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WV Department of
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WR-35
Rev. 8/23/13

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

API 47 - 039 - 06368 County KANAWHA District ELK
Quad BLUE CREEK 7.5' Pad Name N/A Field/Pool Name BLUE CREEK
Farm name ANNA C. SKINNER Well Number 28
Operator (as registered with the OOG) C. I. McKOWN & SON, INC.
Address P.O. BOX 711 City NEWTON State WV Zip 25266

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,254,413 Easting 464,879
Landing Point of Curve Northing ____ Easting ____
Bottom Hole Northing ____ Easting ____

Elevation (ft) 1099 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

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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)

Date permit issued 07/24/14 Date drilling commenced 12/04/14 Date drilling ceased 12/09/14
Date completion activities began 12/16/14 Date completion activities ceased 02/25/15
Verbal plugging (Y/N) N/A 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 N/A Open mine(s) (Y/N) depths NO
Salt water depth(s) ft +/- 540 Void(s) encountered (Y/N) depths NO
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths NO
Is coal being mined in area (Y/N) NO

Reviewed by:
AL 6/8/15
W.S. 06/05/2015

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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							
Surface	8 7/8"	7"	629'	USED	20	153'	YES
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2241	NEW/USED	10.5/11.6	N/A	YES
Tubing		2 3/8"	2181	USED	4.6		
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							
Surface	A	120	15.6	1.20	144	CTS	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50/50 POZ	230	14.4	1.28	[illegible]	+/- 26	N/A
Tubing							

Drillers TD (ft) 2270 Loggers TD (ft) 2268

Deepest formation penetrated WEIR Plug back to (ft) N/A

Plug back procedure

Kick off depth (ft) N/A

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
PRODUCTION - 4 1/2" CASING CENTRALIZERS 2028,2071,2114,2156

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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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	12/15/14	2128'	2145'	24	WEIR
2	12/16/14	2095'	2110'	26	WEIR

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	12/16/14	29.7	3195	4386	1628	41,300	568	97 Mscf of N2
2	12/16/14	29.7	3006	3115	1645	50,300	615	93 Mscf of N2

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PRODUCING FORMATION(S)	DEPTHS	
weir	2086 - 2148 TVD	2086 - 2148 MD

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☒ Open Flow OIL TEST ☒ Flow ☒ Pump

SHUT-IN PRESSURE Surface 250 psi Bottom Hole _____ psi DURATION OF TEST 168 hrs

OPEN FLOW Gas 80 mcfpd Oil 5 bpd NGL _____ bpd Water TRACE bpd GAS MEASURED BY ☒ Estimated ☐ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
SOIL/SAND	0	22	0		
SHALE	22	260			
SAND	260	320			
SHALE	320	380			
SAND	380	410			
SHALE	410	770			
SAND/SHALE	770	1064			
SAND	1064	1283			
SAND/SHALE	1283	1332			
SAND	1332	1415			
SHALE	1415	1430			
SAND	1430	1482			
SHALE	1482	1643			
LIME	1643	1904			

Please insert additional pages as applicable.

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Drilling Contractor DECKER DRILLING
Address 11565 STATE ROUTE 676 City VINCENT State OH Zip 45784

Logging Company APPALACHAIN WELL SURVEYS
Address P.O. BOX 1058 City CAMBRIDGE State OH Zip 43725

Cementing Company UNIVERSAL WELL SERVICES
Address P.O. BOX 2437 City BUCKHANNON State WV Zip 26201

Stimulating Company UNIVERSAL WELL SERVICES
Address P.O. BOX 2437 City BUCKHANNON State WV Zip 26201

Please insert additional pages as applicable.

