

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 RAMEN 1423 PAD

RAMEN 1423-05H

Plan B

Plan: Permit Rev-1

Standard Planning Report

17 August, 2023

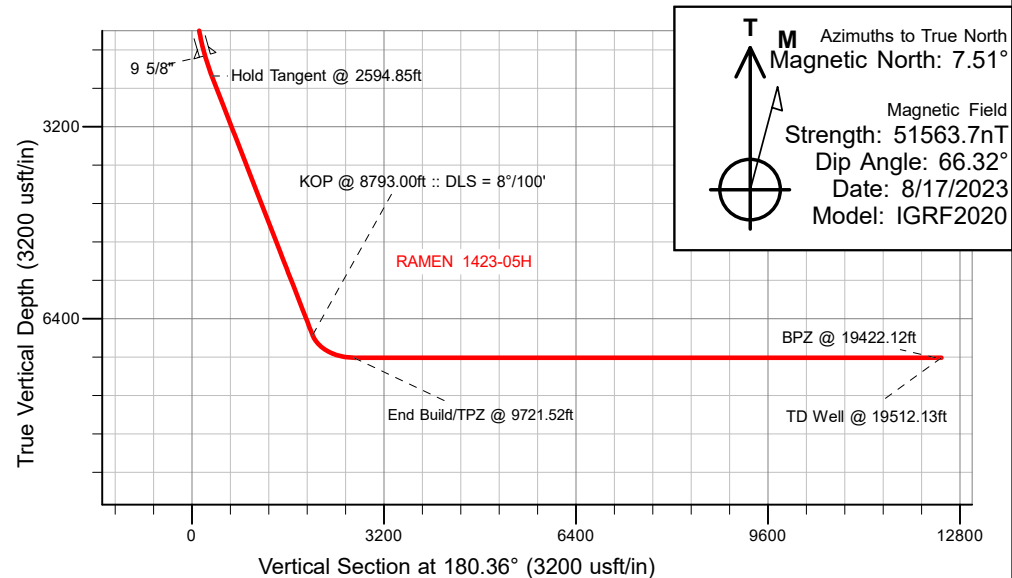
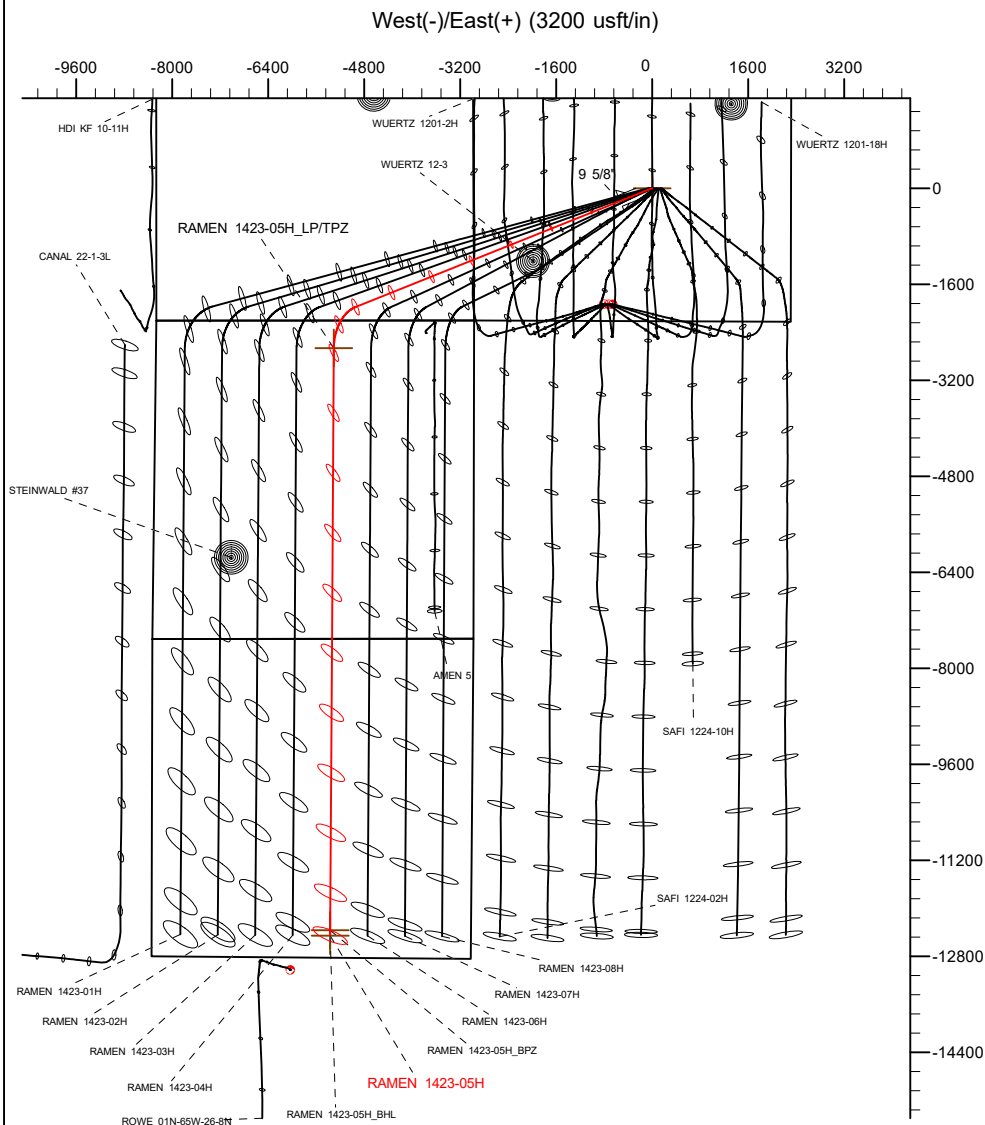
VERDAD RESOURCES

