

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

API 47 - 051 - 01873 County MARSHALL District LIBERTY
Quad CAMERON 7 1/2' Pad Name GLADYS BRIGGS-MSH-PAD1 Field/Pool Name VICTORY FIELD
Farm name JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS & JOHN DEAN BRIGGS Well Number GLADYS BRIGGS MSH 205H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,401,986.828 Easting 532,903.766
Landing Point of Curve Northing 4,402,586.535 Easting 533,319.514
Bottom Hole Northing 4,404,365.513 Easting 531,807.709

Elevation (ft) 1382.2' 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 1/8/2016 Date drilling commenced 11/16/2016 Date drilling ceased 01/04/2017
Date completion activities began 03/25/2017 Date completion activities ceased 4/15/2017
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 733' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,221' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,100' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

NAME: Jean Webster
DATE: 8/28/17

Reviewed by:

Jean Webster
09/15/2017

API 47-051 - 01873 Farm name JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS & JOHN DEAN BRIGGS Well number GLADYS BRIGGS MSH 205H

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	24	20	126	NEW	J-55/94#		Y
Surface	17.5	13.375	823	NEW	J-55/54.5#		Y; 11 BBLs RETURNED
Coal	SEE INTERMEDIATE						
Intermediate 1	12.25	9.625	2652	NEW	J-55/36#		Y; 62 BBLs RETURNED
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	15871	NEW	P-110/20#		Y
Tubing		2.375	7955	NEW	L-80/4.7#		N
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	CLASS A	GROUT CEMENT				SURFACE	24
Surface	CLASS A	421/636	15.60	1.20/1.18	505.2/750.48	SURFACE	8
Coal	SEE INTERMEDIATE						
Intermediate 1	CLASS A	1155	16.0	1.12	1293.6	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	1036/1748	15.60	1.22/1.19	1263.92/2080.12	SURFACE	24
Tubing							

Drillers TD (ft) 15,871' Loggers TD (ft) 15,871'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A

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Kick off depth (ft) 6,794'

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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 _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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- 051 - 01873 Farm name JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS & JOHN DEAN BRIGGS Well number GLADYS BRIGGS MSH 205H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
MARCELLUS	7133.49'	TVD	7950.11' MD
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,900 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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)
	0		0		
	SEE	ATTACHMENT	3		
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					WV Department of Environmental Protection

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company WEATHERFORD
Address 2000 ST. JAMES PLACE City HOUSTON State TX Zip 77056

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

Stimulating Company KEANE FRAC
Address 2121 SAGE ROAD City HOUSTON State TX Zip 77056

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-7632
Signature  Title Staff Regulatory Analyst Date 07/11/2017

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

GLADYS BRIGGS MSH 205H**Perforation Stage Summary**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	3/25/2017	15,553	15,757	42
2	3/26/2017	15,322	15,510	42
3	3/26/2017	15,039	15,269	42
4	3/26/2017	14,784	14,971	42
5	3/26/2017	14,503	14,700	42
6	3/27/2017	14,245	14,453	42
7	3/27/2017	13,982	14,196	42
8	3/27/2017	13,733	13,929	42
9	3/27/2017	13,480	13,671	42
10	3/27/2017	13,243	13,413	42
11	3/28/2017	12,981	13,151	42
12	3/28/2017	12,706	12,907	42
13	3/28/2017	12,436	12,635	42
14	3/28/2017	12,115	12,339	42
15	3/28/2017	11,856	12,051	42
16	3/29/2017	11,589	11,785	42
17	3/31/2017	11,325	11,542	42
18	3/31/2017	11,093	11,275	42
19	3/31/2017	10,837	11,029	42
20	4/1/2017	10,565	10,775	42
21	4/1/2017	10,319	10,499	42
22	4/1/2017	10,063	10,266	42
23	4/1/2017	9,797	10,013	42
24	4/2/2017	9,511	9,734	42
25	4/2/2017	9,243	9,443	42
26	4/2/2017	8,987	9,175	42
27	4/2/2017	8,765	8,921	42
28	4/2/2017	8,471	8,707	54
29	4/3/2017	8,225	8,415	42
30	4/3/2017	7,969	8,152	42

