



# Jay-Bee Oil & Gas

Pleasants County

P4 Pad

P4N2

Wellbore #1

Design: Wellbore #1

## QES Survey Report

07 January, 2019

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WV Department of  
Environmental Protection



06/18/2021



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4N2
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (Patterson #581)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (Patterson #581)
<b>Well:</b>	P4N2	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Pleasants County		
<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>	West Virginia Northern Zone		

<b>Site</b>	P4 Pad				
<b>Site Position:</b>		<b>Northing:</b>	341,266.74 usft	<b>Latitude:</b>	39° 25' 34.766 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,525,094.26 usft	<b>Longitude:</b>	81° 4' 11.201 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.00 °

<b>Well</b>	P4N2					
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b>	341,280.73 usft	<b>Latitude:</b>	39° 25' 34.918 N
	+E/-W	0.0 usft	<b>Easting:</b>	1,525,172.62 usft	<b>Longitude:</b>	81° 4' 10.205 W
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	957.2 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	12/23/2018	-8.42	66.60	51,856.86197077

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	341.63	

<b>Survey Program</b>	<b>Date</b>	12/30/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
30.0	386.0	Gyro - VES Survey International (Wellbore	OWSG MWD - Standard	OWSG MWD - Standard	
422.0	4,362.0	QES MWD Surveys (Wellbore #1)	OWSG MWD - Standard	OWSG MWD - Standard	

<b>Survey</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>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Buid Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
30.0	0.73	5.62	30.0	0.2	0.0	0.2	2.43	2.43	0.00	
60.0	1.05	36.93	60.0	0.6	0.2	0.5	1.90	1.07	104.37	
90.0	1.17	33.26	90.0	1.1	0.5	0.9	0.46	0.40	-12.23	
120.0	1.27	31.93	120.0	1.6	0.9	1.3	0.35	0.33	-4.43	
150.0	1.37	44.52	150.0	2.2	1.3	1.6	1.02	0.33	41.97	
180.0	1.64	51.75	180.0	2.7	1.9	1.9	1.10	0.90	24.10	
210.0	1.54	50.52	210.0	3.2	2.5	2.2	0.35	-0.33	-4.10	
240.0	1.70	49.32	239.9	3.7	3.2	2.5	0.55	0.53	-4.00	
270.0	1.88	53.62	269.9	4.3	3.9	2.9	0.75	0.60	14.33	



