



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (Pilot)	<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>	P2 Pad				
<b>Site Position:</b>		<b>Northing:</b>	344,470.06 usft	<b>Latitude:</b>	39° 26' 7.746 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,532,823.36 usft	<b>Longitude:</b>	81° 2' 33.414 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.98 °

<b>Well</b>	P2S6 U					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	344,442.02 usft	<b>Latitude:</b>	39° 26' 7.471 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,532,833.82 usft	<b>Longitude:</b>	81° 2' 33.275 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	0.0 usft	<b>Ground Level:</b>	712.2 usft

<b>Wellbore</b>	Wellbore #1 (Pilot)				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	5/6/2017	-8.38	66.74	52,049.74413284

<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	162.66	

<b>Survey Program</b>	<b>Date</b>	7/26/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
419.0	10,255.0	MWD Surveys (Wellbore #1 (Pilot))	MWD default	MWD - Standard	

RECEIVED  
Office of Oil and Gas  
JUN 15 2018  
WV Department of  
Environmental Protection

<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>Build 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	
<b>OH First MWD Survey @ 419' MD / TVD</b>										
419.0	0.72	111.78	419.0	-1.0	2.4	1.7	0.17	0.17	0.00	
508.0	0.85	111.66	508.0	-1.4	3.6	2.4	0.15	0.15	-0.13	
603.0	1.22	106.02	603.0	-2.0	5.2	3.4	0.40	0.39	-5.94	
697.0	0.89	91.23	696.9	-2.3	6.9	4.2	0.45	-0.35	-15.73	
792.0	0.95	103.49	791.9	-2.5	8.4	4.9	0.22	0.06	12.91	
887.0	0.16	142.67	886.9	-2.7	9.2	5.4	0.88	-0.83	41.24	
982.0	0.53	177.51	981.9	-3.3	9.3	5.9	0.43	0.39	36.67	
1,076.0	0.34	224.03	1,075.9	-3.9	9.2	6.5	0.41	-0.20	49.49	
1,171.0	0.78	209.85	1,170.9	-4.7	8.7	7.1	0.48	0.46	-14.93	



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (Pilot)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018  
WV Department of  
Environmental Protection

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)
1,266.0	0.92	204.93	1,265.9	-5.9	8.0	8.1	0.17	0.15	-5.18
1,360.0	0.68	202.25	1,359.9	-7.1	7.5	9.0	0.26	-0.26	-2.85
1,455.0	1.27	201.23	1,454.9	-8.6	6.9	10.3	0.62	0.62	-1.07
1,550.0	1.57	198.41	1,549.9	-10.9	6.1	12.2	0.32	0.32	-2.97
1,644.0	1.39	197.34	1,643.8	-13.2	5.3	14.2	0.19	-0.19	-1.14
1,739.0	1.61	184.37	1,738.8	-15.6	4.9	16.4	0.42	0.23	-13.65
1,834.0	0.68	142.70	1,833.8	-17.4	5.1	18.1	1.25	-0.98	-43.86
1,897.0	1.28	99.58	1,896.8	-17.8	6.1	18.8	1.45	0.95	-68.44
1,963.0	1.61	75.93	1,962.7	-17.7	7.7	19.2	1.02	0.50	-35.83
2,027.0	2.22	52.07	2,026.7	-16.7	9.5	18.8	1.55	0.95	-37.28
2,122.0	3.59	18.45	2,121.6	-12.8	11.9	15.7	2.24	1.44	-35.39
2,216.0	3.07	340.65	2,215.4	-7.6	12.0	10.8	2.35	-0.55	-40.21
2,314.0	1.12	271.69	2,313.4	-5.1	10.2	7.9	2.92	-1.99	-70.37
2,409.0	1.74	198.35	2,408.4	-6.4	8.8	8.8	1.87	0.65	-77.20
2,504.0	0.90	195.49	2,503.3	-8.5	8.2	10.6	0.89	-0.88	-3.01
2,599.0	0.98	288.83	2,598.3	-9.0	7.2	10.7	1.44	0.08	98.25
2,694.0	1.79	304.42	2,693.3	-7.9	5.2	9.1	0.93	0.85	16.41
2,789.0	1.72	293.61	2,788.3	-6.5	2.7	7.0	0.36	-0.07	-11.38
2,883.0	0.63	187.03	2,882.2	-6.4	1.3	6.5	2.12	-1.16	-113.38
2,978.0	2.20	137.17	2,977.2	-8.3	2.5	8.6	1.96	1.65	-52.48
3,072.0	1.48	118.01	3,071.2	-10.2	4.8	11.1	1.00	-0.77	-20.38
3,170.0	1.02	22.90	3,169.1	-10.0	6.2	11.4	1.91	-0.47	-97.05
3,265.0	2.50	332.83	3,264.1	-7.3	5.6	8.7	2.11	1.56	-52.71
3,359.0	3.13	327.81	3,358.0	-3.3	3.3	4.2	0.72	0.67	-5.34
3,454.0	2.64	326.52	3,452.9	0.7	0.7	-0.4	0.52	-0.52	-1.36
3,549.0	2.98	309.07	3,547.8	4.1	-2.4	-4.6	0.96	0.36	-18.37
3,644.0	5.26	292.27	3,642.5	7.3	-8.3	-9.4	2.69	2.40	-17.68
3,739.0	8.08	286.24	3,736.9	10.8	-18.8	-15.9	3.05	2.97	-6.35
3,834.0	9.72	280.44	3,830.7	14.1	-33.1	-23.3	1.97	1.73	-6.11
3,928.0	8.95	269.89	3,923.5	15.5	-48.2	-29.2	1.99	-0.82	-11.22
4,023.0	9.32	266.75	4,017.3	15.1	-63.3	-33.3	0.65	0.39	-3.31
4,118.0	8.81	278.16	4,111.1	15.7	-78.1	-38.3	1.96	-0.54	12.01
4,215.0	9.76	286.37	4,206.8	19.1	-93.4	-46.0	1.68	0.98	8.46
4,309.0	10.50	283.93	4,299.4	23.4	-109.3	-54.9	0.91	0.79	-2.60
4,404.0	11.24	276.15	4,392.7	26.4	-127.0	-63.1	1.73	0.78	-8.19
4,499.0	10.96	266.09	4,485.9	26.8	-145.2	-68.9	2.06	-0.29	-10.59
4,594.0	11.09	260.38	4,579.1	24.7	-163.2	-72.2	1.16	0.14	-6.01
4,689.0	9.68	255.30	4,672.6	21.1	-179.9	-73.8	1.77	-1.48	-5.35
4,783.0	8.88	256.65	4,765.4	17.4	-194.6	-74.7	0.88	-0.85	1.44
4,878.0	8.42	266.68	4,859.3	15.3	-208.7	-76.8	1.66	-0.48	10.56
4,973.0	8.20	276.22	4,953.3	15.7	-222.4	-81.2	1.47	-0.23	10.04
5,067.0	8.61	285.55	5,046.3	18.3	-235.8	-87.7	1.51	0.44	9.93
5,161.0	10.82	293.32	5,138.9	23.7	-250.7	-97.3	2.73	2.35	8.27





Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (Pilot)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018  
WV Department of  
Environmental Protection

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)
5,256.0	12.93	295.40	5,231.9	31.8	-268.5	-110.3	2.27	2.22	2.19
5,351.0	13.79	292.55	5,324.3	40.7	-288.6	-124.8	1.14	0.91	-3.00
5,448.0	14.53	288.91	5,418.4	49.0	-310.7	-139.4	1.19	0.76	-3.75
5,543.0	14.80	282.44	5,510.3	55.5	-333.9	-152.5	1.75	0.28	-6.81
5,638.0	14.27	273.25	5,602.3	58.8	-357.4	-162.6	2.49	-0.56	-9.67
5,733.0	13.50	266.63	5,694.5	58.8	-380.2	-169.4	1.86	-0.81	-6.97
5,828.0	12.18	261.67	5,787.1	56.7	-401.2	-173.7	1.81	-1.39	-5.22
5,923.0	9.21	254.41	5,880.5	53.2	-418.4	-175.5	3.43	-3.13	-7.64
6,017.0	9.54	254.79	5,973.2	49.1	-433.2	-176.0	0.36	0.35	0.40
6,112.0	9.23	262.74	6,066.9	46.1	-448.3	-177.6	1.40	-0.33	8.37
6,207.0	9.67	266.51	6,160.6	44.7	-463.8	-180.9	0.80	0.46	3.97
6,302.0	9.31	266.82	6,254.3	43.7	-479.5	-184.7	0.38	-0.38	0.33
6,387.0	8.76	264.97	6,338.3	42.8	-492.8	-187.7	0.73	-0.65	-2.18
6,482.0	9.00	269.51	6,432.2	42.1	-507.4	-191.4	0.78	0.25	4.78
6,577.0	10.12	275.07	6,525.8	42.8	-523.2	-196.8	1.53	1.18	5.85
6,672.0	10.33	276.89	6,619.3	44.5	-539.9	-203.4	0.41	0.22	1.92
6,767.0	10.90	278.37	6,712.7	46.9	-557.3	-210.8	0.67	0.60	1.56
6,862.0	10.18	276.52	6,806.1	49.1	-574.5	-218.1	0.84	-0.76	-1.95
6,956.0	9.14	275.72	6,898.8	50.8	-590.2	-224.4	1.12	-1.11	-0.85
7,051.0	9.09	281.95	6,992.6	53.1	-605.0	-231.0	1.04	-0.05	6.56
7,145.0	9.83	284.23	7,085.3	56.6	-620.1	-238.9	0.88	0.79	2.43
7,240.0	9.75	284.40	7,178.9	60.6	-635.7	-247.3	0.09	-0.08	0.18
7,335.0	10.66	284.13	7,272.4	64.8	-652.1	-256.2	0.96	0.96	-0.28
7,430.0	10.86	280.28	7,365.7	68.5	-669.4	-264.9	0.79	0.21	-4.05
7,525.0	9.25	274.08	7,459.3	70.6	-685.8	-271.8	2.04	-1.69	-6.53
7,622.0	9.27	267.46	7,555.0	70.9	-701.4	-276.7	1.10	0.02	-6.82
7,717.0	8.76	265.43	7,648.8	69.9	-716.2	-280.2	0.63	-0.54	-2.14
7,812.0	9.42	268.12	7,742.6	69.1	-731.2	-283.9	0.83	0.69	2.83
7,907.0	9.61	277.43	7,836.3	69.9	-746.9	-289.3	1.63	0.20	9.80
8,002.0	10.59	279.70	7,929.9	72.4	-763.3	-296.6	1.11	1.03	2.39
8,096.0	10.66	279.99	8,022.3	75.3	-780.4	-304.5	0.09	0.07	0.31
8,191.0	10.81	280.00	8,115.6	78.4	-797.8	-312.6	0.16	0.16	0.01
8,280.0	10.53	281.29	8,203.1	81.5	-814.0	-320.4	0.41	-0.31	1.45
8,374.0	11.47	281.39	8,295.3	85.0	-831.6	-329.0	1.00	1.00	0.11
8,469.0	11.89	277.15	8,388.4	88.1	-850.6	-337.6	1.01	0.44	-4.46
8,564.0	10.63	272.04	8,481.5	89.6	-869.0	-344.5	1.69	-1.33	-5.38
8,659.0	9.62	269.10	8,575.1	89.8	-885.7	-349.7	1.19	-1.06	-3.09
8,753.0	9.33	272.73	8,667.8	90.0	-901.2	-354.5	0.71	-0.31	3.86
8,848.0	8.95	278.07	8,761.6	91.4	-916.2	-360.3	0.98	-0.40	5.62
8,943.0	9.62	281.45	8,855.3	94.0	-931.3	-367.3	0.91	0.71	3.56
9,038.0	10.26	284.73	8,948.9	97.8	-947.3	-375.6	0.90	0.67	3.45
9,132.0	11.21	283.43	9,041.2	102.0	-964.3	-384.8	1.04	1.01	-1.38
9,226.0	11.74	280.47	9,133.4	105.9	-982.6	-393.9	0.84	0.56	-3.15



