

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

API 47-103-03521 County WETZEL District CLAY
Quad LITTLETON Pad Name VERNON JOHNSON WTZ 601H Field/Pool Name VICTORY FIELD WET
Farm name VERNON S. JOHNSON ESTATE Well Number VERNON JOHNSON WTZ 601H
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 4,396,552.422 Easting 538,925.473
Landing Point of Curve Northing 4,395,871.775 Easting 539,167.088
Bottom Hole Northing 4,400,348.177 Easting 534,338.785

Elevation (ft) 1431.5' 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

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JUN 14 2023

Wv Department of
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Date permit issued 8/19/2022 Date drilling commenced 10/13/2022 Date drilling ceased 1/14/2023
Date completion activities began 1/28/2023 Date completion activities ceased 4/01/2023
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 440' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1908' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1282' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:
Steve Myer
12/08/2023
17-2723

API 47- 103 - 03521 Farm name VERNON S. JOHNSON ESTATE Well number VERNON JOHNSON WTZ 601H

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	136	NEW	J-55/94#		Y
Surface	17.5	13.375	542	NEW	J-55/54.50#		Y; 25 BBLS
Coal							
Intermediate 1	12.25	9.625	3177	NEW	J-55/36#		Y; 32 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	6	30,534	NEW	P-110 HP/24#		N
Tubing			0				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	502	15.6	1.20	602.40	SURFACE	8
Coal							
Intermediate 1	CLASS A	1077	15.6	1.18	1270.86	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	5301	15.0	1.29	6838.29	1400	24
Tubing							

Drillers TD (ft) 30,536 Loggers TD (ft) 30,536
 Deepest formation penetrated MARCELLUS Plug back to (ft) 30,446
 Plug back procedure N/A

Kick off depth (ft) 7,307' MD

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

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sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No
 Environmental Protection

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 39 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 642 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 _____

12/08/2023
SV

API 47- 103 - 03521

Farm name VERNON S. JOHNSON ESTATE

Well number VERNON JOHNSON WTZ 601H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT 1	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 1	2				

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Please insert additional pages as applicable.

12/08/2023 [Signature]

API 47- 103 - 03521 Farm name VERNON S. JOHNSON ESTATE Well number VERNON JOHNSON WTZ 601H

PRODUCING FORMATION(S)	DEPTHS		
MARCELLUS	7656	TVD	8688 MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1321 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 34,870 mcfpd Oil 0 bpd NGL _____ bpd Water 1590 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)
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	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 BAKER HUGHES
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

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

Stimulating Company SWN WELL SERVICES
Address PO BOX 12359 City SPRING State TX Zip 77391

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832-796-6139
Signature Denise GrantHAM Title REGULATORY SPECIALIST Date 6.13.2023

Latitude: 39°45'00" SURFACE HOLE 1,175'

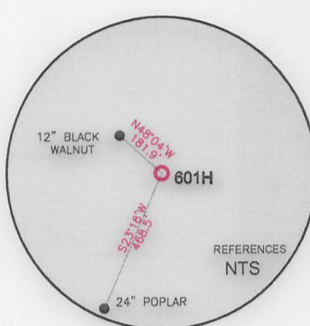
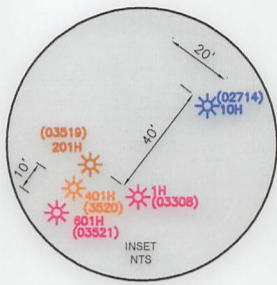
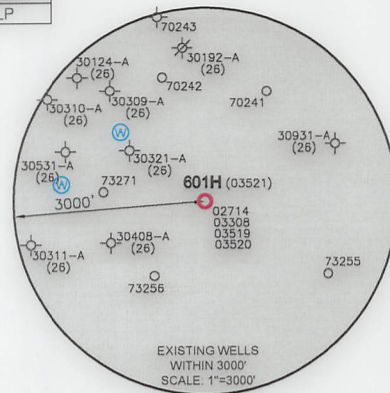
JACKSON SURVEYING INC.

2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

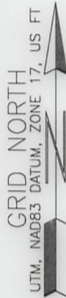
Latitude: 39°47'30" BOTTOM HOLE 4,448'

Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Contains 3 rows of survey data.

Location data tables for SURFACE HOLE LOCATION (SHL), LANDING POINT LOCATION (LPL), and BOTTOM HOLE LOCATION (BHL) with UTM coordinates.



