



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

February 28, 2018
PERMIT MODIFICATION APPROVAL
Vertical / Plugging

FQ ENERGY SERVICES, LLC
28407 STATE ROUTE 7

MARIETTA, OH 45750

Re: Permit Modification Approval for W-1590
47-085-09721-00-00

WILL SET A CAST IRON BRIDGE PLUG AT 6025 FT. WITH A 500 FT. CLASS A CEMENT PLUG ON TOP OF THE CIBP.

FQ ENERGY SERVICES, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: W-1590
Farm Name: MASON, MARY
U.S. WELL NUMBER: 47-085-09721-00-00
Vertical / Plugging
Date Issued: 02/28/2018

Promoting a healthy environment.



Procedures on Ritchie #1 Location Plugging Job

*Perforations @ 6033-6067

*Total Depth 6068 ft.

Day 1 – Prep the Location. Move in-Rig up. Unjay Packer.

Pull 2 7/8" and Packer out of hole.

Day 2 – Rig up wireline Unit. Bond log 4 ½" casing. Set CIBP @ 6025 ft.

Rig Down wireline. Run 2 7/8" EUE to 6020'. Rig up pump truck.

Set plug 1 from 6020 – 5500'. (500' plug).

TOH to 5500. Set 6 % gel plug to 4400'.

TOH to 4400.

Set plug 2 from 4500 – 4400 (100' cement plug). Remove 2 7/8" to surface.

Day 3 – Rig up Wireline. Tag TOC at 4400', Cut casing off at 4400'

Set plug 3 @ 4400-3400. (1000' cement plug). TOH 4 1/2" to 3400'

Set plug 4 @ 3400-2400' (1000' cement plug). TOH 4 ½" to 2400'

Day 4 - Set plug 5 @ 1900-2400. (500' cement plug). TOH 4 ½" to 1900'.

Set 6% Gel Spacer from 1100-1900'. TOH 4 ½" to 1100'

Set Elevation Plug 6 from 1000-1107' (107' cement plug)

TOH 4 ½" to 1000'. Set 6% Gel spacer from 500-1000'.

Set Surface Plug 7 from 0-500' (500' cement plug)

Day 5 – Rig Down Move Off Location.

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2/27/18

MDC

2/27/18

McLaughlin, Jeffrey W

From: Brian G. Haught <bhaught@topdrilling.com>
Sent: Tuesday, February 27, 2018 3:53 PM
To: McLaughlin, Jeffrey W
Cc: 'Brian G. Haught'
Subject: FQ Energy Services, LLC - Plugging Permit dated 8-16-16 API# 47-085-09721P
Attachments: FQ Mason W-1590 Plug Mod - API 47-085-09721.pdf

Dear Mr. McLaughlin,

After reviewing the permitted plugging procedure for the Mason W-1590 well with both FQ personnel and WV Dep inspector Mike Goff, we have come to believe that it would be safer to try to plug this well by installing and Cast-Iron Bridge Plug on top of the open perforations to seal off the flowback water from the Injection zone. We will then run 2 7/8" tubing back in and set a 500' cement plug on top of the CIBP. The other modifications that we are requesting pertain to using 6% gel spacers between the cement plugs where applicable versus the original plan to pump solid cement plugs from TD back to surface. We intend to seal off all of the open zones behind the 4 1/2" casing by setting several cement plugs till we get cement back inside the 7" casing which was originally cemented to surface. From this point we will use 6% gel spacers and set a 200' plug at elevation and finish with a 500' surface plug.

Please review the attached copies of the original permit procedure along with the modified permit procedure for your approval. Should you have any additional comments / concerns please don't hesitate to call me to discuss.

I appreciate your assistance in this matter and look forward to working with you again in the future.

Sincerely,

Brian G. Haught

Vice President
Top Drilling Corporation
(O) 304-477-3333
(M) 304-991-3700
(F) 304-477-3336

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Procedures on Ritchie #1 Location Plugging Job

ok
QW

*Perforations @ 6033-6067

*Total Depth 6068 ft.

?

Day 1- Prep the Location. Move in-Rig up. Unjay Packer.

Pull 2 7/8 with Packer out of hole.

Day 2- Run 2 7/8 to 6050 ft and set perforation plug FROM PSTD OF 6068 TO 5550. (510')
5550-4450 ft = 1100 ft. plug. QW

Finish pulling the tubing out of hole.

Day 3- Cut 4.5 in. of casing @4400 ft.

Set plug @4450-3450 ft =1000 ft plug.

Set plug @3450-2450 ft=1000 ft plug.

Day 4- Set plug @2450-1450 ft =1000 ft. plug

Set plug @ 1450-725 ft=725 ft. plug

Set plug @ 725-425 ft=300 ft. plug

Set plug @425 ft-Surface.

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Day 5- Rig Down Move Off Location.

5% gel spacers between plugs

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4-1-16

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WR-35
Rev (9-11)

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

WV Department of
Environmental Protection
DATE: 4-13-12
API #: 47-005-08721

TR

Farm name: Everett Mason Operator Well No.: W-1598

LOCATION: Elevation: 1057' Quadrangle: Elkboro

District: Grant County: Ritchie
Latitude: 12050 Foot South of 88 Deg. 17 Min. 20 Sec.
Longitude 4400 Foot West of 81 Deg. 05 Min. 00 Sec.

