

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

API 47-09-00161 County BROOKE District BUFFALO
Quad STUEBENVILLE Pad Name MILDRED MANI BRK Field/Pool Name PANHANDLE
Farm name MILDRED MANI & ERIK BAUER Well Number 201H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY LLC
Address PO BOX 12359 City SPRING State TX Zip 77397-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4456024.670 Easting 534899.662
Landing Point of Curve Northing 4455848.165 Easting 534274.111
Bottom Hole Northing 4457731.669 Easting 533536.176

Elevation (ft) 1073' 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)
SOBM

Date permit issued 07/30/2015 Date drilling commenced 08/09/2015 Date drilling ceased 10/12/2015
Date completion activities began 12/07/2015 Date completion activities ceased 01/08/2016
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 300' Open mine(s) (Y/N) depths N
Salt water depth(s) ft ~~53'~~ 82' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 140' Cavern(s) encountered (Y/N) depths Received
Is coal being mined in area (Y/N) N

Office of Oil & Gas

Reviewed by:
JUL 05 2016

AX 10/21/2016
RBDMG

APPROVED

NAME: Jackie Thonta

DATE: 7/5/16

API 47-09 - 00161 Farm name MILDRED MANI & ERIK BAUER Well number 201H

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	28	20	190'	N	J-55/ 94#		Y
Surface	17.5	13.375	418'	N	J-55/ 54.50#		Y, 22 BBLS TO SURFACE
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1510'	N	J-55/ 40#		Y, 16 BBLS TO SURFACE
Intermediate 2							
Intermediate 3							
Production	8.50	5.5	13172'	N	P-110/20#		Y
Tubing		2.375	6398'	N	P-110/4.70#		N
Packer type and depth set		N/A					

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	A	435	15.7	1.29	561	SURFACE	24
Surface	A	465	15.6	1.20	558	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	A	570	15.6	1.19	678.3	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	A	2370	15.6	1.19	2820.3	SURFACE	24
Tubing							

Drillers TD (ft) 13172' Loggers TD (ft) 13172'

Deepest formation penetrated MARCELLUS Plug back to (ft) NA

Plug back procedure NA

Kick off depth (ft) 5499.9'

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 _____

ALL CASING STRINGS RAN WITH A CENTRALIZER AT A MINIMUM OF 1 PER EVERY 3RD JOINT OF CASING

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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API 47- 09 - 00161

Farm name MILDRED MANI & ERIK BAUER Well number 201H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>5604'</u> TVD	<u>6306'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1168 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 1618.146 mcfpd Oil 279.13 bpd NGL _____ bpd Water 447.76 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	
	<u>0</u>		<u>0</u>		
		SEE ATTACHED			

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING
 Address PO BOX 12359 City SPRING State TX Zip 77389-4954

Logging Company NINE ENERGY SERVICES
 Address 16945 NORTHCHASE DR, STE 1600 City HOUSTON State TX Zip 77060

Cementing Company SCHLUMBERGER
 Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77478

Stimulating Company DOWELL SCHLUMBERGER
 Address 1121 BUSCHONG ST City HOUSTON State TX Zip 77039

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-7632
 Signature  Title Sr. Regulatory Analyst Date 09/30/2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry 05 2016

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10/21/2016

WR-36
Rev. 5/08

Date: 06/30/2016
Operators Well Number: MILDRED MANI BRK 201H
API Well No: 47-09 - 00161

**State of West Virginia
Department of Environmental Protection
Office of Oil and Gas**

Well Operator's Report of
Initial Gas-Oil Ratio

Well Operator SWN PRODUCTION COMPANY LLC Designated Agent _____
Address PO BOX 12359 Address _____
SPRING, TX 77391-2359 _____

Geological Target Formation: MARCELLUS Depth 5604' TVD/6306' MD feet
Perforation Interval 6454' - 13048' MD feet

Guidelines for testing:

1. A minimum of gas vented or flared.
2. A 24 hour pre-flow into pipelines or tanks.
3. Uniform producing rate during the 24 hour test per test period.
4. Measurement standards as for Form WR-39, "Report of Annual Production" (see 35CSR4-15)
5. Separate Form WR-36 for each producing formation in a multiple completion.

