

VERDAD RESOURCES

**WATTENBERG FIELD
1N-64W-19 CHIVE & SHALLOT PAD
CHIVE 2536-11H**

Plan A

Plan: Design #1

Standard Planning Report

19 May, 2023

Project: WATTENBERG FIELD
Site: 1N-64W-19 CHIVE & SHALLOT PAD
Well: CHIVE 2536-11H
Wellbore: Plan A
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
2070.00	2231.30	9 5/8"	9-5/8

SHL
1875' FSL
1611' FWL

LP/TPZ
460' FNL
1099' FWL

BPZ
460' FSL
1097' FWL

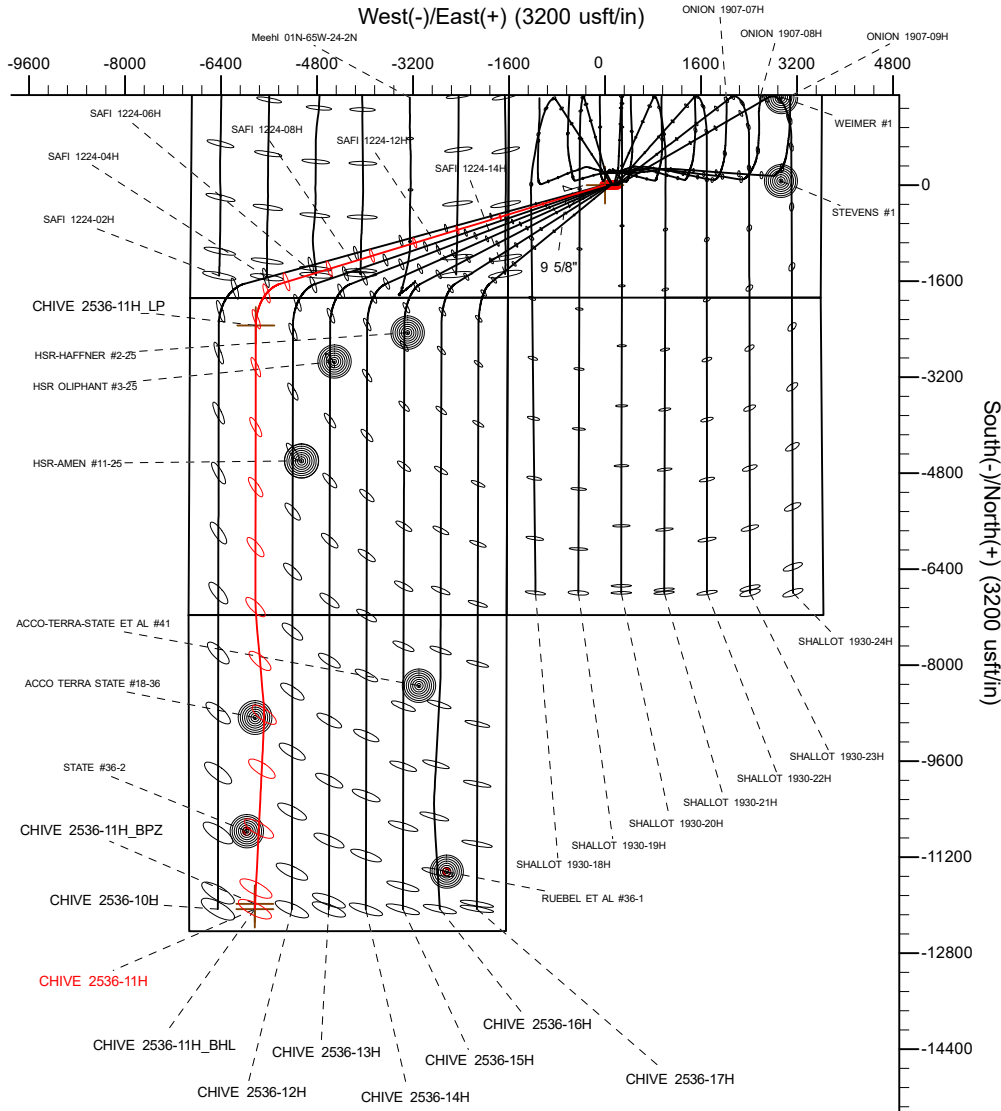
BHL
370' FSL
1097' FWL

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
219.60	0.00	0.00	219.60	0.00	0.00	0.00	0.00	0.00	
2626.10	48.13	253.11	2352.90	-276.79	-911.61	2.00	253.11	278.39	
8939.62	48.13	253.11	6566.81	-1642.73	-5410.24	0.00	0.00	1652.17	
9907.52	90.00	180.10	6950.00	-2341.05	-5820.32	8.00	-78.47	2351.20	
14500.00	90.00	180.10	6950.00	-6933.52	-5828.34	0.00	0.00	6943.68	
14755.00	90.00	175.00	6950.00	-7188.20	-5817.44	2.00	-90.00	7198.34	
16180.00	90.00	175.00	6950.00	-8607.78	-5693.25	0.00	0.00	8617.70	
16571.16	90.00	182.82	6950.00	-8998.56	-5685.82	2.00	90.00	9008.47	
19645.50	90.00	182.82	6950.00	-12069.17	-5837.25	0.00	0.00	12079.34	CHIVE 2536-11H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
CHIVE 2536-11H_SHL	0.00	1256775.25	3252829.14	40.034702	-104.597059
CHIVE 2536-11H_LP	6950.00	1254375.42	3247032.74	40.028275	-104.617844
CHIVE 2536-11H_BPZ	6950.00	1244737.26	3247114.33	40.001815	-104.617895
CHIVE 2536-11H_BHL	6950.00	1244647.26	3247115.09	40.001568	-104.617895



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CHIVE 2536-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft
Site:	1N-64W-19 CHIVE & SHALLOT PAD	North Reference:	True
Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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 CHIVE & SHALLOT PAD				
Site Position:		Northing:	1,256,775.08	usft	Latitude:	40.034702
From:	Map	Easting:	3,252,813.14	usft	Longitude:	-104.597116
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"

Well		CHIVE 2536-11H				
Well Position	+N/-S	0.00 usft	Northing:	1,256,775.24 usft	Latitude:	40.034702
	+E/-W	0.00 usft	Easting:	3,252,829.14 usft	Longitude:	-104.597059
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	5/12/2023	7.53	66.31	51,577.01644327

Design	Design #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	180.10	

Plan Survey Tool Program		Date	5/15/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,070.00	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	
2	2,070.00	19,645.51	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	

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Site:	1N-64W-19 CHIVE & SHALLOT PAD	North Reference:	True
Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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	
219.60	0.00	0.00	219.60	0.00	0.00	0.00	0.00	0.00	0.00	
2,626.10	48.13	253.11	2,352.90	-276.79	-911.61	2.00	2.00	0.00	253.11	
8,939.62	48.13	253.11	6,566.81	-1,642.73	-5,410.24	0.00	0.00	0.00	0.00	
9,907.52	90.00	180.10	6,950.00	-2,341.05	-5,820.32	8.00	4.33	-7.54	-78.47	
14,500.00	90.00	180.10	6,950.00	-6,933.52	-5,828.34	0.00	0.00	0.00	0.00	
14,755.00	90.00	175.00	6,950.00	-7,188.20	-5,817.44	2.00	0.00	-2.00	-90.00	
16,180.00	90.00	175.00	6,950.00	-8,607.78	-5,693.25	0.00	0.00	0.00	0.00	
16,571.16	90.00	182.82	6,950.00	-8,998.56	-5,685.82	2.00	0.00	2.00	90.00	
19,645.50	90.00	182.82	6,950.00	-12,069.17	-5,837.25	0.00	0.00	0.00	0.00	CHIVE 2536-11H_BH

