

AUG 1 c 1996

State of West Virginia Section of Oil and Gas

Division of Environmental Protection

Well Operator's Report of Well Work Permitting Office of Oil & Gas

Farm name: APPALACHIAN POWER CO.

Operator Well No.: BULL CREEF A-14

16 -No

LOCATION:

Elevation: 1,226.22 Quadrangle: RACINE

District: PEYTONA County: BOONE

Latitude: 3595 Feet South of 38 Deg. 12min. 30 Sec. 2045 Feet West of 81 Deg. 40 Min. Sec. Longitude

Company: CABOT OIL & GAS CORPORATI

P.O. BOX 1473

CHARLESTON, WV 25325-0000

Agent: DAVID G. McCLUSKEY

Inspector: RICHARD CAMPBELL

Permit Issued: 11/16/93

03/24/94 Well work Commenced:

Well work Completed: 04/21/94

Verbal Plugging

Permission granted on:

Cable Rotary X Total Depth (feet) 57691 Fresh water depths (ft)

Salt water depths (ft) None

Is coal being mined in area (Y/N)? Y Coal Depths (ft): 374'

-	•	•	

Casing	Used in	Left ement ill Up
Tubing	Drilling	in Well .u. Ft.
Size		
16"	441	441
8 ⁵ /8"	1602'	737 sks 1602 t CTS
*4½"	1808'	140 sks 1808' Class A
Colonia de	·	

*Plug back TD 1779'

OPEN FLOW DATA

Producing formation Tonoloway(completed April 92)Pay zone depth (ft; 5254'-5268' Gas: Initial open flow 21 MCF/d Oil: Initial open flow N/A Bbl/d
Gas: Initial open flow 21 MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow 1380 MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests 4 Hours
Static rock Pressure 1890 psig (surface pressure) after 264 Hours
*Latex plug placed above Tonoloway
Second producing formation I_{njun} Pay zone depth (ft. $1650'-1673'$
Gas: Initial open flow MCF/d Oil: Initial open flow N/A Bbl/d
Final open flow 382 MCF/d Final open flow N/A Bbl/d
Time of open flow between initial and final tests 4 Hours
Static rock Pressure 360 psig (surface pressure) after 168 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FOF ATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For:	CABOT	OIL &	GAS	CORE	ORATIO	N			
	By:	22/1	15 (lush					
	Date:	۶	3/14/	96		· A Vras			
			7 7			1100	881	996	•



DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Perf Newburg 5394'-5404'. Break down stage 1 w/500 gal of 15% No Flow. BDP 5678 psi; Prep to treat Tonoloway. Set CIBP @ 5335' KB & dump (1) sk CalSeal. Perforate Tonoloway 5254'-5268'. Break down Tonoloway w/2000 gal 15% HCl. BDP 5810 psi; Surf ISIP 3770 psi. BH-BDP 7734 psi; BH-ISIP 5165 psi. - H₂S 16,000 ppm.

*C.I.B.P. set @ 5210' with 5 sks latex cement and 5 sks neat cement.

4½" csg cut @ 4270' and pulled. Cement plug placed @ 4147' - 4047', gel 4047' - 2125', cement 2125' - 2025', gel 2025' - 1808'. 4½" csg run to 1808', cemented with 140 sks.

Class "A", plug back TD 1779'.

Perf Injun @ 1650' - 1673'. Broke down with 500 gals 15% HCl acid, displaced with 40,000 SCF N2 # 15,000 SCFM. Break down pressure 2410 psi, ISIP 2200 psi. Frac with 75 Q foam with 48,000# 20/40 mesh sand, total N2 - 276,600 SCF, ISIP 2450 psi.

FORMATION		TOP	BOTTOM
Surface Rock	•	0	1070
Sandstone		1070	1115
Shale		1115	1195
Sandstone		1195	1260
Shale/Siltstone		1260	1390
Big Lime		1390	1630
Injun		1630	1675
Siltstone		1675	2100
Berea		2100	2105
Shale		2105	4645
Onondoga		4645	4750
Oriskany	the second second	4740	4760
Limestone		4760	5395
Newburg		5395	5405
Limestone		5405	5585
Big Six		5585	5630
Shale		5630	T.D.
JIIaie		2020	0 o 160 o

Environmental Protection

14-Aug-92 API # 47-005-1050

FB 0 8 93

State of West Virginia DEPARTMENT OF ENERGY

005-1540

Permitting

Division of Oil and Gas

office of Oil & Gas Well Operator's Report of Well Work

Farm name: APPALACHIAN POWER CO.

Operator Well No.: BULL CREEK A-14

Location:

Elevation: 1226.22

Quadrangle: RACINE

District:

PEYTONA

County: BOONE

Latitude: 3595 FEET SOUTH OF 38 DEG. 12 MIN. 30 SEC.

Longitude: 2045 FEET WEST OF 81 DEG. 40 MIN. 0 SEC.

