



# Jay-Bee Oil & Gas

Pleasants County

P4 Pad

P4S5U

Wellbore #1 (C&L)

Design: Wellbore #1 (C&L)

## Survey Report - Geographic

25 March, 2019

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Office of Oil and Gas

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06/18/2021



Survey Report - Geographic



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S5U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S5U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (C&L)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1 (C&L)	<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>	P4S5U					
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b>	341,249.53 usft	<b>Latitude:</b>	39° 25' 34.599 N
	<b>+E-W</b>	0.0 usft	<b>Easting:</b>	1,525,108.06 usft	<b>Longitude:</b>	81° 4' 11.021 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 (C&L)				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	3/12/2019	-8.43	66.58	51,831.78682059

<b>Design</b>	Wellbore #1 (C&L)				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9,506.0
<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	157.61	

<b>Survey Program</b>	<b>Date</b>	3/25/2019			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.0	320.0	Gyro (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
390.0	9,506.0	QES MWD Surveys (Wellbore #1)	OWSG MWD - Standard	OWSG MWD - Standard	
9,540.0	21,020.0	QES MWD Surveys (Wellbore #1 (C&L))	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>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>	
0.0	0.00	0.00	0.0	0.0	0.0	341,249.53	1,525,108.06	39° 25' 34.599 N	81° 4' 11.021 W	
50.0	0.83	259.54	50.0	-0.1	-0.4	341,249.47	1,525,107.70	39° 25' 34.598 N	81° 4' 11.026 W	
100.0	1.15	254.30	100.0	-0.3	-1.2	341,249.26	1,525,106.86	39° 25' 34.596 N	81° 4' 11.036 W	
150.0	1.60	284.42	150.0	-0.2	-2.4	341,249.30	1,525,105.71	39° 25' 34.596 N	81° 4' 11.051 W	
200.0	1.56	282.30	200.0	0.1	-3.7	341,249.82	1,525,104.36	39° 25' 34.599 N	81° 4' 11.068 W	
250.0	1.62	278.78	249.9	0.3	-5.1	341,249.87	1,525,103.00	39° 25' 34.601 N	81° 4' 11.086 W	
300.0	1.88	282.58	299.9	0.6	-6.6	341,250.16	1,525,101.50	39° 25' 34.604 N	81° 4' 11.105 W	
320.0	1.76	277.07	319.9	0.7	-7.2	341,250.27	1,525,100.88	39° 25' 34.605 N	81° 4' 11.113 W	
390.0	2.17	287.43	389.9	1.3	-9.5	341,250.80	1,525,098.55	39° 25' 34.610 N	81° 4' 11.143 W	
484.0	2.38	278.06	483.8	2.1	-13.1	341,251.81	1,525,094.92	39° 25' 34.617 N	81° 4' 11.189 W	