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft
Site:	1N-64W-19 CHIVE & SHALLOT PAD	North Reference:	True
Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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
219.60	0.00	0.00	219.60	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 219.60ft									
300.00	1.61	253.11	299.99	-0.33	-1.08	0.33	2.00	2.00	0.00
400.00	3.61	253.11	399.88	-1.65	-5.43	1.66	2.00	2.00	0.00
500.00	5.61	253.11	499.55	-3.98	-13.12	4.01	2.00	2.00	0.00
600.00	7.61	253.11	598.88	-7.33	-24.13	7.37	2.00	2.00	0.00
700.00	9.61	253.11	697.75	-11.68	-38.45	11.74	2.00	2.00	0.00
800.00	11.61	253.11	796.04	-17.02	-56.07	17.12	2.00	2.00	0.00
900.00	13.61	253.11	893.62	-23.36	-76.95	23.50	2.00	2.00	0.00
1,000.00	15.61	253.11	990.38	-30.69	-101.08	30.87	2.00	2.00	0.00
1,100.00	17.61	253.11	1,086.21	-39.00	-128.43	39.22	2.00	2.00	0.00
1,200.00	19.61	253.11	1,180.97	-48.27	-158.96	48.54	2.00	2.00	0.00
1,300.00	21.61	253.11	1,274.57	-58.49	-192.64	58.83	2.00	2.00	0.00
1,400.00	23.61	253.11	1,366.88	-69.66	-229.42	70.06	2.00	2.00	0.00
1,500.00	25.61	253.11	1,457.80	-81.76	-269.26	82.23	2.00	2.00	0.00
1,600.00	27.61	253.11	1,547.20	-94.77	-312.12	95.31	2.00	2.00	0.00
1,700.00	29.61	253.11	1,634.99	-108.68	-357.93	109.30	2.00	2.00	0.00
1,800.00	31.61	253.11	1,721.05	-123.47	-406.65	124.18	2.00	2.00	0.00
1,900.00	33.61	253.11	1,805.28	-139.13	-458.21	139.93	2.00	2.00	0.00
2,000.00	35.61	253.11	1,887.58	-155.63	-512.55	156.52	2.00	2.00	0.00
2,100.00	37.61	253.11	1,967.85	-172.95	-569.61	173.95	2.00	2.00	0.00
2,200.00	39.61	253.11	2,045.99	-191.08	-629.32	192.18	2.00	2.00	0.00
2,231.30	40.23	253.11	2,070.00	-196.92	-648.54	198.05	2.00	2.00	0.00
9 5/8"									
2,300.00	41.61	253.11	2,121.91	-209.99	-691.59	211.20	2.00	2.00	0.00
2,400.00	43.61	253.11	2,195.50	-229.66	-756.37	230.98	2.00	2.00	0.00
2,500.00	45.61	253.11	2,266.69	-250.06	-823.56	251.50	2.00	2.00	0.00
2,600.00	47.61	253.11	2,335.39	-271.17	-893.09	272.73	2.00	2.00	0.00
2,626.10	48.13	253.11	2,352.90	-276.79	-911.61	278.39	2.00	2.00	0.00
Hold Tangent @ 2626.10ft									
2,700.00	48.13	253.11	2,402.22	-292.78	-964.27	294.47	0.00	0.00	0.00
2,800.00	48.13	253.11	2,468.97	-314.42	-1,035.52	316.22	0.00	0.00	0.00
2,900.00	48.13	253.11	2,535.71	-336.05	-1,106.78	337.98	0.00	0.00	0.00
3,000.00	48.13	253.11	2,602.45	-357.69	-1,178.03	359.74	0.00	0.00	0.00
3,100.00	48.13	253.11	2,669.20	-379.32	-1,249.28	381.50	0.00	0.00	0.00
3,200.00	48.13	253.11	2,735.94	-400.96	-1,320.54	403.26	0.00	0.00	0.00
3,300.00	48.13	253.11	2,802.69	-422.59	-1,391.79	425.02	0.00	0.00	0.00
3,400.00	48.13	253.11	2,869.43	-444.23	-1,463.05	446.78	0.00	0.00	0.00
3,500.00	48.13	253.11	2,936.18	-465.86	-1,534.30	468.54	0.00	0.00	0.00
3,600.00	48.13	253.11	3,002.92	-487.50	-1,605.55	490.30	0.00	0.00	0.00
3,700.00	48.13	253.11	3,069.66	-509.13	-1,676.81	512.06	0.00	0.00	0.00
3,800.00	48.13	253.11	3,136.41	-530.77	-1,748.06	533.82	0.00	0.00	0.00
3,900.00	48.13	253.11	3,203.15	-552.40	-1,819.31	555.58	0.00	0.00	0.00
4,000.00	48.13	253.11	3,269.90	-574.04	-1,890.57	577.34	0.00	0.00	0.00
4,100.00	48.13	253.11	3,336.64	-595.67	-1,961.82	599.10	0.00	0.00	0.00
4,200.00	48.13	253.11	3,403.39	-617.31	-2,033.08	620.86	0.00	0.00	0.00
4,300.00	48.13	253.11	3,470.13	-638.94	-2,104.33	642.62	0.00	0.00	0.00
4,400.00	48.13	253.11	3,536.87	-660.58	-2,175.58	664.37	0.00	0.00	0.00
4,500.00	48.13	253.11	3,603.62	-682.21	-2,246.84	686.13	0.00	0.00	0.00
4,600.00	48.13	253.11	3,670.36	-703.85	-2,318.09	707.89	0.00	0.00	0.00

