

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

RECEIVED  
Office of Oil and Gas

MAR 04 2019

WV Department of  
Environmental Protection

API 47-095-02226 County Tyler District McElroy  
Quad Shirley Pad Name Happy Field/Pool Name Happy  
Farm name Bloom, Arthur & Lois Well Number Happy 1A  
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 4,368,942.43 Easting 521,430.35  
Landing Point of Curve Northing 4,368,610.38 Easting 520,868.98  
Bottom Hole Northing 4,366,650.18 Easting 521,472.69

Elevation (ft) 1253.5 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)  
Synthetic OBM

Date permit issued 6/23/2015 Date drilling commenced 10/24/2016 Date drilling ceased 3/29/2017  
Date completion activities began 6/18/2017 Date completion activities ceased 7/12/2017  
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 60-90' 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

Reviewed by:

JCB  
3/14/2019

WR-35  
Rev. 8/23/13

API 47-095 - 02226 Farm name Bloom, Arthur & Lois Well number Happy 1A

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	J55 - 40#		Y
Surface	15"	11 3/4"	447	New	J55 - 32#	50'	Y
Coal							
Intermediate 1	11"	8 5/8"	2479	New	J55 - 24#	1500'	Y
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	16184	New	J55 - 17#		Y
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	366	15.6	1.21	442.9	CTS	8
Coal							
Intermediate 1	Class A	705	15.2	1.26	888.3	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	2362	14.5	1.17	2763.5	CTS	8
Tubing							

Drillers TD (ft) 16,188 Loggers TD (ft) 16,188

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6300

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 - 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 \_\_\_\_\_

WR-35  
Rev. 8/23/13

API 47- 095 - 02226 Farm name Bloom, Arthur &amp; Lois Well number Happy 1A

## PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/18/17	16138	16029	95	Marcellus
2	6/19/17	15994	15842	72	Marcellus
3	6/19/17	15807	15609	72	Marcellus
4	6/19/17	15574	15454	72	Marcellus
5	6/19/17	15419	15244	72	Marcellus
6	6/25/17	15209	15037	72	Marcellus
7	6/25/17	15002	14855	72	Marcellus
8	6/25/17	14820	14640	72	Marcellus
9	6/25/17	14605	14424	72	Marcellus
10	6/26/17	14389	14225	72	Marcellus
11	6/27/17	14190	14040	72	Marcellus
12	6/27/17	14005	13872	72	Marcellus
13	6/27/17	13837	13658	72	Marcellus
14	6/27/17	13623	13469	72	Marcellus
15	6/28/17	13426	13250	72	Marcellus
16	6/28/17	13213	13066	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	6/18/17	71	7778	8963	3640	181300	4916	N/A
2	6/19/17	79	8301	7454	4200	179500	4883	N/A
3	6/19/17	81	8128	8044	4431	180800	4853	N/A
4	6/19/17	80	7615	6739	3844	179100	4651	N/A
5	6/19/17	76	7990	7639	4284	176500	4548	N/A
6	6/25/17	80	7616	7255	4723	175300	4684	N/A
7	6/25/17	80	7354	6516	5269	179800	4633	N/A
8	6/25/17	80	7086	6765	4361	178400	4616	N/A
9	6/25/17	82	7315	7178	4860	177700	4506	N/A
10	6/26/17	78	7304	6840	4125	173600	5329	N/A
11	6/27/17	80	7208	7139	4634	176500	4360	N/A
12	6/27/17	80	7635	6960	4937	187900	4246	N/A
13	6/27/17	80	7272	6659	4663	184300	4449	N/A
14	6/27/17	81	7200	6271	4044	179100	4532	N/A
15	6/28/17	80	7183	7075	4953	178500	4611	N/A
16	6/28/17	79	7354	6761	4891	179800	4267	N/A

Please insert additional pages as applicable.