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (Pilot)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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)	
9,321.0	12.91	278.57	9,226.2	109.2	-1,002.5	-403.1	1.30	1.23	-2.00	
9,416.0	13.03	275.98	9,318.8	111.9	-1,023.7	-411.9	0.62	0.13	-2.73	
9,511.0	13.05	271.96	9,411.3	113.4	-1,045.1	-419.7	0.95	0.02	-4.23	
9,606.0	13.26	268.91	9,503.8	113.6	-1,066.7	-426.3	0.76	0.22	-3.21	
9,700.0	12.21	265.27	9,595.5	112.5	-1,087.4	-431.5	1.41	-1.12	-3.87	
9,795.0	13.08	267.40	9,688.2	111.2	-1,108.1	-436.4	1.04	0.92	2.24	
9,890.0	12.47	271.50	9,780.8	111.0	-1,129.1	-442.5	1.15	-0.64	4.32	
9,985.0	11.53	279.74	9,873.8	112.9	-1,148.7	-450.1	2.05	-0.99	8.67	
10,080.0	10.14	281.74	9,967.1	116.2	-1,166.3	-458.5	1.52	-1.46	2.11	
10,175.0	10.26	282.71	10,060.6	119.7	-1,182.7	-466.8	0.22	0.13	1.02	
<b>OH TD @ 10255' MD / 10139' TVD</b>										
10,255.0	10.26	282.71	10,139.3	122.9	-1,196.6	-473.9	0.00	0.00	0.00	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
419.0	419.0	-1.0	2.4	OH First MWD Survey @ 419' MD / TVD
10,255.0	10,139.3	122.9	-1,196.6	OH TD @ 10255' MD / 10139' TVD

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

RECEIVED  
Office of Oil and Gas  
JUN 15 2018  
WV Department of  
Environmental Protection



# Jay-Bee Oil & Gas

Pleasants County

P2 Pad

P2S6 U

ST01 (Pilot)

Survey: MWD Surveys (PH)

## QES Survey Report

27 July, 2017

RECEIVED  
Office of Oil and Gas

JUN 15 2018

WV Department of  
Environmental Protection







Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01 (Pilot)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Pilot Hole	<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>	P2 Pad				
<b>Site Position:</b>		<b>Northing:</b>	344,470.06 usft	<b>Latitude:</b>	39° 26' 7.746 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,532,823.36 usft	<b>Longitude:</b>	81° 2' 33.414 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.98 °

<b>Well</b>	P2S6 U					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	344,442.02 usft	<b>Latitude:</b>	39° 26' 7.471 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,532,833.82 usft	<b>Longitude:</b>	81° 2' 33.275 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	0.0 usft	<b>Ground Level:</b>	712.2 usft

<b>Wellbore</b>	ST01 (Pilot)				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	6/10/2017	-8.38	66.73	52,038.62649593

<b>Design</b>	Pilot Hole				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9,132.0
<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	275.66	

<b>Survey Program</b>	Date 7/27/2017				
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
419.0	9,132.0	MWD Surveys (Wellbore #1 (Pilot))	MWD default	MWD - Standard	
9,132.0	10,545.0	MWD Surveys (PH) (ST01 (Pilot))	MWD default	MWD - Standard	

RECEIVED  
Office of Oil and Gas  
JUN 15 2018  
WV Department of Environmental Protection

<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>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
<b>OH Tie-In @ 9132.0' MD / 9041.2' TVD</b>										
9,132.0	11.21	283.43	9,041.2	102.0	-964.3	969.6	0.00	0.00	0.00	
9,332.0	10.90	260.50	9,237.6	103.4	-1,001.8	1,007.2	2.19	-0.16	-11.47	
9,394.0	8.40	257.30	9,298.7	101.4	-1,012.0	1,017.1	4.12	-4.03	-5.16	
9,424.0	7.60	258.10	9,328.5	100.6	-1,016.1	1,021.1	2.69	-2.67	2.67	
9,517.0	5.10	252.00	9,420.9	98.0	-1,026.1	1,030.7	2.78	-2.69	-6.56	
9,612.0	3.50	262.90	9,515.6	96.3	-1,033.0	1,037.4	1.88	-1.68	11.47	
9,707.0	3.00	270.20	9,610.5	96.0	-1,038.3	1,042.7	0.68	-0.53	7.68	
9,801.0	2.50	277.40	9,704.4	96.3	-1,042.8	1,047.2	0.65	-0.53	7.66	
9,897.0	2.20	282.10	9,800.3	96.9	-1,046.7	1,051.2	0.37	-0.31	4.90	



