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

API <u>47</u> - <u>059</u> - <u>022</u>	County MING	District MAGNOLIA				
Quad <u>MATEWAN</u>	Field/Pool Name					
Farm name LOGAN COAL 8	TIMBER CORP.		_ Well Number _23	74		
Operator (as registered with the						
Address P.O. BOX 480						
As Drilled location NAD 83/0 Top hole Landing Point of Curve Bottom Hole	Northing	Ea	sting			
	<u> </u>	Ea	stung			
Elevation (ft) 1389.9	GL Type of Well	■New □ Existing	Type of Report	□Interim ≜ Final		
Permit Type Deviated	□ Horizontal □ Horizo	ntal 6A 🛔 Vertical	Depth Type	□ Deep		
Type of Operation □ Convert	□ Deepen ■ Drill	□ Plug Back □ Redi	rilling Rework	□ Stimulate		
Well Type □ Brine Disposal □						
Type of Completion □ Single	Multiple Fluids Produ	iced Drine BGas	□ NGL □ Oil	□ Other		
Drilled with □ Cable ■ Rota	ry					
Drilling Media Surface hole Production hole Air Muc Mud Type(s) and Additive(s)			hole ■ Air □ Mud	□ Fresh Water □ Brine		
N/A						
Date permit issued9/15/20		nenced6/30/2015	Date drilling	ceased7/08/2015		
Date completion activities began				8/24/2015		
Verbal plugging (Y/N) N	Date permission granted	J	Granted by			
			RECEN	/ED		
Please note: Operator is required	to submit a plugging applica	ntion within 5 days of v	erbal permission a	ങ്ങd Gas		
	NONE		OCT 0 6	2015.		
Freshwater depth(s) ft	NONE	Open mine(s) (Y/N) d				
Salt water depth(s) ft	1930'		Y/N) WellinDepart			
Coal depth(s) ft	<u>N</u>	Cavern(s) encountered	i Find the line ental	Protection		
Is coal being mined in area (Y/N)	N					

10/30/2015

Rev. 8/23/13										
API 47- <u>059</u>	02256	Farm na	me_LOGAN	COAL	& TIMBER	CORP	Well nui	mber <u>237</u>	74	
CASING STRINGS	Hole Size	Casing Size	Depth	New Use		ade 1/ft	Basi Dept			ent circulate (Y/N) de details below*
Conductor	17 1/2"	13 3/8"	42'	Ne	w	LS				
Surface	12 1/4"	9 5/8"	960'	Ne	w	LS	878'	, 477', 80'		Yes 2 bbls
Coal										
Intermediate 1	8 7/8"	7"	2623'	Ne	sw	LS	1	NONE	ļ	Yes 12 bbls
Intermediate 2									↓	
Intermediate 3										
Production	6 3/8"	4 1/2"	4842'	Ne	w	L-65			N	o - 500' up in 7"
Tubing									<u>L</u>	
Packer type and de	pth set									
CEMENT	Class/Type of Cement	Number of Sack:		urry (ppg)	Yield (ft ³/sks)		Volume	Ceme Top (N		WOC (hrs)
DATA Conductor	Class A	OI Suck.	<u> </u>	, , , , , , , , , , , , , , , , , , ,	783					
Surface	Class A	300	1:	5.5	1.18		354	4 Surfa		8
Coal										
Intermediate 1	Class A	100, 2	15 15.6	, 12.3	1.18, 1.6	34 11	8, 395.6	395.6 Surfa		8
Intermediate 2										
Intermediate 3		.								
Production	Class A	160	1.	3.6	1.90		304	500' up	in 7"	8
Tubing										
Drillers TD (ft) Deepest format Plug back proc	ion penetrated	HARRELL SHALE			gers TD (fi					
Kick off depth	(ft)									
Check all wirel	line logs run	a caliper a neutron	density resistiv		deviated/d gamma ray			ection perature	≜son	ic
Well cored	•								For drilling p	□ No urposes only.
DESCRIBE TI 4295.50, 4127.10°, 3958.70	HE CENTRAL o', 3790.30', 3821.80', 345	IZER PLACEM 3.40' and 3265'	ENT USED	FOR EA	CH CASIN	ig stri	NG <u>4800.7</u>	0', 4632.30', 4	463.90	
										
WAS WELL C	COMPLETED	AS SHOT HOLI	E □ Yes	₿ No	DETA	ILS			·	
WAS WELL C	COMPLETED	OPEN HOLE?	□ Yes 🛔	No	DETAIL	s				
WERE TRACI	ERS USED	⊃Yes ■ No	TYPE OF	F TRACE	ER(S) USE	D				10/05/5

