

VERDAD RESOURCES

WATTENBERG FIELD

2N-64W-24 ARNOLD-BOYD PAD

BOYD 2413-11H

Plan A

Plan: Design #1

Standard Planning Report

14 December, 2021

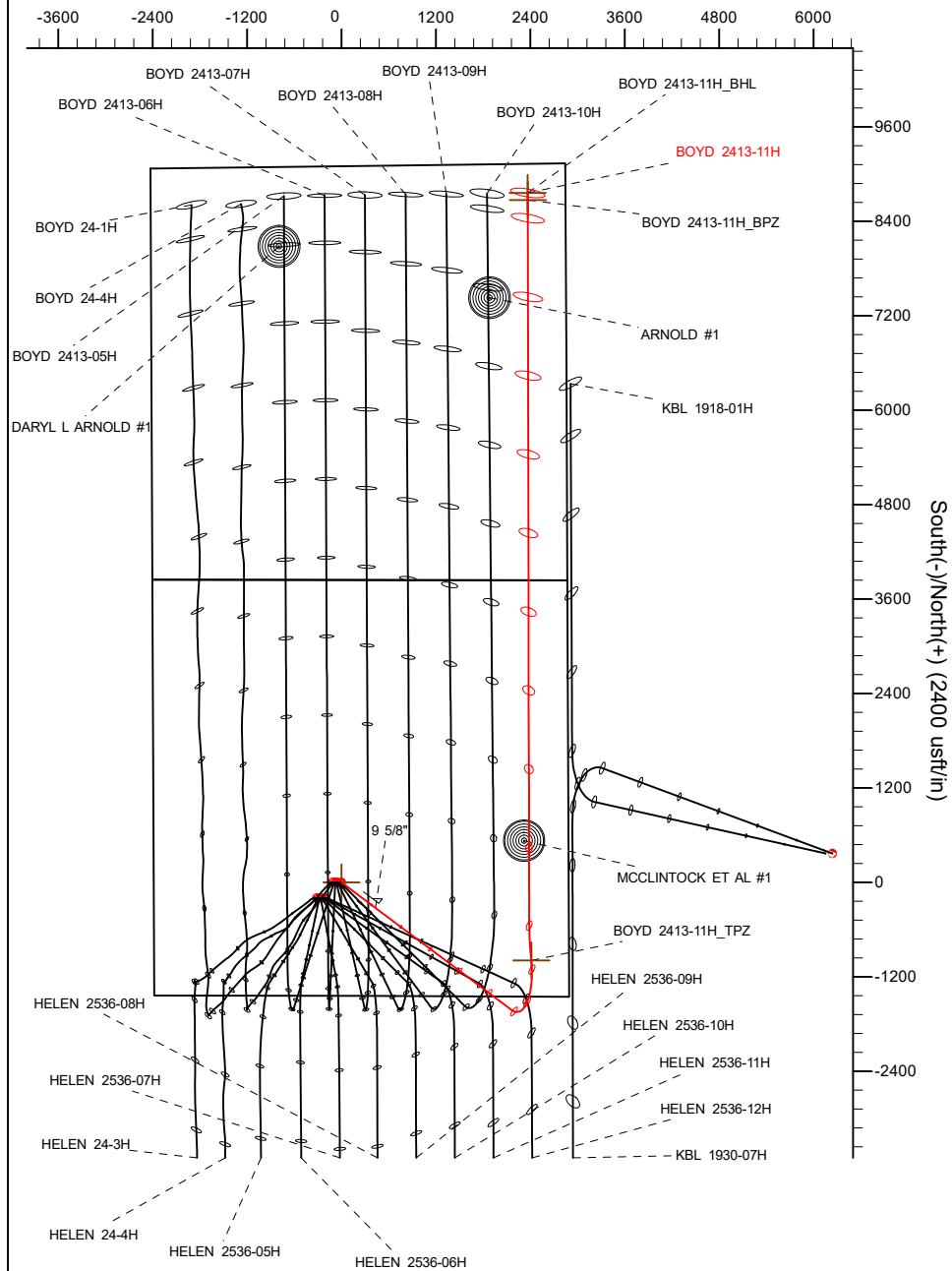
Project: WATTENBERG FIELD
Site: 2N-64W-24 ARNOLD-BOYD PAD
Well: BOYD 2413-11H
Wellbore: Plan A
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1934.00	2039.89	9 5/8"	9-5/8"