Location data tables for SHL, LPL, and BHL with UTM coordinates.



Longitude: 80°35'00"
Longitude: 80°32'30"

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.

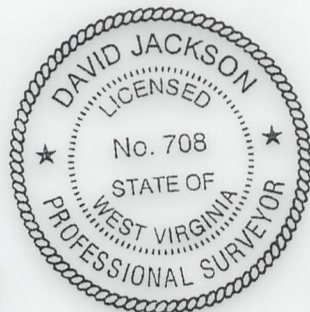
NOTES ON SURVEY

- 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.

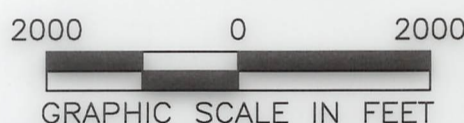
I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

David L Jackson



INTERIOR PARCEL LINE TRACT 7-24-1
p# INTERIOR PARCEL ID TRACT 7-24-1



COMPANY: SWN Production Company, LLC

Table with well details: WVDEP address, accuracy (1/200), proven source (survey grade GPS), elevation (NAVD 88, US FT), operator's well # (601H), and API well # (47, 103, 03521).

Well type and ownership information: WELL TYPE: OIL, WASTED DISPOSAL, PRODUCTION, DEEP, GAS, LIQUID INJECTION, STORAGE, SHALLOW. WATERSHED: WEST VIRGINIA FORK FISH CREEK (HUC-10). DISTRICT: CLAY, COUNTY: WETZEL. SURFACE OWNER: VERNON S. JOHNSON ESTATE. OIL & GAS ROYALTY OWNER: AMP FUND III, LP; ALICE M. ABEREGG; ELLEN ABEREGG; JAMES J. ABEREGG; KEITH ABEREGG; BRIAN F. BUTLER; RED STONE RESOURCES, LLC; JAMES STONEKING. DRILL, DRILL DEEPER, REDRILL, FRACTURE OR STIMULATE, PLUG OFF OLD FORMATION, PERFORATE NEW FORMATION. CONVERT, PLUG & ABANDON, CLEAN OUT & REPLUG, OTHER CHANGE (ASDRILLED) 12/08/2023. TARGET FORMATION: MARCELLUS. ESTIMATED DEPTH: 7,690' TVD 30,536' TMD.

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: 1300 FORT PIERPONT ROAD SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 DESIGNATED AGENT: BRITTANY WOODY ADDRESS: 1300 FORT PIERPONT ROAD SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

Legend and Revisions table. Legend includes symbols for proposed surface hole, existing wellhead, landing point, water well, spring, surveyed boundary, drilling unit, lease boundary, asdrilled path, and proposed path. Revisions table includes date (06-09-2023), drawn by (N. MANO), scale (1\"/>