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<b>Well:</b>	P4S5U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (C&L)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1 (C&L)	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
579.0	2.81	274.38	578.7	2.5	-17.4	341,252.06	1,525,090.64	39° 25' 34.621 N	81° 4' 11.244 W	
700.0	4.15	270.23	699.5	2.8	-24.8	341,252.30	1,525,083.30	39° 25' 34.622 N	81° 4' 11.337 W	
795.0	4.09	272.29	794.2	2.9	-31.6	341,252.45	1,525,076.48	39° 25' 34.622 N	81° 4' 11.424 W	
889.0	4.17	278.56	888.0	3.6	-38.3	341,253.10	1,525,069.75	39° 25' 34.627 N	81° 4' 11.510 W	
984.0	4.02	290.82	982.7	5.3	-44.8	341,254.79	1,525,063.22	39° 25' 34.643 N	81° 4' 11.594 W	
1,079.0	3.10	291.47	1,077.6	7.4	-50.3	341,256.92	1,525,057.72	39° 25' 34.663 N	81° 4' 11.664 W	
1,173.0	2.37	289.93	1,171.4	9.0	-54.5	341,258.51	1,525,053.53	39° 25' 34.678 N	81° 4' 11.718 W	
1,268.0	2.43	280.02	1,266.4	10.0	-58.4	341,259.53	1,525,049.70	39° 25' 34.687 N	81° 4' 11.767 W	
1,351.0	2.44	289.22	1,349.3	10.9	-61.8	341,260.42	1,525,046.30	39° 25' 34.696 N	81° 4' 11.811 W	
1,446.0	1.36	274.77	1,444.2	11.6	-64.8	341,261.18	1,525,043.27	39° 25' 34.703 N	81° 4' 11.849 W	
1,541.0	0.32	202.58	1,539.2	11.5	-66.0	341,261.03	1,525,042.04	39° 25' 34.701 N	81° 4' 11.865 W	
1,635.0	0.52	88.85	1,633.2	11.3	-65.7	341,260.79	1,525,042.37	39° 25' 34.699 N	81° 4' 11.861 W	
1,730.0	1.56	27.58	1,728.2	12.4	-64.7	341,261.95	1,525,043.40	39° 25' 34.710 N	81° 4' 11.848 W	
1,825.0	2.48	7.73	1,823.1	15.6	-63.8	341,265.13	1,525,044.27	39° 25' 34.742 N	81° 4' 11.837 W	
1,919.0	2.38	0.41	1,917.1	19.6	-63.5	341,269.10	1,525,044.56	39° 25' 34.781 N	81° 4' 11.835 W	
2,014.0	0.99	291.09	2,012.0	21.8	-64.3	341,271.37	1,525,043.81	39° 25' 34.803 N	81° 4' 11.845 W	
2,046.0	1.51	235.81	2,044.0	21.7	-64.9	341,271.23	1,525,043.20	39° 25' 34.802 N	81° 4' 11.852 W	
2,105.0	2.70	207.87	2,103.0	20.0	-66.2	341,269.56	1,525,041.91	39° 25' 34.785 N	81° 4' 11.869 W	
2,200.0	2.26	192.80	2,197.9	16.2	-67.6	341,265.76	1,525,040.45	39° 25' 34.747 N	81° 4' 11.886 W	
2,294.0	0.47	176.18	2,291.9	14.0	-68.0	341,263.57	1,525,040.06	39° 25' 34.726 N	81° 4' 11.891 W	
2,389.0	0.36	13.21	2,386.9	13.9	-67.9	341,263.47	1,525,040.16	39° 25' 34.725 N	81° 4' 11.889 W	
2,483.0	0.58	11.81	2,480.9	14.7	-67.7	341,264.22	1,525,040.32	39° 25' 34.732 N	81° 4' 11.888 W	
2,578.0	0.73	21.18	2,575.9	15.7	-67.4	341,265.26	1,525,040.64	39° 25' 34.742 N	81° 4' 11.884 W	
2,673.0	0.77	4.59	2,670.8	16.9	-67.2	341,266.46	1,525,040.91	39° 25' 34.754 N	81° 4' 11.881 W	
2,768.0	1.08	349.07	2,765.8	18.4	-67.3	341,267.97	1,525,040.79	39° 25' 34.769 N	81° 4' 11.882 W	
2,862.0	0.77	15.30	2,859.8	19.9	-67.3	341,269.45	1,525,040.79	39° 25' 34.784 N	81° 4' 11.883 W	
2,957.0	0.78	45.97	2,954.8	21.0	-66.6	341,270.52	1,525,041.42	39° 25' 34.795 N	81° 4' 11.875 W	
3,051.0	0.41	60.40	3,048.8	21.6	-65.9	341,271.13	1,525,042.17	39° 25' 34.801 N	81° 4' 11.865 W	
3,146.0	0.18	154.09	3,143.8	21.6	-65.5	341,271.16	1,525,042.53	39° 25' 34.801 N	81° 4' 11.861 W	
3,241.0	0.19	115.98	3,238.8	21.4	-65.3	341,270.96	1,525,042.74	39° 25' 34.799 N	81° 4' 11.858 W	
3,336.0	0.26	84.89	3,333.8	21.4	-65.0	341,270.91	1,525,043.10	39° 25' 34.799 N	81° 4' 11.854 W	
3,430.0	0.29	73.10	3,427.8	21.5	-64.5	341,271.00	1,525,043.54	39° 25' 34.800 N	81° 4' 11.848 W	
3,525.0	0.29	111.16	3,522.8	21.4	-64.1	341,270.98	1,525,043.99	39° 25' 34.800 N	81° 4' 11.842 W	
3,619.0	0.42	127.77	3,616.8	21.2	-63.6	341,270.68	1,525,044.48	39° 25' 34.797 N	81° 4' 11.836 W	
3,714.0	0.78	135.39	3,711.8	20.5	-62.8	341,270.01	1,525,045.21	39° 25' 34.790 N	81° 4' 11.826 W	
3,809.0	0.42	188.55	3,806.8	19.7	-62.4	341,269.20	1,525,045.62	39° 25' 34.782 N	81° 4' 11.821 W	
3,902.0	0.39	243.89	3,899.8	19.2	-62.8	341,268.73	1,525,045.28	39° 25' 34.778 N	81° 4' 11.825 W	
3,997.0	0.66	248.30	3,994.8	18.9	-63.6	341,268.38	1,525,044.48	39° 25' 34.774 N	81° 4' 11.835 W	
4,090.0	0.48	250.61	4,087.8	18.5	-64.4	341,268.06	1,525,043.62	39° 25' 34.771 N	81° 4' 11.846 W	
4,185.0	0.96	239.01	4,182.8	18.0	-65.5	341,267.51	1,525,042.58	39° 25' 34.765 N	81° 4' 11.860 W	
4,280.0	0.90	179.57	4,277.8	16.8	-66.2	341,266.36	1,525,041.88	39° 25' 34.754 N	81° 4' 11.868 W	
4,374.0	0.65	186.13	4,371.8	15.6	-66.2	341,265.09	1,525,041.83	39° 25' 34.741 N	81° 4' 11.868 W	
4,472.0	0.15	252.32	4,469.8	15.0	-66.4	341,264.50	1,525,041.65	39° 25' 34.735 N	81° 4' 11.871 W	
4,567.0	1.02	97.12	4,564.7	14.8	-65.7	341,264.35	1,525,042.37	39° 25' 34.734 N	81° 4' 11.861 W	
4,662.0	1.99	118.83	4,659.7	13.9	-63.4	341,263.45	1,525,044.66	39° 25' 34.725 N	81° 4' 11.832 W	
4,757.0	1.21	156.20	4,754.7	12.2	-61.6	341,261.74	1,525,046.51	39° 25' 34.709 N	81° 4' 11.808 W	
4,852.0	0.95	129.74	4,849.7	10.8	-60.5	341,260.32	1,525,047.52	39° 25' 34.695 N	81° 4' 11.795 W	
4,946.0	1.75	91.13	4,943.6	10.3	-58.5	341,259.79	1,525,049.55	39° 25' 34.690 N	81° 4' 11.769 W	
5,041.0	1.81	108.09	5,038.6	9.8	-55.6	341,259.30	1,525,052.43	39° 25' 34.686 N	81° 4' 11.732 W	
5,135.0	0.44	80.79	5,132.6	9.4	-53.9	341,258.90	1,525,054.19	39° 25' 34.682 N	81° 4' 11.710 W	
5,230.0	0.35	335.51	5,227.6	9.7	-53.6	341,259.22	1,525,054.43	39° 25' 34.685 N	81° 4' 11.707 W	
5,325.0	1.46	305.61	5,322.6	10.7	-54.7	341,260.19	1,525,053.33	39° 25' 34.695 N	81° 4' 11.721 W	
5,420.0	1.06	298.01	5,417.5	11.8	-56.5	341,261.30	1,525,051.57	39° 25' 34.705 N	81° 4' 11.744 W	
5,515.0	0.26	249.93	5,512.5	12.1	-57.5	341,261.64	1,525,050.59	39° 25' 34.708 N	81° 4' 11.756 W	
5,609.0	0.30	265.80	5,606.5	12.0	-57.9	341,261.55	1,525,050.15	39° 25' 34.707 N	81° 4' 11.762 W	