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

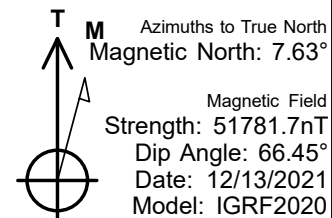
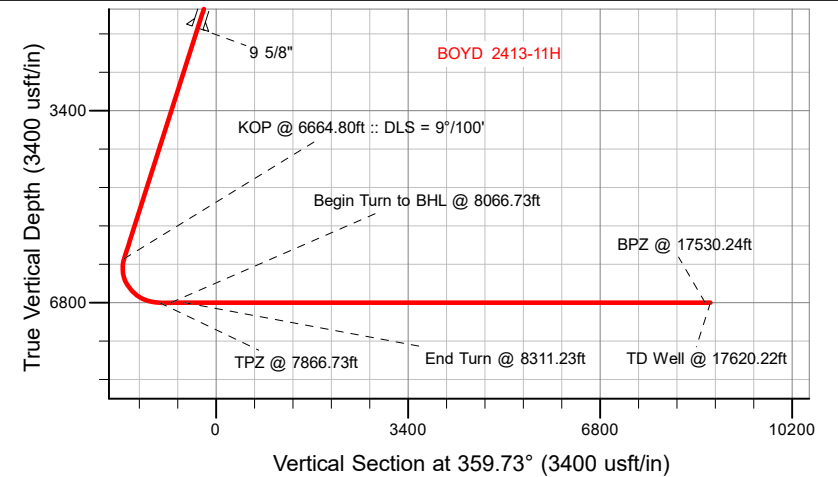


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	201.35	0.00	0.00	201.35	0.00	0.00	0.00	0.00	0.00	
3	1594.35	27.86	126.87	1540.10	-199.23	265.64	2.00	126.87	-200.48	
4	6664.80	27.86	126.87	6022.85	-1620.93	2161.23	0.00	0.00	-1631.09	
5	7866.73	90.00	355.00	6800.00	-991.71	2413.24	9.00	-128.39	-1003.07	
6	8066.73	90.00	355.00	6800.00	-792.47	2395.81	0.00	0.00	-803.75	
7	8311.23	90.00	359.89	6800.00	-548.29	2384.91	2.00	90.00	-559.52	
8	17620.22	90.00	359.89	6800.00	8760.68	2367.03	0.00	0.00	8749.43	BOYD 2413-11H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BOYD 2413-11H_SHL	0.00	0.00	0.00	40.120601	-104.500598
BOYD 2413-11H_TPZ	6800.00	-991.71	2413.24	40.117878	-104.491969
BOYD 2413-11H_BPZ	6800.00	8670.70	2367.32	40.144403	-104.492130
BOYD 2413-11H_BHL	6800.00	8760.68	2367.03	40.144650	-104.492131



WELL DETAILS: BOYD 2413-11H

GL = 4923'

RKB = 20' @ 4943.00usft (RIG)

Plan: Design #1 (BOYD 2413-11H/Plan A)

Date: 12/14/2021

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BOYD 2413-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4943.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4943.00usft (RIG)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-11H	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		2N-64W-24 ARNOLD-BOYD PAD			
Site Position:		Northing:	1,288,353.17 usft	Latitude:	40.120602
From:	Lat/Long	Easting:	3,279,389.09 usft	Longitude:	-104.500941
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well		BOYD 2413-11H				
Well Position	+N/-S	0.00 usft	Northing:	1,288,353.88 usft	Latitude:	40.120601
	+E/-W	0.00 usft	Easting:	3,279,485.01 usft	Longitude:	-104.500598
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,923.00 usft
Grid Convergence:		0.65 °				

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	12/13/2021	7.63	66.45	51,781.74450726

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	359.73	

Plan Survey Tool Program	Date	12/14/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,934.00	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination
2	1,934.00	17,620.22	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4943.00usft (RIG)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-11H	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	
201.35	0.00	0.00	201.35	0.00	0.00	0.00	0.00	0.00	0.00	
1,594.35	27.86	126.87	1,540.10	-199.23	265.64	2.00	2.00	0.00	126.87	
6,664.80	27.86	126.87	6,022.85	-1,620.93	2,161.23	0.00	0.00	0.00	0.00	
7,866.73	90.00	355.00	6,800.00	-991.71	2,413.24	9.00	5.17	-10.97	-128.39	
8,066.73	90.00	355.00	6,800.00	-792.47	2,395.81	0.00	0.00	0.00	0.00	
8,311.23	90.00	359.89	6,800.00	-548.29	2,384.91	2.00	0.00	2.00	90.00	
17,620.22	90.00	359.89	6,800.00	8,760.68	2,367.03	0.00	0.00	0.00	0.00	BOYD 2413-11H_BHI