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GLADYS BRIGGS MSH 205H

Frac Stage Summary

STAGE NUM	Stim Date	Amount of Proppant (lbs)	Amount of water bbls	Max Breakdown Pressure (PSI)	Ave Treatment Pressure (PSI)	ISIP (PSI)	Ave Pump Rate (BPM)	Amount of nitrogen/other
1	3/25/2017	497,260	11,204	9,006	8,637	4,664	74	
2	3/26/2017	377,440	6,774	9,184	8,646	4,964	78	
3	3/26/2017	483,920	7,917	8,944	8,539	4,615	74	
4	3/26/2017	495,620	7,991	8,896	8,515	4,598	77	
5	3/26/2017	502,020	7,521	8,874	8,358	5,348	77	
6	3/27/2017	501,120	7,587	8,918	8,529	4,586	81	
7	3/27/2017	505,520	7,576	9,107	8,387	5,032	78	
8	3/27/2017	497,060	7,617	8,702	8,096	4,604	77	
9	3/27/2017	499,720	7,166	8,787	8,462	4,935	80	
10	3/27/2017	499,020	7,378	8,966	8,522	5,484	84	
11	3/28/2017	433,840	6,732	9,173	8,367	5,834	80	
12	3/28/2017	485,340	7,036	9,221	8,468	5,030	81	
13	3/28/2017	499,680	7,846	9,221	8,468	4,192	81	
14	3/28/2017	495,770	7,583	8,840	8,521	5,563	80	
15	3/28/2017	503,340	7,474	8,779	8,419	4,572	91	
16	3/29/2017	500,500	7,753	8,558	8,224	4,590	84	
17	3/31/2017	490,620	7,504	8,605	8,232	4,505	85	
18	3/31/2017	503,373	7,356	8,713	8,337	5,104	85	
19	3/31/2017	503,348	7,216	8,638	8,021	4,967	89	
20	4/1/2017	498,460	7,152	8,648	8,005	4,560	92	
21	4/1/2017	502,720	7,308	8,889	8,202	4,598	93	
22	4/1/2017	502,500	6,979	8,807	8,265	4,866	86	
23	4/1/2017	503,620	7,136	8,582	7,934	5,069	90	
24	4/2/2017	498,120	7,523	8,475	8,198	5,197	90	
25	4/2/2017	490,620	7,148	8,533	8,125	4,716	90	
26	4/2/2017	489,990	7,100	8,564	8,226	4,889	97	
27	4/2/2017	492,950	6,699	8,778	8,185	4,977	94	
28	4/2/2017	499,740	6,864	8,432	7,944	4,865	99	
29	4/3/2017	500,900	6,734	8,587	8,244	4,987	99	
30	4/3/2017	498,620	7,402	8,528	8,048	4,892	100	

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Well Name:

GLADYS BRIGGS MSH 205H

47051018730000

LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	N/A	N/A	733.00	732.98	
Top of Salt Water	1221.00	1220.54	N/A	N/A	
Pittsburgh Coal	1100.00	1099.85	1109.00	1099.85	
Big Injun (ss)	2335.70	2332.00	2500.50	2496.00	
Berea (siltstone)	2851.00	2844.00	2897.00	2890.28	
Rhinestreet (shale)	6917.87	6465.47	7273.56	6761.87	
Cashaqua (shale)	7273.56	6761.87	7432.26	6882.71	
Middlesex (shale)	7432.26	6882.71	7576.79	6978.87	
Burket (shale)	7576.79	6978.87	7613.14	7000.65	
Tully (ls)	7613.14	7000.65	7657.09	7025.15	
Mahantango (shale)	7657.09	7025.15	7950.11	7133.49	
Marcellus (shale)	7950.11	7133.49	N/A	N/A	GAS

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/26/2017
Job End Date:	4/3/2017
State:	West Virginia
County:	Marshall
API Number:	47-051-01873-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Gladys Briggs 205H
Latitude:	39.76717300
Longitude:	-80.61583000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,195
Total Base Water Volume (gal):	9,201,268
Total Base Non Water Volume:	0



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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	SWN	Carrier/Base Fluid	Water	7732-18-5	100.00000	82.75720	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	15.90567	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	1.03179	None
			Hydrochloric Acid	7647-01-0	15.00000	0.18208	None
KFR-17	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	45.00000	0.02480	None
			ethanediol	107-21-1	10.00000	0.00551	None
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00110	None
			Alcohols, C12-16, ethoxylated	68213-24-1	2.00000	0.00110	None
KFR-28	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.01440	None
			Oxyalkylated alcohol	Proprietary	5.00000	0.00240	None
			ammonium chloride	12125-02-9	5.00000	0.00240	None

KFEAC-30	Keane	Iron Control					
			acetic acid	64-19-7	60.00000	0.00307	None
			Citric acid	77-92-9	40.00000	0.00204	None
KGFR-1	Keane	Friction Reducer					
			Acrylamide modified polymer	Proprietary	30.00000	0.00376	None
			Modified amino compound	Proprietary	5.00000	0.00063	None
KAI-13	Keane	Acid Inhibitor					
			ethanediol	107-21-1	40.00000	0.00101	None
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00051	None
			Ethoxylated alcohol	68131-39-5	10.00000	0.00025	None
			Cinnamaldehyde	104-55-2	10.00000	0.00025	None
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00025	None
			formic acid	64-18-6	10.00000	0.00025	None
			propan-2-ol	67-63-0	5.00000	0.00013	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					
			Water	7732-18-5	85.00000	1.03179	
			ethanediol	107-21-1	10.00000	0.00551	
			Oxyalkylated alcohol	Proprietary	5.00000	0.00240	
			ammonium chloride	12125-02-9	5.00000	0.00240	
			Citric acid	77-92-9	40.00000	0.00204	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00110	
			Alcohols, C12-16, ethoxylated	68213-24-1	2.00000	0.00110	
			Modified amino compound	Proprietary	5.00000	0.00063	
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00051	
			Cinnamaldehyde	104-55-2	10.00000	0.00025	
			formic acid	64-18-6	10.00000	0.00025	
			Ethoxylated alcohol	68131-39-5	10.00000	0.00025	
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00025	
			propan-2-ol	67-63-0	5.00000	0.00013	
			Water	7732-18-5	92.50000		

* 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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Latitude: 39°47'30" N

SURFACE HOLE

9°35'

BOTTOM HOLE

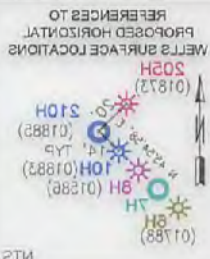
987'

JACKSON SURVEYING INC.

