

VERDAD RESOURCES

**WATTENBERG FIELD
1N-65W-12 SAFI 1224 PAD
SAFI 1224-13H**

Wellbore #1

Plan: Design #1

Standard Planning Report

16 May, 2019

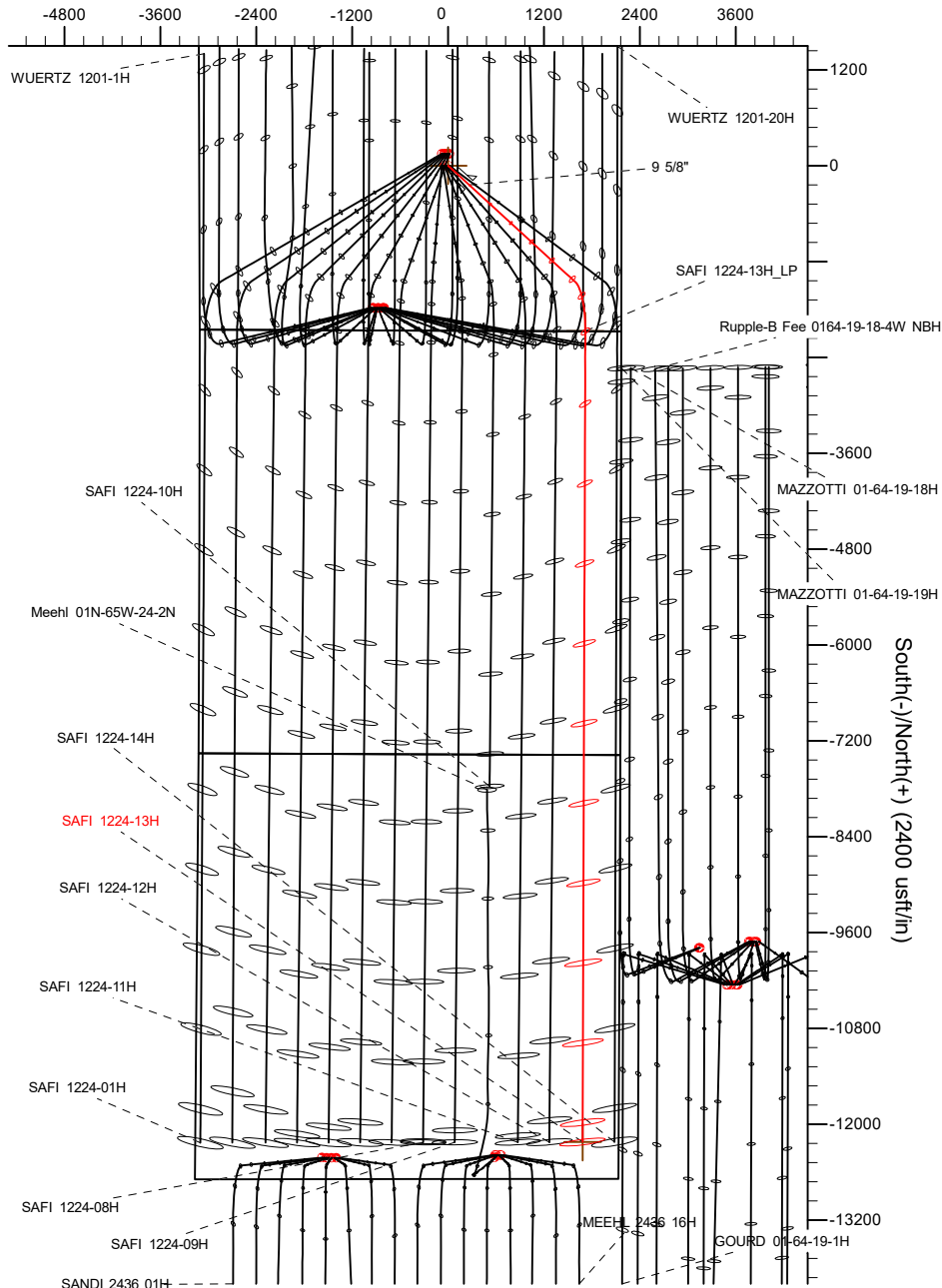
Project: WATTENBERG FIELD
Site: 1N-65W-12 SAFI 1224 PAD
Well: SAFI 1224-13H
Wellbore: Wellbore #1
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1752.63	9 5/8"	9-5/8