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<b>Design:</b>	Wellbore #1 (C&L)	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,704.0	0.50	261.03	5,701.5	11.9	-58.6	341,261.47	1,525,049.49	39° 25' 34.707 N	81° 4' 11.770 W	
5,799.0	0.81	273.44	5,796.5	11.9	-59.7	341,261.44	1,525,048.41	39° 25' 34.706 N	81° 4' 11.784 W	
5,894.0	1.12	273.72	5,891.5	12.0	-61.2	341,261.55	1,525,046.81	39° 25' 34.707 N	81° 4' 11.804 W	
5,988.0	2.62	286.44	5,985.5	12.7	-64.2	341,262.21	1,525,043.83	39° 25' 34.713 N	81° 4' 11.842 W	
6,083.0	5.29	292.04	6,080.2	14.9	-70.4	341,264.47	1,525,037.69	39° 25' 34.734 N	81° 4' 11.921 W	
6,177.0	8.54	298.31	6,173.5	19.9	-80.5	341,269.41	1,525,027.53	39° 25' 34.781 N	81° 4' 12.052 W	
6,272.0	10.33	304.10	6,267.2	28.0	-93.8	341,277.53	1,525,014.26	39° 25' 34.859 N	81° 4' 12.223 W	
6,367.0	10.65	304.92	6,360.6	37.8	-108.0	341,287.33	1,525,000.01	39° 25' 34.954 N	81° 4' 12.406 W	
6,461.0	11.21	304.76	6,452.9	48.0	-122.7	341,297.51	1,524,985.38	39° 25' 35.052 N	81° 4' 12.595 W	
6,555.0	11.06	304.23	6,545.2	58.3	-137.6	341,307.79	1,524,970.42	39° 25' 35.151 N	81° 4' 12.788 W	
6,650.0	10.89	303.76	6,638.5	68.3	-152.5	341,317.82	1,524,955.56	39° 25' 35.247 N	81° 4' 12.979 W	
6,745.0	10.79	308.94	6,731.8	78.8	-166.7	341,328.30	1,524,941.32	39° 25' 35.348 N	81° 4' 13.163 W	
6,842.0	12.71	312.59	6,826.8	91.7	-181.7	341,341.23	1,524,926.40	39° 25' 35.474 N	81° 4' 13.356 W	
6,937.0	14.08	312.20	6,919.2	106.5	-197.9	341,356.07	1,524,910.15	39° 25' 35.617 N	81° 4' 13.567 W	
7,032.0	12.54	306.85	7,011.6	120.5	-214.7	341,370.01	1,524,893.33	39° 25' 35.752 N	81° 4' 13.784 W	
7,126.0	11.87	302.99	7,103.5	131.9	-231.0	341,381.40	1,524,877.06	39° 25' 35.862 N	81° 4' 13.994 W	
7,221.0	11.27	296.94	7,196.6	141.4	-247.5	341,390.93	1,524,860.58	39° 25' 35.953 N	81° 4' 14.206 W	
7,316.0	11.44	293.97	7,289.7	149.4	-264.4	341,398.96	1,524,843.70	39° 25' 36.030 N	81° 4' 14.423 W	
7,410.0	11.39	292.11	7,381.9	156.7	-281.5	341,406.24	1,524,826.58	39° 25' 36.099 N	81° 4' 14.643 W	
7,505.0	9.78	296.16	7,475.2	163.8	-297.4	341,413.33	1,524,810.65	39° 25' 36.166 N	81° 4' 14.847 W	
7,600.0	8.94	305.06	7,569.0	171.6	-310.7	341,421.13	1,524,797.36	39° 25' 36.241 N	81° 4' 15.018 W	
7,695.0	10.10	311.27	7,662.7	181.3	-323.0	341,430.86	1,524,785.06	39° 25' 36.335 N	81° 4' 15.177 W	
7,790.0	11.95	313.19	7,755.9	193.6	-336.4	341,443.09	1,524,771.63	39° 25' 36.453 N	81° 4' 15.351 W	
7,884.0	13.89	308.36	7,847.5	207.2	-352.4	341,456.75	1,524,755.68	39° 25' 36.586 N	81° 4' 15.557 W	
7,979.0	15.21	299.65	7,939.5	220.5	-372.2	341,470.00	1,524,735.91	39° 25' 36.713 N	81° 4' 15.812 W	
8,074.0	15.97	291.02	8,031.0	231.3	-395.2	341,480.85	1,524,712.87	39° 25' 36.816 N	81° 4' 16.108 W	
8,169.0	15.17	285.47	8,122.5	239.3	-419.4	341,488.85	1,524,688.69	39° 25' 36.891 N	81° 4' 16.418 W	
8,264.0	15.05	285.28	8,214.3	245.9	-443.2	341,495.42	1,524,664.82	39° 25' 36.952 N	81° 4' 16.724 W	
8,355.0	14.80	286.34	8,302.2	252.3	-465.8	341,501.80	1,524,642.27	39° 25' 37.011 N	81° 4' 17.013 W	
8,449.0	15.00	286.22	8,393.0	259.0	-489.0	341,508.58	1,524,619.06	39° 25' 37.074 N	81° 4' 17.310 W	
8,544.0	10.85	300.19	8,485.6	267.0	-508.5	341,516.51	1,524,599.52	39° 25' 37.149 N	81° 4' 17.561 W	
8,639.0	11.59	305.91	8,578.8	277.1	-524.0	341,526.61	1,524,584.06	39° 25' 37.246 N	81° 4' 17.760 W	
8,734.0	13.09	308.47	8,671.6	289.4	-540.2	341,538.90	1,524,567.91	39° 25' 37.365 N	81° 4' 17.968 W	
8,829.0	14.24	307.27	8,763.9	303.1	-557.9	341,552.67	1,524,550.18	39° 25' 37.498 N	81° 4' 18.197 W	
8,923.0	14.29	301.74	8,855.0	316.2	-576.9	341,565.77	1,524,531.12	39° 25' 37.624 N	81° 4' 18.443 W	
9,018.0	14.62	299.91	8,947.0	328.4	-597.3	341,577.92	1,524,510.75	39° 25' 37.741 N	81° 4' 18.705 W	
9,112.0	13.47	297.58	9,038.2	339.4	-617.3	341,588.90	1,524,490.77	39° 25' 37.846 N	81° 4' 18.963 W	
9,207.0	14.15	296.68	9,130.5	349.7	-637.5	341,599.24	1,524,470.58	39° 25' 37.944 N	81° 4' 19.222 W	
9,351.0	14.70	303.80	9,269.9	367.8	-668.4	341,617.31	1,524,439.67	39° 25' 38.118 N	81° 4' 19.620 W	
9,411.0	13.80	306.80	9,328.1	376.3	-680.4	341,625.83	1,524,427.61	39° 25' 38.200 N	81° 4' 19.776 W	
9,506.0	9.90	310.00	9,421.0	388.3	-695.8	341,637.87	1,524,412.28	39° 25' 38.316 N	81° 4' 19.974 W	
<b>C&amp;L Tie In @ 9506.0' MD / 9421.0' TVD</b>										
9,540.0	13.30	294.30	9,454.3	391.8	-701.6	341,641.36	1,524,406.47	39° 25' 38.350 N	81° 4' 20.048 W	
9,600.0	11.60	270.40	9,513.0	394.7	-713.9	341,644.25	1,524,394.14	39° 25' 38.376 N	81° 4' 20.206 W	
9,647.0	11.90	249.70	9,559.0	393.1	-723.2	341,642.80	1,524,384.87	39° 25' 38.358 N	81° 4' 20.324 W	
9,695.0	12.70	228.90	9,605.9	387.9	-731.8	341,637.41	1,524,376.24	39° 25' 38.305 N	81° 4' 20.433 W	
9,742.0	14.60	212.50	9,651.6	379.5	-738.9	341,629.01	1,524,369.17	39° 25' 38.221 N	81° 4' 20.521 W	
9,790.0	16.80	199.90	9,697.8	367.9	-744.5	341,617.38	1,524,363.55	39° 25' 38.105 N	81° 4' 20.590 W	
9,837.0	20.00	189.50	9,742.4	353.5	-748.1	341,603.06	1,524,359.91	39° 25' 37.963 N	81° 4' 20.633 W	
9,885.0	22.40	179.00	9,787.2	336.3	-749.3	341,585.81	1,524,358.72	39° 25' 37.792 N	81° 4' 20.645 W	
9,932.0	25.80	171.10	9,830.1	317.2	-747.6	341,568.74	1,524,360.46	39° 25' 37.604 N	81° 4' 20.618 W	
9,980.0	30.40	166.50	9,872.4	295.1	-743.2	341,544.60	1,524,364.91	39° 25' 37.388 N	81° 4' 20.556 W	
10,027.0	34.10	165.50	9,912.2	270.7	-737.1	341,520.27	1,524,370.99	39° 25' 37.140 N	81° 4' 20.474 W	
10,074.0	37.40	165.40	9,950.3	244.2	-730.2	341,493.70	1,524,377.88	39° 25' 36.885 N	81° 4' 20.380 W	
10,121.0	40.10	165.10	9,987.0	215.7	-722.7	341,465.25	1,524,385.38	39° 25' 36.606 N	81° 4' 20.278 W	