P.O. Box 1480
677 W Main St
Clarksburg, WV 26302
304-623-8851

SURFACE HOLE LOCATION (SHL)	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4401986.292	
EASTING: 532802.722	
LANDING POINT LOCATION (LPL)	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4402826.428	
EASTING: 532828.422	
BOTTOM HOLE LOCATION (BHL)	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4404271.228	
EASTING: 531808.222	

SURFACE HOLE LOCATION (SHL)	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4401986.292	
EASTING: 532802.722	
LANDING POINT LOCATION (LPL)	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4402826.428	
EASTING: 532828.422	
BOTTOM HOLE LOCATION (BHL)	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4404271.228	
EASTING: 531808.222	



LINE	BEARING	DISTANCE	DESCRIPTION
L1	S 81°42'48" W	178.36'	SHL TO GNR FR.
L2	N 25°00'26" E	178.36'	SHL TO ROOFTOP.
L3	N 24°42'24" E	2,284.70'	SHL TO LPL
L4	S 48°52'08" W	333.04'	SHL TO 12' TREE OF HEAVEN
L5	S 27°28'24" E	300.76'	SHL TO 18' LOGST. RESERVOIR (SPRING)
L6	N 64°49'58" W	327.12'	SHL TO WATER RESERVOIR (SPRING)

TRACT	SURFACE OWNER (S)	TAX PARCEL	ACRES
1	JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS, JOHN DEAN BRIGGS (2)	17-18-02	121.43
2	PRESTON YEATER & HEATHER L YEATER (2)	07-18-29A	17.91
3	PRESTON A YEATER & HEATHER L YEATER (2)	07-18-29B	4.82
4	VINCENT E LEMASTER (2)	07-10-24	44.08
5	JAMES M CLARK (2)	07-10-09	15.00
6	MARILYN V CLARK (2)	07-10-11	25.00
7	CHARLES R CLARK & MARILYN V WHIRKEY (2)	07-10-12	24.20
8	MARILYN V CLARK (2)	07-10-08	24.02
9	MARILYN V CLARK (2)	07-10-04T	1.72
10	CHARLES R CLARK (2)	07-10-04	48.72
11	CHARLES R CLARK (2)	07-10-01	48.78
12	WAYNE E GRAHAM JR & GWENDOLYN J GRAHAM (2)	07-07-04	158.00
13	RONALD WM KASSERMAN (2)	07-08-09	130.13

NOTES ON SURVEY

- COORDINATE SYSTEM IS TBM AND 82 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE CDS.
- 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 825 FEET OF PROPOSED CENTER OF ROAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERMANENT STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 500 FEET OF LIMITS OF DISTURBANCE.
- ALL WELLS WITHIN 500' OF THE HORIZONTAL LEG ARE SHOWN ON THIS PLAT BASED UPON INFORMATION TAKEN FROM FROM DEED MAPS, WELL PLATS AND AERIAL PHOTOS.

SWN PRODUCTION COMPANY, LLC
GLADYS BRIGGS MSH
205H
SURFACE HOLE
ELEV: 1,382.2'



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. 708
David Jackson



CHARLESTON, WV 25034
OFFICE OF OIL & GAS
601 27TH STREET

SWN COMPANY:
Production Company, LLC
Production Company, LLC

GLADYS BRIGGS MSH
205H
OPERATOR'S WELL #:
API WELL #:
STATE: WV
COUNTY: MORGAN
PERMIT: 01873

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP LIQUID INJECTION SHALLOW

WATERSHED: FISH CREEK OF UPPER OHIO RIVER 2
DISTRICT: LIBERTY
COUNTY: MARSHALL
SURFACE OWNER: JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS & JOHN DEAN BRIGGS
OIL & GAS ROYALTY OWNER: DAVID BONAR, HARRISON J. BRIGGS & GLADYS R. BRIGGS

ACREAGE: 129.43
ACREAGE: 129.43

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

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

ESTIMATED DEPTH: 1,195' TVD (1,871' TMD)
OTHER CHANGE (SPECIFY) ADSORBED
FRAC TURE OR STIMULATE REDRILL DRILL DEEPER PLUG & ABANDON CLEAN OUT & REPLUG PERFORATE NEW FORMATION PLUG OFF OLD FORMATION

REVISIONS:	DATE:
DRAWN BY: N. MANO	03-24-2017
SCALE: 1" = 2000'	
DRAWING NO.:	
WELL LOCATION PLAT:	