Company: CABOT OIL & GAS CORPORATION

P. O. Box 1473

Charleston, WV 25325

Agent: DAVID G. MCCLUSKEY

	rd Campbell
Permit Issued:Well Work Commenced:	8/20/91 9/26/91
Well Work Completed: _ Verbal Plugging	4/17/92 TO reached
Permission granted on:	PI
Rotary X Cable Total Depth (feet)	Rig 576958372
Fresh water depths (ft)	810
Salt water depths (ft)	None
Is coal being mined in Coal Depths (ft):	area (Y/N)? <u>Y</u> 374

Casing	Used in	Left	Cement Fill Up
Tubing	Drilling	in Well	Cu. Ft.
16"	44	44	
8-5/8"	1602	1602	730 sks CTS
4-1/2"	5717	5717	322 sks
2-3/8"	5200	5200	
Arrow s	eal bore Pl	kr @ 5200'	

CIBP set 05335'.

OPEN FLOW DATA

Producing formation Tonoloway Gas: Initial open flow 21 MCF/d Final open flow 1,380 MCF/d	Pay zone depth (ft) <u>5254-5268</u>
Gas: Initial open flow21MCF/d	Oil: Initial open flow 0 Bbl/d
Final open flow	Final open flow <u>(15)</u> Bb1/d
Time of open flow between initial and	final tests4 Hours
Static rock Pressure1890 psig (surf	ace pressure) after264 Hours
Second Producing formation	Pay zone depth (ft)
Gas: Initial open flow MCF/d	Oil: Initial open flow Bbl/d
Final open flow MCF/d	Final open flow Bbl/d
Time of open flow between initial and	final tests Hours
Static rock Pressure psig (surf	face pressure) after Hours
OTE: ON BACK OF THIS FORM PUT THE FOLLOWING:	1). DETAILS OF PERFORATED

INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Date:

Reviewed TMG.	•
Recorded	

CABOT OIL & GAS CORPORATION For:

By:

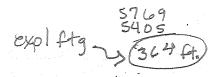
2/54/92

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Perf Newburg 5394'-5404'. Break down stage 1 w/500 gal of 15% No Flow. BDP 5678 psi; Prep to treat Tonoloway. Set CIBP @ 5335' KB & dump (1) sk CalSeal. Perforate Tonoloway 5254'-5268'. Break down Tonoloway w/2000 gal 15% HCl. BDP 5810 psi; Surf ISIP 3770 psi. BH-BDP 7734 psi; BH-ISIP 5165 psi. - H₂S 16,000 ppm.

FORMATION	TOP		BOTTOM
Surface Rock	0		1070
Sandstone	1070		1115
Shale	1115		1195
Sandstone	1195		1260
Shale/Siltstone	1260		1390
Big Lime	1390		1630
	1630		1675
Injun Siltstone	1675		2100
Berea	2100		2105
Shale	2105		4645
Onondoga	4645		4750
Oriskany	4740		4760
Limestone	4760		5395
Newburg	5395		5405
Limestone	5405		5585
	5585		5630
Big Six Shale Rese Mill	5630		T.D.
SHALE WELK TRACK	3030	residence All	at Allen a series
Annual Andrew Marie Marie			5769

DFT 553



RECEIVED

WV Division of Environmental Protection

FEB 0 8 93

Permitting
Office of Oil & Gas

RECEIVED AUG 01 1091 DEPT, OF EMETICY 005-1540 Lesued 8/20/91

Page__of 8/20/93 STATE OF WEST VIRGINIA EXPLAS

	WELL WORK PERMIT APPLICATION
1)	Well Operator: CABOT OIL & GAS CORPORATION 8/45 (2) 564
2)	Operator's Well Number: Bull Creek A-14 3) Elevation: 1226.
4)	Well type: (a) Oil/ or $Gas X$ /
	(b) If Gas: Production X / Underground Storage/ Deep X / Shallow/
5)	Proposed Target Formation(s): Big Six, Newburg
6)	Proposed Total Depth: 5820 feet
7) *	Approximate fresh water strata depths: 491, 514, 536, 721, 776, 986
8) *.	Approximate salt water depths: 803, 828, 1235, 1326, 1520
9)*	Approximate coal seam depths: 260, 361, 381, 557, 585
10)	Does land contain coal seams tributary to active mine? Yes X / No/
*	Proposed Well Work: Drill, and complete a commingled gas well. Based on Boone: 640, 884, 1360 and Coal Co. Maps.
12)	CASING AND TUBING PROGRAM

TYPE	<u>s</u>	PECIFICAT	CIONS	FOOTAGE IN	NTERVALS	CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	16"	LS	65	40'	40)	10 sks Meat GFS
Fresh Water						38591811.3 300500113
Coal	9-5/8"	J-55	36	675 '	675'	210 sks CTA
<u>Intermediate</u>	7 **	J-55	20	1570'	1570	230 sks CL-A
Production	4-1/2"	M-75	11.6	5820'	5820'	234 sks CL-A
Tubing	1-1/2"	CW55	2.75		5720'	36 SAJ411. V
Liners						

<u>Liners</u>				ii.					l l		
PACKERS	9	Kind Sizes	-					······································			
		Depths	set			-					
54			For	Divison	o f	Oil	and	Gas	Use Only	\sim	~

Fee(s) paid:

