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 <u>47</u> - 590 _ 2231	County MING	GO	Distric	t HARDE		
Quad NAUGATUCK	Pad Name		Field/l	Pool Name		
Farm name KIRK, ZELLA D.			Well 1	Number 22	68	
Operator (as registered with the OC	OG) QUALITY NATU	URAL GAS				
Address P.O. BOX 480	City A	LLEN	St	ate KY	Zip	41601
As Drilled location NAD 83/UT		illed plat, pr	ofile view, and devia	the same of the same of the same of		
Top hole Landing Point of Curve	Northing					
Bottom Hole	Northing					
Elevation (ft) 788.8 G	L Type of Wel Horizontal Horiz		Existing T Vertical I	ype of Repor	t □Interin	
Type of Operation □ Convert	□ Deepen ■ Drill	□ Plug Ba	ck Redrilling	□ Rework	□ Stimu	late
Well Type □ Brine Disposal □ C	CBM ■ Gas □ Oil □ S	Secondary R	Recovery Solution	Mining S	Storage	Other
Type of Completion □ Single □ Drilled with □ Cable ■ Rotary Drilling Media Surface hole ■ Production hole ■ Air □ Mud Mud Type(s) and Additive(s)	Air □ Mud □Fresh V	Water	rine ■Gas □ N Intermediate hole			
N/A						
Date permit issued 2/22/2011	2 Date drilling co	mmenced_	5/28/2012	Date drilling	g ceased	5/31/2012
Date completion activities began	12/16/2013	Date c	ompletion activities		12/19/20	
Verbal plugging (Y/N)	Date permission gran	1300		anted by		
verbar plugging (1714)	Date permission gran			unica 07		
Please note: Operator is required t	o submit a plugging app	lication with	hin 5 days of verbal p		FOEI	/ED
Freshwater depth(s) ft	NONE	Open m	nine(s) (Y/N) depths	Offic	e ONONE	and Gas
	30' (1" H2O)		encountered (Y/N)		NC	DNE
Coal depth(s) ft		30.00	(s) encountered (Y/N	\ double	JAN 1	ONE
Is coal being mined in area (Y/N)	NO		(1/1)	W	V Depar	rtment of
						03/07/201

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API 47- 590	_ 2231	Farm na	meKIRK,	ZELLA D.		Well n	umber		
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft		sket pth(s)		ment circulate (Y/N) ide details below*
Conductor	17 1/2"	13 3/8"	42'	NEW		L.S.	-		-
Surface	12 1/4"	9 5/8"	264'	NEW		L.S.	88'		Y
Coal			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
Intermediate 1	8 7/8"	7"	1739'	NEW		L.S. 29	94', 1655'		Υ
Intermediate 2									
Intermediate 3									
Production	6 3/8"	4 1/2"	3664'	NEW		J55	NONE	1	N-500' UP IN 7"
Tubing									
Packer type and de	epth set								
CEMENT	Class/Type	Number		7	Yield ì ³/sks)	Volume (ft ³)	Ceme Top (N		WOC (hrs)
DATA Conductor	of Cement N/A	of Sacks	<u>wt (p</u>	(<u>y</u>	1 /3K3)	<u> </u>	Top (iv	10)	(iiis)
Surface	CLASS A	115	15.	.6	1.18	135 (23 BBL)	SURF	ACE	. 8
Coal	02.007.	1.0		-		, , , , , , , , , , , , , , , , , , , ,			
Intermediate 1	CLASS A	140, 100	13.2,	16.6 1.8	34, 1.18	257 (48bbl), 118 (22bb	SURFA	ACE	8
Intermediate 2					· · · · · · · · · · · · · · · · · · ·				
Intermediate 3									
Production	CLASS A	135	15.	.6	1.9	256 (46 BBL)	500' 11	٧ 7"	24
Tubing									
Drillers TD (ft Deepest format Plug back prod	tion penetrated	HARRELL SHALE (GE	NESEE)	Loggers 7 Plug back					
Kick off depth	(ft) <u>N/A</u>								
Check all wire	line logs run	■ caliper □ neutron	■ density □ resistivit			ional □ ind ■ ten	uction nperature	≣son	ic
Well cored	Yes • No	□ Convention	nal 🗆 Side	ewall	V	Vere cuttings c	ollected =	Yes	□ No
				on Election	ACRIC	TDDIO 1100	24071 20441 21	251 2050	27021 20051 24201 22501
DESCRIBE TI	HE CENTRAL	IZER PLACEMI	ENT USED F	OR EACH C	ASING S	STRING 4 1/2"	-3487', 3311', 31	JD , 2958',	2782', 2605', 2430', 2253'
 									