API 47- 059 - 02256 Farm name LOGAN COAL & TIMBER CORP. Well number 2374

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/18/2015	4486'	4732'	64	SHALE
2	8/24/2015	3554'	3563'	18	BEREA
			-		
			**-		
					

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	8/24/15	98	2957	3037	1211	NONE	NONE	809mscf N2/12bbi HCI
2	8/24/15	94	2723	2812	1128	NONE	NONE	810mscf N2/12bbl HCl
							, ,	
								ECEIVED
							Office	et Oil and Gas
								nct 0 6 2015
							WW	Department of
							- Enviro	Department of amental Protection
								

WR-35 Rev. 8/23/13

API 47- 059	_ 02256	Farm r	name LOGAN CO	OAL & TIMBER	CORP.	Well number_	2374
PRODUCING 1	FORMATION(S	_	<u>DEPTHS</u> 3529-3586'	TVD		MD	
BEREA				_ 1 VD			
DEVONIAN SH	ALE (BROWN)		3586-4235'				
		<u> </u>					
<u> </u>							
Please insert ad	ditional pages a	s applicable.	·				
GAS TEST	Build up	Drawdown	Open Flow	OII	LTEST o	Flow Dump	
SHUT-IN PRE	SSURE Surf	ace 480	_psi Botto	m Hole	psi	DURATION O	F TEST 120 hrs
OPEN FLOW	Gas	Oil	NGL	W	ater	GAS MEASU	
•	411 mcf	pd1	bpd	bpd	bpd	□ Estimated	Orifice Dilot
LITHOLOGY/	TOP	воттом	TOP	BOTTOM			PEGGER OUANITITYAND
FORMATION	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT			RECORD QUANTITYAND ER, BRINE, OIL, GAS, H2S, ETC)
	NAME TVD	TVD	MD	MD_	TYPEOFF	LUID (PRESHWAT	ER, BRINE, OIL, OAS, 1125, LIC)
	0		0		 		
SEE ATTACHED					 		
		-					
	 						
	<u> </u>						
	·						
			<u> </u>	<u> </u>	<u> </u>		<u> </u>
Please insert a	dditional pages	as applicable.					
Drilling Contr	actor MOUNTAI	N RIDGE					
Address 72 OL	D 25 E		City	BARBOURVIL	LE	State KY	Zip 40906
	-						
	pany WEATHER	FORD	O't-	LONDON		State KY	Zip 40741
Address			City	20112011		5440	
Cementing Co	mpany C&JEN	NERGY SERVIC	CES				
Address 580 H	AWTHORN DR		City	NORTON		State VA	Zip <u>24273</u>
			"50				
Stimulating Co	ompany C&J	ENERGY SERV	/IE3	NORTON		State VA	Zip 24273
Address 580 H	AW I HUKN UK		City				
Please insert a	dditional pages	as applicable.					
Completed by	y Darrell Fluhart	y			Telephor		Cell 606-548-1915
Signature 1	JEA-		Title _F	ield Supervisor		Date _	9-29-2015
						- CED ACEOCUS	2 Pagistry 40/20/20

WELL #2374

API#47-5902256

			API#47-59022	200	
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)
FILL	0	8			
SAND	8	43			
SAND/SHALE	43	253			
SAND	253	310			
SAND/SHALE	310	795			
SAND	795	818			
SAND/SHALE	818	1020			
SAND	1020	1080			
SAND/SHALE	1080	1110			
SAND	1110	1174			
SAND/SHALE	1174	1295			
SAND	1295	1470			
SAND/SHALE	1470	1532			
SAND	1532	1650			
SAND/SHALE	1650	1710			
SAND	1710	1770			
SAND/SHALE	1770	1845			
SAND	1845	1920			
SAND/SHALE	1920	1950			
SAND	1950	2050			
SHALE/LIME	2050	2080			
RED ROCK/SHALE	2080	2275			
SAND/SHALE	2275	2430			
SHALE/SLATE/LIME	2430	2460			RECEIVED
SHALE/SLATE	2460	2490		¢	Office of Oil and Gas
SAND/SLATE/RED ROCK	2490	2550			OCT 0 6 2015
SHALE	2550	2570			tment of
LITTLE LIME .	2570	2620			WV Department of nvironmental Protection
BIG LIME	2620	2875		H	7VIIOIIIIO
NJUN	2875	2968			
WEIR	2968	3490			

WELL #2374

API#47-5902256

WELL #2374			API#47-59022	56	
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)
COFFEE SHALE	3490	3530			
BEREA	3530				
GRAY SHALE	3602	4380			
BROWN SHALE	4380				
GRAY SHALE	4530				
BROWN SHALE	4620	4735			
HARRELL SHALE	4735	4868			
				<u> </u>	
				·	
	<u></u>		<u> </u>	<u> </u>	