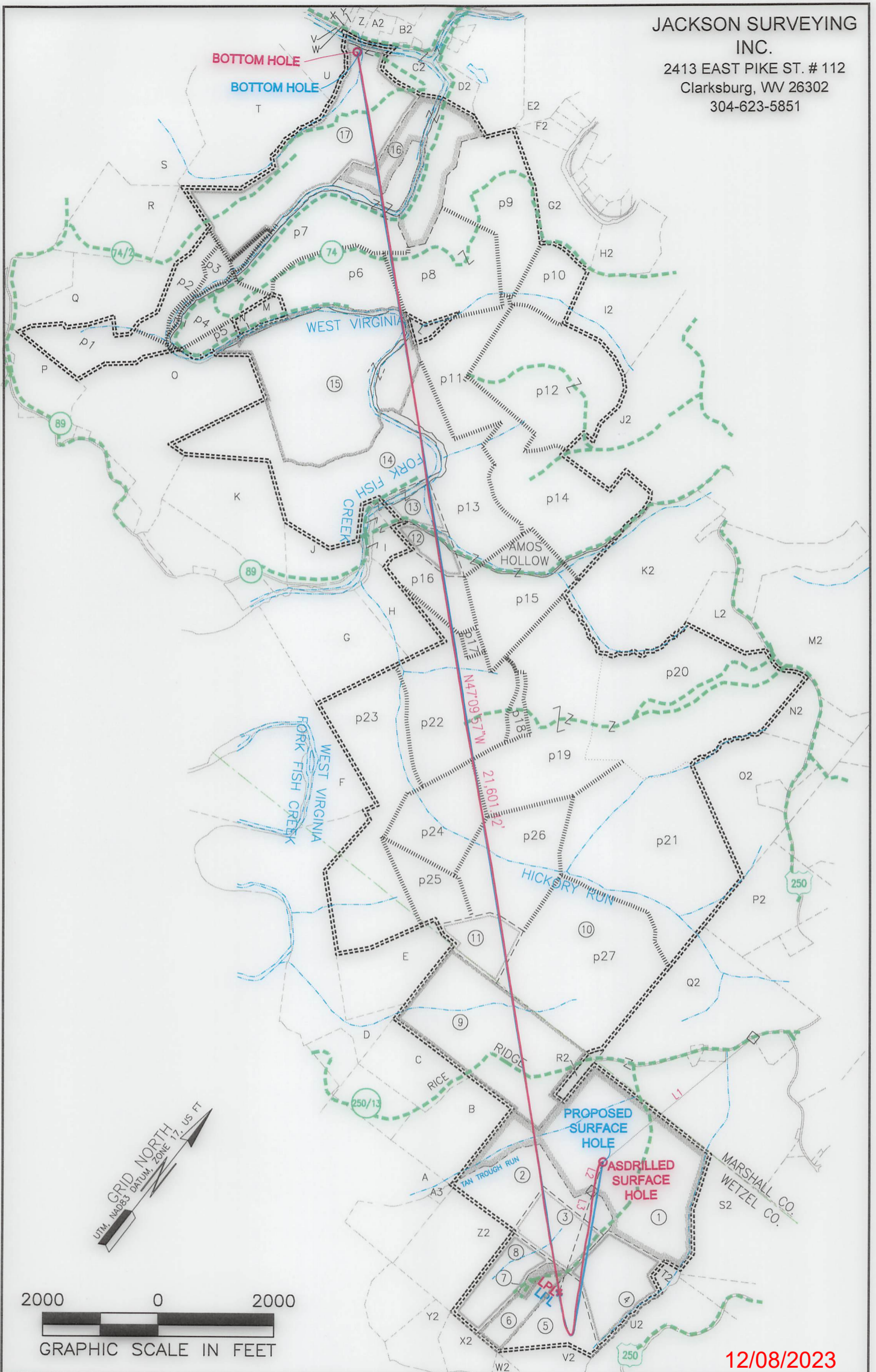
JACKSON SURVEYING

INC.

2413 EAST PIKE ST. # 112

Clarksburg, WV 26302

304-623-5851





REVISIONS:		COMPANY:	
OPERATOR'S	VERNON JOHNSON WTZ	API #:	DATE: 06-09-2023
WELL #:	601H	047-103-03521	DRAWN BY: N. MANO
DISTRICT:	COUNTY:	STATE:	SCALE: 1" = 2000'
CLAY	WETZEL	WV	DRAWING NO:
		WELL LOCATION PLAT 2	

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	JOHNSON VERNON S EST (S)/ AMP FUND III; LP; ALICE M. ABEREGG; ELLEN ABEREGG; JAMES J. ABEREGG; KEITH ABEREGG, BRIAN F. BUTLER; RED STONE RESOURCES, LLC; JAMES STONEKING (R)	3-1-1
TRACT	SURFACE OWNER (S)	TAX PARCEL
2	DRAHEIM HERBERT P ET AL (S)	3-1-6
3	DRAHEIM HERBERT P ETAL (S)	3-1-5
4	MILLIKEN KEVIN R ETAL (S)	3-1-4
5	MILLIKEN KEVIN R ETAL (S)	3-1-13
6	MILLIKEN KEVIN R ETAL (S)	3-1-12
7	MILLIKEN KEVIN R ETAL (S)	3-1-11
8	DRAHEIM GARY WAYNE JR ETAL (S)	3-1-10
9	ABEREGG D W EST & ABEREGG WILLIAM D ETAL L/E ABEREGG DA (S)	1-3-2
10	W VA WILDLIFE RESOURCES SECTION (S)	7-24-1
11	JOHN R. ISIMINGER; LAWRENCE W. MCCLELLAND; MICHAEL CLAY WADE(S)	7-24-6
12	PETER VELLEKOOP & LINDA VELLEKOOP (S)	7-26-6.1
13	GEDEON DANIEL D ET UX (S)	7-26-6
14	YOCUM JOSEPH LEE & MICHAEL D (S)	7-26-9
15	CONSOLIDATED GAS SUPPLY CORP (S)	7-26-8
16	FROMHART BRAD ET UX - LIFE (S)	7-20-41
17	GRIFFEN M PEGGY REVOCABLE LIVING TRUST (S)	7-19-28

