

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

API 47 - 103 - 03012 County Wetzel District Proctor  
Quad New Martinsville Pad Name Erlewine Field/Pool Name Mary  
Farm name Erlewine, Richard Well Number Erlewine #2H (519205)  
Operator (as registered with the OOG) EQT Production Company  
Address 625 Liberty Avenue, Suite 1700 City Pittsburgh State Pennsylvania Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,392,647 Easting 517,389  
Landing Point of Curve Northing 4,392,464 Easting 517,021  
Bottom Hole Northing 4,390,794 Easting 517,423

Elevation (ft) 1,212 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)

Soda Ash, and Sodium Chloride

Date permit issued 12/20/2018? Date drilling commenced \_\_\_\_\_ Date drilling ceased \_\_\_\_\_  
Date completion activities began 4/3/2019 Date completion activities ceased 4/7/2019  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

RECEIVED  
Office of Oil and Gas

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

JUL - 3 2019

Freshwater depth(s) ft \_\_\_\_\_ Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft \_\_\_\_\_ Void(s) encountered (Y/N) depths \_\_\_\_\_  
Coal depth(s) ft \_\_\_\_\_ Cavern(s) encountered (Y/N) depths \_\_\_\_\_  
Is coal being mined in area (Y/N) \_\_\_\_\_

WV Department of  
Environmental Protection

**Reviewed**

Reviewed by:

*Sam M. K.*

DMH

API 47- 103 - 03012 Farm name Erlewine, Richard Well number Erlewine #2H (519205)

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_  
\_\_\_\_\_

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 (MD)	WOC (hrs)
Conductor							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) \_\_\_\_\_ Loggers TD (ft) \_\_\_\_\_  
 Deepest formation penetrated \_\_\_\_\_ Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) \_\_\_\_\_

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 \_\_\_\_\_

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019

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

WV Department of Environmental Protection

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

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

API 47- 103 - 03012

Farm name Erlewine, Richard

Well number Erlewine #2H (519205)

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>Please See Attachment</b>					

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
<b>Please See Attachment</b>								

RECEIVED  
 Office of Oil and Gas  
 JUL - 3 2019  
 WV Department of Environmental Protection

Please insert additional pages as applicable.

API 47- 103 - 03012 Farm name Erlewine, Richard Well number Erlewine #2H (519205)

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>MARCELLUS</u>	<u>6,520'</u>	<u>TVD</u>	<u>7,412'</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 0 psi Bottom Hole N/A psi DURATION OF TEST 142.5 hrs

OPEN FLOW Gas 4,976 mcfpd Oil N/A bpd NGL 711.8 bpd Water 965.8 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 <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
See Attached Sheet					

Please insert additional pages as applicable.

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

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

Cementing Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulating Company ProFrac  
Address 777 Main Street, Suite 3900 City Fort Worth State TX Zip 76102

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019  
WV Department of  
Environmental Protection

Please insert additional pages as applicable.

Completed by Adam Hughey Telephone (412) 553-5884  
Signature [Signature] Title Director - Completions Date ~~07/07/2019~~ 7/11/19

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
	3/14/2019	12,364	12,445	0	MARCELLUS
	4/3/2019	12,165	12,346	40	MARCELLUS
	4/3/2019	11,965	12,146	40	MARCELLUS
	4/3/2019	11,765	11,946	40	MARCELLUS
	4/3/2019	11,565	11,746	40	MARCELLUS
	4/4/2019	11,365	11,546	40	MARCELLUS
	4/4/2019	11,165	11,346	40	MARCELLUS
	4/4/2019	10,965	11,146	40	MARCELLUS
	4/4/2019	10,765	10,946	40	MARCELLUS
	4/4/2019	10,565	10,746	40	MARCELLUS
	4/4/2019	10,365	10,546	40	MARCELLUS
	4/5/2019	10,165	10,346	40	MARCELLUS
	4/5/2019	9,965	10,146	40	MARCELLUS
	4/5/2019	9,765	9,946	40	MARCELLUS
	4/5/2019	9,565	9,746	40	MARCELLUS
	4/5/2019	9,365	9,546	40	MARCELLUS
	4/5/2019	9,165	9,346	40	MARCELLUS
	4/6/2019	8,965	9,146	40	MARCELLUS
	4/6/2019	8,765	8,946	40	MARCELLUS
	4/6/2019	8,565	8,746	40	MARCELLUS
	4/6/2019	8,365	8,546	40	MARCELLUS
	4/6/2019	8,165	8,346	40	MARCELLUS
	4/6/2019	7,965	8,146	40	MARCELLUS
	4/7/2019	7,765	7,946	40	MARCELLUS
	4/7/2019	7,565	7,746	40	MARCELLUS
	4/7/2019	7,447	7,449	0	MARCELLUS