TEST DATA

Start of Test Date	Time	End of Test Date	Time	Duration of Test
Tubing Pressure	Casing Pressure	Separator Pressure	Separator Temperature	
Oil Production During Test	Gas Production During Test	Water Production During Test		
BBLs	MCF	BBLs	-Salinity	
Oil Gravity	Producing Method (flowing, pumping, gas lift etc.)			
API				

GAS PRODUCTION

Measurement Method		Positive Choke <input checked="" type="checkbox"/>
Flange Tap <input type="checkbox"/> Pipe Tap <input type="checkbox"/> L-10 <input type="checkbox"/>		Positive flow prover <input type="checkbox"/>
Orifice diameter	Pipe Diameter (inside)	Nominal Choke Size inches
		18
Differential Pressure range	Max. Static pressure range	Prover and Orifice diameter - inches
Differential		Static
Gas Gravity (Air = 1.0)	Flowing Temperature	Gas Temperature
Measured	Estimated	
24 Hour Coefficient	24 Hour coefficient pressure PSIA	

TEST RESULTS

Daily Oil	Daily Water	Daily Gas	Gas-Oil Ratio
279.13	447.76	1618.146	

SWN PRODUCTION COMPANY LLC
Well Operator
BY Elizabeth Gee
ITS: Designated Representative

Elizabeth Gee
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JUL 05 2016 10/21/2016

MILDRED MANI BRK 201 - STIMULATION INFORMATION

STAGE NUM	Stim 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
1	12/7/2015	2	7,203	8,077	4,998	700,080	9,977	
2	12/7/2015	2	7,262	7,617	3,951	699,420	10,016	
3	12/8/2015	2	7,118	7,480	4,557	701,520	9,978	
4	12/8/2015	2	7,156	7,608	4,168	700,340	10,032	
5	12/8/2015	2	7,212	7,966	4,666	699,920	9,659	
6	12/8/2015	2	7,248	7,991	4,234	688,680	9,626	
7	12/9/2015	2	7,265	8,579	3,893	701,620	10,961	
8	12/10/2015	2	7,627	8,818	4,281	471,600	8,409	
9	12/9/2015	2	7,104	8,099	4,716	701,060	9,926	
10	12/9/2015	2	7,466	9,503	4,345	701,520	14,401	
11	12/10/2015	2	7,026	7,804	4,140	695,120	10,108	
12	12/10/2015	2	7,028	8,262	4,529	704,600	9,806	
13	12/10/2015	2	7,196	8,301	4,641	701,880	9,680	
14	12/11/2015	2	6,763	7,627	4,390	696,180	10,228	
15	12/11/2015	2	6,628	7,276	4,112	700,200	9,751	
16	12/11/2015	2	6,806	7,307	4,759	697,820	9,710	
17	12/12/2015	2	6,764	7,181	4,252	700,440	10,042	
18	12/12/2015	2	6,506	7,891	4,140	699,380	9,646	
19	12/12/2015	2	6,862	8,578	4,164	699,280	9,737	
20	12/13/2015	2	6,509	7,426	4,003	702,320	9,617	
21	12/13/2015	2	6,509	7,633	4,141	698,320	9,626	
22	12/13/2015	2	6,517	7,544	4,362	699,740	9,492	
23	12/13/2015	2	6,261	7,647	4,098	696,760	9,563	
24	12/14/2015	2	6,353	7,247	4,641	703,180	9,590	
TOTAL			6,933	9,503	4,341	16,560,980	239,581	