WAS WELL O	COMPLETED	AS SHOT HOLE	□ Yes ■	No D	ETAILS				
WAS WELL O	COMPLETED	OPEN HOLE?	□ Yes ■ 1	No DET	`AILS _				
									
WERE TRAC	ERS USED 0	Yes No	TYPE OF	TRACER(S)	USED _				

API 47- 590 _ 2231	Farm name_	KIRK, ZELLA D.	Well number
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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	9/6/2013	3566	3346	14	BROWN SHALE (DEVONIAN)
2	12/16/2013	3110	2650	13	BROWN SHALE (DEVONIAN)
3	12/16/2013	2604	2564	12	BEREA
<u> </u>					
-					
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			_		
		-			

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	12/16/13	101,844	4303	4766	1514	NONE	NONE	901,385 cu/ft
2	12/16/13	107,140	3806	3902	1373	NONE	NONE	901,761 cu/ft
3	12/16/13	108,622	4251	4300	1526	NONE	NONE	901,888 cu/ft
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Please insert additional pages as applicable.

WV Department of Environmental Protection

API 47- 590 - 2231	Farm name_KIRK, Z	ELLA D.	Wel	l number	2268
PRODUCING FORMATION(S) BROWN SHALE	<u>DEPTHS</u> 3566-2650'	TVD	M	D	
BEREA	2604-2564'				
	-				
Please insert additional pages as a	applicable.				
GAS TEST □ Build up □ D	Prawdown	C	IL TEST 🗆 Flow	□ Pump	
SHUT-IN PRESSURE Surface	e 265 psi Botto	om Hole N/A	psi DUR	ATION C	OF TEST 96 hrs
OPEN FLOW Gas 310 mcfpd	Oil NGL	_ bpd	Vater GAS bpd □ Es	MEASU timated	RED BY ■ Orifice □ Pilot
LITHOLOGY/ TOP FORMATION DEPTH IN FT I NAME TVD	BOTTOM TOP DEPTH IN FT TVD MD	BOTTOM DEPTH IN FI MD			RECORD QUANTITYAND ER, BRINE, OIL, GAS, H ₂ S, ETC)
0 SEE ATTACHED	0				
Please insert additional pages as a					
Drilling Contractor MOUNTAIN I Address 72 OLD25 E	RIDGE City	BARBOURV	ILLE Stat	e KY	Zip 40906
Logging Company WEATHERFO	ORD City	LONDON	Stat	e KY	Zip 40741
Address NABORS CO			Stat	.6	Zip
Address 580 HAWTHORNE DR	City	10000000000	Stat	e VA	Zip 24273
Stimulating Company UNIVERS	SAL WELL SERVICES INC				
Address PO BOX 686	City	ALLEN	Stat	e KY	Zip <u>41601</u>
Please insert additional pages as a Completed by	applicable.	7	Telephone 60	2/1-27	4 - 8041
Signature law	Title _	man		Date _	01-10-2014

WELL #2268

API#47-590-2231

WELL #2208			API#47-590-2	231	
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, H2S, ETC)
SAND/SHALE	30		IVID	IVID	Licj
SAND	600	660		*	
SAND/SHALE	660				
SAND	810		,,		
SALT SAND	990				
SAND/SHALE	1050				
SAND	1110				
SAND/SHALE	1290				
SAND	1410	· · · · · · · · · · · · · · · · · · ·			
SAND/SLATE/LIME	1525	1545			
SAND	1545	1585	······································		
SAND/SLATE/LIME/RR	1585				
LIME/SHALE	1650				
LITTLE LIME	1700				
BIG LIME	1730		·		
INJUN	1935	1990			_
WEIR	1990	2340			
GRAY SHALE	2340	2525	•		
COFFEE SHALE	2525	2555			
BEREA	2555	2615			
BROWN SHALE	2615	2695			
GRAY SHALE	2695	3580			
WHITE SHALE	3580				
					RECEIVED
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Environmental Protection
03/07/2014