

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

API 47-103-03171 County WETZEL District PROCTOR
Quad WILEYVILLE, WV Pad Name HOHMAN HBP S-WTZ-PAD1 Field/Pool Name VICTORY FIELD WET
Farm name ALBERT L. HOHMAN, JOSEPH HOHMAN, & DEBRA K HOHMAN Well Number HOHMAN HBP S WTZ 6H
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 4,392,379.879 Easting 525,169.671
Landing Point of Curve Northing 4,392,087.676 Easting 525,040.485
Bottom Hole Northing 4,390,999.096 Easting 526,165.379

Elevation (ft) 1467.5' 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
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
SOBM

RECEIVED
Office of Oil and Gas
OCT 03 2017
WV Department of
Environmental Protection

Date permit issued 02/09/2017 Date drilling commenced 04/04/2017 Date drilling ceased 05/02/2017
Date completion activities began 06/22/2017 Date completion activities ceased 07/05/2017
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 598' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1845' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1277.52' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

NAME: Sen M [Signature]
DATE: 10-25-17

Reviewed by: _____
02/16/2018

API 47- 103 - 03171

Farm name ALBERT L. HOHMAN, JOSEPH HOHMAN, & DEBRA K HOHMAN

Well number HOHMAN HBP S WTZ 6H

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	688	NEW	J-55/54.5#		Y; 24 BBLs RETURNED
Coal	SEE INTERMEDIATE						
Intermediate 1	12.25	9.625	2877	NEW	J-55/36#		Y; 55 BBLs RETURNED
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	13059	NEW	HCP-110/20#		Y
Tubing		2.375	7726	NEW	P-110/4.70#		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 TO SURFACE				SURFACE	24
Surface	CLASS A	622	15.60	1.20	746.4	SURFACE	8
Coal	SEE INTERMEDIATE						
Intermediate 1	CLASS A	1094	15.60	1.18	1290.92	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3160	15.60	1.19	3760.4	SURFACE	24
Tubing							

Drillers TD (ft) 13059' Loggers TD (ft) 13059'

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

Plug back procedure _____

Kick off depth (ft) 6258'

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

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 _____

RECEIVED
Office of Oil and Gas
OCT 03 2017
WV Department of Environmental Protection

API 47-103 - 03171

Farm name ALBERT L. HOHMAN, JOSEPH HOHMAN, & DEBRA K HOHMAN

Well number HOHMAN HBP S WTZ 6H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

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)
		SEE	ATTACHMENT	2				

RECEIVED
Office of Oil and Gas
OCT 03 2017
WV Department of Environmental Protection

Please insert additional pages as applicable.

API 47- 103 - 03171

Farm name ALBERT L. HOHMAN, JOSEPH HOHMAN, & DEBRA K HOHMAN

Well number HOHMAN HBP S WTZ 6H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>MARCELLUS</u>	<u>7190.75'</u>	<u>TVD</u>	<u>7611.54'</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2063 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 6195 mcfpd Oil 139 bpd NGL _____ bpd Water 118 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)
	<u>0</u>		<u>0</u>		
	<u>SEE</u>	<u>ATTACHMENT</u>	<u>3</u>		

Please insert additional pages as applicable.

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

RECEIVED
Office of Oil and Gas
OCT 03 2017

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

WV Department of
Environmental Protection

Cementing Company B J SERVICES
Address 11211 FARM TO MARKET 2920 City TOMBALL State TX Zip 77377

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

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832-796-6139
Signature *Denise Grantham* Title REGULATORY TECHNICIAN Date 9/28/2017

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

02/16/2018

**HOHMAN HBP S WTZ 6H
PERF SUMMARY**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	6/22/2017	12,820	12,952	33
2	6/22/2017	12,625	12,757	33
3	6/22/2017	12,430	12,562	33
4	6/23/2017	12,235	12,367	33
5	6/23/2017	12,040	12,172	33
6	6/23/2017	11,845	11,977	33
7	6/23/2017	11,650	11,782	33
8	6/24/2017	11,455	11,587	33
9	6/24/2017	11,260	11,392	33
10	6/24/2017	11,065	11,197	33
11	6/24/2017	10,870	11,002	33
12	6/24/2017	10,675	10,807	33
13	6/24/2017	10,480	10,612	33
14	6/25/2017	10,285	10,417	33
15	6/25/2017	10,090	10,222	33
16	6/25/2017	9,895	10,027	33
17	6/25/2017	9,700	9,832	33
18	6/25/2017	9,505	9,637	33
19	6/25/2017	9,310	9,442	33
20	6/26/2017	9,115	9,247	33
21	6/26/2017	8,920	9,052	33
22	6/26/2017	8,725	8,857	33
23	6/26/2017	8,530	8,662	33
24	6/26/2017	8,335	8,467	33
25	6/26/2017	8,140	8,272	33
26	6/27/2017	7,945	8,077	33
27	6/27/2017	7,750	7,882	33

