

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: Longworth M07H

API: 47 - 051 - 01917

Submission:  Initial  Amended

Notes:

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12/16/2022

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

API 47-051-01917 County Marshall District Clay  
Quad Glen Easton Pad Name Longworth Field/Pool Name N/A  
Farm name Graham H. Longworth Jr. Well Number Longworth M07H  
Operator (as registered with the OOG) EQT CHAP LLC  
Address 2400 Ansys Drive, Suite 200 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 4,410,830.39 Easting 523,397.24  
Landing Point of Curve Northing 4,410,742.24 Easting 523,717.52  
Bottom Hole Northing 4,408,636.13 Easting 525,389.69

Elevation (ft) 1270' 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 12.55 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 01/29/2018 Date drilling commenced 08/31/2017 Date drilling ceased 04/14/2018  
Date completion activities began 06/11/2022 Date completion activities ceased 08/19/2022  
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 99,605 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1576,1998,2102,2139 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 583,853 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**APPROVED**

Reviewed by:  
SM  
12/15/2022  
**12/16/2022**

API 47-051 - 01917 Farm name Graham H. Longworth Jr. Well number Longworth M07H

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	30"	20"	40'	NEW	X-52 218#	N/A	Y
Surface	17-1/2"	13-3/8"	621'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2162'	NEW	L-80 40#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	15,867'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has a calculated TOC of 1775' 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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (GL)	WOC (hrs)
Conductor	CLASS A	17BBLS	N/A	N/A	N/A	0	8+
Surface	CLASS A	483	15.6	1.20	579	0	8
Coal							
Intermediate 1	CLASS A	826	15.6	1.19	982	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H/CLASS H	724/1925	14.7/15.2	1.14/1.15	825/2213	1775	8+
Tubing							

Drillers TD (ft) 15,919' Loggers TD (ft) N/A  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 3277'

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 ABOVE TOC

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

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WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_





API 47- 051 - 01917 Farm name Graham H. Longworth Jr. Well number Longworth M07H

Drilling Contractor Precision Drilling  
Address 10350 Richmond Ave. Suite 700 City Houston State TX Zip 77042

Logging Company Scientific Drilling International  
Address 124 Vista Drive City Charleroi State PA Zip 15022

Logging Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulation Contractor US Well Services LLC  
Address 770 S Post Oak Ln Ste 405 City Houston State TX Zip 77056

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Well # Longworth M07H Final Formations API# 47-051-01917				
Formation Name	Drill Top MD (ftGRD)	Drill Top (TVD) (ftGRD)	Drill Btm MD (ftGRD)	Drill Btm (TVD) (ftGRD)
Sand/Shale	1	1	583	583
Waynesburg Coal	583	583	583	583
Sand/Shale	583	583	853	853
Pittsburgh Coal	853	853	858	858
Sand/Shale	858	858	1,872	1,870
Big Lime	1,872	1,870	2,100	2,098
Big Injun	2,100	2,098	2,182	2,180
Sand/Shale	2,182	2,180	2,819	2,816
Gantz	2,819	2,816	2,880	2,877
Gordon	2,880	2,877	2,960	2,957
50F	2,960	2,957	3,009	3,006
Sand/Shale	3,009	3,006	3,088	3,085
Bayard	3,088	3,085	3,453	3,449
Sand/Shale	3,453	3,449	5,255	5,218
Alexander	5,255	5,218	5,692	5,640
Elks	5,692	5,640	6,362	6,215
Sonyea	6,362	6,215	6,469	6,298
Middlesex	6,469	6,298	6,504	6,324
Genesee	6,504	6,324	6,581	6,375
Geneseo	6,581	6,375	6,618	6,398
Tully	6,618	6,398	6,703	6,444
Hamilton	6,703	6,444	6,857	6,507
Marcellus	6,857	6,507	15,919	6,649

