

VERDAD RESOURCES

**WATTENBERG FIELD
1N-65W-12 SAFI 1224 PAD
SAFI 1224-02H**

Wellbore #1

Plan: Design #2

Standard Planning Report

20 May, 2019

Project: WATTENBERG FIELD
Site: 1N-65W-12 SAFI 1224 PAD
Well: SAFI 1224-02H
Wellbore: Wellbore #1
Design: Design #2

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1769.15	9 5/8"	9-5/8

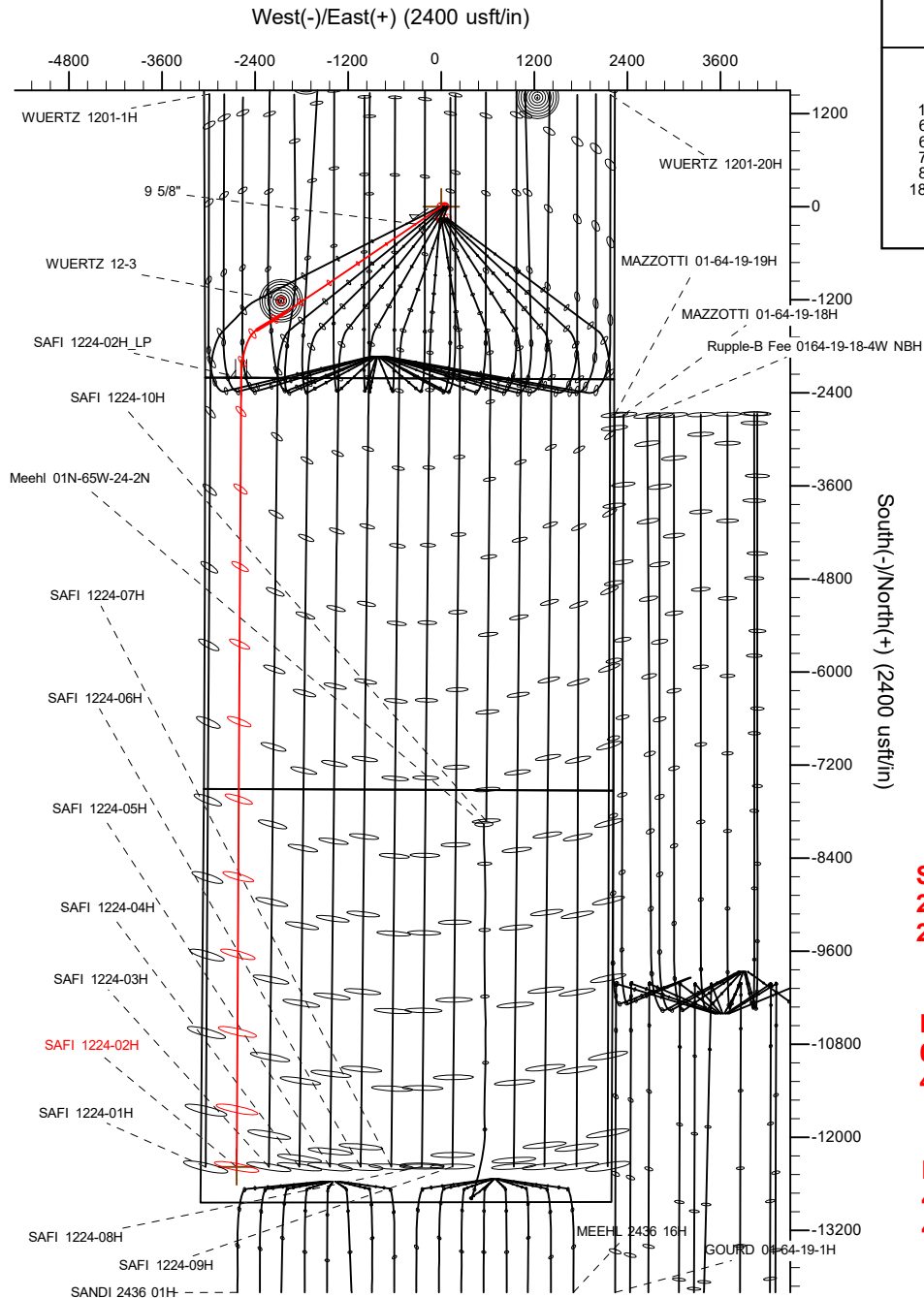
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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
1552.50	26.45	235.80	1506.02	-168.56	-248.02	2.00	235.80	169.98
6240.00	26.45	235.80	5702.85	-1342.12	-1974.88	0.00	0.00	1353.48
6304.58	26.45	238.70	5760.68	-1357.68	-1999.06	2.00	91.30	1369.17
7321.02	26.45	238.70	6670.72	-1592.89	-2385.91	0.00	0.00	1606.60
8170.94	90.00	180.33	7120.00	-2210.80	-2579.75	9.00	-61.13	2225.62
18341.30	90.00	180.33	7120.00	-12381.00	-2637.77	0.00	0.00	12395.99

