

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

RECEIVED  
Office of Oil and Gas

JUN 14 2022

WV Department of  
Environmental Protection

API 47 - 051 - 01904 County Marshall District Clay  
Quad Glen Easton Pad Name Longworth Field/Pool Name N/A  
Farm name Graham H. Longworth Jr. Well Number Longworth M04H  
Operator (as registered with the OOG) EQT CHAP LLC  
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 4,410,837.94 Easting 523,385.79  
Landing Point of Curve Northing 4,410,431.83 Easting 522,513.60  
Bottom Hole Northing 4,412,923.16 Easting 520,480.23

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 12.6 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, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 03/03/2017 Date drilling commenced 11/07/2017 Date drilling ceased 03/18/2018  
Date completion activities began \_\_\_\_\_ Date completion activities ceased \_\_\_\_\_  
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

Reviewed

Reviewed by:  
*[Signature]*  
09/09/2022

API 47-051 - 01904 Farm name Graham H. Longworth Jr. Well number Longworth M04H

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"	629'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2147'	NEW	L-80 40#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	18,356'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has a calculated TOC of 1911' 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	738	15.6	1.19	878	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H/CLASS H	799/2428	14.7/15.2	1.14/1.15	911/2792	1911	8+
Tubing							

Drillers TD (ft) 18,440' Loggers TD (ft) N/A  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 2350'

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 \_\_\_\_\_

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

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

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





API 47- 051 - 01904 Farm name Graham H. Longworth Jr. Well number Longworth M04H

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 \_\_\_\_\_

Drilling Contractor \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Well # Longworth M04H Final Formations API# 47-051-01904				
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	1,867
Big Lime	1,872	1,867	2,100	2,092
Big Injun	2,100	2,092	2,182	2,173
Sand/Shale	2,182	2,173	2,819	2,789
Gantz	2,819	2,789	2,880	2,846
Gordon	2,880	2,846	2,960	2,919
50F	2,960	2,919	3,009	2,964
Sand/Shale	3,009	2,964	3,088	3,035
Bayard	3,088	3,035	3,453	3,338
Sand/Shale	3,453	3,338	5,255	4,758
Alexander	5,255	4,758	5,692	5,107
Elks	5,692	5,107	6,365	5,645
Sonyea	6,365	5,645	6,492	5,746
Middlesex	6,492	5,746	6,532	5,778
Genesee	6,532	5,778	6,612	5,842
Geneseo	6,612	5,842	6,650	5,871
Tully	6,650	5,871	6,737	5,939
Hamilton	6,737	5,939	6,910	6,063
Marcellus	6,910	6,063	18,440	6,523

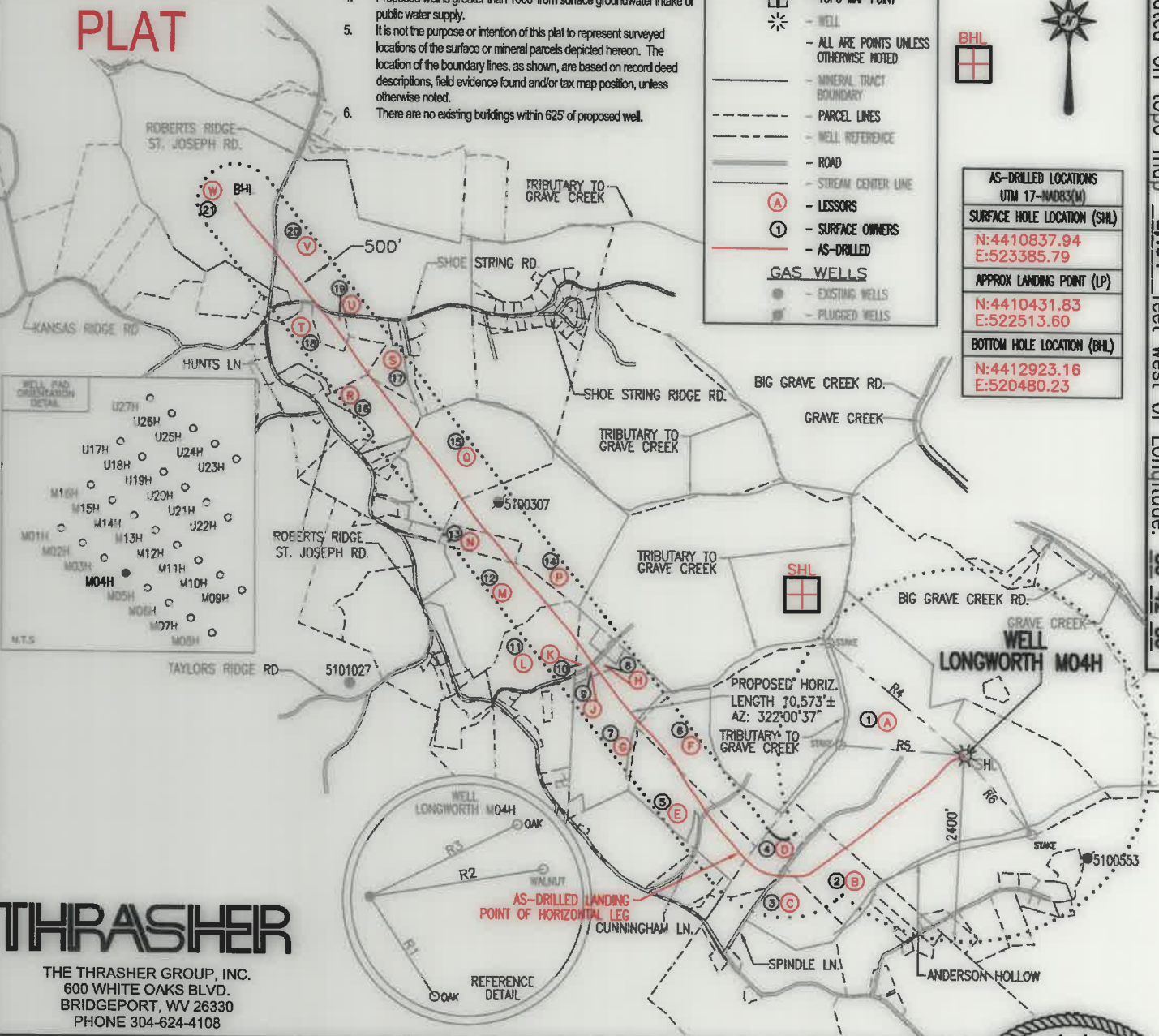
LINE	BEARING	DISTANCE
R1	S 29°05'54" E	157.73
R2	N 75°44'50" E	254.24
R3	N 57°15'07" E	245.03
R4	N 50°35'45" W	2243.15
R5	N 85°58'25" W	1588.76
R6	S 41°04'07" E	1335.84

