

Well Operator's Report of Well Work



Well Number: Willett S-8HM (L027529)

API: 47 - 051 - 02422

Submission: Initial Amended

Notes: Original

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

11/08/2024

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

API 47-051-02422 County Marshall District Meade
Quad Glen Esaton 7.5' Pad Name WILLETT Field/Pool Name N/A
Farm name CNX Land, LLC Well Number Willett S-8HM (L027529)
Operator (as registered with the OOG) EQT Production Company
Address 400 Woodcliff Drive City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,408,180.19 Easting 529,422.51
Landing Point of Curve Northing 4,408,319.8 Easting 530,772.3
Bottom Hole Northing 4,405,242.8 Easting 532,540.1

Elevation (ft) 1310' 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)

Synthetic Oil Based Mud 13.17 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phosphates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 01/07/2022 Date drilling commenced 06/07/2022 Date drilling ceased 09/05/2023
Date completion activities began 03/26/2024 Date completion activities ceased 05/14/2024
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 991' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1463' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 888', 986' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

RECEIVED
Office of Oil and Gas
AUG 2 2024
WV Department of
Environmental Protection

Reviewed by:
Sh
Strader
STRADER
9/6/2024

11/08/2024

API 47-051-02422

Farm name CNX Land, LLC

Well number Willett S-8HM (L027529)

CASING STRINGS	Hole Size	Casing Size	Depth (GL)	New or Used	Grade wt/ft	Basket Depth(s) (GL)	Did cement circulate (Y/N) * Provide details below*
Conductor	38"	30"	120'	NEW	118.65#	N/A	Y
Surface	17-1/2"	13-3/8"	1109'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2988'	NEW	J-55 36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4", 8-1/2"	5-1/2"	20,650'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has a calculated TOC of 1998' GL, which is greater than 500' TVD above the producing formation. No issues during cement job.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (GL)	WOC (hrs)
Conductor	CLASS A	400	15.6	1.21	484	0	8+
Surface	CLASS A	1205	15.6	1.18	1421	0	8
Coal							
Intermediate 1	CLASS A	975	15.0	1.38	1345	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3715	15.0	1.18	4384	1998'	8+
Tubing							

Drillers TD (ft) 20,681'

Loggers TD (ft) N/A

Deepest formation penetrated MARCELLUS

Plug back to (ft) N/A

Plug back procedure N/A

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

Kick off depth (ft) 3,082'

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

CONDUCTOR- NONE

SURFACE- ON SHOE TRACK AND EVERY 500' TO SURFACE

INTERMEDIATE: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE

PRODUCTION: ON SHOE TRACK AND EVERY JOINT TO 16'

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 _____

11/08/2024

API 47- 051 - 02422 Farm name CNX Land, LLC Well number Willett S-8HM (L027529)

Drilling Contractor Falcon (Rig 29)
Address 1120 US-119 City Indiana State PA Zip 15701

Logging Company Nzone Guidance, LLC
Address 140 Falcon Lane City Liberty Hill State TX Zip 78642

Logging Company _____
Address _____ City _____ State _____ Zip _____

Drilling Contractor _____
Address _____ City _____ State _____ Zip _____

RECEIVED
Office of Oil and Gas
AUG 2 2024
WV Department of
Environmental Protection

Well # WILLETT S-8HM (L027529) Final Formations API# 47-051-02422					
Formation Name	Drill Top MD (ftGRD)	Drill Top (TVD) (ftGRD)	Drill Btm MD (ftGRD)	Drill Btm (TVD) (ftGRD)	
Sand/Shale	1	1	889	888	
Sewickley	889	888	891	890	
Sand/Shale	891	890	987	986	
Pittsburgh	987	986	991	990	
Sand/Shale	991	990	2,099	2,078	
Big Lime	2,099	2,078	2,396	2,358	
Big Injun	2,396	2,358	2,451	2,410	
Sand/Shale	2,451	2,410	2,726	2,676	
Berea	2,726	2,676	3,144	3,083	
Gordon	3,144	3,083	3,221	3,157	
50F	3,221	3,157	3,339	3,270	
Bayard	3,339	3,270	5,515	4,943	
Alexander	5,515	4,943	5,958	5,224	
Elks	5,958	5,224	7,419	6,138	
Sonyea	7,419	6,138	7,758	6,353	
Middlesex	7,758	6,353	7,908	6,448	
Genesee	7,908	6,448	8,218	6,643	
Geneseo	8,218	6,643	8,408	6,753	
Tully	8,408	6,753	8,454	6,775	
Hamilton	8,454	6,775	8,776	6,879	
Marcellus	8,776	6,879	20,681	7,065	