SAFI 1224-02H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

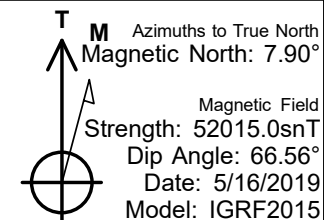
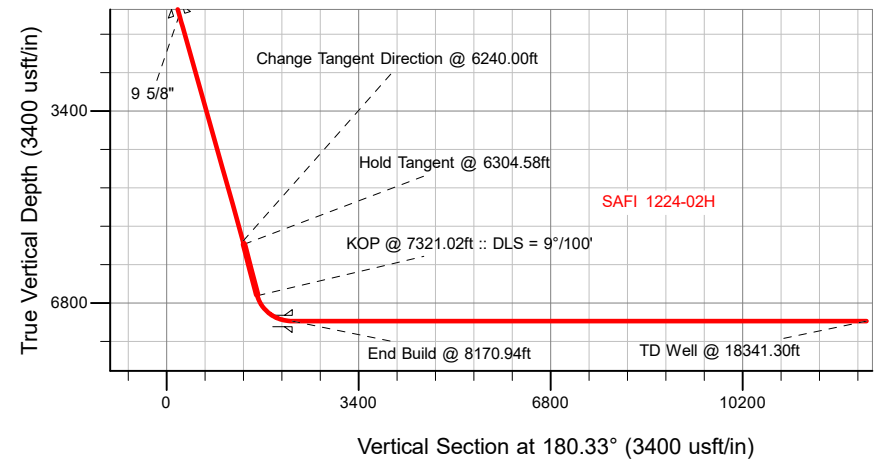
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SAFI 1224-02H_SHL	0.00	0.00	0.00	40.064786	-104.610676
SAFI 1224-02H_BHL	7120.00	-12381.00	-2637.77	40.030797	-104.620096



SHL
2215' FSL
2235' FEL

LP
0' FNL
465' FWL

BHL
460' FSL
462' FWL



WELL DETAILS: SAFI 1224-02H

GL = 4970°

RKB = 24' @ 4994.00usft (RIG)

Plan: Design #2 (SAFI 1224-02H/Wellbore #1)

Date: 5/20/2019

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-02H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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		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 1224-02H					
Well Position	+N/-S	-102.66 usft	Northing:	1,267,694.84 usft	Latitude:	40.064786
	+E/-W	160.60 usft	Easting:	3,248,906.49 usft	Longitude:	-104.610676
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,970.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/16/2019	7.90	66.56	52,015.02191222

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	180.33

Plan Survey Tool Program		Date	5/20/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,700.00	Design #2 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	
2	1,700.00	18,341.30	Design #2 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	

Hewlett-Packard
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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	
230.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,552.50	26.45	235.80	1,506.02	-168.56	-248.02	2.00	2.00	0.00	235.80	
6,240.00	26.45	235.80	5,702.85	-1,342.12	-1,974.88	0.00	0.00	0.00	0.00	
6,304.58	26.45	238.70	5,760.68	-1,357.68	-1,999.06	2.00	0.00	4.49	91.30	
7,321.02	26.45	238.70	6,670.72	-1,592.89	-2,385.91	0.00	0.00	0.00	0.00	
8,170.94	90.00	180.33	7,120.00	-2,210.80	-2,579.75	9.00	7.48	-6.87	-61.13	
18,341.31	90.00	180.33	7,120.00	-12,381.00	-2,637.77	0.00	0.00	0.00	0.00	SAFI 1224-02H_BHL