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BOYD 2413-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4943.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4943.00usft (RIG)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-11H	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
201.35	0.00	0.00	201.35	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 201.35ft									
300.00	1.97	126.87	299.98	-1.02	1.36	-1.03	2.00	2.00	0.00
400.00	3.97	126.87	399.84	-4.13	5.51	-4.16	2.00	2.00	0.00
500.00	5.97	126.87	499.46	-9.33	12.44	-9.39	2.00	2.00	0.00
600.00	7.97	126.87	598.71	-16.62	22.15	-16.72	2.00	2.00	0.00
700.00	9.97	126.87	697.49	-25.97	34.63	-26.14	2.00	2.00	0.00
800.00	11.97	126.87	795.65	-37.39	49.86	-37.63	2.00	2.00	0.00
900.00	13.97	126.87	893.10	-50.86	67.82	-51.18	2.00	2.00	0.00
1,000.00	15.97	126.87	989.70	-66.36	88.48	-66.78	2.00	2.00	0.00
1,100.00	17.97	126.87	1,085.33	-83.88	111.84	-84.40	2.00	2.00	0.00
1,200.00	19.97	126.87	1,179.90	-103.38	137.85	-104.03	2.00	2.00	0.00
1,300.00	21.97	126.87	1,273.27	-124.86	166.48	-125.64	2.00	2.00	0.00
1,400.00	23.97	126.87	1,365.33	-148.28	197.70	-149.21	2.00	2.00	0.00
1,500.00	25.97	126.87	1,455.98	-173.61	231.47	-174.69	2.00	2.00	0.00
1,594.35	27.86	126.87	1,540.10	-199.23	265.64	-200.48	2.00	2.00	0.00
Hold Tangent @ 1594.35ft									
1,600.00	27.86	126.87	1,545.10	-200.82	267.75	-202.08	0.00	0.00	0.00
1,700.00	27.86	126.87	1,633.51	-228.85	305.14	-230.29	0.00	0.00	0.00
1,800.00	27.86	126.87	1,721.92	-256.89	342.52	-258.50	0.00	0.00	0.00
1,900.00	27.86	126.87	1,810.33	-284.93	379.91	-286.72	0.00	0.00	0.00
2,000.00	27.86	126.87	1,898.73	-312.97	417.29	-314.93	0.00	0.00	0.00
2,039.89	27.86	126.87	1,934.00	-324.16	432.21	-326.19	0.00	0.00	0.00
9 5/8"									
2,100.00	27.86	126.87	1,987.14	-341.01	454.68	-343.15	0.00	0.00	0.00
2,200.00	27.86	126.87	2,075.55	-369.05	492.06	-371.36	0.00	0.00	0.00
2,300.00	27.86	126.87	2,163.96	-397.09	529.45	-399.58	0.00	0.00	0.00
2,400.00	27.86	126.87	2,252.37	-425.13	566.83	-427.79	0.00	0.00	0.00
2,500.00	27.86	126.87	2,340.78	-453.17	604.22	-456.01	0.00	0.00	0.00
2,600.00	27.86	126.87	2,429.19	-481.20	641.60	-484.22	0.00	0.00	0.00
2,700.00	27.86	126.87	2,517.60	-509.24	678.99	-512.44	0.00	0.00	0.00
2,800.00	27.86	126.87	2,606.01	-537.28	716.37	-540.65	0.00	0.00	0.00
2,900.00	27.86	126.87	2,694.42	-565.32	753.76	-568.87	0.00	0.00	0.00
3,000.00	27.86	126.87	2,782.83	-593.36	791.14	-597.08	0.00	0.00	0.00
3,100.00	27.86	126.87	2,871.24	-621.40	828.53	-625.30	0.00	0.00	0.00
3,200.00	27.86	126.87	2,959.64	-649.44	865.91	-653.51	0.00	0.00	0.00
3,300.00	27.86	126.87	3,048.05	-677.48	903.30	-681.72	0.00	0.00	0.00
3,400.00	27.86	126.87	3,136.46	-705.51	940.68	-709.94	0.00	0.00	0.00
3,500.00	27.86	126.87	3,224.87	-733.55	978.07	-738.15	0.00	0.00	0.00
3,600.00	27.86	126.87	3,313.28	-761.59	1,015.45	-766.37	0.00	0.00	0.00
3,700.00	27.86	126.87	3,401.69	-789.63	1,052.84	-794.58	0.00	0.00	0.00
3,800.00	27.86	126.87	3,490.10	-817.67	1,090.22	-822.80	0.00	0.00	0.00
3,900.00	27.86	126.87	3,578.51	-845.71	1,127.61	-851.01	0.00	0.00	0.00
4,000.00	27.86	126.87	3,666.92	-873.75	1,164.99	-879.23	0.00	0.00	0.00
4,100.00	27.86	126.87	3,755.33	-901.79	1,202.38	-907.44	0.00	0.00	0.00
4,200.00	27.86	126.87	3,843.74	-929.83	1,239.76	-935.66	0.00	0.00	0.00
4,300.00	27.86	126.87	3,932.15	-957.86	1,277.15	-963.87	0.00	0.00	0.00
4,400.00	27.86	126.87	4,020.56	-985.90	1,314.53	-992.09	0.00	0.00	0.00
4,500.00	27.86	126.87	4,108.96	-1,013.94	1,351.92	-1,020.30	0.00	0.00	0.00
4,600.00	27.86	126.87	4,197.37	-1,041.98	1,389.30	-1,048.52	0.00	0.00	0.00
4,700.00	27.86	126.87	4,285.78	-1,070.02	1,426.69	-1,076.73	0.00	0.00	0.00

