

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

API 47-095-02145 County Tyler District McElroy
Quad Center Point Pad Name Sleepy Field/Pool Name _____
Farm name Weimer, Brent A. & Emma Well Number Sleepy 5
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 4,369,579 Easting 522,459
Landing Point of Curve Northing N/A Easting _____
Bottom Hole Northing 4,370,728 Easting 521,689

Elevation (ft) 1,109' 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 Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
ABS 40

Date permit issued 6/16/2014 Date drilling commenced 8/21/2014 Date drilling ceased 10/2/2014
Date completion activities began 12/30/2015 Date completion activities ceased 1/3/2016
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 90-120' 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 1590-1620' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED
NAME: [Signature]
DATE: 9/8/16
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MAR 27 2016

Reviewed by: _____
10/28/2016

API 47-095 - 02145 Farm name Weimer, Brent A. & Emma Well number Sleepy 5

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	17"	16"	30'	New	20/32/24		Y
Surface	15"	11 3/4"	353'	New	20/23/24	50'	Y
Coal							
Intermediate 1	11"	8 5/8"	2329'	New	20/17/24	1500'	Y
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	11,816'	New	20		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	310	15.6	1.18	162	CTS	8
Coal							
Intermediate 1	Class A	650	14.7	1.36	589	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	1,556	14.4	1.32	2,054	CTS	8
Tubing							

Drillers TD (ft) 11,816' Loggers TD (ft) 11,816'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 8,300'

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

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 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 _____

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	12/30/2015	11804	11686	96	Marcellus
2	12/30/2015	11651	11484	72	Marcellus
3	12/30/2015	11449	11306	72	Marcellus
4	12/30/2015	11271	11104	72	Marcellus
5	12/30/2015	11069	10921	72	Marcellus
6	12/31/2015	10886	10727	72	Marcellus
7	12/31/2015	10692	10515	72	Marcellus
8	12/31/2015	10480	10315	72	Marcellus
9	12/31/2015	10280	10131	72	Marcellus
10	12/31/2015	10096	9924	72	Marcellus
11	01/01/2016	9889	9739	72	Marcellus
12	01/01/2016	9704	9553	72	Marcellus
13	01/01/2016	9518	9339	72	Marcellus
14	01/01/2016	9304	9083	72	Marcellus
15	01/01/2016	9036	8882	72	Marcellus
16	01/01/2016	8849	8683	72	Marcellus

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/other (units)
1	12/30/15	77.4	7241	5087	4583	181000	6338	n/a
2	12/30/15	78.5	7603	6038	4627	179900	6040	n/a
3	12/30/15	79.3	7491	6283	4464	179900	6065	n/a
4	12/30/15	78.2	7663	5833	4892	180200	5987	n/a
5	12/30/15	78.2	7396	5428	5046	181000	5940	n/a
6	12/31/15	78.4	7487	6082	4998	180900	5883	n/a
7	12/31/15	78.5	6941	5373	5369	180850	6960	n/a
8	12/31/15	77.9	7163	5538	4855	180300	5965	n/a
9	12/31/15	78.1	7276	6369	5193	180700	6056	n/a
10	12/31/15	78.4	7323	5921	4860	181550	5927	n/a
11	01/01/16	77.9	7218	5805	4804	182050	5822	n/a
12	01/01/16	77.1	6871	5779	5304	180350	5952	n/a
13	01/01/16	78.2	7133	6830	5138	180650	5868	n/a
14	01/01/16	78.3	7078	6367	5113	180100	5922	n/a
15	01/01/16	78.5	7137	5948	4680	181700	5747	n/a
16	01/01/16	78.5	7278	6071	4569	181450	5693	n/a

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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)
17	01/02/2016	8645	8481	72	Marcellus
18	01/02/2016	8436	8264	72	Marcellus
19	01/02/2016	8225	8049	72	Marcellus
20	01/02/2016	8005	7833	72	Marcellus
21	01/02/2016	7800	7672	72	Marcellus
22	01/03/2016	7614	7477	72	Marcellus
23	01/03/2016	7416	7223	72	Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus
					Marcellus

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 (bbbls)	Amount of Nitrogen/other (units)
17	01/02/16	78.3	7139	5942	5220	180400	5923	N/A
18	01/02/16	78.4	7354	6092	5169	181150	5837	N/A
19	01/02/16	78.3	7142	5556	5026	181300	5802	N/A
20	01/02/16	78.4	7149	5998	4723	181200	5647	N/A
21	01/02/16	78.2	7162	5529	4723	181750	5593	N/A
22	01/03/16	78.4	7021	6041	4824	180950	5568	N/A
23	01/03/16	78.2	6259	4984	4338	181400	5715	N/A

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus	6,936'	TVD	11,816' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2600 psi Bottom Hole N/A psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 3700 mcfpd Oil 50 bpd NGL bpd Water 180 bpd GAS MEASURED BY Estimated Orifice Pilot

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

Please insert additional pages as applicable.