Hewlett-Packard

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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
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	235.80	299.99	-0.48	-0.71	0.48	2.00	2.00	0.00
400.00	3.40	235.80	399.90	-2.83	-4.17	2.86	2.00	2.00	0.00
500.00	5.40	235.80	499.60	-7.15	-10.52	7.21	2.00	2.00	0.00
600.00	7.40	235.80	598.97	-13.41	-19.73	13.52	2.00	2.00	0.00
700.00	9.40	235.80	697.89	-21.62	-31.82	21.81	2.00	2.00	0.00
800.00	11.40	235.80	796.25	-31.77	-46.75	32.04	2.00	2.00	0.00
900.00	13.40	235.80	893.91	-43.84	-64.51	44.21	2.00	2.00	0.00
1,000.00	15.40	235.80	990.76	-57.82	-85.07	58.30	2.00	2.00	0.00
1,100.00	17.40	235.80	1,086.69	-73.68	-108.42	74.31	2.00	2.00	0.00
1,200.00	19.40	235.80	1,181.57	-91.43	-134.53	92.20	2.00	2.00	0.00
1,300.00	21.40	235.80	1,275.30	-111.02	-163.36	111.96	2.00	2.00	0.00
1,400.00	23.40	235.80	1,367.74	-132.44	-194.87	133.56	2.00	2.00	0.00
1,500.00	25.40	235.80	1,458.81	-155.65	-229.04	156.97	2.00	2.00	0.00
1,552.50	26.45	235.80	1,506.02	-168.56	-248.02	169.98	2.00	2.00	0.00
Hold Tangent @ 1552.50ft									
1,600.00	26.45	235.80	1,548.55	-180.45	-265.52	181.97	0.00	0.00	0.00
1,700.00	26.45	235.80	1,638.08	-205.48	-302.36	207.22	0.00	0.00	0.00
1,769.15	26.45	235.80	1,700.00	-222.80	-327.84	224.68	0.00	0.00	0.00
9 5/8"									
1,800.00	26.45	235.80	1,727.62	-230.52	-339.20	232.47	0.00	0.00	0.00
1,900.00	26.45	235.80	1,817.15	-255.56	-376.04	257.72	0.00	0.00	0.00
2,000.00	26.45	235.80	1,906.68	-280.59	-412.88	282.97	0.00	0.00	0.00
2,100.00	26.45	235.80	1,996.21	-305.63	-449.72	308.21	0.00	0.00	0.00
2,200.00	26.45	235.80	2,085.75	-330.66	-486.56	333.46	0.00	0.00	0.00
2,300.00	26.45	235.80	2,175.28	-355.70	-523.40	358.71	0.00	0.00	0.00
2,400.00	26.45	235.80	2,264.81	-380.74	-560.24	383.96	0.00	0.00	0.00
2,500.00	26.45	235.80	2,354.34	-405.77	-597.08	409.21	0.00	0.00	0.00
2,600.00	26.45	235.80	2,443.88	-430.81	-633.92	434.45	0.00	0.00	0.00
2,700.00	26.45	235.80	2,533.41	-455.85	-670.76	459.70	0.00	0.00	0.00
2,800.00	26.45	235.80	2,622.94	-480.88	-707.60	484.95	0.00	0.00	0.00
2,900.00	26.45	235.80	2,712.47	-505.92	-744.43	510.20	0.00	0.00	0.00
3,000.00	26.45	235.80	2,802.01	-530.95	-781.27	535.44	0.00	0.00	0.00
3,100.00	26.45	235.80	2,891.54	-555.99	-818.11	560.69	0.00	0.00	0.00
3,200.00	26.45	235.80	2,981.07	-581.03	-854.95	585.94	0.00	0.00	0.00
3,300.00	26.45	235.80	3,070.60	-606.06	-891.79	611.19	0.00	0.00	0.00
3,400.00	26.45	235.80	3,160.13	-631.10	-928.63	636.44	0.00	0.00	0.00
3,500.00	26.45	235.80	3,249.67	-656.13	-965.47	661.68	0.00	0.00	0.00
3,600.00	26.45	235.80	3,339.20	-681.17	-1,002.31	686.93	0.00	0.00	0.00
3,700.00	26.45	235.80	3,428.73	-706.21	-1,039.15	712.18	0.00	0.00	0.00
3,800.00	26.45	235.80	3,518.26	-731.24	-1,075.99	737.43	0.00	0.00	0.00
3,900.00	26.45	235.80	3,607.80	-756.28	-1,112.83	762.68	0.00	0.00	0.00
4,000.00	26.45	235.80	3,697.33	-781.31	-1,149.67	787.92	0.00	0.00	0.00
4,100.00	26.45	235.80	3,786.86	-806.35	-1,186.51	813.17	0.00	0.00	0.00
4,200.00	26.45	235.80	3,876.39	-831.39	-1,223.35	838.42	0.00	0.00	0.00
4,300.00	26.45	235.80	3,965.93	-856.42	-1,260.19	863.67	0.00	0.00	0.00
4,400.00	26.45	235.80	4,055.46	-881.46	-1,297.03	888.92	0.00	0.00	0.00
4,500.00	26.45	235.80	4,144.99	-906.50	-1,333.87	914.16	0.00	0.00	0.00
4,600.00	26.45	235.80	4,234.52	-931.53	-1,370.71	939.41	0.00	0.00	0.00