Company: Haight Energy Corporation

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>12864 Staunton TPKE Smithville, WV 26178</u>				
Agent: <u>Warren R. Haight</u>	<u>13-3/8"</u>	<u>31'</u>	<u>31'</u>	<u>Existing</u>
Inspector: <u>David Cowan</u>	<u>9-5/8"</u>	<u>321'</u>	<u>321'</u>	<u>Existing</u>
Date Permit Issued: <u>April 6, 2011</u>	<u>7"</u>	<u>2050'</u>	<u>2050'</u>	<u>Existing</u>
Date Well Work Commenced: <u>2/07/2012</u>	<u>4-1/2"</u>	<u>6103'</u>	<u>6103'</u>	<u>Existing</u>
Date Well Work Completed: <u>04/13/2012</u>	<u>2 7/8"</u>		<u>5,970'</u>	<u>NA</u>
Verbal Plugging:				
Date Permission granted on:				
Rotary <input type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft):				
Total Measured Depth (ft):				
Fresh Water Depth (ft.):				
Salt Water Depth (ft.):				
Is coal being mined in area (N/Y)? <u>No</u>				
Coal Depth (ft.): <u>NA</u>				
Void(s) encountered (N/Y) Depth(s) <u>None</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Conversion Pay zone depth (ft) _____
 Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ Hours
 Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____
 Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ Hours
 Static rock Pressure _____ psig (surface pressure) after _____ Hours

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Env. 05/02/2014

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

[Signature] 4-13-12
Signature Date

85-0972/F

Were core samples taken? Yes _____ No X

Were cuttings caught during drilling? Yes _____ No X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Existing Well

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Existing 6044' - 6068'

Packer @ 5,970'

Plug Back Details including Plug Type and Depth(s): 6,140' to 6,068' - Class A Cement

Formations Encountered:	Top Depth	Bottom Depth
Surface:		

Existing

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09/02/2014

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WR-35
Rev (5-01)

DATE: October 10, 2008
API #: 47-085-09721

CR-D

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Firm name: Everett Mason Operator Well No.: WV-1296

LOCATION: Elevation: 1057' Quadrangle: Ellenboro

District: Grant County: Ritchie
Latitude: 12050 Feet South of 39 Deg. 17 Min. 39 Sec.
Longitude: 4858 Feet West of 81 Deg. 05 Min. 30 Sec.

Company: Trans Capital Investment
White Corporation

Address	Casing & Tubing	Used in drilling	Left in well	Cement fill up (Cu. Ft.)
HC 68 Box 14 Stanhope, WV 26128				
Agent: <u>Warren R. Haugh</u>	13 3/8"	31'	31'	
Inspector: <u>David Cowan</u>				
Date Permit Issued: <u>04/17/08</u>	9 5/8"	321'	321'	Cement to surface
Date Well Work Commenced: <u>09/03/08</u>				
Date Well Work Completed: <u>09/03/08</u>	7"	2090'	2090'	Cement to surface
Verbal Description:				
Date Perforations granted on:	4 1/2"	6140'	6140'	2000' fill up
Rotary Cable Run				
Total Depth (feet): <u>6146'</u>				
Fresh Water Depth (ft.): <u>190'</u>				
Salt Water Depth (ft.): <u>None</u>				
Is coal being mined in area (Y/N): <u>N</u>				
Coal Depth (ft.):				

OPEN FLOW DATA

Producing formation: Marshall Shale Pay zone depth (ft) 6082-6118
Gas: Initial open flow 300 MCF/d Oil: Initial open flow - Bbl/d
Final open flow - MCF/d Final open flow - Bbl/d
Time of open flow between initial and final tests 12 Hours
Static rock Pressure 1950 psig (surface pressure) after 24 Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: Trans Capital Investment/ White Corp.
By: Warren R. Haugh, AGC/1
Date: 10/02/08

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Mason W-1590
API # 47-085-08721

Formation	Top	Bottom	Remarks
Red Rock & Shale	0	640	
Sand	640	675	
Red Rock	675	755	
Sand	755	775	
Red Rock	775	830	
Slate	830	910	
Dunford Sand	910	920	
Slate & Shale	920	1300	
Gas Sand	1300	1410	
Slate	1410	1478	
1st Salt Sand	1478	1538	
Shale	1538	1574	
2nd Salt Sand	1574	1592	
Shale	1592	1628	
3rd Salt Sand	1628	1730	
Slate	1730	1815	
Maxon Sand	1815	1855	
Shale	1855	1925	
Little Lina	1925	1950	
Pencil Cave	1950	1954	
Big Lina	1954	2052	
Big Injun Sand	2052	2112	
Slate Break	2112	2115	Slight Show
Gasow Sand	2115	2130	Gas 2050'
Slate & Shale	2130	2394	
Coffee Shale	2394	2428	
Berea Sand	2428	2492	
Slate & Shale	2492	2548	
Sand	2548	2560	
Slate & Shale	2560	2820	
Sand	2820	2832	
Slate & Shale	2832	4454	
Benson Sand	4454	4490	
Slate & Shale	4490	4555	
Alexander Sand	4555	4895	
Slate & Shale	4895	5304	
Sand	5304	5414	
Slate & Shale	5414	6044	Gas Show 6050
Hamilton Shale	6044	6068	
Tully Lina	6068	6072	
Marcellus Shale	6072	6110	Gas Show 6100
Onondaga Lina	6110		
TD	6148		

OCT 02 2009