API 47-095 - 02226

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Well number Happy 1A

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33	7/4/17	9886	9738	72	Marcellus
34	7/5/17	9702	9518	72	Marcellus
35	7/5/17	9485	9360	72	Marcellus
36	7/5/17	9297	9162	72	Marcellus
37	7/6/17	9105	8985	72	Marcellus
38	7/6/17	8946	8757	72	Marcellus
39	7/6/17	8720	8562	72	Marcellus
40	7/6/17	8528	8360	72	Marcellus
41	7/6/17	8311	8180	72	Marcellus
42	7/7/17	8137	7959	72	Marcellus
43	7/7/17	7887	7753	72	Marcellus

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33	7/4/17	80	6678	6704	4071	178200	5550	N/A
34	7/5/17	80	6841	6729	4323	179500	4349	N/A
35	7/5/17	80	6918	6170	4291	181100	6155	N/A
36	7/5/17	80	6874	6392	4951	178700	4200	N/A
37	7/6/17	80	6701	7369	4111	183800	4354	N/A
38	7/6/17	80	6664	6228	4143	181500	4198	N/A
39	7/6/17	80	6731	5887	3583	184500	3973	N/A
40	7/6/17	80	5650	5954	3711	177900	3897	N/A
41	7/6/17	80	5835	5045	3752	186700	3963	N/A
42	7/7/17	81	4783	4767	3187	185800	4336	N/A
43	7/7/17	79	4893	3807	3426	177400	4398	N/A

Please insert additional pages as applicable.

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Please insert additional pages as applicable.



**Lithology**

Happy 1A

47-095-02226

<b>FORMATION</b>	<b>TOP</b>	<b>BOTTOM</b>
MISC. RED ROCK & SHALES	0	2349
LIME	2349	2449
INJUN	2449	2566
SHALE	2566	2913
GORDON STRAY	2913	2933
SHALE	2933	3129
GORDON	3129	3159
SHALE	3159	3438
BAYARD	3438	3447
SHALE	3447	3776
WARREN	3776	3874
SHALE	3874	4110
BALLTOWN	4110	4273
SHALE	4273	4711
2ND RILEY	4711	4819
SHALE	4819	4970
3RD RILEY	4970	5011
SHALE	5011	5068
BENSON	5068	5071
SHALE	5071	5313
ALEXANDER	5313	5484
SHALE	5484	5729
ELK	5729	5777
SHALE	5777	6141
HAMILTON	6141	6315
SHALE	6315	6971
UPPER MARCELLUS	6971	6977
PARCELL LIME	6977	7012
SHALE	7012	7039
LOWER MARCELLUS	7039	

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/18/2017
Job End Date:	7/7/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02226-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	Happy 1A
Latitude:	39.46972100
Longitude:	-80.75103600
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,053
Total Base Water Volume (gal):	11,489,940
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	Company 1	Carrier/Base Fluid	Water	7732-18-5	100.00000	92.18053	None
Sand (Proppant)	Producers Service Corp	Proppant	Silica Substrate	14808-60-7	100.00000	7.2895	None
15% IC Acid	Producers Service Corp	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.0615	None
STIMLUBE F	Producers Service Corp	Friction Reducer	Petroleum Distillates	54742-47-8	30.00000	0.01926	None
			Alcohols, ethoxylated	58002-97-1	3.10000	0.00199	None
			Alcohols, ethoxylated	58551-12-2	3.10000	0.00199	None
			Alcohols, ethoxylated	58439-50-9	3.10000	0.00199	None
PRO GEL 4.0L	Producers Service Corp	Gel	Guar Gum Blend	9000-30-0	100.00000	0.01950	None
SCALECLEAR 112	Producers Service Corp	Scale Inhibitor	Ethylene Glycol	107-21-1	40.00000	0.00821	None