RECEIVED
Office of Oil and Gas
AUG 2 2024
WV Department of
Environmental Protection

11/08/2024

←10,279' B.H.→

←8,762' T.H.→

**WILLETT S LEASE
8HM
EQT PRODUCTION CO.**

T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°50'00"

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 484,005.70	E. 1,643,768.25
NAD'83 GEO.	LAT-(N) 39.823103	LONG-(W) 80.656197
NAD'83 UTM (M)	N. 4,408,180.19	E. 529,422.51

LANDING POINT

NAD'83 S.P.C.(FT)	N. 484,416.6	E. 1,648,146.9
NAD'83 GEO.	LAT-(N) 39.824384	LONG-(W) 80.640627
NAD'83 UTM (M)	N. 4,408,327.7	E. 530,754.4

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 474,185.9	E. 1,653,827.7
NAD'83 GEO.	LAT-(N) 39.796496	LONG-(W) 80.619949
NAD'83 UTM (M)	N. 4,405,239.7	E. 532,537.2

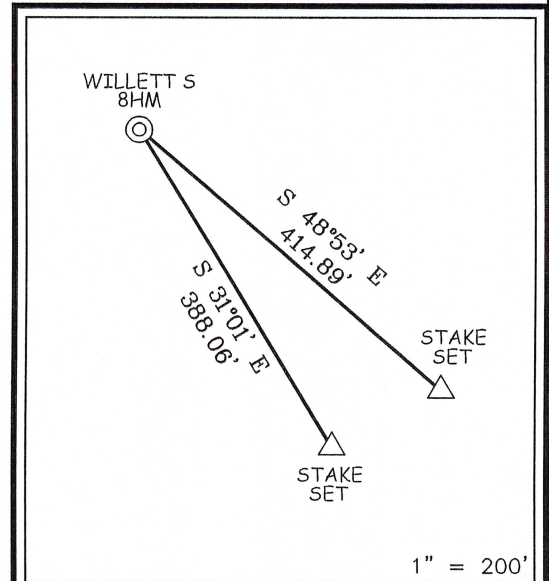
T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°35'00"

T.H. A.D.

TAG	SURFACE OWNER	PARCEL	ACRES
A	CNX LAND, LLC	9-8-6	27.596
B	CNX LAND, LLC	9-3-17	65.86
C	LARRY S. NEELY - LIFE	9-8-7.1	76.005
D	RAYMOND DEWAINE DOBBS, ET AL	9-3-15	70.7424
E	XCL PROCESSING OPERATING LLC	9-3-13	28.00
F	RAYMOND DEWAINE DOBBS, ET AL	9-3-14	81.331
G	JAMES R. THOMAS, ET UX	9-9-7	60.796
H	XCL PROCESSING OPERATING LLC	9-9-7.2	3.907
I	JAMES D. BLAKE, ET AL	9-9-8	52.144
J	ANNA D. MORRIS - TOD	7-1-1	179.00
K	KAREN S. EVANS & JUDY KAY MATTHEWS	7-1-5	116.915
L	NICHOLAS J. EVANS	7-1-5.2	22.42
M	LARRY A. PAYNTER, ET UX	7-1-5.1	1.165
N	KAREN S. EVANS & JUDY KAY MATTHEWS	7-7-1	124.12
O	GEO A. BURRIS	7-8-14	95.44