Planning Report

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Well:	BOYD 2413-11H	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)
4,800.00	27.86	126.87	4,374.19	-1,098.06	1,464.07	-1,104.95	0.00	0.00	0.00
4,900.00	27.86	126.87	4,462.60	-1,126.10	1,501.46	-1,133.16	0.00	0.00	0.00
5,000.00	27.86	126.87	4,551.01	-1,154.14	1,538.84	-1,161.37	0.00	0.00	0.00
5,100.00	27.86	126.87	4,639.42	-1,182.17	1,576.23	-1,189.59	0.00	0.00	0.00
5,200.00	27.86	126.87	4,727.83	-1,210.21	1,613.61	-1,217.80	0.00	0.00	0.00
5,300.00	27.86	126.87	4,816.24	-1,238.25	1,651.00	-1,246.02	0.00	0.00	0.00
5,400.00	27.86	126.87	4,904.65	-1,266.29	1,688.38	-1,274.23	0.00	0.00	0.00
5,500.00	27.86	126.87	4,993.06	-1,294.33	1,725.77	-1,302.45	0.00	0.00	0.00
5,600.00	27.86	126.87	5,081.47	-1,322.37	1,763.15	-1,330.66	0.00	0.00	0.00
5,700.00	27.86	126.87	5,169.88	-1,350.41	1,800.54	-1,358.88	0.00	0.00	0.00
5,800.00	27.86	126.87	5,258.28	-1,378.45	1,837.92	-1,387.09	0.00	0.00	0.00
5,900.00	27.86	126.87	5,346.69	-1,406.49	1,875.31	-1,415.31	0.00	0.00	0.00
6,000.00	27.86	126.87	5,435.10	-1,434.52	1,912.69	-1,443.52	0.00	0.00	0.00
6,100.00	27.86	126.87	5,523.51	-1,462.56	1,950.08	-1,471.74	0.00	0.00	0.00
6,200.00	27.86	126.87	5,611.92	-1,490.60	1,987.46	-1,499.95	0.00	0.00	0.00
6,300.00	27.86	126.87	5,700.33	-1,518.64	2,024.85	-1,528.17	0.00	0.00	0.00
6,400.00	27.86	126.87	5,788.74	-1,546.68	2,062.23	-1,556.38	0.00	0.00	0.00
6,500.00	27.86	126.87	5,877.15	-1,574.72	2,099.62	-1,584.60	0.00	0.00	0.00
6,600.00	27.86	126.87	5,965.56	-1,602.76	2,137.00	-1,612.81	0.00	0.00	0.00
6,664.80	27.86	126.87	6,022.85	-1,620.93	2,161.23	-1,631.09	0.00	0.00	0.00
KOP @ 6664.80ft :: DLS = 9°/100'									
6,700.00	26.00	121.20	6,054.23	-1,629.86	2,174.41	-1,640.09	9.00	-5.28	-16.11
6,750.00	23.81	111.85	6,099.60	-1,639.30	2,193.16	-1,649.62	9.00	-4.39	-18.69
6,800.00	22.27	101.03	6,145.63	-1,644.87	2,211.84	-1,655.28	9.00	-3.07	-21.65
6,850.00	21.54	89.11	6,192.04	-1,646.54	2,230.32	-1,657.03	9.00	-1.47	-23.84
6,900.00	21.68	76.87	6,238.55	-1,644.30	2,248.50	-1,654.88	9.00	0.30	-24.47
6,950.00	22.70	65.24	6,284.87	-1,638.16	2,266.27	-1,648.82	9.00	2.03	-23.26
7,000.00	24.47	54.88	6,330.72	-1,628.16	2,283.50	-1,638.90	9.00	3.54	-20.72
7,050.00	26.85	46.05	6,375.80	-1,614.36	2,300.11	-1,625.18	9.00	4.76	-17.68
7,100.00	29.69	38.66	6,419.85	-1,596.85	2,315.98	-1,607.74	9.00	5.68	-14.76
7,150.00	32.87	32.53	6,462.58	-1,575.73	2,331.02	-1,586.69	9.00	6.36	-12.27
7,200.00	36.30	27.40	6,503.75	-1,551.13	2,345.13	-1,562.17	9.00	6.87	-10.26
7,250.00	39.92	23.06	6,543.09	-1,523.22	2,358.24	-1,534.31	9.00	7.24	-8.68
7,300.00	43.68	19.34	6,580.36	-1,492.15	2,370.24	-1,503.30	9.00	7.52	-7.43
7,350.00	47.54	16.11	6,615.34	-1,458.12	2,381.09	-1,469.32	9.00	7.73	-6.47