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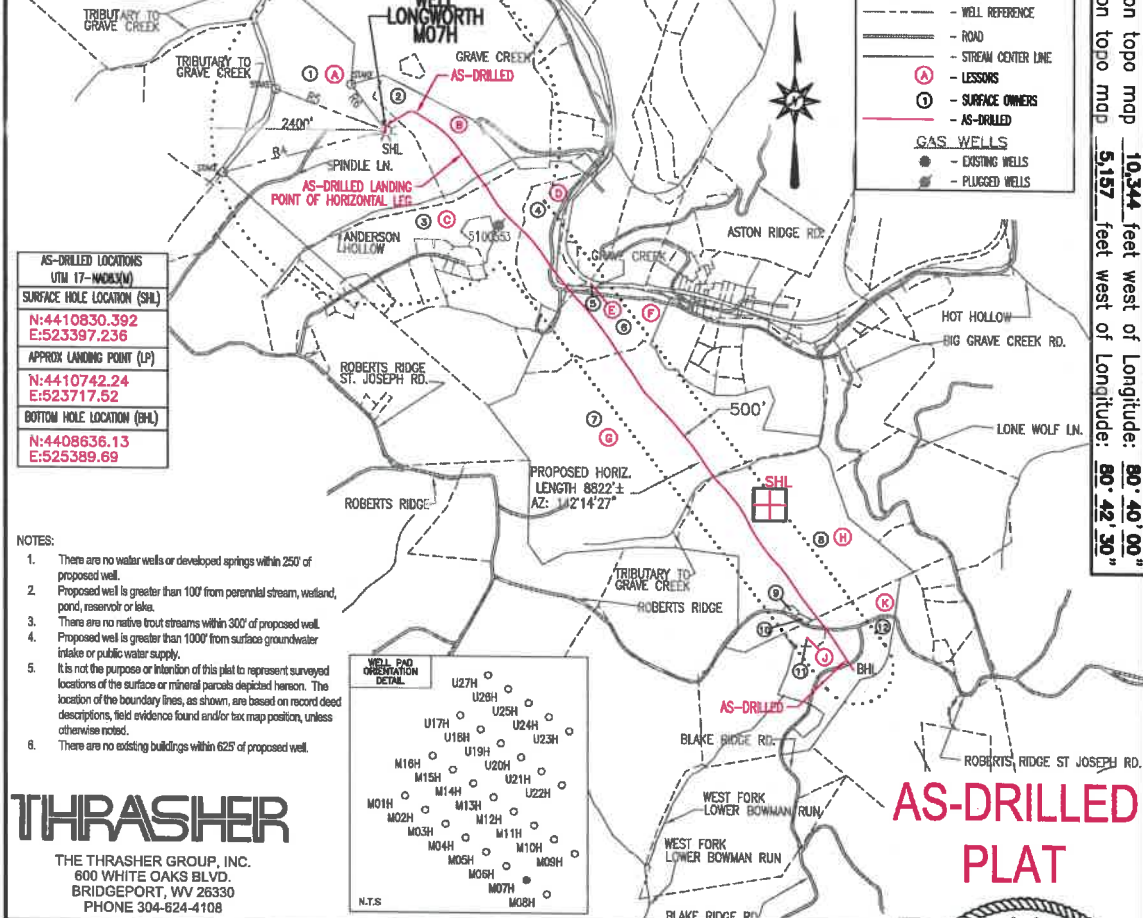
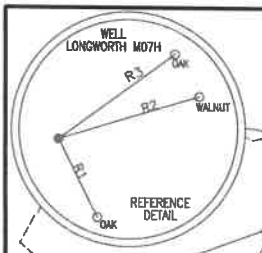
BHL is located on topo map 2,211 feet south of Latitude: 39° 50' 00"  
 SHL is located on topo map 10,106 feet south of Latitude: 39° 52' 30"

**SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS**

LINE	BEARING	DISTANCE
R1	S 26°26'07" E	144.46'
R2	N 73°08'39" E	244.58'
R3	N 53°56'44" E	239.58'
R4	S 75°15'28" W	2317.79'
R5	N 69°44'49" W	1616.56'
R6	N 37°16'10" W	794.99'