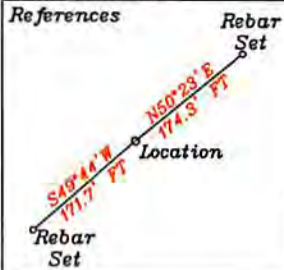


BIOCLEAR 1430	Producers Service Corp	Biocide							
			Glutaraldehyde	111-30-8	20.00000	0.00301	None		
			Alkyl dimethyl benzyl ammonium chloride	68424-85-1	5.00000	0.00075	None		
			Dimethylamine	68439-70-3	0.50000	0.00008	None		
PRO BREAK 4	Producers Service Corp	Gel Breaker							
			Surcose	57-50-1	46.00000	0.00007	None		
			Ethylene Glycol	107-21-1	14.00000	0.00002	None		
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.									
Other Chemical(s)	Listed Above	See Trade Name(s) list							
			Alcohols, ethoxylated	68551-12-2	3.10000	0.00199			
			Alcohols, ethoxylated	68439-50-9	3.10000	0.00199			
			Alcohols, ethoxylated	68002-97-1	3.10000	0.00199			
			Alkyl dimethyl benzyl ammonium chloride	68424-85-1	5.00000	0.00075			
			Dimethylamine	68439-70-3	0.50000	0.00008			
			Ethylene Glycol	107-21-1	14.00000	0.00002			

\* 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%

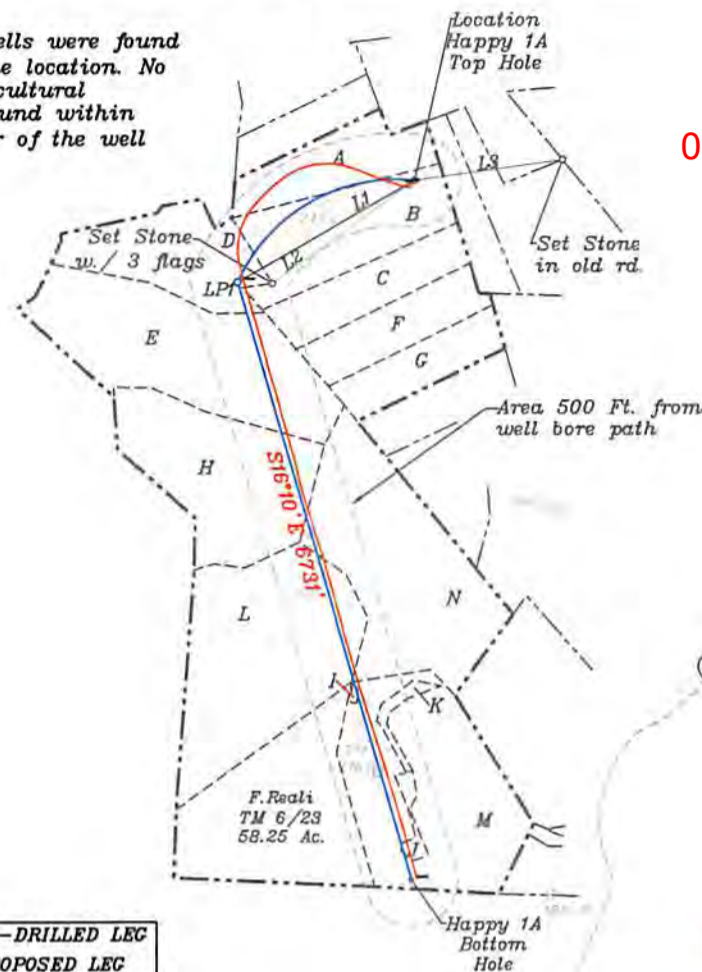
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.  
 Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39-30-00 N (TH)  
LATITUDE 39-27-30 N (BH)



Note: No water wells were found within 250' of the location. No dwellings or agricultural buildings were found within 625' of the center of the well pad.

