







Verdad Resources LLC

SEC 33 T2N R64W

Jackson 02N-64W-33 Pad

Jackson 33-7H

OH

Plan: Plan 2

Standard Planning Report

28 December, 2017





Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Jackson 33-7H
Company:	Verdad Resources LLC	TVD Reference:	WELL @ 5017.00ft (Original Well Elev)
Project:	SEC 33 T2N R64W	MD Reference:	WELL @ 5017.00ft (Original Well Elev)
Site:	Jackson 02N-64W-33 Pad	North Reference:	True
Well:	Jackson 33-7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Project	SEC 33 T2N R64W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Jackson 02N-64W-33 Pad			
Site Position:		Northing:	1,281,248.57 usft	Latitude: 40.1016100
From:	Lat/Long	Easting:	3,262,377.29 usft	Longitude: -104.5620370
Position Uncertainty:	3.28 ft	Slot Radius:	13.200 in	Grid Convergence: 0.61 °

Well	Jackson 33-7H, 275 FNL 1063 FWL			
Well Position	+N/-S	-64.13 ft	Northing:	1,281,185.99 usft
	+E/-W	146.30 ft	Easting:	3,262,524.27 usft
Position Uncertainty		3.28 ft	Wellhead Elevation:	Ground Level: 5,017.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/25/2017	8.08	66.65	52,264

Design	Plan 2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	169.15

Plan Survey Tool Program	Date	12/22/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,040.13 Plan 2 (OH)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
954.79	15.10	47.76	946.09	66.46	73.19	2.00	2.00	0.00	47.76	
5,416.58	15.10	47.76	5,253.91	847.60	933.45	0.00	0.00	0.00	0.00	
6,171.37	0.00	0.00	6,000.00	914.06	1,006.64	2.00	-2.00	0.00	180.00	
6,734.75	0.00	0.00	6,563.38	914.06	1,006.64	0.00	0.00	0.00	0.00	
7,737.15	90.22	180.41	7,200.00	275.06	1,002.01	9.00	9.00	-17.92	180.41	
13,040.13	90.22	180.41	7,180.00	-5,027.74	963.61	0.00	0.00	0.00	0.00	PBHL_Jackson 33-7H



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Company: Verdad Resources LLC
Project: SEC 33 T2N R64W
Site: Jackson 02N-64W-33 Pad
Well: Jackson 33-7H
Wellbore: OH
Design: Plan 2