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

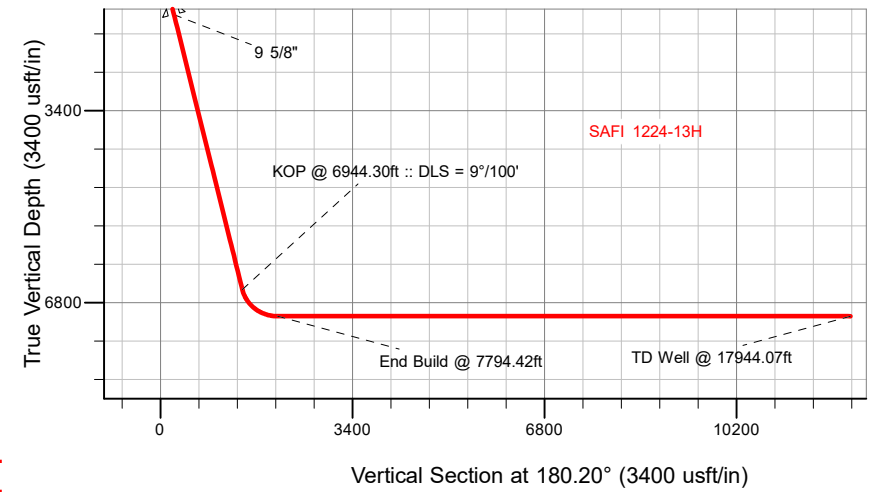


SECTION DETAILS

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	
230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	
1245.00	20.30	132.45	1223.90	-120.10	131.29	2.00	132.45	119.64	
6944.30	20.30	132.45	6569.21	-1454.66	1590.27	0.00	0.00	1449.10	
7794.42	90.00	180.20	7040.00	-2074.17	1717.01	9.00	49.57	2068.16	
17944.07	90.00	180.20	7040.00	-12223.75	1681.37	0.00	0.00	12217.81	SAFI 1224-13H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

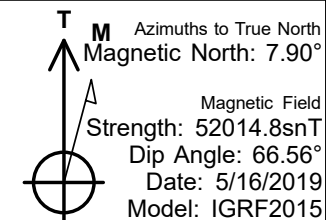
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SAFI 1224-13H_SHL	0.00	0.00	0.00	40.064373	-104.610449
SAFI 1224-13H_BHL	7040.00	-12223.75	1681.37	40.030817	-104.604445



SHL
2065' FSL
2171' FEL

LP
0' FNL
450' FEL

BHL
460' FSL
451' FEL



WELL DETAILS: SAFI 1224-13H

GL = 4971'

RKB = 24' @ 4995.00usft (RIG)

Plan: Design #1 (SAFI 1224-13H/Wellbore #1)

Date: 5/16/2019

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-13H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-13H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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-65W-12 SAFI 1224 PAD			
Site Position:		Northing:	1,267,795.88 usft	Latitude:	40.065068
From:	Lat/Long	Easting:	3,248,744.87 usft	Longitude:	-104.611250
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	SAFI 1224-13H					
Well Position	+N/-S	-252.89 usft	Northing:	1,267,545.25 usft	Latitude:	40.064373
	+E/-W	224.00 usft	Easting:	3,248,971.38 usft	Longitude:	-104.610450
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,971.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/16/2019	7.90	66.56	52,014.82263091

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	180.20

Plan Survey Tool Program	Date	5/16/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,700.00	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD Fixed:v2:standard declination
2	1,700.00	17,944.07	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD Fixed:v2:standard declination