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	26.45	235.80	4,324.06	-956.57	-1,407.55	964.66	0.00	0.00	0.00
4,800.00	26.45	235.80	4,413.59	-981.60	-1,444.39	989.91	0.00	0.00	0.00
4,900.00	26.45	235.80	4,503.12	-1,006.64	-1,481.23	1,015.15	0.00	0.00	0.00
5,000.00	26.45	235.80	4,592.65	-1,031.68	-1,518.07	1,040.40	0.00	0.00	0.00
5,100.00	26.45	235.80	4,682.18	-1,056.71	-1,554.90	1,065.65	0.00	0.00	0.00
5,200.00	26.45	235.80	4,771.72	-1,081.75	-1,591.74	1,090.90	0.00	0.00	0.00
5,300.00	26.45	235.80	4,861.25	-1,106.78	-1,628.58	1,116.15	0.00	0.00	0.00
5,400.00	26.45	235.80	4,950.78	-1,131.82	-1,665.42	1,141.39	0.00	0.00	0.00
5,500.00	26.45	235.80	5,040.31	-1,156.86	-1,702.26	1,166.64	0.00	0.00	0.00
5,600.00	26.45	235.80	5,129.85	-1,181.89	-1,739.10	1,191.89	0.00	0.00	0.00
5,700.00	26.45	235.80	5,219.38	-1,206.93	-1,775.94	1,217.14	0.00	0.00	0.00
5,800.00	26.45	235.80	5,308.91	-1,231.97	-1,812.78	1,242.39	0.00	0.00	0.00
5,900.00	26.45	235.80	5,398.44	-1,257.00	-1,849.62	1,267.63	0.00	0.00	0.00
6,000.00	26.45	235.80	5,487.98	-1,282.04	-1,886.46	1,292.88	0.00	0.00	0.00
6,100.00	26.45	235.80	5,577.51	-1,307.07	-1,923.30	1,318.13	0.00	0.00	0.00
6,200.00	26.45	235.80	5,667.04	-1,332.11	-1,960.14	1,343.38	0.00	0.00	0.00
6,240.00	26.45	235.80	5,702.85	-1,342.12	-1,974.88	1,353.48	0.00	0.00	0.00
Change Tangent Direction @ 6240.00ft									
6,300.00	26.45	238.49	5,756.58	-1,356.62	-1,997.32	1,368.10	2.00	0.00	4.49
6,304.58	26.45	238.70	5,760.68	-1,357.68	-1,999.06	1,369.17	2.00	0.04	4.49
Hold Tangent @ 6304.58ft									
6,400.00	26.45	238.70	5,846.11	-1,379.76	-2,035.38	1,391.46	0.00	0.00	0.00
6,500.00	26.45	238.70	5,935.64	-1,402.90	-2,073.44	1,414.82	0.00	0.00	0.00
6,600.00	26.45	238.70	6,025.17	-1,426.04	-2,111.50	1,438.18	0.00	0.00	0.00
6,700.00	26.45	238.70	6,114.70	-1,449.18	-2,149.55	1,461.54	0.00	0.00	0.00
6,800.00	26.45	238.70	6,204.24	-1,472.32	-2,187.61	1,484.90	0.00	0.00	0.00
6,900.00	26.45	238.70	6,293.77	-1,495.46	-2,225.67	1,508.26	0.00	0.00	0.00
7,000.00	26.45	238.70	6,383.30	-1,518.60	-2,263.73	1,531.62	0.00	0.00	0.00
7,100.00	26.45	238.70	6,472.83	-1,541.74	-2,301.79	1,554.97	0.00	0.00	0.00
7,200.00	26.45	238.70	6,562.37	-1,564.88	-2,339.85	1,578.33	0.00	0.00	0.00
7,300.00	26.45	238.70	6,651.90	-1,588.02	-2,377.91	1,601.69	0.00	0.00	0.00
7,321.02	26.45	238.70	6,670.72	-1,592.89	-2,385.91	1,606.60	0.00	0.00	0.00
KOP @ 7321.02ft :: DLS = 9°/100'									
7,400.00	30.48	226.36	6,740.20	-1,615.88	-2,415.47	1,629.76	9.00	5.10	-15.62
7,500.00	36.82	214.78	6,823.49	-1,658.08	-2,450.99	1,672.17	9.00	6.34	-11.58
7,600.00	43.99	206.35	6,899.64	-1,713.92	-2,483.57	1,728.20	9.00	7.17	-8.43
7,700.00	51.63	199.92	6,966.79	-1,782.03	-2,512.41	1,796.47	9.00	7.64	-6.43