RECEIVED
Office of Oil and Gas
OCT 03 2017
WV Department of
Environmental Protection

02/16/2018

**HOHMAN HBP S WTZ 6H
FRAC STAGE SUMMARY**

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	6/22/2017	80	7,206	8,429	4,588	376,120	6,244	
2	6/22/2017	81	7,543	8,175	4,835	373,760	5,678	
3	6/22/2017	80	7,458	8,466	4,781	374,640	5,636	
4	6/23/2017	81	7,544	8,830	5,522	373,920	5,621	
5	6/23/2017	81	7,469	8,723	5,314	376,500	5,604	
6	6/23/2017	78	7,475	8,794	4,778	375,200	5,583	
7	6/23/2017	81	7,507	8,079	4,995	371,500	5,550	
8	6/24/2017	81	7,462	8,347	4,735	371,680	5,640	
9	6/24/2017	81	7,538	8,290	4,846	374,460	5,531	
10	6/24/2017	81	7,308	8,161	5,125	376,760	5,601	
11	6/24/2017	80	7,400	8,054	4,943	372,780	5,484	
12	6/24/2017	81	7,185	7,914	4,713	373,800	5,518	
13	6/24/2017	82	7,453	9,066	4,567	374,460	5,397	
14	6/25/2017	83	7,287	8,190	4,541	373,900	5,412	
15	6/25/2017	78	7,401	8,755	4,142	375,960	5,640	
16	6/25/2017	80	7,219	8,694	4,921	373,320	5,329	
17	6/25/2017	80	7,080	9,001	4,309	377,140	5,289	
18	6/25/2017	81	7,276	8,826	4,651	328,860	4,979	
19	6/25/2017	83	7,036	8,297	4,538	376,986	5,366	
20	6/26/2017	82	7,114	8,318	4,338	374,360	5,288	
21	6/26/2017	81	6,811	8,476	4,320	373,780	5,244	
22	6/26/2017	81	6,375	7,782	4,199	375,560	5,196	
23	6/26/2017	81	6,318	7,914	4,932	371,880	5,167	
24	6/26/2017	82	6,688	7,631	4,985	373,930	5,247	
25	6/26/2017	81	6,970	8,941	4,274	377,050	5,182	
26	6/27/2017	81	7,140	8,619	4,793	369,850	5,134	
27	6/27/2017	80	6,933	8,150	5,218	369,410	5,383	

RECEIVED
Office of Oil and Gas
OCT 03 2017
WV Department of
Environmental Protection

02/16/2018

Well Name:

HOHMAN HBP S WTZ 6H

4710303171000

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.	598.00	597.91	
Top of Salt Water	1845.00	1833.69	N.A.	N.A.	
Pittsburgh Coal	1277.52	1271.00	1274.94	1272.60	
Big Injun (ss)	2541.31	2524.00	2684.08	2651.50	
Berea (siltstone)	3059.94	3004.21	3120.41	3161.22	
Rhinestreet (shale)	6619.99	6658.71	6964.47	6859.28	
Cashaqua (shale)	6964.47	6859.28	7117.50	6964.65	
Middlesex (shale)	7117.50	6964.65	7268.59	7055.14	
Burket (shale)	7268.59	7055.14	7307.24	7077.35	
Tully (ls)	7307.24	7077.35	7360.79	7102.03	
Mahantango (shale)	7360.79	7102.03	7611.54	7190.75	
Marcellus (shale)	7611.54	7190.75	N.A.	N.A.	GAS