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
3-19-77	SONJA J. STROPE	46.783
3-18-78	CNX LAND, LLC	30.927
3-19-80	RAYMOND DEWAINE DOBBS, ET AL	30.54
3-19-81	XCL PROCESSING OPERATING LLC	26.52
3-19-82	XCL PROCESSING OPERATING LLC	14.89
7-1-7.1	NANCY L. PARSONS	0.5
7-1-19	JEAN JAMISON	51.89
7-7-2	KAREN S. EVANS & JUDY KAY MATTHEWS	24.50
7-7-8.1	KENNETH WAYNE STEELE TRUST	79.03
9-3-13.1	XCL PROCESSING OPERATING LLC	10.00
9-3-15.1	MARSHALL COUNTY PUBLIC SERVICE DISTRICT	0.2296
9-3-17.1	BRIAN & LEAH KESTNER	11.8
9-8-5.2	AMY EVANS & KAREN WHETZAL	4.586
9-8-6.1	KAYLA E. BRATTON	1.423
9-9-7.3	JEFFREY B. THOMAS	1.297
9-9-8.1	DIANA MAE PIATT	2.253
9-9-8.2	VINCENT PATRELLO	0.723
9-9-9	VINCENT P. PATRELLO	1.076

REFERENCES



B.H. A.D.

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
- PLAT UPDATED TO SHOW AS DRILLED PATH. AS DRILLED DATA PROVIDED BY EQT PRODUCTION CO.

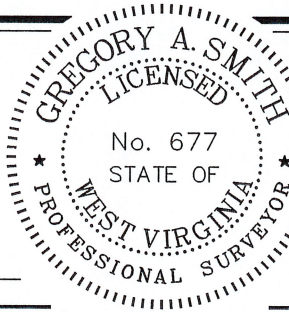


12 Vanion Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slwv.com

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 THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677

Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
DATE SEPTEMBER 21, 20 23
REVISED _____, 20 ____
OPERATORS WELL NO. WILLETT S 8HM
API WELL NO. 47 — 051 — 02422
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8939P8HMAD-2.dwg WILLETT S 8HM-REV2
HORIZONTAL & VERTICAL CONTROL DETERMINED BY: DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS



WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION STORAGE ___ DEEP ___ SHALLOW
LOCATION: ELEVATION 1,310.03' WATERSHED TRIBUTARY OF UPPER BOWMAN RUN
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'
SURFACE OWNER CNX LAND LLC ACREAGE 27.596±
ROYALTY OWNER APPALACHIAN BASIN MINERALS, LP, ET AL ACREAGE 11,088/2024
PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 7,003' / TMD: 20,460'

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT JOSEPH C. MALLOW
ADDRESS 400 WOODCLIFF DRIVE ADDRESS 427 MIDSTATE DRIVE
CANONSBURG, PA 15317 CLARKSBURG, WV 26301