**JACKSON SURVEYING
INC.**

P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851

ADJOINING OWNERS

TRACT	ADJOINING SURFACE OWNER (S)	TAX PARCEL	ACRES
A	MASON DIXON FARMS LLC	07-17-19	22.80
B	JOHN D. BRIGGS & PATTY K. BRIGGS	07-16-02.2	1.03
C	VINCENT E. LEVASTERS	07-16-01	4.00
D	JACK BRIGGS	07-16-02.1	1.02
E	MCELROY COAL COMPANY	07-10-08	50.77
F	DONALD G. BUZZARD ET UX	07-10-07	164.13
G	ALVIN RICKEY ANDERSON ET AL	07-10-06	63.19
H	PAUL F. STERN	07-10-03	1.00
I	WINIFRED M. STERN	07-10-02	1.40
J	WINIFRED M. STERN	07-10-06.1	0.28
K	PAUL & SUSAN ASTON	07-09-26	8.50
L	ALVIN R. & JACKIE L. ANDERSON	07-10-01.1	1.46
M	CHARLES R. CLARK	07-09-28.2	34.00
N	EILEEN HINERMAN	07-09-25	5.00
O	GARY L. DOBBS	07-09-24	18.00
P	PAUL & SUSAN ASTON	07-09-21	100.00
Q	JOHN A. DOBBS ET UX	07-09-23	60.25
R	JOHN A. DOBBS ET UX	07-08-08	51.97
S	JOHN A. DOBBS ET UX	07-08-04	65.65
T	DANNY R. & FRANCES V. KERNS ESTS.	07-08-02	94.00
U	BLAINE E. STERN JR.	07-08-12	33.00
V	BLAINE E. STERN JR.	07-08-11	60.62
W	CONSOLIDATION COAL COMPANY	07-07-03	12.00
X	TERRY L. STRAYER	07-07-05	30.98
Y	WAYNE E. GRAHAM	07-07-05.1	5.82
Z	PAMELA J. HOWARD	07-10-15	15.51
AA	GARY RAY DOBBS ET AL	07-10-18	131.97
BB	JAMES M. CLARK	07-10-10	14.68
CC	HAROLD E. & ANITA RUSH	07-10-23	41.13
DD	HAROLD E. & ANITA RUSH	07-10-23.1	1.33
EE	WILLIAM A. & STEPHANIE F. YEATER	07-16-29.3	41.50
FF	THELMA YEATER	07-16-29	40.41
GG	GLADYS R. BRIGGS	07-16-03	10.00
HH	JACK J. BRIGGS	07-16-05	37.88
II	MASON DIXON FARMS LLC	07-16-06	69.72

09/15/2017


REVISIONS:	COMPANY:		
	OPERATOR'S	GLADYS BRIGGS MSH	
	WELL #:	205H	
	LOCATION:	LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA	
		DATE:	03-24-2017
		DRAWN BY:	N. MANO
		SCALE:	N/A
		DRAWING NO:	
		ADJOINING OWNERS	

JACKSON SURVEYING
 INC.
 P.O. Box 1460
 677 W. Main St.
 Clarkspurg, WV 26305
 304-653-5851

ADJOINING OWNERS

TRACT	ADJOINING SURFACE OWNER (S)	TAX PARCEL	ACRES
II	MASON DIXON FARMS LLC	07-18-06	69.75
HH	JACK J. BRIGGS	07-18-08	37.88
GG	GLADYS R. BRIGGS	07-18-03	10.00
FF	THELMA YEATER	07-18-28	40.41
EE	WILLIAM A. & STEPHANIE F. YEATER	07-18-29	41.80
DD	HAROLD E. & ANITA RUSH	07-10-23	1.33
CC	HAROLD E. & ANITA RUSH	07-10-23	41.13
BB	JAMES M. CLARK	07-10-10	14.88
AA	GARY RAY DOBBS ET AL	07-10-18	131.97
Z	PAMELA J. HOWARD	07-10-15	12.51
Y	WAYNE E. GRAHAM	07-07-05	2.82
X	TERRY L. STRAYER	07-07-05	30.98
W	CONSOLIDATION COAL COMPANY	07-07-03	12.00
V	BLAINE E. STERN JR.	07-08-11	60.62
U	BLAINE E. STERN JR.	07-08-12	33.00
T	DANNY R. & FRANCES V. KERNS ESTS.	07-08-02	84.00
S	JOHN A. DOBBS ET UX	07-08-04	62.68
R	JOHN A. DOBBS ET UX	07-08-08	21.97
Q	JOHN A. DOBBS ET UX	07-08-23	60.28
P	PAUL & SUSAN ASTON	07-08-21	100.00
O	GARY L. DOBBS	07-08-24	18.00
N	EILEEN HINERMAN	07-08-25	2.00
M	CHARLES R. CLARK	07-08-28	34.00
L	ALVIN R. & JACKIE L. ANDERSON	07-10-01	1.48
K	PAUL & SUSAN ASTON	07-08-26	8.50
J	WINIFRED M. STERN	07-10-08	0.28
I	WINIFRED M. STERN	07-10-02	1.40
H	PAUL F. STERN	07-10-03	1.00
G	ALVIN RICKKEY ANDERSON ET AL	07-10-06	63.18
F	DONALD G. BUZZARD ET UX	07-10-07	184.13
E	MCELROY COAL COMPANY	07-10-08	20.77
D	JACK BRIGGS	07-18-05	1.02
C	VINCENT E. LEMASTERS	07-18-01	4.00
B	JOHN D. BRIGGS & PATTY K. BRIGGS	07-18-02	1.03
A	MASON DIXON FARMS LLC	07-17-19	22.80

