



# Jay-Bee Oil & Gas

Pleasants County

P5 pad

P5N4U - Slot P5N4U

ST01

Design: ST01

## QES Survey Report

14 August, 2019



05/13/2022



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P5N4U - Slot P5N4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Site:</b>	P5 pad	<b>MD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Well:</b>	P5N4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST01	<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>	P5 pad				
<b>Site Position:</b>		<b>Northing:</b>	337,356.19 usft	<b>Latitude:</b>	39° 24' 55.845 N
<b>From:</b>	Map	<b>Easting:</b>	1,523,500.43 usft	<b>Longitude:</b>	81° 4' 30.636 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.00 °

<b>Well</b>	P5N4U - Slot P5N4U					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	337,358.33 usft	<b>Latitude:</b>	39° 24' 55.861 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,523,469.94 usft	<b>Longitude:</b>	81° 4' 31.025 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	868.1 usft

<b>Wellbore</b>	ST01				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	8/7/2019	-8.44	66.54	51,780.66107392

<b>Design</b>	ST01				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9,795.0
<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		331.65

<b>Survey Program</b>	<b>Date</b>	8/14/2019			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.0	332.0	Gyro Surveys (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
423.0	9,795.0	QES MWD Surveys (Wellbore #1)	OWSG MWD - Standard	OWSG MWD - Standard	
9,866.0	19,500.0	QES MWD Surveys ST01 (ST01)	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>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	
50.0	0.24	292.70	50.0	0.0	-0.1	0.1	0.48	0.48	0.00	
81.0	0.37	302.91	81.0	0.1	-0.2	0.2	0.45	0.42	32.94	
100.0	0.34	278.10	100.0	0.2	-0.3	0.3	0.82	-0.16	-130.58	
150.0	0.58	317.16	150.0	0.4	-0.7	0.6	0.76	0.48	78.12	
175.0	0.60	309.11	175.0	0.5	-0.9	0.9	0.34	0.08	-32.20	
200.0	0.40	250.49	200.0	0.6	-1.0	1.0	2.08	-0.80	-234.48	
250.0	0.61	270.42	250.0	0.5	-1.5	1.2	0.54	0.42	39.86	
270.0	0.61	278.56	270.0	0.6	-1.7	1.3	0.43	0.00	40.70	



