



APPROVED

NAME: *[Signature]*

DATE: *11/8/17*

SWN Production Company, LLC
P O Box 12359
Spring, Texas 77391-2359
www.swn.com

Via Federal Express

September 21, 2017

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

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Office of Oil and Gas

SEP 25 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:

- Quality Reclamation MRN 10H (API 47-049-02425)
- Quality Reclamation MRN 210H (API 47-049-02424)

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

Denise Grantham
Regulatory Technician
West Virginia Division

/dg
Encl.

R⁺ → V⁺

01/05/2018

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

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API 47-049-02425 County MARION District PAW PAW
Quad GRANT TOWN, WV Pad Name QUALITY RECLAMATION-MRN-PAD1 Field/Pool Name OSAGE FIELD DRY
Farm name JAMES AND DOROTHY ICE, MAJORIE A. KOPP Well Number QUALITY RECLAMATION MRN 10H
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 4,380,739.807 Easting 572,053.871
Landing Point of Curve Northing 4,380,643.225 Easting 573,308.989
Bottom Hole Northing 4,377,797.311 Easting 573,396.655

Elevation (ft) 1224.5' 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 Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
SOBM

Date permit issued 01/13/2017 Date drilling commenced 02/04/2017 Date drilling ceased 03/24/2017
Date completion activities began 05/12/2017 Date completion activities ceased 06/29/2017
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 354' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 608' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 546' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

01/05/2018

API 47-049 - 02425 Farm name JAMES AND DOROTHY ICE, MAJORIE A. KOPP Well number QUALITY RECLAMATION MRN 10H

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	588	NEW	J-55/54.5#		Y; 24 BBLS RETURNED
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	3219	NEW	J-55/36#		Y; 77 BBLS RETURNED
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	18349	NEW	HCP-110/20#		Y
Tubing		2.375	8280	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 TO SURFACE				SURFACE	24
Surface	CLASS A	535	15.60	1.20	642	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	1246	15.60	1.18	1470.28	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3160	15.60	1.19	3760.4	SURFACE	24
Tubing							

Drillers TD (ft) 18349' Loggers TD (ft) 18349'

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

Plug back procedure _____

Kick off depth (ft) 7244'

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- 049 - 02425 Farm name JAMES AND DOROTHY ICE, MAJORIE A. KOPP Well number QUALITY RECLAMATION MRN 10H

PRODUCING FORMATION(S)	DEPTHS	
MARCELLUS	7854.4'	TVD 8083.75' MD

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Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 1723 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs
 OPEN FLOW Gas 1687 mcfpd Oil 0 bpd NGL _____ bpd Water 410 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	
	0		0		
	SEE	ATTACHMENT	3		

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY
 Address PO BOX 12359 City SPRING State TX Zip 77391-2359
 Logging Company DIVERSIFIED
 Address 3602 TX-158 City MIDLAND State TX Zip 79706
 Cementing Company BAKER HUGHES
 Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380
 Stimulating Company US WELL SERVICES
 Address 770 S POST OAK LN #405 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 9/21/2017

Well Name:

QUALITY RECLAMATION MRN 10H

47049024250000

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.	354.00	354.00	
Top of Salt Water	608.00	607.99	N. A.	N. A.	
Pittsburgh Coal	546.00	545.99	1866.40	1866.12	
Big Injun (ss)	1866.40	1866.12	2093.20	2092.77	
Berea (siltstone)	2093.20	2092.77	2130.30	2129.86	
Rhinestreet (shale)	N. A.	N. A.	N. A.	N. A.	
Cashaqua (shale)	7017.54	6978.32	7359.31	7316.02	
Middlesex (shale)	7359.31	7316.02	7631.54	7573.27	
Burket (shale)	7631.54	7573.27	7680.17	7614.91	
Tully (ls)	7680.17	7614.91	7745.56	7667.62	
Mahantango (shale)	7745.56	7667.62	8083.75	7854.40	
Marcellus (shale)	8083.75	7854.40	N. A.	N. A.	GAS