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 Jay-Bee Oil and Gas  
 06/18/2021  
 WV Department of Environmental Protection  
 COMPASS 5000.14 Build 85D



Survey Report - Geographic



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S5U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S5U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (C&L)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1 (C&L)	<b>Database:</b>	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,169.0	43.30	164.30	10,022.8	184.9	-714.3	341,434.46	1,524,393.81	39° 25' 36.303 N	81° 4' 20.164 W
10,217.0	45.70	163.40	10,057.1	152.6	-704.9	341,402.15	1,524,403.17	39° 25' 35.985 N	81° 4' 20.037 W
10,264.0	47.60	162.60	10,089.3	119.9	-694.9	341,369.47	1,524,413.17	39° 25' 35.664 N	81° 4' 19.902 W
10,311.0	52.00	162.70	10,119.6	85.7	-684.2	341,335.21	1,524,423.87	39° 25' 35.327 N	81° 4' 19.758 W
10,359.0	58.00	162.50	10,147.2	48.2	-672.4	341,297.71	1,524,435.62	39° 25' 34.959 N	81° 4' 19.600 W
10,406.0	64.10	162.20	10,169.9	9.0	-660.0	341,258.54	1,524,448.09	39° 25' 34.574 N	81° 4' 19.433 W
10,453.0	68.40	162.60	10,188.8	-32.0	-647.0	341,217.54	1,524,461.09	39° 25' 34.171 N	81° 4' 19.258 W
10,500.0	71.30	162.90	10,205.0	-74.1	-633.9	341,175.41	1,524,474.17	39° 25' 33.757 N	81° 4' 19.082 W
10,548.0	74.30	162.60	10,219.2	-117.9	-620.3	341,131.62	1,524,487.77	39° 25' 33.326 N	81° 4' 18.899 W
10,595.0	77.30	164.20	10,230.7	-161.6	-607.3	341,087.96	1,524,500.78	39° 25' 32.897 N	81° 4' 18.723 W
10,643.0	81.60	165.50	10,239.5	-207.1	-595.0	341,042.42	1,524,513.11	39° 25' 32.449 N	81° 4' 18.556 W
10,690.0	85.30	167.00	10,244.9	-252.5	-583.9	340,997.08	1,524,524.20	39° 25' 32.003 N	81° 4' 18.405 W
10,738.0	85.70	166.90	10,248.6	-299.1	-573.1	340,950.46	1,524,535.01	39° 25' 31.544 N	81° 4' 18.256 W
10,833.0	86.10	166.70	10,255.4	-391.3	-551.4	340,858.21	1,524,556.64	39° 25' 30.636 N	81° 4' 17.960 W
10,927.0	86.00	164.00	10,261.9	-482.0	-527.7	340,767.49	1,524,580.36	39° 25' 29.744 N	81° 4' 17.638 W
11,022.0	86.00	163.70	10,268.5	-573.1	-501.3	340,676.46	1,524,606.72	39° 25' 28.849 N	81° 4' 17.282 W
11,117.0	86.50	164.10	10,274.8	-664.2	-475.1	340,585.38	1,524,633.01	39° 25' 27.963 N	81° 4' 16.926 W
11,211.0	88.80	164.80	10,278.6	-754.6	-449.9	340,494.90	1,524,658.18	39° 25' 27.053 N	81° 4' 16.585 W
11,306.0	89.90	164.90	10,279.7	-846.3	-425.1	340,403.21	1,524,683.01	39° 25' 26.162 N	81° 4' 16.249 W
11,400.0	89.70	162.30	10,280.0	-936.5	-398.5	340,313.05	1,524,709.55	39° 25' 25.275 N	81° 4' 15.890 W
11,495.0	90.00	159.60	10,280.3	-1,026.3	-367.5	340,223.26	1,524,740.55	39° 25' 24.393 N	81° 4' 15.475 W
11,590.0	90.50	155.50	10,279.9	-1,114.1	-331.2	340,135.48	1,524,776.82	39° 25' 23.532 N	81° 4' 14.994 W
11,685.0	89.70	153.50	10,279.7	-1,199.8	-290.3	340,049.74	1,524,817.72	39° 25' 22.692 N	81° 4' 14.453 W
11,779.0	88.50	152.40	10,281.2	-1,283.5	-247.6	339,966.03	1,524,860.46	39° 25' 21.872 N	81° 4' 13.890 W
11,874.0	88.10	153.20	10,284.0	-1,368.0	-204.2	339,881.58	1,524,903.86	39° 25' 21.045 N	81° 4' 13.318 W
