

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**8N-60W-11 SONIC STAR 1101 PAD**

**SONIC STAR 1101-13H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**06 March, 2018**

Project: WATTENBERG FIELD  
Site: 8N-60W-11 SONIC STAR 1101 PAD  
Well: SONIC STAR 1101-13H  
Wellbore: Wellbore #1  
Design: Design #1

# VERDAD RESOURCES

## CASING DETAILS

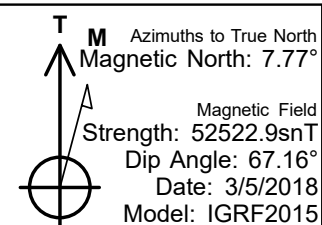
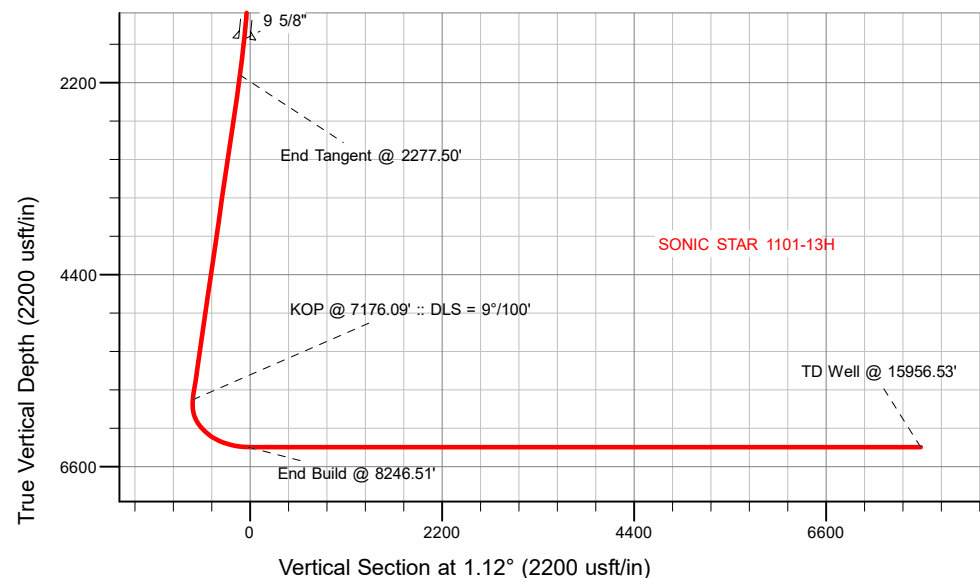
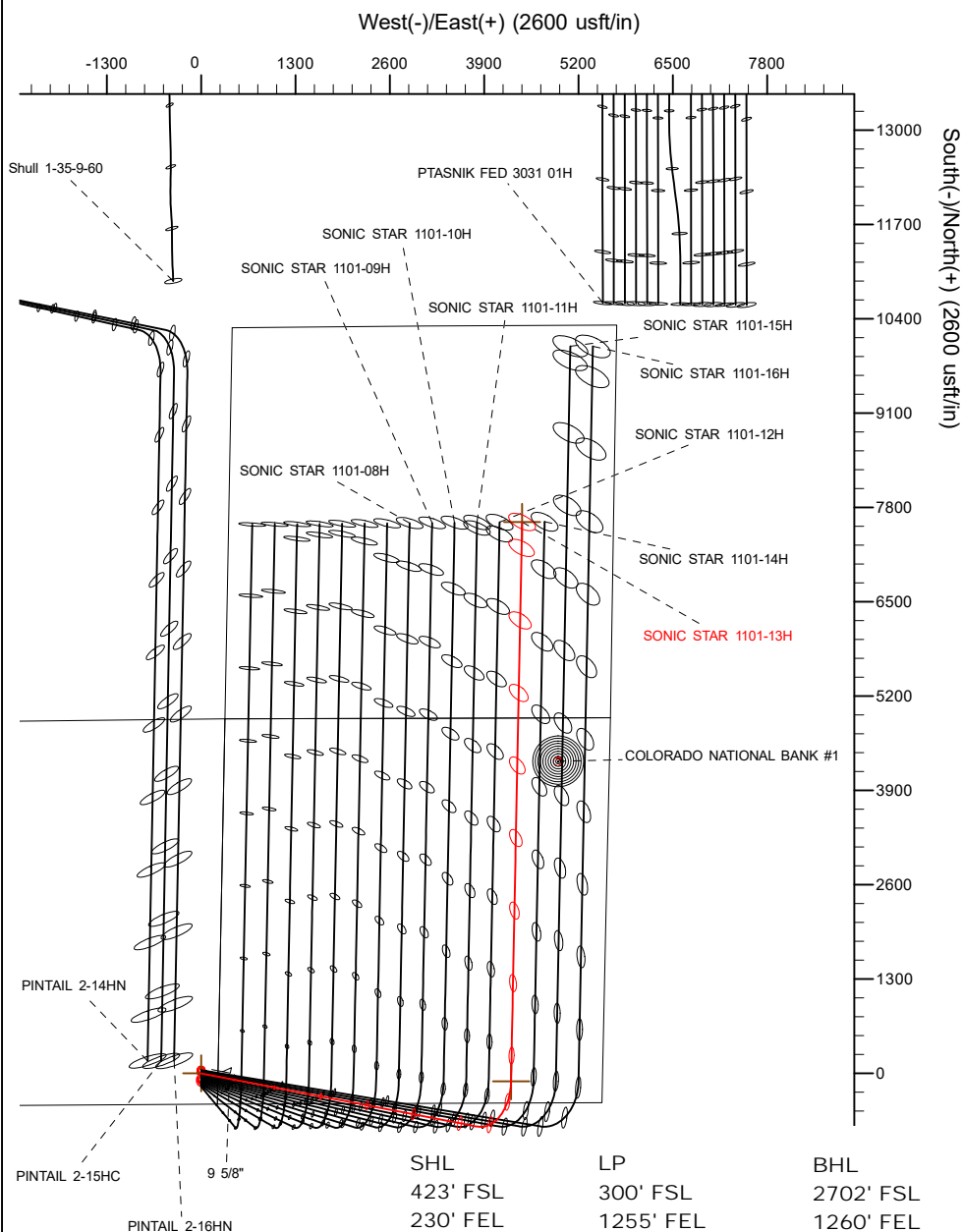
TVD	MD	Name	Size
1700.00	1770.37	9 5/8"	9-5/8