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MILDRED MANI BRK 201H

LITHOLOGY/FORMATION	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, TVD (FT)	TOP DEPTH, MD (FT)	BOTTOM DEPTH, MD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	N.A.	300.00	N.A.	300.00	
Top of Salt Water	802.00	N.A.	802.00	N.A.	
Pittsburgh Coal	133.00	140.00	133.00	140.00	
Big Injun (ss)	1209.24	1736.60	1215.00	1754.00	
Berea (siltstone)	1736.60	5122.86	1754.00	5545.20	
Rhinestreet (shale)	5122.86	5360.36	5545.20	5821.33	
Cashaqua (shale)	5360.36	5412.44	5821.33	5887.94	
Middlesex (shale)	5412.44	5459.77	5887.94	5952.79	
Burket (shale)	5459.77	5482.33	5952.79	5986.13	
Tully (ls)	5482.33	5536.03	5986.13	6072.45	
Mahantango (shale)	5536.03	5604.74	6072.45	6306.50	
Marcellus (shale)	5604.74	5641.62	6306.50	9647.58	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/23/2015
Job End Date:	12/14/2015
State:	West Virginia
County:	Brooke
API Number:	47-009-00161-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Mildred Mani 201H
Longitude:	-80.58962222
Latitude:	40.25395093
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	5,622
Total Base Water Volume (gal):	10,062,402
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
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.							
Proppant Transport	Schlumberger	Corrosion Inhibitor, Acid Corrosion Inhibitor, Acid Breaker, Gelling Agent, Friction Reducer, Fluid Loss Additive, Propping Agent					
			Water (Including Mix Water Supplied by Client)*	NA		83.19589	
			Quartz, Crystalline silica	14808-60-7	98.70141	16.58589	
			Hydrochloric acid	7647-01-0	0.94002	0.15796	
			Ammonium sulfate	7783-20-2	0.18019	0.03028	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.13299	0.02235	
			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.01425	0.00239	
			Guar gum	9000-30-0	0.01308	0.00220	
			Urea	57-13-6	0.00875	0.00147	
			Sodium sulfate	7757-82-6	0.00204	0.00034	
			Non-crystalline silica (impurity)	7631-86-9	0.00185	0.00031	

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		Propan-2-ol	67-63-0	0.00177	0.00030
		Fatty acid, tall-oil reaction products with acetophenone	68188-40-9	0.00069	0.00012
		Alcohols, C12-C16, ethoxylated	68551-12-2	0.00058	0.00010
		Isodecanol w/6-7 Moles Ethylene Oxide	26183-52-8	0.00039	0.00007
		2-Propenamid (impurity)	79-06-1	0.00044	0.00007
		Diammonium peroxodisulphate	7727-54-0	0.00033	0.00006
		Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00023	0.00004
		Cinnamaldehyde	104-55-2	0.00025	0.00004
		Dimethyl siloxanes and silicones	63148-62-9	0.00012	0.00002
		Dodecyl poly(oxyethylene) ether	9002-92-0	0.00003	0.00001
		Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00004	0.00001
		Methanol	67-56-1	0.00006	0.00001
		Amines, tallow alkyl, ethoxylated	61791-26-2	0.00007	0.00001
		Fatty acids, tall-oil	61790-12-3	0.00004	0.00001
		Propargyl alcohol	107-19-7	0.00001	
		Glycols, polyethylene, monotetradecyl ether	27306-79-2	0.00002	
		Dodecamethylcyclohexasiloxane	540-97-6	0.00001	
		Hexadec-1-ene	629-73-2		
		Octamethylcyclotetrasiloxane	556-67-2	0.00001	
		Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	0.00002	
		Decamethyl cyclopentasiloxane	541-02-6	0.00001	
		Formaldehyde	50-00-0		
		Copper(II) sulfate	7758-98-7	0.00001	
		1-Octadecene (C18)	112-88-9		
		Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	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)

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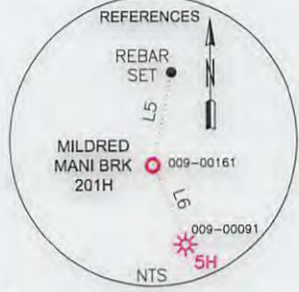
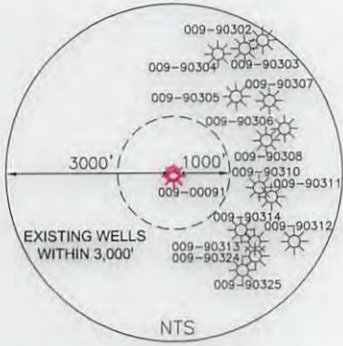
320 O'Bryan Lane • Van Buren, AR 72956
Office: 479.474.7916 • Fax: 479.474.2450
Surveying • handa-inc.com