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Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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)
4,700.00	48.13	253.11	3,737.11	-725.48	-2,389.35	729.65	0.00	0.00	0.00
4,800.00	48.13	253.11	3,803.85	-747.12	-2,460.60	751.41	0.00	0.00	0.00
4,900.00	48.13	253.11	3,870.60	-768.75	-2,531.85	773.17	0.00	0.00	0.00
5,000.00	48.13	253.11	3,937.34	-790.39	-2,603.11	794.93	0.00	0.00	0.00
5,100.00	48.13	253.11	4,004.08	-812.02	-2,674.36	816.69	0.00	0.00	0.00
5,200.00	48.13	253.11	4,070.83	-833.66	-2,745.62	838.45	0.00	0.00	0.00
5,300.00	48.13	253.11	4,137.57	-855.29	-2,816.87	860.21	0.00	0.00	0.00
5,400.00	48.13	253.11	4,204.32	-876.93	-2,888.12	881.97	0.00	0.00	0.00
5,500.00	48.13	253.11	4,271.06	-898.56	-2,959.38	903.73	0.00	0.00	0.00
5,600.00	48.13	253.11	4,337.81	-920.20	-3,030.63	925.49	0.00	0.00	0.00
5,700.00	48.13	253.11	4,404.55	-941.83	-3,101.89	947.25	0.00	0.00	0.00
5,800.00	48.13	253.11	4,471.29	-963.47	-3,173.14	969.01	0.00	0.00	0.00
5,900.00	48.13	253.11	4,538.04	-985.10	-3,244.39	990.76	0.00	0.00	0.00
6,000.00	48.13	253.11	4,604.78	-1,006.74	-3,315.65	1,012.52	0.00	0.00	0.00
6,100.00	48.13	253.11	4,671.53	-1,028.37	-3,386.90	1,034.28	0.00	0.00	0.00
6,200.00	48.13	253.11	4,738.27	-1,050.01	-3,458.16	1,056.04	0.00	0.00	0.00
6,300.00	48.13	253.11	4,805.01	-1,071.64	-3,529.41	1,077.80	0.00	0.00	0.00
6,400.00	48.13	253.11	4,871.76	-1,093.28	-3,600.66	1,099.56	0.00	0.00	0.00
6,500.00	48.13	253.11	4,938.50	-1,114.91	-3,671.92	1,121.32	0.00	0.00	0.00
6,600.00	48.13	253.11	5,005.25	-1,136.55	-3,743.17	1,143.08	0.00	0.00	0.00
6,700.00	48.13	253.11	5,071.99	-1,158.18	-3,814.43	1,164.84	0.00	0.00	0.00
6,800.00	48.13	253.11	5,138.74	-1,179.82	-3,885.68	1,186.60	0.00	0.00	0.00
6,900.00	48.13	253.11	5,205.48	-1,201.45	-3,956.93	1,208.36	0.00	0.00	0.00
7,000.00	48.13	253.11	5,272.22	-1,223.09	-4,028.19	1,230.12	0.00	0.00	0.00
7,100.00	48.13	253.11	5,338.97	-1,244.72	-4,099.44	1,251.88	0.00	0.00	0.00
7,200.00	48.13	253.11	5,405.71	-1,266.36	-4,170.70	1,273.64	0.00	0.00	0.00
7,300.00	48.13	253.11	5,472.46	-1,287.99	-4,241.95	1,295.40	0.00	0.00	0.00
7,400.00	48.13	253.11	5,539.20	-1,309.63	-4,313.20	1,317.16	0.00	0.00	0.00
7,500.00	48.13	253.11	5,605.95	-1,331.26	-4,384.46	1,338.91	0.00	0.00	0.00
7,600.00	48.13	253.11	5,672.69	-1,352.90	-4,455.71	1,360.67	0.00	0.00	0.00
7,700.00	48.13	253.11	5,739.43	-1,374.53	-4,526.97	1,382.43	0.00	0.00	0.00
7,800.00	48.13	253.11	5,806.18	-1,396.17	-4,598.22	1,404.19	0.00	0.00	0.00
7,900.00	48.13	253.11	5,872.92	-1,417.80	-4,669.47	1,425.95	0.00	0.00	0.00
8,000.00	48.13	253.11	5,939.67	-1,439.44	-4,740.73	1,447.71	0.00	0.00	0.00
8,100.00	48.13	253.11	6,006.41	-1,461.07	-4,811.98	1,469.47	0.00	0.00	0.00
8,200.00	48.13	253.11	6,073.16	-1,482.71	-4,883.24	1,491.23	0.00	0.00	0.00
8,300.00	48.13	253.11	6,139.90	-1,504.34	-4,954.49	1,512.99	0.00	0.00	0.00
8,400.00	48.13	253.11	6,206.64	-1,525.98	-5,025.74	1,534.75	0.00	0.00	0.00
8,500.00	48.13	253.11	6,273.39	-1,547.61	-5,097.00	1,556.51	0.00	0.00	0.00
8,600.00	48.13	253.11	6,340.13	-1,569.25	-5,168.25	1,578.27	0.00	0.00	0.00
8,700.00	48.13	253.11	6,406.88	-1,590.88	-5,239.51	1,600.03	0.00	0.00	0.00
8,800.00	48.13	253.11	6,473.62	-1,612.52	-5,310.76	1,621.79	0.00	0.00	0.00
8,900.00	48.13	253.11	6,540.37	-1,634.15	-5,382.01	1,643.55	0.00	0.00	0.00
8,939.62	48.13	253.11	6,566.81	-1,642.73	-5,410.24	1,652.17	0.00	0.00	0.00
KOP @ 8939.62ft :: DLS = 8°/100'									
8,950.00	48.30	252.02	6,573.73	-1,645.05	-5,417.63	1,654.50	8.00	1.65	-10.50
9,000.00	49.27	246.86	6,606.68	-1,658.26	-5,452.82	1,667.77	8.00	1.93	-10.32
9,050.00	50.45	241.86	6,638.93	-1,674.80	-5,487.25	1,684.38	8.00	2.38	-9.99
9,100.00	51.85	237.05	6,670.30	-1,694.59	-5,520.76	1,704.23	8.00	2.79	-9.63
9,150.00	53.43	232.42	6,700.65	-1,717.54	-5,553.18	1,727.23	8.00	3.17	-9.24
9,200.00	55.19	228.00	6,729.83	-1,743.53	-5,584.36	1,753.27	8.00	3.51	-8.85
9,250.00	57.09	223.76	6,757.70	-1,772.44	-5,614.15	1,782.23	8.00	3.82	-8.47
9,300.00	59.14	219.71	6,784.11	-1,804.12	-5,642.39	1,813.96	8.00	4.09	-8.10
9,350.00	61.30	215.84	6,808.95	-1,838.42	-5,668.95	1,848.31	8.00	4.33	-7.75

