,887.87	-215.82	4,885.75	0.00	0.00	0.00	
10,600.00	90.00	179.49	6,850.00	-4,987.86	-214.94	4,985.75	0.00	0.00	0.00	
10,700.00	90.00	179.49	6,850.00	-5,087.86	-214.05	5,085.75	0.00	0.00	0.00	
10,800.00	90.00	179.49	6,850.00	-5,187.86	-213.17	5,185.75	0.00	0.00	0.00	
10,900.00	90.00	179.49	6,850.00	-5,287.85	-212.28	5,285.75	0.00	0.00	0.00	
11,000.00	90.00	179.49	6,850.00	-5,387.85	-211.40	5,385.75	0.00	0.00	0.00	
11,100.00	90.00	179.49	6,850.00	-5,487.84	-210.51	5,485.75	0.00	0.00	0.00	
11,200.00	90.00	179.49	6,850.00	-5,587.84	-209.63	5,585.75	0.00	0.00	0.00	
11,300.00	90.00	179.49	6,850.00	-5,687.84	-208.74	5,685.75	0.00	0.00	0.00	
11,400.00	90.00	179.49	6,850.00	-5,787.83	-207.86	5,785.75	0.00	0.00	0.00	
11,500.00	90.00	179.49	6,850.00	-5,887.83	-206.97	5,885.75	0.00	0.00	0.00	
11,600.00	90.00	179.49	6,850.00	-5,987.82	-206.09	5,985.75	0.00	0.00	0.00	
11,700.00	90.00	179.49	6,850.00	-6,087.82	-205.20	6,085.75	0.00	0.00	0.00	
11,800.00	90.00	179.49	6,850.00	-6,187.82	-204.32	6,185.75	0.00	0.00	0.00	
11,900.00	90.00	179.49	6,850.00	-6,287.81	-203.43	6,285.75	0.00	0.00	0.00	
12,000.00	90.00	179.49	6,850.00	-6,387.81	-202.55	6,385.75	0.00	0.00	0.00	
12,100.00	90.00	179.49	6,850.00	-6,487.80	-201.66	6,485.75	0.00	0.00	0.00	
12,200.00	90.00	179.49	6,850.00	-6,587.80	-200.78	6,585.75	0.00	0.00	0.00	
12,300.00	90.00	179.49	6,850.00	-6,687.80	-199.89	6,685.75	0.00	0.00	0.00	
12,400.00	90.00	179.49	6,850.00	-6,787.79	-199.01	6,785.75	0.00	0.00	0.00	
12,500.00	90.00	179.49	6,850.00	-6,887.79	-198.12	6,885.75	0.00	0.00	0.00	
12,600.00	90.00	179.49	6,850.00	-6,987.79	-197.24	6,985.75	0.00	0.00	0.00	
12,700.00	90.00	179.49	6,850.00	-7,087.78	-196.35	7,085.75	0.00	0.00	0.00	
12,800.00	90.00	179.49	6,850.00	-7,187.78	-195.47	7,185.75	0.00	0.00	0.00	
12,900.00	90.00	179.49	6,850.00	-7,287.77	-194.58	7,285.75	0.00	0.00	0.00	
13,000.00	90.00	179.49	6,850.00	-7,387.77	-193.70	7,385.75	0.00	0.00	0.00	
13,100.00	90.00	179.49	6,850.00	-7,487.77	-192.81	7,485.75	0.00	0.00	0.00	
13,200.00	90.00	179.49	6,850.00	-7,587.76	-191.93	7,585.75	0.00	0.00	0.00	
13,300.00	90.00	179.49	6,850.00	-7,687.76	-191.04	7,685.75	0.00	0.00	0.00	
13,400.00	90.00	179.49	6,850.00	-7,787.75	-190.16	7,785.75	0.00	0.00	0.00	
13,500.00	90.00	179.49	6,850.00	-7,887.75	-189.28	7,885.75	0.00	0.00	0.00	
13,600.00	90.00	179.49	6,850.00	-7,987.75	-188.39	7,985.75	0.00	0.00	0.00	
13,700.00	90.00	179.49	6,850.00	-8,087.74	-187.51	8,085.75	0.00	0.00	0.00	
13,800.00	90.00	179.49	6,850.00	-8,187.74	-186.62	8,185.75	0.00	0.00	0.00	
13,900.00	90.00	179.49	6,850.00	-8,287.73	-185.74	8,285.75	0.00	0.00	0.00	
14,000.00	90.00	179.49	6,850.00	-8,387.73	-184.85	8,385.75	0.00	0.00	0.00	
14,100.00	90.00	179.49	6,850.00	-8,487.73	-183.97	8,485.75	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well HELEN 2536-06H
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 2536-06H	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	179.49	6,850.00	-8,587.72	-183.08	8,585.75	0.00	0.00	0.00	
