

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

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

**SONIC STAR 1101-11H**

**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 1101-11H  
Wellbore: Wellbore #1  
Design: Design #1

# VERDAD RESOURCES

## CASING DETAILS

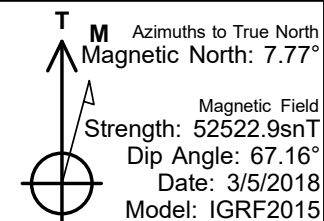
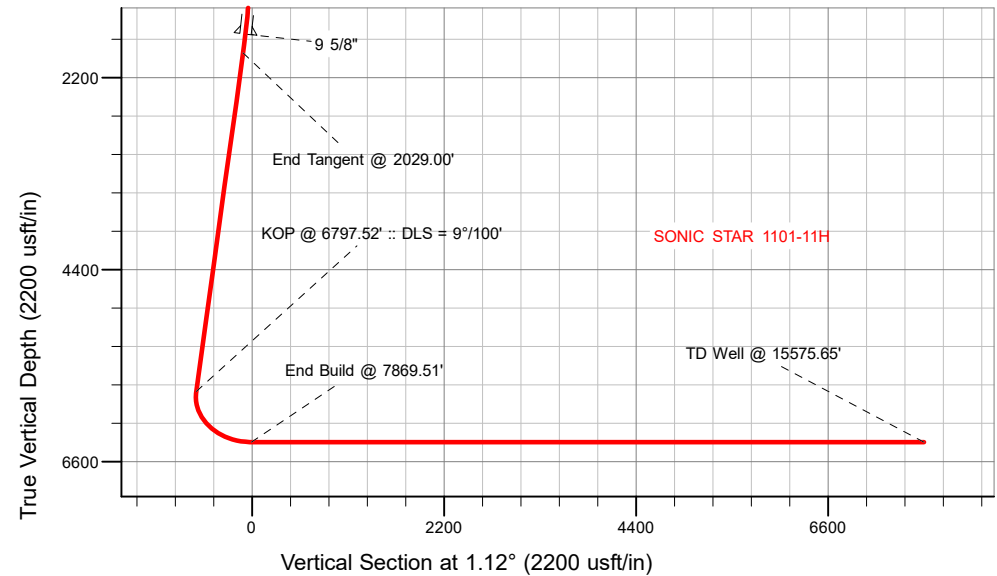
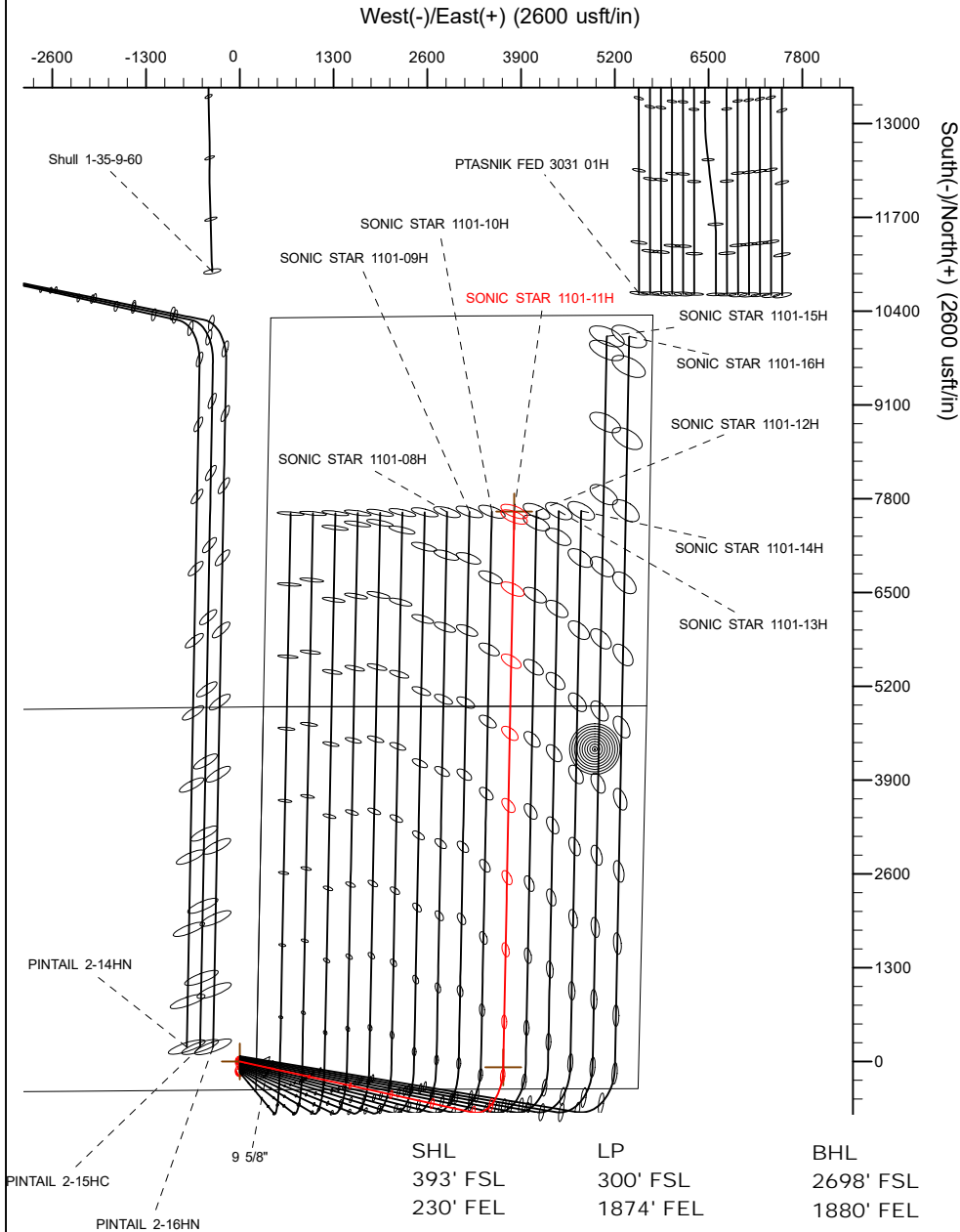
TVD	MD	Name	Size
1700.00	1770.37	9 5/8"	9-5/8