09/15/2017

REVISIONS:	COMPANY:	
	OPERATOR'S:	GLADYS BRIGGS MSH
	WELL #:	205H
	LOCATION:	LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA
	DATE:	03-24-2017
	DRAWN BY:	N. MANO
	SCALE:	N/A
	DRAWING NO.:	ADJOINING OWNERS

Latitude: 39°47'30" N

SURFACE HOLE

9,132'

BOTTOM HOLE

987'

JACKSON SURVEYING INC. P.O. Box 1460 677 W. Main St. Clarksburg, WV 26302 304-623-5651

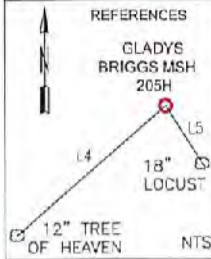
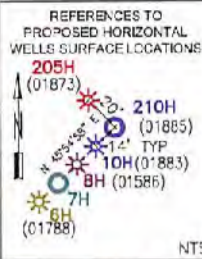


Table with 4 columns: TRACT, SURFACE OWNER (S), TAX PARCEL, ACRES. Lists 13 tracts and their respective owners and acreages.

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,401,986.792 EASTING: 532,903.775

"LANDING POINT" LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,402,526.429 EASTING: 533,369.435

Table with 4 columns: LINE, BEARING, DISTANCE, DESCRIPTION. Lists lines L1 through L6 with bearings, distances, and descriptions of well paths.

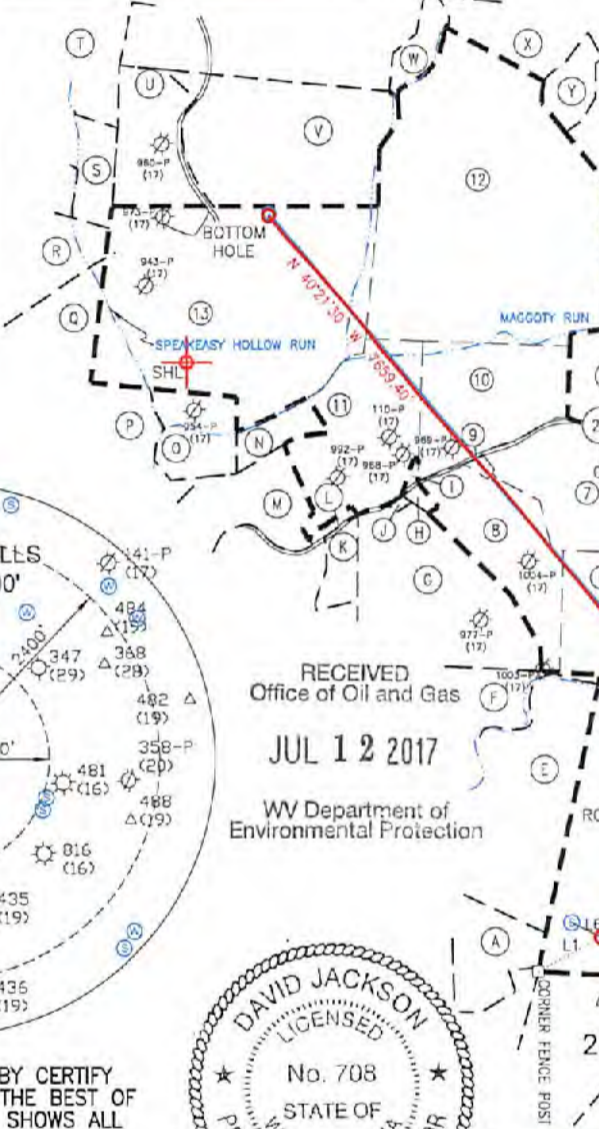
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,404,371.528 EASTING: 531,808.252

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,401,986.828 EASTING: 532,903.766

"LANDING POINT" LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,402,526.535 EASTING: 533,319.514

BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,404,365.913 EASTING: 531,807.709

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



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. 708 David L Jackson

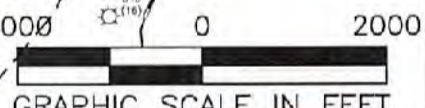


- NOTES ON SURVEY 1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS. 2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREOF WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS. 3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREOF. 4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD. 5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL. 6. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE. 7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE. ALL WELLS WITHIN 500' OF THE HORIZONTAL LEG ARE SHOWN ON THIS PLAT BASED UPON INFORMATION TAKEN FROM FROM DEEP MAPPING, WELL PLATS AND AERIAL PHOTOS.

SWN PRODUCTION COMPANY, LLC "GLADYS BRIGGS MSH 205H"

SURFACE HOLE ELEV: 1,382.2'

RECEIVED Office of Oil and Gas JUL 12 2017 WV Department of Environmental Protection



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)

GLADYS BRIGGS MSH OPERATOR'S WELL #: 205H API WELL #: 47 051 01873 STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW WATERSHED: FISH CREEK OF UPPER OHIO RIVER 2 DISTRICT: LIBERTY COUNTY: MARSHALL SURFACE OWNER: JAMES RODNEY BRIGGS, ROGER JACOB BRIGGS & JOHN DEAN BRIGGS OIL & GAS ROYALTY OWNER: DAVID BONAR; HARRISON J. BRIGGS & GLADYS R. BRIGGS DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) ASDRILLED TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,195' TVD 15,871' 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: PROPOSED SURFACE HOLE / BOTTOM HOLE EXISTING / PRODUCING WELLHEAD LPL LANDING POINT LOCATION EXISTING WATER WELL EXISTING SPRING SURVEYED BOUNDARY DRILLING UNIT LEASE BOUNDARY ASDRILLED PATH PROPOSED PATH REVISIONS: DATE: 03-24-2017 DRAWN BY: N. MANO SCALE: 1" = 2000' DRAWING NO: WELL LOCATION PLAT

