

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-073-02561 County Pleasants District Union
Quad Ben's Run 7.5' Pad Name P2 Field/Pool Name _____
Farm name Morgan Valley Farms Well Number P2S6U
Operator (as registered with the OOG) Jay-Bee Oil & Gas, Inc.
Address 3570 Shields Hill Rd. City Cairo State WV Zip 26337

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,365,096.97 Easting 496,335.95
Landing Point of Curve Northing 4,364,923.98 Easting 496,079.84
Bottom Hole Northing 4,363,103.37 Easting 497,038.21

Elevation (ft) 712.4' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Synthetic OBM

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Date permit issued 4/21/2017 Date drilling commenced 4/23/2017 Date drilling ceased 7/1/2017
Date completion activities began 11/21/2017 Date completion activities ceased 1/27/2018
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 150' Open mine(s) (Y/N) depths N
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths N
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed
Chad Bl...
8/21/2018

Reviewed by:
JEB

API 47-073 - 02561 Farm name Morgan Valley Farms Well number P2S6U

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	30"	26"	30'	New	J55 - 85#		Y
Surface	22"	18 5/8"	421'	New	J55 - 94#	50'	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	1,937'	New	J55 - 61#	1500'	Y
Intermediate 2	12 1/4"	9 5/8"	9,322'	New	P110 - 47#		
Intermediate 3							
Production	8 1/2"	5 1/2"	17,524'	New	P110 - 23#		Y
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	388	15.6	1.2	466	CTS	8
Coal							
Intermediate 1	Class A	Lead 1026/ Tail 393	Lead 15/ Tail 15.6	Lead 1.31/ Tail 1.19	Lead 1344/ Tail 468	CTS	8
Intermediate 2	Class A	Lead 1334/ Tail 451	Lead 12.5/ Tail 15	Lead 2.32/ Tail 1.32	Lead 3095/ Tail 595	2,720'	
Intermediate 3							
Production	Class A	3373	15.6	1.18	3980	870'	8
Tubing							

Drillers TD (ft) 17,524' Loggers TD (ft) 17,494'
 Deepest formation penetrated Pt. Pleasant Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 9,587'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature

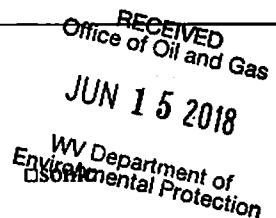
Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Spiral centralizer every joint from TD back to start of
90 degree.
90 - 70 degree every second joint.
70 degree - KOP every third joint.
KOP - Surface centralizer placed every 500'.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____



API 47- 073 - 02561 Farm name Morgan Valley Farms Well number P2S6U

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	11/21/17	17437	17322	97	Pt. Pleasant
2	11/25/17	17287	17120	84	Pt. Pleasant
3	11/25/17	17085	16919	84	Pt. Pleasant
4	11/25/17	16884	16724	84	Pt. Pleasant
5	11/26/17	16689	16542	84	Pt. Pleasant
6	11/29/17	16507	16334	84	Pt. Pleasant
7	11/29/17	16299	16155	84	Pt. Pleasant
8	11/29/17	16120	15961	84	Pt. Pleasant
9	11/29/17	15926	15753	84	Pt. Pleasant
10	11/30/17	15718	15544	84	Pt. Pleasant
11	12/1/17	15509	15365	84	Pt. Pleasant
12	12/2/17	15330	15180	84	Pt. Pleasant
13	12/2/17	15145	14981	84	Pt. Pleasant
14	12/21/17	14946	14785	84	Pt. Pleasant
15	12/21/17	14740	14580	84	Pt. Pleasant
16	12/21/17	14526	14394	84	Pt. Pleasant