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01 (Pilot)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Pilot Hole	<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)	
9,991.0	2.30	288.90	9,894.2	97.9	-1,050.2	1,054.8	0.30	0.11	7.23	
10,086.0	2.20	288.90	9,989.1	99.1	-1,053.8	1,058.4	0.11	-0.11	0.00	
10,181.0	2.30	290.80	10,084.1	100.4	-1,057.3	1,062.0	0.13	0.11	2.00	
10,276.0	2.20	295.00	10,179.0	101.8	-1,060.7	1,065.6	0.20	-0.11	4.42	
10,370.0	2.30	294.40	10,272.9	103.4	-1,064.1	1,069.1	0.11	0.11	-0.64	
10,464.0	2.40	296.40	10,366.8	105.0	-1,067.5	1,072.7	0.14	0.11	2.13	
<b>PH TD @ 10545' MD / 10449' TVD</b>										
10,545.0	2.40	296.60	10,447.8	106.5	-1,070.6	1,075.9	0.01	0.00	0.25	

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
9,132.0	9,041.2	102.0	-964.3	OH Tie-In @ 9132.0' MD / 9041.2' TVD	
10,545.0	10,447.8	106.5	-1,070.6	PH TD @ 10545' MD / 10449' TVD	

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



# Jay-Bee Oil & Gas

Pleasants County

P2 Pad

P2S6 U

ST02 (Curve & Lateral)

Design: Curve & Lateral

## QES Survey Report

27 July, 2017

RECEIVED  
Office of Oil and Gas

JUN 15 2018

WV Department of  
Environmental Protection







Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST02 (Curve & Lateral)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Curve & Lateral	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas

JUN 15 2018

WV Department of  
Environmental Protection

<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>	P2 Pad				
<b>Site Position:</b>		<b>Northing:</b>	344,470.06 usft	<b>Latitude:</b>	39° 26' 7.746 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,532,823.36 usft	<b>Longitude:</b>	81° 2' 33.414 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.98 °

<b>Well</b>	P2S6 U					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	344,442.02 usft	<b>Latitude:</b>	39° 26' 7.471 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,532,833.82 usft	<b>Longitude:</b>	81° 2' 33.275 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	0.0 usft	<b>Ground Level:</b>	712.2 usft

<b>Wellbore</b>	ST02 (Curve & Lateral)				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	6/16/2017	-8.39	66.73	52,036.71938995

<b>Design</b>	Curve & Lateral				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9,394.0
<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	162.66

<b>Survey Program</b>	Date 7/27/2017				
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
419.0	9,132.0	MWD Surveys (Wellbore #1 (Pilot))	MWD default	MWD - Standard	
9,132.0	9,394.0	MWD Surveys (PH) (ST01 (Pilot))	MWD default	MWD - Standard	
9,481.0	17,494.0	MWD Survey (C&L) (ST02 (Curve & Later	MWD default	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>Build 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	
419.0	0.72	111.78	419.0	-1.0	2.4	1.7	0.17	0.17	0.00	
508.0	0.85	111.66	508.0	-1.4	3.6	2.4	0.15	0.15	-0.13	
603.0	1.22	106.02	603.0	-2.0	5.2	3.4	0.40	0.39	-5.94	
697.0	0.89	91.23	696.9	-2.3	6.9	4.2	0.45	-0.35	-15.73	
792.0	0.95	103.49	791.9	-2.5	8.4	4.9	0.22	0.06	12.91	
887.0	0.16	142.67	886.9	-2.7	9.2	5.4	0.88	-0.83	41.24	
982.0	0.53	177.51	981.9	-3.3	9.3	5.9	0.43	0.39	36.67	
1,076.0	0.34	224.03	1,075.9	-3.9	9.2	6.5	0.41	-0.20	49.49	



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST02 (Curve & Lateral)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Curve & Lateral	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018