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	
230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,245.00	20.30	132.45	1,223.90	-120.10	131.29	2.00	2.00	0.00	132.45	
6,944.30	20.30	132.45	6,569.21	-1,454.66	1,590.27	0.00	0.00	0.00	0.00	
7,794.42	90.00	180.20	7,040.00	-2,074.17	1,717.01	9.00	8.20	5.62	49.57	
17,944.07	90.00	180.20	7,040.00	-12,223.75	1,681.37	0.00	0.00	0.00	0.00	SAFI 1224-13H_BHL

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-13H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-13H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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
230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 230.00ft									
300.00	1.40	132.45	299.99	-0.58	0.63	0.57	2.00	2.00	0.00
400.00	3.40	132.45	399.90	-3.40	3.72	3.39	2.00	2.00	0.00
500.00	5.40	132.45	499.60	-8.58	9.38	8.55	2.00	2.00	0.00
600.00	7.40	132.45	598.97	-16.10	17.61	16.04	2.00	2.00	0.00
700.00	9.40	132.45	697.89	-25.96	28.38	25.86	2.00	2.00	0.00
800.00	11.40	132.45	796.25	-38.15	41.70	38.00	2.00	2.00	0.00
900.00	13.40	132.45	893.91	-52.64	57.55	52.44	2.00	2.00	0.00
1,000.00	15.40	132.45	990.76	-69.42	75.90	69.16	2.00	2.00	0.00
1,100.00	17.40	132.45	1,086.69	-88.48	96.73	88.14	2.00	2.00	0.00
1,200.00	19.40	132.45	1,181.57	-109.78	120.02	109.36	2.00	2.00	0.00
1,245.00	20.30	132.45	1,223.90	-120.10	131.29	119.64	2.00	2.00	0.00
Hold Tangent @ 1245.00ft									
1,300.00	20.30	132.45	1,275.48	-132.98	145.37	132.47	0.00	0.00	0.00
1,400.00	20.30	132.45	1,369.27	-156.39	170.97	155.79	0.00	0.00	0.00
1,500.00	20.30	132.45	1,463.06	-179.81	196.57	179.12	0.00	0.00	0.00
1,600.00	20.30	132.45	1,556.85	-203.22	222.17	202.45	0.00	0.00	0.00
1,700.00	20.30	132.45	1,650.64	-226.64	247.77	225.77	0.00	0.00	0.00
1,752.63	20.30	132.45	1,700.00	-238.97	261.24	238.05	0.00	0.00	0.00
9 5/8"									
1,800.00	20.30	132.45	1,744.43	-250.06	273.37	249.10	0.00	0.00	0.00