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 89°04'17" E	1450.71'	SHL TO LANDMARK	FOUND IRON PIPE
L2	S 47°56'26" E	995.76'	SHL TO LANDMARK	FOUND IRON PIPE
L3	S 74°14'35" W	2132.46'	SHL TO LPL	
L4	N 21°23'41" W	6636.61'	LPL TO BHL	
L5	S 23°02'35" E	24.86'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L6	S 23°20'24" E	24.51'	SHL TO REF. PNT.	MILDRED MANI BRK 5H WELL HEAD 009-00091

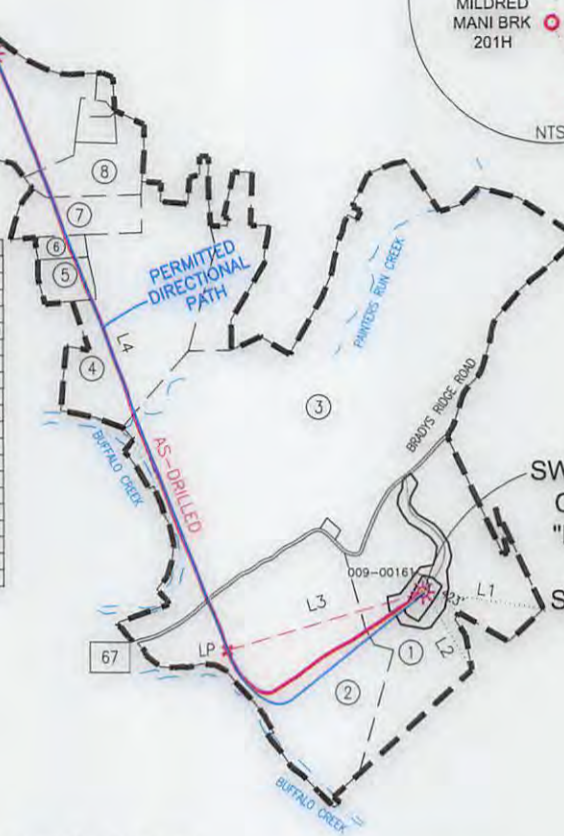
Latitude: 40°17'30"

Longitude: 80°35'00"

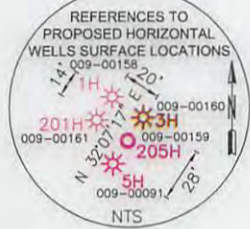
GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT



TRACT	SURFACE OWNER (S)	ROYALTY OWNER (R)	TAX PARCEL	ACRES	LEASE NUMBER
1	ERIC PHILIP BAUER (S/R)		B27-26	95.00	1-329350-002
1	MILDRED MANI (S/R)		B27-26	95.00	1-324207-001
1	MILES BAUER (R)		B27-26	95.00	1-324207-002
2	STARVAGGI INDUSTRIES (S)		B27-27	62.61	
2	CORNELIA JEAN WAUGH (R)		B27-27	62.61	47-000527-000
3	ERIC PHILIP BAUER (S/R)		B27-21	204.94	1-329350-002
3	MILDRED MANI (S/R)		B27-21	204.94	1-324207-001
3	MILES BAUER (R)		B27-21	204.94	1-324207-002
4	DELIA DAVIS BALLOG (S/R)		B27G-15	75.84	47-000554-001
4	THOMAS A. LOVE (S/R)		B27G-15	75.84	47-000554-002
5	BONNIE LEE LUKACENA ET AL (S)		B27L-24	9.22	
5	SHANNON SCHUETZNER (R)		B27L-24	9.22	1-382416-001
5	BONNIE LEE LUKACENA & JOHN N. LUKACENA (R)		B27L-24	9.22	1-382416-002
5	SHEY SCHUETZNER (R)		B27L-24	9.22	1-382416-003
5	SHAYNE SCHUETZNER (R)		B27L-24	9.22	1-382416-004
5	SHELBY CARRELL (R)		B27L-24	9.22	1-382416-005
6	JAMES HENRY SCHAFFER, JR (S/R)		B27L-23	3.30	1-358179-000
7	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)		B27G-60	15.25	1-325792-000
8	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)		B27G-64	13.14	1-329395-000
9	SAMUEL H. HUBBARD & SHELBA HUBBARD (S/R)		B27-2	43.74	1-325799-000



