

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

API 47 - 051 - 01881 County MARSHALL District LIBERTY
Quad LITTLETON(SH)-WILEYVILLE(BH) Pad Name SHAWN HARLAN-MSH-PAD1 Field/Pool Name VICTORY FIELD WET
Farm name SCOTT L. HARLAN AND SHAWN HARLAN Well Number SHAWN HARLAN MSH 1H
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 4,398,280.548 Easting 532,283.724
Landing Point of Curve Northing 4,398,150.544 Easting 532,084.524
Bottom Hole Northing 4,399,149.574 Easting 531,010.983

Elevation (ft) 1390.6' 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
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
SOBM

RECEIVED
Office of Oil and Gas
AUG 10 2017
WV Department of
Environmental Protection

Date permit issued 10/27/2016 Date drilling commenced 11/19/2016 Date drilling ceased 12/21/2016
Date completion activities began 4/14/2017 Date completion activities ceased 5/12/2017
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 319' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 750' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1107' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED
NAME: Jessie Tucker
DATE: 8/28/17

Reviewed by: Jessie Tucker
09/15/2017

API 47- 051 - 01881 Farm name SCOTT L. HARLAN AND SHAWN HARLAN Well number SHAWN HARLAN MSH 1H

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	592	NEW	J-55/54.5#		Y; 26 BBLs RETURNED
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	2665	NEW	J-55/36#		Y; 42 BBLs RETURNED
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	12492	NEW	HCP-110/20#		Y
Tubing		2.375	7628	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	44	15.60			SURFACE	24
Surface	CLASS A	530	15.60	1.20	636	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	1090	16.00	1.12	1220.8	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	840/1230	15.60	1.22/1.19	1024.8/1463.7	SURFACE	24
Tubing							

Drillers TD (ft) 12492' Loggers TD (ft) 12492'

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

Plug back procedure _____

RECEIVED
Office of Oil and Gas

Kick off depth (ft) 6512'

AUG 10 2017

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

WV Department of
Environmental Protection

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 - 01881 Farm name SCOTT L. HARLAN AND SHAWN HARLAN Well number SHAWN HARLAN MSH 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>7,173.45'</u> TVD	<u>7,564.02'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1775 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 3493 mcfpd Oil 11 bpd NGL _____ bpd Water 15 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<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

Logging Company BAKER HUGHES
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

RECEIVED
Office of Oil and Gas
AUG 10 2017

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

WV Department of
Environmental Protection

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

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832-796-6139
Signature *Denise Grantham* Title REGULATORY TECHNICIAN Date 8/9/2017

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

09/15/2017

SHAWN HARLAN MSH 1H
PERF SUMMARY

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	4/14/2017	12,258	12,403	42
2	4/15/2017	12,002	12,196	42
3	4/15/2017	11,746	11,940	42
4	4/15/2017	11,490	11,684	42
5	4/15/2017	11,234	11,428	42
6	4/16/2017	10,978	11,172	42
7	4/16/2017	10,726	10,916	42
8	4/18/2017	10,466	10,660	42
9	4/18/2017	10,210	10,404	42
10	4/18/2017	9,954	10,148	42
11	4/18/2017	9,698	9,892	42
12	4/19/2017	9,442	9,636	42
13	4/19/2017	9,186	9,380	42
14	4/19/2017	8,930	9,124	42
15	4/20/2017	8,674	8,868	42
16	4/20/2017	8,418	8,612	42
17	4/20/2017	8,162	8,356	42
18	4/20/2017	7,906	8,100	42
19	4/21/2017	7,650	7,844	42

RECEIVED
Office of Oil and Gas
AUG 10 2017
WV Department of
Environmental Protection