- A- Eidle TM 6/17 26.36 Ac.
- B- Bloom TM 6/18 59.76 Ac. Ls. T3042A1
- C- Eidle TM 7/17 23.73 Ac.
- D- Woodburn TM 6/19 42 Ac. Ls. T1-18
- E- Woodburn TM 6/20 85 Ac. Ls. T3039
- F- Bessinger TM 7/18 26.36 Ac.
- G- Hufford TM 7/19 22.85 Ac.
- H- Ayers TM 6/21 64.22 Ac. Ls. T3045A
- I- Reali TM 6/55 0.262 Ac. Ls. RPT1
- J- Reali TM 7/46.1 2.734 Ac. Ls. RPT1
- K- Reali TM 7/46.2 3 Ac. Ls. RPT1
- L- Roller TM 6/22 88 Ac. Ls. T1-09
- M- Butcheck TM7/46 81 Ac. Ls. RPT1
- N- Hufford TM 7/37 80 Ac. Ls. T3046



05/03/2019

7 1/2'

Bottom Hole 3,347'

Top Hole 11,093'

7 1/2'

LONGITUDE 80-45-00 N

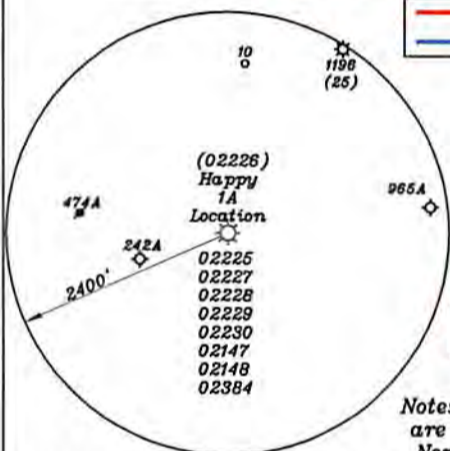
Proposed	
Top Hole	UTM NAD 83(Meters)- 4368942.7 N, 521429.9 E
Landing Point	UTM NAD 83(Meters)- 4368598.6 N, 520850.8 E
Bottom Hole	UTM NAD 83(Meters)- 4368641.3 N, 521455.4 E
As Drilled	
Top Hole	UTM NAD 83(Meters)- 4368942.43 N, 521430.35 E
Landing Point	UTM NAD 83(Meters)- 4368610.38 N, 520868.98 E
Bottom Hole	UTM NAD 83(Meters)- 4368650.18 N, 521472.69 E

NORTH

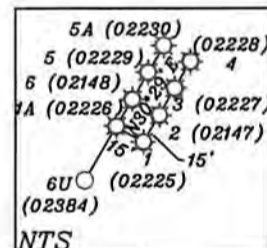
AS-DRILLED LEG  
PROPOSED LEG

Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

NUMBER	DIRECTION	DISTANCE
L1	S60°21'W	2141'
L2	N54°18'E	1901'
L3	S82°09'W	1617'



Notes: Ties to wells and corners are based on State Plane Grid North-WV North Zone NAD 27.



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

FILE NO. \_\_\_\_\_  
DRAWING NO. 1  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY 1 in 200  
PROVEN SOURCE OF ELEVATION GPS  
submeter unit

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

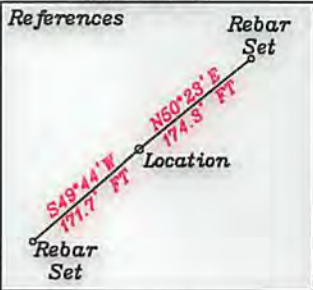
(SIGNED) David L Jackson  
R.P.E. \_\_\_\_\_ L.L.S. 708



STATE OF WEST VIRGINIA  
Division of Environmental Protection  
OFFICE OF OIL AND GAS  
DATE December 22, 2017  
OPERATOR'S WELL NO. Happy 1A  
API WELL NO. AsDrilled  
WELL TYPE: OIL X GAS LIQUID INJECTION WASTE DISPOSAL 47 - 095 - 02226  
(IF 'GAS') PRODUCTION STORAGE DEEP SHALLOW X STATE COUNTY PERMIT  
LOCATION: ELEVATION 1256.9' WATER SHED Walnut Fork & Woodburn Run  
DISTRICT McElroy COUNTY Tyler  
QUADRANGLE Shirley 7 1/2'  
SURFACE OWNER Arthur & Lois Bloom ACREAGE 59.76 ac.  
OIL & GAS ROYALTY OWNER John Lambert Ice LEASE ACREAGE 505.976 ac.