11,969.0	87.30	152.70	10,287.8	-1,452.5	-161.0	339,797.04	1,524,947.03	39° 25' 20.217 N	81° 4' 12.749 W
12,064.0	88.40	154.30	10,291.4	-1,537.4	-118.7	339,712.08	1,524,989.39	39° 25' 19.385 N	81° 4' 12.191 W
12,159.0	88.30	153.90	10,294.1	-1,622.9	-77.2	339,626.66	1,525,030.87	39° 25' 18.548 N	81° 4' 11.643 W
12,254.0	87.70	154.20	10,297.4	-1,708.2	-35.6	339,541.29	1,525,072.41	39° 25' 17.711 N	81° 4' 11.095 W
12,349.0	89.20	153.20	10,300.0	-1,793.4	6.4	339,456.16	1,525,114.49	39° 25' 16.877 N	81° 4' 10.540 W
12,444.0	88.60	152.10	10,301.8	-1,877.7	50.1	339,371.80	1,525,158.12	39° 25' 16.051 N	81° 4' 9.965 W
12,538.0	87.90	151.90	10,304.7	-1,960.7	94.2	339,288.84	1,525,202.23	39° 25' 15.239 N	81° 4' 9.385 W
12,633.0	88.10	151.90	10,308.0	-2,044.4	138.9	339,205.09	1,525,246.95	39° 25' 14.419 N	81° 4' 8.796 W
12,728.0	87.20	150.30	10,311.9	-2,127.5	184.8	339,121.99	1,525,292.82	39° 25' 13.606 N	81° 4' 8.193 W
12,822.0	88.80	151.70	10,315.2	-2,209.7	230.3	339,039.83	1,525,338.36	39° 25' 12.801 N	81° 4' 7.595 W
12,917.0	89.40	154.10	10,316.7	-2,294.3	273.6	338,955.28	1,525,381.63	39° 25' 11.973 N	81° 4' 7.025 W
13,012.0	88.00	152.90	10,318.8	-2,379.2	315.9	338,870.28	1,525,424.01	39° 25' 11.141 N	81° 4' 6.466 W
13,107.0	89.70	154.80	10,320.7	-2,464.4	358.0	338,785.10	1,525,466.01	39° 25' 10.306 N	81° 4' 5.912 W
13,201.0	89.30	154.40	10,321.5	-2,549.3	398.4	338,700.27	1,525,506.48	39° 25' 9.475 N	81° 4' 5.377 W
13,296.0	88.60	154.80	10,323.3	-2,635.1	439.2	338,614.46	1,525,547.22	39° 25' 8.634 N	81° 4' 4.839 W
13,391.0	89.10	154.30	10,325.2	-2,720.8	480.0	338,528.70	1,525,588.04	39° 25' 7.793 N	81° 4' 4.300 W
13,486.0	88.80	154.80	10,326.9	-2,806.6	520.8	338,442.93	1,525,628.85	39° 25' 6.953 N	81° 4' 3.761 W
13,580.0	88.10	154.50	10,329.5	-2,891.5	561.0	338,358.02	1,525,669.08	39° 25' 6.121 N	81° 4' 3.229 W
13,675.0	89.40	154.50	10,331.5	-2,977.2	601.9	338,272.29	1,525,709.97	39° 25' 5.280 N	81° 4' 2.689 W
13,770.0	88.70	154.60	10,333.1	-3,063.0	642.7	338,186.52	1,525,750.79	39° 25' 4.440 N	81° 4' 2.150 W
13,864.0	90.20	152.50	10,334.0	-3,147.2	684.6	338,102.37	1,525,792.65	39° 25' 3.616 N	81° 4' 1.598 W
13,889.0	90.00	152.50	10,334.0	-3,169.3	696.1	338,080.20	1,525,804.20	39° 25' 3.398 N	81° 4' 1.446 W
13,984.0	89.20	152.10	10,334.6	-3,253.4	740.3	337,996.09	1,525,848.36	39° 25' 2.575 N	81° 4' 0.865 W
14,078.0	90.20	153.00	10,335.1	-3,336.9	783.6	337,912.68	1,525,891.69	39° 25' 1.756 N	81° 4' 0.294 W
14,173.0	89.70	152.50	10,335.2	-3,421.3	827.1	337,828.22	1,525,935.18	39° 25' 0.931 N	81° 3' 59.721 W
14,267.0	90.10	153.70	10,335.4	-3,505.1	869.7	337,744.39	1,525,977.71	39° 25' 0.110 N	81° 3' 59.161 W
14,361.0	90.30	153.40	10,335.0	-3,589.3	911.5	337,660.23	1,526,019.58	39° 24' 59.285 N	81° 3' 58.609 W
14,456.0	91.00	153.30	10,334.0	-3,674.2	954.1	337,575.33	1,526,062.19	39° 24' 58.454 N	81° 3' 58.047 W
14,550.0	90.60	153.00	10,332.7	-3,758.1	996.6	337,491.47	1,526,104.64	39° 24' 57.632 N	81° 3' 57.487 W
14,645.0	91.30	152.80	10,331.1	-3,842.6	1,039.8	337,406.92	1,526,147.91	39° 24' 56.804 N	81° 3' 56.917 W