09/15/2017

SHAWN HARLAN MSH 1H
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	4/14/2017	90	8,247	8,739	3,843	505,500	7,612	
2	4/15/2017	88	7,986	8,643	4,050	487,180	7,558	
3	4/15/2017	94	8,209	8,544	4,189	496,820	7,366	
4	4/15/2017	95	8,247	8,687	4,599	499,000	7,300	
5	4/15/2017	92	8,292	8,659	4,529	496,320	7,355	
6	4/16/2017	98	8,127	9,081	4,443	504,970	8,199	
7	4/16/2017	93	8,095	8,923	4,089	500,140	9,369	
8	4/18/2017	98	8,071	8,548	4,561	505,360	7,596	
9	4/18/2017	95	8,302	8,561	4,532	501,200	7,355	
10	4/18/2017	99	8,126	8,535	4,477	494,480	7,322	
11	4/18/2017	98	8,105	8,390	4,602	496,720	7,255	
12	4/19/2017	94	7,637	8,796	4,408	502,460	7,181	
13	4/19/2017	98	7,934	8,271	4,743	503,886	7,534	
14	4/19/2017	96	7,710	8,029	4,155	497,340	7,087	
15	4/20/2017	88	7,992	8,683	4,125	500,060	9,793	
16	4/20/2017	96	7,813	8,562	3,905	495,200	7,033	
17	4/20/2017	96	8,154	8,600	4,569	498,800	9,321	
18	4/20/2017	93	7,620	8,475	4,794	497,540	7,377	
19	4/21/2017	94	7,764	8,408	4,651	500,680	7,080	

RECEIVED
Office of Oil and Gas
AUG 10 2017
WV Department of
Environmental Protection

09/15/2017

Well Name:

SHAWN HARLAN MSH 1H

47051018810000

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.	319.00	319.00	
Top of Salt Water	750.00	750.00	N. A.	N. A.	
Pittsburgh Coal	1107.00	1106.76	1116.00	1115.75	
Big Injun (ss)	2396.50	2386.00	2515.50	2504.00	
Berea (siltstone)	2869.00	2855.00	2915.00	2901.18	
Rhinestreet (shale)	6579.45	6507.69	6899.12	6815.63	
Cashaqua (shale)	6899.12	6815.63	7037.31	6933.93	
Middlesex (shale)	7037.31	6933.93	7168.75	7027.27	
Burket (shale)	7168.75	7027.27	7208.08	7050.61	
Tully (ls)	7208.08	7050.61	7254.14	7075.44	
Mahantango (shale)	7254.14	7075.44	7564.02	7173.45	
Marcellus (shale)	7564.02	7173.45	N. A.	N. A.	GAS

RECEIVED
Office of Oil and Gas
AUG 10 2017
Environmental Protection
WV Department of

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/14/2017
Job End Date:	4/21/2017
State:	West Virginia
County:	Marshall
API Number:	47-051-01883-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Shawn Harlan 1H
Latitude:	39.73380400
Longitude:	-80.62325200
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,181
Total Base Water Volume (gal):	6,086,073
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	SWN	Carrier/Base Fluid	Water	7732-18-5	100.00000	83.25285	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	15.54574	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.93403	None
			Hydrochloric Acid	7647-01-0	15.00000	0.16483	None
KFR-17	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	84742-47-8	45.00000	0.04321	None
			ethanediol	107-21-1	10.00000	0.00960	None
			Alcohols, C12-16, ethoxylated	68213-24-1	2.00000	0.00192	None
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00192	None
KFEAC-30	Keane	Iron Control	acetic acid	64-19-7	60.00000	0.00278	None
			Citric acid	77-92-9	40.00000	0.00185	None
KAI-16	Keane	Acid Inhibitor	Isopropanol	67-63-0	60.00000	0.00113	None

RECEIVED
Office of Oil and Gas

AUG 10 2017

			Ethoxylated Fatty Alcohol	Proprietary	30.00000	0.00057	None
			Aromatic aldehyde	Proprietary	10.00000	0.00019	None
			Ethoxylated Alcohol	Proprietary	10.00000	0.00019	None
			Alkoxylated fatty amine	Proprietary	5.00000	0.00009	None
			Methanol	67-56-1	1.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	85.00000	0.93403	
			ethanediol	107-21-1	10.00000	0.00960	
			Alcohols, C12-16, ethoxylated	68213-24-1	2.00000	0.00192	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00192	
			Citric acid	77-92-9	40.00000	0.00185	
			Ethoxylated Fatty Alcohol	Proprietary	30.00000	0.00057	
			Ethoxylated Alcohol	Proprietary	10.00000	0.00019	
			Aromatic aldehyde	Proprietary	10.00000	0.00019	
			Alkoxylated fatty amine	Proprietary	5.00000	0.00009	
			Methanol	67-56-1	1.00000	0.00002	
			Water	7732-18-5	92.50000		
			ammonium chloride	12125-02-9	5.00000		
			Oxyalkylated alcohol	Proprietary	5.00000		

* 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 and Gas
 AUG 10 2017
 MN Department of
 Environmental Protection

Via Federal Express

August 9, 2017

State of West Virginia
Department of Environmental Protection
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

RECEIVED
Office of Oil and Gas

AUG 10 2017

WV Department of
Environmental Protection

RE: SWN Production Company, LLC
Operator ID: 494512924
Regulatory Filings: WR-34, WR-35 Filing

To Whom It May Concern:

Please find enclosed forms WR-34 No Discharge, WR-35 Well Operator's Report of Well Work for the following wells:

Shawn Harlan 1H (API 47-051-01881)
Shawn Harlan 5H (API 47-051-01882)

If you have any questions or require additional information, please contact me via email at denise_grantham@swn.com or telephone at (832) 796-6139.