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	2277.50	40.55	100.90	2112.43	-130.10	675.60	2.00	100.90	-116.87	
4	7176.09	40.55	100.90	5834.57	-732.30	3802.77	0.00	0.00	-657.63	
5	8246.51	90.00	1.12	6375.00	-108.63	4270.77	9.00	-97.46	-25.13	
6	15956.53	90.00	1.12	6375.00	7599.91	4422.01	0.00	0.00	7684.89	SONIC STAR 1101-13H_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SONIC STAR 1101-13H_SHL	0.00	0.00	0.00	40.671000	-104.049101
SONIC STAR 1101-13H_BHL	6375.00	7599.91	4422.01	40.691859	-104.033155



## WELL DETAILS: SONIC STAR 1101-13H

GL = 4882'

RKB = 20' @ 4902.00usft (RIG)

Plan: Design #1 (SONIC STAR 1101-13H/Wellbore #1)

Created By: \_\_\_\_\_ Date: 3/6/2018  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-13H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-13H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	WATTENBERG FIELD		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		8N-60W-11 SONIC STAR 1101 PAD			
Site Position:		Northing:	1,490,400.68 usft	Latitude:	40.670506
From:	Lat/Long	Easting:	3,402,456.42 usft	Longitude:	-104.049114
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.94 °

Well		SONIC STAR 1101-13H				
Well Position	+N/-S	180.04 usft	Northing:	1,490,580.75 usft	Latitude:	40.671000
	+E/-W	3.52 usft	Easting:	3,402,456.99 usft	Longitude:	-104.049101
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,882.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	3/5/2018	7.77	67.16	52,522.94619513

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	1.12

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/5/2018			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,700.00	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	
2	1,700.00	15,956.53	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,277.50	40.55	100.90	2,112.43	-130.10	675.60	2.00	2.00	0.00	100.90	
7,176.09	40.55	100.90	5,834.57	-732.30	3,802.77	0.00	0.00	0.00	0.00	
8,246.51	90.00	1.12	6,375.00	-108.63	4,270.77	9.00	4.62	-9.32	-97.46	
15,956.53	90.00	1.12	6,375.00	7,599.91	4,422.01	0.00	0.00	0.00	0.00	SONIC STAR 1101-13H