RECEIVED
Office of Oil and Gas
OCT 03 2017
WV Department of
Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	6/22/2017
Job End Date:	6/27/2017
State:	West Virginia
County:	Wetzel
API Number:	47-103-03171-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Hohman HBP S WTZ 6H
Latitude:	39.68087820
Longitude:	-80.70649326
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,321
Total Base Water Volume (gal):	6,088,845
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	Southwestern Energy	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	82.41552	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	16.32304	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.40000	0.98091	
			Hydrogen Chloride	7647-01-0	17.50000	0.22806	
WFRA-2000	U.S. Well Services, LLC	Friction Reducer					
			Water	7732-18-5	60.00000	0.02708	
			2-Propenoic acid, polymer with 2-propenamides	9003-06-9	30.00000	0.01354	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01110	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00033	
			Cinnamaldehyde	104-55-2	20.00000	0.00012	
			Formic acid	64-18-6	20.00000	0.00011	

OCT 03 2017

RECEIVED
Office of Oil and Gas

WV Department of Environmental Protection

			Butyl cellosolve	111-76-2	20.00000	0.00010
			Polyether	60828-78-6	10.00000	0.00006
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00003

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

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

RECEIVED
Office of Oil Spill Response
OCT 03 2017
U.S. Department of the Interior
Bureau of Land Management
Environmental Protection

Latitude: 39°42'30"

SURFACE HOLE 11,205'

BOTTOM HOLE 7,955'

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

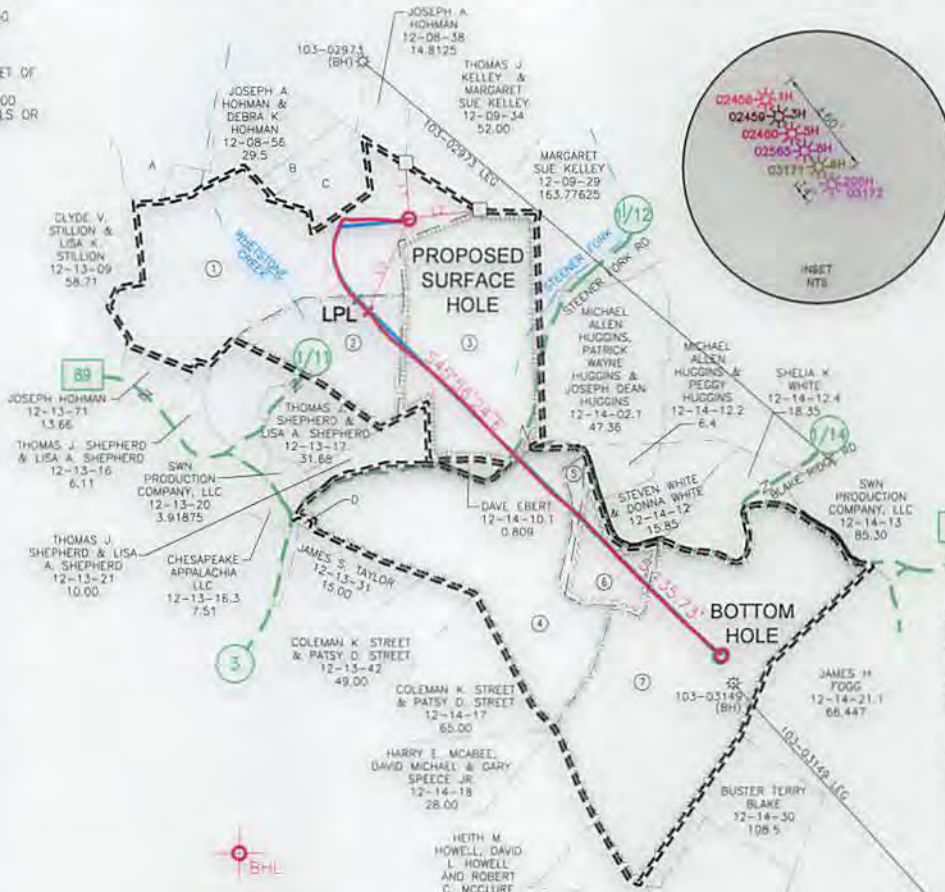
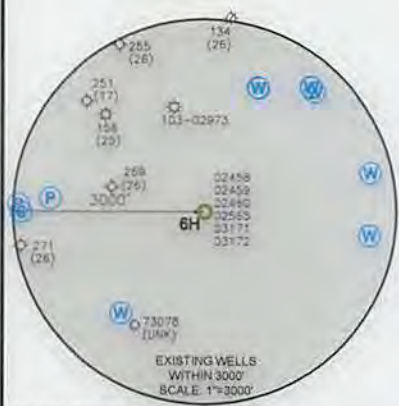
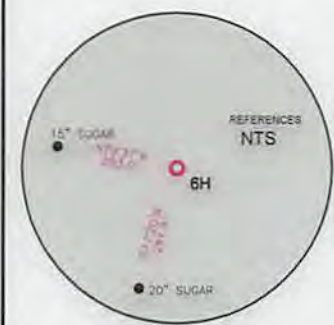
Table with 4 rows: SURFACE HOLE LOCATION (SHL), LANDING POINT (LPL), and BOTTOM HOLE LOCATION (BHL). Each row contains UTM coordinates (NAD83, Zone 17, Meters) for Northing and Easting.

