

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: Longworth M10H

API: 47 - 051 - 02130

Submission: Initial Amended

Notes:

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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 - 051 - 02130 County Marshall District Clay
Quad Glen Easton Pad Name Longworth Field/Pool Name N/A
Farm name Graham H. Longworth Jr. Well Number Longworth M10H
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 4,410,838.03 Easting 523,402.27
Landing Point of Curve Northing 4,410,320.68 Easting 523,186.46
Bottom Hole Northing 4,407,847.09 Easting 525,136.79

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 13.6 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, ferrocchrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 01/25/2019 Date drilling commenced 04/12/2019 Date drilling ceased 10/27/2019
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:

[Signature]
12/13/2022
12/16/2022

API 47-051 - 02130 Farm name Graham H. Longworth Jr. Well number Longworth M10H

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"	43'	NEW	X-52 78.6#	N/A	Y
Surface	17-1/2"	13-3/8"	626'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2177'	NEW	L-80 40#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	17,507'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has a calculated TOC of 1811' 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	16BBLs	15.6	N/A	N/A	0	8+
Surface	CLASS A	521	15.6	1.19	620	0	8
Coal							
Intermediate 1	CLASS A	898	15.6	1.19	1068	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2856	15.0	1.23	3513	1811	8+
Tubing							

Drillers TD (ft) 17,536' Loggers TD (ft) N/A
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure _____

Kick off depth (ft) 2363'

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

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

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 _____

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API 47- 051 - 02130 Farm name Graham H. Longworth Jr. Well number Longworth M10H

PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas 2465.28 mcfpd Oil 0 bpd NGL 0 bpd Water 74.12 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		

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Please insert additional pages as applicable.

Drilling Contractor Highlands Drilling LLC (Rig 9)
Address 900 Virginia Street East City Charleston State WV Zip 25301

Logging Company Baker Hughes
Address 400 Technology Dr Suite 100 City Canonsburg State PA Zip 15317

Cementing Company BJ Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Cementing Company _____
Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Adam Hughey Telephone 724-575-5475
Signature _____ Title Director of Completions Date 2022-11-09

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

12/16/2022

API 47- 051 - 02130 Farm name Graham H. Longworth Jr. Well number Longworth M10H

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 M10H Final Formations API# 47-051-02130				
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	1,869
Big Lime	1,872	1,869	2,100	2,096
Big Injun	2,100	2,096	2,182	2,178
Sand/Shale	2,182	2,178	2,819	2,798
Gantz	2,819	2,798	2,880	2,855
Gordon	2,880	2,855	2,960	2,930
50F	2,960	2,930	3,009	2,976
Sand/Shale	3,009	2,976	3,088	3,049
Bayard	3,088	3,049	3,453	3,389
Sand/Shale	3,453	3,389	5,255	5,079
Alexander	5,255	5,079	5,692	5,487
Elks	5,692	5,487	6,470	6,201
Sonyea	6,470	6,201	6,576	6,283
Middlesex	6,576	6,283	6,612	6,309
Genesee	6,612	6,309	6,691	6,361
Geneseo	6,691	6,361	6,730	6,384
Tully	6,730	6,384	6,818	6,430
Hamilton	6,818	6,430	6,971	6,491
Marcellus	6,971	6,491	17,536	6,667

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AS-DRILLED PLAT

BHL is located on topo map 4,798 feet south of Latitude: 39° 50' 00"
 SHL is located on topo map 10,113 feet south of Latitude: 39° 52' 30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS

- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
 2. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 3. There are no native trout streams within 300' of proposed well.
 4. Proposed well is greater than 1000' from surface groundwater intake or public water supply.
 5. 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.
 6. There are no existing buildings within 625' of proposed well.

