

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 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

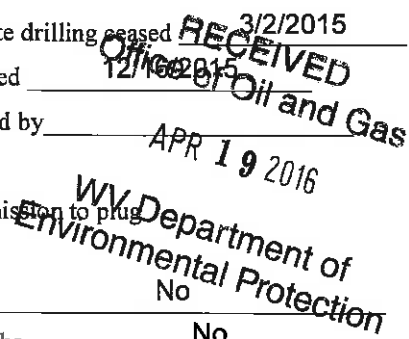
Mud Type(s) and Additive(s)
Surface sections were drilled on air. The Intermediate and Production sections were drilled on SBM Fluid loss control, emulsifier, and shale stabilizer additives.

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

Reviewed by: _____
10/28/2016



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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	<u>287 10 3</u>	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		Y
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	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 (isters) and curve, then one every two joints from KOP to surface.

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS See attached perforation/stimulation report.

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS

WV Department of Environmental Protection

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD

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

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	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, cl, trans, lccmt, 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, cl, trans, ltgy-gy, cns, lccmt, mg-fg, sbang-ang, arg, msph, non calc, tr floor, exd fast out, fnt odr, lse pyr
Burket Shale	6297	6312	6514	6544	SH: drkgy, v. drkgy, frm, slty, grty, sbbky-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, sbbky-sbfiss, carb, modv. calc, lse calct, w/LS
Marcellus Shaie	6400		6799		SH: drkgy, v. drkgy, frm, slty, grty, sbbky-sbfiss, non calc, lse calct, lse pyr, w/LS: gy, ltgy, hrd, mott, mic, fkn, 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 _____

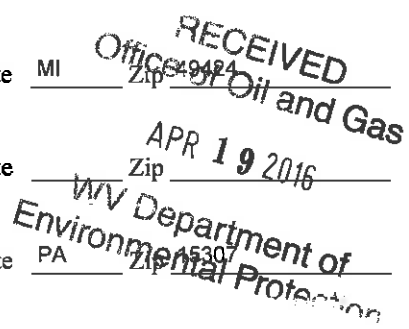
Stimulating Company Schlumberger Technology Corp
Address 4600 J Barry Court, Suite 200 City Canonsburg State PA Zip 15307

Please insert additional pages as applicable.

Completed by Jackie M. Scholar Telephone 724-564-3721
Signature [Signature] Title Regulatory Compliance Team Lead Date 4/15/2016

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

[Signature] 10/28/2016



API: 47-5101708	Well Name: Berger	Well Number: 9H
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PERFORATION RECORD					
Stage No.	Perforation Date	Perforated From TMD Ft.	Perforated To TMD Ft.	Number of Perforations	Formation(s)
1	10/20/15	12390	12228	50	Marcellus
2	10/21/15	12190	13028	50	Marcellus
3	10/21/15	11990	11828	50	Marcellus
4	10/21/15	11790	11628	50	Marcellus
5	10/22/15	11588	11430	50	Marcellus
6	10/22/15	11390	11228	50	Marcellus
7	10/23/15	11190	11028	50	Marcellus
8	10/23/15	10985	10828	50	Marcellus
9	10/23/15	10790	10628	50	Marcellus
10	10/24/15	10590	10430	50	Marcellus
11	10/24/15	10390	10228	50	Marcellus
12	10/25/15	10190	10028	50	Marcellus
13	10/25/15	9987	9831	50	Marcellus
14	10/25/15	9790	9628	50	Marcellus
15	10/26/15	9590	9428	50	Marcellus
16	10/27/15	9388	9228	50	Marcellus
17	10/27/15	9190	9028	50	Marcellus
18	10/27/15	8990	8828	50	Marcellus
19	10/28/15	8790	8625	50	Marcellus
20	10/29/15	8585	8427	50	Marcellus
21	10/29/15	8390	8228	50	Marcellus
22	10/30/15	8188	8028	50	Marcellus
23	10/30/15	7990	7828	50	Marcellus
24	10/30/15	7788	7628	50	Marcellus
25	10/31/15	7588	7426	50	Marcellus
26	10/31/15	7387	7230	50	Marcellus
27	10/31/15	7189	7028	50	Marcellus
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Please insert additional copies of this page if additional rows/stages are needed.

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STIMULATION INFORMATION / STAGE								
Complete a separate record for each stimulation stage. (Please insert additional lines for additional stages or additional pages as applicable).								
Stg No.	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbis)	Amount of Nitrogen/ other (units)
1	10/20/15	95	9026	0	3981	386617	10225	n/a
2	10/21/15	97	8827	5880	0	405019	10722	n/a
3	10/21/15	97	8326	6313	4218	403009	10650	n/a
4	10/21/15	98	8554	6391	0	400946	10862	n/a
5	10/22/15	97	8552	6777	4521	404224	11004	n/a
6	10/22/15	97	8294	6358	5050	393971	10679	n/a
7	10/23/15	98	8195	6309	5454	400729	10658	n/a
8	10/23/15	97	8329	6551	4805	400774	10705	n/a
9	10/23/15	98	7655	6060	4800	400276	10674	n/a
10	10/24/15	98	7606	5148	4405	401331	10495	n/a
11	10/24/15	98	8643	6500	4850	401347	10763	n/a
12	10/25/15	95	8017	6060	4777	398127	10604	n/a
13	10/25/15	98	8095	6030	4999	405048	10545	n/a
14	10/25/15	98	8164	6394	4949	403515	10643	n/a
15	10/26/15	97	8242	6234	4959	398133	10827	n/a
16	10/27/15	98	7862	6000	5050	402585	10710	n/a
17	10/27/15	97	8169	6552	5003	402677	10557	n/a
18	10/27/15	98	8113	6040	4777	402098	10624	n/a
19	10/28/15	97	7661	6111	4904	408856	10540	n/a
20	10/29/15	97	7409	n/a	4660	355770	10290	n/a
21	10/29/15	98	7467	6614	4702	399705	10392	n/a
22	10/30/15	98	7229	6212	5220	403356	10562	n/a
23	10/30/15	98	7489	6237	4834	399042	10216	n/a
24	10/30/15	97	7316	6440	5023	397415	10442	n/a
25	10/31/15	98	6984	6650	4919	401649	10463	n/a
26	10/31/15	98	7092	7112	4933	398821	10464	n/a
27	10/31/15	98	7255	6849	4685	400264	10384	n/a
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CEMENTING CONTRACTORS		
Name Schlumberger Technology Corp	Name Baker Hughes	Name
Address Two Robinson Plaza, Suite 200	Address 5373 West Alabama, Suite 300	Address
City - State - Zip Pittsburgh, PA 15205	City - State - Zip Houston, TX 77056	City - State - Zip

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DRILLING CONTRACTORS		
Driller	Driller	Driller
Name Rocky Mountain Drilling	Name Highlands Drilling LLC	Name Nabors Drilling USA
Address 185 North Vernal Avenue, Suite 2	Address 900 Virginia Street East	Address 10100 NW 10th Street
City - State - Zip Vernal, UT 84078	City - State - Zip Charlestown, WV 25301	City - State - Zip Oklahoma City, OK 73127

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