CASING DETAILS			
TVD 2020.00	MD 2144.69	Name 9 5/8"	Size 9-5/8

SHL	LP/TPZ	BPZ	BHL
2215' FSL	460' FNL	460' FSL	370' FSL
2315' FEL	2339' FEL	2345' FEL	2345' FEL

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	
300.85	0.00	0.00	300.85	0.00	0.00	0.00	0.00	0.00	
2594.85	45.88	248.19	2357.43	-323.39	-808.12	2.00	248.19	328.46	
8793.00	45.88	248.19	6672.36	-1976.53	-4939.18	0.00	0.00	2007.52	
9721.52	90.00	180.36	7050.00	-2663.66	-5304.14	8.00	-74.16	2696.94	
19512.13	90.00	180.36	7050.00	-12454.07	-5365.79	0.00	0.00	12487.54	RAMEN 1423-05H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	Northing	Easting	Latitude	Longitude	
RAMEN 1423-05H_SHL	0.00	1267694.37	3248826.43	40.064787	-104.610962	
RAMEN 1423-05H_LP/TPZ	7050.00	1264977.71	3243549.36	40.057473	-104.629911	
RAMEN 1423-05H_BPZ	7050.00	1255277.13	3243585.44	40.030844	-104.630122	
RAMEN 1423-05H_BHL	7050.00	1255187.13	3243585.77	40.030597	-104.630124	



WELL DETAILS: RAMEN 1423-05H	
GL = 4971'	
RKB = 24' @ 4995.00usft (RIG)	
Plan: Permit Rev-1 (RAMEN 1423-05H/Plan B)	
Date:	8/17/2023

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-05H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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-65W-12 RAMEN 1423 PAD				
Site Position:		Northing:	1,267,694.08	usft	Latitude:	40.064787
From:	Map	Easting:	3,248,778.43	usft	Longitude:	-104.611134
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"

Well		RAMEN 1423-05H				
Well Position	+N/-S	0.00 usft	Northing:	1,267,694.37 usft	Latitude:	40.064787
	+E/-W	0.00 usft	Easting:	3,248,826.43 usft	Longitude:	-104.610962
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,971.00 usft
Grid Convergence:		0.57 °				

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	8/17/2023	7.51	66.32	51,563.65840570

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	180.36	

Plan Survey Tool Program		Date	8/17/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,020.00	Permit Rev-1 (Plan B)	ISCWSA MWD	Fixed:v2:standard declination
2	2,020.00	19,512.13	Permit Rev-1 (Plan B)	ISCWSA MWD	Fixed:v2:standard declination

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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	
300.85	0.00	0.00	300.85	0.00	0.00	0.00	0.00	0.00	0.00	
2,594.85	45.88	248.19	2,357.43	-323.39	-808.12	2.00	2.00	0.00	248.19	
8,793.00	45.88	248.19	6,672.36	-1,976.53	-4,939.18	0.00	0.00	0.00	0.00	
9,721.52	90.00	180.36	7,050.00	-2,663.66	-5,304.14	8.00	4.75	-7.31	-74.16	
19,512.13	90.00	180.36	7,050.00	-12,454.07	-5,365.79	0.00	0.00	0.00	0.00	RAMEN 1423-05H_B