WV Department of  
Environmental Protection

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)
1,171.0	0.78	209.85	1,170.9	-4.7	8.7	7.1	0.48	0.46	-14.93
1,266.0	0.92	204.93	1,265.9	-5.9	8.0	8.1	0.17	0.15	-5.18
1,360.0	0.68	202.25	1,359.9	-7.1	7.5	9.0	0.26	-0.26	-2.85
1,455.0	1.27	201.23	1,454.9	-8.6	6.9	10.3	0.62	0.62	-1.07
1,550.0	1.57	198.41	1,549.9	-10.9	6.1	12.2	0.32	0.32	-2.97
1,644.0	1.39	197.34	1,643.8	-13.2	5.3	14.2	0.19	-0.19	-1.14
1,739.0	1.61	184.37	1,738.8	-15.6	4.9	16.4	0.42	0.23	-13.65
1,834.0	0.68	142.70	1,833.8	-17.4	5.1	18.1	1.25	-0.98	-43.86
1,897.0	1.28	99.58	1,896.8	-17.8	6.1	18.8	1.45	0.95	-68.44
1,963.0	1.61	75.93	1,962.7	-17.7	7.7	19.2	1.02	0.50	-35.83
2,027.0	2.22	52.07	2,026.7	-16.7	9.5	18.8	1.55	0.95	-37.28
2,122.0	3.59	18.45	2,121.6	-12.8	11.9	15.7	2.24	1.44	-35.39
2,216.0	3.07	340.65	2,215.4	-7.6	12.0	10.8	2.35	-0.55	-40.21
2,314.0	1.12	271.69	2,313.4	-5.1	10.2	7.9	2.92	-1.99	-70.37
2,409.0	1.74	198.35	2,408.4	-6.4	8.8	8.8	1.87	0.65	-77.20
2,504.0	0.90	195.49	2,503.3	-8.5	8.2	10.6	0.89	-0.88	-3.01
2,599.0	0.98	288.83	2,598.3	-9.0	7.2	10.7	1.44	0.08	98.25
2,694.0	1.79	304.42	2,693.3	-7.9	5.2	9.1	0.93	0.85	16.41
2,789.0	1.72	293.61	2,788.3	-6.5	2.7	7.0	0.36	-0.07	-11.38
2,883.0	0.63	187.03	2,882.2	-6.4	1.3	6.5	2.12	-1.16	-113.38
2,978.0	2.20	137.17	2,977.2	-8.3	2.5	8.6	1.96	1.65	-52.48
3,072.0	1.48	118.01	3,071.2	-10.2	4.8	11.1	1.00	-0.77	-20.38
3,170.0	1.02	22.90	3,169.1	-10.0	6.2	11.4	1.91	-0.47	-97.05
3,265.0	2.50	332.83	3,264.1	-7.3	5.6	8.7	2.11	1.56	-52.71
3,359.0	3.13	327.81	3,358.0	-3.3	3.3	4.2	0.72	0.67	-5.34
3,454.0	2.64	326.52	3,452.9	0.7	0.7	-0.4	0.52	-0.52	-1.36
3,549.0	2.98	309.07	3,547.8	4.1	-2.4	-4.6	0.96	0.36	-18.37
3,644.0	5.26	292.27	3,642.5	7.3	-8.3	-9.4	2.69	2.40	-17.68
3,739.0	8.08	286.24	3,736.9	10.8	-18.8	-15.9	3.05	2.97	-6.35
3,834.0	9.72	280.44	3,830.7	14.1	-33.1	-23.3	1.97	1.73	-6.11
3,928.0	8.95	269.89	3,923.5	15.5	-48.2	-29.2	1.99	-0.82	-11.22
4,023.0	9.32	266.75	4,017.3	15.1	-63.3	-33.3	0.65	0.39	-3.31
4,118.0	8.81	278.16	4,111.1	15.7	-78.1	-38.3	1.96	-0.54	12.01
4,215.0	9.76	286.37	4,206.8	19.1	-93.4	-46.0	1.68	0.98	8.46
4,309.0	10.50	283.93	4,299.4	23.4	-109.3	-54.9	0.91	0.79	-2.60
4,404.0	11.24	276.15	4,392.7	26.4	-127.0	-63.1	1.73	0.78	-8.19
4,499.0	10.96	266.09	4,485.9	26.8	-145.2	-68.9	2.06	-0.29	-10.59
4,594.0	11.09	260.38	4,579.1	24.7	-163.2	-72.2	1.16	0.14	-6.01
4,689.0	9.68	255.30	4,672.6	21.1	-179.9	-73.8	1.77	-1.48	-5.35
4,783.0	8.88	256.65	4,765.4	17.4	-194.6	-74.7	0.88	-0.85	1.44
4,878.0	8.42	266.68	4,859.3	15.3	-208.7	-76.8	1.66	-0.48	10.56
4,973.0	8.20	276.22	4,953.3	15.7	-222.4	-81.2	1.47	-0.23	10.04
5,067.0	8.61	285.55	5,046.3	18.3	-235.8	-87.7	1.51	0.44	9.93





Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST02 (Curve & Lateral)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Curve & Lateral	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018