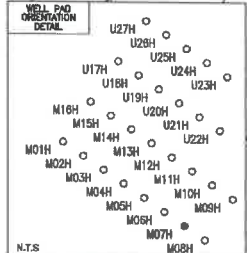
**LEGEND**

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- ROAD
- STREAM CENTER LINE
- LESSORS
- SURFACE OWNERS
- AS-DRILLED
- GAS WELLS
- EXISTING WELLS
- PLUGGED WELLS



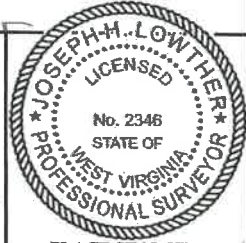
AS-DRILLED LOCATIONS UTM (7-MDQJUV)
SURFACE HOLE LOCATION (SHL)
N:4410830.392
E:523397.236
APPROX LANDING POINT (LP)
N:4410742.24
E:523717.52
BOTTOM HOLE LOCATION (BHL)
N:4408636.13
E:525389.69

- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
  - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  - There are no native trout streams within 300' of proposed well.
  - Proposed well is greater than 1000' from surface groundwater intake or public water supply.
  - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
  - There are no existing buildings within 625' of proposed well.



**THRASHER**  
 THE THRASHER GROUP, INC.  
 600 WHITE OAKS BLVD.  
 BRIDGEPORT, WV 26330  
 PHONE 304-624-4108

**AS-DRILLED PLAT**



FILE #: LONGWORTH M07H - AS-DRILLED  
 DRAWING #: LONGWORTH M07H - AS-DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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 DEPARTMENT OF ENVIRONMENTAL PROTECTION.  
 Signed: *Joseph H. Lowther*  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2346

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: FEBRUARY 23, 2021  
 OPERATOR'S WELL #: LONGWORTH M07H - AS-DRILLED  
 API WELL #: 47 51 01917  
 STATE COUNTY PERMIT

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Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1295'

COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: GRAHAM H. LONGWORTH JR. ACREAGE: 123.589±

OIL & GAS ROYALTY OWNER: GRAHAM H. LONGWORTH JR. ACREAGE: 615.367±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE

(SPECIFY): AS-DRILLED PLAT

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,674± TMD: 15,944±

WELL OPERATOR EQT CHAP LLC DESIGNATED AGENT JOSEPH C. MALLOW

Address 400 WOODCLIFF DRIVE Address 115 PROFESSIONAL PLACE, PO BOX 280

City CANONSBURG State PA Zip Code 15317 City BRIDGEPORT State WV Zip Code 26330

12/16/2022



# LONGWORTH M07H PAGE 2 OF 2 AS-DRILLED PLAT

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH JR. ET AL	4-11/1
B	GRAHAM H. LONGWORTH JR. ET AL	4-11/2
	LISA NICEWARNER	
	JULIA RODGERS	
	KEITH FRIESE	
	MARK FRIESE	
	ANTHONY FRIESE	
	JAMES FRIESE	
	HENRY FRIESE	
	STEVEN FRIESE	
C	DELORES J. FOX	4-11/54
D	CNX GAS COMPANY LLC	4-11/52
E	CNX GAS COMPANY LLC	4-11/59
F	JOE PAUL WELLMAN	9-1/2
	WILLIAM R. LEVASSEUR, JR.	
	FRANCIS THOMAS KROL, JR.	
	CHRISTINA L. BOARDWINE	
	DIANA L. WELLMAN	
	MARGARET ANN BONNETT	
	DOROTHY SEDOSKY	
	MARGARET E. DAKAN	
	DOLLYE GUZEK	
	LINDSEY R. FOSTER	
	NANCY DAKAN RACKLEY ET VIR	
	CNX GAS COMPANY LLC	
	RONALD W. DAKAN	
	DAVID H. DAKAN	
	SUZANNE SWIFT	
	BARBARA D. FURFARI	
	DIANE CLARE WILLIS ET VIR	
	LESLIE MARIE BUTTS	
	JOSEPH G. DAKAN	
	ELAINE A. FONTES	
	DIANA K. COSLUCK	
	LESLEY D. BALLA	
G	HOWARD E. YOUNG BY AIF SUSAN YOUNG	9-1/18
H	DANIEL L. DOBBS ET UX	9-1/16
J	*VICKIE J. MASON	9-1/24.1
K	PETER MILLER	9-1/24

\* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH JR.	4-11/1
2	GRAHAM H. LONGWORTH JR.	4-11/2
3	DUNCAN OR SUSAN ARNETT	4-11/54
4	HARRY & DONNA ROUSH	4-11/52
5	CONSOLIDATION COAL COMPANY/MURRAY ENERGY C/O LAND DEPT	4-11/59
6	HARRY & DONNA ROUSH	9-1/2
7	CNX LAND RESOURCES INC.	9-1/18
8	CNX LAND RESOURCES INC.	9-1/16
9	MACK A. CROW ET UX.	9-1/17
10	MACK A. CROW ET UX.	9-1/16.1
11	*VICKIE CROW	9-1/24.1
12	PETER A. MILLER	9-1/24

AS-DRILLED LOCATIONS UTM 17-MADUJM	
SURFACE HOLE LOCATION (SHL)	
N:4410830.392	E:523397.236
APPROX LANDING POINT (LP)	
N:4410742.24	E:523717.52
BOTTOM HOLE LOCATION (BHL)	
N:4408836.13	E:525389.69

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WV DEPT OF ENVIRONMENT & NATURAL RESOURCES  
PLANNING & PERMITTING DIVISION

FEBRUARY 23, 2021

## THRASHER

THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

12/16/2022

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/11/2022
Job End Date:	8/1/2022
State:	West Virginia
County:	Marshall
API Number:	47-051-01917-00-00
Operator Name:	EQT Production
Well Name and Number:	Longworth A 7H
Latitude:	39.84716820
Longitude:	-80.72650730
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,674
Total Base Water Volume (gal):	18,181,254
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	EQT	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.48052	None
Sand (Proppant)	EQT	Proppant	Silica Substrate	14808-60-7	100.00000	11.42334	None
Clearal 268	ChemStream	Biocide	Non-hazardous substances	Proprietary	80.00000	0.00895	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor	Non-hazardous substances	Proprietary	90.00000	0.00760	None
StimSTREAM FR 9800	ChemStream	Friction Reducer	Copolymer of 2-propenamide	Proprietary	30.00000	0.00408	None
StimSTREAM FR 9800	ChemStream	Friction Reducer	Petroleum Distillate	64742-47-8	20.00000	0.00181	None
15% HCl	US Well Services	Acid	Hydrogen Chloride	7647-01-0	15.00000	0.00062	None
Clearal 268	ChemStream	Biocide	Glutaraldehyde	111-30-8	20.00000	0.00056	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor					

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			Bis(HexaMethylene Triamine Penta(Methylene Phosphonic Acid)(BHMT)	34690-00-1	10.00000	0.00009	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00002	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00002	None
Clearal 268	ChemStream	Biocide					
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00001	None
Clearal 268	ChemStream	Biocide					
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00001	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Pyridinium, 1-(phenylmethyl)-, ethyl methyl derivs., chlorides	68909-18-2	25.00000	0.00001	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Methanol	67-56-1	25.00000	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
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Ethoxylated Alcohols	68439-50-9	15.00000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Ethanoic Acid	64-19-7	15.00000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Proprietary	Proprietary	10.00000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Proprietary	Proprietary	10.00000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Ethoxylated Nonylphenols	127087-87-0	5.00000		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.