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.85	0.00	0.00	300.85	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 300.85ft									
400.00	1.98	248.19	399.98	-0.64	-1.59	0.65	2.00	2.00	0.00
500.00	3.98	248.19	499.84	-2.57	-6.42	2.61	2.00	2.00	0.00
600.00	5.98	248.19	599.46	-5.80	-14.49	5.89	2.00	2.00	0.00
700.00	7.98	248.19	698.71	-10.31	-25.77	10.48	2.00	2.00	0.00
800.00	9.98	248.19	797.48	-16.12	-40.27	16.37	2.00	2.00	0.00
900.00	11.98	248.19	895.64	-23.19	-57.96	23.56	2.00	2.00	0.00
1,000.00	13.98	248.19	993.08	-31.54	-78.81	32.03	2.00	2.00	0.00
1,100.00	15.98	248.19	1,089.68	-41.14	-102.82	41.79	2.00	2.00	0.00
1,200.00	17.98	248.19	1,185.31	-52.00	-129.93	52.81	2.00	2.00	0.00
1,300.00	19.98	248.19	1,279.87	-64.08	-160.13	65.09	2.00	2.00	0.00
1,400.00	21.98	248.19	1,373.23	-77.38	-193.38	78.60	2.00	2.00	0.00
1,500.00	23.98	248.19	1,465.29	-91.89	-229.62	93.33	2.00	2.00	0.00
1,600.00	25.98	248.19	1,555.93	-107.58	-268.83	109.27	2.00	2.00	0.00
1,700.00	27.98	248.19	1,645.04	-124.44	-310.96	126.39	2.00	2.00	0.00
1,800.00	29.98	248.19	1,732.51	-142.44	-355.94	144.67	2.00	2.00	0.00
1,900.00	31.98	248.19	1,818.24	-161.56	-403.73	164.10	2.00	2.00	0.00
2,000.00	33.98	248.19	1,902.11	-181.79	-454.27	184.64	2.00	2.00	0.00
2,100.00	35.98	248.19	1,984.04	-203.09	-507.50	206.27	2.00	2.00	0.00
2,144.69	36.88	248.19	2,020.00	-212.95	-532.14	216.29	2.00	2.00	0.00
9 5/8"									
2,200.00	37.98	248.19	2,063.92	-225.44	-563.35	228.97	2.00	2.00	0.00
2,300.00	39.98	248.19	2,141.65	-248.81	-621.75	252.71	2.00	2.00	0.00
2,400.00	41.98	248.19	2,217.14	-273.17	-682.64	277.46	2.00	2.00	0.00
2,500.00	43.98	248.19	2,290.29	-298.50	-745.93	303.18	2.00	2.00	0.00
2,594.85	45.88	248.19	2,357.43	-323.39	-808.12	328.46	2.00	2.00	0.00
Hold Tangent @ 2594.85ft									
2,600.00	45.88	248.19	2,361.02	-324.76	-811.56	329.86	0.00	0.00	0.00
2,700.00	45.88	248.19	2,430.64	-351.43	-878.21	356.95	0.00	0.00	0.00
2,800.00	45.88	248.19	2,500.25	-378.11	-944.86	384.04	0.00	0.00	0.00
2,900.00	45.88	248.19	2,569.87	-404.78	-1,011.51	411.13	0.00	0.00	0.00
3,000.00	45.88	248.19	2,639.48	-431.45	-1,078.15	438.22	0.00	0.00	0.00
3,100.00	45.88	248.19	2,709.10	-458.12	-1,144.80	465.30	0.00	0.00	0.00
3,200.00	45.88	248.19	2,778.72	-484.79	-1,211.45	492.39	0.00	0.00	0.00
3,300.00	45.88	248.19	2,848.33	-511.46	-1,278.10	519.48	0.00	0.00	0.00
3,400.00	45.88	248.19	2,917.95	-538.14	-1,344.75	546.57	0.00	0.00	0.00
3,500.00	45.88	248.19	2,987.57	-564.81	-1,411.40	573.66	0.00	0.00	0.00
3,600.00	45.88	248.19	3,057.18	-591.48	-1,478.05	600.75	0.00	0.00	0.00
3,700.00	45.88	248.19	3,126.80	-618.15	-1,544.70	627.84	0.00	0.00	0.00
3,800.00	45.88	248.19	3,196.42	-644.82	-1,611.35	654.93	0.00	0.00	0.00
3,900.00	45.88	248.19	3,266.03	-671.49	-1,678.00	682.02	0.00	0.00	0.00
4,000.00	45.88	248.19	3,335.65	-698.16	-1,744.65	709.11	0.00	0.00	0.00
4,100.00	45.88	248.19	3,405.26	-724.84	-1,811.30	736.20	0.00	0.00	0.00
4,200.00	45.88	248.19	3,474.88	-751.51	-1,877.95	763.29	0.00	0.00	0.00
4,300.00	45.88	248.19	3,544.50	-778.18	-1,944.60	790.38	0.00	0.00	0.00
4,400.00	45.88	248.19	3,614.11	-804.85	-2,011.25	817.47	0.00	0.00	0.00
4,500.00	45.88	248.19	3,683.73	-831.52	-2,077.90	844.56	0.00	0.00	0.00
4,600.00	45.88	248.19	3,753.35	-858.19	-2,144.55	871.65	0.00	0.00	0.00
4,700.00	45.88	248.19	3,822.96	-884.87	-2,211.20	898.74	0.00	0.00	0.00