**JACKSON SURVEYING
INC.**

P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851

ADJOINING OWNERS

TRACT	ADJOINING SURFACE OWNER (S)	TAX PARCEL	ACRES
A	MASON DIXON FARMS LLC	07-17-19	22.60
B	JOHN D. BRIGGS & PATTY K. BRIGGS	07-16-02.2	1.03
C	VINCENT E. LEVASTERS	07-16-01	4.00
D	JACK BRIGGS	07-16-02.1	1.02
E	MCELROY COAL COMPANY	07-10-08	53.77
F	DNALD G. BUZZARD ET UX	07-10-07	164.73
G	ALVIN RICKEY ANDERSON ET AL	07-10-06	63.19
H	PAUL F. STERN	07-10-03	1.00
I	WINIFRED M. STERN	07-10-02	1.40
J	WINIFRED M. STERN	07-10-06.1	0.28
K	PAUL & SJSAN ASTON	07-09-26	8.50
L	ALVIN R. & JACKIE L. ANDERSON	07-10-01.1	1.46
M	CHARLES R. CLARK	07-09-28.2	34.00
N	EILEEN HINERMAN	07-09-25	5.00
O	GARY L. DOBBS	07-09-24	18.00
P	PAUL & SJSAN ASTON	07-09-21	100.00
Q	JOHN A. DOBBS ET UX	07-09-23	60.25
R	JOHN A. DOBBS ET UX	07-08-08	51.97
S	JOHN A. DOBBS ET UX	07-08-04	65.65
T	DANNY R. & FRANCES V. KERNS ESTS.	07-08-02	94.00
U	BLAINE E. STERN JR.	07-08-12	33.00
V	BLAINE E. STERN JR.	07-08-11	60.62
W	CONSOLIDATION COAL COMPANY	07-07-03	12.00
X	TERRY L. STRAYER	07-07-05	30.98
Y	WAYNE E. GRAHAM	07-07-05.1	5.82
Z	PAVELA J. HOWARD	07-10-15	15.51
AA	GARY RAY DOBBS ET AL	07-10-18	131.97
BB	JAMES M. CLARK	07-10-10	14.68
CC	HAROLD E. & ANITA RUSH	07-10-23	41.13
DD	HAROLD E. & ANITA RUSH	07-10-23.1	1.33
EE	WILLIAM A. & STEPHANIE F. YEATER	07-16-29.3	41.50
FF	THELMA YEATER	07-16-29	40.41
GG	GLADYS R. BRIGGS	07-16-03	10.00
HH	JACK J. BRIGGS	07-16-05	37.88
II	MASON DIXON FARMS LLC	07-16-06	69.72