7,400.00	51.49	13.26	6,647.80	-1,421.34	2,390.69	-1,432.59	9.00	7.89	-5.71
7,450.00	55.49	10.70	6,677.54	-1,382.04	2,399.01	-1,393.32	9.00	8.01	-5.11
7,500.00	59.54	8.38	6,704.39	-1,340.45	2,405.98	-1,351.77	9.00	8.11	-4.64
7,550.00	63.63	6.25	6,728.18	-1,296.84	2,411.56	-1,308.19	9.00	8.18	-4.26
7,600.00	67.76	4.26	6,748.76	-1,251.48	2,415.72	-1,262.85	9.00	8.24	-3.97
7,650.00	71.90	2.39	6,766.00	-1,204.64	2,418.44	-1,216.02	9.00	8.29	-3.74
7,700.00	76.06	0.61	6,779.80	-1,156.61	2,419.69	-1,168.00	9.00	8.32	-3.57
7,750.00	80.23	358.89	6,790.07	-1,107.69	2,419.46	-1,119.08	9.00	8.35	-3.44
7,800.00	84.41	357.21	6,796.74	-1,058.18	2,417.77	-1,069.56	9.00	8.36	-3.36
7,850.00	88.60	355.55	6,799.79	-1,008.38	2,414.62	-1,019.75	9.00	8.37	-3.31
7,866.73	90.00	355.00	6,800.00	-991.71	2,413.24	-1,003.07	9.00	8.37	-3.30
TPZ @ 7866.73ft									
7,900.00	90.00	355.00	6,800.00	-958.57	2,410.34	-969.91	0.00	0.00	0.00
8,000.00	90.00	355.00	6,800.00	-858.95	2,401.63	-870.26	0.00	0.00	0.00
8,066.73	90.00	355.00	6,800.00	-792.47	2,395.81	-803.75	0.00	0.00	0.00
Begin Turn to BHL @ 8066.73ft									
8,100.00	90.00	355.67	6,800.00	-759.31	2,393.10	-770.58	2.00	0.00	2.00
8,200.00	90.00	357.67	6,800.00	-659.49	2,387.29	-670.73	2.00	0.00	2.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BOYD 2413-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4943.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4943.00usft (RIG)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-11H	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)
8,300.00	90.00	359.67	6,800.00	-559.52	2,384.96	-570.75	2.00	0.00	2.00
8,311.23	90.00	359.89	6,800.00	-548.29	2,384.91	-559.52	2.00	0.00	2.00
End Turn @ 8311.23ft									
8,400.00	90.00	359.89	6,800.00	-459.52	2,384.74	-470.75	0.00	0.00	0.00
8,500.00	90.00	359.89	6,800.00	-359.52	2,384.55	-370.75	0.00	0.00	0.00
8,600.00	90.00	359.89	6,800.00	-259.52	2,384.36	-270.75	0.00	0.00	0.00
8,700.00	90.00	359.89	6,800.00	-159.52	2,384.17	-170.75	0.00	0.00	0.00
8,800.00	90.00	359.89	6,800.00	-59.52	2,383.98	-70.75	0.00	0.00	0.00
8,900.00	90.00	359.89	6,800.00	40.48	2,383.78	29.25	0.00	0.00	0.00
9,000.00	90.00	359.89	6,800.00	140.48	2,383.59	129.25	0.00	0.00	0.00
9,100.00	90.00	359.89	6,800.00	240.48	2,383.40	229.25	0.00	0.00	0.00
9,200.00	90.00	359.89	6,800.00	340.48	2,383.21	329.25	0.00	0.00	0.00
9,300.00	90.00	359.89	6,800.00	440.48	2,383.01	429.25	0.00	0.00	0.00
9,400.00	90.00	359.89	6,800.00	540.48	2,382.82	529.24	0.00	0.00	0.00
9,500.00	90.00	359.89	6,800.00	640.48	2,382.63	629.24	0.00	0.00	0.00
9,600.00	90.00	359.89	6,800.00	740.48	2,382.44	729.24	0.00	0.00	0.00
9,700.00	90.00	359.89	6,800.00	840.48	2,382.25	829.24	0.00	0.00	0.00