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CHIVE 2536-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft
Site:	1N-64W-19 CHIVE & SHALLOT PAD	North Reference:	True
Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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	63.57	212.12	6,832.09	-1,875.17	-5,693.70	1,885.10	8.00	4.54	-7.43	
9,450.00	65.94	208.55	6,853.42	-1,914.20	-5,716.53	1,924.17	8.00	4.73	-7.14	
9,500.00	68.38	205.12	6,872.83	-1,955.31	-5,737.31	1,965.32	8.00	4.89	-6.87	
9,550.00	70.89	201.79	6,890.23	-1,998.30	-5,755.96	2,008.35	8.00	5.02	-6.64	
9,600.00	73.46	198.57	6,905.54	-2,042.97	-5,772.37	2,053.04	8.00	5.14	-6.44	
9,650.00	76.08	195.44	6,918.68	-2,089.10	-5,786.47	2,099.19	8.00	5.23	-6.27	
9,700.00	78.73	192.37	6,929.58	-2,136.46	-5,798.18	2,146.57	8.00	5.31	-6.13	
9,750.00	81.42	189.36	6,938.20	-2,184.81	-5,807.46	2,194.95	8.00	5.37	-6.02	
9,800.00	84.13	186.40	6,944.49	-2,233.94	-5,814.26	2,244.08	8.00	5.42	-5.93	
9,850.00	86.85	183.46	6,948.42	-2,283.59	-5,818.54	2,293.74	8.00	5.45	-5.87	
9,900.00	89.59	180.54	6,949.97	-2,333.53	-5,820.28	2,343.68	8.00	5.47	-5.84	
9,907.52	90.00	180.10	6,950.00	-2,341.05	-5,820.32	2,351.20	8.00	5.47	-5.84	
End Build/TPZ @ 9907.52ft										
10,000.00	90.00	180.10	6,950.00	-2,433.53	-5,820.49	2,443.68	0.00	0.00	0.00	
10,100.00	90.00	180.10	6,950.00	-2,533.52	-5,820.66	2,543.68	0.00	0.00	0.00	
10,200.00	90.00	180.10	6,950.00	-2,633.52	-5,820.84	2,643.68	0.00	0.00	0.00	
10,300.00	90.00	180.10	6,950.00	-2,733.52	-5,821.01	2,743.68	0.00	0.00	0.00	
10,400.00	90.00	180.10	6,950.00	-2,833.52	-5,821.18	2,843.68	0.00	0.00	0.00	
10,500.00	90.00	180.10	6,950.00	-2,933.52	-5,821.36	2,943.68	0.00	0.00	0.00	
10,600.00	90.00	180.10	6,950.00	-3,033.52	-5,821.53	3,043.68	0.00	0.00	0.00	
10,700.00	90.00	180.10	6,950.00	-3,133.52	-5,821.71	3,143.68	0.00	0.00	0.00	
10,800.00	90.00	180.10	6,950.00	-3,233.52	-5,821.88	3,243.68	0.00	0.00	0.00	
10,900.00	90.00	180.10	6,950.00	-3,333.52	-5,822.06	3,343.68	0.00	0.00	0.00	
11,000.00	90.00	180.10	6,950.00	-3,433.52	-5,822.23	3,443.68	0.00	0.00	0.00	
11,100.00	90.00	180.10	6,950.00	-3,533.52	-5,822.41	3,543.68	0.00	0.00	0.00	
11,200.00	90.00	180.10	6,950.00	-3,633.52	-5,822.58	3,643.68	0.00	0.00	0.00	
11,300.00	90.00	180.10	6,950.00	-3,733.52	-5,822.76	3,743.68	0.00	0.00	0.00	
11,400.00	90.00	180.10	6,950.00	-3,833.52	-5,822.93	3,843.68	0.00	0.00	0.00	
11,500.00	90.00	180.10	6,950.00	-3,933.52	-5,823.10	3,943.68	0.00	0.00	0.00	
11,600.00	90.00	180.10	6,950.00	-4,033.52	-5,823.28	4,043.68	0.00	0.00	0.00	
11,700.00	90.00	180.10	6,950.00	-4,133.52	-5,823.45	4,143.68	0.00	0.00	0.00	