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen (cu ft)
1	11/21/17	69	10300	11259	6785	311440	8020	N/A
2	11/25/17	78	10625	11322	7069	375940	7518	N/A
3	11/25/17	75	10207	10723	7086	324020	6751	N/A
4	11/25/17	71	10272	11852	6796	334540	6888	N/A
5	11/26/17	76	10627	11031	7541	328580	6634	N/A
6	11/29/17	74	10970	11863	7129	344860	8255	N/A
7	11/29/17	76	10828	11365	7213	350560	8031	N/A
8	11/29/17	76	10779	11120	7320	353690	7963	N/A
9	11/29/17	79	10753	11508	7367	353410	8204	N/A
10	11/30/17	78	10944	11776	7176	349500	8264	N/A
11	12/1/17	76	10923	11870	7155	362660	8155	N/A
12	12/2/17	62	11034	11815	6936	352380	7728	N/A
13	12/2/17	68	10757	12033	6903	359300	7935	N/A
14	12/21/17	53	11704	12121	7338	328980	13023	N/A
15	12/21/17	75	10906	11678	7493	336410	7952	N/A
16	12/21/17	70	10335	11905	7094	347300	8117	N/A

Please insert additional pages as applicable.

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Nitrogen Unit

API 47- 073 - 02561 Farm name Morgan Valley Farms Well number P2S6U

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	12/22/17	14340	14190	84	Pt. Pleasant
18	12/22/17	14144	13992	84	Pt. Pleasant
19	12/22/17	13944	13826	84	Pt. Pleasant
20	12/30/17	13773	13618	84	Pt. Pleasant
21	1/3/18	13580	13416	84	Pt. Pleasant
22	1/13/18	13370	13227	84	Pt. Pleasant
23	1/15/18	13180	13039	84	Pt. Pleasant
24	1/24/18	13000	12837	84	Pt. Pleasant
25	1/24/18	12800	12634	84	Pt. Pleasant
26	1/24/18	12596	12460	84	Pt. Pleasant
27	1/24/18	12421	12237	84	Pt. Pleasant
28	1/25/18	12205	12088	84	Pt. Pleasant
29	1/25/18	12046	11867	84	Pt. Pleasant
30	1/25/18	11824	11671	84	Pt. Pleasant
31	1/26/18	11628	11490	84	Pt. Pleasant
32	1/26/18	11450	11302	84	Pt. Pleasant

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STIMULATION INFORMATION PER STAGE

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Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
17	12/22/17	72	10665	11727	7891	311620	7850	N/A
18	12/22/17	69	10628	12170	6931	339100	7399	N/A
19	12/22/17	75	10477	11715	7032	355350	7633	N/A
20	12/27/17	73	11011	12263	10516	208580	10085	N/A
21	1/3/18	57	11140	12623	9941	352980	8359	N/A
22	1/13/18	80	9952	11255	6867	346020	9218	N/A
23	1/15/18	67	10577	12330	7936	189950	19413	N/A
24	1/24/18	66	10466	11415	7024	345990	7309	N/A
25	1/24/18	72	10232	11938	6980	339030	7327	N/A
26	1/24/18	80	10346	10664	7336	359510	7901	N/A
27	1/25/18	78	10458	10160	7167	321800	7666	N/A
28	1/25/18	78	10370	9959	7341	344955	7265	N/A
29	1/25/18	77	9986	10523	7070	356255	7017	N/A
30	1/25/18	78	10602	11045	7338	355020	7932	N/A
31	1/26/18	80	10044	10509	7208	355800	7859	N/A
32	1/26/18	76	10261	10595	7430	351060	7257	N/A

Please insert additional pages as applicable.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
33	1/27/18	11254	11078	84	Pt. Pleasant
34	1/27/18	11034	10918	84	Pt. Pleasant
35	1/27/18	10878	10734	84	Pt. Pleasant
36	1/27/18	10693	10526	84	Pt. Pleasant

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STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
33	1/26/18	74	10081	10984	7108	353560	7880	N/A
34	1/26/18	74	10178	10300	7269	354260	7822	N/A
35	1/27/18	80	10021	10517	7023	300580	7414	N/A
36	1/27/18	79	9824	10082	6861	356408	7859	N/A

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	
Marcellus	10,227'	TVD 17,494' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 7600 psi Bottom Hole N/A psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 7500 mcfpd Oil N/A bpd NGL N/A bpd Water 100 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
See Attached.	0		0		

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Please insert additional pages as applicable.