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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	45.88	248.19	3,892.58	-911.54	-2,277.85	925.83	0.00	0.00	0.00
4,900.00	45.88	248.19	3,962.20	-938.21	-2,344.50	952.92	0.00	0.00	0.00
5,000.00	45.88	248.19	4,031.81	-964.88	-2,411.15	980.01	0.00	0.00	0.00
5,100.00	45.88	248.19	4,101.43	-991.55	-2,477.80	1,007.10	0.00	0.00	0.00
5,200.00	45.88	248.19	4,171.04	-1,018.22	-2,544.45	1,034.19	0.00	0.00	0.00
5,300.00	45.88	248.19	4,240.66	-1,044.89	-2,611.10	1,061.28	0.00	0.00	0.00
5,400.00	45.88	248.19	4,310.28	-1,071.57	-2,677.75	1,088.37	0.00	0.00	0.00
5,500.00	45.88	248.19	4,379.89	-1,098.24	-2,744.40	1,115.46	0.00	0.00	0.00
5,600.00	45.88	248.19	4,449.51	-1,124.91	-2,811.05	1,142.55	0.00	0.00	0.00
5,700.00	45.88	248.19	4,519.13	-1,151.58	-2,877.70	1,169.64	0.00	0.00	0.00
5,800.00	45.88	248.19	4,588.74	-1,178.25	-2,944.35	1,196.73	0.00	0.00	0.00
5,900.00	45.88	248.19	4,658.36	-1,204.92	-3,011.00	1,223.82	0.00	0.00	0.00
6,000.00	45.88	248.19	4,727.98	-1,231.59	-3,077.65	1,250.91	0.00	0.00	0.00
6,100.00	45.88	248.19	4,797.59	-1,258.27	-3,144.30	1,278.00	0.00	0.00	0.00
6,200.00	45.88	248.19	4,867.21	-1,284.94	-3,210.95	1,305.09	0.00	0.00	0.00
6,300.00	45.88	248.19	4,936.82	-1,311.61	-3,277.60	1,332.18	0.00	0.00	0.00
6,400.00	45.88	248.19	5,006.44	-1,338.28	-3,344.25	1,359.27	0.00	0.00	0.00
6,500.00	45.88	248.19	5,076.06	-1,364.95	-3,410.90	1,386.36	0.00	0.00	0.00
6,600.00	45.88	248.19	5,145.67	-1,391.62	-3,477.55	1,413.45	0.00	0.00	0.00
6,700.00	45.88	248.19	5,215.29	-1,418.30	-3,544.20	1,440.54	0.00	0.00	0.00
6,800.00	45.88	248.19	5,284.91	-1,444.97	-3,610.85	1,467.63	0.00	0.00	0.00
6,900.00	45.88	248.19	5,354.52	-1,471.64	-3,677.50	1,494.72	0.00	0.00	0.00
7,000.00	45.88	248.19	5,424.14	-1,498.31	-3,744.15	1,521.81	0.00	0.00	0.00
7,100.00	45.88	248.19	5,493.76	-1,524.98	-3,810.80	1,548.90	0.00	0.00	0.00
7,200.00	45.88	248.19	5,563.37	-1,551.65	-3,877.45	1,575.98	0.00	0.00	0.00
7,300.00	45.88	248.19	5,632.99	-1,578.32	-3,944.10	1,603.07	0.00	0.00	0.00