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MCGUFFIE ARCH	1-6-5
B	WILLIAMS JOHN EDWARD	1-3-9
C	WILLIAMS LONNIE L	1-3-7
D	SEIDLER EARL DALE & NETTIE	1-2-6.1
E	WILLIAMS KATHERINE E TRUST	1-3-1
F	VELLEKOOP PETER B ET UX - TOD	7-27-13
G	VELLEKOOP PETER B ET UX - TOD	7-27-11
H	VELLEKOOP PETER B ET UX - TOD	7-27-10.1
I	VELLEKOOP PETER B ET UX - TOD	7-27-6.2
J	STIPETICH SUSAN F & FRANK R	7-27-4.2
K	YOCUM JOSEPH LEE & MICHAEL D	7-27-4
L	BUZZARD COLIN R	7-26-3
M	HUNDRED RESOURCES INC	7-26-11
N	BUTLER JOHN M & LISA A	7-26-11.1
O	HORNER DELORSE A	7-26-10
P	WADE EDWARD E JR	7-27-2
Q	MORGAN JAMES E - LIFE	7-26-14
R	ROMACK VICTOR A	7-19-38
S	HORNER DELORSE A - LIFE	7-19-30
T	GRIFFEN M PEGGY REVOCABLE LIVING TRUST	7-19-29
U	ZELIC NICK ET UX	7-19-27
V	HORNER DELORSE A - LIFE	7-19-26
W	CHURCH OF CHRIST TRUSTEES	7-19-25
X	COLLINS BRIAN & PAMELA J	7-19-24
Y	COLLINS BRIAN & PAMELA J	7-19-23.1
Z	COLLINS BRIAN & PAMELA J	7-19-23.2
A2	DRUSCHEL JAMES F & JAMIE ANN ET AL	7-19-23
B2	CUMPTON GAIL	7-19-20
C2	UNDERDONK ALAN	7-16-25.1
D2	FROMHART BRAD ET UX - LIFE	7-20-1
E2	BURGE JUDITH A & VIRGINIA L BAILEY ET AL	7-20-6
F2	GEHO ANNIE L EST	7-20-11
G2	BURLEY AMMON ET UX	7-20-12
H2	BURLEY AMMON	7-20-18
I2	BURLEY AMMON A	7-20-24
J2	BURLEY AMMON A	7-20-37
K2	GRESHAW JASON M & MARY L	7-25-2
L2	BROWN ANDREW C III	7-25-6
M2	HARRINGTON CLYDE F	7-25-7
N2	W VA DEPT OF COMMERCE DIV OF NATURAL RESOURCES	7-25-9
O2	CONAWAY THOMAS EARL JR & CAROLYN K STOWE	7-25-12
P2	CONAWAY THOMAS E	7-23-1
Q2	PRENDERGAST MICHAEL J & SUELLEN LEMLEY	7-23-26
R2	LONG LONNY DAVID & LINDA SUE	1-3-2.1
S2	PRENDERGAST MICHAEL J & SUE ELLEN	3-1-2
T2	WV MINERALS INC	3-1-3
U2	MCDIFFITT WILBERT(WEBB)H TRUST	3-1-35
V2	GORBY GREGORY A & CYNTHIA D	3-1-14
W2	WAYNE CARMINT REALTY	3-1-18
X2	WAYNE CARMINT REALTY LLC	3-1-19
Y2	WAYNE CARMINT REALTY LLC	3-1-20
Z2	DRAHEIM GARY W JR ETAL	3-1-9
A3	CBC HOLDINGS LLC	3-1-8.1

12/08/2023

REVISIONS:	COMPANY:	 					
	OPERATOR'S	VERNON JOHNSON WTZ	API #:	DATE: 06-09-2023			
	WELL #:	601H	047-103-03521	DRAWN BY: N. MANO			
	DISTRICT:	CLAY	COUNTY:	WETZEL	STATE:	WV	SCALE:
						DRAWING NO:	WELL LOCATION PLAT 3



Well Name: **Vernon Johnson WTZ 601H**

47103035210000

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 JUN 14 2023
 WV Department of Environmental Protection