## 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	2029.00	35.58	102.30	1916.85	-113.94	522.57	2.00	102.30	-103.70	
4	6797.52	35.58	102.30	5795.10	-704.99	3233.39	0.00	0.00	-641.66	
5	7869.51	90.00	1.12	6375.00	-80.49	3652.63	9.00	-99.13	-9.08	
6	15575.65	90.00	1.12	6375.00	7624.18	3802.85	0.00	0.00	7697.05	SONIC STAR 1101-11H_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SONIC STAR 1101-11H_SHL	0.00	0.00	0.00	40.670918	-104.049103
SONIC STAR 1101-11H_BHL	6375.00	7624.18	3802.85	40.691844	-104.035390



## WELL DETAILS: SONIC STAR 1101-11H

GL = 4882'

RKB = 20' @ 4902.00usft (RIG)

Plan: Design #1 (SONIC STAR 1101-11H/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 1101-11H
<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 1101-11H	<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 1101-11H					
Well Position	+N/-S	150.02 usft	Northing:	1,490,550.73 usft	Latitude:	40.670918
	+E/-W	2.94 usft	Easting:	3,402,456.90 usft	Longitude:	-104.049104
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	52,522.90373904

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	15,575.65	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	
2,029.00	35.58	102.30	1,916.85	-113.94	522.57	2.00	2.00	0.00	102.30	
6,797.52	35.58	102.30	5,795.10	-704.99	3,233.39	0.00	0.00	0.00	0.00	
7,869.51	90.00	1.12	6,375.00	-80.49	3,652.63	9.00	5.08	-9.44	-99.13	
15,575.65	90.00	1.12	6,375.00	7,624.18	3,802.85	0.00	0.00	0.00	0.00	SONIC STAR 1101-11