Survey Report - Geographic



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S5U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S5U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (C&L)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1 (C&L)	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,739.0	91.00	152.60	10,329.2	-3,926.1	1,083.0	337,323.40	1,526,191.01	39° 24' 55.986 N	81° 3' 56.350 W	
14,834.0	90.50	152.60	10,328.0	-4,010.5	1,126.7	337,239.07	1,526,234.73	39° 24' 55.160 N	81° 3' 55.774 W	
14,929.0	90.90	153.70	10,326.8	-4,095.2	1,169.6	337,154.32	1,526,277.63	39° 24' 54.330 N	81° 3' 55.209 W	
15,024.0	90.60	152.90	10,325.6	-4,180.1	1,212.3	337,069.46	1,526,320.31	39° 24' 53.499 N	81° 3' 54.646 W	
15,118.0	90.90	153.00	10,324.3	-4,263.8	1,255.0	336,985.75	1,526,363.06	39° 24' 52.679 N	81° 3' 54.083 W	
15,213.0	90.20	152.60	10,323.4	-4,348.3	1,298.4	336,901.26	1,526,406.48	39° 24' 51.851 N	81° 3' 53.511 W	
15,308.0	90.50	152.50	10,322.8	-4,432.6	1,342.2	336,816.95	1,526,450.27	39° 24' 51.026 N	81° 3' 52.934 W	
15,403.0	90.30	152.20	10,322.2	-4,516.7	1,386.3	336,732.80	1,526,494.36	39° 24' 50.202 N	81° 3' 52.354 W	
15,498.0	90.50	152.00	10,321.5	-4,600.7	1,430.7	336,648.85	1,526,538.81	39° 24' 49.380 N	81° 3' 51.769 W	
15,593.0	90.20	152.80	10,320.9	-4,684.9	1,474.8	336,564.66	1,526,582.82	39° 24' 48.555 N	81° 3' 51.190 W	
15,688.0	90.10	153.10	10,320.7	-4,769.5	1,518.0	336,480.05	1,526,626.02	39° 24' 47.727 N	81° 3' 50.620 W	
15,782.0	91.50	152.90	10,319.4	-4,853.2	1,560.6	336,396.31	1,526,668.69	39° 24' 46.906 N	81° 3' 50.058 W	
15,877.0	91.50	153.20	10,316.9	-4,937.9	1,603.7	336,311.66	1,526,711.73	39° 24' 46.077 N	81° 3' 49.491 W	
15,972.0	91.50	153.30	10,314.4	-5,022.7	1,646.4	336,226.85	1,526,754.48	39° 24' 45.247 N	81° 3' 48.928 W	
16,066.0	91.50	153.50	10,311.9	-5,106.7	1,688.5	336,142.83	1,526,796.55	39° 24' 44.423 N	81° 3' 48.373 W	
16,161.0	90.90	153.20	10,309.9	-5,191.6	1,731.1	336,057.94	1,526,839.16	39° 24' 43.592 N	81° 3' 47.812 W	
16,255.0	90.60	153.10	10,308.7	-5,275.4	1,773.5	335,974.08	1,526,881.61	39° 24' 42.770 N	81° 3' 47.252 W	
16,350.0	90.40	152.70	10,307.9	-5,360.0	1,816.8	335,889.52	1,526,924.88	39° 24' 41.942 N	81° 3' 46.682 W	
16,445.0	90.20	152.80	10,307.4	-5,444.5	1,860.3	335,805.06	1,526,968.38	39° 24' 41.115 N	81° 3' 46.109 W	
16,539.0	91.90	154.50	10,305.7	-5,528.7	1,902.0	335,720.85	1,527,010.09	39° 24' 40.290 N	81° 3' 45.559 W	
16,634.0	91.90	154.30	10,302.5	-5,614.3	1,943.1	335,635.22	1,527,051.12	39° 24' 39.451 N	81° 3' 45.017 W	
16,728.0	92.10	154.70	10,299.2	-5,699.1	1,983.5	335,550.43	1,527,091.58	39° 24' 38.620 N	81° 3' 44.483 W	
16,823.0	92.40	154.00	10,295.5	-5,784.7	2,024.6	335,464.86	1,527,132.65	39° 24' 37.781 N	81° 3' 43.941 W	
16,918.0	91.90	153.80	10,291.9	-5,869.9	2,066.4	335,379.61	1,527,174.42	39° 24' 36.946 N	81° 3' 43.390 W	
17,012.0	91.60	153.50	10,289.1	-5,954.1	2,108.1	335,295.41	1,527,216.12	39° 24' 36.121 N	81° 3' 42.840 W	
17,107.0	91.80	153.30	10,286.2	-6,039.0	2,150.6	335,210.50	1,527,258.64	39° 24' 35.289 N	81° 3' 42.280 W	