Completed by C. McKOWN, II Telephone (304) 565-7318
Signature _____ Title PRESIDENT Date 05/27/2015

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

06/05/2015

LITHOLOGY FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
SHALE	1904	2086	0		
SAND	2086	2148			
SHALE	2148	2247			

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TREATMENT SUMMARY

C.I. McKown Skinner #28	Stage #1	Date: 12/16/2014

DESCRIPTION OF JOB: Energized Crosslin

Pressures (psi)		Treatment Stats			Perforations (ft)	
Well Open	0				Mid (TVD)	1250
Breakdown	4386	Avg Pressure	3195	psi		
ISIP	1628	Max Pressure	3850	psi	Top Depth (MD)	2128
					Middle (MD)	
Pumping Volumes (SCF)/(BBL)		Avg Rate	4495.5	SCF/min	Bottom Depth (MD)	2145
Load & Breakdown	1bbl	Max Rate	4505.0	SCF/min		
Total Nitrogen	97210	Avg Rate	29.66666667	BPM	Number of Perfs	24
Total Clean	568	Max Rate	29.8	BPM		
Total Slurry	626					

Time	Rate (SCF/min)	Nitrogen Cum. Volume (SCF)	Slurry Rate (BPM)	Slurry Cum Vol. (BBL)	Pressure (psi)	Description of Stage or Event
7:05						Arrived on Location
14:45						Safety Meeting
15:12					4550	Test Lines
15:18					0	Open Well
15:21			3	1	4386	Break Formation
15:22	4486.0		29.6	5	3850	Establish Rate
15:25	4486.0	15977	29.6	94	3630	Start Sand @ 1.00# 20/40
15:28	4505.0	29485	29.8	183	3108	Start Sand @ 2.00# 20/40
15:34	4505.0	57167	29.6	366	2848	Start Sand @ 3.00# 20/40
15:42	4505.0	91683	6	578	1881	Blender Lost Tub
15:43	0.0	94458	16.8	591	2480	Establish Rate
15:44		97210	5.5	602	1899	Pump Acid 500 Gal 15% HCL
15:46			15.8	603	2582	Displace Acid
15:47			15.8	611	2561	Drop 3.75 Frac Ball
15:48				626	2406	Shut Down

Material Totals

Proppant	20/40	413	sks

Additives			
	Nitrogen	97210	SCF
	19XL Gel	750	lbs
	15% HCL Acid	500	gal
	Unilink 8.5	51	gal
	SuperSurf	52	gal
	Iron	13	gal
	Clay Chek	14	gal
	NE-90	13	gal
	LEB 10X	4	qts
	Unihib G	0.5	gal

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TREATMENT SUMMARY

C.I. McKown Skinner #28	Stage #2	Date: 12/16/2014

DESCRIPTION OF JOB: Energized Crosslink

Pressures (psi)		Treatment Stats			Perforations (ft)	
Well Open	1204					
Breakdown	3115	Avg Pressure	3006	psi	Mid (TVD)	1250
ISIP	1645	Max Pressure	3590	psi	Top Depth (MD)	2097
					Middle (MD)	
Pumping Volumes (SCF)/(BBL)		Avg Rate	4495.5	SCF/min	Bottom Depth (MD)	2113
Load & Breakdown	1bbl	Max Rate	4505.0	SCF/min		
Total Nitrogen	93227	Avg Rate	29.675	BPM	Number of Perfs	26
Total Clean	615	Max Rate	29.9	BPM		
Total Slurry	683					

Time	Rate (SCF/min)	Nitrogen Cum. Volume (SCF)	Slurry Rate (BPM)	Slurry Cum Vol. (BBL)	Pressure (psi)	Description of Stage or Event
17:48					4700	Test Lines
17:50					1204	Open Well
17:53			2.8	1	3115	Break Formation
17:53	4486.0		29.9	5	3590	Establish Rate
17:57	4505.0	14461	29.8	90	3380	Start Sand @ 1.00# 20/40
18:00	4486.0	27334	29.6	176	3080	Start Sand @ 2.00# 20/40
18:06	4505.0	54357	29.8	354	2829	Start Sand @ 3.00# 20/40
18:14	4486.0	92960	29.5	610	2735	Start Sand @ 4.00# 20/40
18:14		93227	29.5	611	2501	N2 Out
18:15			29.9	650	2475	Start Flush
18:17				683	2563	Shut Down
18:22					1401	Shut In 5 Min

Material Totals

Proppant	20/40	503	sks

Additives			
	Nitrogen	93227	SCF
	19XL Gel	450	lbs
	15% HCL Acid	0	gal
	Unilink 8.5	52	gal
	SuperSurf	50	gal
	Iron	11	gal
	Clay Chek	10	gal
	NE-90	11	gal
	LEB 10X	4	qts
	Unihib G	0	gal

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