

AMENDED

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

API 47-051-01703 County Marshall District Clay  
Quad Powhatan, OH-WV Pad Name Berger Field/Pool Name \_\_\_\_\_  
Farm name Berger Well Number 2H  
Operator (as registered with the OOG) Chevron Appalachia, LLC  
Address 800 Mountain View Drive City Smithfield State PA Zip 15478

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4413875.60 Easting 520986.61  
Landing Point of Curve Northing 4414341.99 Easting 521011.57  
Bottom Hole Northing 4415703.16 Easting 520068.14

Elevation (ft) 1292 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)  
Non aqueous fluid containing weighting agent, fluid loss additives, emulsifier, viscosity and rheological control agent, oil-wetting agent, fluid rheology conditioner

Date permit issued 2/26/2014 Date drilling commenced 6/16/2014 Date drilling ceased 2/3/2015  
Date completion activities began 8/4/2015 Date completion activities ceased 12/18/2015  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

Freshwater depth(s) ft 169' MD Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 768' MD, 820' MD, 830' MD, 850' MD Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) \_\_\_\_\_  
**APPROVED**  
NAME: [Signature]  
DATE: 8/28/17  
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MAY 13 2016  
Department of Environmental Protection  
Reviewed by: [Signature]  
09/15/2017

API 47-051 - 01703 Farm name Berger 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	36	30	40	New	118.76#, X-42		
Surface	17 1/2	13 3/8	298	New	54.50#, J-55		
Coal							
Intermediate 1	12 1/4	9 5/8	2671	New	40#, N-80		
Intermediate 2							
Intermediate 3							
Production	8 1/2	5 1/2	12940	New	20#, P-110		
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	Bulk	60					
Surface		382	15.60	1.21	462	Surface	8
Coal							
Intermediate 1	EasyBLOCK	914	15.60	1.24	1133	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A EasyBLOK	2517	15.20	1.29	3247	Surface	8
Tubing							

Drillers TD (ft) 12989' Loggers TD (ft) 12989'  
 Deepest formation penetrated Marcellus Plug back to (ft) n/a  
 Plug back procedure n/a

Kick off depth (ft) 5383'

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 There is a bow spring centralizer every two joints on the water and intermediate strings. The production string has two centralizers every joint in the lateral and curve, then one every two joints from KOP to surface.

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS **RECEIVED**  
**Office of Oil and Gas**

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS **MAY 13 2016**

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED **WV Department of Environmental Protection**

API 47- 051 - 01703 Farm name Berger Well number 2H

PERFORATION RECORD

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

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)
		SEE	ATTACHED					

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Please insert additional pages as applicable.

API 47-051-01703 Farm name Berger Well number \_\_\_\_\_

PRODUCING FORMATION(S)	DEPTHS		
Marcellus (S2B)	6439	TVD	7178 MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 1630 psi Bottom Hole 3900 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 126 mcfpd Oil 45 bpd NGL n/a bpd Water 543 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	0		0		
Pittsburgh Coal	830	837	830	837	Solid Coal Seam
Burkett	6296	6314	6,680	6,717	Grey shale
Tully	6,314	6,355	6,717	6,806	Limestone
S5	6,355	6,404	6,806	6,992	Black Shale
S3	6,404	6,428	6,992	7,156	Black Shale
Stafford	6,428	6,430	7,156	7,178	Limestone
S2B	6,430	6,439	7,178	7,268	Black Shale
Purcell	N/A				
S1B	N/A				
Onondaga	N/A				
Huntersville	N/A				

Please insert additional pages as applicable.

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

Logging Company ALS Group USA Corp  
Address 3352 128th Avenue City Holland State MI Zip 49424

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

Stimulating Company Schlumberger Technology Corp  
Address 4600 J Barry Court, Suite 200 City Cannonsburg State PA Zip 15307

Please insert additional pages as applicable.

Completed by Jackie M. Scholar Telephone 724-564-3721 Date MAY 13 2016  
Signature [Signature] Title Regulatory Compliance Team Lead Date 5/10/2016

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

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Environmental Protection

09/15/2017



**Jackie M. Scholar**  
Regulatory Reporting Coordinator

May 10, 2016

**CERTIFIED MAIL: 7015 0640 0001 0567 4444**

WV DEP  
Office of Oil and Gas  
601 – 57<sup>th</sup> Street  
Charleston, WV 25304

RE: Amended Well Operator's Report of Well Work WR-35  
**Berger 2H**

Dear Sir/Madam,

Enclosed here within please find one (1) Amended Well Operator's Report of Well Work WR-35 for the **Berger 2H, (API 47-051-01703)**. The following items have been amended:

- **Production Information**

If you have any questions, please contact me at (724) 564-3721. Thank you.

Sincerely,  
Chevron Appalachia, LLC

Jackie M. Scholar

Enclosures

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Appalachian/Michigan Business Unit  
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Tel 724-564-3721  
[jscholar@chevron.com](mailto:jscholar@chevron.com)

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