7,800.00	59.56	194.74	7,023.27	-1,860.74	-2,536.78	1,875.32	9.00	7.93	-5.18
7,900.00	67.66	190.35	7,067.70	-1,948.10	-2,556.10	1,962.79	9.00	8.10	-4.39
8,000.00	75.86	186.45	7,098.99	-2,041.96	-2,569.89	2,056.73	9.00	8.20	-3.90
8,100.00	84.12	182.83	7,116.36	-2,140.02	-2,577.81	2,154.83	9.00	8.26	-3.63
8,170.94	90.00	180.33	7,120.00	-2,210.80	-2,579.75	2,225.62	9.00	8.28	-3.52
End Build @ 8170.94ft									
8,200.00	90.00	180.33	7,120.00	-2,239.86	-2,579.92	2,254.69	0.00	0.00	0.00
8,300.00	90.00	180.33	7,120.00	-2,339.86	-2,580.49	2,354.69	0.00	0.00	0.00
8,400.00	90.00	180.33	7,120.00	-2,439.86	-2,581.06	2,454.69	0.00	0.00	0.00
8,500.00	90.00	180.33	7,120.00	-2,539.86	-2,581.63	2,554.69	0.00	0.00	0.00
8,600.00	90.00	180.33	7,120.00	-2,639.86	-2,582.20	2,654.69	0.00	0.00	0.00
8,700.00	90.00	180.33	7,120.00	-2,739.86	-2,582.77	2,754.69	0.00	0.00	0.00
8,800.00	90.00	180.33	7,120.00	-2,839.85	-2,583.34	2,854.69	0.00	0.00	0.00
8,900.00	90.00	180.33	7,120.00	-2,939.85	-2,583.91	2,954.69	0.00	0.00	0.00
9,000.00	90.00	180.33	7,120.00	-3,039.85	-2,584.48	3,054.69	0.00	0.00	0.00
9,100.00	90.00	180.33	7,120.00	-3,139.85	-2,585.05	3,154.69	0.00	0.00	0.00
9,200.00	90.00	180.33	7,120.00	-3,239.85	-2,585.62	3,254.69	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-02H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
9,300.00	90.00	180.33	7,120.00	-3,339.85	-2,586.19	3,354.69	0.00	0.00	0.00	
9,400.00	90.00	180.33	7,120.00	-3,439.84	-2,586.76	3,454.69	0.00	0.00	0.00	
9,500.00	90.00	180.33	7,120.00	-3,539.84	-2,587.33	3,554.69	0.00	0.00	0.00	
9,600.00	90.00	180.33	7,120.00	-3,639.84	-2,587.91	3,654.69	0.00	0.00	0.00	
9,700.00	90.00	180.33	7,120.00	-3,739.84	-2,588.48	3,754.69	0.00	0.00	0.00	
9,800.00	90.00	180.33	7,120.00	-3,839.84	-2,589.05	3,854.69	0.00	0.00	0.00	
9,900.00	90.00	180.33	7,120.00	-3,939.84	-2,589.62	3,954.69	0.00	0.00	0.00	
10,000.00	90.00	180.33	7,120.00	-4,039.83	-2,590.19	4,054.69	0.00	0.00	0.00	
10,100.00	90.00	180.33	7,120.00	-4,139.83	-2,590.76	4,154.69	0.00	0.00	0.00	
10,200.00	90.00	180.33	7,120.00	-4,239.83	-2,591.33	4,254.69	0.00	0.00	0.00	
10,300.00	90.00	180.33	7,120.00	-4,339.83	-2,591.90	4,354.69	0.00	0.00	0.00	
10,400.00	90.00	180.33	7,120.00	-4,439.83	-2,592.47	4,454.69	0.00	0.00	0.00	
10,500.00	90.00	180.33	7,120.00	-4,539.83	-2,593.04	4,554.69	0.00	0.00	0.00	
10,600.00	90.00	180.33	7,120.00	-4,639.82	-2,593.61	4,654.69	0.00	0.00	0.00	
10,700.00	90.00	180.33	7,120.00	-4,739.82	-2,594.18	4,754.69	0.00	0.00	0.00	
10,800.00	90.00	180.33	7,120.00	-4,839.82	-2,594.75	4,854.69	0.00	0.00	0.00	
10,900.00	90.00	180.33	7,120.00	-4,939.82	-2,595.32	4,954.69	0.00	0.00	0.00	
11,000.00	90.00	180.33	7,120.00	-5,039.82	-2,595.89	5,054.69	0.00	0.00	0.00	