Local Co-ordinate Reference: Well Jackson 33-7H
TVD Reference: WELL @ 5017.00ft (Original Well Elev)
MD Reference: WELL @ 5017.00ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
300.00	2.00	47.76	299.98	1.17	1.29	-0.91	2.00	2.00	0.00
400.00	4.00	47.76	399.84	4.69	5.17	-3.64	2.00	2.00	0.00
500.00	6.00	47.76	499.45	10.55	11.62	-8.17	2.00	2.00	0.00
600.00	8.00	47.76	598.70	18.74	20.64	-14.52	2.00	2.00	0.00
700.00	10.00	47.76	697.47	29.26	32.22	-22.67	2.00	2.00	0.00
800.00	12.00	47.76	795.62	42.08	46.35	-32.61	2.00	2.00	0.00
900.00	14.00	47.76	893.06	57.21	63.00	-44.33	2.00	2.00	0.00
954.79	15.10	47.76	946.09	66.46	73.19	-51.49	2.00	2.00	0.00
1,000.00	15.10	47.76	989.74	74.37	81.91	-57.63	0.00	0.00	0.00
1,100.00	15.10	47.76	1,086.29	91.88	101.19	-71.19	0.00	0.00	0.00
1,200.00	15.10	47.76	1,182.84	109.39	120.47	-84.76	0.00	0.00	0.00
1,300.00	15.10	47.76	1,279.39	126.90	139.75	-98.33	0.00	0.00	0.00
1,400.00	15.10	47.76	1,375.94	144.40	159.03	-111.89	0.00	0.00	0.00
1,500.00	15.10	47.76	1,472.49	161.91	178.31	-125.46	0.00	0.00	0.00
1,600.00	15.10	47.76	1,569.04	179.42	197.59	-139.02	0.00	0.00	0.00
1,700.00	15.10	47.76	1,665.59	196.92	216.87	-152.59	0.00	0.00	0.00
1,735.65	15.10	47.76	1,700.00	203.17	223.74	-157.42	0.00	0.00	0.00
9 5/8"									
1,800.00	15.10	47.76	1,762.13	214.43	236.15	-166.15	0.00	0.00	0.00
1,900.00	15.10	47.76	1,858.68	231.94	255.43	-179.72	0.00	0.00	0.00
2,000.00	15.10	47.76	1,955.23	249.45	274.71	-193.29	0.00	0.00	0.00
2,100.00	15.10	47.76	2,051.78	266.95	293.99	-206.85	0.00	0.00	0.00
2,200.00	15.10	47.76	2,148.33	284.46	313.27	-220.42	0.00	0.00	0.00
2,300.00	15.10	47.76	2,244.88	301.97	332.55	-233.98	0.00	0.00	0.00
2,400.00	15.10	47.76	2,341.43	319.48	351.84	-247.55	0.00	0.00	0.00
2,500.01	15.10	47.76	2,437.98	336.98	371.12	-261.12	0.00	0.00	0.00
2,600.01	15.10	47.76	2,534.53	354.49	390.40	-274.68	0.00	0.00	0.00
2,700.01	15.10	47.76	2,631.08	372.00	409.68	-288.25	0.00	0.00	0.00
2,800.01	15.10	47.76	2,727.63	389.51	428.96	-301.81	0.00	0.00	0.00
2,900.01	15.10	47.76	2,824.18	407.01	448.24	-315.38	0.00	0.00	0.00
3,000.01	15.10	47.76	2,920.73	424.52	467.52	-328.94	0.00	0.00	0.00
3,100.01	15.10	47.76	3,017.28	442.03	486.80	-342.51	0.00	0.00	0.00
3,200.01	15.10	47.76	3,113.83	459.54	506.08	-356.08	0.00	0.00	0.00
3,300.01	15.10	47.76	3,210.38	477.04	525.36	-369.64	0.00	0.00	0.00
3,400.01	15.10	47.76	3,306.92	494.55	544.64	-383.21	0.00	0.00	0.00
3,500.01	15.10	47.76	3,403.47	512.06	563.92	-396.77	0.00	0.00	0.00
3,600.01	15.10	47.76	3,500.02	529.57	583.20	-410.34	0.00	0.00	0.00
3,700.01	15.10	47.76	3,596.57	547.07	602.48	-423.91	0.00	0.00	0.00
3,800.01	15.10	47.76	3,693.12	564.58	621.77	-437.47	0.00	0.00	0.00
3,900.01	15.10	47.76	3,789.67	582.09	641.05	-451.04	0.00	0.00	0.00
4,000.01	15.10	47.76	3,886.22	599.60	660.33	-464.60	0.00	0.00	0.00
4,100.01	15.10	47.76	3,982.77	617.10	679.61	-478.17	0.00	0.00	0.00
4,200.01	15.10	47.76	4,079.32	634.61	698.89	-491.73	0.00	0.00	0.00
4,300.01	15.10	47.76	4,175.87	652.12	718.17	-505.30	0.00	0.00	0.00
4,400.01	15.10	47.76	4,272.42	669.63	737.45	-518.87	0.00	0.00	0.00
4,500.01	15.10	47.76	4,368.97	687.13	756.73	-532.43	0.00	0.00	0.00
4,600.01	15.10	47.76	4,465.52	704.64	776.01	-546.00	0.00	0.00	0.00
4,700.01	15.10	47.76	4,562.07	722.15	795.29	-559.56	0.00	0.00	0.00
4,800.01	15.10	47.76	4,658.62	739.66	814.57	-573.13	0.00	0.00	0.00
4,900.01	15.10	47.76	4,755.17	757.16	833.85	-586.70	0.00	0.00	0.00
5,000.01	15.10	47.76	4,851.71	774.67	853.13	-600.26	0.00	0.00	0.00