7,400.00	45.88	248.19	5,702.60	-1,605.00	-4,010.75	1,630.16	0.00	0.00	0.00
7,500.00	45.88	248.19	5,772.22	-1,631.67	-4,077.40	1,657.25	0.00	0.00	0.00
7,600.00	45.88	248.19	5,841.84	-1,658.34	-4,144.05	1,684.34	0.00	0.00	0.00
7,700.00	45.88	248.19	5,911.45	-1,685.01	-4,210.70	1,711.43	0.00	0.00	0.00
7,800.00	45.88	248.19	5,981.07	-1,711.68	-4,277.35	1,738.52	0.00	0.00	0.00
7,900.00	45.88	248.19	6,050.69	-1,738.35	-4,344.00	1,765.61	0.00	0.00	0.00
8,000.00	45.88	248.19	6,120.30	-1,765.03	-4,410.64	1,792.70	0.00	0.00	0.00
8,100.00	45.88	248.19	6,189.92	-1,791.70	-4,477.29	1,819.79	0.00	0.00	0.00
8,200.00	45.88	248.19	6,259.53	-1,818.37	-4,543.94	1,846.88	0.00	0.00	0.00
8,300.00	45.88	248.19	6,329.15	-1,845.04	-4,610.59	1,873.97	0.00	0.00	0.00
8,400.00	45.88	248.19	6,398.77	-1,871.71	-4,677.24	1,901.06	0.00	0.00	0.00
8,500.00	45.88	248.19	6,468.38	-1,898.38	-4,743.89	1,928.15	0.00	0.00	0.00
8,600.00	45.88	248.19	6,538.00	-1,925.05	-4,810.54	1,955.24	0.00	0.00	0.00
8,700.00	45.88	248.19	6,607.62	-1,951.73	-4,877.19	1,982.33	0.00	0.00	0.00
8,793.00	45.88	248.19	6,672.36	-1,976.53	-4,939.18	2,007.52	0.00	0.00	0.00
KOP @ 8793.00ft :: DLS = 8"/100'									
8,800.00	46.04	247.44	6,677.23	-1,978.43	-4,943.84	2,009.45	8.00	2.22	-10.69
8,850.00	47.28	242.21	6,711.56	-1,993.90	-4,976.72	2,025.13	8.00	2.49	-10.45
8,900.00	48.76	237.21	6,745.01	-2,012.65	-5,008.78	2,044.08	8.00	2.95	-10.01
8,950.00	50.44	232.44	6,777.43	-2,034.59	-5,039.88	2,066.21	8.00	3.36	-9.53
9,000.00	52.31	227.92	6,808.65	-2,059.60	-5,069.85	2,091.42	8.00	3.73	-9.06
9,050.00	54.34	223.62	6,838.52	-2,087.58	-5,098.56	2,119.57	8.00	4.06	-8.60
9,100.00	56.51	219.54	6,866.90	-2,118.38	-5,125.85	2,150.54	8.00	4.35	-8.15
9,150.00	58.82	215.67	6,893.65	-2,151.84	-5,151.61	2,184.17	8.00	4.61	-7.74
9,200.00	61.23	211.99	6,918.64	-2,187.82	-5,175.70	2,220.30	8.00	4.83	-7.37
9,250.00	63.74	208.47	6,941.74	-2,226.13	-5,198.00	2,258.75	8.00	5.02	-7.03
9,300.00	66.33	205.11	6,962.85	-2,266.59	-5,218.42	2,299.33	8.00	5.18	-6.73
9,350.00	68.99	201.88	6,981.86	-2,309.00	-5,236.84	2,341.85	8.00	5.32	-6.46