11,100.00	90.00	180.33	7,120.00	-5,139.82	-2,596.46	5,154.69	0.00	0.00	0.00	
11,200.00	90.00	180.33	7,120.00	-5,239.82	-2,597.03	5,254.69	0.00	0.00	0.00	
11,300.00	90.00	180.33	7,120.00	-5,339.81	-2,597.60	5,354.69	0.00	0.00	0.00	
11,400.00	90.00	180.33	7,120.00	-5,439.81	-2,598.17	5,454.69	0.00	0.00	0.00	
11,500.00	90.00	180.33	7,120.00	-5,539.81	-2,598.74	5,554.69	0.00	0.00	0.00	
11,600.00	90.00	180.33	7,120.00	-5,639.81	-2,599.31	5,654.69	0.00	0.00	0.00	
11,700.00	90.00	180.33	7,120.00	-5,739.81	-2,599.88	5,754.69	0.00	0.00	0.00	
11,800.00	90.00	180.33	7,120.00	-5,839.81	-2,600.46	5,854.69	0.00	0.00	0.00	
11,900.00	90.00	180.33	7,120.00	-5,939.80	-2,601.03	5,954.69	0.00	0.00	0.00	
12,000.00	90.00	180.33	7,120.00	-6,039.80	-2,601.60	6,054.69	0.00	0.00	0.00	
12,100.00	90.00	180.33	7,120.00	-6,139.80	-2,602.17	6,154.69	0.00	0.00	0.00	
12,200.00	90.00	180.33	7,120.00	-6,239.80	-2,602.74	6,254.69	0.00	0.00	0.00	
12,300.00	90.00	180.33	7,120.00	-6,339.80	-2,603.31	6,354.69	0.00	0.00	0.00	
12,400.00	90.00	180.33	7,120.00	-6,439.80	-2,603.88	6,454.69	0.00	0.00	0.00	
12,500.00	90.00	180.33	7,120.00	-6,539.79	-2,604.45	6,554.69	0.00	0.00	0.00	
12,600.00	90.00	180.33	7,120.00	-6,639.79	-2,605.02	6,654.69	0.00	0.00	0.00	
12,700.00	90.00	180.33	7,120.00	-6,739.79	-2,605.59	6,754.69	0.00	0.00	0.00	
12,800.00	90.00	180.33	7,120.00	-6,839.79	-2,606.16	6,854.69	0.00	0.00	0.00	
12,900.00	90.00	180.33	7,120.00	-6,939.79	-2,606.73	6,954.69	0.00	0.00	0.00	
13,000.00	90.00	180.33	7,120.00	-7,039.79	-2,607.30	7,054.69	0.00	0.00	0.00	
13,100.00	90.00	180.33	7,120.00	-7,139.78	-2,607.87	7,154.69	0.00	0.00	0.00	
13,200.00	90.00	180.33	7,120.00	-7,239.78	-2,608.44	7,254.69	0.00	0.00	0.00	
13,300.00	90.00	180.33	7,120.00	-7,339.78	-2,609.01	7,354.69	0.00	0.00	0.00	
13,400.00	90.00	180.33	7,120.00	-7,439.78	-2,609.58	7,454.69	0.00	0.00	0.00	
13,500.00	90.00	180.33	7,120.00	-7,539.78	-2,610.15	7,554.69	0.00	0.00	0.00	
13,600.00	90.00	180.33	7,120.00	-7,639.78	-2,610.72	7,654.69	0.00	0.00	0.00	
13,700.00	90.00	180.33	7,120.00	-7,739.77	-2,611.29	7,754.69	0.00	0.00	0.00	
13,800.00	90.00	180.33	7,120.00	-7,839.77	-2,611.86	7,854.69	0.00	0.00	0.00	
13,900.00	90.00	180.33	7,120.00	-7,939.77	-2,612.44	7,954.69	0.00	0.00	0.00	
14,000.00	90.00	180.33	7,120.00	-8,039.77	-2,613.01	8,054.69	0.00	0.00	0.00	
14,100.00	90.00	180.33	7,120.00	-8,139.77	-2,613.58	8,154.69	0.00	0.00	0.00	
14,200.00	90.00	180.33	7,120.00	-8,239.77	-2,614.15	8,254.69	0.00	0.00	0.00	
14,300.00	90.00	180.33	7,120.00	-8,339.76	-2,614.72	8,354.69	0.00	0.00	0.00	
14,400.00	90.00	180.33	7,120.00	-8,439.76	-2,615.29	8,454.69	0.00	0.00	0.00	
14,500.00	90.00	180.33	7,120.00	-8,539.76	-2,615.86	8,554.69	0.00	0.00	0.00	