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Well: Jackson 33-7H
Wellbore: OH
Design: Plan 2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Jackson 33-7H
 WELL @ 5017.00ft (Original Well Elev)
 WELL @ 5017.00ft (Original Well Elev)
 True
 Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.01	15.10	47.76	4,948.26	792.18	872.41	-613.83	0.00	0.00	0.00
5,200.01	15.10	47.76	5,044.81	809.69	891.70	-627.39	0.00	0.00	0.00
5,300.01	15.10	47.76	5,141.36	827.19	910.98	-640.96	0.00	0.00	0.00
5,400.01	15.10	47.76	5,237.91	844.70	930.26	-654.52	0.00	0.00	0.00
5,416.58	15.10	47.76	5,253.91	847.60	933.45	-656.77	0.00	0.00	0.00
5,500.01	13.43	47.76	5,334.77	861.42	948.67	-667.48	2.00	-2.00	0.00
5,600.01	11.43	47.76	5,432.42	875.88	964.60	-678.69	2.00	-2.00	0.00
5,700.01	9.43	47.76	5,530.76	888.05	978.00	-688.11	2.00	-2.00	0.00
5,800.01	7.43	47.76	5,629.68	897.90	988.85	-695.75	2.00	-2.00	0.00
5,900.01	5.43	47.76	5,729.04	905.43	997.13	-701.58	2.00	-2.00	0.00
6,000.01	3.43	47.76	5,828.74	910.62	1,002.85	-705.60	2.00	-2.00	0.00
6,100.01	1.43	47.76	5,928.65	913.46	1,005.98	-707.81	2.00	-2.00	0.00
6,171.37	0.00	0.00	6,000.00	914.06	1,006.64	-708.27	2.00	-2.00	0.00
6,200.01	0.00	0.00	6,028.64	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,300.01	0.00	0.00	6,128.64	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,400.01	0.00	0.00	6,228.64	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,500.01	0.00	0.00	6,328.64	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,600.01	0.00	0.00	6,428.64	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,700.01	0.00	0.00	6,528.64	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,734.75	0.00	0.00	6,563.38	914.06	1,006.64	-708.27	0.00	0.00	0.00
6,800.01	5.87	180.41	6,628.53	910.72	1,006.62	-704.99	9.00	9.00	0.00
6,900.01	14.87	180.41	6,726.79	892.73	1,006.49	-687.35	9.00	9.00	0.00
7,000.01	23.87	180.41	6,821.03	859.59	1,006.25	-654.85	9.00	9.00	0.00
7,100.01	32.87	180.41	6,908.93	812.12	1,005.90	-608.29	9.00	9.00	0.00
7,200.01	41.87	180.41	6,988.32	751.48	1,005.46	-548.82	9.00	9.00	0.00
7,300.01	50.87	180.41	7,057.24	679.17	1,004.94	-477.90	9.00	9.00	0.00
7,400.01	59.87	180.41	7,114.01	596.97	1,004.34	-397.28	9.00	9.00	0.00
7,500.02	68.87	180.41	7,157.21	506.91	1,003.69	-308.94	9.00	9.00	0.00
7,600.02	77.87	180.41	7,185.79	411.19	1,003.00	-215.07	9.00	9.00	0.00
7,700.02	86.87	180.41	7,199.05	312.18	1,002.28	-117.96	9.00	9.00	0.00
7,737.15	90.22	180.41	7,200.00	275.06	1,002.01	-81.56	9.00	9.00	0.00
LP_Jackson 33-7H(0 FNL 2100 FWL)									
7,737.15	90.22	180.41	7,200.00	275.06	1,002.01	-81.55	9.00	9.00	0.00
7,800.02	90.22	180.41	7,199.76	212.20	1,001.56	-19.90	0.00	0.00	0.00
7,900.02	90.22	180.41	7,199.38	112.20	1,000.83	78.17	0.00	0.00	0.00
8,000.02	90.22	180.41	7,199.00	12.20	1,000.11	176.24	0.00	0.00	0.00
8,100.02	90.22	180.41	7,198.63	-87.79	999.38	274.32	0.00	0.00	0.00
8,200.02	90.22	180.41	7,198.25	-187.79	998.66	372.39	0.00	0.00	0.00
8,300.02	90.22	180.41	7,197.87	-287.79	997.94	470.46	0.00	0.00	0.00
8,400.02	90.22	180.41	7,197.50	-387.78	997.21	568.54	0.00	0.00	0.00
8,500.02	90.22	180.41	7,197.12	-487.78	996.49	666.61	0.00	0.00	0.00
8,600.02	90.22	180.41	7,196.74	-587.78	995.76	764.68	0.00	0.00	0.00
8,700.02	90.22	180.41	7,196.36	-687.78	995.04	862.76	0.00	0.00	0.00
8,800.02	90.22	180.41	7,195.99	-787.77	994.32	960.83	0.00	0.00	0.00
8,900.02	90.22	180.41	7,195.61	-887.77	993.59	1,058.91	0.00	0.00	0.00
9,000.02	90.22	180.41	7,195.23	-987.77	992.87	1,156.98	0.00	0.00	0.00
9,100.02	90.22	180.41	7,194.86	-1,087.76	992.14	1,255.05	0.00	0.00	0.00
9,200.02	90.22	180.41	7,194.48	-1,187.76	991.42	1,353.13	0.00	0.00	0.00
9,300.02	90.22	180.41	7,194.10	-1,287.76	990.70	1,451.20	0.00	0.00	0.00
9,400.02	90.22	180.41	7,193.73	-1,387.75	989.97	1,549.27	0.00	0.00	0.00
9,500.02	90.22	180.41	7,193.35	-1,487.75	989.25	1,647.35	0.00	0.00	0.00
9,600.02	90.22	180.41	7,192.97	-1,587.75	988.52	1,745.42	0.00	0.00	0.00
9,700.02	90.22	180.41	7,192.59	-1,687.74	987.80	1,843.49	0.00	0.00	0.00