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-13H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-13H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Tangent @ 250.00'									
300.00	1.00	100.90	300.00	-0.08	0.43	-0.07	2.00	2.00	0.00
400.00	3.00	100.90	399.93	-0.74	3.86	-0.67	2.00	2.00	0.00
500.00	5.00	100.90	499.68	-2.06	10.70	-1.85	2.00	2.00	0.00
600.00	7.00	100.90	599.13	-4.04	20.97	-3.63	2.00	2.00	0.00
700.00	9.00	100.90	698.15	-6.67	34.63	-5.99	2.00	2.00	0.00
800.00	11.00	100.90	796.63	-9.95	51.68	-8.94	2.00	2.00	0.00
900.00	13.00	100.90	894.44	-13.88	72.10	-12.47	2.00	2.00	0.00
1,000.00	15.00	100.90	991.46	-18.46	95.85	-16.58	2.00	2.00	0.00
1,100.00	17.00	100.90	1,087.58	-23.67	122.92	-21.26	2.00	2.00	0.00
1,200.00	19.00	100.90	1,182.68	-29.51	153.26	-26.51	2.00	2.00	0.00
1,300.00	21.00	100.90	1,276.65	-35.98	186.85	-32.32	2.00	2.00	0.00
1,400.00	23.00	100.90	1,369.36	-43.06	223.63	-38.68	2.00	2.00	0.00
1,500.00	25.00	100.90	1,460.71	-50.75	263.57	-45.59	2.00	2.00	0.00
1,600.00	27.00	100.90	1,550.59	-59.04	306.61	-53.04	2.00	2.00	0.00
1,700.00	29.00	100.90	1,638.88	-67.92	352.71	-61.01	2.00	2.00	0.00
1,770.37	30.41	100.90	1,700.00	-74.51	386.95	-66.94	2.00	2.00	0.00
9 5/8"									
1,800.00	31.00	100.90	1,725.48	-77.38	401.80	-69.51	2.00	2.00	0.00
1,900.00	33.00	100.90	1,810.28	-87.40	453.84	-78.51	2.00	2.00	0.00
2,000.00	35.00	100.90	1,893.18	-97.97	508.74	-88.01	2.00	2.00	0.00
2,100.00	37.00	100.90	1,974.07	-109.08	566.46	-97.99	2.00	2.00	0.00
2,200.00	39.00	100.90	2,052.87	-120.72	626.91	-108.45	2.00	2.00	0.00
2,277.50	40.55	100.90	2,112.43	-130.10	675.60	-116.87	2.00	2.00	0.00
End Tangent @ 2277.50'									
2,300.00	40.55	100.90	2,129.53	-132.87	689.96	-119.35	0.00	0.00	0.00
2,400.00	40.55	100.90	2,205.51	-145.16	753.80	-130.40	0.00	0.00	0.00
2,500.00	40.55	100.90	2,281.50	-157.45	817.64	-141.44	0.00	0.00	0.00
2,600.00	40.55	100.90	2,357.48	-169.75	881.48	-152.48	0.00	0.00	0.00
2,700.00	40.55	100.90	2,433.46	-182.04	945.31	-163.53	0.00	0.00	0.00
2,800.00	40.55	100.90	2,509.45	-194.33	1,009.15	-174.57	0.00	0.00	0.00
2,900.00	40.55	100.90	2,585.43	-206.63	1,072.99	-185.61	0.00	0.00	0.00
3,000.00	40.55	100.90	2,661.42	-218.92	1,136.83	-196.66	0.00	0.00	0.00
3,100.00	40.55	100.90	2,737.40	-231.21	1,200.67	-207.70	0.00	0.00	0.00
3,200.00	40.55	100.90	2,813.38	-243.51	1,264.51	-218.74	0.00	0.00	0.00
3,300.00	40.55	100.90	2,889.37	-255.80	1,328.34	-229.79	0.00	0.00	0.00
3,400.00	40.55	100.90	2,965.35	-268.09	1,392.18	-240.83	0.00	0.00	0.00
3,500.00	40.55	100.90	3,041.34	-280.39	1,456.02	-251.87	0.00	0.00	0.00
3,600.00	40.55	100.90	3,117.32	-292.68	1,519.86	-262.91	0.00	0.00	0.00
3,700.00	40.55	100.90	3,193.30	-304.97	1,583.70	-273.96	0.00	0.00	0.00
3,800.00	40.55	100.90	3,269.29	-317.27	1,647.54	-285.00	0.00	0.00	0.00
3,900.00	40.55	100.90	3,345.27	-329.56	1,711.37	-296.04	0.00	0.00	0.00
4,000.00	40.55	100.90	3,421.25	-341.85	1,775.21	-307.09	0.00	0.00	0.00
4,100.00	40.55	100.90	3,497.24	-354.15	1,839.05	-318.13	0.00	0.00	0.00
4,200.00	40.55	100.90	3,573.22	-366.44	1,902.89	-329.17	0.00	0.00	0.00
4,300.00	40.55	100.90	3,649.21	-378.73	1,966.73	-340.22	0.00	0.00	0.00
4,400.00	40.55	100.90	3,725.19	-391.03	2,030.57	-351.26	0.00	0.00	0.00
4,500.00	40.55	100.90	3,801.17	-403.32	2,094.40	-362.30	0.00	0.00	0.00
4,600.00	40.55	100.90	3,877.16	-415.61	2,158.24	-373.35	0.00	0.00	0.00