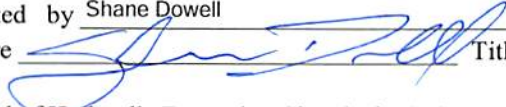
Drilling Contractor Patterson-UTI Energy Inc
Address 10713 West Sam Houston Parkway North Suite 800 City Houston State TX Zip 77064

Logging Company StrataGraph NE Inc.
Address 116 Ellsworth Ave City Marietta State OH Zip 45750

Cementing Company BJ Services
Address 1036 E Main St City Bridgeport State WV Zip 26330

Stimulating Company US Well Services
Address 533 Industrial Park Rd City Jane Lew State CO Zip 26378

Please insert additional pages as applicable.

Completed by Shane Dowell Telephone 304-628-3111
Signature  Title Office Manager Date 6-5-2018

Lithology

P2S6U 47-073-02561

FORMATION	TOP	BOTTOM
MISC. RED ROCK & SHALES	0	1785
LIME	1785	1885
INJUN	1885	2002
SHALE	2002	2349
GORDON STRAY	2349	2369
SHALE	2369	2565
GORDON	2565	2595
SHALE	2595	2874
BAYARD	2874	2883
SHALE	2883	3212
WARREN	3212	3310
SHALE	3310	3546
BALLTOWN	3546	3709
SHALE	3709	4147
2ND RILEY	4147	4255
SHALE	4255	4406
3RD RILEY	4406	4447
SHALE	4447	4504
BENSON	4504	4507
SHALE	4507	4749
ALEXANDER	4749	4920
SHALE	4920	5165
ELK	5165	5213
SHALE	5213	5344
HAMILTON	5344	5518
SHALE	5518	5616
UPPER MARCELLUS	5616	5635
PARCELL LIME	5635	5670
SHALE	5670	5723
LOWER MARCELLUS	5723	5778
ONONDAGA	5778	5875
HUNTERSVILLE CHERT	5875	5972
ORISKANY	5972	6010

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HELDERBERG	6010	6442
BASS ISLAND	6442	6495
SALINA	6495	7431
LOCKPORT	7431	7719
ROSE HILL	7719	8008
PACKER SHELL	8008	8096
CLINTON	8096	8305
QUEENSTON	8305	9106
REEDSVILLE	9106	10032
UTICA	10032	10287
POINT PLEASANT	10287	0

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Jay-Bee Oil & Gas

Pleasants County

P2 Pad

P2S6 U

Wellbore #1 (Pilot)

Survey: MWD Surveys

QES Survey Report

27 July, 2017

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Quintana Energy Services

11390 FM 830
Willis, TX 77318
Phone: (936) 856-4332
Fax: (936) 856-8678



Survey Certification Sheet

Company	Job Number	Date
Jay-Bee Oil & Gas, Inc.	AM-170655	7/27/2017

Lease	Well Name	County & State
N/A	P2S6U	Pleasants County, WV

API No.	Survey Depth Range	Survey Type
47-073-0256	419 feet to 10255 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
9132' to 10545' MD 419' to 17494' MD	Steve Spicer

Certification Statement

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Quintana Energy Services (QES). This report represents a true and correct directional survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using minimum curvature.