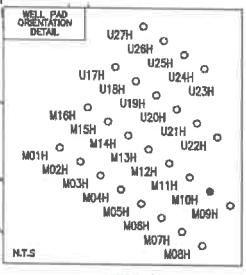
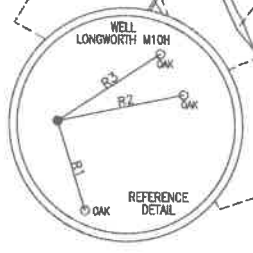
LINE	BEARING	DISTANCE
R1	S 17°05'33" E	161.25'
R2	N 77°57'58" E	221.99'
R3	N 56°40'26" E	211.56'
R4	S 39°17'22" E	1300.28'
R5	N 70°46'25" W	1624.12'
R6	N 51°26'41" W	2285.57'

AS-DRILLED LOCATIONS UTM 17-NAD83(W)	
SURFACE HOLE LOCATION (SHL)	N:4410838.03 E:523402.27
APPROX LANDING POINT (LP)	N:4410320.68 E:523186.46
BOTTOM HOLE LOCATION (BHL)	N:4407847.09 E:525136.79

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

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



BHL is located on topo map 11,183 feet west of Longitude: 80° 40' 00"
 SHL is located on topo map 5,086 feet west of Longitude: 80° 42' 30"

FILE #: LONGWORTH M10H - AS-DRILLED
 DRAWING #: LONGWORTH M10H - 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 C. Mallow
 R.P.E.: _____ L.L.S.: P.S. No. 2346

JOSEPH H. LOWTHER
 LICENSED PROFESSIONAL SURVEYOR
 No. 2346
 STATE OF WEST VIRGINIA
 PLACE SEAL HERE

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(+) 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 M10H - AS-DRILLED
 API WELL #: 47 51 02130
 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: 843.161±

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: 6,692± TMD: 17,561±

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

M10H

PAGE 2 OF 2

AS-DRILLED

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH JR. ET AL	4-11/1
B	DELORES J. FOX	4-11/54
C	JOHN D. LIGHTNER	4-11/54.3
D	DOROTHY L. MIDCAP	4-11/54.1
E	CLINT E. AND BRENT L. FLOWERS	4-11/56
F	HOWARD E. YOUNG BY AIF SUSAN YOUNG	9-1/18
G	SHANNON R. & Lyla L. HUBBS	9-1/21
H	DEAN B. COLVIN	9-1/22
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO JR., ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
J	DEAN B. COLVIN	9-1/22.2
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK POA CAROL HULL	
	KEVIN O'HARA	
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	ROBERT R. D'ERAMO JR., ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	

	LESSOR	DIST-TM/PAR
K	DEAN B. COLVIN	9-1/22.3
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO JR., ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
L	ROGER L. CLARK	9-4/9.5
M	*ROGER L. CLARK	9-4/9.2
N	JOHN K. MASON JR.	9-1/23
P	THOMAS B. CLARK ET UX	9-4/9.1
Q	THOMAS B. CLARK ET UX	9-5/2

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH JR.	4-11/1
2	DUNCAN OR SUSAN ARNETT	4-11/54
3	JAMES E. & LEAH A. YOHO	4-11/54.12
4	JOHN D. LIGHTNER ET UX	4-11/54.3
5	RAYMOND L. MIDCAP	4-11/54.1
6	CLINT E. & BRENT B. FLOWERS	4-11/56
7	CNX LAND RESOURCES INC	9-1/18
8	CNX LAND RESOURCES INC	9-1/21
9	CNX LAND RESOURCES INC	9-1/22
10	GEORGE CHRIS LAGOS ET UX	9-1/22.2
11	CAROL A. CLARK	9-1/22.4
12	CNX LAND RESOURCES INC	9-1/22.3
13	CAROL A. CLARK	9-4/9.5
14	*CAROL A. CLARK	9-4/9.2
15	JOHN K. MASON JR.	9-1/23
16	THOMAS B. & ANNETTE K. CLARK	9-4/9.1
17	THOMAS B. & ANNETTE K. CLARK	9-5/2

AS-DRILLED LOCATIONS	
UTM 17-MAD30(M)	
SURFACE HOLE LOCATION (SHL)	N:4410838.03 E:523402.27
APPROX LANDING POINT (LP)	N:4410320.68 E:523186.46
BOTTOM HOLE LOCATION (BHL)	N:4407847.09 E:525136.79

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THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-824-4108