Survey Report



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<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Site:</b>	P5 pad	<b>MD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Well:</b>	P5N4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST01	<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	0.54	301.98	300.0	0.7	-2.0	1.5	0.81	-0.23	78.07	
332.0	0.71	287.88	332.0	0.8	-2.3	1.8	0.71	0.53	-44.06	
423.0	0.53	289.62	423.0	1.1	-3.2	2.5	0.20	-0.20	1.91	
518.0	0.64	314.40	518.0	1.6	-4.0	3.3	0.29	0.12	26.08	
613.0	0.50	178.61	613.0	1.6	-4.4	3.5	1.11	-0.15	-142.94	
708.0	1.29	142.18	708.0	0.3	-3.7	2.0	0.99	0.83	-38.35	
802.0	2.29	118.50	801.9	-1.4	-1.4	-0.6	1.30	1.06	-25.19	
897.0	1.00	83.38	896.9	-2.2	1.1	-2.5	1.66	-1.36	-36.97	
992.0	1.85	348.77	991.9	-0.6	1.6	-1.3	2.29	0.89	-99.59	
1,087.0	1.36	339.88	1,086.8	1.9	0.9	1.3	0.58	-0.52	-9.36	
1,182.0	0.76	218.44	1,181.8	2.5	0.1	2.1	1.97	-0.63	-127.83	
1,277.0	2.20	174.03	1,276.8	0.2	-0.1	0.2	1.83	1.52	-46.75	
1,371.0	1.30	143.90	1,370.7	-2.5	0.8	-2.5	1.34	-0.96	-32.05	
1,466.0	0.83	39.50	1,465.7	-2.8	1.8	-3.3	1.80	-0.49	-109.89	
1,561.0	1.65	341.04	1,560.7	-1.0	1.8	-1.7	1.48	0.86	-61.54	
1,656.0	0.80	314.45	1,655.7	0.8	0.9	0.3	1.05	-0.89	-27.99	
1,751.0	1.58	208.39	1,750.7	0.1	-0.2	0.2	2.06	0.82	-111.64	
1,845.0	1.68	144.31	1,844.6	-2.2	0.0	-1.9	1.84	0.11	-68.17	
1,940.0	1.82	74.82	1,939.6	-2.9	2.3	-3.6	2.10	0.15	-73.15	
2,034.0	3.80	0.93	2,033.5	0.6	3.8	-1.2	3.97	2.11	-78.61	
2,098.0	4.99	345.12	2,097.3	5.4	3.1	3.3	2.64	1.86	-24.70	
2,213.0	3.67	336.03	2,212.0	13.6	0.3	11.8	1.29	-1.15	-7.90	
2,308.0	4.23	315.08	2,306.8	18.9	-3.4	18.2	1.62	0.59	-22.05	
2,403.0	5.65	295.39	2,401.4	23.4	-10.1	25.4	2.31	1.49	-20.73	
2,498.0	6.60	278.00	2,495.9	26.1	-19.7	32.4	2.18	1.00	-18.31	
2,593.0	8.74	274.81	2,590.0	27.5	-32.3	39.6	2.30	2.25	-3.36	
2,688.0	10.79	278.94	2,683.7	29.5	-48.3	48.9	2.28	2.16	4.35	
2,783.0	12.56	284.23	2,776.7	33.4	-67.1	61.3	2.18	1.86	5.57	
2,877.0	14.42	289.94	2,868.1	39.9	-88.0	76.9	2.43	1.98	6.07	
2,971.0	15.85	295.26	2,958.8	49.4	-110.6	96.0	2.12	1.52	5.66	
3,066.0	16.91	299.78	3,050.0	61.8	-134.4	118.2	1.74	1.12	4.76	
3,163.0	18.07	301.41	3,142.5	76.6	-159.5	143.2	1.30	1.20	1.68	
3,258.0	18.42	299.79	3,232.7	91.8	-185.1	168.6	0.65	0.37	-1.71	
3,353.0	18.18	299.19	3,322.9	106.5	-211.0	193.9	0.32	-0.25	-0.63	
3,447.0	17.85	297.98	3,412.3	120.4	-236.5	218.3	0.53	-0.35	-1.29	
3,542.0	18.32	296.09	3,502.6	133.8	-262.8	242.5	0.79	0.49	-1.99	
3,636.0	18.87	294.12	3,591.7	146.5	-290.0	266.6	0.89	0.59	-2.10	
3,731.0	18.94	291.33	3,681.6	158.4	-318.3	290.5	0.95	0.07	-2.94	
3,825.0	18.42	286.41	3,770.6	168.1	-346.8	312.6	1.76	-0.55	-5.23	
3,920.0	17.88	281.52	3,860.9	175.3	-375.5	332.5	1.70	-0.57	-5.15	
4,014.0	17.01	282.32	3,950.6	181.1	-403.1	350.7	0.96	-0.93	0.85	
4,109.0	16.48	285.88	4,041.6	187.7	-429.6	369.2	1.22	-0.56	3.75	
4,206.0	16.85	288.40	4,134.5	195.9	-456.2	389.0	0.84	0.38	2.60	