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-11H
<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 1101-11H	<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	102.30	300.00	-0.09	0.43	-0.08	2.00	2.00	0.00
400.00	3.00	102.30	399.93	-0.84	3.84	-0.76	2.00	2.00	0.00
500.00	5.00	102.30	499.68	-2.32	10.65	-2.11	2.00	2.00	0.00
600.00	7.00	102.30	599.13	-4.55	20.86	-4.14	2.00	2.00	0.00
700.00	9.00	102.30	698.15	-7.51	34.46	-6.84	2.00	2.00	0.00
800.00	11.00	102.30	796.63	-11.21	51.43	-10.21	2.00	2.00	0.00
900.00	13.00	102.30	894.44	-15.64	71.74	-14.24	2.00	2.00	0.00
1,000.00	15.00	102.30	991.46	-20.80	95.37	-18.93	2.00	2.00	0.00
1,100.00	17.00	102.30	1,087.58	-26.67	122.30	-24.27	2.00	2.00	0.00
1,200.00	19.00	102.30	1,182.68	-33.25	152.50	-30.26	2.00	2.00	0.00
1,300.00	21.00	102.30	1,276.65	-40.54	185.91	-36.89	2.00	2.00	0.00
1,400.00	23.00	102.30	1,369.36	-48.51	222.51	-44.16	2.00	2.00	0.00
1,500.00	25.00	102.30	1,460.71	-57.18	262.25	-52.04	2.00	2.00	0.00
1,600.00	27.00	102.30	1,550.59	-66.52	305.08	-60.54	2.00	2.00	0.00
1,700.00	29.00	102.30	1,638.88	-76.52	350.94	-69.64	2.00	2.00	0.00
1,770.37	30.41	102.30	1,700.00	-83.95	385.01	-76.40	2.00	2.00	0.00
9 5/8"									
1,800.00	31.00	102.30	1,725.48	-87.17	399.79	-79.34	2.00	2.00	0.00
1,900.00	33.00	102.30	1,810.28	-98.46	451.57	-89.61	2.00	2.00	0.00
2,000.00	35.00	102.30	1,893.18	-110.37	506.20	-100.45	2.00	2.00	0.00
2,029.00	35.58	102.30	1,916.85	-113.94	522.57	-103.70	2.00	2.00	0.00
End Tangent @ 2029.00'									
2,100.00	35.58	102.30	1,974.59	-122.74	562.93	-111.71	0.00	0.00	0.00
2,200.00	35.58	102.30	2,055.92	-135.13	619.78	-122.99	0.00	0.00	0.00
2,300.00	35.58	102.30	2,137.25	-147.53	676.63	-134.27	0.00	0.00	0.00
2,400.00	35.58	102.30	2,218.58	-159.92	733.48	-145.56	0.00	0.00	0.00
2,500.00	35.58	102.30	2,299.91	-172.32	790.32	-156.84	0.00	0.00	0.00
2,600.00	35.58	102.30	2,381.24	-184.71	847.17	-168.12	0.00	0.00	0.00
2,700.00	35.58	102.30	2,462.57	-197.11	904.02	-179.40	0.00	0.00	0.00
2,800.00	35.58	102.30	2,543.90	-209.50	960.87	-190.68	0.00	0.00	0.00
2,900.00	35.58	102.30	2,625.23	-221.90	1,017.72	-201.96	0.00	0.00	0.00
3,000.00	35.58	102.30	2,706.56	-234.29	1,074.57	-213.24	0.00	0.00	0.00
3,100.00	35.58	102.30	2,787.89	-246.69	1,131.41	-224.53	0.00	0.00	0.00
3,200.00	35.58	102.30	2,869.23	-259.08	1,188.26	-235.81	0.00	0.00	0.00
3,300.00	35.58	102.30	2,950.56	-271.48	1,245.11	-247.09	0.00	0.00	0.00
3,400.00	35.58	102.30	3,031.89	-283.87	1,301.96	-258.37	0.00	0.00	0.00
3,500.00	35.58	102.30	3,113.22	-296.27	1,358.81	-269.65	0.00	0.00	0.00
3,600.00	35.58	102.30	3,194.55	-308.66	1,415.66	-280.93	0.00	0.00	0.00