FEBRUARY 23, 2021

12/16/2022

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/30/2020
Job End Date:	1/30/2020
State:	West Virginia
County:	Marshall
API Number:	47-051-02082-00-00
Operator Name:	Chevron USA Inc.
Well Name and Number:	Longworth 10H
Latitude:	39.84735100
Longitude:	-80.72667100
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,699
Total Base Water Volume (gal):	2,133,180
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	Chevron	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.83491	None
Sand	UPP	Proppant	Crystalline Silica in the form of Quartz	14808-60-7	99.90000	10.00878	None
FR-11	UPP	Friction reducer	Water	7732-18-5	55.00000	0.05193	None
			CHEMPLEX-Polymer_00019	Trade Secret	25.00000	0.02361	None
			Hydrotreated Petroleum Distillate	64742-47-8	25.00000	0.02361	None
			Sodium Chloride	7647-14-5	15.00000	0.01416	None
			Alcohol Ethoxylate Surfactants	68551-12-2	3.00000	0.00283	None
			Oleic Acid Diethanolamide	93-83-4	3.00000	0.00283	None
			Ammonium Chloride	12125-02-9	2.00000	0.00189	None
			Polyoxyethylene Sorbitan Monoleate	9005-65-6	1.00000	0.00094	None
HCL Acid (7.5%)	UPP	Acidizing	Hydrochloric Acid	7647-01-0	7.50000	0.07446	None
K-BAC 1020	UPP	Biocide					

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CHEVRON COMPLETED

			Polyethylene glycol	25322-68-3	50.00000	0.01023	None
			Water	7732-18-5	30.00000	0.00614	None
			2,2-Dibromo-3-nitrilopropionamide	10222-01-2	21.00000	0.00430	None
Scale Hib PE-18	UPP	Scale Inhibitor					
			Ethylene glycol	107-21-1	40.00000	0.00703	None
			Proprietary Scale Inhibitor	Proprietary	30.00000	0.00527	None
7L	UPP	Iron Control Agent					
			Ethylene Glycol	107-21-1	20.00000	0.00401	None
			Ammonium glycolate	35249-89-9	20.00000	0.00401	None
			Hydroxyacetic acid	79-14-1	5.00000	0.00100	None
Unihib G	UPP	Acid inhibitor					
			Butyl diglycol	112-34-5	75.00000	0.00058	None
			Alcohols, C10-16, ethoxylated	68002-97-1	50.00000	0.00039	None
			Methanol	67-56-1	5.00000	0.00004	None
			Formaldehyde	50-00-0	1.00000	0.00001	None
			Thiourea	62-56-6	1.00000	0.00001	None
Unigel 5F	UPP	Viscosifier					
			Guar Gum	9000-30-0	99.00000	0.00025	None
AP Breaker	UPP	Gel Breaker					
			Ammonium Persulfate	7727-54-0	100.00000	0.00000	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.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	55.00000	0.05193	
			Hydrotreated Petroleum Distillate	64742-47-8	25.00000	0.02361	
			Sodium Chloride	7647-14-5	15.00000	0.01416	
			Polyethylene glycol	25322-68-3	50.00000	0.01023	
			Ethylene glycol	107-21-1	40.00000	0.00703	
			Water	7732-18-5	30.00000	0.00614	
			Ammonium glycolate	35249-89-9	20.00000	0.00401	
			Oleic Acid Diethanolamide	93-83-4	3.00000	0.00283	
			Alcohol Ethoxylate Surfactants	68551-12-2	3.00000	0.00283	
			Ammonium Chloride	12125-02-9	2.00000	0.00189	
			Hydroxyacetic acid	79-14-1	5.00000	0.00100	
			Polyoxyethylene Sorbitan Monoleate	9005-65-6	1.00000	0.00094	
			Alcohols, C10-16, ethoxylated	68002-97-1	50.00000	0.00039	
			Methanol	67-56-1	5.00000	0.00004	
			Thiourea	62-56-6	1.00000	0.00001	
			Formaldehyde	50-00-0	1.00000	0.00001	