17,202.0	92.00	153.50	10,283.1	-6,123.9	2,193.1	335,125.61	1,527,301.15	39° 24' 34.458 N	81° 3' 41.719 W	
17,297.0	90.30	152.40	10,281.2	-6,208.5	2,236.3	335,041.02	1,527,344.34	39° 24' 33.629 N	81° 3' 41.150 W	
17,392.0	89.10	151.60	10,281.7	-6,292.4	2,280.9	334,957.14	1,527,388.94	39° 24' 32.808 N	81° 3' 40.564 W	
17,486.0	88.40	152.00	10,283.7	-6,375.2	2,325.3	334,874.32	1,527,433.35	39° 24' 31.977 N	81° 3' 39.980 W	
17,581.0	88.80	153.20	10,286.1	-6,459.5	2,369.0	334,790.01	1,527,477.06	39° 24' 31.171 N	81° 3' 39.404 W	
17,675.0	86.20	151.70	10,290.2	-6,542.8	2,412.4	334,706.75	1,527,520.49	39° 24' 30.356 N	81° 3' 38.832 W	
17,770.0	86.30	151.70	10,296.4	-6,626.2	2,457.4	334,623.29	1,527,565.43	39° 24' 29.539 N	81° 3' 38.241 W	
17,865.0	88.70	153.40	10,300.5	-6,710.5	2,501.1	334,539.07	1,527,609.17	39° 24' 28.714 N	81° 3' 37.666 W	
17,960.0	90.90	154.50	10,300.8	-6,795.8	2,542.8	334,453.73	1,527,650.89	39° 24' 27.878 N	81° 3' 37.115 W	
18,055.0	89.80	153.50	10,300.3	-6,881.2	2,584.5	334,368.35	1,527,692.53	39° 24' 27.041 N	81° 3' 36.566 W	
18,149.0	89.30	152.90	10,301.0	-6,965.1	2,626.9	334,284.45	1,527,734.91	39° 24' 26.211 N	81° 3' 36.007 W	
18,244.0	89.30	153.30	10,302.2	-7,049.8	2,669.8	334,199.73	1,527,777.89	39° 24' 25.390 N	81° 3' 35.441 W	
18,338.0	89.10	153.80	10,303.5	-7,133.9	2,711.7	334,115.58	1,527,819.76	39° 24' 24.565 N	81° 3' 34.889 W	
18,433.0	88.70	153.20	10,305.3	-7,219.0	2,754.1	334,030.58	1,527,862.14	39° 24' 23.733 N	81° 3' 34.331 W	
18,528.0	90.40	154.50	10,306.0	-7,304.2	2,795.9	333,945.31	1,527,904.00	39° 24' 22.897 N	81° 3' 33.778 W	
18,623.0	91.00	155.60	10,304.9	-7,390.3	2,836.0	333,859.19	1,527,944.07	39° 24' 22.053 N	81° 3' 33.249 W	
18,717.0	89.60	154.10	10,304.4	-7,475.4	2,876.0	333,774.10	1,527,984.02	39° 24' 21.219 N	81° 3' 32.721 W	
18,812.0	89.80	154.60	10,304.9	-7,561.1	2,917.1	333,688.47	1,528,025.14	39° 24' 20.380 N	81° 3' 32.178 W	
18,907.0	90.00	154.50	10,305.1	-7,646.8	2,957.9	333,602.68	1,528,065.96	39° 24' 19.539 N	81° 3' 31.639 W	
19,002.0	89.80	153.90	10,305.2	-7,732.4	2,999.2	333,517.15	1,528,107.31	39° 24' 18.701 N	81° 3' 31.094 W	
19,096.0	90.00	153.90	10,305.4	-7,816.8	3,040.6	333,432.74	1,528,148.66	39° 24' 17.874 N	81° 3' 30.548 W	
19,191.0	88.80	152.40	10,306.4	-7,901.5	3,083.5	333,347.99	1,528,191.57	39° 24' 17.043 N	81° 3' 29.983 W	
19,286.0	89.10	152.00	10,308.1	-7,985.6	3,127.8	333,263.97	1,528,235.87	39° 24' 16.211 N	81° 3' 29.400 W	
19,380.0	89.10	151.60	10,309.6	-8,068.4	3,172.2	333,181.14	1,528,280.28	39° 24' 15.410 N	81° 3' 28.816 W	
19,475.0	89.10	151.00	10,311.1	-8,151.7	3,217.8	333,097.82	1,528,325.90	39° 24' 14.594 N	81° 3' 28.217 W	
19,570.0	89.30	151.20	10,312.4	-8,234.9	3,263.7	333,014.66	1,528,371.80	39° 24' 13.780 N	81° 3' 27.614 W	
19,665.0	88.00	152.40	10,314.7	-8,318.6	3,308.6	332,930.96	1,528,416.68	39° 24' 12.969 N	81° 3' 27.023 W	
19,759.0	88.20	152.40	10,317.6	-8,401.8	3,352.1	332,847.70	1,528,460.21	39° 24' 12.145 N	81° 3' 26.451 W	
19,854.0	88.40	152.30	10,320.6	-8,485.9	3,396.2	332,763.59	1,528,504.27	39° 24' 11.321 N	81° 3' 25.871 W	