1,900.00	20.30	132.45	1,838.21	-273.47	298.97	272.43	0.00	0.00	0.00
2,000.00	20.30	132.45	1,932.00	-296.89	324.57	295.76	0.00	0.00	0.00
2,100.00	20.30	132.45	2,025.79	-320.31	350.17	319.08	0.00	0.00	0.00
2,200.00	20.30	132.45	2,119.58	-343.72	375.76	342.41	0.00	0.00	0.00
2,300.00	20.30	132.45	2,213.37	-367.14	401.36	365.74	0.00	0.00	0.00
2,400.00	20.30	132.45	2,307.16	-390.55	426.96	389.06	0.00	0.00	0.00
2,500.00	20.30	132.45	2,400.95	-413.97	452.56	412.39	0.00	0.00	0.00
2,600.00	20.30	132.45	2,494.74	-437.39	478.16	435.72	0.00	0.00	0.00
2,700.00	20.30	132.45	2,588.53	-460.80	503.76	459.04	0.00	0.00	0.00
2,800.00	20.30	132.45	2,682.31	-484.22	529.36	482.37	0.00	0.00	0.00
2,900.00	20.30	132.45	2,776.10	-507.64	554.96	505.70	0.00	0.00	0.00
3,000.00	20.30	132.45	2,869.89	-531.05	580.56	529.02	0.00	0.00	0.00
3,100.00	20.30	132.45	2,963.68	-554.47	606.16	552.35	0.00	0.00	0.00
3,200.00	20.30	132.45	3,057.47	-577.89	631.76	575.68	0.00	0.00	0.00
3,300.00	20.30	132.45	3,151.26	-601.30	657.36	599.00	0.00	0.00	0.00
3,400.00	20.30	132.45	3,245.05	-624.72	682.96	622.33	0.00	0.00	0.00
3,500.00	20.30	132.45	3,338.84	-648.13	708.55	645.66	0.00	0.00	0.00
3,600.00	20.30	132.45	3,432.63	-671.55	734.15	668.98	0.00	0.00	0.00
3,700.00	20.30	132.45	3,526.41	-694.97	759.75	692.31	0.00	0.00	0.00
3,800.00	20.30	132.45	3,620.20	-718.38	785.35	715.64	0.00	0.00	0.00
3,900.00	20.30	132.45	3,713.99	-741.80	810.95	738.96	0.00	0.00	0.00
4,000.00	20.30	132.45	3,807.78	-765.22	836.55	762.29	0.00	0.00	0.00
4,100.00	20.30	132.45	3,901.57	-788.63	862.15	785.62	0.00	0.00	0.00
4,200.00	20.30	132.45	3,995.36	-812.05	887.75	808.94	0.00	0.00	0.00
4,300.00	20.30	132.45	4,089.15	-835.46	913.35	832.27	0.00	0.00	0.00
4,400.00	20.30	132.45	4,182.94	-858.88	938.95	855.60	0.00	0.00	0.00
4,500.00	20.30	132.45	4,276.73	-882.30	964.55	878.93	0.00	0.00	0.00
4,600.00	20.30	132.45	4,370.51	-905.71	990.15	902.25	0.00	0.00	0.00