COUNTY NAME PERMIT

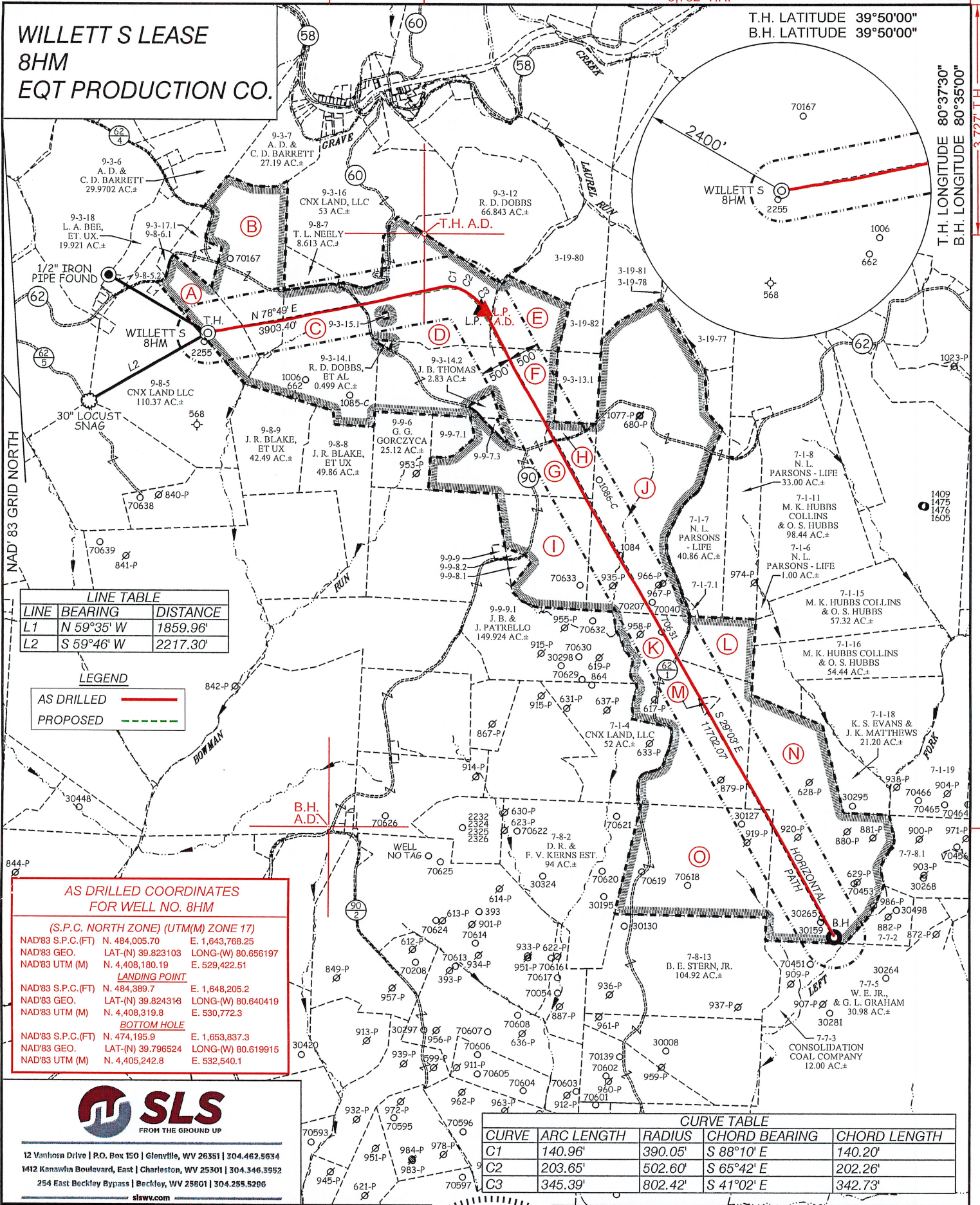
←10,279' B.H.

8,762' T.H.

T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°50'00"

T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°35'00"

**WILLETT S LEASE
8HM
EQT PRODUCTION CO.**



LINE TABLE

LINE	BEARING	DISTANCE
L1	N 59°35' W	1859.96'
L2	S 59°46' W	2217.30'

LEGEND

AS DRILLED	
PROPOSED	

AS DRILLED COORDINATES FOR WELL NO. 8HM

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17)

NAD'83 S.P.C.(FT)	N. 484,005.70	E. 1,643,768.25
NAD'83 GEO.	LAT-(N) 39.823103	LONG-(W) 80.656197
NAD'83 UTM (M)	N. 4,408,180.19	E. 529,422.51

LANDING POINT

NAD'83 S.P.C.(FT)	N. 484,389.7	E. 1,648,205.2
NAD'83 GEO.	LAT-(N) 39.824318	LONG-(W) 80.640419
NAD'83 UTM (M)	N. 4,408,319.8	E. 530,772.3

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 474,195.9	E. 1,653,837.3
NAD'83 GEO.	LAT-(N) 39.796524	LONG-(W) 80.619915
NAD'83 UTM (M)	N. 4,405,242.8	E. 532,540.1



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5206
slswv.com

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	140.96'	390.05'	S 88°10' E	140.20'
C2	203.65'	502.60'	S 65°42' E	202.26'
C3	345.39'	802.42'	S 41°02' E	342.73'

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

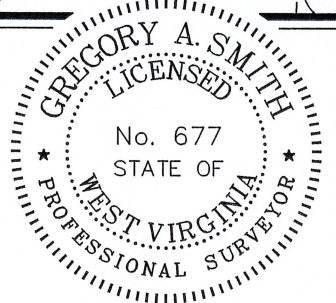
NAD'83 S.P.C.(FT)	N. 484,005.70	E. 1,643,768.25
NAD'83 GEO.	LAT-(N) 39.823103	LONG-(W) 80.656197
NAD'83 UTM (M)	N. 4,408,180.19	E. 529,422.51

