

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

API 47-051-01708 County Marshall District Clay Quad Glen Easton Pad Name Berger Field/Pool Name Farm name Berger Well Number 9H 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 4413854.26 Easting 520988.08 Landing Point of Curve Northing 4413530.72 Easting 520981.28 Bottom Hole Northing 4412186.01 Easting 521913.12

Elevation (ft) 1292 GL Type of Well [X] New [ ] Existing Type of Report [ ] Interim [X] Final Permit Type [ ] Deviated [ ] Horizontal [X] Horizontal 6A [ ] Vertical Depth Type [ ] Deep [X] Shallow Type of Operation [ ] Convert [ ] Deepen [X] Drill [ ] Plug Back [ ] Redrilling [ ] Rework [X] Stimulate Well Type [ ] Brine Disposal [ ] CBM [X] Gas [ ] Oil [ ] Secondary Recovery [ ] Solution Mining [ ] Storage [ ] Other Type of Completion [X] Single [ ] Multiple Fluids Produced [ ] Brine [X] Gas [ ] NGL [ ] Oil [ ] Other Drilled with [ ] Cable [X] Rotary

Drilling Media Surface hole [X] Air [ ] Mud [ ] Fresh Water Intermediate hole [ ] Air [X] Mud [ ] Fresh Water [ ] Brine Production hole [ ] Air [X] Mud [ ] Fresh Water [ ] Brine

Mud Type(s) and Additive(s) Surface sections were drilled on air. The Intermediate and Production sections were drilled on SBM Fluid loss control, emulsifier, and shale stabilizer additives.

Date permit issued 2/26/2014 Date drilling commenced 7/1/2014 Date drilling ceased 3/2/2015 Date completion activities began 8/18/2015 Date completion activities ceased 12/16/2015 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' Open mine(s) (Y/N) depths No Salt water depth(s) ft Void(s) encountered (Y/N) depths No Coal depth(s) ft 768'-769', 784'-785', 830'-837', 1411'-1413', 1415'-1418' Cavern(s) encountered (Y/N) depths No Is coal being mined in area (Y/N) No but not sealed

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APPROVED

NAME: Jacquelin Shurts DATE: 2/11/2014

AX 007/01/2016

API 47-051 - 01708 Farm name Berger Well number 9H

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	X-42; 118.76		Y
Surface	17 1/2	13 3/8	297	New	J-55; 54.50		Y
Coal							
Intermediate 1	12	9 5/8	2673	New	J-55; 40		Y
Intermediate 2							
Intermediate 3							
Production	8 1/2	5 1/2	12431	New	P-110; 20		X
Tubing							
Packer type and depth set							

*per Jackie Scholten  
email 6/1/2014*

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	8
Surface	Bulk	382	15.60	1.21	462	Surface	8
Coal							
Intermediate 1	EasyBlok	912	15.6	1.23	1121	Surface	8
Intermediate 2							
Intermediate 3							
Production	EasyBLOK	2380	15.2	1.31	3118	Surface	8
Tubing							

Drillers TD (ft) 12480' Loggers TD (ft) 12480'

Deepest formation penetrated Marcel Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5238'

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 Bow spring centralizer every two joints on the Water  
and Intermediate strings. Production string has two centralizer 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 See attached perforation/stimulation report

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 - 01708 Farm name Berger Well number 9H

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 1542 psi Bottom Hole 4100 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 441 mcfpd Oil 125 bpd NGL n/a bpd Water 692 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		
Dunkard Group Sand	160	169	169	169	Fresh Water 169'MD 1" stream
Pittsburgh Coal	830	837	830	837	Coal
Salt Sand	1538	1568	1540	1570	Gas Show @ 1550' 6101 units
Big Lime	1848	1928	1850	1930	Limestone: crm-wh, hd, crpxln
Burgoon (Big Injun)	1927	2117	1930	2120	SS:offwh, wh, cons, clr, trans, lcemt, fg-mg
Weir Sand	2277	2297	2280	2300	SLTST: ltgy-mgy, occ mgy, hrd, vf-fg, tcmt, bio, arg, sl calc
Berea Sand	2507	2530	2510	2533	SS: wh, clr, trans, ltgy-gy, cns, lcmt, mg-fg, sbang-ang, arg, msph, non calc, tr flor, exl fast cut, fnt odr, lse pyr
Burket Shale	6297	6312	6514	6544	SH: drkgy, v. drkgy, frm, slty, grty, sbblky-sbfiss, modcalc, embd calc, lse calct
Tully Limestone	6312	6352	6544	6636	LS: ltgy, gy, mgy, frm-hrd, dns, cln, mic-fxln, v. arg
Hamilton Shale	6352	6400	6636	6799	SH: drkgy, v. drkgy, frm, slty, grty, sbblky-sbfiss, carb, modv. calc, lse calct, w/LS
Marcellus Shale	6400		6799		SH: drkgy, v. drkgy, frm, slty, grty, sbblky-sbfiss, non calc, lse calct, lse pyr, w/LS: gy, ltgy, hrd, mott, mic, fxln, v. arg

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 Canonsburg State PA Zip 15307

Please insert additional pages as applicable.

Completed by Jackie M. Scholar Telephone 724-564-3721  
Signature [Signature] Title Regulatory Compliance Team Lead Date 5/18/2016

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

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**Jackie M. Scholar**  
Regulatory Reporting Coordinator

May 18, 2016

**CERTIFIED MAIL: 7015 0640 0001 0567 4666**

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 9H**

Dear Sir/Madam,

Enclosed here within please find one (1) Amended Well Operator's Report of Well Work WR-35 for the **Berger 9H, (API 47-5101708)**. 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

**Appalachian/Michigan Business Unit**  
Chevron North America Exploration & Production Company (a division of Chevron U.S.A. Inc.)  
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[jscholar@chevron.com](mailto:jscholar@chevron.com)

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