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	0.00	0.00	440.00	440.00	
Top of Salt Water	1908.00	1881.00	NA	NA	
Pittsburgh Coal	1282.00	1277.00	1290.00	1285.00	
Pottsville (ss)	1407.00	1399.00	1443.00	1434.00	
Raven Cliff (ss)	1903.00	1876.00	2186.00	2135.00	
Maxton (ss)	2186.00	2135.00	2620.00	2513.00	
Big Injun (ss)	2620.00	2513.00	2913.00	2766.00	
Berea (siltstone)	3321.00	3120.00	3354.00	3148.00	
Rhinestreet (shale)	7783.00	7003.00	8192.00	7383.00	
Middlesex (shale)	8192.00	7383.00	8273.00	7447.00	
Burket (shale)	8328.00	7486.00	8377.00	7520.00	
Tully (ls)	8377.00	7520.00	8423.00	7547.00	
Mahantango (shale)	8423.00	7547.00	8688.00	7656.00	
Marcellus (shale)	8688.00	7656.00	NA	NA	GAS

VERNON JOHNSON WTZ 601H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	1/28/2023	80.6	8,894	10,925	3,858	176,500	6,982	0
2	2/1/2023	69.8	10,384	7,220	4,471	304,820	12,642	0
3	2/2/2023	92.9	10,524	8,475	4,625	306,100	10,513	0
4	2/2/2023	87.4	10,118	5,420	5,251	305,300	10,495	0
5	2/3/2023	85.2	9,766	6,455	5,025	301,010	9,758	0
6	2/3/2023	91.6	10,426	6,670	5,541	308,830	9,741	0
7	2/3/2023	83.1	10,245	6,377	4,823	307,560	10,151	0
8	2/4/2023	92.2	10,628	6,575	5,280	304,050	9,984	0
9	2/4/2023	89.8	10,457	6,500	5,002	309,920	9,668	0
10	2/4/2023	90.9	10,367	6,835	5,424	313,530	9,881	0
11	2/5/2023	86.9	10,431	5,605	4,915	301,490	9,469	0
12	2/5/2023	90	10,569	6,975	5,000	318,090	9,521	0
13	2/5/2023	83.4	10,267	6,032	5,290	308,260	9,667	0
14	2/6/2023	86.5	10,380	6,437	5,203	304,120	10,127	0
15	2/6/2023	85.6	10,316	6,445	4,925	317,240	9,652	0
16	2/6/2023	88	10,510	6,545	5,265	309,950	9,519	0
17	2/6/2023	87.5	10,438	6,165	5,207	311,240	9,518	0
18	2/7/2023	89.5	10,355	6,295	5,898	315,350	9,535	0
19	2/7/2023	80.9	10,181	7,100	4,925	317,660	9,096	0
20	2/7/2023	77	9,720	6,623	5,334	310,620	8,952	0
21	2/8/2023	94.5	10,426	6,510	5,674	313,840	9,629	0
22	2/8/2023	78.3	9,194	6,461	5,400	314,990	10,749	0
23	2/8/2023	87.6	10,310	6,675	5,628	308,670	8,682	0
24	2/8/2023	90.6	10,289	6,350	5,426	304,720	9,189	0
25	2/9/2023	90.8	10,266	6,876	5,300	307,730	9,465	0
26	2/9/2023	90.9	10,338	6,510	6,005	311,040	9,003	0
27	2/9/2023	88.2	10,405	5,452	5,229	308,560	9,407	0
28	2/10/2023	86.8	10,560	6,915	5,425	311,490	9,036	0
29	2/10/2023	48.2	6,240	6,505	5,125	310,360	15,739	0
30	2/12/2023	78.4	8,743	6,062	6,080	312,040	10,595	0
31	2/12/2023	91.8	10,253	5,777	5,846	311,970	9,553	0
32	2/13/2023	92.7	10,348	6,705	5,863	310,820	9,309	0
33	2/13/2023	91	10,092	6,895	6,084	309,560	9,333	0
34	2/13/2023	91.8	10,095	6,790	5,415	312,350	9,007	0
35	2/14/2023	89.7	10,115	6,239	5,305	317,240	9,096	0
36	2/14/2023	81	9,254	5,725	5,200	314,210	9,929	0
37	2/14/2023	93.7	10,241	6,055	5,688	318,360	9,381	0
38	2/15/2023	93.8	10,433	5,405	5,673	317,360	9,095	0
39	2/15/2023	87.8	9,628	5,629	4,481	315,140	9,397	0
40	2/16/2023	75.1	8,555	5,561	4,860	315,180	9,824	0
41	2/16/2023	93.8	10,066	5,972	4,588	314,160	9,121	0
42	2/17/2023	90.5	9,435	6,784	5,878	312,540	9,405	0
43	2/17/2023	90.9	9,777	7,007	4,536	309,600	9,177	0
44	2/18/2023	90.9	9,290	6,233	5,828	309,830	9,078	0
45	2/18/2023	90.6	9,536	6,042	4,927	310,340	8,815	0
46	2/18/2023	90.3	9,269	6,218	4,773	313,110	9,210	0
47	2/19/2023	96.6	9,651	6,124	5,584	318,370	9,103	0
48	2/19/2023	98.1	9,574	6,004	5,063	314,210	9,117	0
49	2/19/2023	89.5	9,397	6,784	4,368	309,150	9,152	0
50	2/20/2023	99.5	9,496	5,816	5,556	313,930	8,940	0
51	2/20/2023	91.3	9,387	6,076	4,602	309,240	9,307	0
52	2/21/2023	95.3	9,456	5,963	4,864	316,410	8,967	0
53	2/21/2023	98.9	9,647	5,975	5,770	306,650	8,905	0