\* 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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# Perforation Data

Stage No.	Perforation Date	Stage Perforated From TMD Ft.	Stage Perforated To TMD Ft.	# of Perforations/Stage	Formation(s)
2	07/20/2022	15663	15482	40	Marcellus
3	07/20/2022	15463	15282	40	Marcellus
4	07/20/2022	15263	15082	40	Marcellus
5	07/21/2022	15063	14882	40	Marcellus
6	07/21/2022	14863	14682	40	Marcellus
7	07/21/2022	14663	14482	40	Marcellus
8	07/22/2022	14463	14282	40	Marcellus
9	07/22/2022	14263	14082	40	Marcellus
10	07/22/2022	14063	13882	40	Marcellus
11	07/22/2022	13863	13682	40	Marcellus
12	07/23/2022	13663	13482	40	Marcellus
13	07/23/2022	13463	13282	40	Marcellus
14	07/23/2022	13263	13082	40	Marcellus
15	07/23/2022	13063	12882	40	Marcellus
16	07/23/2022	12863	12682	40	Marcellus
17	07/24/2022	12663	12482	40	Marcellus
18	07/24/2022	12463	12282	40	Marcellus
19	07/24/2022	12263	12082	40	Marcellus
20	07/24/2022	12063	11882	40	Marcellus
21	07/25/2022	11863	11682	40	Marcellus
22	07/25/2022	11663	11482	40	Marcellus
23	07/25/2022	11463	11282	40	Marcellus
24	07/25/2022	11263	11082	40	Marcellus
25	07/25/2022	11063	10882	40	Marcellus
26	07/26/2022	10863	10682	40	Marcellus
27	07/26/2022	10663	10482	40	Marcellus
28	07/26/2022	10463	10282	40	Marcellus
29	07/26/2022	10263	10082	40	Marcellus
30	07/27/2022	10063	9882	40	Marcellus
31	07/27/2022	9863	9682	40	Marcellus
32	07/27/2022	9663	9482	40	Marcellus
33	07/27/2022	9463	9282	40	Marcellus
34	07/27/2022	9263	9082	40	Marcellus
35	07/28/2022	9063	8882	40	Marcellus
36	07/28/2022	8863	8682	40	Marcellus
37	07/28/2022	8663	8482	40	Marcellus
38	07/28/2022	8463	8282	40	Marcellus
39	07/29/2022	8263	8082	40	Marcellus
40	07/29/2022	8063	7882	40	Marcellus
41	07/29/2022	7863	7682	40	Marcellus
42	07/29/2022	7663	7482	40	Marcellus

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43	07/30/2022	7463	7282	40	Marcellus
44	07/30/2022	7252	7082	40	Marcellus
45	07/30/2022	7063	6882	40	Marcellus

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# Stimulation Data

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Well_UID	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)
-015631	1	07/20/2022	75	9242	7122	4068	220080	4871	
-015631	2	07/20/2022	100	9067	5391	4465	440140	10010	
-015631	3	07/21/2022	101	8610	5293	4801	440400	9874	
-015631	4	07/21/2022	100	8678	5599	4965	440600	9863	
-015631	5	07/21/2022	95	8397	5396	5042	440200	9848	
-015631	6	07/22/2022	100	9055	5420	4726	440510	9920	
-015631	7	07/22/2022	100	8706	5642	5179	440100	9882	
-015631	8	07/22/2022	100	8861	5154	5005	440150	9823	
-015631	9	07/22/2022	95	8955	5571	4910	440120	9831	
-015631	10	07/22/2022	101	8432	5536	5078	440150	9827	
-015631	11	07/23/2022	100	8492	5618	5433	440080	9801	
-015631	12	07/23/2022	100	8507	5251	5169	440500	9794	
-015631	13	07/23/2022	100	8739	5381	5123	440200	9790	
-015631	14	07/23/2022	100	8762	5605	5256	440075	9795	
-015631	15	07/24/2022	100	8651	5754	5192	440100	9790	
-015631	16	07/24/2022	100	8328	5697	5275	440210	9772	
-015631	17	07/24/2022	100	8496	5891	5008	440100	9912	
-015631	18	07/24/2022	100	8789	5895	4941	440100	9767	
-015631	19	07/24/2022	100	8519	5749	5025	440180	9753	
-015631	20	07/25/2022	100	8367	5618	5137	440060	9802	
-015631	21	07/25/2022	100	8521	5943	5040	440120	9736	
-015631	22	07/25/2022	100	8486	5986	5036	440050	9732	
-015631	23	07/25/2022	100	8257	5567	4927	440050	9723	
-015631	24	07/26/2022	100	8506	5849	4962	440080	9701	
-015631	25	07/26/2022	98	8377	5903	4822	440020	9720	
-015631	26	07/26/2022	100	8340	5391	5235	440100	9697	
-015631	27	07/26/2022	100	8565	5890	5207	440050	9692	
-015631	28	07/27/2022	100	8518	4297	4949	440060	9688	
-015631	29	07/27/2022	100	8411	5546	4771	440560	9677	
-015631	30	07/27/2022	100	8483	5771	5411	440075	9661	
-015631	31	07/27/2022	100	8348	5706	5070	440075	9664	
-015631	32	07/27/2022	96	8666	5627	4939	440075	9576	
-015631	33	07/28/2022	100	8381	5368	5252	440080	9644	
-015631	34	07/28/2022	101	8052	5302	4992	440400	9599	
-015631	35	07/28/2022	100	7752	5987	5184	440050	9627	
-015631	36	07/28/2022	100	7937	5019	5362	440050	9634	
-015631	37	07/29/2022	98	7468	5365	5417	440200	9608	
-015631	38	07/29/2022	100	7494	4858	5477	440560	9757	
-015631	39	07/29/2022	100	7751	5056	5195	440100	9596	
-015631	40	07/29/2022	101	7649	5369	4818	440300	9587	
-015631	41	07/30/2022	99	8227	5800	4784	440620	9592	