Christopher Hughes

Christopher Hughes
MWD Compliance Manager

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES,
ou=compliance, email=chrish@qeslp.com, c=US
Date: 2017.07.27 11:52:40 -05'00'

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Quintana Energy Services

11390 FM 830

Willis, TX 77318

Phone: (936) 856-4332

Fax: (936) 856-8678



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Survey Report



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

Project	Pleasants County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

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

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

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

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	162.66	

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

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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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
OH First MWD Survey @ 419' MD / TVD										
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



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Site:	P2 Pad	MD Reference:	well @ 732.8usft (Nomac #81)
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Wellbore:	Wellbore #1 (Pilot)	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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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



Company: Jay-Bee Oil & Gas
 Project: Pleasants County
 Site: P2 Pad
 Well: P2S6 U
 Wellbore: Wellbore #1 (Pilot)
 Design: Wellbore #1

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

Well P2S6 U
 well @ 732.8usft (Nomac #81)
 well @ 732.8usft (Nomac #81)
 Grid
 Minimum Curvature
 EDM 5000.1 Single User Db

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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



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P2S6 U
Project:	Pleasants County	TVD Reference:	well @ 732.8usft (Nomac #81)
Site:	P2 Pad	MD Reference:	well @ 732.8usft (Nomac #81)
Well:	P2S6 U	North Reference:	Grid
Wellbore:	Wellbore #1 (Pilot)	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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	
OH TD @ 10255' MD / 10139' TVD										
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

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Jay-Bee Oil & Gas

Pleasants County

P2 Pad

P2S6 U

ST01 (Pilot)

Survey: MWD Surveys (PH)

QES Survey Report

27 July, 2017

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Survey Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P2S6 U
Project:	Pleasants County	TVD Reference:	well @ 732.8usft (Nomac #81)
Site:	P2 Pad	MD Reference:	well @ 732.8usft (Nomac #81)
Well:	P2S6 U	North Reference:	Grid
Wellbore:	ST01 (Pilot)	Survey Calculation Method:	Minimum Curvature
Design:	Pilot Hole	Database:	EDM 5000.1 Single User Db

Project	Pleasants County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

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

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

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

Design	Pilot Hole				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	9,132.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	275.66	

Survey Program	Date 7/27/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
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

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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)	
OH Tie-In @ 9132.0' MD / 9041.2' TVD										
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



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P2S6 U
Project:	Pleasants County	TVD Reference:	well @ 732.8usft (Nomac #81)
Site:	P2 Pad	MD Reference:	well @ 732.8usft (Nomac #81)
Well:	P2S6 U	North Reference:	Grid
Wellbore:	ST01 (Pilot)	Survey Calculation Method:	Minimum Curvature
Design:	Pilot Hole	Database:	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	
PH TD @ 10545' MD / 10449' TVD										
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

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Survey Report



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

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Project	Pleasants County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

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

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

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

Design	Curve & Lateral				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	9,394.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	162.66

Survey Program	Date 7/27/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
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	

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)	
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



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

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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



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

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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



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

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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	
C&L Tie-in @ 9394.0' MD / 9298.8' TVD										
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



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Project:	Pleasants County	TVD Reference:	well @ 732.8usft (Nomac #81)
Site:	P2 Pad	MD Reference:	well @ 732.8usft (Nomac #81)
Well:	P2S6 U	North Reference:	Grid
Wellbore:	ST02 (Curve & Lateral)	Survey Calculation Method:	Minimum Curvature
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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



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

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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	
TD ST02 (C&L) @ 17494' MD / 10325' TVD										
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	

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: _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/21/2017
Job End Date:	1/27/2018
State:	West Virginia
County:	Pleasants
API Number:	47-073-02561-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	P2S6U
Latitude:	39.43540800
Longitude:	-81.04257620
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	10,227
Total Base Water Volume (gal):	12,852,652
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	JayBee Oil & Gas	Carrier/Base Fluid	Water	7732-18-5	100.00000	89.25026	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	10.10564	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.40138	
			Hydrogen Chloride	7647-01-0	17.50000	0.09332	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.03628	
			Petroleum Distillates	64742-47-8	60.00000	0.03436	
			Suspending agent (solid)	14808-60-7	3.00000	0.00555	
			Surfactant	68439-51-0	3.00000	0.00218	
WFRA-1000	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01485	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01218	