WV Department of  
Environmental Protection

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)	
5,161.0	10.82	293.32	5,138.9	23.7	-250.7	-97.3	2.73	2.35	8.27	
5,256.0	12.93	295.40	5,231.9	31.8	-268.5	-110.3	2.27	2.22	2.19	
5,351.0	13.79	292.55	5,324.3	40.7	-288.6	-124.8	1.14	0.91	-3.00	
5,448.0	14.53	288.91	5,418.4	49.0	-310.7	-139.4	1.19	0.76	-3.75	
5,543.0	14.80	282.44	5,510.3	55.5	-333.9	-152.5	1.75	0.28	-6.81	
5,638.0	14.27	273.25	5,602.3	58.8	-357.4	-162.6	2.49	-0.56	-9.67	
5,733.0	13.50	266.63	5,694.5	58.8	-380.2	-169.4	1.86	-0.81	-6.97	
5,828.0	12.18	261.67	5,787.1	56.7	-401.2	-173.7	1.81	-1.39	-5.22	
5,923.0	9.21	254.41	5,880.5	53.2	-418.4	-175.5	3.43	-3.13	-7.64	
6,017.0	9.54	254.79	5,973.2	49.1	-433.2	-176.0	0.36	0.35	0.40	
6,112.0	9.23	262.74	6,066.9	46.1	-448.3	-177.6	1.40	-0.33	8.37	
6,207.0	9.67	266.51	6,160.6	44.7	-463.8	-180.9	0.80	0.46	3.97	
6,302.0	9.31	266.82	6,254.3	43.7	-479.5	-184.7	0.38	-0.38	0.33	
6,387.0	8.76	264.97	6,338.3	42.8	-492.8	-187.7	0.73	-0.65	-2.18	
6,482.0	9.00	269.51	6,432.2	42.1	-507.4	-191.4	0.78	0.25	4.78	
6,577.0	10.12	275.07	6,525.8	42.8	-523.2	-196.8	1.53	1.18	5.85	
6,672.0	10.33	276.89	6,619.3	44.5	-539.9	-203.4	0.41	0.22	1.92	
6,767.0	10.90	278.37	6,712.7	46.9	-557.3	-210.8	0.67	0.60	1.56	
6,862.0	10.18	276.52	6,806.1	49.1	-574.5	-218.1	0.84	-0.76	-1.95	
6,956.0	9.14	275.72	6,898.8	50.8	-590.2	-224.4	1.12	-1.11	-0.85	
7,051.0	9.09	281.95	6,992.6	53.1	-605.0	-231.0	1.04	-0.05	6.56	
7,145.0	9.83	284.23	7,085.3	56.6	-620.1	-238.9	0.88	0.79	2.43	
7,240.0	9.75	284.40	7,178.9	60.6	-635.7	-247.3	0.09	-0.08	0.18	
7,335.0	10.66	284.13	7,272.4	64.8	-652.1	-256.2	0.96	0.96	-0.28	
7,430.0	10.86	280.28	7,365.7	68.5	-669.4	-264.9	0.79	0.21	-4.05	
7,525.0	9.25	274.08	7,459.3	70.6	-685.8	-271.8	2.04	-1.69	-6.53	
7,622.0	9.27	267.46	7,555.0	70.9	-701.4	-276.7	1.10	0.02	-6.82	
7,717.0	8.76	265.43	7,648.8	69.9	-716.2	-280.2	0.63	-0.54	-2.14	
7,812.0	9.42	268.12	7,742.6	69.1	-731.2	-283.9	0.83	0.69	2.83	
7,907.0	9.61	277.43	7,836.3	69.9	-746.9	-289.3	1.63	0.20	9.80	
8,002.0	10.59	279.70	7,929.9	72.4	-763.3	-296.6	1.11	1.03	2.39	
8,096.0	10.66	279.99	8,022.3	75.3	-780.4	-304.5	0.09	0.07	0.31	
8,191.0	10.81	280.00	8,115.6	78.4	-797.8	-312.6	0.16	0.16	0.01	
8,280.0	10.53	281.29	8,203.1	81.5	-814.0	-320.4	0.41	-0.31	1.45	
8,374.0	11.47	281.39	8,295.3	85.0	-831.6	-329.0	1.00	1.00	0.11	
8,469.0	11.89	277.15	8,388.4	88.1	-850.6	-337.6	1.01	0.44	-4.46	
8,564.0	10.63	272.04	8,481.5	89.6	-869.0	-344.5	1.69	-1.33	-5.38	
8,659.0	9.62	269.10	8,575.1	89.8	-885.7	-349.7	1.19	-1.06	-3.09	
8,753.0	9.33	272.73	8,667.8	90.0	-901.2	-354.5	0.71	-0.31	3.86	
8,848.0	8.95	278.07	8,761.6	91.4	-916.2	-360.3	0.98	-0.40	5.62	
8,943.0	9.62	281.45	8,855.3	94.0	-931.3	-367.3	0.91	0.71	3.56	
9,038.0	10.26	284.73	8,948.9	97.8	-947.3	-375.6	0.90	0.67	3.45	
9,132.0	11.21	283.43	9,041.2	102.0	-964.3	-384.8	1.04	1.01	-1.38	





Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST02 (Curve & Lateral)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Curve & Lateral	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018

WV Department of  
Environmental Protection

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)	
9,332.0	10.90	260.50	9,237.6	103.4	-1,001.8	-397.3	2.19	-0.16	-11.47	
<b>C&amp;L Tie-in @ 9394.0' MD / 9298.8' TVD</b>										
9,394.0	8.40	257.30	9,298.7	101.4	-1,012.0	-398.5	4.12	-4.03	-5.16	
9,481.0	13.10	223.90	9,384.3	92.9	-1,025.1	-394.2	8.76	5.40	-38.39	
9,546.0	11.40	203.10	9,447.8	81.7	-1,032.7	-385.8	7.23	-2.62	-32.00	
9,593.0	10.40	199.40	9,494.0	73.4	-1,036.0	-378.9	2.60	-2.13	-7.87	
9,641.0	8.30	187.90	9,541.3	65.9	-1,037.9	-372.2	5.84	-4.38	-23.96	
9,688.0	7.70	168.30	9,587.9	59.5	-1,037.7	-366.0	5.91	-1.28	-41.70	
9,736.0	10.30	170.90	9,635.3	52.1	-1,036.4	-358.6	5.48	5.42	5.42	
9,783.0	11.90	171.50	9,681.4	43.1	-1,035.0	-349.7	3.41	3.40	1.28	
9,831.0	14.90	163.50	9,728.1	32.3	-1,032.5	-338.6	7.33	6.25	-16.67	
9,878.0	18.10	160.60	9,773.2	19.6	-1,028.4	-325.2	7.03	6.81	-6.17	
9,925.0	20.70	160.80	9,817.5	4.9	-1,023.2	-309.6	5.53	5.53	0.43	
9,972.0	25.20	162.50	9,860.8	-12.5	-1,017.5	-291.3	9.68	9.57	3.62	
10,020.0	30.90	161.00	9,903.1	-33.9	-1,010.4	-268.8	11.96	11.88	-3.13	
10,067.0	34.90	161.60	9,942.6	-58.1	-1,002.2	-243.3	8.54	8.51	1.28	
10,115.0	38.30	162.60	9,981.1	-85.3	-993.4	-214.6	7.19	7.08	2.08	
10,162.0	42.00	166.20	10,017.0	-114.5	-985.3	-184.4	9.29	7.87	7.66	
10,209.0	46.10	166.20	10,050.8	-146.2	-977.5	-151.8	8.72	8.72	0.00	
10,256.0	49.20	165.70	10,082.4	-179.9	-969.1	-117.1	6.64	6.60	-1.06	
10,304.0	53.30	165.70	10,112.5	-216.2	-959.8	-79.7	8.54	8.54	0.00	
10,351.0	58.40	163.50	10,138.9	-253.7	-949.5	-40.9	11.52	10.85	-4.68	
10,399.0	62.60	163.00	10,162.5	-293.7	-937.4	0.9	8.80	8.75	-1.04	
10,446.0	68.00	161.60	10,182.1	-334.3	-924.4	43.6	11.80	11.49	-2.98	
10,494.0	72.90	161.70	10,198.2	-377.2	-910.2	88.8	10.21	10.21	0.21	
10,541.0	78.30	160.70	10,209.9	-420.3	-895.5	134.3	11.67	11.49	-2.13	
10,588.0	81.50	162.80	10,218.1	-464.2	-881.1	180.6	8.11	6.81	4.47	
10,635.0	85.90	160.60	10,223.3	-508.6	-866.4	227.3	10.45	9.36	-4.68	
10,683.0	87.40	159.20	10,226.1	-553.6	-849.9	275.1	4.27	3.13	-2.92	
10,730.0	89.90	154.80	10,227.2	-596.8	-831.6	321.9	10.76	5.32	-9.36	
10,777.0	90.40	155.50	10,227.1	-639.5	-811.8	368.4	1.83	1.06	1.49	
10,872.0	88.00	153.60	10,228.4	-725.2	-771.0	462.5	3.22	-2.53	-2.00	
10,967.0	88.40	155.10	10,231.4	-810.8	-729.9	556.4	1.63	0.42	1.58	
11,061.0	88.40	153.40	10,234.0	-895.5	-689.1	649.4	1.81	0.00	-1.81	
11,156.0	89.40	151.80	10,235.8	-979.8	-645.4	742.9	1.99	1.05	-1.68	
11,251.0	90.90	151.50	10,235.6	-1,063.4	-600.3	836.1	1.61	1.58	-0.32	
11,345.0	91.40	150.70	10,233.7	-1,145.7	-554.8	928.2	1.00	0.53	-0.85	
11,440.0	90.60	154.00	10,232.0	-1,229.8	-510.8	1,021.7	3.57	-0.84	3.47	
11,535.0	91.50	153.80	10,230.3	-1,315.1	-469.0	1,115.5	0.97	0.95	-0.21	
11,629.0	91.10	155.80	10,228.2	-1,400.1	-429.0	1,208.6	2.17	-0.43	2.13	
11,725.0	91.50	154.60	10,226.0	-1,487.2	-388.7	1,303.8	1.32	0.42	-1.25	
11,819.0	90.80	155.80	10,224.1	-1,572.5	-349.3	1,397.0	1.48	-0.74	1.28	
11,914.0	89.10	152.50	10,224.2	-1,658.0	-307.9	1,490.9	3.91	-1.79	-3.47	
12,008.0	89.10	152.20	10,225.6	-1,741.3	-264.3	1,583.4	0.32	0.00	-0.32	