LANDING POINT

NAD'83 S.P.C.(FT)	N. 484,416.6	E. 1,648,146.9
NAD'83 GEO.	LAT-(N) 39.824384	LONG-(W) 80.640627
NAD'83 UTM (M)	N. 4,408,327.7	E. 530,754.4

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 474,185.9	E. 1,653,827.7
NAD'83 GEO.	LAT-(N) 39.796496	LONG-(W) 80.619949
NAD'83 UTM (M)	N. 4,405,239.7	E. 532,537.2



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

P.S. 677 *Gregory A. Smith*

LEGEND

LEASE LINE	
SURFACE LINE	
WELL LATERAL	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
TAX MAP-PARCEL	00-00
SURFACE OWNER (SEE TABLE)	
LEASE # (SEE WW-6A1)	

SCALE 1" = 2000' FILE NO. 8939P8HMAD-2.dwg
WILLETT S 8HM-REV2
DATE SEPTEMBER 21, 2023
REVISED _____, 20____
OPERATORS WELL NO. WILLETT S 8HM
API WELL NO. 47-051-02422
NO. STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT JOSEPH C. MALLOW
ADDRESS 400 WOODCLIFF DRIVE ADDRESS 427 MIDSTATE DRIVE
CANONSBURG, PA 15317 CLARKSBURG, WV 26301

COUNTY NAME PERMIT

11/08/2024

Perforation Data

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

Stage No.	Perforation Date	Stage Perforated From TMD Ft.	Stage Perforated To TMD Ft.	# of Perforations/Stage	Formation(s)
2	03/27/2024	20557	20407	48	Marcellus
3	03/27/2024	20378	20228	48	Marcellus
4	03/27/2024	20199	20049	48	Marcellus
5	03/28/2024	20020	19870	48	Marcellus
6	03/28/2024	19841	19691	48	Marcellus
7	03/29/2024	19663	19513	48	Marcellus
8	03/30/2024	19484	19334	48	Marcellus
9	04/04/2024	19305	19155	48	Marcellus
10	04/05/2024	19126	18976	48	Marcellus
11	04/05/2024	18947	18797	48	Marcellus
12	04/06/2024	18769	18619	48	Marcellus
13	04/06/2024	18590	18440	48	Marcellus
14	04/06/2024	18411	18261	48	Marcellus
15	04/06/2024	18232	18082	48	Marcellus
16	04/07/2024	18053	17903	48	Marcellus
17	04/07/2024	17875	17725	48	Marcellus
18	04/08/2024	17696	17546	48	Marcellus
19	04/08/2024	17517	17367	48	Marcellus
20	04/08/2024	17338	17188	48	Marcellus
21	04/09/2024	17159	17009	48	Marcellus
22	04/09/2024	16981	16831	48	Marcellus
23	04/10/2024	16802	16652	48	Marcellus
24	04/10/2024	16623	16473	48	Marcellus
25	04/11/2024	16444	16294	48	Marcellus
26	04/11/2024	16265	16115	48	Marcellus
27	04/11/2024	16087	15937	48	Marcellus
28	04/12/2024	15908	15758	48	Marcellus
29	04/13/2024	15729	15579	48	Marcellus
30	04/13/2024	15550	15400	48	Marcellus
31	04/14/2024	15371	15221	48	Marcellus
32	04/14/2024	15193	15043	48	Marcellus
33	04/15/2024	15014	14864	48	Marcellus
34	04/16/2024	14835	14685	48	Marcellus
35	04/17/2024	14656	14506	48	Marcellus
36	04/17/2024	14477	14327	48	Marcellus
37	04/17/2024	14299	14149	48	Marcellus
38	04/18/2024	14120	13970	48	Marcellus
39	04/18/2024	13941	13791	48	Marcellus
40	04/19/2024	13762	13612	48	Marcellus
41	04/20/2024	13583	13433	48	Marcellus
42	04/20/2024	13405	13255	48	Marcellus
43	04/20/2024	13226	13076	48	Marcellus
44	04/21/2024	13047	12897	48	Marcellus