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-02H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
14,600.00	90.00	180.33	7,120.00	-8,639.76	-2,616.43	8,654.69	0.00	0.00	0.00	
14,700.00	90.00	180.33	7,120.00	-8,739.76	-2,617.00	8,754.69	0.00	0.00	0.00	
14,800.00	90.00	180.33	7,120.00	-8,839.76	-2,617.57	8,854.69	0.00	0.00	0.00	
14,900.00	90.00	180.33	7,120.00	-8,939.75	-2,618.14	8,954.69	0.00	0.00	0.00	
15,000.00	90.00	180.33	7,120.00	-9,039.75	-2,618.71	9,054.69	0.00	0.00	0.00	
15,100.00	90.00	180.33	7,120.00	-9,139.75	-2,619.28	9,154.69	0.00	0.00	0.00	
15,200.00	90.00	180.33	7,120.00	-9,239.75	-2,619.85	9,254.69	0.00	0.00	0.00	
15,300.00	90.00	180.33	7,120.00	-9,339.75	-2,620.42	9,354.69	0.00	0.00	0.00	
15,400.00	90.00	180.33	7,120.00	-9,439.75	-2,620.99	9,454.69	0.00	0.00	0.00	
15,500.00	90.00	180.33	7,120.00	-9,539.75	-2,621.56	9,554.69	0.00	0.00	0.00	
15,600.00	90.00	180.33	7,120.00	-9,639.74	-2,622.13	9,654.69	0.00	0.00	0.00	
15,700.00	90.00	180.33	7,120.00	-9,739.74	-2,622.70	9,754.69	0.00	0.00	0.00	
15,800.00	90.00	180.33	7,120.00	-9,839.74	-2,623.27	9,854.69	0.00	0.00	0.00	
15,900.00	90.00	180.33	7,120.00	-9,939.74	-2,623.84	9,954.69	0.00	0.00	0.00	
16,000.00	90.00	180.33	7,120.00	-10,039.74	-2,624.41	10,054.69	0.00	0.00	0.00	
16,100.00	90.00	180.33	7,120.00	-10,139.74	-2,624.99	10,154.69	0.00	0.00	0.00	
16,200.00	90.00	180.33	7,120.00	-10,239.73	-2,625.56	10,254.69	0.00	0.00	0.00	
16,300.00	90.00	180.33	7,120.00	-10,339.73	-2,626.13	10,354.69	0.00	0.00	0.00	
16,400.00	90.00	180.33	7,120.00	-10,439.73	-2,626.70	10,454.69	0.00	0.00	0.00	
16,500.00	90.00	180.33	7,120.00	-10,539.73	-2,627.27	10,554.69	0.00	0.00	0.00	
16,600.00	90.00	180.33	7,120.00	-10,639.73	-2,627.84	10,654.69	0.00	0.00	0.00	
16,700.00	90.00	180.33	7,120.00	-10,739.73	-2,628.41	10,754.69	0.00	0.00	0.00	
16,800.00	90.00	180.33	7,120.00	-10,839.72	-2,628.98	10,854.69	0.00	0.00	0.00	