11,800.00	90.00	180.10	6,950.00	-4,233.52	-5,823.63	4,243.68	0.00	0.00	0.00	
11,900.00	90.00	180.10	6,950.00	-4,333.52	-5,823.80	4,343.68	0.00	0.00	0.00	
12,000.00	90.00	180.10	6,950.00	-4,433.52	-5,823.98	4,443.68	0.00	0.00	0.00	
12,100.00	90.00	180.10	6,950.00	-4,533.52	-5,824.15	4,543.68	0.00	0.00	0.00	
12,200.00	90.00	180.10	6,950.00	-4,633.52	-5,824.33	4,643.68	0.00	0.00	0.00	
12,300.00	90.00	180.10	6,950.00	-4,733.52	-5,824.50	4,743.68	0.00	0.00	0.00	
12,400.00	90.00	180.10	6,950.00	-4,833.52	-5,824.67	4,843.68	0.00	0.00	0.00	
12,500.00	90.00	180.10	6,950.00	-4,933.52	-5,824.85	4,943.68	0.00	0.00	0.00	
12,600.00	90.00	180.10	6,950.00	-5,033.52	-5,825.02	5,043.68	0.00	0.00	0.00	
12,700.00	90.00	180.10	6,950.00	-5,133.52	-5,825.20	5,143.68	0.00	0.00	0.00	
12,800.00	90.00	180.10	6,950.00	-5,233.52	-5,825.37	5,243.68	0.00	0.00	0.00	
12,900.00	90.00	180.10	6,950.00	-5,333.52	-5,825.55	5,343.68	0.00	0.00	0.00	
13,000.00	90.00	180.10	6,950.00	-5,433.52	-5,825.72	5,443.68	0.00	0.00	0.00	
13,100.00	90.00	180.10	6,950.00	-5,533.52	-5,825.90	5,543.68	0.00	0.00	0.00	
13,200.00	90.00	180.10	6,950.00	-5,633.52	-5,826.07	5,643.68	0.00	0.00	0.00	
13,300.00	90.00	180.10	6,950.00	-5,733.52	-5,826.25	5,743.68	0.00	0.00	0.00	
13,400.00	90.00	180.10	6,950.00	-5,833.52	-5,826.42	5,843.68	0.00	0.00	0.00	
13,500.00	90.00	180.10	6,950.00	-5,933.52	-5,826.59	5,943.68	0.00	0.00	0.00	
13,600.00	90.00	180.10	6,950.00	-6,033.52	-5,826.77	6,043.68	0.00	0.00	0.00	
13,700.00	90.00	180.10	6,950.00	-6,133.52	-5,826.94	6,143.68	0.00	0.00	0.00	
13,800.00	90.00	180.10	6,950.00	-6,233.52	-5,827.12	6,243.68	0.00	0.00	0.00	
13,900.00	90.00	180.10	6,950.00	-6,333.52	-5,827.29	6,343.68	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CHIVE 2536-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft
Site:	1N-64W-19 CHIVE & SHALLOT PAD	North Reference:	True
Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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)
14,000.00	90.00	180.10	6,950.00	-6,433.52	-5,827.47	6,443.68	0.00	0.00	0.00
14,100.00	90.00	180.10	6,950.00	-6,533.52	-5,827.64	6,543.68	0.00	0.00	0.00
14,200.00	90.00	180.10	6,950.00	-6,633.52	-5,827.82	6,643.68	0.00	0.00	0.00
14,300.00	90.00	180.10	6,950.00	-6,733.52	-5,827.99	6,743.68	0.00	0.00	0.00
14,400.00	90.00	180.10	6,950.00	-6,833.52	-5,828.17	6,843.68	0.00	0.00	0.00
14,500.00	90.00	180.10	6,950.00	-6,933.52	-5,828.34	6,943.68	0.00	0.00	0.00
Begin Turn for AC @ 14500.00ft									
14,600.00	90.00	178.10	6,950.00	-7,033.50	-5,826.77	7,043.66	2.00	0.00	-2.00
14,700.00	90.00	176.10	6,950.00	-7,133.37	-5,821.71	7,143.52	2.00	0.00	-2.00
14,755.00	90.00	175.00	6,950.00	-7,188.20	-5,817.44	7,198.34	2.00	0.00	-2.00