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

11/08/2024

45	04/21/2024	12868	12718	48	Marcellus
46	04/21/2024	12689	12539	48	Marcellus
47	04/22/2024	12511	12361	48	Marcellus
48	04/22/2024	12332	12182	48	Marcellus
49	04/22/2024	12153	12003	48	Marcellus
50	04/23/2024	11974	11824	48	Marcellus
51	04/23/2024	11795	11645	48	Marcellus
52	04/23/2024	11617	11467	48	Marcellus
53	04/24/2024	11438	11288	48	Marcellus
54	04/24/2024	11259	11109	48	Marcellus
55	04/25/2024	11080	10930	48	Marcellus
56	04/25/2024	10901	10751	48	Marcellus
57	04/25/2024	10723	10573	48	Marcellus
58	04/26/2024	10544	10394	48	Marcellus
59	04/26/2024	10365	10215	48	Marcellus
60	04/27/2024	10186	10036	48	Marcellus
61	04/28/2024	10007	9857	48	Marcellus
62	04/28/2024	9829	9679	48	Marcellus
63	04/28/2024	9650	9500	48	Marcellus
64	04/29/2024	9471	9321	48	Marcellus
65	04/29/2024	9292	9142	48	Marcellus
66	04/30/2024	9113	8963	48	Marcellus
67	04/30/2024	8935	8814	40	Marcellus

RECEIVED
Office of Oil and Gas
AUG 2 2024
WV Department of
Environmental Protection

11/08/2024

Stimulation Data

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

11/08/2024

Stage #	Stimulation 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)
1	03/26/2024	75	8740	9031	4475	253460	7641.26	
2	03/27/2024	99	9070	0	4418	450100	9505.74	
3	03/27/2024	88	8631	9326	5612	455981	10184.10	
4	03/28/2024	99	8972	0	4835	450520	9325.90	
5	03/29/2024	87	8502	0	4522	450576	9193.05	
6	03/29/2024	94	8875	9266	4575	450053	9212.19	
7	03/30/2024	96	8869	0	5322	451880	9135.21	
8	04/05/2024	58	8461	8243	6454	450286	17676.76	
9	04/05/2024	86	9098	8966	4954	451564	9192.74	
10	04/06/2024	97	8780	8481	4837	450337	10141.79	
11	04/06/2024	99	8519	0	5222	450869	9402.17	
12	04/06/2024	100	8205	8607	5216	450415	9062.21	
13	04/06/2024	100	8279	8695	5340	450558	9118.79	
14	04/07/2024	100	8570	0	5545	449380	9113.05	
15	04/07/2024	94	8419	8986	5568	450126	9091.50	
16	04/07/2024	99	8521	9032	5123	450568	9087.43	
17	04/08/2024	100	8486	8865	5203	450027	9410.95	
18	04/08/2024	100	8145	7954	5336	450384	9084.83	
19	04/09/2024	100	8471	8717	5159	450009	9575.12	
20	04/09/2024	100	8263	7765	5234	450385	9044.05	
21	04/10/2024	100	8351	8810	5165	449147	8986.57	
22	04/10/2024	99	8713	8799	4629	450405	9006.90	
23	04/10/2024	100	8395	8829	5481	450490	8943.69	
24	04/11/2024	100	8282	8713	4735	450203	9099.55	
25	04/11/2024	100	8346	8833	5512	450323	8987.57	
26	04/12/2024	100	8033	8359	5215	450017	9108.86	
27	04/12/2024	99	8625	9045	5083	450585	8999.00	
28	04/13/2024	100	8164	8434	4831	449260	9004.00	
29	04/13/2024	100	8374	8682	4875	450093	9099.55	
30	04/14/2024	100	8184	8556	5196	448659	8984.90	
31	04/14/2024	100	8171	8592	5040	450160	8973.31	
32	04/16/2024	16	7842	8044	4865	449879	13382.88	
33	04/16/2024	99	7769	7827	4759	448703	9131.88	
34	04/16/2024	100	7962	0	4655	450375	9724.36	
35	04/17/2024	99	8230	0	5125	449921	9076.93	
36	04/17/2024	97	7875	8533	4977	449366	9384.07	
37	04/18/2024	100	8377	0	5580	449603	8908.45	
38	04/18/2024	100	7736	7867	5117	450711	8985.90	
39	04/19/2024	100	8213	0	4787	449810	8915.10	
40	04/20/2024	99	7755	9159	5006	450907	8886.67	
41	04/20/2024	100	8093	8876	4492	451274	8932.26	
42	04/20/2024	100	7788	0	5020	451080	9251.50	
43	04/21/2024	100	7891	0	4909	450913	8898.69	