3,700.00	35.58	102.30	3,275.88	-321.06	1,472.50	-292.21	0.00	0.00	0.00
3,800.00	35.58	102.30	3,357.21	-333.45	1,529.35	-303.50	0.00	0.00	0.00
3,900.00	35.58	102.30	3,438.54	-345.85	1,586.20	-314.78	0.00	0.00	0.00
4,000.00	35.58	102.30	3,519.87	-358.24	1,643.05	-326.06	0.00	0.00	0.00
4,100.00	35.58	102.30	3,601.20	-370.64	1,699.90	-337.34	0.00	0.00	0.00
4,200.00	35.58	102.30	3,682.53	-383.03	1,756.75	-348.62	0.00	0.00	0.00
4,300.00	35.58	102.30	3,763.86	-395.43	1,813.59	-359.90	0.00	0.00	0.00
4,400.00	35.58	102.30	3,845.19	-407.82	1,870.44	-371.18	0.00	0.00	0.00
4,500.00	35.58	102.30	3,926.52	-420.22	1,927.29	-382.47	0.00	0.00	0.00
4,600.00	35.58	102.30	4,007.85	-432.61	1,984.14	-393.75	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 1101-11H
<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 1101-11H	<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	35.58	102.30	4,089.18	-445.01	2,040.99	-405.03	0.00	0.00	0.00	
4,800.00	35.58	102.30	4,170.51	-457.40	2,097.84	-416.31	0.00	0.00	0.00	
4,900.00	35.58	102.30	4,251.84	-469.80	2,154.68	-427.59	0.00	0.00	0.00	
5,000.00	35.58	102.30	4,333.17	-482.19	2,211.53	-438.87	0.00	0.00	0.00	
5,100.00	35.58	102.30	4,414.50	-494.59	2,268.38	-450.15	0.00	0.00	0.00	
5,200.00	35.58	102.30	4,495.83	-506.98	2,325.23	-461.43	0.00	0.00	0.00	
5,300.00	35.58	102.30	4,577.16	-519.38	2,382.08	-472.72	0.00	0.00	0.00	
5,400.00	35.58	102.30	4,658.49	-531.77	2,438.93	-484.00	0.00	0.00	0.00	
5,500.00	35.58	102.30	4,739.82	-544.17	2,495.77	-495.28	0.00	0.00	0.00	
5,600.00	35.58	102.30	4,821.15	-556.56	2,552.62	-506.56	0.00	0.00	0.00	
5,700.00	35.58	102.30	4,902.49	-568.96	2,609.47	-517.84	0.00	0.00	0.00	
5,800.00	35.58	102.30	4,983.82	-581.35	2,666.32	-529.12	0.00	0.00	0.00	
5,900.00	35.58	102.30	5,065.15	-593.75	2,723.17	-540.40	0.00	0.00	0.00	
6,000.00	35.58	102.30	5,146.48	-606.14	2,780.02	-551.69	0.00	0.00	0.00	
6,100.00	35.58	102.30	5,227.81	-618.54	2,836.86	-562.97	0.00	0.00	0.00	
6,200.00	35.58	102.30	5,309.14	-630.93	2,893.71	-574.25	0.00	0.00	0.00	
6,300.00	35.58	102.30	5,390.47	-643.33	2,950.56	-585.53	0.00	0.00	0.00	
6,400.00	35.58	102.30	5,471.80	-655.72	3,007.41	-596.81	0.00	0.00	0.00	
6,500.00	35.58	102.30	5,553.13	-668.12	3,064.26	-608.09	0.00	0.00	0.00	
6,600.00	35.58	102.30	5,634.46	-680.51	3,121.11	-619.37	0.00	0.00	0.00	
6,700.00	35.58	102.30	5,715.79	-692.91	3,177.95	-630.66	0.00	0.00	0.00	
6,797.52	35.58	102.30	5,795.10	-704.99	3,233.39	-641.66	0.00	0.00	0.00	
KOP @ 6797.52' :: DLS = 9°/100'										
6,800.00	35.55	101.92	5,797.12	-705.30	3,234.80	-641.93	9.00	-1.40	-15.29	
6,850.00	35.10	94.17	5,837.94	-709.35	3,263.37	-645.42	9.00	-0.89	-15.50	