Drilling Contractor Horizontal Well Drillers
Address 2915 SH 74 South City Purcell State OK Zip 73080

Logging Company Precise Well Analysis
Address PO Box 542 City Belpre State OH Zip 45714

Cementing Company Nabors Completion & Production
Address 1650 Hackers Creek Rd. City Jane Lew State WV Zip 26378

Stimulating Company CalFrac
Address 717 17th St. City Denver State CO Zip 80202

Please insert additional pages as applicable.

Completed by Shane Dowell Telephone 304-628-3111
Signature  Title Office Manager Date 3-24-2016

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Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

10/28/2016

Lithology

Sleepy 5 47-095-02145

FORMATION	TOP	BOTTOM
MISC. RED ROCK & SHALES	0	2205
LIME	2205	2305
INJUN	2305	2422
SHALE	2422	2769
GORDON STRAY	2769	2789
SHALE	2789	2985
GORDON	2985	3015
SHALE	3015	3294
BAYARD	3294	3303
SHALE	3303	3632
WARREN	3632	3730
SHALE	3730	3966
BALLTOWN	3966	4129
SHALE	4129	4567
2ND RILEY	4567	4675
SHALE	4675	4826
3RD RILEY	4826	4867
SHALE	4867	4924
BENSON	4924	4927
SHALE	4927	5169
ALEXANDER	5169	5340
SHALE	5340	5585
ELK	5585	5633
SHALE	5633	6007
HAMILTON	6007	6181
SHALE	6181	6837
UPPER Marcellus	6837	6843
PARCELL LIME	6843	6878
SHALE	6878	6914
LOWER MARCELLUS	6914	

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10/28/2016

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/30/2015
Job End Date:	1/3/2016
State:	West Virginia
County:	Tyler
API Number:	47-095-02145-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	Sleepy 5
Longitude:	-80.73905556
Latitude:	39.47541667
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,936
Total Base Water Volume (gal):	5,851,768
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