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North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,800.02	90.22	180.41	7,192.22	-1,787.74	987.07	1,941.57	0.00	0.00	0.00
9,900.02	90.22	180.41	7,191.84	-1,887.74	986.35	2,039.64	0.00	0.00	0.00
10,000.02	90.22	180.41	7,191.46	-1,987.73	985.63	2,137.71	0.00	0.00	0.00
10,100.02	90.22	180.41	7,191.09	-2,087.73	984.90	2,235.79	0.00	0.00	0.00
10,200.02	90.22	180.41	7,190.71	-2,187.73	984.18	2,333.86	0.00	0.00	0.00
10,300.02	90.22	180.41	7,190.33	-2,287.73	983.45	2,431.94	0.00	0.00	0.00
10,400.02	90.22	180.41	7,189.95	-2,387.72	982.73	2,530.01	0.00	0.00	0.00
10,500.02	90.22	180.41	7,189.58	-2,487.72	982.01	2,628.08	0.00	0.00	0.00
10,600.02	90.22	180.41	7,189.20	-2,587.72	981.28	2,726.16	0.00	0.00	0.00
10,700.02	90.22	180.41	7,188.82	-2,687.71	980.56	2,824.23	0.00	0.00	0.00
10,800.02	90.22	180.41	7,188.45	-2,787.71	979.83	2,922.30	0.00	0.00	0.00
10,900.02	90.22	180.41	7,188.07	-2,887.71	979.11	3,020.38	0.00	0.00	0.00
11,000.02	90.22	180.41	7,187.69	-2,987.70	978.38	3,118.45	0.00	0.00	0.00
11,100.02	90.22	180.41	7,187.32	-3,087.70	977.66	3,216.52	0.00	0.00	0.00
11,200.02	90.22	180.41	7,186.94	-3,187.70	976.94	3,314.60	0.00	0.00	0.00
11,300.02	90.22	180.41	7,186.56	-3,287.69	976.21	3,412.67	0.00	0.00	0.00
11,400.02	90.22	180.41	7,186.18	-3,387.69	975.49	3,510.74	0.00	0.00	0.00
11,500.02	90.22	180.41	7,185.81	-3,487.69	974.76	3,608.82	0.00	0.00	0.00
11,600.02	90.22	180.41	7,185.43	-3,587.68	974.04	3,706.89	0.00	0.00	0.00
11,700.02	90.22	180.41	7,185.05	-3,687.68	973.32	3,804.97	0.00	0.00	0.00
11,800.02	90.22	180.41	7,184.68	-3,787.68	972.59	3,903.04	0.00	0.00	0.00
11,900.02	90.22	180.41	7,184.30	-3,887.68	971.87	4,001.11	0.00	0.00	0.00
12,000.02	90.22	180.41	7,183.92	-3,987.67	971.14	4,099.19	0.00	0.00	0.00
12,100.02	90.22	180.41	7,183.54	-4,087.67	970.42	4,197.26	0.00	0.00	0.00
12,200.02	90.22	180.41	7,183.17	-4,187.67	969.69	4,295.33	0.00	0.00	0.00
12,300.02	90.22	180.41	7,182.79	-4,287.66	968.97	4,393.41	0.00	0.00	0.00
12,400.03	90.22	180.41	7,182.41	-4,387.66	968.25	4,491.48	0.00	0.00	0.00
12,500.03	90.22	180.41	7,182.04	-4,487.66	967.52	4,589.55	0.00	0.00	0.00
12,600.03	90.22	180.41	7,181.66	-4,587.65	966.80	4,687.63	0.00	0.00	0.00
12,700.03	90.22	180.41	7,181.28	-4,687.65	966.07	4,785.70	0.00	0.00	0.00
12,800.03	90.22	180.41	7,180.91	-4,787.65	965.35	4,883.77	0.00	0.00	0.00
12,900.03	90.22	180.41	7,180.53	-4,887.64	964.63	4,981.85	0.00	0.00	0.00
13,000.03	90.22	180.41	7,180.15	-4,987.64	963.90	5,079.92	0.00	0.00	0.00
13,040.13	90.22	180.41	7,180.00	-5,027.74	963.61	5,119.25	0.00	0.00	0.00