9,800.00	90.00	359.89	6,800.00	940.48	2,382.05	929.24	0.00	0.00	0.00
9,900.00	90.00	359.89	6,800.00	1,040.48	2,381.86	1,029.24	0.00	0.00	0.00
10,000.00	90.00	359.89	6,800.00	1,140.48	2,381.67	1,129.24	0.00	0.00	0.00
10,100.00	90.00	359.89	6,800.00	1,240.48	2,381.48	1,229.24	0.00	0.00	0.00
10,200.00	90.00	359.89	6,800.00	1,340.48	2,381.29	1,329.24	0.00	0.00	0.00
10,300.00	90.00	359.89	6,800.00	1,440.48	2,381.09	1,429.24	0.00	0.00	0.00
10,400.00	90.00	359.89	6,800.00	1,540.48	2,380.90	1,529.24	0.00	0.00	0.00
10,500.00	90.00	359.89	6,800.00	1,640.48	2,380.71	1,629.24	0.00	0.00	0.00
10,600.00	90.00	359.89	6,800.00	1,740.48	2,380.52	1,729.24	0.00	0.00	0.00
10,700.00	90.00	359.89	6,800.00	1,840.48	2,380.32	1,829.24	0.00	0.00	0.00
10,800.00	90.00	359.89	6,800.00	1,940.48	2,380.13	1,929.24	0.00	0.00	0.00
10,900.00	90.00	359.89	6,800.00	2,040.48	2,379.94	2,029.24	0.00	0.00	0.00
11,000.00	90.00	359.89	6,800.00	2,140.48	2,379.75	2,129.24	0.00	0.00	0.00
11,100.00	90.00	359.89	6,800.00	2,240.48	2,379.56	2,229.24	0.00	0.00	0.00
11,200.00	90.00	359.89	6,800.00	2,340.48	2,379.36	2,329.24	0.00	0.00	0.00
11,300.00	90.00	359.89	6,800.00	2,440.48	2,379.17	2,429.24	0.00	0.00	0.00
11,400.00	90.00	359.89	6,800.00	2,540.48	2,378.98	2,529.24	0.00	0.00	0.00
11,500.00	90.00	359.89	6,800.00	2,640.48	2,378.79	2,629.24	0.00	0.00	0.00
11,600.00	90.00	359.89	6,800.00	2,740.48	2,378.60	2,729.24	0.00	0.00	0.00
11,700.00	90.00	359.89	6,800.00	2,840.48	2,378.40	2,829.24	0.00	0.00	0.00
11,800.00	90.00	359.89	6,800.00	2,940.48	2,378.21	2,929.24	0.00	0.00	0.00
11,900.00	90.00	359.89	6,800.00	3,040.47	2,378.02	3,029.24	0.00	0.00	0.00
12,000.00	90.00	359.89	6,800.00	3,140.47	2,377.83	3,129.23	0.00	0.00	0.00
12,100.00	90.00	359.89	6,800.00	3,240.47	2,377.64	3,229.23	0.00	0.00	0.00
12,200.00	90.00	359.89	6,800.00	3,340.47	2,377.44	3,329.23	0.00	0.00	0.00
12,300.00	90.00	359.89	6,800.00	3,440.47	2,377.25	3,429.23	0.00	0.00	0.00
12,400.00	90.00	359.89	6,800.00	3,540.47	2,377.06	3,529.23	0.00	0.00	0.00
12,500.00	90.00	359.89	6,800.00	3,640.47	2,376.87	3,629.23	0.00	0.00	0.00
12,600.00	90.00	359.89	6,800.00	3,740.47	2,376.67	3,729.23	0.00	0.00	0.00
12,700.00	90.00	359.89	6,800.00	3,840.47	2,376.48	3,829.23	0.00	0.00	0.00
12,800.00	90.00	359.89	6,800.00	3,940.47	2,376.29	3,929.23	0.00	0.00	0.00
12,900.00	90.00	359.89	6,800.00	4,040.47	2,376.10	4,029.23	0.00	0.00	0.00
13,000.00	90.00	359.89	6,800.00	4,140.47	2,375.91	4,129.23	0.00	0.00	0.00
13,100.00	90.00	359.89	6,800.00	4,240.47	2,375.71	4,229.23	0.00	0.00	0.00
13,200.00	90.00	359.89	6,800.00	4,340.47	2,375.52	4,329.23	0.00	0.00	0.00
13,300.00	90.00	359.89	6,800.00	4,440.47	2,375.33	4,429.23	0.00	0.00	0.00
13,400.00	90.00	359.89	6,800.00	4,540.47	2,375.14	4,529.23	0.00	0.00	0.00