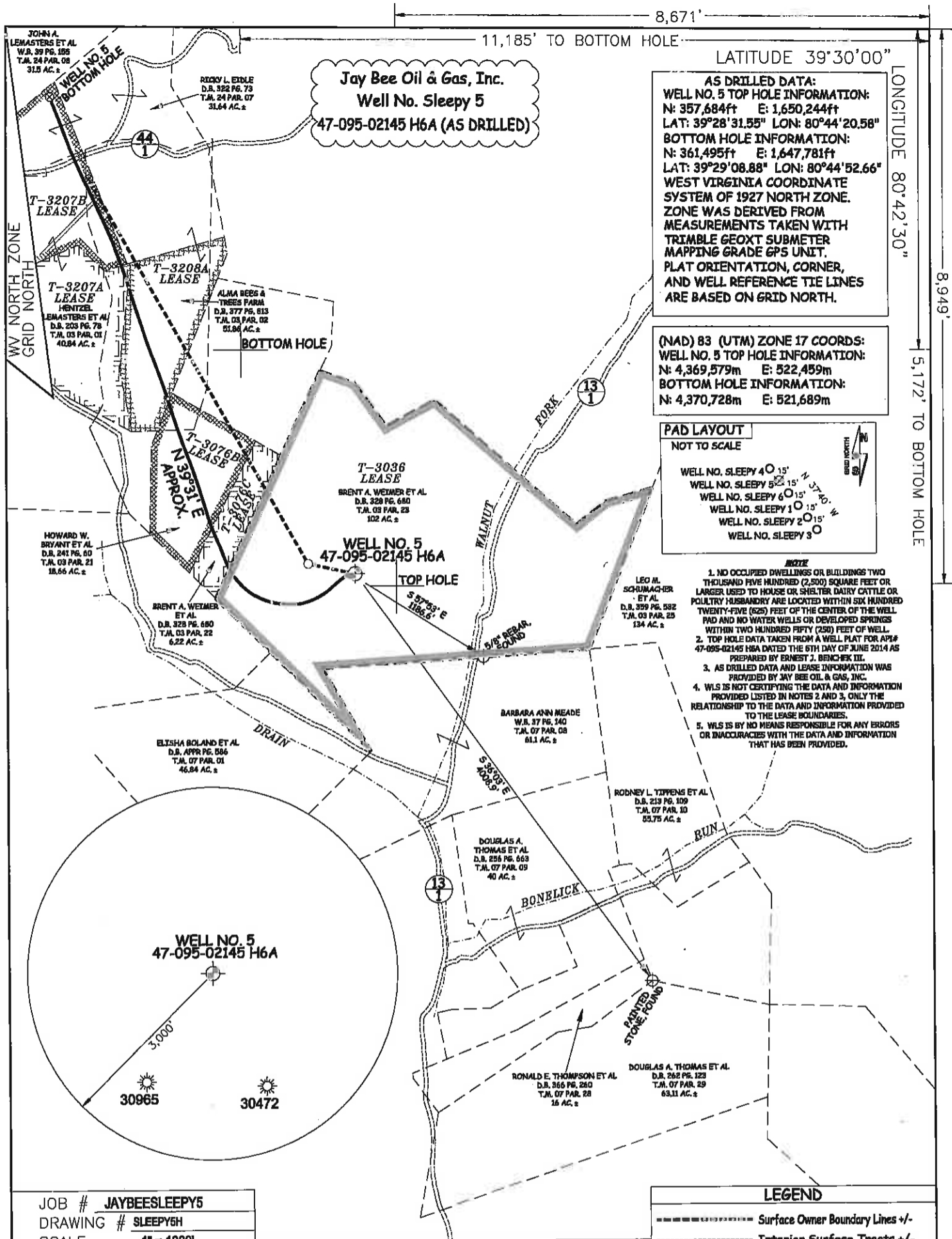
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Customer & CWS	Base Fluid & Mix Water	Water	7732-18-5	100.00000	91.88576	
Sand (Proppant), DAP-901, DAP-925, DWP-111, DWP-621, DWP-901, DWP-938, DWP-844, Hydrochloric Acid	CWS	Propping Agent, Scale Inhibitor, Acid Corrosion Inhibitor, Gel Slurry, Friction Reducer, Breaker, Surfactant, Microbicide, Clean Perforations	Crystalline silica (Quartz) Hydrochloric acid Paraffinic hydrocarbon solvent 2-Propenoic acid, polymer with propenamide, sodium salt Guar gum Distillates (petroleum), hydrotreated middle Polyethylene glycol mixture Methanol Illite Calcite	14808-60-7 7647-01-0 64742-47-8 25987-30-8 9000-30-0 64742-46-7 25322-68-3 67-56-1 12173-60-3 471-34-1	100.00000 37.00000 30.00000 40.00000 60.00000 60.00000 54.50000 60.00000 1.00000 1.00000	7.76239 0.14931 0.03597 0.03198 0.01937 0.01937 0.01485 0.00959 0.00933 0.00914	

Organic phosphonate 1	Proprietary	30.00000	0.00722	Proprietary CAS
2,2-Dibromo-3-Nitropropionamide	10222-01-2	20.00000	0.00545	
Goethite	1310-14-1	0.10000	0.00476	
Sorbitan monooleate, ethoxylated	9005-65-6	5.00000	0.00400	
Sorbitan monooleate	1338-43-8	5.00000	0.00400	
Biotite	1302-27-8	0.10000	0.00389	
Apatite	84476-38-6	0.10000	0.00389	
Ilmenite	98072-94-7	0.10000	0.00346	
Organic phosphonate 2	Proprietary	10.00000	0.00241	Proprietary CAS
Isotridecyl alcohol, ethoxylated	78330-21-9	3.00000	0.00240	
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00161	
Sodium acetate	126-96-5	2.00000	0.00160	
Ammonium chloride	12125-02-9	10.00000	0.00144	
Oxyalkylated polyamine	Proprietary	5.00000	0.00120	Proprietary CAS
Amine salt	Proprietary	5.00000	0.00120	Proprietary CAS
Sodium bromide	7647-15-6	4.00000	0.00109	
Ammonium Persulfate	7727-54-0	100.00000	0.00103	
Dibromoacetonitrile	3252-43-5	3.00000	0.00082	
Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00048	
Alcohols, C9-11, ethoxylated	68439-46-3	5.00000	0.00038	
Acetic acid	64-19-7	1.00000	0.00024	
Alcohols, C12-13, ethoxylated	66455-14-9	1.00000	0.00008	
Acrylamide	79-06-1	0.10000	0.00008	
Modified thiourea polymer	68527-49-1	30.00000	0.00005	
Alcohols, C14-15, ethoxylated	68951-67-7	30.00000	0.00005	
Fatty acids, tall-oil	61790-12-3	30.00000	0.00005	
Formaldehyde	50-00-0	0.10000	0.00004	
Propargyl Alcohol	107-19-7	10.00000	0.00002	
Alkenes, C>10 a-	64743-02-8	5.00000	0.00001	
Sodium chloride	7647-14-5	1.00000		