LEASE NO. & ACREAGE: "See ownership list above for lease numbers"

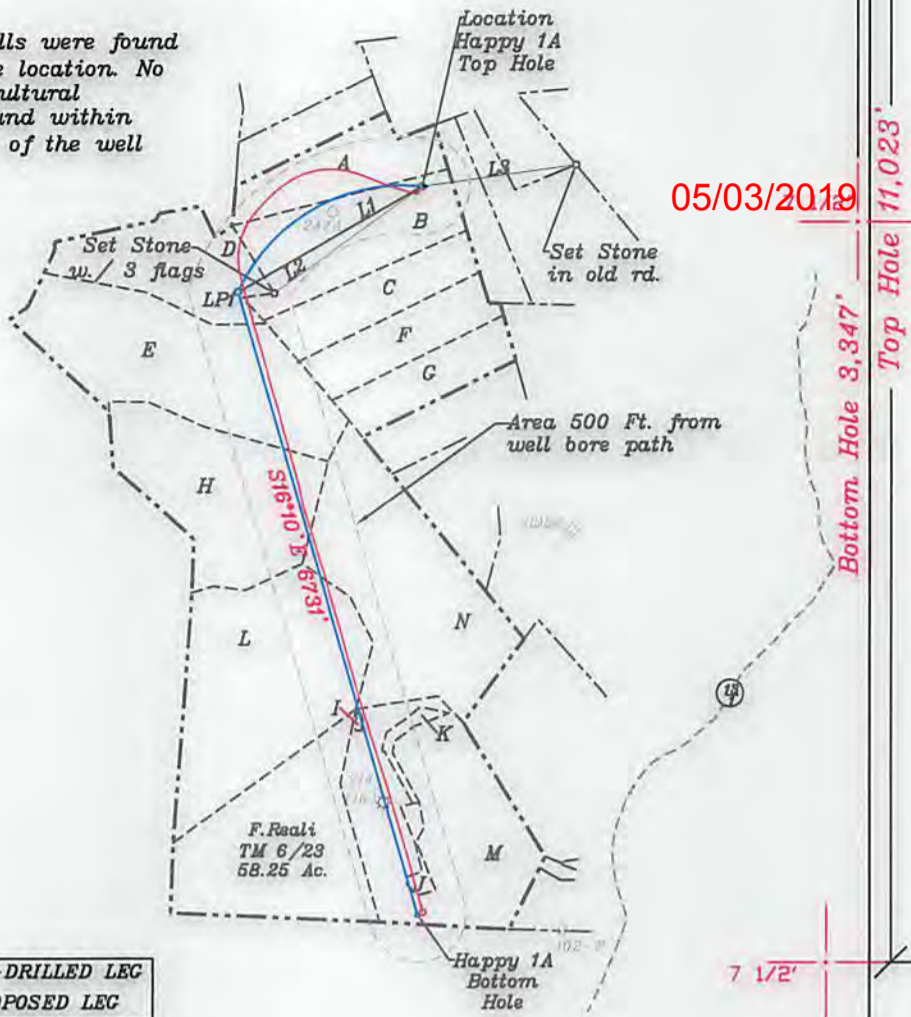
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AsDrilled  
PLUG AND ABANDON CLEAN OUT AND REPLUG \_\_\_\_\_  
TARGET FORMATION Marcellus ESTIMATED DEPTH TVD= 7,064 - TMD= 16,188' ±  
WELL OPERATOR Jay-Bee Oil & Gas, Inc. DESIGNATED AGENT Randy Broda  
ADDRESS 1720 Rt. 22, East Union, NJ 07083 ADDRESS 3570 Shields Hill Rd., Cairo, WV 26337



LATITUDE 39-30-00 N (TH)  
LATITUDE 39-27-30 N (BH)

Note: No water wells were found within 250' of the location. No dwellings or agricultural buildings were found within 625' of the center of the well pad.