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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 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-13H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	20.30	132.45	4,464.30	-929.13	1,015.75	925.58	0.00	0.00	0.00
4,800.00	20.30	132.45	4,558.09	-952.55	1,041.34	948.91	0.00	0.00	0.00
4,900.00	20.30	132.45	4,651.88	-975.96	1,066.94	972.23	0.00	0.00	0.00
5,000.00	20.30	132.45	4,745.67	-999.38	1,092.54	995.56	0.00	0.00	0.00
5,100.00	20.30	132.45	4,839.46	-1,022.80	1,118.14	1,018.89	0.00	0.00	0.00
5,200.00	20.30	132.45	4,933.25	-1,046.21	1,143.74	1,042.21	0.00	0.00	0.00
5,300.00	20.30	132.45	5,027.04	-1,069.63	1,169.34	1,065.54	0.00	0.00	0.00
5,400.00	20.30	132.45	5,120.83	-1,093.04	1,194.94	1,088.87	0.00	0.00	0.00
5,500.00	20.30	132.45	5,214.61	-1,116.46	1,220.54	1,112.19	0.00	0.00	0.00
5,600.00	20.30	132.45	5,308.40	-1,139.88	1,246.14	1,135.52	0.00	0.00	0.00
5,700.00	20.30	132.45	5,402.19	-1,163.29	1,271.74	1,158.85	0.00	0.00	0.00
5,800.00	20.30	132.45	5,495.98	-1,186.71	1,297.34	1,182.17	0.00	0.00	0.00
5,900.00	20.30	132.45	5,589.77	-1,210.13	1,322.94	1,205.50	0.00	0.00	0.00
6,000.00	20.30	132.45	5,683.56	-1,233.54	1,348.54	1,228.83	0.00	0.00	0.00
6,100.00	20.30	132.45	5,777.35	-1,256.96	1,374.13	1,252.15	0.00	0.00	0.00
6,200.00	20.30	132.45	5,871.14	-1,280.37	1,399.73	1,275.48	0.00	0.00	0.00
6,300.00	20.30	132.45	5,964.93	-1,303.79	1,425.33	1,298.81	0.00	0.00	0.00
6,400.00	20.30	132.45	6,058.72	-1,327.21	1,450.93	1,322.13	0.00	0.00	0.00
6,500.00	20.30	132.45	6,152.50	-1,350.62	1,476.53	1,345.46	0.00	0.00	0.00
6,600.00	20.30	132.45	6,246.29	-1,374.04	1,502.13	1,368.79	0.00	0.00	0.00
6,700.00	20.30	132.45	6,340.08	-1,397.46	1,527.73	1,392.11	0.00	0.00	0.00
6,800.00	20.30	132.45	6,433.87	-1,420.87	1,553.33	1,415.44	0.00	0.00	0.00
6,900.00	20.30	132.45	6,527.66	-1,444.29	1,578.93	1,438.77	0.00	0.00	0.00
6,944.30	20.30	132.45	6,569.21	-1,454.66	1,590.27	1,449.10	0.00	0.00	0.00
KOP @ 6944.30ft :: DLS = 9°/100'									
7,000.00	23.85	141.92	6,620.83	-1,470.06	1,604.35	1,464.45	9.00	6.36	17.00
7,100.00	31.18	153.30	6,709.52	-1,509.18	1,628.50	1,503.48	9.00	7.34	11.38
7,200.00	39.17	160.56	6,791.23	-1,562.20	1,650.69	1,556.42	9.00	7.98	7.26
7,300.00	47.47	165.65	6,863.95	-1,627.81	1,670.37	1,621.97	9.00	8.30	5.09
7,400.00	55.94	169.53	6,925.88	-1,704.39	1,687.06	1,698.50	9.00	8.47	3.88
7,500.00	64.51	172.70	6,975.50	-1,790.07	1,700.34	1,784.13	9.00	8.57	3.17
7,600.00	73.14	175.44	7,011.59	-1,882.73	1,709.90	1,876.75	9.00	8.63	2.74
7,700.00	81.81	177.94	7,033.26	-1,980.09	1,715.49	1,974.09	9.00	8.66	2.50
7,794.42	90.00	180.20	7,040.00	-2,074.17	1,717.01	2,068.16	9.00	8.68	2.39
End Build @ 7794.42ft									
7,800.00	90.00	180.20	7,040.00	-2,079.75	1,716.99	2,073.74	0.00	0.00	0.00