Planning Report

Database: Company: Project: Site: Well: Wellbore: Design:	EDM 5000.16 Single User Db VERDAD RESOURCES WATTENBERG FIELD 2N-64W-24 ARNOLD-BOYD PAD BOYD 2413-11H Plan A Design #1	Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:	Well BOYD 2413-11H RKB = 20' @ 4943.00usft (RIG) RKB = 20' @ 4943.00usft (RIG) True Minimum Curvature
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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)	
13,500.00	90.00	359.89	6,800.00	4,640.47	2,374.95	4,629.23	0.00	0.00	0.00	
13,600.00	90.00	359.89	6,800.00	4,740.47	2,374.75	4,729.23	0.00	0.00	0.00	
13,700.00	90.00	359.89	6,800.00	4,840.47	2,374.56	4,829.23	0.00	0.00	0.00	
13,800.00	90.00	359.89	6,800.00	4,940.47	2,374.37	4,929.23	0.00	0.00	0.00	
13,900.00	90.00	359.89	6,800.00	5,040.47	2,374.18	5,029.23	0.00	0.00	0.00	
14,000.00	90.00	359.89	6,800.00	5,140.47	2,373.98	5,129.23	0.00	0.00	0.00	
14,100.00	90.00	359.89	6,800.00	5,240.47	2,373.79	5,229.23	0.00	0.00	0.00	
14,200.00	90.00	359.89	6,800.00	5,340.47	2,373.60	5,329.23	0.00	0.00	0.00	
14,300.00	90.00	359.89	6,800.00	5,440.47	2,373.41	5,429.23	0.00	0.00	0.00	
14,400.00	90.00	359.89	6,800.00	5,540.47	2,373.22	5,529.23	0.00	0.00	0.00	
14,500.00	90.00	359.89	6,800.00	5,640.47	2,373.02	5,629.23	0.00	0.00	0.00	
14,600.00	90.00	359.89	6,800.00	5,740.47	2,372.83	5,729.22	0.00	0.00	0.00	
14,700.00	90.00	359.89	6,800.00	5,840.47	2,372.64	5,829.22	0.00	0.00	0.00	
14,800.00	90.00	359.89	6,800.00	5,940.47	2,372.45	5,929.22	0.00	0.00	0.00	
14,900.00	90.00	359.89	6,800.00	6,040.47	2,372.26	6,029.22	0.00	0.00	0.00	
15,000.00	90.00	359.89	6,800.00	6,140.47	2,372.06	6,129.22	0.00	0.00	0.00	
15,100.00	90.00	359.89	6,800.00	6,240.47	2,371.87	6,229.22	0.00	0.00	0.00	
15,200.00	90.00	359.89	6,800.00	6,340.47	2,371.68	6,329.22	0.00	0.00	0.00	
15,300.00	90.00	359.89	6,800.00	6,440.47	2,371.49	6,429.22	0.00	0.00	0.00	
15,400.00	90.00	359.89	6,800.00	6,540.47	2,371.29	6,529.22	0.00	0.00	0.00	
15,500.00	90.00	359.89	6,800.00	6,640.47	2,371.10	6,629.22	0.00	0.00	0.00	
15,600.00	90.00	359.89	6,800.00	6,740.47	2,370.91	6,729.22	0.00	0.00	0.00	
15,700.00	90.00	359.89	6,800.00	6,840.47	2,370.72	6,829.22	0.00	0.00	0.00	
15,800.00	90.00	359.89	6,800.00	6,940.47	2,370.53	6,929.22	0.00	0.00	0.00	
15,900.00	90.00	359.89	6,800.00	7,040.47	2,370.33	7,029.22	0.00	0.00	0.00	