16,900.00	90.00	180.33	7,120.00	-10,939.72	-2,629.55	10,954.69	0.00	0.00	0.00	
17,000.00	90.00	180.33	7,120.00	-11,039.72	-2,630.12	11,054.69	0.00	0.00	0.00	
17,100.00	90.00	180.33	7,120.00	-11,139.72	-2,630.69	11,154.69	0.00	0.00	0.00	
17,200.00	90.00	180.33	7,120.00	-11,239.72	-2,631.26	11,254.69	0.00	0.00	0.00	
17,300.00	90.00	180.33	7,120.00	-11,339.72	-2,631.83	11,354.69	0.00	0.00	0.00	
17,400.00	90.00	180.33	7,120.00	-11,439.71	-2,632.40	11,454.69	0.00	0.00	0.00	
17,500.00	90.00	180.33	7,120.00	-11,539.71	-2,632.97	11,554.69	0.00	0.00	0.00	
17,600.00	90.00	180.33	7,120.00	-11,639.71	-2,633.54	11,654.69	0.00	0.00	0.00	
17,700.00	90.00	180.33	7,120.00	-11,739.71	-2,634.11	11,754.69	0.00	0.00	0.00	
17,800.00	90.00	180.33	7,120.00	-11,839.71	-2,634.68	11,854.69	0.00	0.00	0.00	
17,900.00	90.00	180.33	7,120.00	-11,939.71	-2,635.25	11,954.69	0.00	0.00	0.00	
18,000.00	90.00	180.33	7,120.00	-12,039.70	-2,635.82	12,054.69	0.00	0.00	0.00	
18,100.00	90.00	180.33	7,120.00	-12,139.70	-2,636.39	12,154.69	0.00	0.00	0.00	
18,200.00	90.00	180.33	7,120.00	-12,239.70	-2,636.97	12,254.69	0.00	0.00	0.00	
18,300.00	90.00	180.33	7,120.00	-12,339.70	-2,637.54	12,354.69	0.00	0.00	0.00	
18,341.31	90.00	180.33	7,120.00	-12,381.00	-2,637.77	12,395.99	0.00	0.00	0.00	
TD Well @ 18341.30ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,769.15	1,700.00	9 5/8"	9-5/8	13-1/2	

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Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
230.00	230.00	0.00	0.00	Begin Nudge @ 230.00ft
1,552.50	1,506.02	-168.56	-248.02	Hold Tangent @ 1552.50ft
6,240.00	5,702.85	-1,342.12	-1,974.88	Change Tangent Direction @ 6240.00ft
6,304.58	5,760.68	-1,357.68	-1,999.06	Hold Tangent @ 6304.58ft
7,321.02	6,670.72	-1,592.89	-2,385.91	KOP @ 7321.02ft :: DLS = 9°/100'
8,170.94	7,120.00	-2,210.80	-2,579.75	End Build @ 8170.94ft
18,341.31	7,120.00	-12,381.00	-2,637.77	TD Well @ 18341.30ft