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STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	2/21/2023	92.1	9,228	6,297	4,920	311,820	8,816	0
55	2/22/2023	93.6	9,621	6,533	5,539	311,390	8,790	0
56	2/22/2023	88.9	8,737	5,571	5,770	312,000	8,728	0
57	2/22/2023	95.1	9,469	6,440	5,181	310,060	8,711	0
58	2/23/2023	89.5	9,331	5,855	5,840	306,040	8,759	0
59	2/24/2023	93	9,495	6,509	5,342	312,420	8,612	0
60	2/24/2023	94.4	9,601	6,875	5,421	313,970	8,772	0
61	2/24/2023	80.5	8,586	7,116	5,200	314,220	8,808	0
62	2/24/2023	91.2	9,674	7,301	5,620	310,470	8,850	0
63	2/25/2023	95.1	9,812	7,276	6,493	316,120	8,808	0
64	2/25/2023	93.9	9,200	6,103	6,137	307,490	8,554	0
65	2/25/2023	89	9,241	6,641	5,660	314,750	8,785	0
66	2/26/2023	86.2	9,274	7,042	5,654	303,710	8,508	0
67	2/26/2023	98.5	9,795	6,645	6,420	314,100	8,293	0
68	2/26/2023	80.7	8,831	5,708	6,280	304,500	8,471	0
69	2/26/2023	90.6	9,309	7,411	5,527	307,510	8,618	0
70	2/27/2023	94.7	9,185	7,127	6,410	312,380	9,422	0
71	2/27/2023	95.9	9,365	7,150	6,072	308,000	8,465	0
72	2/27/2023	99.6	9,511	7,465	6,399	310,580	8,504	0
73	2/27/2023	99.6	9,335	6,182	6,301	314,540	8,540	0
74	2/28/2023	99.5	9,433	6,880	6,905	314,970	8,495	0
75	2/28/2023	99.5	9,369	6,952	5,339	313,080	9,442	0
76	2/28/2023	99.3	9,277	7,048	5,608	312,870	7,912	0
77	3/1/2023	98.9	8,850	6,356	6,048	309,910	7,822	0
78	3/1/2023	81.8	8,549	6,804	6,282	312,320	7,693	0
79	3/1/2023	85.5	8,935	6,359	6,447	314,490	7,856	0
80	3/1/2023	94.9	9,385	6,680	6,425	315,410	7,755	0
81	3/2/2023	93.9	9,437	5,617	6,794	314,890	7,748	0
82	3/2/2023	95.3	9,823	6,890	5,670	306,770	7,437	0
83	3/2/2023	97.6	9,496	6,749	5,375	311,690	7,570	0
84	3/2/2023	98.8	9,462	6,160	5,000	313,220	7,704	0
85	3/3/2023	98.2	8,672	6,500	5,481	313,350	7,603	0
86	3/3/2023	97.4	9,337	6,627	5,155	308,560	7,532	0
87	3/3/2023	96.3	9,231	6,364	4,926	314,220	7,740	0
88	3/3/2023	97.6	8,786	6,514	4,917	309,330	8,272	0
89	3/3/2023	99.4	8,807	5,419	5,433	312,450	7,409	0
90	3/3/2023	99.5	8,844	5,050	5,700	307,630	7,261	0
91	3/3/2023	99.3	8,519	5,240	5,500	308,290	7,181	0
92	3/4/2023	99.4	8,638	6,595	5,214	305,680	7,107	0
93	3/4/2023	99.2	8,857	6,191	5,254	309,410	7,176	0
94	3/4/2023	99.8	8,358	6,560	5,000	307,950	7,187	0
95	3/4/2023	99.5	8,450	6,015	4,985	311,580	7,061	0
96	3/4/2023	99.6	8,523	6,200	5,015	315,500	7,175	0
97	3/5/2023	99.8	8,348	5,345	5,906	303,910	7,026	0
98	3/5/2023	99.4	8,398	6,304	5,334	312,830	7,167	0
99	3/5/2023	99.8	8,382	6,562	5,572	315,500	7,791	0
100	3/5/2023	99.9	8,485	6,450	5,253	313,400	7,331	0
101	3/5/2023	99.9	8,403	5,641	5,063	302,200	7,106	0
102	3/5/2023	99.7	8,371	6,317	5,000	311,280	7,170	0
103	3/5/2023	99.4	8,559	6,630	5,100	304,500	6,915	0
104	3/5/2023	86	8,128	4,200	5,025	312,000	6,976	0

