

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

API 47-095-02085 County Tyler District McElroy
Quad Shirley 7.5' Pad Name RPT8 Field/Pool Name _____
Farm name Jack Hair et al Well Number RPT8-1
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 4,370,417.4 Easting 518,394.8
Landing Point of Curve Northing 4,369,869.2 Easting 518,696.2
Bottom Hole Northing 4,368,112.8 Easting 519,216.2

Elevation (ft) 1244' 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)
EZ-MUD® (hydrotreated light petroleum distillate)

Date permit issued 2/5/2013 Date drilling commenced 5/6/2013 Date drilling ceased 7/6/2013
Date completion activities began 1/13/2014 Date completion activities ceased 2/28/2014
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 420' - 480' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2120' - 2310' 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 by:
AL S/26/15
U.S. 06/12/2015
WV Dept. of Environmental Protection

API 47-095 - 02085 Farm name Jack Hair et al Well number RPT8-1

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		Yes
Surface	15"	11 3/4"	546'	New	20/23/24	50'	Yes
Coal							
Intermediate 1	11"	8 5/8"	2,411'	New	20/17/24	1,500'	Yes
Intermediate 2							
Intermediate 3							
Production	7 7/8"	5 1/2"	13,954'	New	20/24/24		Yes
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	265	15.6	1.26	334	CTS	0
Coal							
Intermediate 1	Class A	665	14.3	1.45	964	CTS	0
Intermediate 2							
Intermediate 3							
Production	Class A	1,855	14.3	1.35	2,504	300' from surface	0
Tubing							

Drillers TD (ft) 14,812' Loggers TD (ft) 14,812'
 Deepest formation penetrated Marcellus Plug back to (ft) 13,954'
 Plug back procedure 5 1/2 Production Casing

Kick off depth (ft) 6,270'

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 bow centralizer placed every 500'.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Received

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS APR 27 2015

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____ Office of Oil and Gas
 WV Dept. of Environmental Protection

API 47-095 - 02085 Farm name Jack Hair et al Well number RPT8-1

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	10-18-2013	13726	13937	96	Marcellus
2-9	1-31-2014 Super Frac	11450	13508	168	Marcellus
10	1-31-2014	10873	11150	48	Marcellus
11	1-31-2014	10623	10802	48	Marcellus
12	1-31-2014	10387	10566	48	Marcellus
13	1-31-2014	10162	10385	48	Marcellus
14	1-31-2014	9850	10046	48	Marcellus
15	1-31-2014	9502	9748	48	Marcellus
16	1-31-2014	9230	9456	48	Marcellus
17	1-31-2014	8896	9174	48	Marcellus
18	1-31-2014	8640	8861	48	Marcellus
19	1-31-2014	8406	8592	48	Marcellus
20	1-31-2014	8188	8371	48	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	1-13-14	71.8	6799	6979	5874	1120	6416	N/A
2-9	2-11-14	68.0	7219	8254	4958	7673	40782	N/A
10	2-13-14	69.7	6846	5970	4951	1930	6694	N/A
11	2-13-14	68.7	7063	5698	4719	1600	6693	N/A
12	2-13-14	70.2	6582	6179	5123	1834	7871	N/A
13	2-14-14	70.8	6699	5581	4612	1785	6920	N/A
14	2-14-14	68.7	6709	5514	4538	1791	7648	N/A
15	2-14-14	70.1	6375	5543	4614	1722	6902	N/A
16	2-15-14	69.9	6620	5243	4725	1877	6978	N/A
17	2-15-14	69.7	6430	5825	5113	1745	6541	N/A
18	2-16-14	70.1	6454	5323	5214	1791	6577	N/A
19	2-16-14	70.7	6410	5465	5216	1769	6181	N/A
20	2-16-14	70.3	6346	5156	5153	1745	5832	N/A

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Please insert additional pages as applicable.

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	rpt 8 pad	
	rpt 8-1	47-095-02085
	rpt 8-2	47-095-02084
	rpt 8-3	47-095-02083
	ELEVATION	1244
FORMATION	TOP	BOTTOM
MISC. RED ROCK & SHALES	0	2137
LIME	2137	2237
INJUN	2137	2254
SHALE	2254	2601
GORDON STRAY	2601	2621
SHALE	2621	2817
GORDON	2817	2847
SHALE	2847	3126
BAYARD	3126	3135
SHALE	3135	3464
WARREN	3464	3562
SHALE	3562	3798
BALLTOWN	3798	3961
SHALE	3961	4399
2ND RILEY	4399	4507
SHALE	4507	4658
3RD RILEY	4658	4699
SHALE	4699	4756
BENSON	4756	4759
SHALE	4759	5001
ALEXANDER	5001	5172
SHALE	5172	5417
ELK	5417	5465
SHALE	5465	6161
HAMILTON	6161	6335
SHALE	6155	6811
UPPER Marcellus	6811	6840
PARCELL LIME	6840	6875
SHALE	6875	6922
LOWER MARCELLUS	6922	