6,900.00	35.16	86.35	5,878.85	-709.47	3,292.09	-644.99	9.00	0.11	-15.65	
6,950.00	35.71	78.64	5,919.61	-705.68	3,320.78	-640.64	9.00	1.11	-15.41	
7,000.00	36.74	71.22	5,959.97	-697.99	3,349.26	-632.39	9.00	2.06	-14.84	
7,050.00	38.20	64.22	5,999.67	-686.45	3,377.35	-620.30	9.00	2.93	-14.00	
7,100.00	40.05	57.72	6,038.47	-671.13	3,404.89	-604.44	9.00	3.70	-13.01	
7,150.00	42.24	51.74	6,076.14	-652.12	3,431.70	-584.92	9.00	4.37	-11.96	
7,200.00	44.71	46.27	6,112.43	-629.54	3,457.61	-561.84	9.00	4.94	-10.94	
7,250.00	47.42	41.28	6,147.13	-603.54	3,482.48	-535.35	9.00	5.42	-9.98	
7,300.00	50.33	36.72	6,180.03	-574.26	3,506.14	-505.62	9.00	5.82	-9.12	
7,350.00	53.40	32.53	6,210.91	-541.90	3,528.45	-472.83	9.00	6.14	-8.37	
7,400.00	56.60	28.68	6,239.59	-506.65	3,549.27	-437.18	9.00	6.41	-7.71	
7,450.00	59.92	25.10	6,265.89	-468.73	3,568.47	-398.89	9.00	6.63	-7.15	
7,500.00	63.33	21.76	6,289.66	-428.37	3,585.94	-358.20	9.00	6.82	-6.68	
7,550.00	66.81	18.61	6,310.73	-385.82	3,601.56	-315.35	9.00	6.96	-6.29	
7,600.00	70.35	15.63	6,329.00	-341.35	3,615.25	-270.62	9.00	7.08	-5.97	
7,650.00	73.94	12.77	6,344.33	-295.22	3,626.91	-224.27	9.00	7.18	-5.71	
7,700.00	77.56	10.02	6,356.63	-247.73	3,636.48	-176.60	9.00	7.25	-5.51	
7,750.00	81.21	7.34	6,365.84	-199.16	3,643.89	-127.89	9.00	7.30	-5.35	
7,800.00	84.88	4.72	6,371.90	-149.81	3,649.10	-78.46	9.00	7.34	-5.25	
7,850.00	88.56	2.13	6,374.75	-100.00	3,652.08	-28.59	9.00	7.36	-5.19	
7,869.51	90.00	1.12	6,375.00	-80.49	3,652.63	-9.08	9.00	7.37	-5.17	
End Build @ 7869.51'										
7,900.00	90.00	1.12	6,375.00	-50.01	3,653.22	21.41	0.00	0.00	0.00	
8,000.00	90.00	1.12	6,375.00	49.97	3,655.17	121.41	0.00	0.00	0.00	
8,100.00	90.00	1.12	6,375.00	149.95	3,657.12	221.41	0.00	0.00	0.00	
8,200.00	90.00	1.12	6,375.00	249.93	3,659.07	321.41	0.00	0.00	0.00	
8,300.00	90.00	1.12	6,375.00	349.91	3,661.02	421.41	0.00	0.00	0.00	
8,400.00	90.00	1.12	6,375.00	449.89	3,662.97	521.41	0.00	0.00	0.00	
8,500.00	90.00	1.12	6,375.00	549.87	3,664.92	621.41	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 1101-11H
<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 1101-11H	<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)	
8,600.00	90.00	1.12	6,375.00	649.86	3,666.87	721.41	0.00	0.00	0.00	
8,700.00	90.00	1.12	6,375.00	749.84	3,668.82	821.41	0.00	0.00	0.00	
8,800.00	90.00	1.12	6,375.00	849.82	3,670.77	921.41	0.00	0.00	0.00	
8,900.00	90.00	1.12	6,375.00	949.80	3,672.72	1,021.41	0.00	0.00	0.00	
9,000.00	90.00	1.12	6,375.00	1,049.78	3,674.67	1,121.41	0.00	0.00	0.00	
9,100.00	90.00	1.12	6,375.00	1,149.76	3,676.62	1,221.41	0.00	0.00	0.00	