Sincerely,



Denise Grantham
Regulatory Technician
West Virginia Division

/dg
Encl.

$\frac{R^2}{A} \rightarrow V^{+}$

SURFACE HOLE

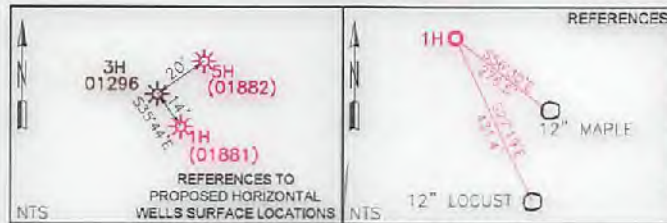
11,224'

Latitude: 39°45'00"

BOTTOM HOLE

3,673'

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



REFERENCES

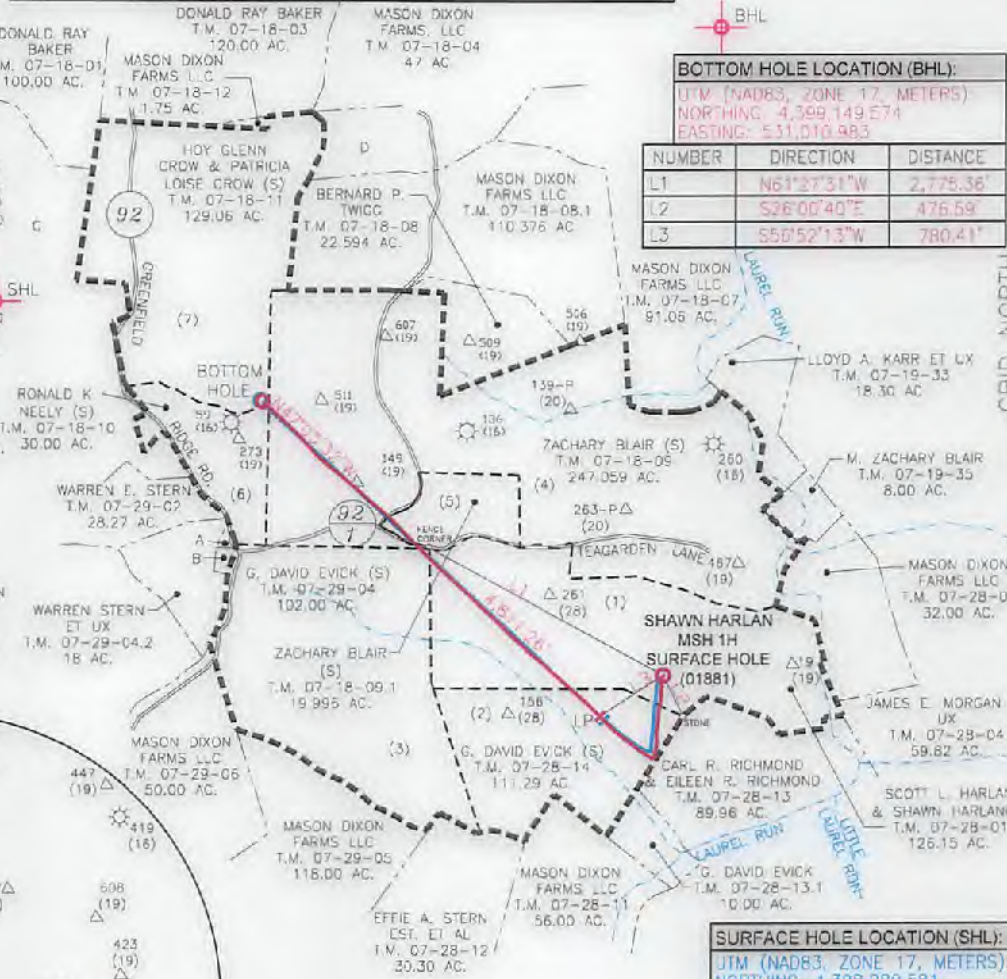
Table with 2 columns: LOCATION, COORDINATES. Includes SURFACE HOLE LOCATION (SHL) and LANDING POINT LOCATION (LPL) details.