End Turn @ 14755.00ft									
14,800.00	90.00	175.00	6,950.00	-7,233.03	-5,813.52	7,243.17	0.00	0.00	0.00
14,900.00	90.00	175.00	6,950.00	-7,332.65	-5,804.81	7,342.77	0.00	0.00	0.00
15,000.00	90.00	175.00	6,950.00	-7,432.27	-5,796.09	7,442.37	0.00	0.00	0.00
15,100.00	90.00	175.00	6,950.00	-7,531.89	-5,787.37	7,541.98	0.00	0.00	0.00
15,200.00	90.00	175.00	6,950.00	-7,631.51	-5,778.66	7,641.58	0.00	0.00	0.00
15,300.00	90.00	175.00	6,950.00	-7,731.13	-5,769.94	7,741.19	0.00	0.00	0.00
15,400.00	90.00	175.00	6,950.00	-7,830.75	-5,761.23	7,840.79	0.00	0.00	0.00
15,500.00	90.00	175.00	6,950.00	-7,930.37	-5,752.51	7,940.39	0.00	0.00	0.00
15,600.00	90.00	175.00	6,950.00	-8,029.99	-5,743.80	8,040.00	0.00	0.00	0.00
15,700.00	90.00	175.00	6,950.00	-8,129.61	-5,735.08	8,139.60	0.00	0.00	0.00
15,800.00	90.00	175.00	6,950.00	-8,229.22	-5,726.37	8,239.21	0.00	0.00	0.00
15,900.00	90.00	175.00	6,950.00	-8,328.84	-5,717.65	8,338.81	0.00	0.00	0.00
16,000.00	90.00	175.00	6,950.00	-8,428.46	-5,708.93	8,438.41	0.00	0.00	0.00
16,100.00	90.00	175.00	6,950.00	-8,528.08	-5,700.22	8,538.02	0.00	0.00	0.00
16,180.00	90.00	175.00	6,950.00	-8,607.78	-5,693.25	8,617.70	0.00	0.00	0.00
Begin Turn to BHL @ 16180.00ft									
16,200.00	90.00	175.40	6,950.00	-8,627.71	-5,691.57	8,637.63	2.00	0.00	2.00
16,300.00	90.00	177.40	6,950.00	-8,727.51	-5,685.29	8,737.42	2.00	0.00	2.00
16,400.00	90.00	179.40	6,950.00	-8,827.46	-5,682.50	8,837.37	2.00	0.00	2.00
16,500.00	90.00	181.40	6,950.00	-8,927.45	-5,683.20	8,937.36	2.00	0.00	2.00
16,571.16	90.00	182.82	6,950.00	-8,998.56	-5,685.82	9,008.47	2.00	0.00	2.00
End Turn @ 16571.16ft									
16,600.00	90.00	182.82	6,950.00	-9,027.37	-5,687.24	9,037.28	0.00	0.00	0.00
16,700.00	90.00	182.82	6,950.00	-9,127.25	-5,692.17	9,137.17	0.00	0.00	0.00
16,800.00	90.00	182.82	6,950.00	-9,227.13	-5,697.09	9,237.06	0.00	0.00	0.00
16,900.00	90.00	182.82	6,950.00	-9,327.01	-5,702.02	9,336.94	0.00	0.00	0.00
17,000.00	90.00	182.82	6,950.00	-9,426.88	-5,706.94	9,436.83	0.00	0.00	0.00
17,100.00	90.00	182.82	6,950.00	-9,526.76	-5,711.87	9,536.72	0.00	0.00	0.00
17,200.00	90.00	182.82	6,950.00	-9,626.64	-5,716.79	9,636.60	0.00	0.00	0.00
17,300.00	90.00	182.82	6,950.00	-9,726.52	-5,721.72	9,736.49	0.00	0.00	0.00
17,400.00	90.00	182.82	6,950.00	-9,826.40	-5,726.65	9,836.38	0.00	0.00	0.00
17,500.00	90.00	182.82	6,950.00	-9,926.28	-5,731.57	9,936.27	0.00	0.00	0.00
17,600.00	90.00	182.82	6,950.00	-10,026.16	-5,736.50	10,036.15	0.00	0.00	0.00
17,700.00	90.00	182.82	6,950.00	-10,126.03	-5,741.42	10,136.04	0.00	0.00	0.00
17,800.00	90.00	182.82	6,950.00	-10,225.91	-5,746.35	10,235.93	0.00	0.00	0.00