Survey Report



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<b>Wellbore:</b>	ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST01	<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)
4,301.0	17.95	290.30	4,225.1	205.3	-483.0	410.1	1.30	1.16	2.00
4,396.0	18.67	288.80	4,315.3	215.3	-511.1	432.2	0.91	0.76	-1.58
4,490.0	19.74	285.97	4,404.1	224.5	-540.6	454.3	1.51	1.14	-3.01
4,584.0	19.17	280.97	4,492.7	231.8	-571.0	475.2	1.87	-0.61	-5.32
4,679.0	18.49	278.27	4,582.7	237.0	-601.2	494.1	1.16	-0.72	-2.84
4,774.0	18.55	278.09	4,672.7	241.3	-631.1	512.0	0.09	0.06	-0.19
4,868.0	16.84	277.90	4,762.3	245.3	-659.4	529.0	1.82	-1.82	-0.20
4,963.0	16.57	280.75	4,853.3	249.7	-686.3	545.6	0.91	-0.28	3.00
5,058.0	16.73	281.55	4,944.3	254.9	-713.0	562.9	0.29	0.17	0.84
5,152.0	15.98	279.02	5,034.5	259.7	-739.1	579.5	1.10	-0.80	-2.69
5,250.0	14.70	277.44	5,129.0	263.4	-764.7	594.9	1.37	-1.31	-1.61
5,345.0	13.80	279.13	5,221.1	266.8	-787.9	608.9	1.04	-0.95	1.78
5,439.0	15.18	288.55	5,312.1	272.5	-810.6	624.7	2.90	1.47	10.02
5,535.0	19.00	293.20	5,403.9	282.6	-836.9	646.1	4.22	3.98	4.84
5,629.0	21.81	286.13	5,492.0	293.5	-867.7	670.3	3.97	2.99	-7.52
5,724.0	21.33	282.40	5,580.3	302.1	-901.6	694.0	1.53	-0.51	-3.93
5,819.0	21.21	278.90	5,668.8	308.5	-935.4	715.7	1.34	-0.13	-3.68
5,914.0	21.16	278.78	5,757.4	313.8	-969.4	736.4	0.07	-0.05	-0.13
6,008.0	21.92	280.69	5,844.9	319.6	-1,003.4	757.7	1.10	0.81	2.03
6,197.0	23.55	283.64	6,019.2	335.0	-1,074.7	805.2	1.05	0.86	1.56
6,283.0	22.41	282.80	6,098.3	342.7	-1,107.4	827.5	1.38	-1.33	-0.98
6,377.0	18.58	280.65	6,186.4	349.5	-1,139.6	848.7	4.15	-4.07	-2.29
6,472.0	16.01	279.80	6,277.1	354.5	-1,167.4	866.3	2.72	-2.71	-0.89
6,567.0	14.76	278.18	6,368.7	358.4	-1,192.3	881.6	1.39	-1.32	-1.71
6,662.0	13.63	279.47	6,460.8	362.0	-1,215.3	895.7	1.24	-1.19	1.36
6,756.0	13.78	285.77	6,552.1	366.9	-1,237.0	910.3	1.60	0.16	6.70
6,851.0	14.14	288.37	6,644.3	373.6	-1,258.9	926.6	0.76	0.38	2.74
6,946.0	17.36	287.15	6,735.7	381.4	-1,283.5	945.2	3.41	3.39	-1.28
7,040.0	19.90	283.08	6,824.8	389.2	-1,312.5	965.8	3.03	2.70	-4.33
7,135.0	18.54	281.82	6,914.5	396.0	-1,343.0	986.2	1.50	-1.43	-1.33
7,233.0	17.95	285.25	7,007.6	403.1	-1,372.8	1,006.7	1.25	-0.60	3.50
7,327.0	17.87	289.65	7,097.0	411.8	-1,400.4	1,027.4	1.44	-0.09	4.68
7,422.0	18.50	292.56	7,187.3	422.5	-1,428.0	1,049.9	1.16	0.66	3.06
7,517.0	18.77	292.49	7,277.3	434.1	-1,456.1	1,073.5	0.29	0.28	-0.07
7,612.0	17.29	291.21	7,367.6	445.1	-1,483.3	1,096.0	1.61	-1.56	-1.35
7,706.0	15.61	290.82	7,457.8	454.6	-1,508.2	1,116.3	1.79	-1.79	-0.41
7,801.0	15.99	291.17	7,549.2	463.9	-1,532.3	1,135.9	0.41	0.40	0.37
7,896.0	16.74	287.78	7,640.3	472.8	-1,557.6	1,155.7	1.28	0.79	-3.57
7,990.0	18.34	285.30	7,730.0	480.8	-1,584.7	1,175.7	1.88	1.70	-2.64
8,085.0	19.72	284.80	7,819.8	488.8	-1,614.6	1,196.9	1.46	1.45	-0.53
8,180.0	20.04	282.46	7,909.1	496.5	-1,646.0	1,218.5	0.90	0.34	-2.46
8,274.0	19.95	280.31	7,997.4	502.8	-1,677.5	1,239.1	0.79	-0.10	-2.29
8,365.0	19.51	280.42	8,083.1	508.3	-1,707.8	1,258.3	0.49	-0.48	0.12



Survey Report



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<b>Design:</b>	ST01	<b>Database:</b>	EDM 5000.1 Single User Db