* 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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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:	47-051-02130-00-00
Operator Name:	EQT Production
Well Name and Number:	Longworth A 10H
Latitude:	39.84723690
Longitude:	-80.72644820
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,692
Total Base Water Volume (gal):	19,609,758
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
Water	EQT	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.50633	None
Sand (Proppant)	EQT	Proppant	Silica Substrate	14808-60-7	100.00000	11.40338	None
Clearal 268	ChemStream	Biocide	Non-hazardous substances	Proprietary	80.00000	0.00899	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-propenamamide	Proprietary	30.00000	0.00318	None
StimSTREAM FR 9800	ChemStream	Friction Reducer	Petroleum Distillate	64742-47-8	20.00000	0.00141	None
15% HCl	US Well Services	Acid	Hydrogen Chloride	7647-01-0	15.00000	0.00071	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	0.00001	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00001	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					
			Methanol	67-56-1	25.00000	0.00001	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Pyridinium, 1-(phenylmethyl)-, ethyl methyl derivs., chlorides	68909-18-2	25.00000	0.00001	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Ammonium chloride ((NH4)Cl)	12125-02-9	1.00000	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
Clearal 268	ChemStream	Biocide					
			Ethanol	64-17-5	1.50000	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

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Stage No.	Perforation Date	Stage Perforated From TMD Ft.	Stage Perforated To TMD Ft.	# of Perforations/Stage	Formation(s)
1	06/11/2022	16471	16290	40	Marcellus
2	06/12/2022	16266	16087	40	Marcellus
3	06/12/2022	16068	15889	40	Marcellus
4	06/12/2022	15870	15691	40	Marcellus
5	06/13/2022	15672	15493	40	Marcellus
6	06/14/2022	15474	15295	40	Marcellus
7	06/14/2022	15276	15097	40	Marcellus
8	06/14/2022	15078	14899	40	Marcellus
9	06/16/2022	14880	14701	40	Marcellus
10	06/17/2022	14682	14503	40	Marcellus
11	06/17/2022	14484	14305	40	Marcellus
12	06/17/2022	14286	14107	40	Marcellus
13	06/18/2022	14088	13909	40	Marcellus
14	06/18/2022	13900	13711	40	Marcellus
15	06/18/2022	13692	13513	40	Marcellus
16	06/18/2022	13494	13315	40	Marcellus
17	06/19/2022	13296	13117	40	Marcellus
18	06/19/2022	13098	12919	40	Marcellus
19	06/19/2022	12900	12721	40	Marcellus
20	06/19/2022	12702	12523	40	Marcellus
21	06/20/2022	12504	12325	40	Marcellus
22	06/20/2022	12306	12127	40	Marcellus
23	06/20/2022	12108	11929	40	Marcellus
24	06/20/2022	11910	11731	40	Marcellus
25	06/20/2022	11712	11533	40	Marcellus
26	06/21/2022	11514	11335	40	Marcellus
27	06/21/2022	11316	11137	40	Marcellus
28	06/21/2022	11118	10939	40	Marcellus
29	06/22/2022	10920	10741	40	Marcellus
30	06/22/2022	10722	10543	40	Marcellus
31	06/22/2022	10524	10345	40	Marcellus
32	06/22/2022	10326	10147	40	Marcellus
33	06/23/2022	10128	9949	40	Marcellus
34	06/23/2022	9930	9751	40	Marcellus
35	06/23/2022	9732	9553	40	Marcellus
36	06/23/2022	9534	9355	40	Marcellus
37	06/24/2022	9336	9157	40	Marcellus
38	06/24/2022	9138	8959	40	Marcellus
39	06/24/2022	8940	8761	40	Marcellus
40	06/25/2022	8742	8563	40	Marcellus
41	06/25/2022	8544	8365	40	Marcellus