SWN PRODUCTION COMPANY, LLC
"MILDRED MANI BRK 201H"
SURFACE HOLE
ELEV. 1073.0'



SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,456,024.670 EASTING: 534,899.662
LANDING POINT (LP): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,455,848.165 EASTING: 534,274.111
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,457,731.669 EASTING: 533,536.176

NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 1000 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2315

2-2-16



COMPANY: **SWN** Production Company, LLC

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)	COMPANY: SWN Production Company, LLC MILDRED MANI BRK OPERATOR'S WELL #: 201H API WELL #: 47 09 00161 STATE COUNTY PERMIT
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WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: BUFFALO CREEK ELEVATION: 1073.0'

DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: STUEBENVILLE EAST WV.

SURFACE OWNER: MILDRED MANI & ERIK PHILIP BAUER ACREAGE: 95.00±

OIL & GAS ROYALTY OWNER: MILDRED MANI & ERIK PHILIP BAUER ACREAGE: 95.00±

DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

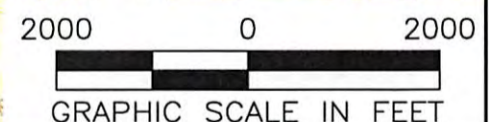
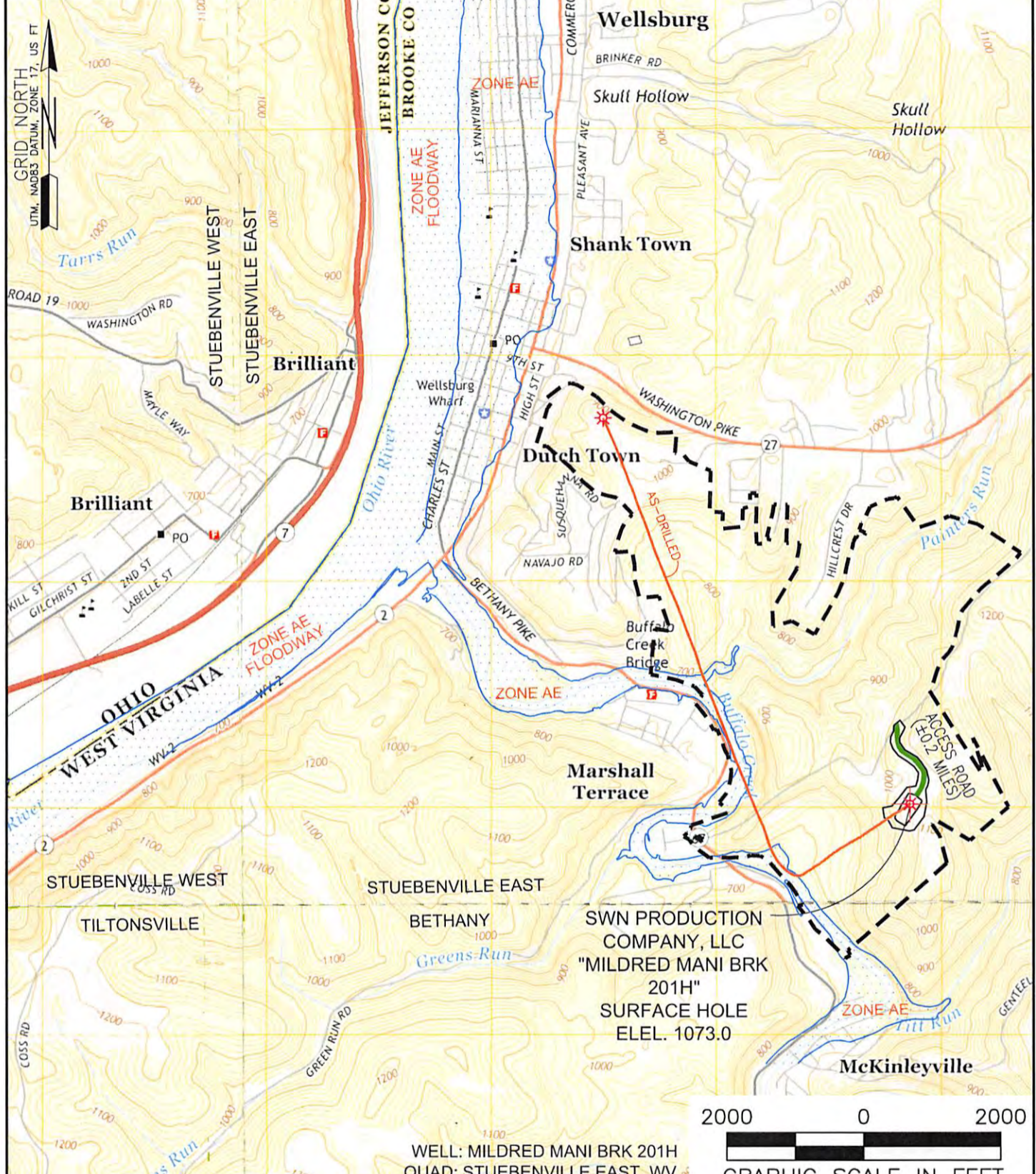
CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,675' TVD 13,172' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378

DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:	REVISIONS:	DATE: 10-21-2015
<ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR 	<ul style="list-style-type: none"> --- LEASE BOUNDARY --- AS-DRILLED PATH --- PERMITTED DIRECTIONAL PATH --- ABANDONED PATH 	<ul style="list-style-type: none"> △ REVISED TVD & TMD, 07-22-2015 △ REVISED SHL, LP, TVD, TMD & BHL FOR ASDRILLED DIRECTIONAL PATH, 01-22-2016 △ REVISED ASDRILLED & PERMITTED DIRECTIONAL PATH COLOR, ADDED LP COORDINATES, 01-29-2016
		DRAWN BY: J. HARNESS SCALE: 1" = 2000' DRAWING NO: 59393 WELL LOCATION PLAT



WELL: MILDRED MANI BRK 201H
QUAD: STUEBENVILLE EAST, WV

NAME AND DISTANCE TO THE NEAREST STREAM: TITT RUN IS LOCATED ±0.31 MILES SOUTHEAST OF THE CENTER OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.		COMPANY: SWN Production Company, LLC		SWN Production Company™		
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET				OPERATOR'S MILDRED MANI BRK		WELL #: 201H		
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM UNINCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBERS 54009C0090 D, 54009C0130 D, & 54009C0088 D; EFFECTIVE DATE APRIL, 19, 2010.				LOCATION: BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA				10/21/2016
LEGEND: <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR ⊙ EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD 				SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.253951° LONGITUDE: -80.589622°		BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.269385° LONGITUDE: -80.605565°		
REVISIONS:				DATE: 10-21-2015		DRAWN BY: J. HARNES		
						SCALE: 1" = 2000'		
						DRAWING NO: 59393		
						TOPOGRAPHIC MAP		



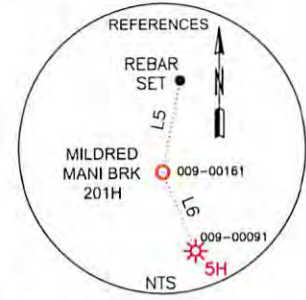
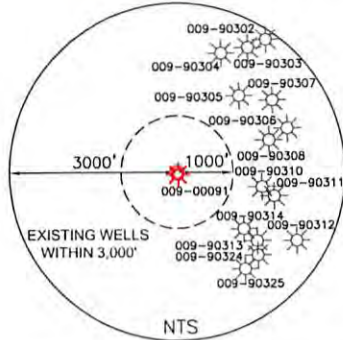
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LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 89°04'17" E	1450.71'	SHL TO LANDMARK	FOUND IRON PIPE
L2	S 47°56'26" E	995.76'	SHL TO LANDMARK	FOUND IRON PIPE
L3	S 74°14'35" W	2132.46'	SHL TO LPL	
L4	N 21°23'41" W	6636.81'	LPL TO BHL	
L5	S 23°02'35" E	24.86'	SHL TO REF. PNT.	1/2" Ø REBAR SET
L6	S 23°20'24" E	24.51'	SHL TO REF. PNT.	MILDRED MANI BRK 5H WELL HEAD 009-00091

Latitude: 40°17'30"

Longitude: 80°35'00"

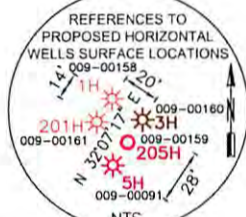
GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT



TRACT	SURFACE OWNER (S) ROYALTY OWNER (R)	TAX PARCEL	ACRES	LEASE NUMBER
1	ERIC PHILIP BAUER (S/R)	B27-26	95.00	1-329350-002
1	MILDRED MANI (S/R)	B27-26	95.00	1-324207-001
1	MILES BAUER (R)	B27-26	95.00	1-324207-002
2	STARVAGGI INDUSTRIES (S)	B27-27	62.61	
2	CORNELIA JEAN WAUGH (R)	B27-27	62.61	47-000527-000
3	ERIC PHILIP BAUER (S/R)	B27-21	204.94	1-329350-002
3	MILDRED MANI (S/R)	B27-21	204.94	1-324207-001
3	MILES BAUER (R)	B27-21	204.94	1-324207-002
4	DELIA DAVIS BALLOG (S/R)	B27G-15	75.84	47-000554-001
4	THOMAS A. LOVE (S/R)	B27G-15	75.84	47-000554-002
5	BONNIE LEE LUKACENA ET AL (S)	B27L-24	9.22	
5	SHANNON SCHUETZNER (R)	B27L-24	9.22	1-382416-001
5	BONNIE LEE LUKACENA & JOHN H. LUKACENA (R)	B27L-24	9.22	1-382416-002
5	SHEY SCHUETZNER (R)	B27L-24	9.22	1-382416-003
5	SHAYNE SCHUETZNER (R)	B27L-24	9.22	1-382416-004
5	SHELBY CARRELL (R)	B27L-24	9.22	1-382416-005
6	JAMES HENRY SCHAFFER, JR (S/R)	B27L-23	3.30	1-358179-000
7	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)	B27G-60	15.25	1-325792-000
8	DAVID M. HUBBARD & NANCY L. HUBBARD (S/R)	B27G-64	13.14	1-329395-000
9	SAMUAL H. HUBBARD & SHELBA HUBBARD (S/R)	B27-2	43.74	1-325799-000



SWN PRODUCTION COMPANY, LLC
"MILDRED MANI BRK 201H"
SURFACE HOLE
ELEV. 1073.0'



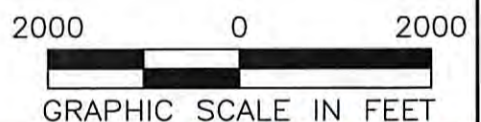
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,456,024.670 EASTING: 534,899.662
LANDING POINT (LP): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,455,848.165 EASTING: 534,274.111
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,457,731.669 EASTING: 533,536.176

NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 1000 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.



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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



P.S. 2315

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	COMPANY: SWN Production Company, LLC MILDRED MANI BRK OPERATOR'S WELL #: 201H API WELL #: 47 09 00161 STATE COUNTY PERMIT
	WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	WATERSHED: BUFFALO CREEK DISTRICT: BUFFALO COUNTY: BROOKE SURFACE OWNER: MILDRED MANI & ERIK PHILIP BAUER OIL & GAS ROYALTY OWNER: MILDRED MANI & ERIK PHILIP BAUER