17,900.00	90.00	182.82	6,950.00	-10,325.79	-5,751.27	10,335.81	0.00	0.00	0.00
18,000.00	90.00	182.82	6,950.00	-10,425.67	-5,756.20	10,435.70	0.00	0.00	0.00
18,100.00	90.00	182.82	6,950.00	-10,525.55	-5,761.12	10,535.59	0.00	0.00	0.00
18,200.00	90.00	182.82	6,950.00	-10,625.43	-5,766.05	10,635.47	0.00	0.00	0.00
18,300.00	90.00	182.82	6,950.00	-10,725.31	-5,770.97	10,735.36	0.00	0.00	0.00
18,400.00	90.00	182.82	6,950.00	-10,825.18	-5,775.90	10,835.25	0.00	0.00	0.00
18,500.00	90.00	182.82	6,950.00	-10,925.06	-5,780.83	10,935.14	0.00	0.00	0.00
18,600.00	90.00	182.82	6,950.00	-11,024.94	-5,785.75	11,035.02	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CHIVE 2536-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft
Site:	1N-64W-19 CHIVE & SHALLOT PAD	North Reference:	True
Well:	CHIVE 2536-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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)
18,700.00	90.00	182.82	6,950.00	-11,124.82	-5,790.68	11,134.91	0.00	0.00	0.00
18,800.00	90.00	182.82	6,950.00	-11,224.70	-5,795.60	11,234.80	0.00	0.00	0.00
18,900.00	90.00	182.82	6,950.00	-11,324.58	-5,800.53	11,334.68	0.00	0.00	0.00
19,000.00	90.00	182.82	6,950.00	-11,424.46	-5,805.45	11,434.57	0.00	0.00	0.00
19,100.00	90.00	182.82	6,950.00	-11,524.34	-5,810.38	11,534.46	0.00	0.00	0.00
19,200.00	90.00	182.82	6,950.00	-11,624.21	-5,815.30	11,634.35	0.00	0.00	0.00
19,300.00	90.00	182.82	6,950.00	-11,724.09	-5,820.23	11,734.23	0.00	0.00	0.00
19,400.00	90.00	182.82	6,950.00	-11,823.97	-5,825.15	11,834.12	0.00	0.00	0.00
19,500.00	90.00	182.82	6,950.00	-11,923.85	-5,830.08	11,934.01	0.00	0.00	0.00
19,555.40	90.00	182.82	6,950.00	-11,979.18	-5,832.81	11,989.34	0.00	0.00	0.00
BPZ @ 19555.40ft									
19,600.00	90.00	182.82	6,950.00	-12,023.73	-5,835.01	12,033.89	0.00	0.00	0.00
19,645.50	90.00	182.82	6,950.00	-12,069.17	-5,837.25	12,079.34	0.00	0.00	0.00
TD Well @ 19645.51ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,231.30	2,070.00	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)	
219.60	219.60	0.00	0.00	Begin Nudge @ 219.60ft
2,626.10	2,352.90	-276.79	-911.61	Hold Tangent @ 2626.10ft
8,939.62	6,566.81	-1,642.73	-5,410.24	KOP @ 8939.62ft :: DLS = 8°/100'
9,907.52	6,950.00	-2,341.05	-5,820.32	End Build/TPZ @ 9907.52ft
14,500.00	6,950.00	-6,933.52	-5,828.34	Begin Turn for AC @ 14500.00ft
14,755.00	6,950.00	-7,188.20	-5,817.44	End Turn @ 14755.00ft
16,180.00	6,950.00	-8,607.78	-5,693.25	Begin Turn to BHL @ 16180.00ft
16,571.16	6,950.00	-8,998.56	-5,685.82	End Turn @ 16571.16ft
19,555.40	6,950.00	-11,979.18	-5,832.81	BPZ @ 19555.40ft
19,645.50	6,950.00	-12,069.17	-5,837.25	TD Well @ 19645.51ft