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST02 (Curve & Lateral)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Curve & Lateral	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018

WV Department of  
Environmental Protection

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)	
12,103.0	88.80	151.50	10,227.4	-1,825.0	-219.5	1,676.7	0.80	-0.32	-0.74	
12,198.0	89.20	154.80	10,229.0	-1,909.8	-176.6	1,770.3	3.50	0.42	3.47	
12,293.0	89.40	152.90	10,230.2	-1,995.0	-134.7	1,864.2	2.01	0.21	-2.00	
12,387.0	89.10	149.50	10,231.4	-2,077.4	-89.4	1,956.3	3.63	-0.32	-3.62	
12,482.0	89.50	150.90	10,232.6	-2,159.8	-42.2	2,049.1	1.53	0.42	1.47	
12,577.0	90.90	155.80	10,232.3	-2,244.7	0.4	2,142.8	5.36	1.47	5.16	
12,672.0	90.70	153.60	10,230.9	-2,330.6	41.0	2,236.9	2.33	-0.21	-2.32	
12,766.0	91.50	155.30	10,229.1	-2,415.3	81.5	2,329.9	2.00	0.85	1.81	
12,861.0	91.90	154.90	10,226.3	-2,501.5	121.5	2,424.0	0.60	0.42	-0.42	
12,956.0	90.80	155.20	10,224.1	-2,587.6	161.5	2,518.1	1.20	-1.16	0.32	
13,051.0	90.90	156.20	10,222.7	-2,674.2	200.6	2,612.4	1.06	0.11	1.05	
13,146.0	89.40	152.20	10,222.4	-2,759.7	242.0	2,706.4	4.50	-1.58	-4.21	
13,241.0	88.90	154.10	10,223.8	-2,844.4	284.9	2,800.0	2.07	-0.53	2.00	
13,336.0	88.50	153.90	10,226.0	-2,929.8	326.5	2,893.9	0.47	-0.42	-0.21	
13,430.0	87.30	152.00	10,229.4	-3,013.4	369.2	2,986.5	2.39	-1.28	-2.02	
13,525.0	86.40	152.90	10,234.6	-3,097.5	413.1	3,079.9	1.34	-0.95	0.95	
13,620.0	86.70	154.20	10,240.4	-3,182.4	455.3	3,173.5	1.40	0.32	1.37	
13,715.0	87.10	152.10	10,245.5	-3,267.1	498.2	3,267.1	2.25	0.42	-2.21	
13,810.0	88.10	152.00	10,249.5	-3,350.9	542.7	3,360.4	1.06	1.05	-0.11	
13,905.0	90.80	154.70	10,250.4	-3,435.8	585.3	3,454.1	4.02	2.84	2.84	
14,000.0	90.90	152.60	10,249.0	-3,520.9	627.4	3,547.9	2.21	0.11	-2.21	
14,094.0	90.20	153.50	10,248.1	-3,604.7	670.0	3,640.6	1.21	-0.74	0.96	
14,189.0	88.90	151.20	10,248.8	-3,688.8	714.1	3,734.0	2.78	-1.37	-2.42	
14,284.0	88.90	150.20	10,250.7	-3,771.7	760.6	3,826.9	1.05	0.00	-1.05	
14,379.0	89.80	152.60	10,251.7	-3,855.1	806.1	3,920.1	2.70	0.95	2.53	
14,474.0	88.90	151.20	10,252.8	-3,938.9	850.8	4,013.4	1.75	-0.95	-1.47	
14,568.0	88.40	151.10	10,255.0	-4,021.2	896.1	4,105.5	0.54	-0.53	-0.11	
14,663.0	87.30	151.70	10,258.6	-4,104.5	941.6	4,198.6	1.32	-1.16	0.63	
14,758.0	86.60	154.40	10,263.6	-4,189.1	984.6	4,292.1	2.93	-0.74	2.84	
14,853.0	87.30	155.40	10,268.7	-4,275.0	1,024.8	4,386.1	1.28	0.74	1.05	
14,948.0	85.50	154.30	10,274.7	-4,360.8	1,065.1	4,480.1	2.22	-1.89	-1.16	
15,043.0	85.80	153.00	10,281.9	-4,445.7	1,107.2	4,573.6	1.40	0.32	-1.37	
15,138.0	86.90	152.60	10,287.9	-4,530.0	1,150.5	4,667.0	1.23	1.16	-0.42	
15,232.0	87.70	154.60	10,292.3	-4,614.1	1,192.2	4,759.7	2.29	0.85	2.13	
15,327.0	87.90	153.30	10,296.0	-4,699.4	1,233.9	4,853.6	1.38	0.21	-1.37	
15,422.0	88.00	152.90	10,299.4	-4,784.0	1,276.9	4,947.2	0.43	0.11	-0.42	
15,516.0	88.40	153.10	10,302.3	-4,867.8	1,319.5	5,039.8	0.48	0.43	0.21	
15,611.0	88.50	152.40	10,304.9	-4,952.2	1,363.0	5,133.4	0.74	0.11	-0.74	
15,706.0	88.80	153.80	10,307.2	-5,036.9	1,406.0	5,227.0	1.51	0.32	1.47	
15,801.0	90.40	154.70	10,307.6	-5,122.4	1,447.2	5,321.0	1.93	1.68	0.95	
15,895.0	88.90	154.10	10,308.4	-5,207.2	1,487.9	5,414.0	1.72	-1.60	-0.64	
15,990.0	90.00	155.00	10,309.3	-5,293.0	1,528.7	5,508.0	1.50	1.16	0.95	
16,085.0	88.80	155.30	10,310.3	-5,379.2	1,568.6	5,602.2	1.30	-1.26	0.32	





Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P2S6 U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Site:</b>	P2 Pad	<b>MD Reference:</b>	well @ 732.8usft (Nomac #81)
<b>Well:</b>	P2S6 U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST02 (Curve & Lateral)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Curve & Lateral	<b>Database:</b>	EDM 5000.1 Single User Db

RECEIVED  
Office of Oil and Gas  
JUN 15 2018  
WV Department of  
Environmental Protection

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)	
16,180.0	89.20	156.10	10,312.0	-5,465.8	1,607.7	5,696.5	0.94	0.42	0.84	
16,275.0	89.80	155.10	10,312.8	-5,552.3	1,646.9	5,790.8	1.23	0.63	-1.05	
16,370.0	90.00	156.00	10,312.9	-5,638.7	1,686.3	5,885.0	0.97	0.21	0.95	
16,464.0	89.10	153.40	10,313.7	-5,723.7	1,726.4	5,978.1	2.93	-0.96	-2.77	
16,558.0	89.40	152.20	10,314.9	-5,807.3	1,769.4	6,070.7	1.32	0.32	-1.28	
16,653.0	89.50	152.60	10,315.8	-5,891.5	1,813.4	6,164.2	0.43	0.11	0.42	
16,748.0	89.70	153.30	10,316.5	-5,976.1	1,856.6	6,257.8	0.77	0.21	0.74	
16,842.0	89.50	152.40	10,317.1	-6,059.7	1,899.5	6,350.5	0.98	-0.21	-0.96	
16,937.0	89.20	149.80	10,318.2	-6,142.9	1,945.4	6,443.5	2.75	-0.32	-2.74	
17,032.0	89.10	148.30	10,319.6	-6,224.4	1,994.2	6,535.8	1.58	-0.11	-1.58	
17,127.0	88.70	150.80	10,321.5	-6,306.2	2,042.4	6,628.3	2.66	-0.42	2.63	
17,222.0	88.70	150.50	10,323.6	-6,389.0	2,088.9	6,721.2	0.32	0.00	-0.32	
17,316.0	90.00	151.00	10,324.7	-6,471.0	2,134.9	6,813.2	1.48	1.38	0.53	
17,411.0	90.10	151.20	10,324.6	-6,554.2	2,180.8	6,906.3	0.24	0.11	0.21	
17,441.0	90.00	151.20	10,324.6	-6,580.5	2,195.2	6,935.7	0.33	-0.33	0.00	
<b>TD ST02 (C&amp;L) @ 17494' MD / 10325' TVD</b>										
17,494.0	90.00	151.20	10,324.6	-6,626.9	2,220.8	6,987.6	0.00	0.00	0.00	

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,394.0	9,298.7	101.4	-1,012.0	C&L Tie-in @ 9394.0' MD / 9298.8' TVD
17,494.0	10,324.6	-6,626.9	2,220.8	TD ST02 (C&L) @ 17494' MD / 10325' TVD

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