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8,460.0	18.95	282.50	8,172.8	514.5	-1,738.4	1,278.3	0.93	-0.59	2.19	
8,555.0	19.27	283.04	8,262.6	521.4	-1,768.7	1,298.8	0.38	0.34	0.57	
8,650.0	20.76	281.18	8,351.8	528.2	-1,800.5	1,319.9	1.71	1.57	-1.96	
8,745.0	18.44	277.17	8,441.3	533.4	-1,832.0	1,339.3	2.82	-2.44	-4.22	
8,840.0	16.29	276.94	8,532.0	536.8	-1,860.1	1,355.7	2.26	-2.26	-0.24	
8,934.0	16.20	278.45	8,622.2	540.4	-1,886.2	1,371.2	0.46	-0.10	1.61	
9,029.0	15.94	280.16	8,713.5	544.6	-1,912.1	1,387.3	0.57	-0.27	1.80	
9,124.0	15.77	282.36	8,804.9	549.7	-1,937.6	1,403.8	0.66	-0.18	2.32	
9,219.0	16.12	284.97	8,896.3	555.8	-1,962.9	1,421.3	0.84	0.37	2.75	
9,378.0	18.90	293.18	9,047.9	571.7	-2,007.9	1,456.6	2.33	1.75	5.16	
9,511.0	18.00	293.10	9,174.1	588.2	-2,046.6	1,489.5	0.68	-0.68	-0.06	
9,606.0	14.60	283.40	9,265.2	596.8	-2,071.8	1,509.0	4.57	-3.58	-10.21	
9,700.0	13.70	275.50	9,356.4	600.6	-2,094.4	1,523.1	2.26	-0.96	-8.40	
<b>ST01 Tie In @ 9795.0'MD / 9448.7' TVD</b>										
9,795.0	13.50	266.90	9,448.7	601.1	-2,116.7	1,534.1	2.14	-0.21	-9.05	
9,866.0	17.20	275.10	9,517.2	601.5	-2,135.4	1,543.4	6.03	5.21	11.55	
9,914.0	21.40	281.70	9,562.5	603.9	-2,151.1	1,553.0	9.85	8.75	13.75	
9,961.0	26.30	290.90	9,605.5	609.4	-2,169.2	1,566.4	13.06	10.43	19.57	
10,009.0	30.00	297.20	9,647.8	618.7	-2,189.8	1,584.3	9.88	7.71	13.13	
10,056.0	32.60	301.90	9,688.0	630.8	-2,211.0	1,605.0	7.59	5.53	10.00	
10,104.0	35.60	305.10	9,727.7	645.6	-2,233.4	1,628.8	7.28	6.25	6.67	
10,151.0	38.00	310.50	9,765.4	662.9	-2,255.7	1,654.5	8.57	5.11	11.49	
10,199.0	39.10	315.90	9,802.9	683.4	-2,277.4	1,682.9	7.37	2.29	11.25	
10,246.0	41.20	319.50	9,838.8	705.8	-2,297.8	1,712.3	6.66	4.47	7.66	
10,294.0	43.60	320.20	9,874.3	730.5	-2,318.7	1,743.9	5.10	5.00	1.46	
10,341.0	46.70	321.20	9,907.4	756.3	-2,339.8	1,776.7	6.77	6.60	2.13	
10,388.0	49.90	322.00	9,938.7	783.8	-2,361.5	1,811.2	6.93	6.81	1.70	
10,435.0	52.70	322.90	9,968.1	812.9	-2,383.9	1,847.4	6.14	5.96	1.91	
10,483.0	56.80	324.40	9,995.8	844.5	-2,407.1	1,886.2	8.91	8.54	3.13	
10,530.0	61.00	324.70	10,020.0	877.2	-2,430.4	1,926.1	8.95	8.94	0.64	
10,578.0	64.70	325.70	10,041.9	912.3	-2,454.8	1,968.6	7.93	7.71	2.08	
10,625.0	70.20	327.80	10,060.0	948.6	-2,478.6	2,011.8	12.41	11.70	4.47	
10,672.0	74.80	328.50	10,074.1	986.7	-2,502.2	2,056.5	9.89	9.79	1.49	
10,719.0	79.30	329.70	10,084.6	1,026.0	-2,525.7	2,102.3	9.89	9.57	2.55	
10,767.0	82.70	330.00	10,092.1	1,067.0	-2,549.6	2,149.7	7.11	7.08	0.63	
10,814.0	86.00	331.50	10,096.8	1,107.8	-2,572.4	2,196.4	7.71	7.02	3.19	
10,862.0	88.70	332.70	10,099.0	1,150.1	-2,594.8	2,244.4	6.15	5.63	2.50	
10,957.0	88.40	332.00	10,101.4	1,234.3	-2,638.9	2,339.3	0.80	-0.32	-0.74	
11,052.0	90.70	332.90	10,102.1	1,318.5	-2,682.8	2,434.3	2.60	2.42	0.95	
11,146.0	90.40	332.10	10,101.2	1,401.8	-2,726.2	2,528.3	0.91	-0.32	-0.85	
11,241.0	91.10	330.60	10,100.0	1,485.2	-2,771.8	2,623.3	1.74	0.74	-1.58	
11,336.0	91.30	331.10	10,098.0	1,568.2	-2,818.1	2,718.2	0.57	0.21	0.53	
11,431.0	89.60	329.50	10,097.2	1,650.7	-2,865.1	2,813.2	2.46	-1.79	-1.68	
11,526.0	89.70	329.50	10,097.8	1,732.5	-2,913.3	2,908.1	0.11	0.11	0.00	





Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P5N4U - Slot P5N4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Site:</b>	P5 pad	<b>MD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Well:</b>	P5N4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST01	<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)	
11,620.0	90.10	329.50	10,098.0	1,813.5	-2,961.0	3,002.1	0.43	0.43	0.00	
11,715.0	90.40	330.20	10,097.6	1,895.7	-3,008.8	3,097.0	0.80	0.32	0.74	
11,810.0	90.60	330.40	10,096.7	1,978.2	-3,055.8	3,192.0	0.30	0.21	0.21	
11,904.0	90.80	330.00	10,095.6	2,059.7	-3,102.5	3,286.0	0.48	0.21	-0.43	
11,999.0	91.30	329.20	10,093.9	2,141.7	-3,150.6	3,380.9	0.99	0.53	-0.84	
12,094.0	90.20	327.30	10,092.6	2,222.4	-3,200.6	3,475.7	2.31	-1.16	-2.00	
12,189.0	90.90	328.30	10,091.7	2,302.8	-3,251.2	3,570.5	1.28	0.74	1.05	
12,284.0	89.80	332.20	10,091.1	2,385.3	-3,298.3	3,665.4	4.27	-1.16	4.11	
12,378.0	90.50	333.70	10,090.9	2,469.0	-3,341.1	3,759.4	1.76	0.74	1.60	
12,473.0	90.50	334.00	10,090.0	2,554.3	-3,382.9	3,854.3	0.32	0.00	0.32	
12,568.0	90.40	333.90	10,089.3	2,639.6	-3,424.7	3,949.2	0.15	-0.11	-0.11	
12,663.0	90.70	333.50	10,088.4	2,724.8	-3,466.8	4,044.2	0.53	0.32	-0.42	
12,758.0	90.50	331.90	10,087.4	2,809.2	-3,510.3	4,139.2	1.70	-0.21	-1.68	
12,852.0	90.30	331.40	10,086.7	2,891.9	-3,555.0	4,233.2	0.57	-0.21	-0.53	
12,947.0	90.40	330.90	10,086.2	2,975.1	-3,600.8	4,328.2	0.54	0.11	-0.53	
13,042.0	89.90	332.80	10,085.9	3,058.9	-3,645.6	4,423.1	2.07	-0.53	2.00	
13,136.0	89.40	332.30	10,086.5	3,142.3	-3,688.9	4,517.1	0.75	-0.53	-0.53	
13,231.0	88.90	331.70	10,087.9	3,226.2	-3,733.5	4,612.1	0.82	-0.53	-0.63	
13,326.0	90.50	333.70	10,088.4	3,310.6	-3,777.1	4,707.1	2.70	1.68	2.11	
13,421.0	90.30	334.60	10,087.7	3,396.1	-3,818.5	4,802.0	0.97	-0.21	0.95	
13,516.0	90.20	333.10	10,087.3	3,481.3	-3,860.4	4,896.9	1.58	-0.11	-1.58	
13,610.0	90.60	333.40	10,086.7	3,565.3	-3,902.7	4,990.9	0.53	0.43	0.32	
13,705.0	90.70	332.30	10,085.6	3,649.8	-3,946.0	5,085.9	1.16	0.11	-1.16	
13,800.0	90.60	330.90	10,084.5	3,733.4	-3,991.2	5,180.8	1.48	-0.11	-1.47	
13,895.0	91.60	332.60	10,082.7	3,817.0	-4,036.2	5,275.8	2.08	1.05	1.79	
13,990.0	92.30	335.00	10,079.4	3,902.2	-4,078.1	5,370.7	2.63	0.74	2.53	
14,084.0	91.90	332.50	10,076.0	3,986.4	-4,119.6	5,464.6	2.69	-0.43	-2.66	
14,179.0	91.10	329.80	10,073.5	4,069.6	-4,165.5	5,559.5	2.96	-0.84	-2.84	
14,274.0	90.50	333.20	10,072.2	4,153.1	-4,210.8	5,654.5	3.63	-0.63	3.58	
14,369.0	91.00	332.90	10,070.9	4,237.8	-4,253.8	5,749.5	0.61	0.53	-0.32	
14,463.0	89.10	332.10	10,070.9	4,321.1	-4,297.2	5,843.4	2.19	-2.02	-0.85	
14,558.0	89.60	332.50	10,071.9	4,405.2	-4,341.4	5,938.4	0.67	0.53	0.42	
14,653.0	90.60	333.10	10,071.8	4,489.7	-4,384.8	6,033.4	1.23	1.05	0.63	
14,747.0	91.10	333.40	10,070.4	4,573.7	-4,427.1	6,127.4	0.62	0.53	0.32	
14,843.0	93.50	333.00	10,066.5	4,659.3	-4,470.4	6,223.2	2.53	2.50	-0.42	
14,937.0	91.20	328.50	10,062.7	4,741.2	-4,516.2	6,317.1	5.37	-2.45	-4.79	
15,032.0	92.60	330.70	10,059.5	4,823.1	-4,564.3	6,412.0	2.74	1.47	2.32	
15,126.0	92.30	328.90	10,055.5	4,904.2	-4,611.5	6,505.9	1.94	-0.32	-1.91	
15,221.0	91.90	328.10	10,052.0	4,985.2	-4,661.1	6,600.7	0.94	-0.42	-0.84	
15,316.0	91.60	327.40	10,049.1	5,065.5	-4,711.8	6,695.4	0.80	-0.32	-0.74	
15,411.0	91.90	332.30	10,046.2	5,147.6	-4,759.5	6,790.3	5.17	0.32	5.16	
15,506.0	89.90	333.40	10,044.7	5,232.1	-4,802.8	6,885.2	2.40	-2.11	1.16	
15,601.0	86.90	333.80	10,047.4	5,317.1	-4,845.0	6,980.1	3.19	-3.16	0.42	