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QUALITY RECLAMATION MRN 10H
PERF SUMMARY

SEP 25 2017

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STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	5/12/2017	18,048	18,241	42
2	5/12/2017	17,793	17,986	42
3	5/12/2017	17,537	17,731	42
4	5/13/2017	17,282	17,476	42
5	5/13/2017	17,027	17,220	42
6	5/14/2017	16,784	16,965	42
7	5/14/2017	16,494	16,715	42
8	5/14/2017	16,262	16,455	42
9	5/15/2017	16,023	16,200	42
10	5/15/2017	15,818	15,965	42
11	5/15/2017	15,502	15,696	42
12	5/15/2017	15,230	15,449	42
13	5/16/2017	14,964	15,140	42
14	5/16/2017	14,731	14,918	42
15	5/16/2017	14,469	14,652	42
16	5/16/2017	14,215	14,397	42
17	5/17/2017	13,983	14,122	42
18	5/17/2017	13,711	13,893	42
19	5/17/2017	13,450	13,634	42
20	5/17/2017	13,213	13,407	42
21	5/17/2017	12,924	13,135	42
22	5/18/2017	12,737	12,885	42
23	5/18/2017	12,440	12,621	42
24	5/18/2017	12,173	12,402	42
25	5/18/2017	11,844	12,068	42
26	5/19/2017	11,602	11,785	42
27	5/19/2017	11,391	11,554	42
28	5/19/2017	11,159	11,352	42
29	5/19/2017	10,903	11,072	42
30	5/20/2017	10,630	10,855	42
31	5/20/2017	10,408	10,577	42
32	5/20/2017	10,172	10,348	42
33	5/20/2017	9,883	10,094	42
34	5/20/2017	9,603	9,813	42
35	5/21/2017	9,355	9,528	42
36	5/21/2017	9,105	9,311	42
37	5/21/2017	8,862	9,046	42
38	5/21/2017	8,591	8,788	42
39	5/21/2017	8,359	8,550	42

QUALITY RECLAMATION MRN 10H
FRAC STAGE SUMMARY

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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	5/12/2017	90	8,765	9,041	6,276	498,840	9,672	
2	5/12/2017	93	8,717	8,923	6,083	499,680	8,017	
3	5/12/2017	96	8,789	9,019	6,137	500,140	7,984	
4	5/13/2017	96	8,764	8,955	6,359	496,600	7,874	
5	5/13/2017	98	8,489	8,773	6,105	498,140	7,905	
6	5/14/2017	97	8,789	9,005	6,369	497,200	7,916	
7	5/14/2017	94	8,620	8,991	6,218	493,220	7,706	
8	5/14/2017	96	8,664	8,862	6,009	499,660	7,623	
9	5/15/2017	99	8,706	8,994	6,781	497,880	7,590	
10	5/15/2017	94	8,685	8,890	6,745	495,540	7,642	
11	5/15/2017	98	8,765	8,926	6,083	497,200	7,568	
12	5/15/2017	97	8,772	9,019	6,083	499,780	7,533	
13	5/16/2017	97	8,681	8,816	6,924	498,100	7,379	
14	5/16/2017	97	8,672	8,887	6,752	503,200	7,584	
15	5/16/2017	98	8,724	8,923	6,473	501,260	7,448	
16	5/16/2017	93	8,762	8,858	6,287	499,580	7,409	
17	5/17/2017	94	8,784	8,916	6,271	499,400	7,357	
18	5/17/2017	97	8,813	8,966	6,720	496,380	7,319	
19	5/17/2017	94	8,823	8,994	6,874	496,540	7,382	
20	5/17/2017	93	8,420	8,622	6,287	502,340	7,383	
21	5/17/2017	93	8,490	8,633	6,180	492,100	7,372	
22	5/18/2017	98	8,757	9,120	6,895	505,380	7,246	
23	5/18/2017	100	8,396	8,587	6,194	506,960	7,219	
24	5/18/2017	91	8,558	8,729	6,473	496,900	7,256	
25	5/18/2017	94	8,547	8,680	6,341	497,880	7,361	
26	5/19/2017	100	8,603	8,794	7,110	495,960	7,183	
27	5/19/2017	101	8,318	8,637	7,249	502,800	7,298	
28	5/19/2017	99	8,124	8,340	6,505	494,750	7,133	
29	5/19/2017	100	7,875	8,097	6,248	495,630	7,023	
30	5/20/2017	100	7,909	8,060	6,477	500,100	6,999	
31	5/20/2017	100	8,003	8,619	6,176	506,520	6,944	
32	5/20/2017	100	7,734	8,050	6,727	506,760	7,130	
33	5/20/2017	101	7,866	8,125	6,516	497,140	6,927	
34	5/20/2017	101	7,898	8,250	5,951	496,000	6,881	
35	5/21/2017	99	8,184	8,372	6,427	502,480	6,871	
36	5/21/2017	100	7,997	8,394	6,752	502,140	6,889	
37	5/21/2017	101	7,814	8,522	6,688	496,940	6,909	
38	5/21/2017	100	7,871	8,261	6,531	493,840	6,786	
39	5/21/2017	100	7,701	8,208	6,255	500,705	6,758	