PBHL_Jackson 33-7H(0 FSL 2100 FWL)

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_Jackson 33-7H(0 - plan hits target center - Point	0.00	0.00	7,180.00	-5,027.74	963.61	1,276,168.74	3,263,541.03	40.0876320	-104.5580700
LP_Jackson 33-7H(0 FN - plan misses target center by 0.01ft at 7737.15ft MD (7200.00 TVD, 275.06 N, 1002.01 E) - Point	0.00	0.00	7,200.00	275.06	1,002.01	1,281,471.65	3,263,523.31	40.1021890	-104.5579320



Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Jackson 33-7H
Company:	Verdad Resources LLC	TVD Reference:	WELL @ 5017.00ft (Original Well Elev)
Project:	SEC 33 T2N R64W	MD Reference:	WELL @ 5017.00ft (Original Well Elev)
Site:	Jackson 02N-64W-33 Pad	North Reference:	True
Well:	Jackson 33-7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (in)	Hole Diameter (in)
1,735.65	1,700.00	9 5/8"		9.625	13.500
13,040.13	7,180.00	5 1/2"		5.500	8.500

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.00	
954.79	946.09	66.46	73.19	Start 4461.80 hold at 954.79 MD	
5,416.58	5,253.91	847.60	933.45	Start Drop -2.00	
6,171.37	6,000.00	914.06	1,006.64	Start 563.38 hold at 6171.37 MD	
6,734.75	6,563.38	914.06	1,006.64	Start DLS 9.00 TFO 180.41	
7,737.15	7,200.00	275.06	1,002.01	Start 5302.98 hold at 7737.15 MD	
13,040.13	7,180.00	-5,027.74	963.61	TD at 13040.13	