# Hewlett-Packard

## Planning Report

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<b>Well:</b>	SONIC STAR 1101-13H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	40.55	100.90	3,953.14	-427.91	2,222.08	-384.39	0.00	0.00	0.00
4,800.00	40.55	100.90	4,029.13	-440.20	2,285.92	-395.43	0.00	0.00	0.00
4,900.00	40.55	100.90	4,105.11	-452.49	2,349.76	-406.48	0.00	0.00	0.00
5,000.00	40.55	100.90	4,181.09	-464.79	2,413.59	-417.52	0.00	0.00	0.00
5,100.00	40.55	100.90	4,257.08	-477.08	2,477.43	-428.56	0.00	0.00	0.00
5,200.00	40.55	100.90	4,333.06	-489.37	2,541.27	-439.61	0.00	0.00	0.00
5,300.00	40.55	100.90	4,409.05	-501.67	2,605.11	-450.65	0.00	0.00	0.00
5,400.00	40.55	100.90	4,485.03	-513.96	2,668.95	-461.69	0.00	0.00	0.00
5,500.00	40.55	100.90	4,561.01	-526.25	2,732.79	-472.73	0.00	0.00	0.00
5,600.00	40.55	100.90	4,637.00	-538.54	2,796.62	-483.78	0.00	0.00	0.00
5,700.00	40.55	100.90	4,712.98	-550.84	2,860.46	-494.82	0.00	0.00	0.00
5,800.00	40.55	100.90	4,788.96	-563.13	2,924.30	-505.86	0.00	0.00	0.00
5,900.00	40.55	100.90	4,864.95	-575.42	2,988.14	-516.91	0.00	0.00	0.00
6,000.00	40.55	100.90	4,940.93	-587.72	3,051.98	-527.95	0.00	0.00	0.00
6,100.00	40.55	100.90	5,016.92	-600.01	3,115.82	-538.99	0.00	0.00	0.00
6,200.00	40.55	100.90	5,092.90	-612.30	3,179.65	-550.04	0.00	0.00	0.00
6,300.00	40.55	100.90	5,168.88	-624.60	3,243.49	-561.08	0.00	0.00	0.00
6,400.00	40.55	100.90	5,244.87	-636.89	3,307.33	-572.12	0.00	0.00	0.00
6,500.00	40.55	100.90	5,320.85	-649.18	3,371.17	-583.17	0.00	0.00	0.00
6,600.00	40.55	100.90	5,396.84	-661.48	3,435.01	-594.21	0.00	0.00	0.00
6,700.00	40.55	100.90	5,472.82	-673.77	3,498.85	-605.25	0.00	0.00	0.00
6,800.00	40.55	100.90	5,548.80	-686.06	3,562.68	-616.30	0.00	0.00	0.00
6,900.00	40.55	100.90	5,624.79	-698.36	3,626.52	-627.34	0.00	0.00	0.00
7,000.00	40.55	100.90	5,700.77	-710.65	3,690.36	-638.38	0.00	0.00	0.00
7,100.00	40.55	100.90	5,776.76	-722.94	3,754.20	-649.43	0.00	0.00	0.00
7,176.09	40.55	100.90	5,834.57	-732.30	3,802.77	-657.83	0.00	0.00	0.00
KOP @ 7176.09' :: DLS = 9°/100'									
7,200.00	40.32	97.60	5,852.77	-734.79	3,818.07	-660.02	9.00	-0.97	-13.80
7,250.00	40.14	90.64	5,890.97	-737.11	3,850.24	-661.71	9.00	-0.36	-13.93
7,300.00	40.38	83.68	5,929.14	-735.51	3,882.47	-659.48	9.00	0.48	-13.91
7,350.00	41.02	76.85	5,967.07	-729.99	3,914.56	-653.33	9.00	1.30	-13.66
7,400.00	42.06	70.24	6,004.51	-720.59	3,946.32	-643.31	9.00	2.08	-13.21
7,450.00	43.47	63.94	6,041.23	-707.37	3,977.55	-629.48	9.00	2.80	-12.60
7,500.00	45.19	58.00	6,077.01	-690.40	4,008.05	-611.93	9.00	3.46	-11.90
7,550.00	47.21	52.42	6,111.63	-669.80	4,037.65	-590.75	9.00	4.04	-11.15
7,600.00	49.48	47.22	6,144.87	-645.69	4,066.16	-566.09	9.00	4.54	-10.40
7,650.00	51.97	42.38	6,176.53	-618.22	4,093.39	-538.09	9.00	4.98	-9.69
7,700.00	54.65	37.86	6,206.41	-587.56	4,119.20	-506.93	9.00	5.35	-9.03
7,750.00	57.48	33.64	6,234.33	-553.90	4,143.40	-472.80	9.00	5.66	-8.43
7,800.00	60.44	29.69	6,260.12	-517.44	4,165.86	-435.91	9.00	5.93	-7.91
7,850.00	63.51	25.97	6,283.61	-478.41	4,186.44	-396.49	9.00	6.15	-7.45
7,900.00	66.68	22.44	6,304.67	-437.05	4,205.01	-354.78	9.00	6.33	-7.06
7,950.00	69.92	19.08	6,323.16	-393.62	4,221.46	-311.03	9.00	6.48	-6.72
8,000.00	73.22	15.85	6,338.97	-348.38	4,235.68	-265.52	9.00	6.60	-6.45
8,050.00	76.57	12.74	6,352.00	-301.61	4,247.58	-218.53	9.00	6.70	-6.23
8,100.00	79.96	9.71	6,362.17	-253.61	4,257.10	-170.35	9.00	6.77	-6.05
8,150.00	83.37	6.75	6,369.42	-204.66	4,264.18	-121.27	9.00	6.83	-5.93
8,200.00	86.80	3.82	6,373.70	-155.07	4,268.76	-71.60	9.00	6.86	-5.85
8,246.51	90.00	1.12	6,375.00	-108.63	4,270.77	-25.13	9.00	6.88	-5.81
End Build @ 8246.51'									
8,300.00	90.00	1.12	6,375.00	-55.15	4,271.82	28.36	0.00	0.00	0.00
8,400.00	90.00	1.12	6,375.00	44.83	4,273.78	128.36	0.00	0.00	0.00
8,500.00	90.00	1.12	6,375.00	144.81	4,275.74	228.36	0.00	0.00	0.00
8,600.00	90.00	1.12	6,375.00	244.79	4,277.70	328.36	0.00	0.00	0.00