7,900.00	90.00	180.20	7,040.00	-2,179.75	1,716.64	2,173.74	0.00	0.00	0.00
8,000.00	90.00	180.20	7,040.00	-2,279.75	1,716.28	2,273.74	0.00	0.00	0.00
8,100.00	90.00	180.20	7,040.00	-2,379.75	1,715.93	2,373.74	0.00	0.00	0.00
8,200.00	90.00	180.20	7,040.00	-2,479.75	1,715.58	2,473.74	0.00	0.00	0.00
8,300.00	90.00	180.20	7,040.00	-2,579.75	1,715.23	2,573.74	0.00	0.00	0.00
8,400.00	90.00	180.20	7,040.00	-2,679.75	1,714.88	2,673.74	0.00	0.00	0.00
8,500.00	90.00	180.20	7,040.00	-2,779.74	1,714.53	2,773.74	0.00	0.00	0.00
8,600.00	90.00	180.20	7,040.00	-2,879.74	1,714.18	2,873.74	0.00	0.00	0.00
8,700.00	90.00	180.20	7,040.00	-2,979.74	1,713.83	2,973.74	0.00	0.00	0.00
8,800.00	90.00	180.20	7,040.00	-3,079.74	1,713.48	3,073.74	0.00	0.00	0.00
8,900.00	90.00	180.20	7,040.00	-3,179.74	1,713.12	3,173.74	0.00	0.00	0.00
9,000.00	90.00	180.20	7,040.00	-3,279.74	1,712.77	3,273.74	0.00	0.00	0.00
9,100.00	90.00	180.20	7,040.00	-3,379.74	1,712.42	3,373.74	0.00	0.00	0.00
9,200.00	90.00	180.20	7,040.00	-3,479.74	1,712.07	3,473.74	0.00	0.00	0.00
9,300.00	90.00	180.20	7,040.00	-3,579.74	1,711.72	3,573.74	0.00	0.00	0.00
9,400.00	90.00	180.20	7,040.00	-3,679.74	1,711.37	3,673.74	0.00	0.00	0.00
9,500.00	90.00	180.20	7,040.00	-3,779.74	1,711.02	3,773.74	0.00	0.00	0.00
9,600.00	90.00	180.20	7,040.00	-3,879.74	1,710.67	3,873.74	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-13H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-13H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
9,700.00	90.00	180.20	7,040.00	-3,979.74	1,710.31	3,973.74	0.00	0.00	0.00	
9,800.00	90.00	180.20	7,040.00	-4,079.74	1,709.96	4,073.74	0.00	0.00	0.00	
9,900.00	90.00	180.20	7,040.00	-4,179.74	1,709.61	4,173.74	0.00	0.00	0.00	
10,000.00	90.00	180.20	7,040.00	-4,279.74	1,709.26	4,273.74	0.00	0.00	0.00	
10,100.00	90.00	180.20	7,040.00	-4,379.73	1,708.91	4,373.74	0.00	0.00	0.00	
10,200.00	90.00	180.20	7,040.00	-4,479.73	1,708.56	4,473.74	0.00	0.00	0.00	
10,300.00	90.00	180.20	7,040.00	-4,579.73	1,708.21	4,573.74	0.00	0.00	0.00	
10,400.00	90.00	180.20	7,040.00	-4,679.73	1,707.86	4,673.74	0.00	0.00	0.00	
10,500.00	90.00	180.20	7,040.00	-4,779.73	1,707.51	4,773.74	0.00	0.00	0.00	
10,600.00	90.00	180.20	7,040.00	-4,879.73	1,707.15	4,873.74	0.00	0.00	0.00	
10,700.00	90.00	180.20	7,040.00	-4,979.73	1,706.80	4,973.74	0.00	0.00	0.00	
10,800.00	90.00	180.20	7,040.00	-5,079.73	1,706.45	5,073.74	0.00	0.00	0.00	
10,900.00	90.00	180.20	7,040.00	-5,179.73	1,706.10	5,173.74	0.00	0.00	0.00	
11,000.00	90.00	180.20	7,040.00	-5,279.73	1,705.75	5,273.74	0.00	0.00	0.00	
11,100.00	90.00	180.20	7,040.00	-5,379.73	1,705.40	5,373.74	0.00	0.00	0.00	
11,200.00	90.00	180.20	7,040.00	-5,479.73	1,705.05	5,473.74	0.00	0.00	0.00	
11,300.00	90.00	180.20	7,040.00	-5,579.73	1,704.70	5,573.74	0.00	0.00	0.00	