Table with 2 columns: LOCATION, COORDINATES. Includes BOTTOM HOLE LOCATION (BHL) details.

Table with 3 columns: NUMBER, DIRECTION, DISTANCE. Lists L1, L2, L3 with bearings and distances.

ROYALTY OWNERS FOR (1):

List of royalty owners including Janet E. Wilbur, Donald Ray Baker, Mason Dixon Farms, LLC, and others.



SCALE 1"=2000'

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. NO DWELLINGS OR AGRICULTURAL BUILDINGS GREATER THAN 2,500 SQUARE FEET WITHIN 825 FEET OF PROPOSED CENTER OF PAD. 2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL. 3. ALL WELLS WITHIN 500' OF THE HORIZONTAL LEG ARE SHOWN ON THIS PLAT BASED UPON INFORMATION TAKEN FROM DEP MAPPING, WELL PLATS AND AERIAL PHOTOS. 4. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.

Table with 2 columns: LOCATION, COORDINATES. Includes SURFACE HOLE LOCATION (SHL) and BOTTOM HOLE LOCATION (BHL) details.

COMPANY: SWN Production Company, LLC. Includes logo and contact information.

Table with 2 columns: WELL #, PERMIT #. Includes SHAWN HARLAN MSH 1H, API WELL # 47, 051, 01881.

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW. WATERSHED: LAUREL RUN OF UPPER OHIO SOUTH. DISTRICT: LIBERTY COUNTY: MARSHALL. SURFACE OWNER: SCOTT L. HARLAN AND SHAWN HARLAN. OIL & GAS ROYALTY OWNER: SEE NOTE 5.

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.

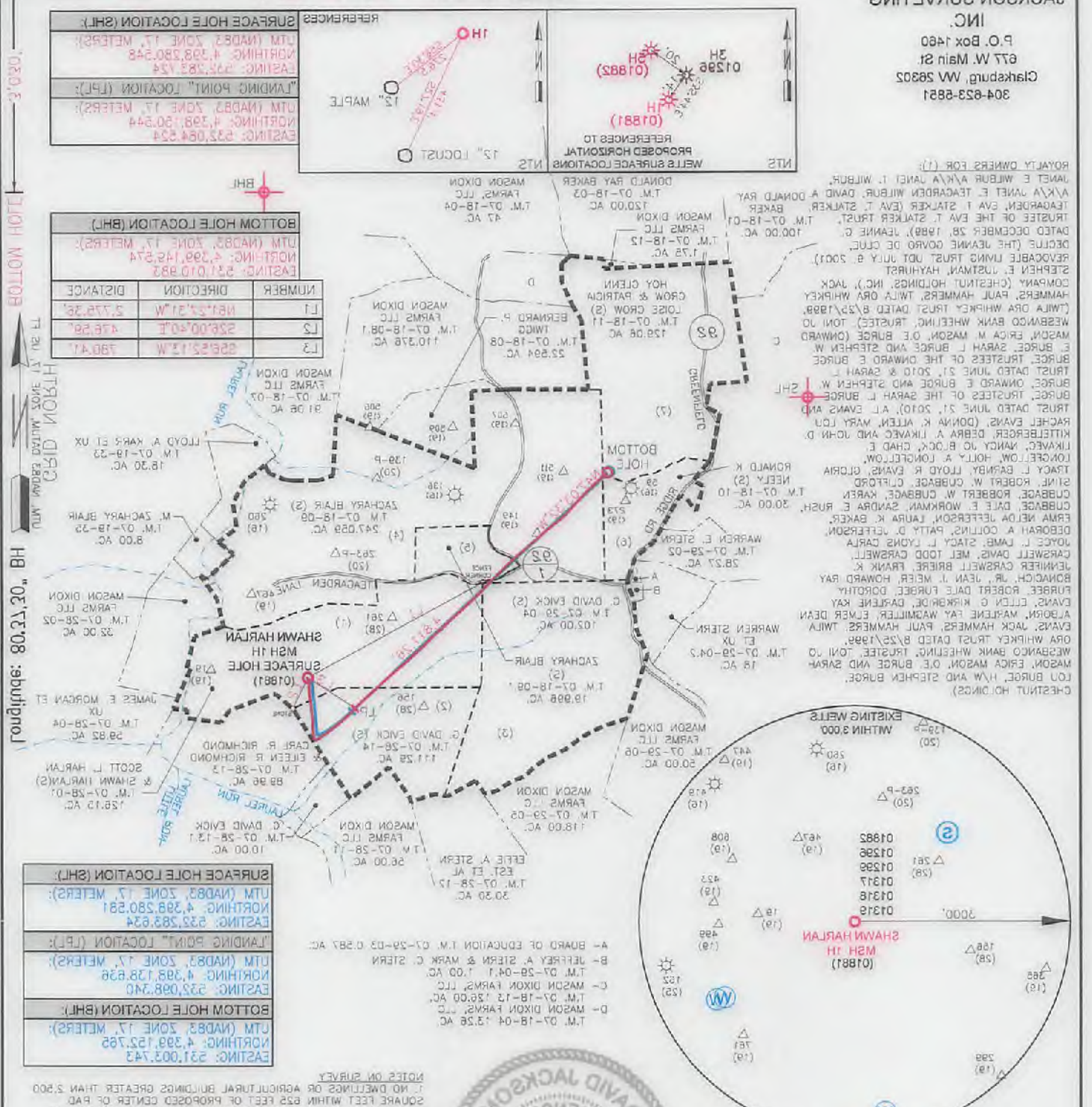
LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE, EXISTING / PRODUCING WELLHEAD, LPL* LANDING POINT LOCATION, EXISTING WATER WELL, EXISTING SPRING, SURVEYED BOUNDARY, DRILLING UNIT, LEASE BOUNDARY, ADSRILLED PATH, PROPOSED PATH.