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-13H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-13H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)	
8,700.00	90.00	1.12	6,375.00	344.78	4,279.66	428.36	0.00	0.00	0.00	
8,800.00	90.00	1.12	6,375.00	444.76	4,281.63	528.36	0.00	0.00	0.00	
8,900.00	90.00	1.12	6,375.00	544.74	4,283.59	628.36	0.00	0.00	0.00	
9,000.00	90.00	1.12	6,375.00	644.72	4,285.55	728.36	0.00	0.00	0.00	
9,100.00	90.00	1.12	6,375.00	744.70	4,287.51	828.36	0.00	0.00	0.00	
9,200.00	90.00	1.12	6,375.00	844.68	4,289.47	928.36	0.00	0.00	0.00	
9,300.00	90.00	1.12	6,375.00	944.66	4,291.43	1,028.36	0.00	0.00	0.00	
9,400.00	90.00	1.12	6,375.00	1,044.64	4,293.39	1,128.36	0.00	0.00	0.00	
9,500.00	90.00	1.12	6,375.00	1,144.62	4,295.36	1,228.36	0.00	0.00	0.00	
9,600.00	90.00	1.12	6,375.00	1,244.60	4,297.32	1,328.36	0.00	0.00	0.00	
9,700.00	90.00	1.12	6,375.00	1,344.58	4,299.28	1,428.36	0.00	0.00	0.00	
9,800.00	90.00	1.12	6,375.00	1,444.56	4,301.24	1,528.36	0.00	0.00	0.00	
9,900.00	90.00	1.12	6,375.00	1,544.54	4,303.20	1,628.36	0.00	0.00	0.00	
10,000.00	90.00	1.12	6,375.00	1,644.53	4,305.16	1,728.36	0.00	0.00	0.00	
10,100.00	90.00	1.12	6,375.00	1,744.51	4,307.13	1,828.36	0.00	0.00	0.00	
10,200.00	90.00	1.12	6,375.00	1,844.49	4,309.09	1,928.36	0.00	0.00	0.00	
10,300.00	90.00	1.12	6,375.00	1,944.47	4,311.05	2,028.36	0.00	0.00	0.00	
10,400.00	90.00	1.12	6,375.00	2,044.45	4,313.01	2,128.36	0.00	0.00	0.00	
10,500.00	90.00	1.12	6,375.00	2,144.43	4,314.97	2,228.36	0.00	0.00	0.00	
10,600.00	90.00	1.12	6,375.00	2,244.41	4,316.93	2,328.36	0.00	0.00	0.00	
10,700.00	90.00	1.12	6,375.00	2,344.39	4,318.90	2,428.36	0.00	0.00	0.00	
10,800.00	90.00	1.12	6,375.00	2,444.37	4,320.86	2,528.36	0.00	0.00	0.00	
10,900.00	90.00	1.12	6,375.00	2,544.35	4,322.82	2,628.36	0.00	0.00	0.00	
11,000.00	90.00	1.12	6,375.00	2,644.33	4,324.78	2,728.36	0.00	0.00	0.00	
11,100.00	90.00	1.12	6,375.00	2,744.31	4,326.74	2,828.36	0.00	0.00	0.00	
11,200.00	90.00	1.12	6,375.00	2,844.29	4,328.70	2,928.36	0.00	0.00	0.00	