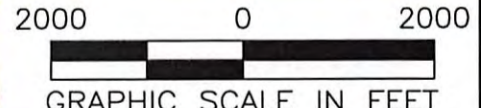
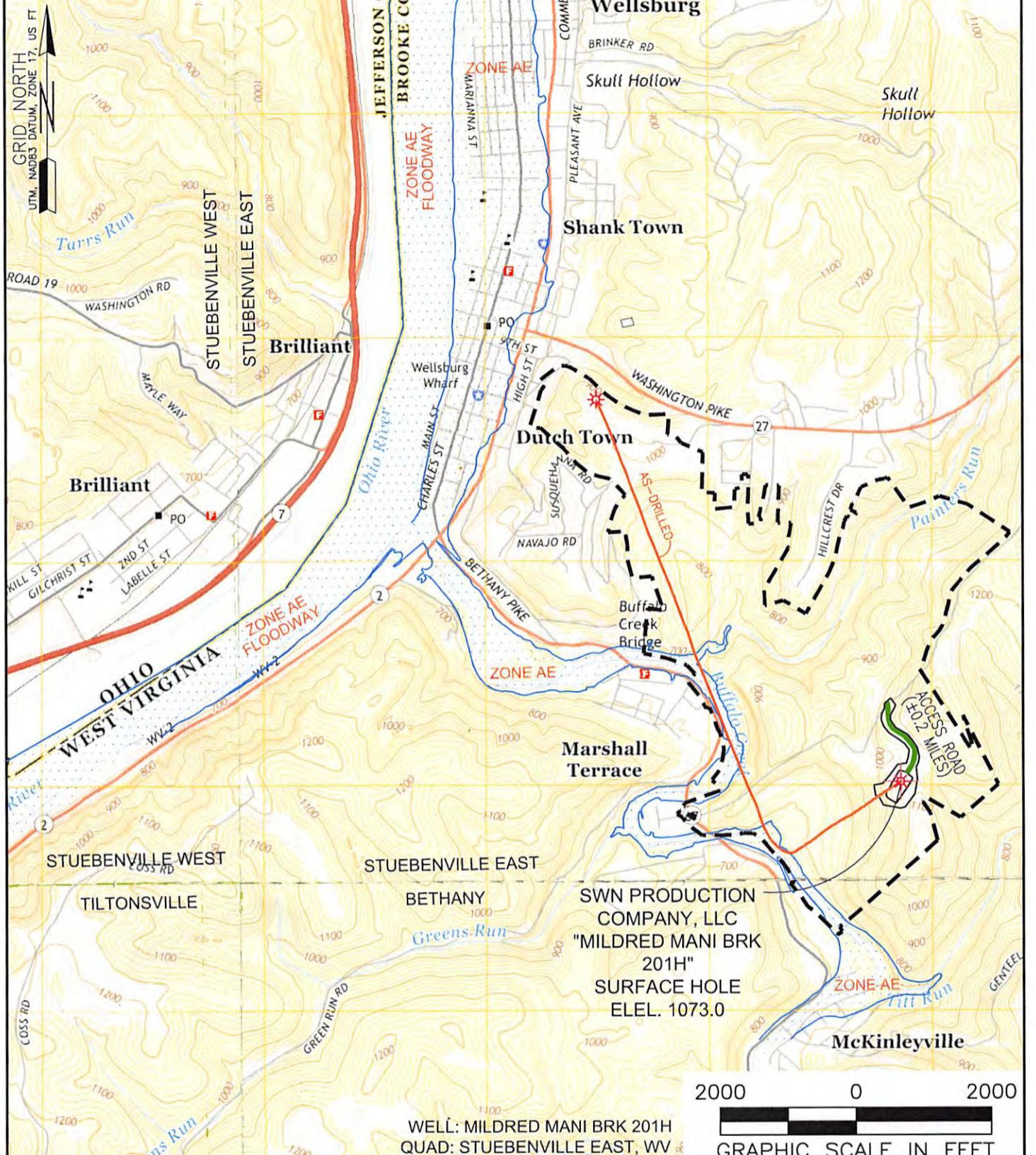
DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED TARGET FORMATION: MARCELLUS	ESTIMATED DEPTH: 5,675' TVD 13,172' TMD 10/21/2016
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WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378	DESIGNATED AGENT: DEE SOUTHALL ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378
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LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR	--- LEASE BOUNDARY --- AS-DRILLED PATH --- PERMITTED DIRECTIONAL PATH --- DIRECTIONAL PATH --- ABANDONED PATH	REVISIONS: △ REVISED TVD & TMD, 07-22-2015 △ REVISED SHL, LP, TVD, TMD & BHL FOR AS-DRILLED DIRECTIONAL PATH, 01-22-2016 △ REVISED AS-DRILLED & PERMITTED DIRECTIONAL PATH COLOR, ADDED LP COORDINATES. 01-29-2016	DATE: 10-21-2015 DRAWN BY: J. HARNES SCALE: 1" = 2000' DRAWING NO: 59393 WELL LOCATION PLAT
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○ EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD				DATE: 10-21-2015		DRAWN BY: J. HARNESS SCALE: 1" = 2000' DRAWING NO: 59393 TOPOGRAPHIC MAP	

10/21/2016