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%

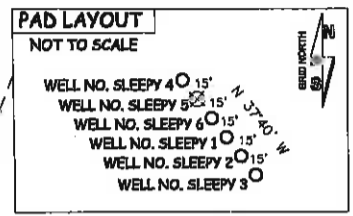
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



Jay Bee Oil & Gas, Inc.
Well No. Sleepy 5
47-095-02145 H6A (AS DRILLED)

AS DRILLED DATA:
WELL NO. 5 TOP HOLE INFORMATION:
 N: 357,684ft E: 1,650,244ft
 LAT: 39°28'31.55" LON: 80°44'20.58"
BOTTOM HOLE INFORMATION:
 N: 361,495ft E: 1,647,781ft
 LAT: 39°29'08.88" LON: 80°44'52.66"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE 6PS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL NO. 5 TOP HOLE INFORMATION:
 N: 4,369,579m E: 522,459m
BOTTOM HOLE INFORMATION:
 N: 4,370,728m E: 521,689m



- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD AND NO WATER WELLS OR DEVELOPED SPRINGS WITHIN TWO HUNDRED FIFTY (250) FEET OF WELL.
 2. TOP HOLE DATA TAKEN FROM A WELL PLAT FOR AP# 47-095-02145 H6A DATED THE 6TH DAY OF JUNE 2014 AS PREPARED BY ERNEST J. BENCKEK III.
 3. AS DRILLED DATA AND LEASE INFORMATION WAS PROVIDED BY JAY BEE OIL & GAS, INC.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

JOB # **JAYBEESLEEPY5**
 DRAWING # **SLEEPY5H**
 SCALE **1" = 1000'**
 MINIMUM DEGREE OF ACCURACY **SUBMETER**
 PROVEN SOURCE OF ELEV. **SUBMETER MAPPING GRADE GPS**



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND	
-----	Surface Owner Boundary Lines +/-
-----	Interior Surface Tracts +/-
⊕	Found monument, as noted
○-----	Proposed Well Path
○-----	As Drilled Well Path
DATE	03/21/16
OPERATOR'S WELL #	SLEEPY 5

WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/>	47	095	02145
(IF "GAS") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	STATE	COUNTY	PERMIT
LOCATION: ELEVATION 1,120'	WATERSHED OUTLET MIDDLE ISLAND CREEK	10/28/2016	
QUADRANGLE SHIRLEY 7.5'	DISTRICT MCELROY	COUNTY	TYLER
SURFACE OWNER BRENT A. WEIMER ET AL	ACREAGE	102 ACRES +/-	
OIL & GAS ROYALTY OWNER T-3036; T-3076C; T-3076B; T-3208A; T-3207A; T-3207B	LEASE ACREAGE	102 ACRES+; 6.22 ACRES+; 18 ACRES+; 16 ACRES+; 76.5 ACRES+; 28.13 ACRES+	
PROPOSED WORK: DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/>	PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (X) AS DRILLED		
TARGET FORMATION MARCELLUS	ESTIMATED DEPTH	6,936' TVD 11,816' MD	
WELL OPERATOR JAY BEE OIL & GAS, INC.	DESIGNATED AGENT	RANDY BRODA	
ADDRESS 1720 ROUTE 22	ADDRESS	ROUTE 1, BOX 5	
EAST UNION, NJ 07083	CAIRO, WV 26337		