11,300.00	90.00	1.12	6,375.00	2,944.27	4,330.66	3,028.36	0.00	0.00	0.00	
11,400.00	90.00	1.12	6,375.00	3,044.26	4,332.63	3,128.36	0.00	0.00	0.00	
11,500.00	90.00	1.12	6,375.00	3,144.24	4,334.59	3,228.36	0.00	0.00	0.00	
11,600.00	90.00	1.12	6,375.00	3,244.22	4,336.55	3,328.36	0.00	0.00	0.00	
11,700.00	90.00	1.12	6,375.00	3,344.20	4,338.51	3,428.36	0.00	0.00	0.00	
11,800.00	90.00	1.12	6,375.00	3,444.18	4,340.47	3,528.36	0.00	0.00	0.00	
11,900.00	90.00	1.12	6,375.00	3,544.16	4,342.43	3,628.36	0.00	0.00	0.00	
12,000.00	90.00	1.12	6,375.00	3,644.14	4,344.40	3,728.36	0.00	0.00	0.00	
12,100.00	90.00	1.12	6,375.00	3,744.12	4,346.36	3,828.36	0.00	0.00	0.00	
12,200.00	90.00	1.12	6,375.00	3,844.10	4,348.32	3,928.36	0.00	0.00	0.00	
12,300.00	90.00	1.12	6,375.00	3,944.08	4,350.28	4,028.36	0.00	0.00	0.00	
12,400.00	90.00	1.12	6,375.00	4,044.06	4,352.24	4,128.36	0.00	0.00	0.00	
12,500.00	90.00	1.12	6,375.00	4,144.04	4,354.20	4,228.36	0.00	0.00	0.00	
12,600.00	90.00	1.12	6,375.00	4,244.02	4,356.17	4,328.36	0.00	0.00	0.00	
12,700.00	90.00	1.12	6,375.00	4,344.01	4,358.13	4,428.36	0.00	0.00	0.00	
12,800.00	90.00	1.12	6,375.00	4,443.99	4,360.09	4,528.36	0.00	0.00	0.00	
12,900.00	90.00	1.12	6,375.00	4,543.97	4,362.05	4,628.36	0.00	0.00	0.00	
13,000.00	90.00	1.12	6,375.00	4,643.95	4,364.01	4,728.36	0.00	0.00	0.00	
13,100.00	90.00	1.12	6,375.00	4,743.93	4,365.97	4,828.36	0.00	0.00	0.00	
13,200.00	90.00	1.12	6,375.00	4,843.91	4,367.93	4,928.36	0.00	0.00	0.00	
13,300.00	90.00	1.12	6,375.00	4,943.89	4,369.90	5,028.36	0.00	0.00	0.00	
13,400.00	90.00	1.12	6,375.00	5,043.87	4,371.86	5,128.36	0.00	0.00	0.00	
13,500.00	90.00	1.12	6,375.00	5,143.85	4,373.82	5,228.36	0.00	0.00	0.00	
13,600.00	90.00	1.12	6,375.00	5,243.83	4,375.78	5,328.36	0.00	0.00	0.00	
13,700.00	90.00	1.12	6,375.00	5,343.81	4,377.74	5,428.36	0.00	0.00	0.00	
13,800.00	90.00	1.12	6,375.00	5,443.79	4,379.70	5,528.36	0.00	0.00	0.00	
13,900.00	90.00	1.12	6,375.00	5,543.77	4,381.67	5,628.36	0.00	0.00	0.00	
14,000.00	90.00	1.12	6,375.00	5,643.76	4,383.63	5,728.36	0.00	0.00	0.00	