11,400.00	90.00	180.20	7,040.00	-5,679.73	1,704.35	5,673.74	0.00	0.00	0.00	
11,500.00	90.00	180.20	7,040.00	-5,779.73	1,703.99	5,773.74	0.00	0.00	0.00	
11,600.00	90.00	180.20	7,040.00	-5,879.73	1,703.64	5,873.74	0.00	0.00	0.00	
11,700.00	90.00	180.20	7,040.00	-5,979.73	1,703.29	5,973.74	0.00	0.00	0.00	
11,800.00	90.00	180.20	7,040.00	-6,079.72	1,702.94	6,073.74	0.00	0.00	0.00	
11,900.00	90.00	180.20	7,040.00	-6,179.72	1,702.59	6,173.74	0.00	0.00	0.00	
12,000.00	90.00	180.20	7,040.00	-6,279.72	1,702.24	6,273.74	0.00	0.00	0.00	
12,100.00	90.00	180.20	7,040.00	-6,379.72	1,701.89	6,373.74	0.00	0.00	0.00	
12,200.00	90.00	180.20	7,040.00	-6,479.72	1,701.54	6,473.74	0.00	0.00	0.00	
12,300.00	90.00	180.20	7,040.00	-6,579.72	1,701.18	6,573.74	0.00	0.00	0.00	
12,400.00	90.00	180.20	7,040.00	-6,679.72	1,700.83	6,673.74	0.00	0.00	0.00	
12,500.00	90.00	180.20	7,040.00	-6,779.72	1,700.48	6,773.74	0.00	0.00	0.00	
12,600.00	90.00	180.20	7,040.00	-6,879.72	1,700.13	6,873.74	0.00	0.00	0.00	
12,700.00	90.00	180.20	7,040.00	-6,979.72	1,699.78	6,973.74	0.00	0.00	0.00	
12,800.00	90.00	180.20	7,040.00	-7,079.72	1,699.43	7,073.74	0.00	0.00	0.00	
12,900.00	90.00	180.20	7,040.00	-7,179.72	1,699.08	7,173.74	0.00	0.00	0.00	
13,000.00	90.00	180.20	7,040.00	-7,279.72	1,698.73	7,273.74	0.00	0.00	0.00	
13,100.00	90.00	180.20	7,040.00	-7,379.72	1,698.38	7,373.74	0.00	0.00	0.00	
13,200.00	90.00	180.20	7,040.00	-7,479.72	1,698.02	7,473.74	0.00	0.00	0.00	
13,300.00	90.00	180.20	7,040.00	-7,579.72	1,697.67	7,573.74	0.00	0.00	0.00	
13,400.00	90.00	180.20	7,040.00	-7,679.71	1,697.32	7,673.74	0.00	0.00	0.00	
13,500.00	90.00	180.20	7,040.00	-7,779.71	1,696.97	7,773.74	0.00	0.00	0.00	
13,600.00	90.00	180.20	7,040.00	-7,879.71	1,696.62	7,873.74	0.00	0.00	0.00	
13,700.00	90.00	180.20	7,040.00	-7,979.71	1,696.27	7,973.74	0.00	0.00	0.00	
13,800.00	90.00	180.20	7,040.00	-8,079.71	1,695.92	8,073.74	0.00	0.00	0.00	
13,900.00	90.00	180.20	7,040.00	-8,179.71	1,695.57	8,173.74	0.00	0.00	0.00	
14,000.00	90.00	180.20	7,040.00	-8,279.71	1,695.22	8,273.74	0.00	0.00	0.00	
14,100.00	90.00	180.20	7,040.00	-8,379.71	1,694.86	8,373.74	0.00	0.00	0.00	
14,200.00	90.00	180.20	7,040.00	-8,479.71	1,694.51	8,473.74	0.00	0.00	0.00	
14,300.00	90.00	180.20	7,040.00	-8,579.71	1,694.16	8,573.74	0.00	0.00	0.00	
14,400.00	90.00	180.20	7,040.00	-8,679.71	1,693.81	8,673.74	0.00	0.00	0.00	
14,500.00	90.00	180.20	7,040.00	-8,779.71	1,693.46	8,773.74	0.00	0.00	0.00	
14,600.00	90.00	180.20	7,040.00	-8,879.71	1,693.11	8,873.74	0.00	0.00	0.00	
14,700.00	90.00	180.20	7,040.00	-8,979.71	1,692.76	8,973.74	0.00	0.00	0.00	
14,800.00	90.00	180.20	7,040.00	-9,079.71	1,692.41	9,073.74	0.00	0.00	0.00	
14,900.00	90.00	180.20	7,040.00	-9,179.71	1,692.06	9,173.74	0.00	0.00	0.00	