RECEIVED  
Office of Oil and Gas

JUL - 3 2019

WV Department of  
Environmental Protection

Stage Number	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/other (units)
1	4/3/2019	92.00	8,343	8,930	3,965	303,500	5,267	0
2	4/3/2019	102.00	8,272	8,577	3,866	601,360	9,901	0
3	4/3/2019	102.00	8,324	8,679	4,471	601,180	9,870	0
4	4/3/2019	100.00	8,118	8,324	5,274	600,720	9,989	0
5	4/4/2019	100.00	8,120	8,431	5,317	600,960	9,928	0
6	4/4/2019	101.00	8,157	8,425	4,720	600,840	9,940	0
7	4/4/2019	102.00	8,146	8,475	4,302	600,860	9,687	0
8	4/4/2019	102.00	7,994	8,268	4,283	600,600	9,625	0
9	4/4/2019	101.00	7,936	8,328	4,597	600,300	9,720	0
10	4/4/2019	101.00	7,779	7,996	5,260	598,180	9,760	0
11	4/5/2019	101.00	7,726	8,165	5,188	600,160	9,759	0
12	4/5/2019	101.00	7,834	8,320	4,661	600,040	9,740	0
13	4/5/2019	101.00	7,818	8,879	4,115	600,360	9,313	0
14	4/5/2019	101.00	7,716	8,857	4,245	600,140	9,266	0
15	4/5/2019	101.00	7,781	8,847	4,165	600,740	9,309	0
16	4/5/2019	100.00	7,531	7,876	4,843	600,180	9,644	0
17	4/6/2019	101.00	7,336	7,572	5,151	600,380	9,758	0
18	4/6/2019	101.00	7,464	7,922	4,224	600,120	9,445	0
19	4/6/2019	102.00	7,381	8,679	4,248	600,880	9,210	0
20	4/6/2019	101.00	7,320	8,806	4,339	600,280	9,203	0
21	4/6/2019	102.00	7,204	8,750	4,338	601,460	9,173	0
22	4/6/2019	101.00	7,167	7,872	5,074	600,620	9,488	0
23	4/7/2019	101	6,870	7,189	4,830	600,000	9,737	0

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019  
WV Department of  
Environmental Protection

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

API 47 - 103 - 03012 County Wetzel District Proctor  
Quad New Martinsville Pad Name Erlewine Field/Pool Name Mary  
Farm name Erlewine, Richard Well Number #2H  
Operator (as registered with the OOG) Stone Energy Corporation  
Address 1300 Fort Pierpont Dr. - Suite 201 City Morgantown State WV Zip 26508

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,392,647 Easting 517,389  
Landing Point of Curve Northing 4,392,464 Easting 517,021  
Bottom Hole Northing 4,390,794 Easting 517,423

Elevation (ft) 1,212 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)  
Saturated salt mud which includes Caustic Soda, Barite, Lime, New-Drill, Perma-Lose HT, Xan-Plex D, X-Cide 102, Soda Ash, and Sodium Chloride

Date permit issued 8/22/2014 Date drilling commenced 8/29/2014 Date drilling ceased 2/3/2015  
Date completion activities began Not Yet Completed Date completion activities ceased Not Yet Completed  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019  
WV Department of  
Environmental Protection

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 105 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1,668 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 374, 444 and 644 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: \_\_\_\_\_

API 47- 103 - 03012

Farm name Erlewine, Richard

Well number #2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	91'	New	LS - 94.1 ppf		N - GTS
Surface	17.5"	13.375"	1,214' KB - 1,204' GL	New	J55 - 54.5 ppf	121' & 239'	Y - CTS
Coal	17.5"	13.375"	1,214' KB - 1,204' GL	New	J55 - 54.5 ppf	121' & 239'	Y - CTS
Intermediate 1	12.25"	9.625"	2,419'	New	J55 - 36 ppf		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,502'	New	P110 - 20 ppf		N - TOC @ 1,388' Calculated
Tubing							
Packer type and depth set							

Comment Details: Circulated 32 bbls cement to surface on 13.375" casing string. Circulated 20 bbls cement to surface on the 9.625" casing string. Did not circulate any cement to surface on the 5.5" casing string. TOC on 5.5" calculated to be 1,388'.