16,000.00	90.00	359.89	6,800.00	7,140.47	2,370.14	7,129.22	0.00	0.00	0.00	
16,100.00	90.00	359.89	6,800.00	7,240.47	2,369.95	7,229.22	0.00	0.00	0.00	
16,200.00	90.00	359.89	6,800.00	7,340.47	2,369.76	7,329.22	0.00	0.00	0.00	
16,300.00	90.00	359.89	6,800.00	7,440.47	2,369.57	7,429.22	0.00	0.00	0.00	
16,400.00	90.00	359.89	6,800.00	7,540.47	2,369.37	7,529.22	0.00	0.00	0.00	
16,500.00	90.00	359.89	6,800.00	7,640.47	2,369.18	7,629.22	0.00	0.00	0.00	
16,600.00	90.00	359.89	6,800.00	7,740.47	2,368.99	7,729.22	0.00	0.00	0.00	
16,700.00	90.00	359.89	6,800.00	7,840.47	2,368.80	7,829.22	0.00	0.00	0.00	
16,800.00	90.00	359.89	6,800.00	7,940.47	2,368.61	7,929.22	0.00	0.00	0.00	
16,900.00	90.00	359.89	6,800.00	8,040.47	2,368.41	8,029.22	0.00	0.00	0.00	
17,000.00	90.00	359.89	6,800.00	8,140.47	2,368.22	8,129.22	0.00	0.00	0.00	
17,100.00	90.00	359.89	6,800.00	8,240.47	2,368.03	8,229.21	0.00	0.00	0.00	
17,200.00	90.00	359.89	6,800.00	8,340.47	2,367.84	8,329.21	0.00	0.00	0.00	
17,300.00	90.00	359.89	6,800.00	8,440.47	2,367.64	8,429.21	0.00	0.00	0.00	
17,400.00	90.00	359.89	6,800.00	8,540.46	2,367.45	8,529.21	0.00	0.00	0.00	
17,500.00	90.00	359.89	6,800.00	8,640.46	2,367.26	8,629.21	0.00	0.00	0.00	
17,530.24	90.00	359.89	6,800.00	8,670.70	2,367.20	8,659.45	0.00	0.00	0.00	
BPZ @ 17530.24ft										
17,600.00	90.00	359.89	6,800.00	8,740.46	2,367.07	8,729.21	0.00	0.00	0.00	
17,620.22	90.00	359.89	6,800.00	8,760.68	2,367.03	8,749.43	0.00	0.00	0.00	
TD Well @ 17620.22ft										

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BOYD 2413-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4943.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4943.00usft (RIG)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,039.89	1,934.00	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)		
201.35	201.35	0.00	0.00	Begin Nudge @ 201.35ft	
1,594.35	1,540.10	-199.23	265.64	Hold Tangent @ 1594.35ft	
6,664.80	6,022.85	-1,620.93	2,161.23	KOP @ 6664.80ft :: DLS = 9°/100'	
7,866.73	6,800.00	-991.71	2,413.24	TPZ @ 7866.73ft	
8,066.73	6,800.00	-792.47	2,395.81	Begin Turn to BHL @ 8066.73ft	
8,311.23	6,800.00	-548.29	2,384.91	End Turn @ 8311.23ft	
17,530.24	6,800.00	8,670.70	2,367.20	BPZ @ 17530.24ft	
17,620.22	6,800.00	8,760.68	2,367.03	TD Well @ 17620.22ft	