RECEIVED  
Office of Oil and Gas  
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WV Department of  
Environmental Protection

12/16/2022

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-015631	42	07/30/2022	100	7769	4928	4804	440000	9579
-015631	43	07/30/2022	100	7846	5856	4743	440050	9569
-015631	44	07/30/2022	99	7481	5579	4789	440100	9627
-015631	45	07/31/2022	100	7556	5686	5221	440360	9476

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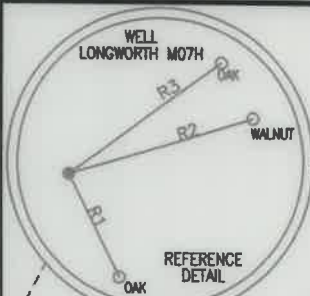
BHL is located on topo map 2211 feet south of Latitude: 39° 50' 00"  
 SHL is located on topo map 10,166 feet south of Latitude: 39° 52' 30"

**SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS**

**LEGEND**

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- ROAD
- STREAM CENTER LINE
- (A) - LESSORS
- (1) - SURFACE OWNERS
- AS-DRILLED
- GAS WELLS**
- EXISTING WELLS
- PLUGGED WELLS

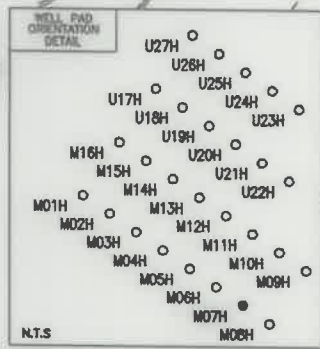
LINE	BEARING	DISTANCE
R1	S 26°26'07" E	144.46'
R2	N 73°06'39" E	244.58'
R3	N 53°56'44" E	239.58'
R4	S 75°15'28" W	2317.79'
R5	N 69°44'49" W	1616.56'
R6	N 37°16'10" W	794.99'



<b>AS-DRILLED LOCATIONS</b> UTM 17-NAD83(M)
<b>SURFACE HOLE LOCATION (SHL)</b> N:4410830.392 E:523397.236
<b>APPROX LANDING POINT (LP)</b> N:4410742.24 E:523717.52
<b>BOTTOM HOLE LOCATION (BHL)</b> N:4408636.13 E:525389.69

- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
  - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  - There are no native trout streams within 300' of proposed well.
  - Proposed well is greater than 1000' from surface groundwater intake or public water supply.
  - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
  - There are no existing buildings within 625' of proposed well.