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 (MD)	WOC (hrs)
Conductor	Type 1	34	15.6	1.18	40	Surface	24.0
Surface	HalCem Class "A"	910	15.6	1.18	1,074	Surface	8.0
Coal	HalCem Class "A"	910	15.6	1.18	1,074	Surface	8.0
Intermediate 1	HalCem Class "A"	800	15.6	1.18	944	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-Tuned Spacer 3 Tail-Vari Cem	Lead-178 Tail-2,350	Lead-14.5 Tail-15.0	Lead-2.37 Tail-1.20	Lead-422 Tail-2,820	1,388' Calculated	7.0
Tubing							

Drillers TD (ft) 12,510 MD / 6,655 TVD

Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Shale

Plug back to (ft)                     

Plug back procedure                     

Kick off depth (ft) 5,609 MD / 5,577 TVD

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 Surface casing had bow spring centralizers placed on

joints 2, 6, 10, 14, 18, and 22. Intermediate casing had bow spring centralizers placed on joints 4, 8, 12, 16, 20, 24, 28 and 32.

Production casing had rigid spiral centralizers placed on every third joint beginning with joint 1 to joint 160. Ran a total of 54 rigid spiral centralizers. Ran bow spring centralizers from joint 164 to joint 268 on every fourth joint. A total of 27 bow spring centralizers were run.

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                     

RECEIVED  
Office of Oil and Gas

JUL - 3 2019

WV Department of  
Environmental Protection



API 47- 103 - 03012

Farm name **Erlewine, Richard**

Well number **#2H**

PERFORATION RECORD

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

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019

WV Department of  
Environmental Protection

Please insert additional pages as applicable.

API 47- 103 - 03012 Farm name Erlewine, Richard Well number #2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Not Yet Completed</u>	<u>TVD</u>	<u>MD</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

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 \_\_\_\_\_ mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd GAS MEASURED BY  Estimated  Orifice  Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP DEPTH IN FT NAME TVD</u>	<u>BOTTOM DEPTH IN FT TVD</u>	<u>TOP DEPTH IN FT MD</u>	<u>BOTTOM DEPTH IN FT MD</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H<sub>2</sub>S, ETC)</u>
	0		0		
See Attached Sheet					

Please insert additional pages as applicable.

Drilling Contractor Nomac (top-hole) & Saxon Drilling (horizontal)  
Address 2034 Martins Branch Rd /9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 25312 / 77381

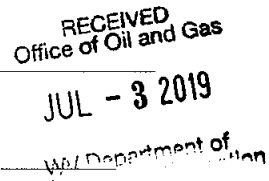
Logging Company Scientific Drilling and Schlumberger  
Address 124 Vista Drive / 1178 US HWY 33 East City Charteroi / Weston State PA / WV Zip 15022 / 26452

Cementing Company Schlumberger  
Address 1178 US HWY 33 East City Weston State WV Zip 26452

Stimulating Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please insert additional pages as applicable.

Completed by W. Lee Hornsby Telephone 304-225-1600  
Signature \_\_\_\_\_ Title Drilling Engineer Date 7/7/2014



Erlewine #2H  
API 47-103-03012  
Stone Energy Corporation

	Horizontal		Bottom (ft TVD)	Bottom (ft MD)	
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface		*	374	FW @ 105'
Coal	374		*	378	
Sandstone & Shale	378		*	444	
Coal	444			446	
Sandstone & Shale	446			644	
Coal	644			646	
Sandstone & Shale	646			2,014	SW @ 1,668'
Little Lime	2,014		*	2,044	
Big Lime	2,044		*	2,144	
Big Injun	2,144		*	2,244	
Sandstone & Shale	2,244		*	2,612	
Berea Sandstone	2,612		*	2,642	
Shale	2,642		*	2,857	
Gordon	2,857		*	2,907	
Undiff Devonian Shale	2,907		*	5,571	5,603
Rhinestreet	5,571	5,603	~	6,177	6,247
Cashaqua	6,177	6,247	~	6,346	6,850
Middlesex	6,346	6,850	~	6,362	6,896
West River	6,362	6,896	~	6,429	7,051
Geneseo	6,429	7,051	~	6,433	7,093
Tully Limestone	6,433	7,093	~	6,476	7,223
Hamilton Shale	6,476	7,223	~	6,520	7,412
Marcellus	6,520	7,412	~	6,655	12,510
TD				6,655	12,510

\* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019  
Department of



# End of Well Report

Erlewine 2H

Curve/Lateral

Saxon 141

Prepared By:

S.Rhodes



RECEIVED  
Office of Oil and Gas  
JUL - 3 2019  
WV Department of  
Environmental Protection

# **TABLE OF CONTENTS**

- 1. Directional Plot – Planned vs. Actual**
- 2. Surveys**
- 3. Daily Drilling Reports**
- 4. BHA Summary Reports and Slide Sheets**
- 5. Graphical Job History**
- 6. Support Staff**