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4N2
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (Patterson #581)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (Patterson #581)
<b>Well:</b>	P4N2	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature .
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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)
300.0	2.02	50.65	299.9	5.0	4.7	3.2	0.58	0.47	-9.90
330.0	2.13	53.79	329.9	5.6	5.6	3.6	0.53	0.37	10.47
360.0	2.26	59.49	359.9	6.2	6.5	3.9	0.85	0.43	19.00
<b>Gyro Tie In @ 386.0' MD / 385.8' TVD</b>									
386.0	2.17	57.91	385.8	6.8	7.4	4.1	0.42	-0.35	-6.08
422.0	2.28	54.22	421.8	7.5	8.6	4.5	0.50	0.31	-10.25
516.0	1.98	96.21	515.8	8.5	11.7	4.3	1.65	-0.32	44.67
611.0	4.09	104.73	610.6	7.4	16.6	1.8	2.27	2.22	8.97
705.0	6.57	95.42	704.2	6.1	25.2	-2.2	2.79	2.84	-9.90
800.0	8.47	89.93	798.4	5.6	37.6	-6.6	2.14	2.00	-5.78
895.0	11.20	87.97	892.0	5.9	53.8	-11.4	2.89	2.87	-2.06
989.0	13.58	88.54	983.8	6.5	74.0	-17.1	2.54	2.53	0.61
1,084.0	15.21	89.21	1,075.8	7.0	97.6	-24.2	1.72	1.72	0.71
1,179.0	17.06	91.56	1,167.1	6.7	124.0	-32.7	2.06	1.95	2.47
1,273.0	18.61	90.89	1,256.5	6.1	152.8	-42.3	1.66	1.65	-0.71
1,368.0	18.99	89.59	1,346.5	6.0	183.4	-52.1	0.60	0.40	-1.37
1,463.0	19.48	89.86	1,436.2	6.2	214.7	-61.8	0.52	0.52	0.28
1,558.0	17.55	89.87	1,526.2	6.2	244.9	-71.2	2.03	-2.03	0.01
1,652.0	17.63	91.45	1,615.9	5.9	273.3	-80.5	0.52	0.09	1.68
1,747.0	18.06	89.53	1,706.3	5.7	302.4	-89.9	0.77	0.45	-2.02
1,842.0	19.96	89.66	1,796.1	5.9	333.3	-99.5	2.00	2.00	0.14
1,936.0	21.03	90.63	1,884.1	5.8	366.2	-109.9	1.19	1.14	1.03
2,031.0	20.99	93.51	1,972.8	4.6	400.2	-121.8	1.09	-0.04	3.03
2,119.0	19.83	92.93	2,055.3	2.8	430.9	-133.1	1.34	-1.32	-0.66
2,214.0	17.62	89.08	2,145.3	2.2	461.4	-143.3	2.66	-2.33	-4.05
2,308.0	18.12	89.31	2,234.7	2.6	490.2	-152.0	0.54	0.53	0.24
2,403.0	17.90	91.10	2,325.1	2.5	519.6	-161.3	0.63	-0.23	1.88
2,498.0	18.67	86.46	2,415.3	3.2	549.3	-170.1	1.73	0.81	-4.88
2,593.0	15.54	81.45	2,506.1	6.0	577.1	-176.2	3.64	-3.29	-5.27
2,687.0	17.48	90.13	2,596.2	7.9	603.7	-182.8	3.33	2.06	9.23
2,782.0	20.54	85.02	2,686.0	9.3	634.6	-191.2	3.66	3.22	-5.38
2,877.0	19.49	90.76	2,775.3	10.5	667.0	-200.2	2.34	-1.11	6.04
2,972.0	19.32	93.45	2,864.9	9.4	698.6	-211.3	0.96	-0.18	2.83
3,066.0	19.83	91.87	2,953.5	7.9	730.0	-222.6	0.78	0.54	-1.68
3,161.0	19.51	94.43	3,042.9	6.2	761.9	-234.3	0.97	0.34	2.69
3,255.0	19.43	92.28	3,131.6	4.3	793.2	-245.9	0.77	0.77	-2.29
3,350.0	19.52	91.11	3,221.1	3.4	824.9	-256.7	0.42	0.09	-1.23
3,445.0	19.94	90.50	3,310.5	2.9	856.9	-267.3	0.49	0.44	-0.64
3,539.0	19.53	90.86	3,399.0	2.6	888.7	-277.6	0.46	-0.44	0.38
3,633.0	21.10	94.03	3,487.2	1.1	921.3	-289.3	2.04	1.67	3.37
3,728.0	22.46	97.15	3,575.4	-2.3	956.3	-303.6	1.88	1.49	3.28
3,822.0	22.32	92.10	3,662.3	-5.2	992.0	-317.6	2.05	-0.15	-5.37
3,917.0	21.73	89.75	3,750.4	-5.8	1,027.6	-329.3	1.12	-0.62	-2.47

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4,011.0	22.09	88.06	3,837.6	-5.1	1,062.7	-339.8	0.77	0.38	-1.80	
4,108.0	21.22	89.13	3,925.9	-4.3	1,097.7	-350.0	1.01	-0.92	1.13	
4,201.0	18.91	91.53	4,015.1	-4.4	1,130.3	-360.4	2.58	-2.43	2.53	
4,295.0	11.52	85.07	4,105.8	-4.0	1,154.9	-367.8	8.05	-7.86	-6.87	
<b>OH TD @ 4362.0' MD / 4171.7' TVD</b>										
4,362.0	8.50	85.07	4,171.7	-3.0	1,166.5	-370.5	4.51	-4.51	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
386.0	385.8	6.8	7.4	Gyro Tie In @ 386.0' MD / 385.8' TVD	
4,362.0	4,171.7	-3.0	1,166.5	OH TD @ 4362.0' MD / 4171.7' TVD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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