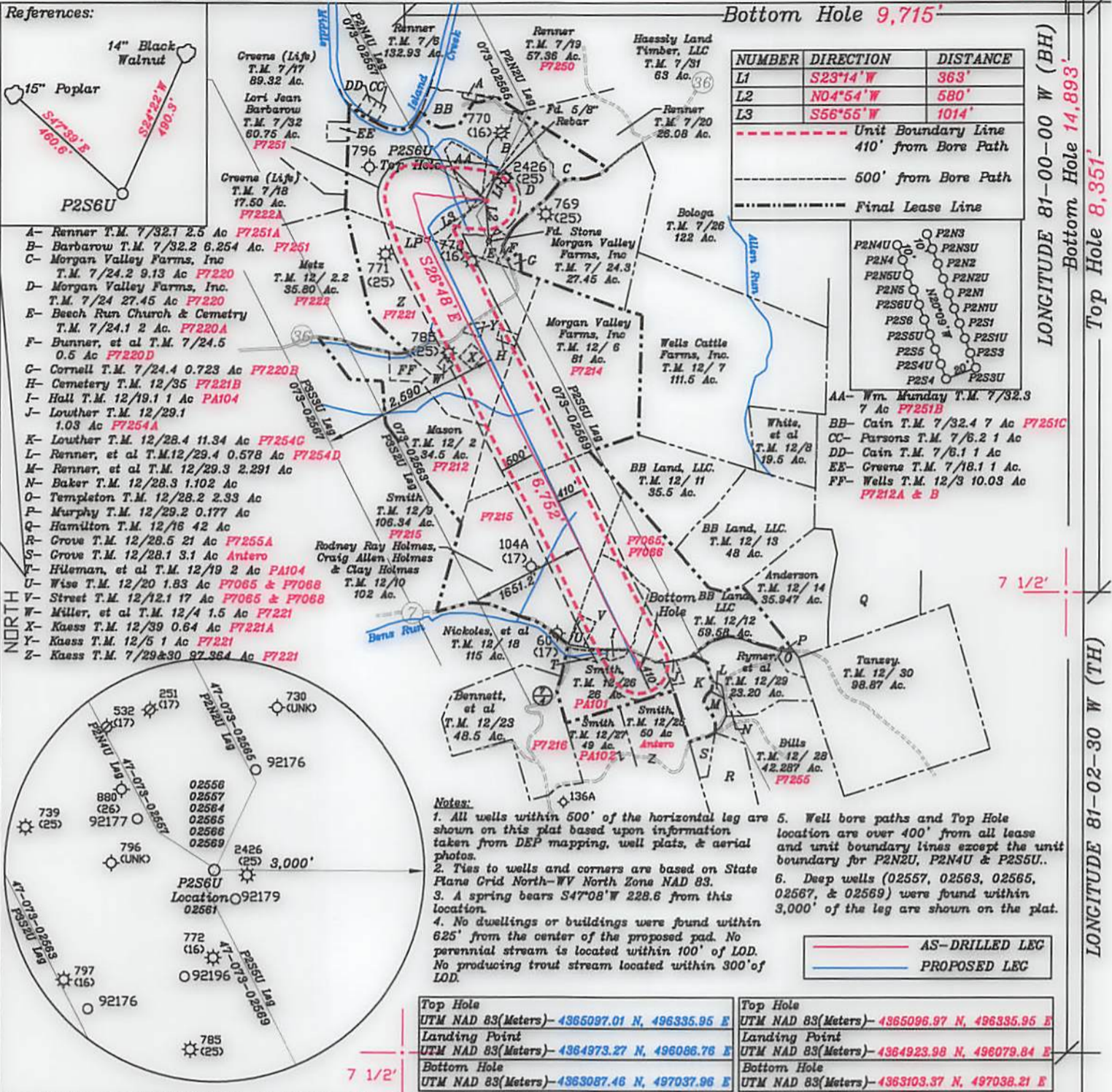
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WFRA-405	J.S. Well Services, LLC	Friction Reducer					
			2-Propenoic acid, polymer with 2-propenamamide	9003-06-9	30.00000	0.01151	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.00927	
SI-1200	J.S. Well Services, LLC	Scale Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.01210	
			Proprietary Scale Inhibitor	Proprietary	10.00000	0.00324	
Bioclear 5000	J.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-Dibromo-3-nitripropionamide	10222-01-2	10.00000	0.00522	
AP One	J.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00147	
NWA-200s	J.S. Well Services, LLC	Surfactants & Foamers					
			Proprietary Activating Agent	Proprietary	50.00000	0.00093	
AI-303	J.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00013	
			Cinnamaldehyde	104-55-2	20.00000	0.00005	
			Formic acid	64-18-6	20.00000	0.00005	
			Butyl cellosolve	111-76-2	20.00000	0.00004	
			Polyether	60828-78-6	10.00000	0.00002	
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00001	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