RECEIVED  
Office of Oil and Gas  
JUL - 3 2019  
WV Department of  
Environmental Protection

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/3/2019
Job End Date:	4/7/2019
State:	West Virginia
County:	Wetzel
API Number:	47-103-03012-00-00
Operator Name:	EQT Production
Well Name and Number:	519205
Latitude:	39.68339900
Longitude:	-80.79739600
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6.520
Total Base Water Volume (gal):	9,889,219
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	ProFrac	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.76157	None
ProHib 100	ProFrac	Acid Corrosion Inhibitor					
				Listed Below			

Hydrochloric Acid (15%)	ProFrac	Acidizing											
							Listed Below						
Other Chemical (s)	Listed Above	See Trade Name (s) List											
							Listed Below						
Clearal 268	Chemstream	Bacteria Treatment											
							Listed Below						
StimStream FR 9800	Chemstream	Friction Reducer											
							Listed Below						
Sand (Proppant)	ProFrac	Proppant											
							Listed Below						
StimStream SC-398	Chemstream	Scale Inhibitor											
							Listed Below						
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.													
							14808-60-7	100.00000	15.10974	None			
							Silica Substrate						
							Proprietary	30.00000	0.01418				
							Copolymer Of 2-Propenamide						
							Proprietary	30.00000	0.01418	None			
							Copolymer Of 2-Propenamide						
							Proprietary	90.00000	0.01252	None			
							Non-Hazardous Substances						
							64742-47-8	20.00000	0.00945	None			
							Petroleum Distillate						
							64742-47-8	20.00000	0.00945				
							Petroleum Distillate						
							7647-01-0	15.00000	0.00874	None			
							Hydrochloric Acid						

			Non-Hazardous Substances	Proprietary	90.00000	0.00823	None
			Non-Hazardous Substances	Proprietary	90.00000	0.00823	
			Glutaraldehyde	111-30-8	20.00000	0.00278	None
			Alcohols, C12-16, Ethoxylated	68551-12-2	2.00000	0.00095	None
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00095	
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00095	None
			Alcohols, C12-16, Ethoxylated	68551-12-2	2.00000	0.00095	
			Bis(HexaMethylene Triamine Penta (Methylene Phosphonic Acid) (BHMT)	34690-00-1	10.00000	0.00091	None
			Bis(HexaMethylene Triamine Penta (Methylene Phosphonic Acid) (BHMT)	34690-00-1	10.00000	0.00091	
			Ammonium Chloride ((NH4)Cl)	12125-02-9	1.00000	0.00047	None
			Ammonium Chloride ((NH4)Cl)	12125-02-9	1.00000	0.00047	
			Alkyl Dimethyl Benzyl Ammonium Chloride	68391-01-5	3.00000	0.00042	None
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	3.00000	0.00042	None
			Methanol	67-56-1	90.00000	0.00010	
			Methanol	67-56-1	90.00000	0.00010	None
			Xylene	1330-20-7	5.00000	0.00001	
			Alcohols, C7-9-ISO, C8-Rich	68526-83-0	5.00000	0.00001	None
			Imidazoline	61790-69-0	5.00000	0.00001	None
			Propargyl Alcohol	107-19-7	5.00000	0.00001	
			Isopropanol	67-63-0	5.00000	0.00001	
			Propargyl Alcohol	107-19-7	5.00000	0.00001	None
			Xylene	1330-20-7	5.00000	0.00001	None



			Imidazoline	61790-69-0	5.00000	0.00001	
			Isopropanol	67-63-0	5.00000	0.00001	None
			Alcohols, C7-9-ISO, C8-Rich	68526-83-0	5.00000	0.00001	
			Ethylbenzene	100-41-4	1.00000	0.00000	None
			Ethylbenzene	100-41-4	1.00000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%  
\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.  
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: Erlewine # H2 (519205)