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42	06/25/2022	8346	8167	40	Marcellus
43	06/25/2022	8148	7969	40	Marcellus
44	06/26/2022	7950	7771	40	Marcellus
45	06/26/2022	7752	7573	40	Marcellus
46	06/26/2022	7554	7375	40	Marcellus
47	06/26/2022	7356	7177	40	Marcellus
48	06/27/2022	7158	6999	36	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)
-015625	1	06/12/2022	99	8811	5741	3380	440160	10404	
-015625	2	06/12/2022	100	8974	5579	3241	440200	9861	
-015625	3	06/12/2022	99	8872	4885	5250	440080	9909	
-015625	4	06/13/2022	100	9031	5500	5106	440200	10110	
-015625	5	06/14/2022	100	8665	4093	5812	440100	12869	
-015625	6	06/14/2022	100	8710	5726	5609	440300	9868	
-015625	7	06/15/2022	100	8938	4886	4652	440020	9862	
-015625	8	06/16/2022	99	9010	3944	4807	440100	9796	
-015625	9	06/17/2022	100	8774	5599	5018	440100	9784	
-015625	10	06/17/2022	100	8883	4927	5347	440100	9856	
-015625	11	06/17/2022	100	8811	4997	4889	440160	9354	
-015625	12	06/18/2022	100	8997	5427	4527	440100	9763	
-015625	13	06/18/2022	100	8779	6038	4665	440100	9755	
-015625	14	06/18/2022	100	8952	5867	4673	440150	9742	
-015625	15	06/18/2022	100	8871	6014	4953	440060	9842	
-015625	16	06/19/2022	100	8771	4149	5011	440120	9736	
-015625	17	06/19/2022	100	8696	5264	4525	440100	9738	
-015625	18	06/19/2022	100	8794	4610	4664	440100	9720	
-015625	19	06/19/2022	100	8664	5882	4711	440040	9726	
-015625	20	06/20/2022	100	8754	4907	4840	440160	9712	
-015625	21	06/20/2022	100	8454	8738	4981	440160	9719	
-015625	22	06/20/2022	100	8709	5535	4747	440000	9671	
-015625	23	06/20/2022	100	8343	5948	4692	440000	9664	
-015625	24	06/21/2022	99	8203	7287	4933	440220	9683	
-015625	25	06/21/2022	100	8223	6423	4658	440140	9657	
-015625	26	06/21/2022	100	7904	5833	4518	440100	9662	
-015625	27	06/21/2022	100	8099	6202	4808	440060	9604	
-015625	28	06/22/2022	100	8172	6067	4891	440100	9626	
-015625	29	06/22/2022	100	8085	4854	4724	440080	9609	
-015625	30	06/22/2022	100	8221	5270	4854	441980	9592	
-015625	31	06/22/2022	100	8103	7362	4871	440060	9627	
-015625	32	06/23/2022	100	8084	8087	4654	440100	9597	
-015625	33	06/23/2022	100	7897	6830	4782	440100	9585	
-015625	34	06/23/2022	100	7896	4904	4708	440080	9561	
-015625	35	06/23/2022	100	7823	8158	4687	440150	9907	
-015625	36	06/24/2022	100	7782	6706	4560	440350	9576	
-015625	37	06/24/2022	100	7794	8105	4701	440080	9582	
-015625	38	06/25/2022	100	7870	8779	4711	440450	9560	
-015625	39	06/25/2022	100	7716	6670	4833	440080	9519	
-015625	40	06/25/2022	101	7738	3856	4704	440000	9537	
-015625	41	06/25/2022	100	7710	4153	4851	440100	9526	