01/05/2018

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/12/2017
Job End Date:	5/21/2017
State:	West Virginia
County:	Marion
API Number:	47-049-02425-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Quality Reclamation MRN 10H
Latitude:	39.57333800
Longitude:	-80.11610830
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,940
Total Base Water Volume (gal):	11,959,390
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	82.59485	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	16.11602	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.94672	
			Hydrogen Chloride	7647-01-0	17.50000	0.22011	
WFRA-2000	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	60.00000	0.05669	
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.02835	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.02324	
OPTI-FLEX	U.S. Well Services, LLC	Friction Reducer	Trade Secret	Proprietary	50.00000	0.00703	
			Distillates, petroleum, hydrotreated light	64742-47-8	50.00000	0.00569	

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AI-303	J.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00032	
			Formic acid	64-18-6	20.00000	0.00011	
			Cinnamaldehyde	104-55-2	20.00000	0.00011	
			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	
AP One	J.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00057	

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)



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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	QUALITY RECLAMATION SERVICES, LLC (S) JAMES W. ICE & DOROTHY ICE, MARJORIE A. KOPP (R)	16-23-03	226.0710
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	MICHAEL L. CLELLAND & LISA M. CLELLAND (S)	16-23-06	20.60
3	CHARLES T. BRAGG (S)	16-23-05	26.5855
4	W.V. D.O.T. D.O.H. (S)	(CR 25/5)	0.6617
5	CHARLES T. BRAGG (S)	16-27-27	17.60
6	CHARLES T. BRAGG (S)	16-27-28	20.00
7	CHARLES T. BRAGG (S)	16-27-29	15.79
8	AMERICAN BITUMINOUS POWER PARTNERS, LP (S)	16-27-30	35.00
9	LILLY ANN PARKER (S)	16-27-20	37.25
10	LILY ANN PARKER (S)	16-27-19	40.25
11	LILY ANN PARKER (S)	16-27-18	49.65
12	LILY ANN PARKER (S)	16-27-12	43.93
13	AMERICAN BITUMINOUS POWER PARTNERS, LP (S)	16-27-42	121.80
14	LILY ANN PARKER (S)	16-27-11	23.00
15	LILY ANN PARKER (S)	16-27-10	16.50
16	BRADLEY S. LINVILLE (S)	16-27-8.1	33.92
17	DAVID MAX FLORI (S)	16-27-46.1	12.88
18	PAUL R. DUSKEY (S)	16-27-49	19.98

