

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

API 47-051-01599 County Marshall District Clay
Quad Businessburg 7.5 Pad Name Conner Field/Pool Name Fort Beeler
Farm name Conner Well Number 6H
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 505336.87 Easting 1617524.51
Landing Point of Curve Northing 504937.88 Easting 1617803.49
Bottom Hole Northing 500547.50 Easting 1622017.15

Elevation (ft) 1,220' 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)
Water base and oil base mud. Base oil, emulsifier, water, barite, line, KCL.

Date permit issued 6-06-2013 Date drilling commenced 6-8-2013 Date drilling ceased 9-20-2013
Date completion activities began 11-7-2013 Date completion activities ceased 1-11-2014
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 58' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None noted on Mudlogs Void(s) encountered (Y/N) depths N
Coal depth(s) ft 694' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

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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"	97"	New			
Surface	28"	24"	374"	New	X56, 186 lb/ft		Y, 45 bbls to surface
Coal	21"	18-5/8"	908'	New	J-55, 87.5 lb/ft	748'	Y, 40 bbls to surface
Intermediate 1	17-1/2"	13-3/8"	2,546'	New	N-80, 72 lb/ft		Y, 29 bbls to surface
Intermediate 2	12-1/4"	9-5/8"	8,480'	New	P-110, 53.4 lb/ft		Y, 25 bbls to surface
Intermediate 3							
Production	7-7/8"	5-1/2"	17,418'	New	P-110, 23.5 lb/ft		Y, less than 1 bbl to surface
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	Ready Mix						
Surface	Class A	531	15.6	1.2	637	0	8
Coal	Class A	798	15.6	1.2	957	0	8
Intermediate 1	Class A	1,880	15.6	1.2	1,566	0	8
Intermediate 2	Class A	2,465	14.0, 15.2	1.34, 1.26	3,223	0	8
Intermediate 3							
Production	Class G	2,600	14.2, 16.0	1.31, 1.65	3,684	0	8
Tubing							

Drillers TD (ft) 17,432 Loggers TD (ft) _____
 Deepest formation penetrated Trenton Plug back to (ft) 10,057
 Plug back procedure Set two balanced cement plugs - first one was from 11,275' to 10,687', and the second was from 10,687' to 10,057'.

Kick off depth (ft) 10,420

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 _____
On the water string, coal string, intermediate 1, and intermediate 2 there was a bow spring centralizer installed every two joints.
 The production string had one centralizer per joint in the lateral and curve and one every two joints from KOP to surface.

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 _____

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Point Pleasant</u>	<u>11005</u>	<u>TVD</u>	<u>11017</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

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 ₂ S, ETC)
	0		0		
Pittsburgh Coal	758	762	758	762	Coal
Big Lime	1800	1810	1800	1810	Limestone: brn, dkbrn, llbrn, dns, crpxln
Burgoon (Big Injun)	1850	2107	1850	2107	SS:gy, grngy, hrd, vt-cmt, rnd, sbrnd, ang
Weir Sand	2252	2276	2252	2276	SLTST: gy, mgy, hrd,, t-cmt, slty. SS: off wh, gy, hrd, t-cmt, md, sbrnd, ang
Berea Sand	2449	2549	2450	2550	SH: gy, mgy, sbblky, frm, v-slty, non calc, tr pyr. tr SLTST: brn, gy, mgy, hrd, t-cmt, slty
Burket Shale	6220	6235	6228	6243	SH: drkgy, v.drkgy, frm, slty, grty, sbblky-sbfiss, modcalc, embd calc, lse calct
Tully Limestone	6236	6273	6243	6281	SH: drkgy, v.drkgy, frm, slty, grty, sbblky-sbfiss, carb, v. calc, lse xls calct, w/LS: lgy, gy, mgy, frm-hrd, dns, chn, mic-fxl, v. arg
Hamilton Shale	6273	6323	6281	6331	SH: drkgy, v.drkgy, frm, slty, grty, sbblky-sbfiss, carb, modv. calc, lse calct, w/LS
Marcellus Shale	6323	6374	6331	6382	SH: drkgy, v.drkgy, frm, slty, grty, sbblky-sbfiss, non calc, lse calct, lse pyr, w/LS gy, lgy, hrd,, mott, m/c, fxln, v. arg
Onondaga Limestone	6374	6418	6382	6426	SH: v.drkgy, blk, drkgy, frm, slty, sl grty, carb, sbblky-sbfiss, v. calc, lse calct, lse pyr, tr LS:, w/ tr CHRT,
Oriskany Sandstone	6595	6688	6603	6696	SS: clr-trns, wht, hrd, rnd- sbrnd, g. sph, tcmt, lse calct, sl tr SLTST
Helderberg Limestone	6688	7009	6696	7018	LS: v. lgy, gy, mott, frm-hrd, micvfxln, v. arg, sl tr SLTST: lgy-gy, hrd, m gn, tcmt, bio, sl calc, tr SH:
Mandata Shale	7009	7043	7018	7052	trace of shale