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P5N4U - Slot P5N4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Site:</b>	P5 pad	<b>MD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Well:</b>	P5N4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST01	<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)
15,695.0	87.20	333.10	10,052.2	5,401.1	-4,887.0	7,074.0	0.81	0.32	-0.74
15,790.0	89.50	331.90	10,054.9	5,485.3	-4,930.8	7,168.9	2.73	2.42	-1.26
15,884.0	89.50	331.20	10,055.8	5,568.0	-4,975.6	7,262.9	0.74	0.00	-0.74
15,979.0	92.50	330.60	10,054.1	5,651.0	-5,021.8	7,357.9	3.22	3.16	-0.63
16,074.0	94.30	330.90	10,048.5	5,733.7	-5,068.1	7,452.7	1.92	1.89	0.32
16,169.0	96.20	330.90	10,039.8	5,816.4	-5,114.1	7,547.3	2.00	2.00	0.00
16,263.0	96.70	331.20	10,029.2	5,898.1	-5,159.4	7,640.7	0.62	0.53	0.32
16,358.0	94.70	329.80	10,019.8	5,980.4	-5,205.9	7,735.2	2.57	-2.11	-1.47
16,453.0	95.00	329.80	10,011.8	6,062.2	-5,253.5	7,829.8	0.32	0.32	0.00
16,548.0	93.20	330.00	10,005.0	6,144.2	-5,301.0	7,924.5	1.91	-1.89	0.21
16,642.0	90.70	329.30	10,001.8	6,225.2	-5,348.5	8,018.4	2.76	-2.66	-0.74
16,737.0	90.30	331.20	10,000.9	6,307.7	-5,395.6	8,113.3	2.04	-0.42	2.00
16,831.0	90.30	330.80	10,000.4	6,389.9	-5,441.2	8,207.3	0.43	0.00	-0.43
16,925.0	91.30	332.70	9,999.1	6,472.7	-5,485.7	8,301.3	2.28	1.06	2.02
17,020.0	92.10	332.50	9,996.3	6,557.0	-5,529.4	8,396.3	0.87	0.84	-0.21
17,115.0	90.90	332.40	9,993.8	6,641.2	-5,573.3	8,491.2	1.27	-1.26	-0.11
17,209.0	91.30	332.50	9,992.0	6,724.5	-5,616.8	8,585.2	0.44	0.43	0.11
17,304.0	91.30	331.40	9,989.9	6,808.3	-5,661.5	8,680.2	1.16	0.00	-1.16
17,399.0	91.90	331.10	9,987.2	6,891.6	-5,707.1	8,775.1	0.71	0.63	-0.32
17,493.0	90.60	331.70	9,985.2	6,974.1	-5,752.1	8,869.1	1.52	-1.38	0.64
17,588.0	91.00	332.40	9,983.8	7,058.0	-5,796.6	8,964.1	0.85	0.42	0.74
17,683.0	90.40	333.80	9,982.7	7,142.7	-5,839.6	9,059.0	1.60	-0.63	1.47
17,777.0	91.40	335.60	9,981.2	7,227.7	-5,879.8	9,152.9	2.19	1.06	1.91