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ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
Stage No	Perforation I	Perf From MD	Perf to MD	Number of Perforations
1	1/23/2023	30,446	30,356	36
2	1/31/2023	30,322	30,145	36
3	2/1/2023	30,112	29,935	36
4	2/2/2023	29,902	29,725	36
5	2/3/2023	29,692	29,515	36
6	2/3/2023	29,482	29,305	36
7	2/3/2023	29,272	29,095	36
8	2/4/2023	29,062	28,885	36
9	2/4/2023	28,852	28,675	36
10	2/4/2023	28,642	28,465	36
11	2/4/2023	28,432	28,255	36
12	2/5/2023	28,222	28,045	36
13	2/5/2023	28,012	27,835	36
14	2/5/2023	27,802	27,625	36
15	2/6/2023	27,592	27,415	36
16	2/6/2023	27,382	27,205	36
17	2/6/2023	27,172	26,995	36
18	2/6/2023	26,962	26,785	36
19	2/7/2023	26,752	26,575	36
20	2/7/2023	26,542	26,365	36
21	2/7/2023	26,332	26,155	36
22	2/8/2023	26,122	25,945	36
23	2/8/2023	25,912	25,735	36
24	2/8/2023	25,702	25,525	36
25	2/9/2023	25,492	25,315	36
26	2/9/2023	25,282	25,105	36
27	2/9/2023	25,072	24,895	36
28	2/10/2023	24,862	24,685	36
29	2/10/2023	24,652	24,475	36
30	2/12/2023	24,442	24,265	36
31	2/12/2023	24,232	24,055	36
32	2/12/2023	24,022	23,845	36
33	2/13/2023	23,812	23,635	36
34	2/13/2023	23,602	23,425	36
35	2/13/2023	23,392	23,215	36
36	2/14/2023	23,182	23,005	36
37	2/14/2023	22,972	22,795	36
38	2/14/2023	22,762	22,585	36
39	2/15/2023	22,552	22,375	36
40	2/15/2023	22,342	22,165	36
41	2/16/2023	22,132	21,955	36