API: 47 - 103 - 03012

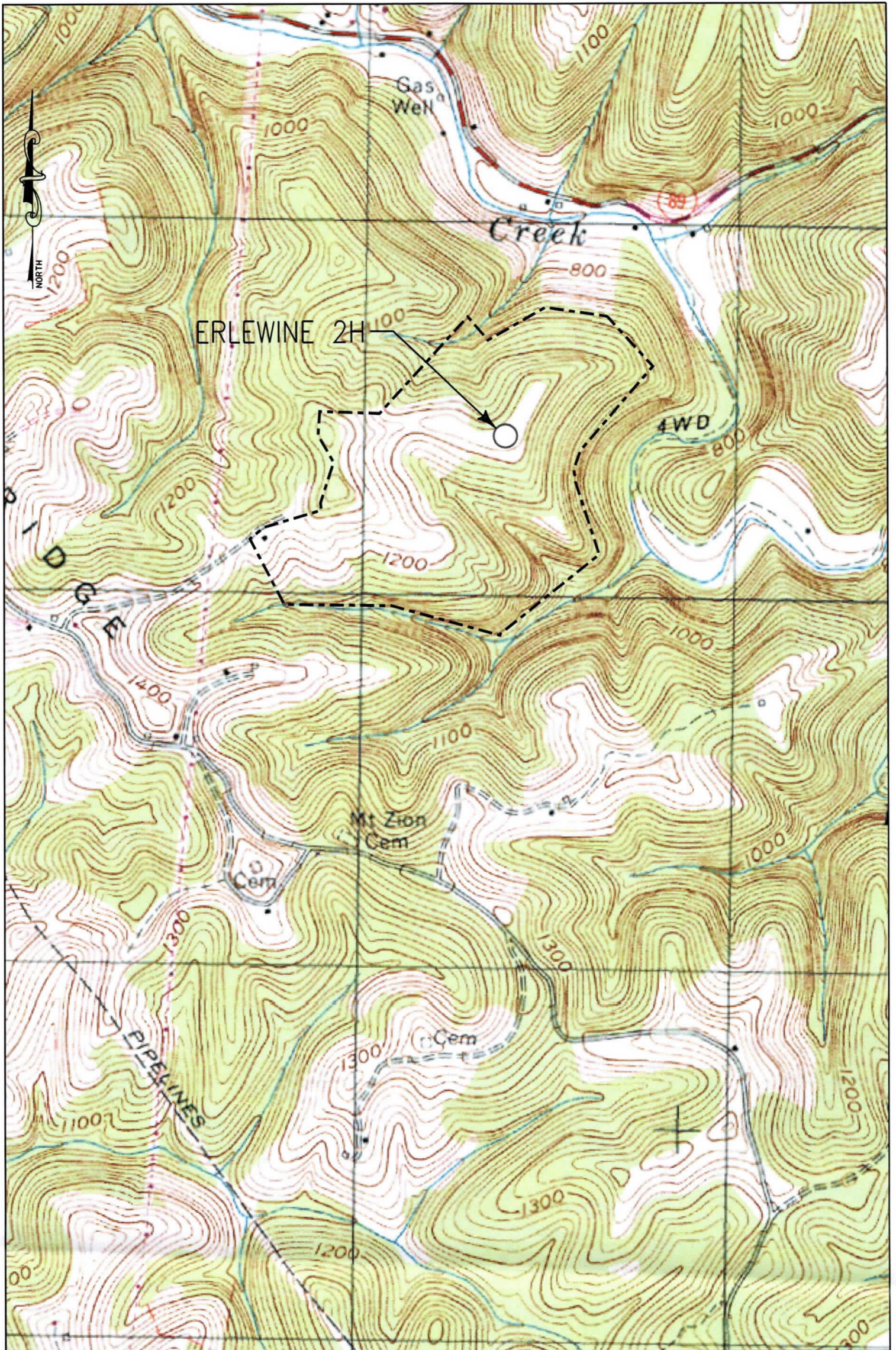
Submission:  Initial  Amended

Notes: The Following Amends The Interim WR-35 Submitted By Stone Energy, Following Drilling Operations On The Well. This Amended Version Adds The Required Reporting For Stimulation And Wireline Operations Completed By EQT Production Company. Also Amended Is The Permit Issue Date.