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-13H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-13H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
15,000.00	90.00	180.20	7,040.00	-9,279.70	1,691.70	9,273.74	0.00	0.00	0.00	
15,100.00	90.00	180.20	7,040.00	-9,379.70	1,691.35	9,373.74	0.00	0.00	0.00	
15,200.00	90.00	180.20	7,040.00	-9,479.70	1,691.00	9,473.74	0.00	0.00	0.00	
15,300.00	90.00	180.20	7,040.00	-9,579.70	1,690.65	9,573.74	0.00	0.00	0.00	
15,400.00	90.00	180.20	7,040.00	-9,679.70	1,690.30	9,673.74	0.00	0.00	0.00	
15,500.00	90.00	180.20	7,040.00	-9,779.70	1,689.95	9,773.74	0.00	0.00	0.00	
15,600.00	90.00	180.20	7,040.00	-9,879.70	1,689.60	9,873.74	0.00	0.00	0.00	
15,700.00	90.00	180.20	7,040.00	-9,979.70	1,689.25	9,973.74	0.00	0.00	0.00	
15,800.00	90.00	180.20	7,040.00	-10,079.70	1,688.89	10,073.74	0.00	0.00	0.00	
15,900.00	90.00	180.20	7,040.00	-10,179.70	1,688.54	10,173.74	0.00	0.00	0.00	
16,000.00	90.00	180.20	7,040.00	-10,279.70	1,688.19	10,273.74	0.00	0.00	0.00	
16,100.00	90.00	180.20	7,040.00	-10,379.70	1,687.84	10,373.74	0.00	0.00	0.00	
16,200.00	90.00	180.20	7,040.00	-10,479.70	1,687.49	10,473.74	0.00	0.00	0.00	
16,300.00	90.00	180.20	7,040.00	-10,579.70	1,687.14	10,573.74	0.00	0.00	0.00	
16,400.00	90.00	180.20	7,040.00	-10,679.70	1,686.79	10,673.74	0.00	0.00	0.00	
16,500.00	90.00	180.20	7,040.00	-10,779.70	1,686.44	10,773.74	0.00	0.00	0.00	
16,600.00	90.00	180.20	7,040.00	-10,879.70	1,686.09	10,873.74	0.00	0.00	0.00	
16,700.00	90.00	180.20	7,040.00	-10,979.69	1,685.73	10,973.74	0.00	0.00	0.00	
16,800.00	90.00	180.20	7,040.00	-11,079.69	1,685.38	11,073.74	0.00	0.00	0.00	
16,900.00	90.00	180.20	7,040.00	-11,179.69	1,685.03	11,173.74	0.00	0.00	0.00	
17,000.00	90.00	180.20	7,040.00	-11,279.69	1,684.68	11,273.74	0.00	0.00	0.00	
17,100.00	90.00	180.20	7,040.00	-11,379.69	1,684.33	11,373.74	0.00	0.00	0.00	
17,200.00	90.00	180.20	7,040.00	-11,479.69	1,683.98	11,473.74	0.00	0.00	0.00	
17,300.00	90.00	180.20	7,040.00	-11,579.69	1,683.63	11,573.74	0.00	0.00	0.00	
17,400.00	90.00	180.20	7,040.00	-11,679.69	1,683.28	11,673.74	0.00	0.00	0.00	
17,500.00	90.00	180.20	7,040.00	-11,779.69	1,682.93	11,773.74	0.00	0.00	0.00	
17,600.00	90.00	180.20	7,040.00	-11,879.69	1,682.57	11,873.74	0.00	0.00	0.00	
17,700.00	90.00	180.20	7,040.00	-11,979.69	1,682.22	11,973.74	0.00	0.00	0.00	
17,800.00	90.00	180.20	7,040.00	-12,079.69	1,681.87	12,073.74	0.00	0.00	0.00	
17,900.00	90.00	180.20	7,040.00	-12,179.69	1,681.52	12,173.74	0.00	0.00	0.00	
17,944.07	90.00	180.20	7,040.00	-12,223.75	1,681.37	12,217.81	0.00	0.00	0.00	
TD Well @ 17944.07ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,752.63	1,700.00	9 5/8"		9-5/8	13-1/2

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
230.00	230.00	+N/-S (usft)	+E/-W (usft)	Begin Nudge @ 230.00ft	
1,245.00	1,223.90	-120.10	131.29	Hold Tangent @ 1245.00ft	
6,944.30	6,569.21	-1,454.66	1,590.27	KOP @ 6944.30ft :: DLS = 9°/100'	
7,794.42	7,040.00	-2,074.17	1,717.01	End Build @ 7794.42ft	
17,944.07	7,040.00	-12,223.75	1,681.37	TD Well @ 17944.07ft	