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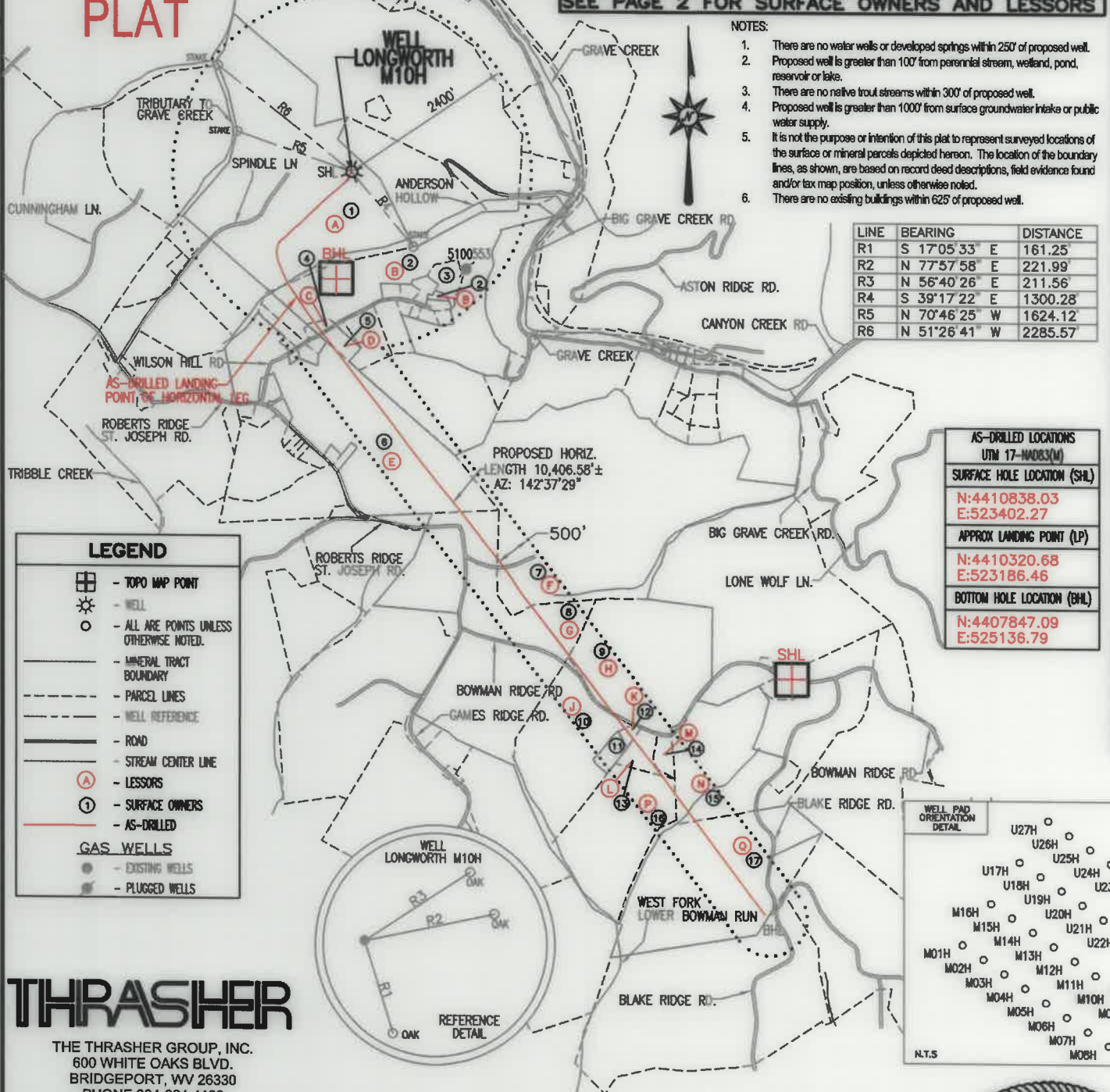
-015625	42	06/25/2022	101	7508	8766	4579	440300	9499
-015625	43	06/26/2022	100	7503	8213	4649	440600	9508
-015625	44	06/26/2022	100	7212	5206	4367	440080	9493
-015625	45	06/26/2022	100	7443	5561	4956	440020	9479
-015625	46	06/27/2022	101	7417	4952	4505	440150	9469
-015625	47	06/27/2022	101	7334	7705	4615	440250	9490
-015625	48	06/27/2022	100	7197	5723	4522	396000	8490

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AS-DRILLED PLAT

BHL is located on topo map 4,798 feet south of Latitude: 39° 50' 00"
 SHL is located on topo map 10,113 feet south of Latitude: 39° 52' 30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS



- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
 2. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 3. There are no native trout streams within 300' of proposed well.
 4. Proposed well is greater than 1000' from surface groundwater intakes or public water supply.
 5. 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.
 6. There are no existing buildings within 625' of proposed well.