REVISIONS: DATE: 04-20-2017. DRAWN BY: N. MANO. SCALE: 1" = 2000'. DRAWING NO: WELL LOCATION PLAT.

JACKSON SURVEYING

INC.
P.O. Box 1480
677 W. Main St
Clarksburg, WV 26302
304-823-8851

ROYALTY OWNERS FOR (1):
JANET E WILBUR A/K/A JANET I. WILBUR,
A/K/A JANET E TEAGARDEN WILBUR, DAVID A DONALD RAY,
TEAGARDEN, EVA T STALKER (EVA T STALKER BAKER
TRUSTEE OF THE EVA T STALKER TRUST,
DATED DECEMBER 28, 1989), LEANNE G
DEGLUE (THE LEANNE GOVOD DE CLUE
REVOCABLE LIVING TRUST DATED JULY 8, 2001),
STEPHEN E LUSTMAN, HAYHURST
COMPANY (CHESTNUT HOLDINGS, INC.), JACK
HAMMERS, PAUL HAMMERS, TWILA ORA WHIRKEY
(TWILA ORA WHIRKEY TRUST DATED 8/25/1989,
WESTBANK BANK WHEELING, TRUSTEE), TONI JO
MASON, ERICA M MASON, O.E. BURGE (ONWARD
BURGE, TRUSTEE OF THE ONWARD E BURGE
TRUST DATED JUNE 21, 2010 & SARAH L
BURGE, TRUSTEE OF THE SARAH L BURGE
TRUST DATED JUNE 21, 2010), A.L. EVANS AND
RACHEL EVANS (DONNA K ALLEN, MARY LOU
KITTELBERGER, DEBRA A LIKAVIC AND JOHN D
LIKAVIC, NANCY JO BLOCK, CHAD E
LONGELLOW, HOLLY A LONGELLOW,
TACAY L BARNBY, LLOYD R EVANS, GLORIA
SINCE, ROBERT W. CUBBAGE, CLYDE
CUBBAGE, ROBERT W. CUBBAGE, KAREN
CUBBAGE, DALE E. WORKMAN, SANDRA E RUSH,
FRMA NELA JEFFERSON, LAURA K BAKER,
DEBORAH A COLLINS, PATTY D JEFFERSON,
JOYCE L LAMB, STACY L LYONS CARLA,
CARWELL CARWELL, MEL TODD CARWELL,
JENNIFER DAVIS, BRIERE FRANK K,
BONNACH, JR. JEAN L MEIER, HOWARD RAY
BURBE, ROBERT DALE FURBER, DOROTHY
EVANS, ELLIEN G KIRKBRIDE, DARLENE KAY
ALBORN, MARLENE FAY WADSWILLER, LEVIER DEAN
EVANS, JACK HAMMERS, PAUL HAMMERS, TWILA
ORA WHIRKEY TRUST DATED 8/25/1989,
WESTBANK BANK WHEELING, TRUSTEE, TONI JO
MASON, ERICA MASON, O.E. BURGE AND SARAH
LOU BURGE, H/W AND STEPHEN BURGE,
CHESTNUT HOLDINGS