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Office of Oil and Gas
WV Dept. of Environmental Protection

06/12/2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/13/2014
Job End Date:	2/28/2014
State:	West Virginia
County:	Tyler
API Number:	47-095-02085-00-00
Operator Name:	Jay-Bee Oil & Gas, Inc.
Well Name and Number:	RPT8-1
Longitude:	-80.78610600
Latitude:	39.48315900
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,922
Total Base Water Volume (gal):	5,125,470
Total Base Non Water Volume:	



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Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Jay-Bee Oil & Gas, Inc.	Water	Water	7732-18-5	100.00000	93.03399	
100 Mesh	Nabors Completion and Production Services	Sand Bulk West Virginia	Crystalline Silica	14808-60-7	99.90000	2.90239	
			Aluminum Oxide	1344-28-1	1.10000	0.03196	
			Iron Oxide	1309-37-1	0.10000	0.00291	
			Titanium Oxide	13463-67-7	0.10000	0.00291	
30/50 Mesh	Nabors Completion and Production Services	Bulk Sand West Virginia	Crystalline Silica	14808-60-7	99.90000	2.55082	
			Aluminum Oxide	1344-28-1	1.10000	0.02809	
			Iron Oxide	1309-37-1	0.10000	0.00255	
			Titanium Oxide	13463-67-7	0.10000	0.00255	
20/40 Mesh	Nabors Completion and Production Services	Bulk Sand West Virginia	Crystalline Silica	14808-60-7	99.90000	0.71772	
			Aluminum Oxide	1344-28-1	1.10000	0.00790	

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			Titanium Oxide	13463-67-7			0.10000	0.00072	
HCL Acid 22 Baume			Iron Oxide	1309-37-1			0.10000	0.00072	
	Nabors Completion and Production Services	Bulk Acid							
			Water	7732-18-5			87.50000	0.54794	
			Hydrogen Chloride	7641-01-1			18.00000	0.11272	
WFR-3B	Nabors Completion and Production Services	Friction Reducer							
			Hydrotreated Light Distillate	64742-47-8			30.00000	0.02755	
			Mineral Spirits	8052-41-3			10.00000	0.00919	
			Ethoxylated Alcohols	68551-12-2			4.00000	0.00367	
KR-153-SL	Nabors Completion and Production Services	Biocides							
			Polyethylene Glycol	25322-68-3			50.00000	0.01279	
			2,2-Dibromo-3-nitropropionamide	10222-01-2			20.00000	0.00512	
Super TSC LT	Nabors Completion and Production Services	Paraffin & Scale Additives							
			Water	7732-18-5			60.00000	0.01532	
Super Max II	Nabors Completion and Production Services	Surfactant & Foamer							
			Ethylhexanol	104-76-7			40.00000	0.00330	
			Isopropyl Alcohol	67-63-0			30.00000	0.00248	
			Glycol Ethers	111-76-2			7.00000	0.00058	
CaCl2	Nabors Completion and Production Services	Perforation							
LSG-100L	Nabors Completion and Production Services	Gelling Agents							
			Calcium chloride	10043-52-4			100.00000	0.00479	
Acid Inhibitor AL-2	Nabors Completion and Production Services	Acid Corrosion Inhibitor							
			Petroleum Distillates	64742-47-8			60.00000	0.00328	
			Propargyl Alcohol	107-19-7			40.00000	0.00050	
			Isopropyl Alcohol	67-63-0			40.00000	0.00050	
			Glycol Ethers	111-76-2			40.00000	0.00050	
			Ethoxylated Nonylphenol	68412-54-4			13.00000	0.00016	
			Tar bases	72480-70-7			10.00000	0.00013	
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.									
		Friction Reducer					25.00000	0.02296	
		Paraffin & Scale Additives	Propylene Glycol	57-55-6			15.00000	0.00383	
			proprietary	proprietary					

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Dept. of Environmental Protection

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		proprietary	proprietary	15.00000	0.00383
		proprietary	proprietary	15.00000	0.00383
		proprietary	proprietary	15.00000	0.00383
	Gelling Agents				
		Guar Gum	9000-30-0	50.00000	0.00271
		Suspending Agent	14808-60-7	2.00000	0.00011
		Surfactant	68439-51-0	2.00000	0.00011
	Surfactant & Foamer				
		proprietary	proprietary	7.00000	0.00058