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-13H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-13H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
14,100.00	90.00	1.12	6,375.00	5,743.74	4,385.59	5,828.36	0.00	0.00	0.00
14,200.00	90.00	1.12	6,375.00	5,843.72	4,387.55	5,928.36	0.00	0.00	0.00
14,300.00	90.00	1.12	6,375.00	5,943.70	4,389.51	6,028.36	0.00	0.00	0.00
14,400.00	90.00	1.12	6,375.00	6,043.68	4,391.47	6,128.36	0.00	0.00	0.00
14,500.00	90.00	1.12	6,375.00	6,143.66	4,393.43	6,228.36	0.00	0.00	0.00
14,600.00	90.00	1.12	6,375.00	6,243.64	4,395.40	6,328.36	0.00	0.00	0.00
14,700.00	90.00	1.12	6,375.00	6,343.62	4,397.36	6,428.36	0.00	0.00	0.00
14,800.00	90.00	1.12	6,375.00	6,443.60	4,399.32	6,528.36	0.00	0.00	0.00
14,900.00	90.00	1.12	6,375.00	6,543.58	4,401.28	6,628.36	0.00	0.00	0.00
15,000.00	90.00	1.12	6,375.00	6,643.56	4,403.24	6,728.36	0.00	0.00	0.00
15,100.00	90.00	1.12	6,375.00	6,743.54	4,405.20	6,828.36	0.00	0.00	0.00
15,200.00	90.00	1.12	6,375.00	6,843.52	4,407.17	6,928.36	0.00	0.00	0.00
15,300.00	90.00	1.12	6,375.00	6,943.51	4,409.13	7,028.36	0.00	0.00	0.00
15,400.00	90.00	1.12	6,375.00	7,043.49	4,411.09	7,128.36	0.00	0.00	0.00
15,500.00	90.00	1.12	6,375.00	7,143.47	4,413.05	7,228.36	0.00	0.00	0.00
15,600.00	90.00	1.12	6,375.00	7,243.45	4,415.01	7,328.36	0.00	0.00	0.00
15,700.00	90.00	1.12	6,375.00	7,343.43	4,416.97	7,428.36	0.00	0.00	0.00
15,800.00	90.00	1.12	6,375.00	7,443.41	4,418.94	7,528.36	0.00	0.00	0.00
15,900.00	90.00	1.12	6,375.00	7,543.39	4,420.90	7,628.36	0.00	0.00	0.00
15,956.53	90.00	1.12	6,375.00	7,599.91	4,422.01	7,684.89	0.00	0.00	0.00
TD Well @ 15956.53'									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,770.37	1,700.00	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)	
250.00	250.00	0.00	0.00	Begin Tangent @ 250.00'
2,277.50	2,112.43	-130.10	675.60	End Tangent @ 2277.50'
7,176.09	5,834.57	-732.30	3,802.77	KOP @ 7176.09' :: DLS = 9°/100'
8,246.51	6,375.00	-108.63	4,270.77	End Build @ 8246.51'
15,956.53	6,375.00	7,599.91	4,422.01	TD Well @ 15956.53'