RECEIVED  
Office of Oil and Gas

JUL - 3 2019

WV Department of  
Environmental Protection



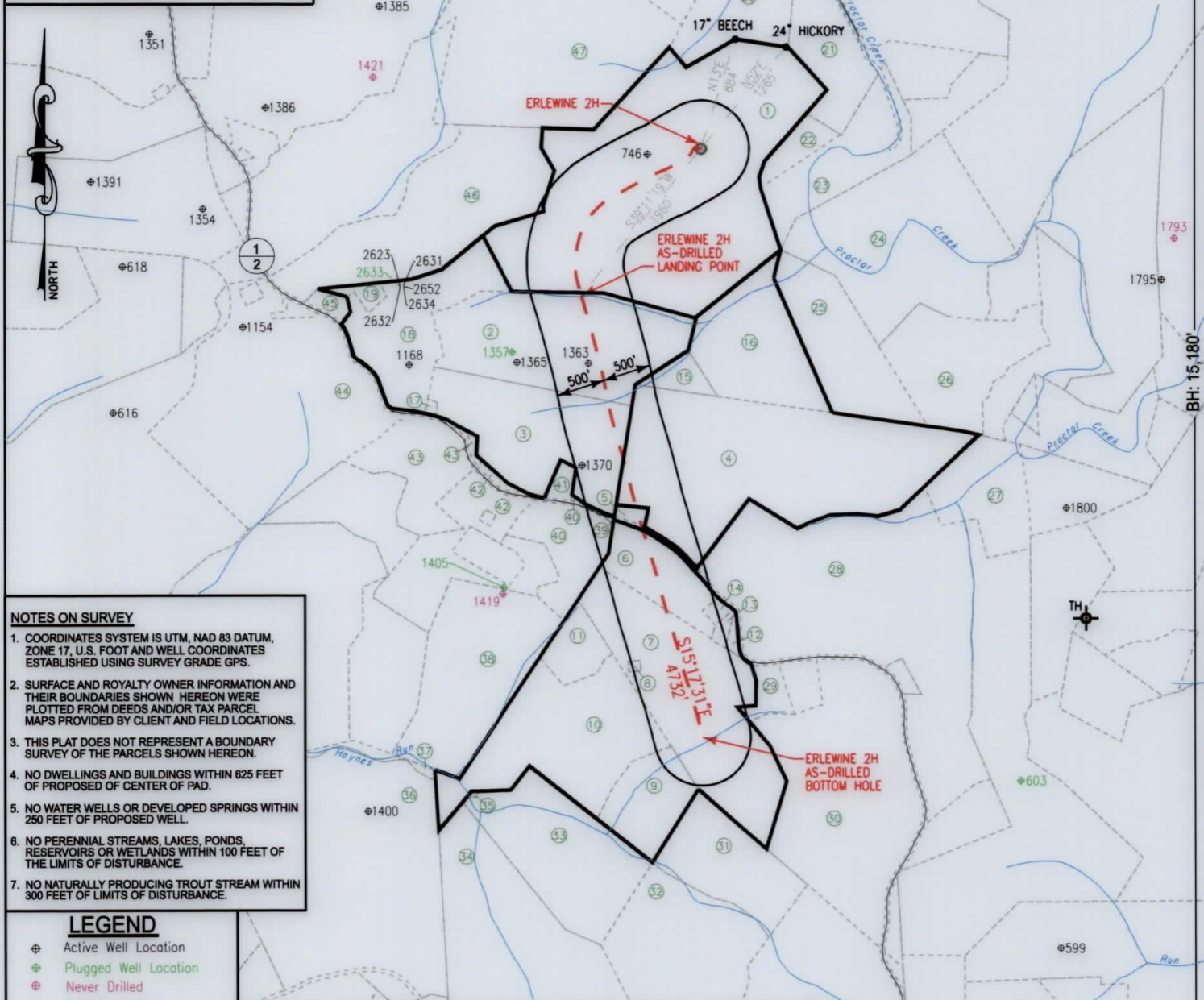
KEYSTONE CONSULTANTS, INC.  
 32 EAST MAIN STREET,  
 CARNEGIE, PA 15106  
 412-278-2100

1" = 1000'  
 NEW MARTINSVILLE 7.5'

EQT PRODUCTION COMPANY  
 115 PROFESSIONAL PLACE  
 PO BOX 280  
 BRIDGEPORT, WV 26330



**Erlewine 2H  
Erlewine  
EQT Production Company**



- NOTES ON SURVEY**
- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
  - SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
  - THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
  - NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
  - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
  - NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
  - NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

- LEGEND**
- ⊕ Active Well Location
  - ⊕ Plugged Well Location
  - ⊕ Never Drilled
  - ⊕ Abandoned Well
  - ① Tract Identification
  - Proposed Gas Well
  - Located Corner, as noted
  - Surface Tract Lines
  - Reference Line
  - Lease Boundary
  - Creek or Drain
  - ⊕ WV County Route
  - ⊕ WV State Route

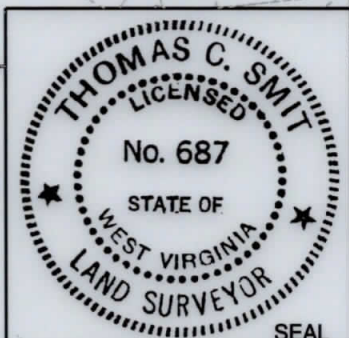
Tract ID.	Lease No.	Acres	Owner
1	873753	130.201343	Ronald Carney ET UX
2 & 3	873675	130.425735	Dempsey Wilson ET UX
4	873885	120.707255	Fred Henry ET UX
5	874047	1.379363	Emily Diane Wilson
6 & 7	873653	159.616215	Bradley Ray Nice

(⊕) Denotes Location of Well on United States Topographic Maps



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.