* 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)

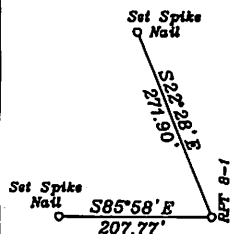
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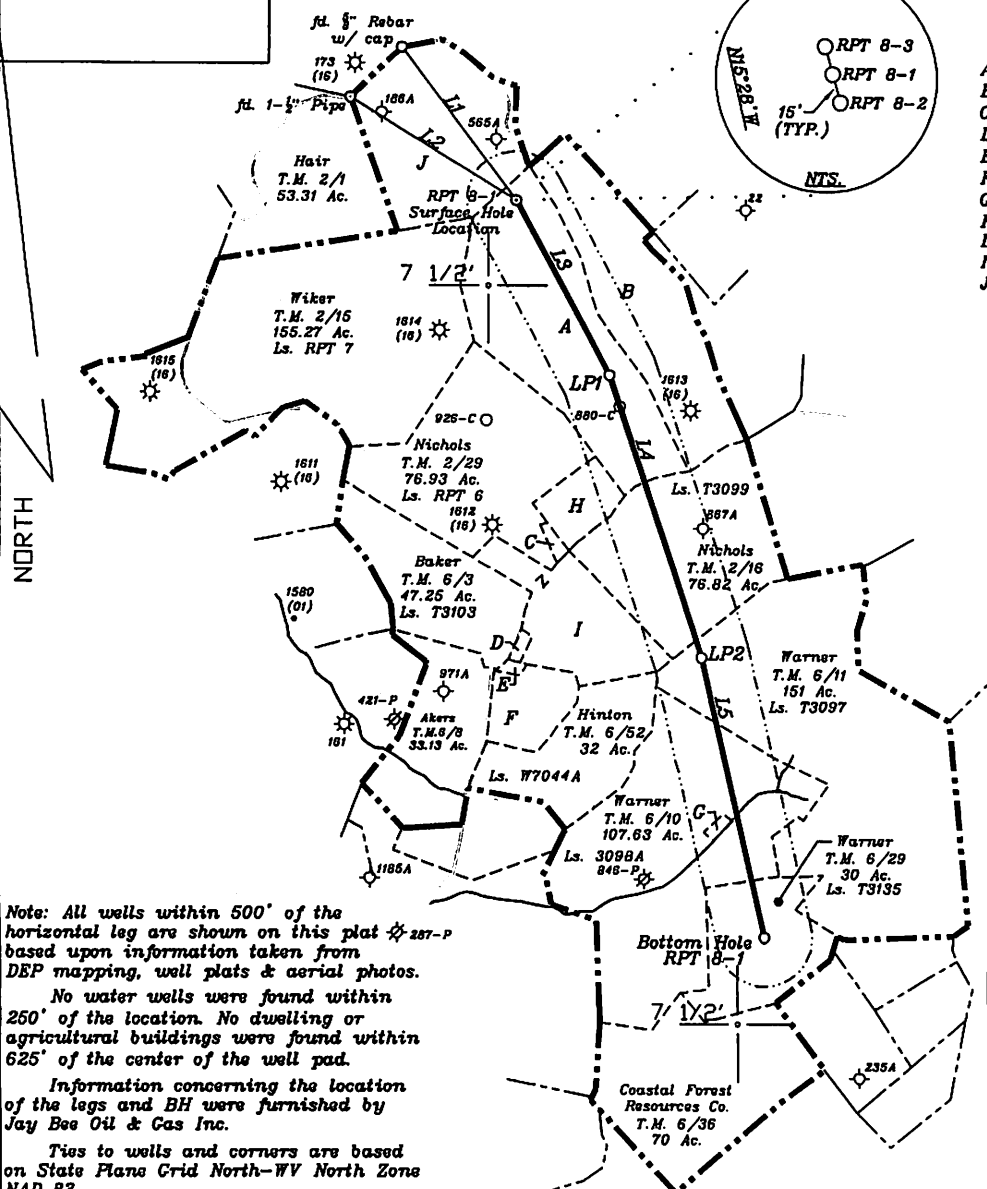
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References