Table with 3 rows: SURFACE HOLE LOCATION (SHL), LANDING POINT (LPL), and BOTTOM HOLE LOCATION (BHL). Each row contains UTM coordinates (NAD83, Zone 17, Meters) for Northing and Easting.

WELL RESTRICTIONS

- 1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Contains data for lines L1, L2, and L3.



NOTES ON SURVEY

- 1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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



Table with 3 columns: State/County/Permit information, Accuracy (1/200), and Well Identification (Operator's Well # 6H, API Well # 47, 103, 03171).

Form with fields for Well Type (Production), Watershed (Whetstone Creek & Steener Fork), District (Proctor), County (Wetzel), and Target Formation (Marcellus).

Form with fields for Well Operator (SWN Production Company, LLC) and Designated Agent (Dee Southall), including addresses and zip codes.

Table with 2 columns: Legend (Proposed Surface Hole, Existing Well, LPL, Existing Water Well, Existing Spring) and Revisions (Date: 09-29-2017, Drawn by: N. Mano, Scale: 1" = 2000').



**JACKSON SURVEYING
INC.**

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

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	ALBERT L. HOHMAN AND MARY L. HOHMAN, TRUSTEES OF THE HOHMAN REVOCABLE LIVING TRUST DATED AUGUST 8, 2014, JOSEPH A. HOHMAN AND DEBRA K. HOHMAN (S) ALBERT L. HOHMAN AND MARY L. HOHMAN, TRUSTEES OF THE HOHMAN REVOCABLE LIVING TRUST DATED AUGUST 8, 2014, JOSEPH A. HOHMAN AND DEBRA K. HOHMAN (R)	12-08-55	59.80
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	THOMAS J. & LISA A. SHEPHERD (S)	12-13-18	35.85
3	THOMAS J. SHEPHERD & LISA A. SHEPHERD, ANTHONY F. SHEPHERD & DEBORA L. SHEPHERD (S)	12-14-01	80.75
4	ROBERT C. RICHTER & MILDRED M. RICHTER (S)	12-14-10	99.19
5	ROBERT C. RICHTER & MILDRED M. RICHTER (S)	12-14-11	2.00
6	CHARLES E. SMITH & SHIRLEY M. SMITH (S)	12-14-12.3	18.30
7	BUSTER BLAKE & BARABARA A. BLAKE (S)	12-14-12.1	134.46

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	ALBERT L. HOHMAN AND MARY L. HOHMAN, TRUSTEES OF THE HOHMAN REVOCABLE LIVING TRUST DATED AUGUST 8, 2014; JOSEPH A. HOHMAN & DEBRA K. HOHMAN	12-08-35	14.40
B	ALBERT L. HOHMAN AND MARY L. HOHMAN, TRUSTEES OF THE HOHMAN REVOCABLE LIVING TRUST DATED AUGUST 8, 2014; JOSEPH A. HOHMAN & DEBRA K. HOHMAN	12-08-57	5.00
C	ALBERT L. HOHMAN AND MARY L. HOHMAN, TRUSTEES OF THE HOHMAN REVOCABLE LIVING TRUST DATED AUGUST 8, 2014; JOSEPH A. HOHMAN & DEBRA K. HOHMAN	12-08-58	10.00
D	ISABELLA CECILIA PARIKH, TRUSTEE OF TRUST A OF THE PARIKH FAMILY TRUST, DATED DECEMBER 11, 1979	12-13-30	0.34375

02/16/2018

REVISIONS:	COMPANY:	 	
	OPERATOR'S	HOHMAN HBP S WTZ	
	WELL #:	6H	
	DISTRICT:	COUNTY:	STATE:
	PROCTOR	WETZEL	WV
			DATE: 09-29-2017
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO:
			WELL LOCATION PLAT 2