LINE	BEARING	DISTANCE
R1	S 17°05'33" E	161.25'
R2	N 77°57'58" E	221.99'
R3	N 56°40'26" E	211.56'
R4	S 39°17'22" E	1300.28'
R5	N 70°46'25" W	1624.12'
R6	N 51°26'41" W	2285.57'

AS-DRILLED LOCATIONS UTM 17-MADE3(M)	
SURFACE HOLE LOCATION (SHL)	
N:4410838.03	E:523402.27
APPROX LANDING POINT (LP)	
N:4410320.68	E:523186.46
BOTTOM HOLE LOCATION (BHL)	
N:4407847.09	E:525136.79

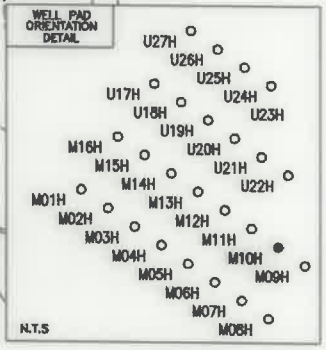
LEGEND

- 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

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



FILE #: LONGWORTH M10H - AS-DRILLED
 DRAWING #: LONGWORTH M10H - 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



(+) 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 M10H - AS-DRILLED
 API WELL #: 47 51 02130
 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: 843.161± **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: 6,692'± TMD: 17,561'±

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 11,183 feet west of Longitude: 80° 40' 00"
 SHL is located on topo map 5,086 feet west of Longitude: 80° 42' 30"

LONGWORTH

M10H

PAGE 2 OF 2

AS-DRILLED

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH JR. ET AL	4-11/1
B	DELORES J. FOX	4-11/54
C	JOHN D. LIGHTNER	4-11/54.3
D	DOROTHY L. MIDCAP	4-11/54.1
E	CLINT E. AND BRENT L. FLOWERS	4-11/56
F	HOWARD E. YOUNG BY AIF SUSAN YOUNG	9-1/18
G	SHANNON R. & LYLA L. HUBBS	9-1/21
H	DEAN B. COLVIN	9-1/22
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO JR., ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
J	DEAN B. COLVIN	9-1/22.2
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
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	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO JR., ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	

	LESSOR	DIST-TM/PAR
K	DEAN B. COLVIN	9-1/22.3
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO JR., ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
L	ROGER L. CLARK	9-4/9.5
M	*ROGER L. CLARK	9-4/9.2
N	JOHN K. MASON JR.	9-1/23
P	THOMAS B. CLARK ET UX	9-4/9.1
Q	THOMAS B. CLARK ET UX	9-5/2

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH JR.	4-11/1
2	DUNCAN OR SUSAN ARNETT	4-11/54
3	JAMES E. & LEAH A. YOHO	4-11/54.12
4	JOHN D. LIGHTNER ET UX	4-11/54.3
5	RAYMOND L. MIDCAP	4-11/54.1
6	CLINT E. & BRENT B. FLOWERS	4-11/56
7	CNX LAND RESOURCES INC	9-1/18
8	CNX LAND RESOURCES INC	9-1/21
9	CNX LAND RESOURCES INC	9-1/22
10	GEORGE CHRIS LAGOS ET UX	9-1/22.2
11	CAROL A. CLARK	9-1/22.4
12	CNX LAND RESOURCES INC	9-1/22.3
13	CAROL A. CLARK	9-4/9.5
14	*CAROL A. CLARK	9-4/9.2
15	JOHN K. MASON JR.	9-1/23
16	THOMAS B. & ANNETTE K. CLARK	9-4/9.1
17	THOMAS B. & ANNETTE K. CLARK	9-5/2

AS-DRILLED LOCATIONS UTM 17-NAD83(M)	
SURFACE HOLE LOCATION (SHL)	
N:4410838.03	E:523402.27
APPROX LANDING POINT (LP)	
N:4410320.68	E:523186.46
BOTTOM HOLE LOCATION (BHL)	
N:4407847.09	E:525136.79

12/16/2022

THRASHER

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