BHL is located on topo map 3,270 feet south of Latitude: 39° 52' 30"  
 SHL is located on topo map 10,141 feet south of Latitude: 39° 52' 30"

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

- 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.

# AS-DRILLED PLAT



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

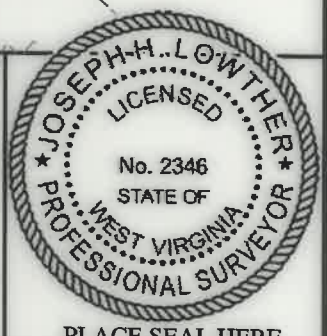
AS-DRILLED LOCATIONS
UTM 17-NAD83(M)
<b>SURFACE HOLE LOCATION (SHL)</b>
N:4410837.94
E:523385.79
<b>APPROX LANDING POINT (LP)</b>
N:4410431.83
E:522513.60
<b>BOTTOM HOLE LOCATION (BHL)</b>
N:4412923.16
E:520480.23

BHL is located on topo map 3,012 feet west of Longitude: 80° 45' 00"  
 SHL is located on topo map 5,194 feet west of Longitude: 80° 42' 30"

FILE #: LONGWORTH M04H - AS-DRILLED  
 DRAWING #: LONGWORTH M04H - 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: DECEMBER 28, 2021  
 OPERATOR'S WELL #: LONGWORTH M04H - AS-DRILLED  
 API WELL #: 47 51 01904  
 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: 667.256± 09/09/2022

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: 6,422'± TMD: 18,465'±

WELL OPERATOR EQT CHAP, LLC DESIGNATED AGENT JOSEPH C. MALLOW  
 Address 400 WOODCLIFF DRIVE Address 427 MIDSTATE DRIVE  
 City CANONSBURG State PA Zip Code 15317 City CLARKSBURG State WV Zip Code 26301

# LONGWORTH

## M04H

### PAGE 2 OF 2

### AS-DRILLED PLAT

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH, JR. ET AL	4-11/1
B	HOLMES CWC LEGACY LLC	4-11/55
C	MARY W. HOLMES ET AL	4-13/39
D	JEFFREY S. HOLMES ET UX	4-13/39.1
E	LOREN HARTLEY ET UX	4-13/35
F	DALE CUNNINGHAM ET UX	4-13/34
G	DEBRA GUMP ET AL	4-13/32
	TIMOTHY HUGGINS	
H	WILLIAM F. BRITTON	4-13/32.6
J	JOHN R. WOOD ESTATE	4-13/32.2
K	KEITH A. HILL ET UX	4-13/32.3
L	ROBERT L. JONES, JR. ET UX	4-13/29
M	PAUL TRADER ET UX	4-13/25
N	ROBERT L. JONES, JR. ET UX	4-12/24
P	RALPH E. WOOD	4-12/21
Q	RALPH E. WOOD	4-12/22
R	LEMONT MASON ET UX	4-13/15.1
S	LIONEL SCHWING ET UX	4-13/13.1
T	LEMONT MASON ET UX	4-13/12
U	DUSTIN E. CRAWFORD	4-13/12.2
V	BYRON C. FREELAND ET UX	4-7/28
W	JOSEPH L. FREELAND ET UX	4-7/21

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH, JR.	4-11/1
2	HOLMES-CWC-LEGACY LLC	4-11/55
3	MARY HOLMES-LIFE	4-13/39
4	JEFFREY SCOTT HOLMES, ET AL.	4-13/39.1
5	PATRICIA A. HARTLEY	4-13/35
6	DALE & MARY CUNNINGHAM	4-13/34
7	DEBRA GUMP	4-13/32
8	WILLIAM F. BRITTON	4-13/32.6
9	HARLEY WOOD EST	4-13/32.2
10	KEVIN L. HOLMES, JR.	4-13/32.3
11	ROBERT L. JONES, JR.	4-13/29
12	PAUL TRADER	4-13/25
13	ROBERT L. JONES, JR., ET UX.	4-12/24
14	RALPH E. WOOD	4-12/21
15	RALPH E. WOOD	4-12/22
16	LEMONT MASON, ET UX.	4-13/15.1
17	LIONEL D. SCHWING, ET UX.	4-13/13.1
18	LEMONT & RHONDA L. MASON	4-13/12
19	DUSTIN E. CRAWFORD	4-13/12.2
20	BYRON FREELAND	4-7/28
21	JOSEPH L. FREELAND, ET UX.	4-7/21

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DECEMBER 28, 2021