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STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
42	2/17/2023	21,922	21,745	36
43	2/17/2023	21,712	21,535	36
44	2/18/2023	21,502	21,325	36
45	2/18/2023	21,292	21,115	36
46	2/18/2023	21,082	20,905	36
47	2/19/2023	20,872	20,695	36
48	2/19/2023	20,662	20,485	36
49	2/19/2023	20,452	20,275	36
50	2/20/2023	20,242	20,065	36
51	2/20/2023	20,032	19,855	36
52	2/20/2023	19,822	19,645	36
53	2/21/2023	19,612	19,435	36
54	2/21/2023	19,402	19,225	36
55	2/21/2023	19,192	19,015	36
56	2/22/2023	18,982	18,805	36
57	2/22/2023	18,772	18,595	36
58	2/22/2023	18,562	18,385	36
59	2/23/2023	18,352	18,175	36
60	2/24/2023	18,142	17,965	36
61	2/24/2023	17,932	17,755	36
62	2/24/2023	17,722	17,545	36
63	2/25/2023	17,512	17,335	36
64	2/25/2023	17,302	17,125	36
65	2/25/2023	17,092	16,915	36
66	2/26/2023	16,882	16,705	36
67	2/26/2023	16,672	16,495	36
68	2/26/2023	16,462	16,285	36
69	2/26/2023	16,252	16,075	36
70	2/27/2023	16,042	15,865	36
71	2/27/2023	15,832	15,655	36
72	2/27/2023	15,622	15,445	36
73	2/27/2023	15,412	15,235	36
74	2/27/2023	15,202	15,025	36
75	2/28/2023	14,992	14,815	36
76	2/28/2023	14,782	14,605	36
77	2/28/2023	14,572	14,395	36
78	3/1/2023	14,362	14,185	36
79	3/1/2023	14,152	13,975	36
80	3/1/2023	13,942	13,765	36
81	3/1/2023	13,732	13,555	36
82	3/2/2023	13,522	13,345	36
83	3/2/2023	13,312	13,135	36

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STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
84	3/2/2023	13,102	12,925	36
85	3/3/2023	12,892	12,715	36
86	3/3/2023	12,682	12,505	36
87	3/3/2023	12,472	12,295	36
88	3/3/2023	12,262	12,085	36
89	3/3/2023	12,052	11,875	36
90	3/3/2023	11,842	11,665	36
91	3/3/2023	11,632	11,455	36
92	3/4/2023	11,422	11,245	36
93	3/4/2023	11,212	11,035	36
94	3/4/2023	11,002	10,825	36
95	3/4/2023	10,792	10,615	36
96	3/4/2023	10,582	10,405	36
97	3/4/2023	10,372	10,195	36
98	3/5/2023	10,162	9,985	36
99	3/5/2023	9,952	9,775	36
100	3/5/2023	9,742	9,565	36
101	3/5/2023	9,532	9,355	36
102	3/5/2023	9,322	9,145	36
103	3/5/2023	9,112	8,935	36
104	3/5/2023	8,902	8,725	36

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/27/2023
Job End Date:	3/5/2023
State:	West Virginia
County:	Wetzel
API Number:	47-103-03521-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	VERNON JOHNSON WTZ 601
Latitude:	39.71793514
Longitude:	-80.54586604
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,525
Total Base Water Volume (gal):	38,350,640
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
Base Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	90.47352	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.34098	

SA
7-27-23

			Water	7732-18-5	100.00000	0.34098	
StimSTREAM SC 398 CW	SWN Well Services	Scale Inhibitor					
				Listed Below			
StimSTREAM FR 2800	SWN Well Services	Friction Reducer					
				Listed Below			
StimSTREAM FR 9800	SWN Well Services	Friction Reducer					
				Listed Below			
FSTI-CI-02	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
Ferriplex 80	SWN Well Services	Iron Control					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			
Clearal 270	SWN Well Services	Biocide					
				Listed Below			
HCL	SWN Well Services	Solvent					
				Listed Below			

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Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

		Crystalline Silica, quartz	14808-60-7	100.00000	9.10252	
		Hydrochloric Acid	7647-01-0	15.00000	0.04627	
		Glutaraldehyde	111-30-8	25.00000	0.00251	
		Ethylene glycol	107-21-1	40.00000	0.00149	
		Quaternary Ammonium compounds, Benzyl-C12-C16-alkyldimethyl, Chlorides	68424-85-1	7.50000	0.00075	RECEIVED Office of Oil and Gas JUN 14 2023 WV Department of Environmental Protection
		Didecyldimethylammonium Chloride	7173-51-5	7.50000	0.00075	
		Sodium Erythorbate	6381-77-7	100.00000	0.00066	
		Ethanol	64-17-5	4.00000	0.00040	
		Cinnamaldehyde	104-55-2	10.00000	0.00012	
		N,N-Dimethylformamide	68-12-2	10.00000	0.00012	
		Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-	9016-45-9	10.00000	0.00012	
		Triethyl phosphate	78-40-0	5.00000	0.00006	
		Isopropyl alcohol	67-63-0	5.00000	0.00006	
		2-Butoxyethanol	111-76-2	5.00000	0.00006	
		1-Octanol	111-87-5	5.00000	0.00006	
		benzyl chloridequaternized	72480-70-7	5.00000	0.00006	
		1-Decanol	112-30-1	5.00000	0.00006	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

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

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)