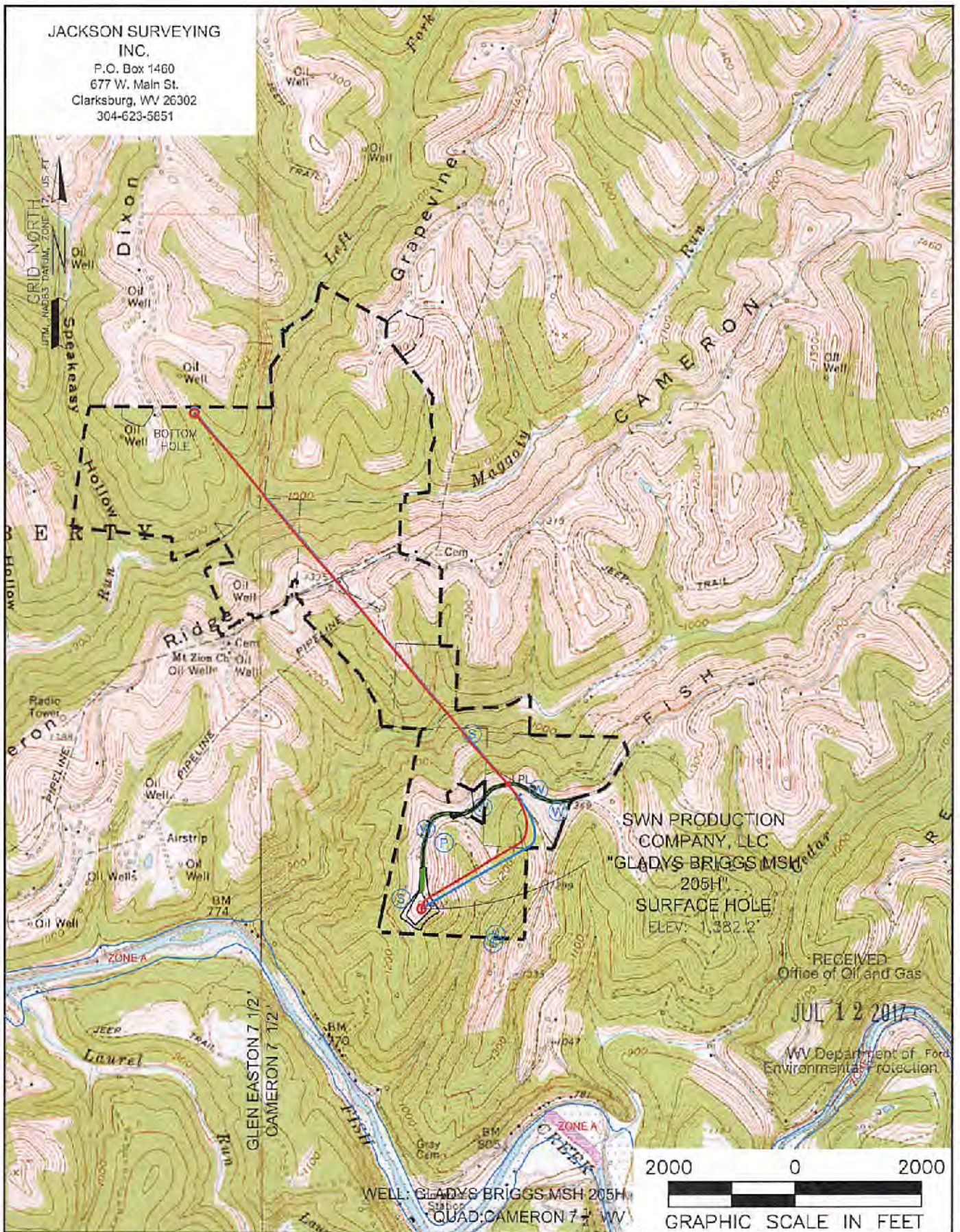
RECEIVED
Office of Oil and Gas

JUL 12 2017

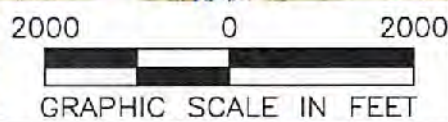
WV Department of
Environmental Protection

REVISIONS:	COMPANY:	SWN Production Company, LLC	SWN Production Company™	<i>R-V+ 09/15/2017</i>
	OPERATOR'S	GLADYS BRIGGS MSH		DATE: 03-24-2017
	WELL #:	205H		DRAWN BY: N. MANO
	LOCATION:	LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA		SCALE: N/A
				DRAWING NO:
				ADJOINING OWNERS

JACKSON SURVEYING
INC.
P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851



RECEIVED
Office of Oil and Gas
JUL 12 2017
WV Department of Environmental Protection



NAME AND DISTANCE TO THE NEAREST STREAM: FISH CREEK IS LOCATED ±0.49 MILES SW OF THE CENTER OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.		COMPANY: SWN Production Company, LLC		SWN <i>RE-V+[®]</i> 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 FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF MARSHALL COUNTY, WEST VIRGINIA; MAP NUMBER 51051C0200 E; EFFECTIVE DATE: SEPTEMBER 25, 2009.				OPERATOR'S GLADYS BRIGGS MSH		WELL #: 205H	
				LOCATION: LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA			
				SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 39.757175° LONGITUDE: -80.515930°			
				BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 39.788647° LONGITUDE: -80.628512°			
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD ⊙ ABANDONED WELL ⊙ PLUGGED & ABANDONED WELL ⊙ CUT CONDUCTOR				○ EXISTING SPRING ○ EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD		REVISIONS: DATE: 03-24-2017 DRAWN BY: N. MANO SCALE: 1" = 2000' DRAWING NO: TOPOGRAPHIC MAP	

09/15/2017

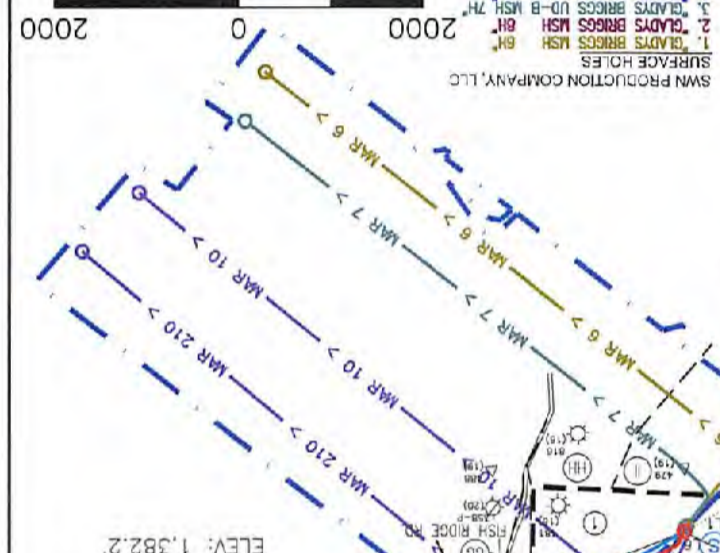
JACKSON SURVEYING
INC.
P.O. Box 1450
Clarksville, WV 26302
304-623-6851