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

11/08/2024

44	04/21/2024	100	8077	0	5111	450668	8986.67
45	04/21/2024	100	7451	8195	4847	450872	8983.40
46	04/22/2024	101	7522	7679	5089	450868	8895.86
47	04/22/2024	101	7674	0	5250	450000	8899.21
48	04/22/2024	101	8082	0	4683	450830	9421.95
49	04/23/2024	100	7911	8776	4947	451102	8848.21
50	04/23/2024	100	7463	8061	5095	450051	8909.17
51	04/24/2024	100	7452	7938	5024	450695	8850.74
52	04/24/2024	100	7539	8491	5381	450159	9048.10
53	04/24/2024	101	7382	0	5245	450060	8873.98
54	04/25/2024	100	7342	8218	5184	450025	8861.26
55	04/25/2024	100	7333	8733	5120	450015	9006.76
56	04/25/2024	97	7884	7649	4633	450060	8813.38
57	04/26/2024	100	7528	8458	5179	450586	8816.62
58	04/26/2024	100	7950	8570	5481	436390	8839.86
59	04/27/2024	100	7720	8573	4829	450020	8730.79
60	04/28/2024	100	7500	8533	5377	450376	8981.31
61	04/28/2024	100	7451	8839	5400	450162	8956.21
62	04/28/2024	100	7087	8197	4940	450010	8832.90
63	04/29/2024	98	7494	6966	5216	449884	8992.93
64	04/29/2024	100	7208	7513	5011	450120	8802.33
65	04/30/2024	99	7313	7821	4780	450097	8822.93
66	04/30/2024	100	6833	7477	5205	447981	8716.67
67	04/30/2024	90	6991	7633	4631	370916	7448.07

RECEIVED
Office of Oil and Gas

AUG 2 2024

WV Department of
Environmental Protection

11/08/2024

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	03/26/2024
Job End Date:	04/30/2024
State:	West Virginia
County:	Marshall
API Number:	47-051-02422-00-00
Operator Name:	EQT Production
Well Name and Number:	Willett S-8HM
Latitude:	39.823103
Longitude:	-80.656197
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7099
Total Base Water Volume (gal)*:	25964851.08
Total Base Non Water Volume:	0



Water Source	Percent
--------------	---------

RECEIVED
Office of Oil and Gas
AUG 2 2024
WV Department of
Environmental Protection

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	EQT	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	87.70409	None
Sand (Proppant)	EQT	Proppant					
			Silica Substrate	14808-60-7	100.00000	12.09504	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Copolymer of 2-propenamamide	Proprietary	30.00000	0.01123	None
Clearal 268	ChemStream	Biocide					
			Non-hazardous substances	Proprietary	80.00000	0.00896	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor					
			Non-hazardous substances	Proprietary	90.00000	0.00762	None
StimSTREAM	ChemStream	Friction					

11/08/2024

FR 9800		Reducer					
			Petroleum Distillate	64742-47-8	20.00000	0.00499	None
HCR-7000 WL	Fluid Energy Group Ltd.	Synthetic Acid					
			Proprietary	Proprietary	20.00000	0.00211	None
Clearal 268	ChemStream	Biocide					
			Glutaraldehyde	111-30-8	20.00000	0.00056	None
HCR-7000 WL	Fluid Energy Group Ltd.	Synthetic Acid					
			Proprietary	Proprietary	10.00000	0.00053	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor					
			Bis(HexaMethylene Triamine Penta(Methylene Phosphonic Acid) (BHMT)	34690-00-1	10.00000	0.00009	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00005	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00005	None
Clearal 268	ChemStream	Biocide					
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00001	None
Clearal 268	ChemStream	Biocide					
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00001	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Ammonium chloride ((NH4)Cl)	12125-02-9	1.00000	0.00001	None
Clearal 268	ChemStream	Biocide					
			Ethanol	64-17-5	1.50000	0.00000	None

RECEIVED
Office of Oil and Gas
10.00000
AUG 2 2024
0.00009
WV Department of Environmental Protection

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 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%

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)

11/08/2024