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-05H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
9,400.00	71.71	198.76	6,998.68	-2,353.15	-5,253.17	2,386.11	8.00	5.44	-6.23
9,450.00	74.47	195.74	7,013.22	-2,398.82	-5,267.35	2,431.87	8.00	5.54	-6.04
9,500.00	77.28	192.81	7,025.42	-2,445.81	-5,279.30	2,478.93	8.00	5.62	-5.88
9,550.00	80.12	189.93	7,035.22	-2,493.87	-5,288.96	2,527.05	8.00	5.68	-5.75
9,600.00	82.99	187.11	7,042.56	-2,542.77	-5,296.28	2,576.00	8.00	5.73	-5.65
9,650.00	85.87	184.32	7,047.42	-2,592.27	-5,301.23	2,625.53	8.00	5.76	-5.58
9,700.00	88.75	181.55	7,049.77	-2,642.14	-5,303.78	2,675.42	8.00	5.78	-5.54
9,721.52	90.00	180.36	7,050.00	-2,663.66	-5,304.14	2,696.94	8.00	5.79	-5.53
End Build/TPZ @ 9721.52ft									
9,800.00	90.00	180.36	7,050.00	-2,742.14	-5,304.64	2,775.41	0.00	0.00	0.00
9,900.00	90.00	180.36	7,050.00	-2,842.14	-5,305.27	2,875.41	0.00	0.00	0.00
10,000.00	90.00	180.36	7,050.00	-2,942.13	-5,305.90	2,975.41	0.00	0.00	0.00
10,100.00	90.00	180.36	7,050.00	-3,042.13	-5,306.52	3,075.41	0.00	0.00	0.00
10,200.00	90.00	180.36	7,050.00	-3,142.13	-5,307.15	3,175.41	0.00	0.00	0.00
10,300.00	90.00	180.36	7,050.00	-3,242.13	-5,307.78	3,275.41	0.00	0.00	0.00
10,400.00	90.00	180.36	7,050.00	-3,342.13	-5,308.41	3,375.41	0.00	0.00	0.00
10,500.00	90.00	180.36	7,050.00	-3,442.12	-5,309.04	3,475.41	0.00	0.00	0.00
10,600.00	90.00	180.36	7,050.00	-3,542.12	-5,309.67	3,575.41	0.00	0.00	0.00
10,700.00	90.00	180.36	7,050.00	-3,642.12	-5,310.30	3,675.41	0.00	0.00	0.00
10,800.00	90.00	180.36	7,050.00	-3,742.12	-5,310.93	3,775.41	0.00	0.00	0.00
10,900.00	90.00	180.36	7,050.00	-3,842.12	-5,311.56	3,875.41	0.00	0.00	0.00
11,000.00	90.00	180.36	7,050.00	-3,942.11	-5,312.19	3,975.41	0.00	0.00	0.00
11,100.00	90.00	180.36	7,050.00	-4,042.11	-5,312.82	4,075.41	0.00	0.00	0.00
11,200.00	90.00	180.36	7,050.00	-4,142.11	-5,313.45	4,175.41	0.00	0.00	0.00
11,300.00	90.00	180.36	7,050.00	-4,242.11	-5,314.08	4,275.41	0.00	0.00	0.00
11,400.00	90.00	180.36	7,050.00	-4,342.11	-5,314.71	4,375.41	0.00	0.00	0.00
11,500.00	90.00	180.36	7,050.00	-4,442.10	-5,315.34	4,475.41	0.00	0.00	0.00
11,600.00	90.00	180.36	7,050.00	-4,542.10	-5,315.97	4,575.41	0.00	0.00	0.00
11,700.00	90.00	180.36	7,050.00	-4,642.10	-5,316.60	4,675.41	0.00	0.00	0.00
11,800.00	90.00	180.36	7,050.00	-4,742.10	-5,317.23	4,775.41	0.00	0.00	0.00
11,900.00	90.00	180.36	7,050.00	-4,842.10	-5,317.86	4,875.41	0.00	0.00	0.00
12,000.00	90.00	180.36	7,050.00	-4,942.09	-5,318.49	4,975.41	0.00	0.00	0.00
12,100.00	90.00	180.36	7,050.00	-5,042.09	-5,319.12	5,075.41	0.00	0.00	0.00
12,200.00	90.00	180.36	7,050.00	-5,142.09	-5,319.75	5,175.41	0.00	0.00	0.00
12,300.00	90.00	180.36	7,050.00	-5,242.09	-5,320.38	5,275.41	0.00	0.00	0.00
12,400.00	90.00	180.36	7,050.00	-5,342.09	-5,321.01	5,375.41	0.00	0.00	0.00
12,500.00	90.00	180.36	7,050.00	-5,442.08	-5,321.64	5,475.41	0.00	0.00	0.00
12,600.00	90.00	180.36	7,050.00	-5,542.08	-5,322.27	5,575.41	0.00	0.00	0.00
12,700.00	90.00	180.36	7,050.00	-5,642.08	-5,322.90	5,675.41	0.00	0.00	0.00