14,300.00	90.00	179.49	6,850.00	-8,687.72	-182.20	8,685.75	0.00	0.00	0.00	
14,400.00	90.00	179.49	6,850.00	-8,787.71	-181.31	8,785.75	0.00	0.00	0.00	
14,500.00	90.00	179.49	6,850.00	-8,887.71	-180.43	8,885.75	0.00	0.00	0.00	
14,600.00	90.00	179.49	6,850.00	-8,987.71	-179.54	8,985.75	0.00	0.00	0.00	
14,700.00	90.00	179.49	6,850.00	-9,087.70	-178.66	9,085.75	0.00	0.00	0.00	
14,800.00	90.00	179.49	6,850.00	-9,187.70	-177.77	9,185.75	0.00	0.00	0.00	
14,900.00	90.00	179.49	6,850.00	-9,287.70	-176.89	9,285.75	0.00	0.00	0.00	
15,000.00	90.00	179.49	6,850.00	-9,387.69	-176.00	9,385.75	0.00	0.00	0.00	
15,100.00	90.00	179.49	6,850.00	-9,487.69	-175.12	9,485.75	0.00	0.00	0.00	
15,200.00	90.00	179.49	6,850.00	-9,587.68	-174.23	9,585.75	0.00	0.00	0.00	
15,300.00	90.00	179.49	6,850.00	-9,687.68	-173.35	9,685.75	0.00	0.00	0.00	
15,400.00	90.00	179.49	6,850.00	-9,787.68	-172.46	9,785.75	0.00	0.00	0.00	
15,500.00	90.00	179.49	6,850.00	-9,887.67	-171.58	9,885.75	0.00	0.00	0.00	
15,600.00	90.00	179.49	6,850.00	-9,987.67	-170.69	9,985.75	0.00	0.00	0.00	
15,700.00	90.00	179.49	6,850.00	-10,087.66	-169.81	10,085.75	0.00	0.00	0.00	
15,800.00	90.00	179.49	6,850.00	-10,187.66	-168.92	10,185.75	0.00	0.00	0.00	
15,900.00	90.00	179.49	6,850.00	-10,287.66	-168.04	10,285.75	0.00	0.00	0.00	
16,000.00	90.00	179.49	6,850.00	-10,387.65	-167.15	10,385.75	0.00	0.00	0.00	
16,100.00	90.00	179.49	6,850.00	-10,487.65	-166.27	10,485.75	0.00	0.00	0.00	
16,200.00	90.00	179.49	6,850.00	-10,587.64	-165.38	10,585.75	0.00	0.00	0.00	
16,300.00	90.00	179.49	6,850.00	-10,687.64	-164.50	10,685.75	0.00	0.00	0.00	
16,400.00	90.00	179.49	6,850.00	-10,787.64	-163.61	10,785.75	0.00	0.00	0.00	
16,500.00	90.00	179.49	6,850.00	-10,887.63	-162.73	10,885.75	0.00	0.00	0.00	
16,600.00	90.00	179.49	6,850.00	-10,987.63	-161.84	10,985.75	0.00	0.00	0.00	
16,700.00	90.00	179.49	6,850.00	-11,087.62	-160.96	11,085.75	0.00	0.00	0.00	
16,800.00	90.00	179.49	6,850.00	-11,187.62	-160.07	11,185.75	0.00	0.00	0.00	
16,900.00	90.00	179.49	6,850.00	-11,287.62	-159.19	11,285.75	0.00	0.00	0.00	
16,966.56	90.00	179.49	6,850.00	-11,354.17	-158.60	11,352.31	0.00	0.00	0.00	
BPZ @ 16966.56ft										
17,000.00	90.00	179.49	6,850.00	-11,387.61	-158.30	11,385.75	0.00	0.00	0.00	
17,056.54	90.00	179.49	6,850.00	-11,444.15	-157.80	11,442.29	0.00	0.00	0.00	
TD Well @ 17056.54ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,931.39	1,908.00	9 5/8"		9-5/8	13-1/2

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
223.00	223.00	+N/-S (usft)	+E/-W (usft)	Begin Nudge @ 223.00ft	
756.50	753.42	-48.45	-10.28	Hold Tangent @ 756.50ft	
6,430.07	6,328.90	-1,076.05	-228.33	KOP @ 6430.07ft :: DLS = 9°/100'	
7,314.35	6,850.00	-1,702.34	-244.02	TPZ @ 7314.35ft	
16,966.56	6,850.00	-11,354.17	-158.60	BPZ @ 16966.56ft	
17,056.54	6,850.00	-11,444.15	-157.80	TD Well @ 17056.54ft	