Please insert additional pages as applicable.

Drilling Contractor Nabors Drilling USA
 Address 380 Southpoint Boulevard, Suite 210 City Canonsburg State PA Zip 15317

Logging Company Schlumberger
 Address 4600 JBarry Court, Suite 200 City Canonsburg State PA Zip 15317

Cementing Company Halliburton
 Address 121 Champion Way City Canonsburg State PA Zip 15317

Stimulating Company Universal
 Address 730 Braddock View Drive/P.O. Box 130 City Mt. Braddock State PA Zip 15465

Please insert additional pages as applicable.

Completed by Jenny Butchko Telephone 724-564-3894
 Signature _____ Title Regulatory Reporting Team Leader Date _____

API 47- 051 - 01599 Farm name Conner Well number 6H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Point Pleasant	11005	TVD	11017 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 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 ₂ S, ETC)
	0		0		
Akron Dolomite	7043	7155	7052	7164	DOL:ltgy,tan,v. ltrn,frm-hrd, mic-vfxln,arg,w/LS:ltgy,gy ,drkgy,gybrn,mott, frm-hrd,f-vfxln,tr SH:
Salina	7155	7881	7164	7890	SALT w/interbd SH:mgy-v.drkgy blk,frm,slty,grty, sbfiss,sl carb,sl calc,/w occ tr DOL:/w ANHY
Vernon Shale	7881	8088	7890	8098	SH:vtlgy-mgy, gy, frm, slty, sbb/ky-sbfiss,non calc, DOL:vltrn-mbrn, dkrn-vdrbrn, vf-mixcln w/ occ ANHY
Lockport Dolomite	8088	8479	8098	8489	DOL:vtlgy-gry, gry-midgry, hrd-mfrm, vf-mixcln, scat for, no cut,SH:ltgy-gry, occ mgy, sbang-ang, slty, dolmic, v. calc;
Rochester Shale	8479	8725	8489	8735	SH:gy,gy/,red/gry,tr grn frm,slty-smth,blky-sbb/ky, non calc, tr SS
Irondequoit Dolomite	8725	8743	8735	8753	SH:gy,ltgy,red/gry,tr grn frm,slty-smth,blky-sbb/ky, non calc,tr embd calct,w/DOL
Sodus Shale	8743	8793	8753	8803	SH:gy,ltgy,red/gry,tr grn frm,slty-smth,blky-sbb/ky, non calc,tr embd calct,tr les SS:
Packer Shale	8793	8843	8803	8854	SH:ltgy-gry, midgry, tr vdkgy, msh-mfrm, occ slty, occ dolmic, sl calc; DOL:lbrn-robrn, vfm, mic/xln/w SS chr,opa gry
Medina	8843	8989	8854	9000	SS:red-brn,trans,frm-hrd,vfg, tcm,tsbang no flor,tr qtz,w/SH: red-brn,tr ltgy,frm,v slty, blky-sbfiss,slty,non calc, w/inbd SLTST
Queenston Shale	9016	9889	9027	9900	SH:ltgy,gy,red/brn occ mgy,frm, v.slty,grty,sbfiss ,non calc
Utica Shale	10877	11005	10889	11017	SH:mdgy-drkgy,frm,sl.slty sl.grty,sbfiss-sbb/ky,sl -mod calc,lmy,lse calct,w/LS
Point Pleasant Shale	11005	11135	11017	11147	SH:mdgy-vdrkgy,blk,frm,sl.slty sl.grty,sbfiss-sbb/ky, mod calc,lmy,lse calct
Trenton Limeston	11135		11147		LS:gy,ltgy,occ mgy,frm-hrd, cln,dns,mic-vfxln,lse/embd calct,v,arg,w/ interbd SH