12,800.00	90.00	180.36	7,050.00	-5,742.08	-5,323.53	5,775.41	0.00	0.00	0.00
12,900.00	90.00	180.36	7,050.00	-5,842.08	-5,324.16	5,875.41	0.00	0.00	0.00
13,000.00	90.00	180.36	7,050.00	-5,942.07	-5,324.79	5,975.41	0.00	0.00	0.00
13,100.00	90.00	180.36	7,050.00	-6,042.07	-5,325.41	6,075.41	0.00	0.00	0.00
13,200.00	90.00	180.36	7,050.00	-6,142.07	-5,326.04	6,175.41	0.00	0.00	0.00
13,300.00	90.00	180.36	7,050.00	-6,242.07	-5,326.67	6,275.41	0.00	0.00	0.00
13,400.00	90.00	180.36	7,050.00	-6,342.07	-5,327.30	6,375.41	0.00	0.00	0.00
13,500.00	90.00	180.36	7,050.00	-6,442.06	-5,327.93	6,475.41	0.00	0.00	0.00
13,600.00	90.00	180.36	7,050.00	-6,542.06	-5,328.56	6,575.41	0.00	0.00	0.00
13,700.00	90.00	180.36	7,050.00	-6,642.06	-5,329.19	6,675.41	0.00	0.00	0.00
13,800.00	90.00	180.36	7,050.00	-6,742.06	-5,329.82	6,775.41	0.00	0.00	0.00
13,900.00	90.00	180.36	7,050.00	-6,842.06	-5,330.45	6,875.41	0.00	0.00	0.00
14,000.00	90.00	180.36	7,050.00	-6,942.05	-5,331.08	6,975.41	0.00	0.00	0.00
14,100.00	90.00	180.36	7,050.00	-7,042.05	-5,331.71	7,075.41	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-05H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)	
14,200.00	90.00	180.36	7,050.00	-7,142.05	-5,332.34	7,175.41	0.00	0.00	0.00	
14,300.00	90.00	180.36	7,050.00	-7,242.05	-5,332.97	7,275.41	0.00	0.00	0.00	
14,400.00	90.00	180.36	7,050.00	-7,342.05	-5,333.60	7,375.41	0.00	0.00	0.00	
14,500.00	90.00	180.36	7,050.00	-7,442.04	-5,334.23	7,475.41	0.00	0.00	0.00	
14,600.00	90.00	180.36	7,050.00	-7,542.04	-5,334.86	7,575.41	0.00	0.00	0.00	
14,700.00	90.00	180.36	7,050.00	-7,642.04	-5,335.49	7,675.41	0.00	0.00	0.00	
14,800.00	90.00	180.36	7,050.00	-7,742.04	-5,336.12	7,775.41	0.00	0.00	0.00	
14,900.00	90.00	180.36	7,050.00	-7,842.04	-5,336.75	7,875.41	0.00	0.00	0.00	
15,000.00	90.00	180.36	7,050.00	-7,942.03	-5,337.38	7,975.41	0.00	0.00	0.00	
15,100.00	90.00	180.36	7,050.00	-8,042.03	-5,338.01	8,075.41	0.00	0.00	0.00	
15,200.00	90.00	180.36	7,050.00	-8,142.03	-5,338.64	8,175.41	0.00	0.00	0.00	
15,300.00	90.00	180.36	7,050.00	-8,242.03	-5,339.27	8,275.41	0.00	0.00	0.00	
15,400.00	90.00	180.36	7,050.00	-8,342.03	-5,339.90	8,375.41	0.00	0.00	0.00	
15,500.00	90.00	180.36	7,050.00	-8,442.02	-5,340.53	8,475.41	0.00	0.00	0.00	
15,600.00	90.00	180.36	7,050.00	-8,542.02	-5,341.16	8,575.41	0.00	0.00	0.00	
15,700.00	90.00	180.36	7,050.00	-8,642.02	-5,341.79	8,675.41	0.00	0.00	0.00	
15,800.00	90.00	180.36	7,050.00	-8,742.02	-5,342.42	8,775.41	0.00	0.00	0.00	
15,900.00	90.00	180.36	7,050.00	-8,842.02	-5,343.05	8,875.41	0.00	0.00	0.00	
16,000.00	90.00	180.36	7,050.00	-8,942.01	-5,343.68	8,975.41	0.00	0.00	0.00	
16,100.00	90.00	180.36	7,050.00	-9,042.01	-5,344.30	9,075.41	0.00	0.00	0.00	
16,200.00	90.00	180.36	7,050.00	-9,142.01	-5,344.93	9,175.41	0.00	0.00	0.00	
16,300.00	90.00	180.36	7,050.00	-9,242.01	-5,345.56	9,275.41	0.00	0.00	0.00	
16,400.00	90.00	180.36	7,050.00	-9,342.01	-5,346.19	9,375.41	0.00	0.00	0.00	
16,500.00	90.00	180.36	7,050.00	-9,442.00	-5,346.82	9,475.41	0.00	0.00	0.00	
16,600.00	90.00	180.36	7,050.00	-9,542.00	-5,347.45	9,575.41	0.00	0.00	0.00	