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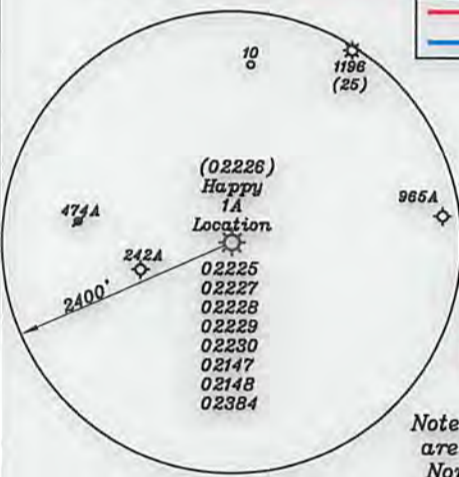


05/03/2019

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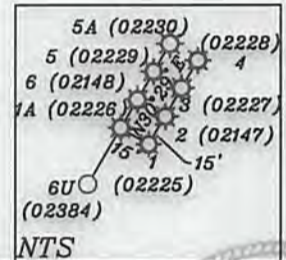
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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS



LONGITUDE 80-45-00 N

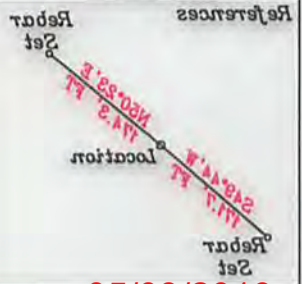
FILE NO. \_\_\_\_\_  
DRAWING NO. 1  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY 1 in 200  
PROVEN SOURCE OF ELEVATION GPS  
submeter unit

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.  
(SIGNED) David L. Jackson  
R.P.E. \_\_\_\_\_ L.L.S. 708



STATE OF WEST VIRGINIA  
Division of Environmental Protection  
OFFICE OF OIL AND GAS  
DATE December 22, 2017  
OPERATOR'S WELL NO. Happy 1A  
API WELL NO. As Drilled  
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 02226  
(IF 'GAS') PRODUCTION STORAGE DEEP SHALLOW X STATE COUNTY PERMIT  
LOCATION: ELEVATION 1256.9' WATER SHED Walnut Fork & Woodburn Run  
DISTRICT McElroy COUNTY Tyler  
QUADRANGLE Shirley 7 1/2'  
SURFACE OWNER Arthur & Lois Bloom ACREAGE 59.76 ac.  
OIL & GAS ROYALTY OWNER John Lambert Ice LEASE ACREAGE 505.976 ac.

LEASE NO. & ACREAGE: "See ownership list above for lease numbers"  
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As Drilled  
PLUG AND ABANDON CLEAN OUT AND REPLUG \_\_\_\_\_  
TARGET FORMATION Marcellus ESTIMATED DEPTH TVD= 7,064 - TMD= 16,188'±  
WELL OPERATOR Jay-Bee Oil & Gas, Inc. DESIGNATED AGENT Randy Broda  
ADDRESS 1720 Rt. 22, East Union, NJ 07083 ADDRESS 3570 Shields Hill Rd., Cairo, WV 26337