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Completed by Jenny Butchko Telephone 724-564-3894
 Signature Jenny Butchko Title Regulatory Reporting Team Leader Date 3.25.14

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	12-12-2013	17302	17304	36	Utica Shale
2	12-13-2013	17002	27004	36	Utica Shale
3	12-13-2013	16702	16704	36	Utica Shale
4	12-14-2013	16402	16404	36	Utica Shale
5	12-14-2013	16102	16104	36	Utica Shale
6	12-14-2013	15802	15804	36	Utica Shale
7	12-15-2013	15502	15504	36	Utica Shale
8	12-16-2013	15202	15204	36	Utica Shale
9	12-16-2013	14902	14904	36	Utica Shale
10	12-16-2013	14602	14604	36	Utica Shale
11	12-17-2013	14302	14304	36	Utica Shale
12	12-17-2013	14002	14004	36	Utica Shale
13	12-17-2013	13702	13704	36	Utica Shale
14	12-18-2013	13402	13404	36	Utica Shale
15	12-18-2013	13102	13104	36	Utica Shale
16	12-18-2013	12802	12804	36	Utica Shale

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)
1	12-12-2013	69.9	10686	11146	8097	294,650	8473	0
2	12-13-2013	63.8	10524	11409	7812	250,782	9309	0
3	12-13-2013	65.9	10266	10589	8105	237,451	6629	0
4	12-14-2013	66.3	10469	10910	8004	242,107	7982	0
5	12-14-2013	67.6	10446	10832	8113	299,155	7354	0
6	12-14-2013	68.7	10748	11129	8808	300,298	4571	0
7	12-15-2013	73.0	10916	11165	8584	82,412	4439	0
8	12-16-2013	65.6	10476	10747	8047	108,048	5886	0
9	12-16-2013	74.5	11037	11494	8148	342,667	8746	0
10	12-16-2013	74.6	10917	11326	8308	313,921	9801	0
11	12-17-2013	82.0	11209	11452	8169	345,383	8466	0
12	12-17-2013	70.7	11126	11523	7897	308,762	8121	0
13	12-17-2013	85.1	11032	11250	8115	341,368	8880	0
14	12-18-2013	82.8	11004	11365	8289	353,241	8966	0
15	12-18-2013	83.9	10967	11400	8372	326,246	7583	0
16	12-18-2013	84.2	11075	11350	8025	356,523	8113	0

Please insert additional pages as applicable.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/9/2013
Job End Date:	12/19/2013
State:	West Virginia
County:	Marshall
API Number:	47-051-01599-00-00
Operator Name:	Chevron USA Inc.
Well Name and Number:	Conner Unit 6H
Longitude:	-80.75068300
Latitude:	39.88069300
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	11,184
Total Base Water Volume (gal):	6,624,887
Total Base Non Water Volume:	



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
Clean Volume	Chevron Appalachia, LLC	Carrier/Base Fluid					
Proppant	US Sand Co	Proppant	H2O	7732-18-5	100.00000	90.58022	
15% Hcl Acid	Reagent/PPG	Used to open perfs	Crystalline Silica	14808-60-7	100.00000	9.41978	
7.5% Hcl Acid	Reagent/PPG	Used to open perfs	Hydrochloric Acid	7647-01-0	15.00000	0.14038	
Unislik ST 50	CESI	Friction Reducer	Hydrochloric Acid	7647-01-0	7.50000	0.09276	
EC 6116a	Nalco	Biocide	Hydrotreated Light Distillate	64742-47-8	30.00000	0.03732	
			Polyethylene Glycol	25322-68-3	60.00000	0.01542	
			1, 1-Dibromo-3-nitropropionamide	10222-01-2	30.00000	0.00771	
			Dibromoacetonitrile	3252-43-5	5.00000	0.00129	
Scale Inhibitor A	Nalco	Scale Inhibitor	Ethylene Glycol	107-21-1	30.00000	0.00757	
Iron Control A	Nalco	Iron Control	Ethylene Glycol	107-21-1	30.00000	0.00708	

CMHPG	Ashland	Water Viscosifier	Carboxymethyl Hydroxypropyl Guar Blend	68130-15-4	100.00000	0.00242
GBL	Clearwater	Gel Breaker	Ethylene Glycol	107-21-1	60.00000	0.00004
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.						

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

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)