- * Total Water Volume sources may include fresh water, produced water, and/or recycled water
- ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



LONGITUDE 81-00-00 W (BH)
 Bottom Hole 14,893'
 Top Hole 8,351'
 LONGITUDE 81-02-30 W (TH)

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. _____	I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. (SIGNED) <u>David L Jackson</u> R.P.E. _____ P.S. 708
DRAWING NO. <u>1</u>	
SCALE <u>1" = 2000'</u>	
MINIMUM DEGREE OF ACCURACY <u>1 in 200</u>	
PROVEN SOURCE OF ELEVATION <u>GPS</u> submeter unit	

DAVID JACKSON
LICENSED
No. 708
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR

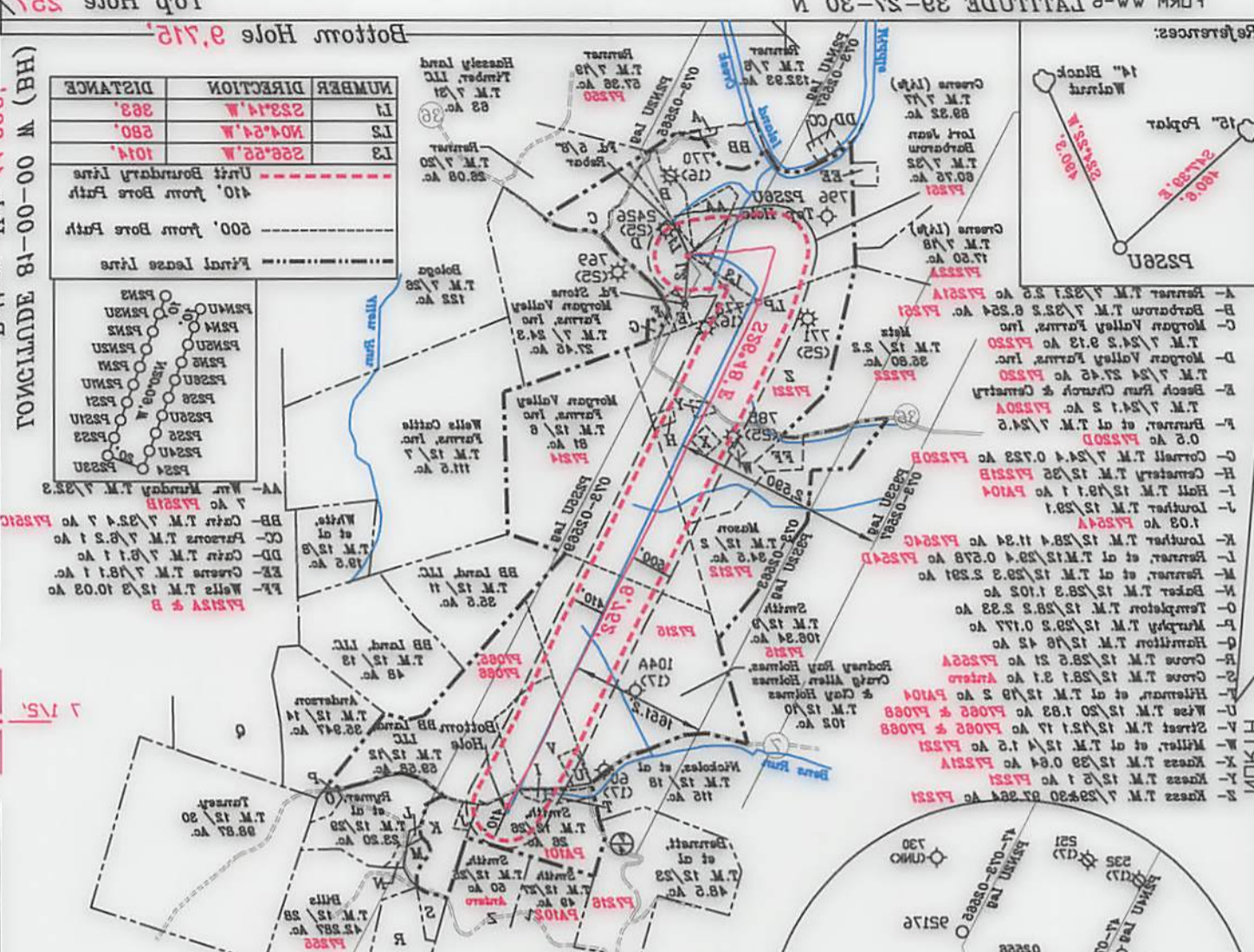
STATE OF WEST VIRGINIA Division of Environmental Protection OFFICE OF OIL AND GAS	DATE <u>February 27, 2017</u>
WELL TYPE: OIL GAS <u>X</u> LIQUID INJECTION WASTE DISPOSAL _____ (IF 'GAS') PRODUCTION <u>X</u> STORAGE DEEP <u>X</u> SHALLOW _____	OPERATOR'S WELL NO. <u>P2S6U</u> API WELL NO. _____
LOCATION: ELEVATION <u>712.4'</u> WATER SHED <u>Middle Island Creek</u> DISTRICT <u>Union</u> COUNTY <u>Pleasants</u>	STATE COUNTY PERMIT <u>47 073 02561</u>
SURFACE OWNER <u>Morgan Valley Farms, Inc.</u> ACREAGE <u>27.451 Ac.</u> OIL & GAS ROYALTY OWNER <u>Morgan Valley Farms, Inc.</u> LEASE ACREAGE <u>102.777 Ac.</u> LEASE NO. <u>P7220</u>	