16,700.00	90.00	180.36	7,050.00	-9,642.00	-5,348.08	9,675.41	0.00	0.00	0.00	
16,800.00	90.00	180.36	7,050.00	-9,742.00	-5,348.71	9,775.41	0.00	0.00	0.00	
16,900.00	90.00	180.36	7,050.00	-9,842.00	-5,349.34	9,875.41	0.00	0.00	0.00	
17,000.00	90.00	180.36	7,050.00	-9,941.99	-5,349.97	9,975.41	0.00	0.00	0.00	
17,100.00	90.00	180.36	7,050.00	-10,041.99	-5,350.60	10,075.41	0.00	0.00	0.00	
17,200.00	90.00	180.36	7,050.00	-10,141.99	-5,351.23	10,175.41	0.00	0.00	0.00	
17,300.00	90.00	180.36	7,050.00	-10,241.99	-5,351.86	10,275.41	0.00	0.00	0.00	
17,400.00	90.00	180.36	7,050.00	-10,341.99	-5,352.49	10,375.41	0.00	0.00	0.00	
17,500.00	90.00	180.36	7,050.00	-10,441.98	-5,353.12	10,475.41	0.00	0.00	0.00	
17,600.00	90.00	180.36	7,050.00	-10,541.98	-5,353.75	10,575.41	0.00	0.00	0.00	
17,700.00	90.00	180.36	7,050.00	-10,641.98	-5,354.38	10,675.41	0.00	0.00	0.00	
17,800.00	90.00	180.36	7,050.00	-10,741.98	-5,355.01	10,775.41	0.00	0.00	0.00	
17,900.00	90.00	180.36	7,050.00	-10,841.98	-5,355.64	10,875.41	0.00	0.00	0.00	
18,000.00	90.00	180.36	7,050.00	-10,941.98	-5,356.27	10,975.41	0.00	0.00	0.00	
18,100.00	90.00	180.36	7,050.00	-11,041.97	-5,356.90	11,075.41	0.00	0.00	0.00	
18,200.00	90.00	180.36	7,050.00	-11,141.97	-5,357.53	11,175.41	0.00	0.00	0.00	
18,300.00	90.00	180.36	7,050.00	-11,241.97	-5,358.16	11,275.41	0.00	0.00	0.00	
18,400.00	90.00	180.36	7,050.00	-11,341.97	-5,358.79	11,375.41	0.00	0.00	0.00	
18,500.00	90.00	180.36	7,050.00	-11,441.97	-5,359.42	11,475.41	0.00	0.00	0.00	
18,600.00	90.00	180.36	7,050.00	-11,541.96	-5,360.05	11,575.41	0.00	0.00	0.00	
18,700.00	90.00	180.36	7,050.00	-11,641.96	-5,360.68	11,675.41	0.00	0.00	0.00	
18,800.00	90.00	180.36	7,050.00	-11,741.96	-5,361.31	11,775.41	0.00	0.00	0.00	
18,900.00	90.00	180.36	7,050.00	-11,841.96	-5,361.94	11,875.41	0.00	0.00	0.00	
19,000.00	90.00	180.36	7,050.00	-11,941.96	-5,362.57	11,975.41	0.00	0.00	0.00	
19,100.00	90.00	180.36	7,050.00	-12,041.95	-5,363.19	12,075.41	0.00	0.00	0.00	
19,200.00	90.00	180.36	7,050.00	-12,141.95	-5,363.82	12,175.41	0.00	0.00	0.00	
19,300.00	90.00	180.36	7,050.00	-12,241.95	-5,364.45	12,275.41	0.00	0.00	0.00	
19,400.00	90.00	180.36	7,050.00	-12,341.95	-5,365.08	12,375.41	0.00	0.00	0.00	
19,422.12	90.00	180.36	7,050.00	-12,364.07	-5,365.22	12,397.53	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-05H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
BPZ @ 19422.12ft									
19,500.00	90.00	180.36	7,050.00	-12,441.95	-5,365.71	12,475.41	0.00	0.00	0.00
19,512.13	90.00	180.36	7,050.00	-12,454.07	-5,365.79	12,487.54	0.00	0.00	0.00
TD Well @ 19512.13ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,144.69	2,020.00	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)	
300.85	300.85	0.00	0.00	Begin Nudge @ 300.85ft
2,594.85	2,357.43	-323.39	-808.12	Hold Tangent @ 2594.85ft
8,793.00	6,672.36	-1,976.53	-4,939.18	KOP @ 8793.00ft :: DLS = 8°/100'
9,721.52	7,050.00	-2,663.66	-5,304.14	End Build/TPZ @ 9721.52ft
19,422.12	7,050.00	-12,364.07	-5,365.22	BPZ @ 19422.12ft
19,512.13	7,050.00	-12,454.07	-5,365.79	TD Well @ 19512.13ft