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	WARREN V. HARTLEY & DONNA S. HARTLEY	16-23-7	0.50
B	THOMAS W. MARTIN & STANIS F. MARTIN	16-25-17	0.83
C	THOMAS W. MARTIN & STANIS F. MARTIN	16-25-16	3.00
D	CHARLES G. MURRAY	16-25-19	9.89
E	GEORGE J. LEMLEY & ALICE M. LEMLEY	16-25-19.1	9.90
F	RODNEY R. MARTIN	16-27-26	1.00
G	RUSSELL MCGLONE & PAULINE MCGLONE	16-23-4	2.00
H	JOSHUA A. CORWIN & COURTNEY A. CORWIN	16-23-5.2	1.02
I	DOUGLAS P. ICE & DONNA E. ICE	16-23-5.1	2.00
J	RODNEY R. MARTIN & NELLIE J. MARTIN	16-27-26.1	2.33
K	RODNEY R. MARTIN	16-27-26.2	2.50
L	LILY A. PARKER	16-27-22.1	0.41
M	CHARLES T. BRAGG	16-27-22	4.07
N	NOUMENON CORP.	16-27-21	2.50
O	KATHY GOWER	16-27-17.1	2.15
P	KEVIN D. ROBBINS & SHIRLEY D. ROBBINS	16-27-17	9.47
Q	WILLIAM & GLANNA M. GASDA	16-32-11	2.74
R	LILY A. PARKER	16-27-12	43.93
S	MICHAEL J. DUKICH	16-27-9.3	1.09
T	MICHAEL L. DUKICH	16-27-9.4	1.02
U	ROBERT W. MORRIS & MARLENE M. MORRIS	16-27-9.1	1.02
V	JERFFREY L. AMMONS & ANNE C. AMMONS	16-27-9.5	1.19
W	JOSEPH P. AMMONS & CORA J. AMMONS	16-27-9.6	1.30
X	ALBERT L. REED OR RUTH A. REED	16-27-9	2.20
Y	RANDY E. FISHER & ROBIN D. FISHER	16-27-9.2	0.76
Z	RICHARD C. KEENER & SUSAN J. KEENER	16-27-8.2	1.29
AA	ALBERT C. MORRIS & TAMMY J. MORRIS	16-27-8.4	0.8830
BB	VIRGINIA M. WEEKLEY & RUSSEL F. WEEKLEY	16-27-7.4	0.54
CC	MICHAEL D. WEEKLEY	16-27-7.2	0.90
DD	STEPHEN F. WEEKLEY	16-27-7.1	0.34
EE	RODERICK D. WEEKLEY	16-27-7	0.24
FF	HELEN WEEKLEY	16-27-7.3	0.15
GG	RANDY W. CUNNINGHAM & KAREN A. CUNNINGHAM	16-27-6.1	0.88
HH	GLEN L. CLUTTER & DEBRA L. CLUTTER	16-27-5	1.21
II	SHEILA G. VISHNICK	16-27-1	2.00
JJ	DENZIL J. & CALANTHA WILKINSON	16-27-50	6.00
KK	BAXTER VOLUNTEER FIRE	16-27-52	1.54
LL	BAXTER VOLUNTEER FIRE	16-27-51	6.00
MM	CAROLYNE E. BROWNLEE & DORA M. BROWNLEE	16-29-36.1	8.72
NN	PAUL R DUSKEY	16-27-47	1.02
OO	DAVID M. FLORI	16-27-48	0.31
PP	SYLVIA M. PATECHUCK	16-28-05	18.06
QQ	PAUL E. LAWRENCE	16-28-03	0.48

01/05/2018

REVISIONS:	COMPANY:	 	
	OPERATOR'S	QUALITY RECLAMATION MRN	DATE: 09-08-2017
	WELL #:	10H	DRAWN BY: N. MANO
	DISTRICT:	PAW PAW	SCALE: N/A
	COUNTY:	MARION	DRAWING NO:
	STATE:	WV	WELL LOCATION PLAT 2