PROPOSED WORK: DRILL _____ CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) <u>ASDRILLED</u>	
PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____ TARGET FORMATION <u>Point Pleasant</u> ESTIMATED DEPTH <u>TVD = 10,227'; TMD = 17,494'</u> WELL OPERATOR <u>Jay-Bee Oil & Gas, Inc.</u> DESIGNATED AGENT <u>Randy Broda</u> ADDRESS <u>1720 Route 22 E, Union, NJ 07083</u> ADDRESS <u>3570 Shields Hill Rd., Cairo, WV 26337</u>	

ADDRESS 2570 Shields Hill Rd., Carro, WV 26837
 DESIGNATED AGENT Randy Broda
 TARGET FORMATION Point Pleasant ESTIMATED DEPTH TVD = 10,227'; TMD = 17,494'
 PLUG AND ABANDON CLEAN OUT AND REPLUG
 FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) **AS DRILLED**
 STIMULATE PLUG OLD FORMATION PERFORATE NEW
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR
 LEASE NO. P2220
 MORGAN VALLEY FARMS, INC.
 SURFACE OWNER Morgan Valley Farms, Inc.
 QUADRANGLE Bears Run 7 1/2'
 DISTRICT Union
 COUNTY Pleasants
 LOCATION: ELEVATION 712.4' WATER SHED Middle Island Creek
 (IF GAS) PRODUCTION X STORAGE DEEP X SHALLOW
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 OFFICE OF OIL AND GAS
 DIVISION OF ENVIRONMENTAL PROTECTION
 STATE OF WEST VIRGINIA