REFERENCES

SURFACE HOLE LOCATION (SHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,398,280.548 EASTING: 523,283.834
LANDING POINT LOCATION (LPL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,398,180.544 EASTING: 523,084.524

REFERENCES

BOTTOM HOLE LOCATION (BHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,399,142.574 EASTING: 521,010.882
-----------------------------	--

NUMBER	DIRECTION	DISTANCE
L1	N61°27'17"W	5,725.26'
L2	S28°00'40"E	4,625.9'
L3	S28°52'12"W	780.47'

REFERENCES

SURFACE HOLE LOCATION (SHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,398,280.581 EASTING: 523,283.834
LANDING POINT LOCATION (LPL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,398,180.836 EASTING: 523,088.740
BOTTOM HOLE LOCATION (BHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,399,122.785 EASTING: 521,003.743

REFERENCES

SURFACE HOLE LOCATION (SHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,398,280.581 EASTING: 523,283.834
LANDING POINT LOCATION (LPL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,398,180.836 EASTING: 523,088.740
BOTTOM HOLE LOCATION (BHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,399,122.785 EASTING: 521,003.743

NOTES ON SURVEY:
1. NO DWELLINGS OR AGRICULTURAL BUILDINGS GREATER THAN 2,500
SQUARE FEET WITHIN 625 FEET OF PROPOSED CENTER OF ROAD.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF
PROPOSED WELL.
3. ALL WELLS WITHIN 500' OF THE HORIZONTAL LEG ARE SHOWN ON THIS
PLAN BASED UPON INFORMATION TAKEN FROM DEEP MAPPING, WELL PLATS
AND AERIAL PHOTOS.
4. A GOOD NATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT
AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.

PLAT SCALE 1" = 2000'

COMPANY: SWN Production Company, LLC



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

WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	WATERSHED: LAUREL RUN OF UPPER OHIO SOUTH	UNITED STATES TOPOGRAPHIC MAPS (+) DENOTES LOCATION OF WELL ON	OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034
DISTRICT: LIBERTY	COUNTY: MARSHALL	ACCURACY: 1/2000	WV DEP
SURFACE OWNER: SCOTT L. HARLAN AND SHAWN HARLAN	QUADRANGLE: LITTLETON(SH)-WILEYVILLE(BH)	PROVEN SOURCE OF GRADE GPS	STATE OF WEST VIRGINIA
OIL & GAS ROYALTY OWNER: SEE NOTE 2	ACREAGE: 128.15	ELEVATION: (NAD 88, US FT)	PROFESSIONAL SURVEYOR
DRILL DEEPER <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) ADSORBED	ACREAGE: 128.15	OPERATOR'S WELL #:	NO. 708
DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) ADSORBED	ESTIMATED DEPTH: 7,189' TVD	API WELL #:	STATE OF WEST VIRGINIA
PERFORATE NEW FORMATION <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) ADSORBED	DESIGNATED AGENT: DEE SOUTHAHLL	STATE:	PROFESSIONAL SURVEYOR
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	ADDRESS: P.O. BOX 1300	CITY: JANE LEW	WEST VIRGINIA
ADDRESS: P.O. BOX 1300	CITY: JANE LEW	STATE: WV	WEST VIRGINIA
CITY: JANE LEW	STATE: WV	ZIP CODE: 26378	WEST VIRGINIA
CITY: JANE LEW	STATE: WV	ZIP CODE: 26378	WEST VIRGINIA

LEGEND:	PROPOSED SURFACE HOLE / BOTTOM HOLE
EXISTING / PRODUCING WELLS	EXISTING WATER WELL
LANDING POINT LOCATION	EXISTING SPRING
PROPOSED PATH	
ASSEMBLED PATH	
LEASE BOUNDARY	
DRILLING UNIT	
SURVEYED BOUNDARY	
REVISIONS:	
DATE: 04-20-2017	
DRAWN BY: N. MAMO	
SCALE: 1" = 2000'	
DRAWING NO:	
WELL LOCATION PLAT	