LINE	BEARING	DISTANCE	DESCRIPTION
L1	S 61°43'45" W	784.58'	SHL TO CNGR EP
L2	N 26°00'35" E	1,661.44'	SHL TO ROOFCRBT
L3	N 34°43'54" E	2,394.10'	SHL TO LPL
L4	S 48°56'09" W	535.07'	SHL TO 12" TREE OF HEAVEN
L5	S 32°26'24" E	200.20'	SHL TO 18" LOCUST
L6	N 64°19'58" W	357.72'	SHL TO WATER RESERVOIR (SPRING)

09/15/2017



TAX PARCEL ADDRESS	DATE	OWNER
1 JAMES ROBERT BRIGGS ROBERT BRIGGS ROBERT BRIGGS (S) / DRIP BANK HANSON	7-16-02	21.43
2 PESTON VENTER & HEATHER L. VENTER HOPKINS	07-16-29.4	17.91
3 JAMES H. RINE & HEATHER L. VENTER (S) / ASTLEY M. HOPKINS (B)	07-16-29.2	4.92
4 VINCENT E. LEASTERS (S) / PEARL LOUCH FKA / ASTLEY M. HOPKINS (B)	07-10-24	44.06
5 PEARL WILKINS, A JANE DAVIS, RONALD YOUNG, DUW, DOLAN FKA/DAWILE W. YOUNG, DUW, PATRYE E. MILLARD, E. JOHNSON, S. WILLIAMS, FAYE M. SHERRY, E. JOHNSON, S. WILLIAMS, FAYE M. SHERRY, E. JOHNSON, S. WILLIAMS	07-10-09	15.00
6 JAMES K. CLARK (S) / OLIVE PINKENAST (S)	07-10-11	26.00
7 CHARLES R. CLARK & MARTIN V. WHIPKEY (S) / LONNA CLARK, DOBA RENOLDS, REVEREND	07-10-12	25.30
8 MARTIN V. CLARK (S) / SARAH JANE KINOREE & BEN KINOREE III, ALEXANDER FOSTER RENOLDS, AS EDITH RENOLDS, ALEXANDER FOSTER RENOLDS, AN INCORPORATED PERSON, & GLADYS RENOLDS	07-10-03	34.02
9 MARTIN V. CLARK (S) / SARAH JANE KINOREE & BEN KINOREE III, ALEXANDER FOSTER RENOLDS, AS EDITH RENOLDS, ALEXANDER FOSTER RENOLDS, AN INCORPORATED PERSON, & GLADYS RENOLDS	07-10-04.1	1.12
10 CHARLES R. CLARK (S) / SARAH JANE KINOREE & BEN KINOREE III, ALEXANDER FOSTER RENOLDS, AS EDITH RENOLDS, ALEXANDER FOSTER RENOLDS, AN INCORPORATED PERSON, & GLADYS RENOLDS	07-10-04	46.72
11 CHARLES R. CLARK (S) / SARAH JANE KINOREE & BEN KINOREE III, ALEXANDER FOSTER RENOLDS, AS EDITH RENOLDS, ALEXANDER FOSTER RENOLDS, AN INCORPORATED PERSON, & GLADYS RENOLDS	07-10-01	46.75
12 WAYNE E. GRAYAM JR. & GEMEDOLYN L. GRAYAM (S) / WILLYAM WOODBURN (S) / WILLYAM WOODBURN (S) / GEMEDOLYN L. GRAYAM (B) / WAYNE E. GRAYAM JR. & GEMEDOLYN L. GRAYAM (S)	07-06-09	150.16
13 RONALD M.L. KASSERMAN (S) / WILLIAM WOODBURN (S)	07-06-09	150.16



REVISIONS:
DATE: 03-24-2017
DRAWN BY: N. MANO
SCALE: 1" = 200'
DRAWING NO:
INTERNAL WELL PLAT

COMPANY: SWN Production Company, LLC

OPERATORS: GLADYS BRIGGS MSH 205H

WELL #: 205H

LOCATION: LIBERTY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA

SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 39.78647, LONGITUDE: -80.615830

BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 39.78647, LONGITUDE: -80.628512

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLS
- EXISTING WATER WELL
- EXISTING SPRING
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLS
- EXISTING WATER WELL
- EXISTING SPRING

NOTE: ANY LIMITS OR IMPROVEMENTS SHOWN ON THIS PLAT ARE FROM REASONABLE VISUAL OBSERVATIONS. NO UTILITY COMPANIES WERE CONTACTED FOR UTILITY LINE LOCATIONS.

UTM (NAD83) ZONE 17 (METERS):
NORTHING: 4401,986.828
EASTING: 532,903.766

UTM (NAD83) ZONE 17 (FEET):
NORTHING: 14,442,185.118
EASTING: 1,748,368.438

UTM (NAD83) ZONE 17 (METERS):
NORTHING: 4402,586.535
EASTING: 533,191.514

UTM (NAD83) ZONE 17 (FEET):
NORTHING: 14,444,152.658
EASTING: 1,749,732.438

UTM (NAD83) ZONE 17 (METERS):
NORTHING: 14,449,989.168
EASTING: 1,744,772.458

UTM (NAD83) ZONE 17 (FEET):
NORTHING: 46,803,635.863
EASTING: 5,624,963.441

UTM (NAD83) ZONE 17 (METERS):
NORTHING: 46,804,237.376
EASTING: 5,625,564.954

UTM (NAD83) ZONE 17 (METERS):
NORTHING: 4,404,365.513
EASTING: 531,807.709