DATE February 27, 2017
 OPERATOR'S WELL NO. P2220
 API WELL NO. 47-073-02561
 STATE COUNTY PERMIT
 R.P.E. No. 708
 (SIGNED) David Jackson
 I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES OF ENVIRONMENTAL PROTECTION.
 STATE OF WEST VIRGINIA
 LICENSED PROFESSIONAL SURVEYOR
 No. 708
 DAVID JACKSON

Top Hole	UTM NAD 83 (Meters) - 4382087.01 N, 486325.95 E
Bottom Hole	UTM NAD 83 (Meters) - 4382087.46 N, 497027.96 E
Top Hole	UTM NAD 83 (Meters) - 4384272.27 N, 486086.78 E
Bottom Hole	UTM NAD 83 (Meters) - 4384272.37 N, 486079.84 E

1. All wells within 500' of the horizontal leg are shown on this plat based upon information obtained from DEP mapping, well plats & aerial photos.
 2. Ties to wells and corners are based on State Plane Grid North-WY North Zone NAD 83.
 3. A spring bears 27°08' W 228.8' from this location.
 4. No dwellings or buildings were found within 3,000' of the leg as shown on the plat.
 5. Deep wells (02567, 02568, 02569, 02567, & 02568) were found within location are over 400' from all lease and unit boundaries lines except the unit boundary for P2220, P2221 & P2222.
 6. Well bore paths and Top Hole location are shown on the plat.



FORM W-E LATITUDE 39-27-30 N
 15. Poplar 24°32' W 490.8'
 14. Black Walnut 24°32' W 490.8'

Reference:
 A- Farmer T.M. 7/25.7.25 Ac P2221
 B- Bottom T.M. 7/25.2.25 Ac P2220
 C- Morgan Valley Farms, Inc. T.M. 7/24.2.25 Ac P2220
 D- Morgan Valley Farms, Inc. T.M. 7/24.2.25 Ac P2220
 E- Beach Run Church & Cemetery T.M. 7/24.1.2 Ac P2220
 F- Farmer et al T.M. 7/24.2 Ac P2220
 G- Correll T.M. 7/24.4.0725 Ac P2220
 H- Cemetery T.M. 12/25 P2221
 I- Hill T.M. 12/25.1 Ac P2220
 J- Louder T.M. 12/25.1 Ac P2221
 K- Louder T.M. 12/25.4.1134 Ac P2221
 L- Farmer et al T.M. 12/25.4.0278 Ac P2221
 M- Farmer et al T.M. 12/25.2.231 Ac P2221
 N- Baker T.M. 12/25.3.102 Ac P2221
 O- Templeton T.M. 12/25.2.23 Ac P2221
 P- Farmer et al T.M. 12/25.2.0177 Ac P2221
 Q- Hamilton T.M. 12/25.4 Ac P2221
 R- Grove T.M. 12/25.2.21 Ac P2221
 S- Grove T.M. 12/25.2.21 Ac P2221
 T- Hoffman et al T.M. 12/25.2 Ac P2221
 U- West T.M. 12/25.1.83 Ac P2221
 V- Street T.M. 12/25.1.17 Ac P2221
 W- Miller et al T.M. 12/25.1.5 Ac P2221
 X- Kress T.M. 12/25.0.64 Ac P2221
 Y- Kress T.M. 12/25.1 Ac P2221
 Z- Kress T.M. 7/25.20.27.24 Ac P2221