*Thomas C. Smalls*  
L. L. S. 687



FILE NO: W2192 (BK 65-61)  
DRAWING NO:  
SCALE: 1" = 1600'  
MINIMUM DEGREE OF ACCURACY: 1:2500  
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

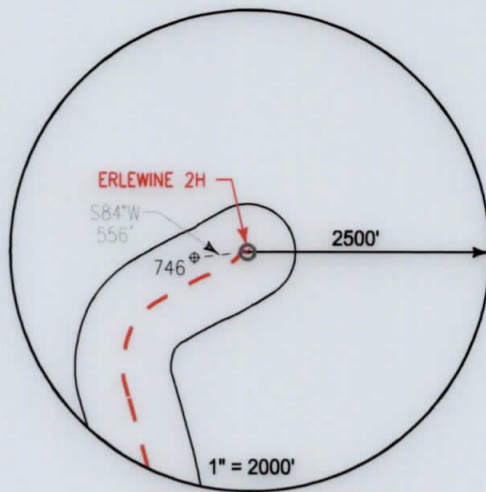
DATE: JUNE 25 20 19  
OPERATORS WELL NO: ERLEWINE 2H  
API WELL NO  
47 - 103 - 03012  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION ELEVATION: 1,220' WATERSHED: TRIBUTARY OF PROCTOR CREEK QUADRANGLE: NEW MARTINSVILLE 7.5'  
DISTRICT: Proctor COUNTY: Wetzel  
SURFACE OWNER: Richard Erlewine ACREAGE: 135 ±  
ROYALTY OWNER: Ronald Carney, et ux LEASE NO: 873753 ACREAGE: 130.20 ±  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6,850'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Jason Ranson  
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330

**Erlewine 2H**  
**Erlewine**  
**EQT Production Company**

Tract ID.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	6	46	Wetzel	Proctor	Richard L. Erlewine	136.18
2	11	3	Wetzel	Proctor	Mary Wilson & Christy Leek EST	52.33
3	11	11	Wetzel	Proctor	Christy Leek	41.66
4	11	12	Wetzel	Proctor	Louise Emma Wilson	89.99
5	11	9	Wetzel	Proctor	Emily D. Wilson	1.18
6	11	20	Wetzel	Proctor	John A. Helmick	15.26
7	11	24	Wetzel	Proctor	Bradley Ray Nice	69.92
8	11	23	Wetzel	Proctor	Burton Cemetery	0.32
9	11	27	Wetzel	Proctor	Linda C. & Douglas S. Parish	16.15
10	11	26	Wetzel	Proctor	Linda C. & Douglas S. Parish	46.98
11	11	22	Wetzel	Proctor	Linda C. & Douglas S. Parish	8.11
12	11	N/A	Wetzel	Proctor	N/A	N/A
13	11	28	Wetzel	Proctor	John A. Helmick	1.07
14	11	20.1	Wetzel	Proctor	Lynn Debra Oates	1.06
15	11	4	Wetzel	Proctor	Louise Emma Wilson	4.24
16	11	5	Wetzel	Proctor	John J. & Emma L. Moore	30.34
17	11	10	Wetzel	Proctor	Woodland School	0.37
18	6	45	Wetzel	Proctor	Christy Leek	29.51
19	6	45.3	Wetzel	Proctor	Linda Anderson	2.01
20	6	30	Wetzel	Proctor	Albert Ray Anderson	102.63
21	6	40	Wetzel	Proctor	Kevin S. Goff	19.13
22	6	47	Wetzel	Proctor	Richard Victor Reed ET AL	5.55
23	7	34	Wetzel	Proctor	Kevin Goff	23.31
24	7	37	Wetzel	Proctor	Rost Energy Company	64.56
25	12	1	Wetzel	Proctor	Kevin Goff	28.69
26	12	2	Wetzel	Proctor	John J. & Emma L. Moore	31.57
27	12	14	Wetzel	Proctor	Rost Energy Company	20.65
28	12	27.1	Wetzel	Proctor	Sharon Henthorn	110.05
29	11	25.3	Wetzel	Proctor	Joyce A. Meeden	4.3
30	12	44	Wetzel	Proctor	Charles G. Shepard	72.43
31	5	4	Magnolia	Proctor	Wilson Emma Moore	22.75
32	5	17	Magnolia	Proctor	Sharon L. Bearce	48.92
33	5	3	Magnolia	Proctor	Sharon L. Bearce	39.32
34	5	16	Magnolia	Proctor	Sharon L. Bearce	108.64
35	5	3.1	Magnolia	Proctor	N/A	0.11
36	5	2	Magnolia	Proctor	David E. & Jeanie L. Schupbach	96.43
37	11	N/A	Magnolia	Proctor	N/A	N/A
38	11	16	Magnolia	Proctor	Nancy J. Garner	44.92
39	11	11	Wetzel	Proctor	Christy Leek	41.66
40	11	17	Wetzel	Proctor	Shane Talkington & Bradley Nice	15.91
41	11	11.1	Wetzel	Proctor	Emily Dian Wilson	1.94
42	11	18	Wetzel	Proctor	Charles A. Henderson	6
43	11	8	Wetzel	Proctor	Coastal Lumber Company	20.63
44	11	2	Wetzel	Proctor	Jack J. Moore	80.67
45	6	45.2	Wetzel	Proctor	Stone Energy Corporation	2.06
46	6	45.1	Wetzel	Proctor	Donald F. & Martha J. Arrick	53.9
47	6	36	Wetzel	Proctor	Richard L. Erlewine	127.14