17,872.0	90.80	334.30	9,979.4	7,313.7	-5,920.0	9,247.7	1.51	-0.63	-1.37
17,967.0	90.00	334.10	9,978.7	7,399.3	-5,961.3	9,342.6	0.87	-0.84	-0.21
18,061.0	89.50	331.60	9,979.1	7,482.9	-6,004.2	9,436.6	2.71	-0.53	-2.66
18,156.0	91.00	334.00	9,978.7	7,567.4	-6,047.7	9,531.6	2.98	1.58	2.53
18,251.0	91.80	335.90	9,976.4	7,653.4	-6,087.9	9,626.4	2.17	0.84	2.00
18,345.0	90.70	333.00	9,974.3	7,738.2	-6,128.4	9,720.2	3.30	-1.17	-3.09
18,440.0	90.30	330.20	9,973.5	7,821.8	-6,173.6	9,815.2	2.98	-0.42	-2.95
18,535.0	91.90	331.70	9,971.7	7,904.8	-6,219.7	9,910.2	2.31	1.68	1.58
18,629.0	91.10	331.20	9,969.2	7,987.3	-6,264.6	10,004.1	1.00	-0.85	-0.53
18,724.0	91.00	330.30	9,967.5	8,070.2	-6,311.0	10,099.1	0.95	-0.11	-0.95
18,818.0	91.30	333.70	9,965.6	8,153.2	-6,355.1	10,193.1	3.63	0.32	3.62
18,913.0	91.40	336.50	9,963.4	8,239.3	-6,395.1	10,287.9	2.95	0.11	2.95
19,008.0	91.40	334.20	9,961.0	8,325.6	-6,434.7	10,382.6	2.42	0.00	-2.42
19,102.0	91.60	331.60	9,958.6	8,409.3	-6,477.5	10,476.6	2.77	0.21	-2.77
19,197.0	92.30	329.00	9,955.3	8,491.7	-6,524.6	10,571.5	2.83	0.74	-2.74
19,292.0	92.60	329.40	9,951.3	8,573.3	-6,573.1	10,666.3	0.53	0.32	0.42
19,386.0	92.90	328.80	9,946.8	8,653.8	-6,621.4	10,760.1	0.71	0.32	-0.64
19,447.0	93.60	329.80	9,943.3	8,706.2	-6,652.5	10,821.0	2.00	1.15	1.64
<b>ST01 TD @ 19500.0' MD / 9940.0' TVD</b>									
19,500.0	93.60	329.80	9,940.0	8,751.9	-6,679.1	10,873.8	0.00	0.00	0.00



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P5N4U - Slot P5N4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Site:</b>	P5 pad	<b>MD Reference:</b>	WELL @ 888.7usft (Patterson #581)
<b>Well:</b>	P5N4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST01	<b>Database:</b>	EDM 5000.1 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,795.0	9,448.7	601.1	-2,116.7	ST01 Tie In @ 9795.0'MD / 9448.7' TVD
19,500.0	9,940.0	8,751.9	-6,679.1	ST01 TD @ 19500.0' MD / 9940.0' TVD

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