Survey Report - Geographic



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S5U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S5U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 (C&L)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1 (C&L)	<b>Database:</b>	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,949.0	88.60	152.60	10,323.1	-8,570.1	3,440.1	332,679.39	1,528,548.20	39° 24' 10.497 N	81° 3' 25.293 W
20,044.0	88.80	152.90	10,325.2	-8,654.6	3,483.6	332,594.96	1,528,591.69	39° 24' 9.670 N	81° 3' 24.720 W
20,138.0	89.00	153.00	10,327.0	-8,738.3	3,526.4	332,511.26	1,528,634.43	39° 24' 8.850 N	81° 3' 24.157 W
20,233.0	89.40	152.50	10,328.4	-8,822.7	3,569.9	332,426.81	1,528,677.92	39° 24' 8.023 N	81° 3' 23.584 W
20,328.0	90.90	153.00	10,328.1	-8,907.2	3,613.4	332,342.35	1,528,721.42	39° 24' 7.196 N	81° 3' 23.012 W
20,422.0	90.50	153.00	10,327.0	-8,990.9	3,656.0	332,258.61	1,528,764.09	39° 24' 6.376 N	81° 3' 22.450 W
20,612.0	90.60	153.20	10,325.1	-9,160.4	3,742.0	332,089.17	1,528,850.05	39° 24' 4.716 N	81° 3' 21.317 W
20,801.0	90.80	153.50	10,322.8	-9,329.3	3,826.8	331,920.26	1,528,934.81	39° 24' 3.061 N	81° 3' 20.200 W
20,966.0	91.00	153.80	10,320.2	-9,477.1	3,900.0	331,772.43	1,529,008.04	39° 24' 1.613 N	81° 3' 19.235 W
21,020.0	91.00	153.80	10,319.3	-9,525.6	3,923.8	331,723.98	1,529,031.88	39° 24' 1.138 N	81° 3' 18.921 W
<b>TD @ 21020.0' MD / 10319.3' TVD</b>									

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
9,506.0	9,421.0	388.3	-695.8	C&L Tie In @ 9506.0' MD / 9421.0' TVD
21,020.0	10,319.3	-9,525.6	3,923.8	TD @ 21020.0' MD / 10319.3' TVD

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