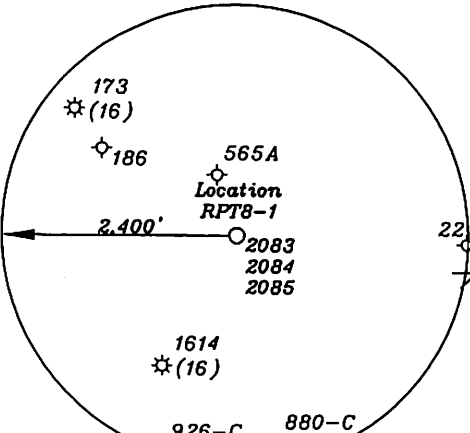
Surface Hole Location UTM NAD 83(Meters)-4370417.4 N, 518394.8 E Geo. NAD 83-39.483159 N, 80.786106 W State Plane NAD 83-360692.3 N, 1605511.6 E	Landing Point 2 UTM NAD 83(Meters)-4368990.2 N, 519003.9 E Geo. NAD 83-39.470287 N, 80.779065 W State Plane NAD 83-355975.8 N, 1607432.0 E
Landing Point 1 UTM NAD 83(Meters)-4369869.3 N, 518696.2 E Geo. NAD 83-39.478214 N, 80.782617 W State Plane NAD 83-358877.2 N, 1606470.7 E	Bottom Hole Location UTM NAD 83(Meters)-4368112.8 N, 519216.2 E Geo. NAD 83-39.462376 N, 80.776621 W State Plane NAD 83-353085.0 N, 1608080.8 E



- A-Hair T.M. 2/17 85 Ac.
- B-Sherwood T.M. 2/18 62.5 Ac.
- C-Nichols T.M. 6/4 1.25 Ac.
- D-Cole T.M. 6/5 1 Ac. Ls. T3100A1
- E-Hostuttler T.M. 6/6 0.38 Ac.
- F-Catrell T.M. 6/7 14.62 Ac. Ls. T3101
- G-Warner T.M. 6/10.1 0.368 Ac.
- H-D. Nichols et al T.M. 2/19 12.5 Ac. Ls. T3099A
- I-Liller T.M. 6/3.1 15 Ac. Ls. T3180
- J-Hair T.M. 2/2 53.75 Ac.

NUMBER	DIRECTION	DISTANCE
L1	S31°21' E	1,917'
L2	S68°27' E	1,999'
L3	S27°51' E	2,053'
L4	S18°20' E	3,056'
L5	S12°39' E	2,963'

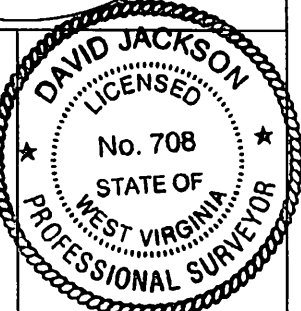
Note: All wells within 500' of the horizontal leg are shown on this plat based upon information taken from DEP mapping, well plats & aerial photos.
No water wells were found within 250' of the location. No dwelling or agricultural buildings were found within 625' of the center of the well pad.
Information concerning the location of the legs and BH were furnished by Jay Bee Oil & Gas Inc.
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

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
(SIGNED) David J Jackson
R.P.E. _____ L.L.S. 708



STATE OF WEST VIRGINIA
Division of Environmental Protection
OFFICE OF OIL AND GAS

DATE April 21, 2015
OPERATOR'S WELL NO. RPT 8-1
API WELL NO. _____

WELL TYPE: OIL GAS LIQUID INJECTION X WASTE DISPOSAL _____ STATE 47 COUNTY 095 PERMIT 02085
(IF 'GAS') PRODUCTION X STORAGE _____ DEEP _____ SHALLOW X

LOCATION: ELEVATION 1,244.5' WATER SHED Big Run
DISTRICT McElroy COUNTY Tyler
QUADRANGLE Shirley 7 1/2'

SURFACE OWNER Jack Hair et al ACREAGE 85 ac
OIL & GAS ROYALTY OWNER Jack Hair(85 Ac.), Duane Nichols(76.82 Ac.), Harold T. Warner(151 Ac.), Richard Warner(107.83Ac.) & (30 Ac.)

LEASE NO. RPT 8, T3099, T3097, T3098A & T3135

PROPOSED WORK: DRILL X CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
TARGET FORMATION Marcellus ESTIMATED DEPTH 7,500'+ Horizontal leg
WELL OPERATOR Jay Bee Oil & Gas, Inc. DESIGNATED AGENT Randy Broda
ADDRESS 1720 Rt. 22 East Union, NJ 07083 ADDRESS Rt. 1 Box 5 Cairo, WV 26337

06/12/2015

NORTH

LONGITUDE 80-45-00 W BH

LONGITUDE 80-47-00 W TH

Top Hole 13,624'

Top Hole 6,018'