9,200.00	90.00	1.12	6,375.00	1,249.74	3,678.56	1,321.41	0.00	0.00	0.00	
9,300.00	90.00	1.12	6,375.00	1,349.72	3,680.51	1,421.41	0.00	0.00	0.00	
9,400.00	90.00	1.12	6,375.00	1,449.70	3,682.46	1,521.41	0.00	0.00	0.00	
9,500.00	90.00	1.12	6,375.00	1,549.68	3,684.41	1,621.41	0.00	0.00	0.00	
9,600.00	90.00	1.12	6,375.00	1,649.67	3,686.36	1,721.41	0.00	0.00	0.00	
9,700.00	90.00	1.12	6,375.00	1,749.65	3,688.31	1,821.41	0.00	0.00	0.00	
9,800.00	90.00	1.12	6,375.00	1,849.63	3,690.26	1,921.41	0.00	0.00	0.00	
9,900.00	90.00	1.12	6,375.00	1,949.61	3,692.21	2,021.41	0.00	0.00	0.00	
10,000.00	90.00	1.12	6,375.00	2,049.59	3,694.16	2,121.41	0.00	0.00	0.00	
10,100.00	90.00	1.12	6,375.00	2,149.57	3,696.11	2,221.41	0.00	0.00	0.00	
10,200.00	90.00	1.12	6,375.00	2,249.55	3,698.06	2,321.41	0.00	0.00	0.00	
10,300.00	90.00	1.12	6,375.00	2,349.53	3,700.01	2,421.41	0.00	0.00	0.00	
10,400.00	90.00	1.12	6,375.00	2,449.51	3,701.96	2,521.41	0.00	0.00	0.00	
10,500.00	90.00	1.12	6,375.00	2,549.49	3,703.91	2,621.41	0.00	0.00	0.00	
10,600.00	90.00	1.12	6,375.00	2,649.48	3,705.86	2,721.41	0.00	0.00	0.00	
10,700.00	90.00	1.12	6,375.00	2,749.46	3,707.81	2,821.41	0.00	0.00	0.00	
10,800.00	90.00	1.12	6,375.00	2,849.44	3,709.76	2,921.41	0.00	0.00	0.00	
10,900.00	90.00	1.12	6,375.00	2,949.42	3,711.70	3,021.41	0.00	0.00	0.00	
11,000.00	90.00	1.12	6,375.00	3,049.40	3,713.65	3,121.41	0.00	0.00	0.00	
11,100.00	90.00	1.12	6,375.00	3,149.38	3,715.60	3,221.41	0.00	0.00	0.00	
11,200.00	90.00	1.12	6,375.00	3,249.36	3,717.55	3,321.41	0.00	0.00	0.00	
11,300.00	90.00	1.12	6,375.00	3,349.34	3,719.50	3,421.41	0.00	0.00	0.00	
11,400.00	90.00	1.12	6,375.00	3,449.32	3,721.45	3,521.41	0.00	0.00	0.00	
11,500.00	90.00	1.12	6,375.00	3,549.30	3,723.40	3,621.41	0.00	0.00	0.00	
11,600.00	90.00	1.12	6,375.00	3,649.29	3,725.35	3,721.41	0.00	0.00	0.00	
11,700.00	90.00	1.12	6,375.00	3,749.27	3,727.30	3,821.41	0.00	0.00	0.00	
11,800.00	90.00	1.12	6,375.00	3,849.25	3,729.25	3,921.41	0.00	0.00	0.00	
11,900.00	90.00	1.12	6,375.00	3,949.23	3,731.20	4,021.41	0.00	0.00	0.00	
12,000.00	90.00	1.12	6,375.00	4,049.21	3,733.15	4,121.41	0.00	0.00	0.00	
12,100.00	90.00	1.12	6,375.00	4,149.19	3,735.10	4,221.41	0.00	0.00	0.00	
12,200.00	90.00	1.12	6,375.00	4,249.17	3,737.05	4,321.41	0.00	0.00	0.00	
12,300.00	90.00	1.12	6,375.00	4,349.15	3,739.00	4,421.41	0.00	0.00	0.00	
12,400.00	90.00	1.12	6,375.00	4,449.13	3,740.95	4,521.41	0.00	0.00	0.00	
12,500.00	90.00	1.12	6,375.00	4,549.11	3,742.90	4,621.41	0.00	0.00	0.00	
12,600.00	90.00	1.12	6,375.00	4,649.10	3,744.85	4,721.41	0.00	0.00	0.00	
12,700.00	90.00	1.12	6,375.00	4,749.08	3,746.79	4,821.41	0.00	0.00	0.00	