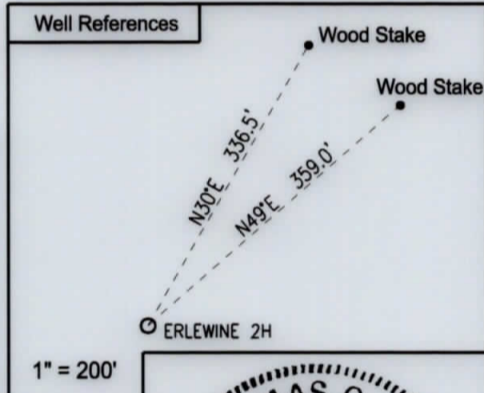


**Notes:**  
**ERLEWINE 2H As-Drilled coordinates are**  
 NAD 27 N: 433,657.003 E: 1,634,869.000  
 NAD 27 Lat: 39.683399 Long: -80.797397  
 NAD 83 UTM N: 4,392,646.796 E: 517,389.436

**ERLEWINE 2H As-Drilled Landing Point coordinates are**  
 NAD 27 N: 432,138.163 E: 1,633,630.810  
 NAD 27 Lat: 39.679180 Long: -80.801717  
 NAD 83 UTM N: 4,392,177.760 E: 517,019.920

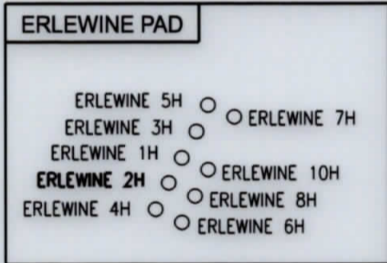
**ERLEWINE 2H As-Drilled Bottom Hole coordinates are**  
 NAD 27 N: 427,575.073 E: 1,634,878.600  
 NAD 27 Lat: 39.666703 Long: -80.797050  
 NAD 83 UTM N: 4,390,885.335 E: 517,421.710

West Virginia Coordinates system of 1927 (North Zone) based upon Differential GPS Measurements  
 Plat orientation, Corner and well ties are based upon the grid north meridian  
 Well location references are based upon the grid north meridian.  
 UTM coordinates are NAD83, Zone 17, Meters.



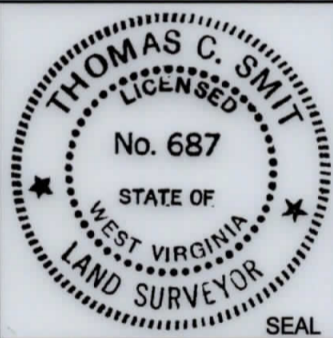
**LEGEND**

- ⊕ Active Well Location
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- ⊙ WV County Route
- ⊙ WV State Route



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.

*L. L. S.*  
**L. L. S. 687**



FILE NO: W2192 (BK 65-61)  
 DRAWING NO: \_\_\_\_\_  
 SCALE: 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY:  
1:2500  
 PROVEN SOURCE OF ELEVATION:  
NGS CORS Station

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: JUNE 25 20 19  
 OPERATORS WELL NO: ERLEWINE 2H  
 API WELL NO  
47 - 103 - 03012  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION ELEVATION: 1,220' WATERSHED: TRIBUTARY OF PROCTOR CREEK QUADRANGLE: NEW MARTINSVILLE 7.5'  
 DISTRICT: Proctor COUNTY: Wetzel

SURFACE OWNER: Richard Erlewine ACREAGE: 135 ±  
 ROYALTY OWNER: Ronald Carney, et ux LEASE NO: 873753 ACREAGE: 130.20 ±

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6,850'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Jason Ranson  
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330