1910/03/2019

- A- Eidle TM 6/17 28.28 Ac.
- B- Bloom TM 6/18 29.78 Ac. LA. T3042A1
- C- Eidle TM 7/17 23.73 Ac.
- D- Woodburn TM 6/19 42 Ac. LA. T1-18
- E- Woodburn TM 6/20 85 Ac. LA. T3039
- F- Bessinger TM 7/18 28.28 Ac.
- G- Harford TM 7/19 22.85 Ac.
- H- Agers TM 6/21 64.22 Ac. LA. T3045A
- I- Realt TM 6/25 0.282 Ac. LA. RPT1
- J- Realt TM 7/18 1.234 Ac. LA. RPT1
- K- Realt TM 7/18 2.3 Ac. LA. RPT1
- L- Roller TM 6/22 88 Ac. LA. T1-09
- M- Butchock TM 7/18 81 Ac. LA. RPT1
- N- Harford TM 7/27 80 Ac. LA. T3046

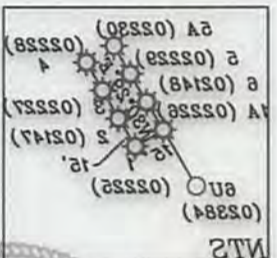
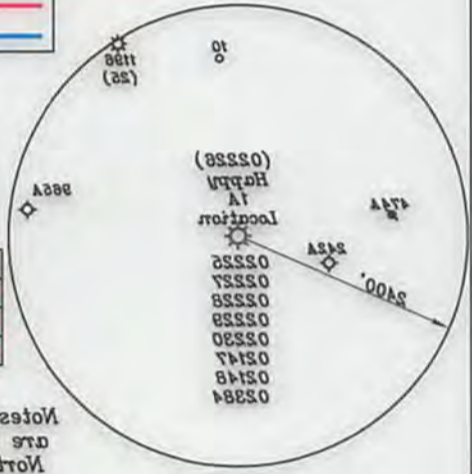
Proposed	
Top Hole	TUM MAD 83(Meters) - 4388427 N. 521429.2 E
Landing Point	TUM MAD 83(Meters) - 4388588 N. 52080.8 E
As Drilled	
Bottom Hole	TUM MAD 83(Meters) - 4388413 N. 52142.4 E
Top Hole	TUM MAD 83(Meters) - 4388424 N. 521430.2 E
Landing Point	TUM MAD 83(Meters) - 4388610 N. 52088.98 E
Bottom Hole	TUM MAD 83(Meters) - 43885018 N. 52142.89 E

PROPOSED LEC  
 AS-DRILLED LEC

Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.

NUMBER	DIRECTION	DISTANCE
L1	S80°21'W	214'
L2	N54°18'E	190'
L3	S82°09'W	181'

Notes: Ties to wells and corners are based on State Plane Grid North-WV North Zone NAD 83. (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS



Top Hole 446'  
 Bottom Hole 124'

LATITUDE 39-30-00 N (TH)  
 LATITUDE 39-27-30 N (BH)

Job Hole 11'033'  
 Bottom Hole 3'344'

TOWNSHIP 80-42-00 W



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 (SIGNED) *David L. Jackson*  
 R.P.E. L.L.S. 708

FILE NO. \_\_\_\_\_  
 DRAWING NO. 1  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1 in 500  
 PROVEN SOURCE OF ELEVATION GPS  
 submeter unit

STATE OF WEST VIRGINIA  
 Division of Environmental Protection  
 OFFICE OF OIL AND GAS  
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 (IF GAS) PRODUCTION STORAGE DEEP SHALLOW X STATE COUNTY PERMIT  
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 SURFACE OWNER Arthur & Lois Bloom  
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 ESTIMATED DEPTH TVD = 7,064' - TMD = 16,188' ±  
 DESIGNATED AGENT Randy Broda  
 WELL OPERATOR Jay-Bee Oil & Gas, Inc.  
 ADDRESS 3570 Shields Hill Rd., Cairo, WV 26337

DATE December 22, 2017  
 OPERATOR'S WELL NO. Happy 1A  
 API WELL NO. As Drilled  
 47 092 0228