12,800.00	90.00	1.12	6,375.00	4,849.06	3,748.74	4,921.41	0.00	0.00	0.00	
12,900.00	90.00	1.12	6,375.00	4,949.04	3,750.69	5,021.41	0.00	0.00	0.00	
13,000.00	90.00	1.12	6,375.00	5,049.02	3,752.64	5,121.41	0.00	0.00	0.00	
13,100.00	90.00	1.12	6,375.00	5,149.00	3,754.59	5,221.41	0.00	0.00	0.00	
13,200.00	90.00	1.12	6,375.00	5,248.98	3,756.54	5,321.41	0.00	0.00	0.00	
13,300.00	90.00	1.12	6,375.00	5,348.96	3,758.49	5,421.41	0.00	0.00	0.00	
13,400.00	90.00	1.12	6,375.00	5,448.94	3,760.44	5,521.41	0.00	0.00	0.00	
13,500.00	90.00	1.12	6,375.00	5,548.92	3,762.39	5,621.41	0.00	0.00	0.00	
13,600.00	90.00	1.12	6,375.00	5,648.91	3,764.34	5,721.41	0.00	0.00	0.00	
13,700.00	90.00	1.12	6,375.00	5,748.89	3,766.29	5,821.41	0.00	0.00	0.00	
13,800.00	90.00	1.12	6,375.00	5,848.87	3,768.24	5,921.41	0.00	0.00	0.00	
13,900.00	90.00	1.12	6,375.00	5,948.85	3,770.19	6,021.41	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 1101-11H
<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 1101-11H	<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)
14,000.00	90.00	1.12	6,375.00	6,048.83	3,772.14	6,121.41	0.00	0.00	0.00
14,100.00	90.00	1.12	6,375.00	6,148.81	3,774.09	6,221.41	0.00	0.00	0.00
14,200.00	90.00	1.12	6,375.00	6,248.79	3,776.04	6,321.41	0.00	0.00	0.00
14,300.00	90.00	1.12	6,375.00	6,348.77	3,777.99	6,421.41	0.00	0.00	0.00
14,400.00	90.00	1.12	6,375.00	6,448.75	3,779.94	6,521.41	0.00	0.00	0.00
14,500.00	90.00	1.12	6,375.00	6,548.73	3,781.88	6,621.41	0.00	0.00	0.00
14,600.00	90.00	1.12	6,375.00	6,648.72	3,783.83	6,721.41	0.00	0.00	0.00
14,700.00	90.00	1.12	6,375.00	6,748.70	3,785.78	6,821.41	0.00	0.00	0.00
14,800.00	90.00	1.12	6,375.00	6,848.68	3,787.73	6,921.41	0.00	0.00	0.00
14,900.00	90.00	1.12	6,375.00	6,948.66	3,789.68	7,021.41	0.00	0.00	0.00
15,000.00	90.00	1.12	6,375.00	7,048.64	3,791.63	7,121.41	0.00	0.00	0.00
15,100.00	90.00	1.12	6,375.00	7,148.62	3,793.58	7,221.41	0.00	0.00	0.00
15,200.00	90.00	1.12	6,375.00	7,248.60	3,795.53	7,321.41	0.00	0.00	0.00
15,300.00	90.00	1.12	6,375.00	7,348.58	3,797.48	7,421.41	0.00	0.00	0.00
15,400.00	90.00	1.12	6,375.00	7,448.56	3,799.43	7,521.41	0.00	0.00	0.00
15,500.00	90.00	1.12	6,375.00	7,548.54	3,801.38	7,621.41	0.00	0.00	0.00
15,575.65	90.00	1.12	6,375.00	7,624.18	3,802.85	7,697.05	0.00	0.00	0.00
TD Well @ 15575.65'									

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'
2,029.00	1,916.85	-113.94	522.57	End Tangent @ 2029.00'
6,797.52	5,795.10	-704.99	3,233.39	KOP @ 6797.52' :: DLS = 9°/100'
7,869.51	6,375.00	-80.49	3,652.63	End Build @ 7869.51'
15,575.65	6,375.00	7,624.18	3,802.85	TD Well @ 15575.65'