**THRASHER**  
 THE THRASHER GROUP, INC.  
 600 WHITE OAKS BLVD.  
 BRIDGEPORT, WV 26330  
 PHONE 304-624-4108



**AS-DRILLED PLAT**



FILE #: LONGWORTH M07H - AS-DRILLED  
 DRAWING #: LONGWORTH M07H - AS-DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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 DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: Joseph M. Lowther  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2346

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

DATE: FEBRUARY 23, 2021  
 OPERATOR'S WELL #: LONGWORTH M07H - AS-DRILLED  
 API WELL #: 47 51 01917  
 STATE COUNTY PERMIT

STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1295'  
 COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: GRAHAM H. LONGWORTH JR. ACREAGE: 123.589±  
 OIL & GAS ROYALTY OWNER: GRAHAM H. LONGWORTH JR. ACREAGE: 615.367± 12/16/2022

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION   
 PERFORATE NEW FORMATION  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE

(SPECIFY): AS-DRILLED PLAT  
 TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,674± TMD: 15,944±

WELL OPERATOR EQT CHAP LLC DESIGNATED AGENT JOSEPH C. MALLOW  
 Address 400 WOODCLIFF DRIVE Address 115 PROFESSIONAL PLACE, PO BOX 280  
 City CANONSBURG State PA Zip Code 15317 City BRIDGEPORT State WV Zip Code 26330

BHL is located on topo map 10,344 feet west of Longitude: 80° 40' 00"  
 SHL is located on topo map 5,157 feet west of Longitude: 80° 42' 30"



# LONGWORTH M07H PAGE 2 OF 2 AS-DRILLED PLAT

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH JR. ET AL	4-11/1
B	GRAHAM H. LONGWORTH JR. ET AL	4-11/2
	LISA NICEWARNER	
	JULIA RODGERS	
	KEITH FRIESE	
	MARK FREISE	
	ANTHONY FREISE	
	JAMES FRIESE	
	HENRY FREISE	
	STEVEN FRIESE	
C	DELORES J. FOX	4-11/54
D	CNX GAS COMPANY LLC	4-11/52
E	CNX GAS COMPANY LLC	4-11/59
F	JOE PAUL WELLMAN	9-1/2
	WILLIAM R. LEVASSEUR, JR.	
	FRANCIS THOMAS KROL, JR.	
	CHRISTINA L. BOARDWINE	
	DIANA L. WELLMAN	
	MARGARET ANN BONNETT	
	DOROTHY SEDOSKY	
	MARGARET E. DAKAN	
	DOLLYE GUZEK	
	LINDSEY R. FOSTER	
	NANCY DAKAN RACKLEY ET VIR	
	CNX GAS COMPANY LLC	
	RONALD W. DAKAN	
	DAVID H. DAKAN	
	SUZANNE SWIFT	
	BARBARA D. FURFARI	
	DIANE CLARE WILLIS ET VIR	
	LESLIE MARIE BUTTS	
	JOSEPH G. DAKAN	
	ELAINE A. FONTES	
	DIANA K. COSLICK	
	LESLEY D. BALLA	
G	HOWARD E. YOUNG BY AIF SUSAN YOUNG	9-1/18
H	DANIEL L. DOBBS ET UX	9-1/16
J	*VICKIE J. MASON	9-1/24.1
K	PETER MILLER	9-1/24

\* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH JR.	4-11/1
2	GRAHAM H. LONGWORTH JR.	4-11/2
3	DUNCAN OR SUSAN ARNETT	4-11/54
4	HARRY & DONNA ROUSH	4-11/52
5	CONSOLIDATION COAL COMPANY/MURRAY ENERGY C/O LAND DEPT	4-11/59
6	HARRY & DONNA ROUSH	9-1/2
7	CNX LAND RESOURCES INC.	9-1/18
8	CNX LAND RESOURCES INC.	9-1/16
9	MACK A. CROW ET UX.	9-1/17
10	MACK A. CROW ET UX.	9-1/16.1
11	*VICKIE CROW	9-1/24.1
12	PETER A. MILLER	9-1/24

AS-DRILLED LOCATIONS UTM 17-NAD83(M)
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12/16/2022

FEBRUARY 23, 2021

## THRASHER

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