Wall Work Permit Reclamation Fund

(Type)

1) Date: July 31, 1991

Operator's well number BULL CREEK A-14 2)

API Well No: 47 - <u>005</u> - <u>1540</u> 3)

State - County - Permit

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

		NOTICE AND	APPLICATION	V FOR A WELL W	ORK PERMIT	
4)	Surface Ow	mer(s) to	be served:	5) (a) Coa	l Operator:	•
·	(a) Name	Appalachia	n Power Co.	Name	NOT OPERAT	TED
	Address	Attn: L. D	. Price, Lar	d M and dress		
	PO Box 202	l, Roanoke	, VA 24022-2	121		
	(b) Name _			_ (b) Coal 0		h Declaration
	Address			_ Name <u>Ap</u>	palachian Po	
	/ - \			_ Address At		rice, Land Mgr
	(C) Name _			PO Box 202		VA 24022-2121
	Address			_ Name		
		****		_ wddress	· · · · · · · · · · · · · · · · · · ·	
6)	Inspector	Robert S	. Campbell	(c) Coal L	essee with I	Declaration
- /			x 21B			
		Duck, WV	25063		**************************************	3
	Telephone	(304)-364	-8065			
	1	O THE PERS	SON(S) NAMED	ABOVE TAKE NO	TICE THAT:	
	T 7 7 7 - 7		,			
	Included 1	s the leas	se or leases	or other cont	inuing conti	ract or
COUCI	tacts by wn	ich i noto	the right	o extract oil	and gas <u>OR</u>	
Sect:	included i	s the into	rmation requ	lired by Chapt Jinia (see pag	er 22B, Art:	icle 1,
sect.	I certify	that ac ro	or wear and	ginia (see pag	e Zj	Virginia Code
T has	i cercity	chac as re	darrea augei	and application	or the west	<u>virginia Code</u>
7 110 A	e served d	obies of f	nis notice a	and abbilcatio	n, a location	on plat, and
accor	panying do	reuments pa	e (Affidavid	gh on the	above named	parties, by:
				postal receip	t attached)	•
	Publi	cation (No	tice of Pub	lication attac	hed)	
	I have rea	d and unde	rstand Chapt	er 22B and 38	CSR 11-18,	and I agree
to th	ne terms an	d condition	ns of any pe	ermit issued u	nder this ar	pplication.
	I certify	under pena	alty of law t	hat I have pe	rsonally exa	amined and am
famil	iar with t	he informa	tion submitt	ed on this ap	plication for	orm and all
attac	hments, an	d that bas	sed on my ind	quiry of those	individuals	s immediately
respo	nsible for	obtaining	, the informa	tion, I belie	ve that the	information
is tr			omplete.			
	I am aware	that ther	re are signif	icant penalti	es for submi	itting false
intor	mation, in			y of fine and		
	Mariana di Pangarana di Pangaran Pangarana di Pangarana di Pangar			or CABOT QIL &	GAS CORPORA	ATION
	e e e e e e e e e e e e e e e e e e e		By:	1111	III Clark	Fing
			Its:	Drilling Su	perintende nd	
ta .	Section 2		Address	PO Box 1473		<u> </u>
	over the second of the second		Telephone	Charleston,		
Subsc	ribed and		ore me this a	(304) 347-1		uly , 19 <u>91</u>
		- work beto	1		J1	uly , 19 <u>91</u>
			1/000	mer L. (Pl)	ofeth	Notary Public
Мусс	mmission e	xpires	May 31, 1999		7	Lantte
		_	A CONTRACTOR OF THE CONTRACTOR	***************************************		

FORM WW-2BOT 2 1 93

Partice of Call West VIRGINIA CAPUAL (

STATE OF WEST VIRGINIA

Partice of Call West West VIRGINIA

Office of Call West VIRGINIA

Office Office Office VIRGINIA

Office

1)	Well O	perator:	Cabot Oil	& Gas Corpor	ation 8/4	5 0 56	5
p 2)		•					evation: 1226.2
	Well t	ype: (a) (Dil_/	or Gas	<u>x</u> /		
~		(b)	If Gas:		u_x/ Undergr	cound Storag Shallo	
5) .	Propose	ed Target I	Formation	(s): Big	Injun 371	manus manus manifest side of the second	
6) 4	Propos	ed Total De	epth:		feet		
7)	Approx	imate fres	h water s	trata dept	:hs:	310'	
8)	Approx	imate salt	water de	pths:	- 1	None	
9)	Approx	imate coal	seam der	oths:	374'		
10)	Does la	and contain	n coal se	ams tribut	ary to act	ive mine? Y	es <u>x</u> /No/
	Propos *Existi		rk: P&A <u>CASIN</u>	Tonoloway and	nd complete B	Jug Bash 3	Fracquistro
TYPE	in postania angranja i kada na nagaja nangana kamanana	S	PECIFICAT	CIONS	FOOTAGE I	TERVALS	CEMENT
		Size	Grade	Weight		Left in	l i
Cond	uctor	16"			44 '	441	
Fres	h Water					fotos s	33634191
Coal					V,		38591611.2
Inte	rmediat	e 8-5/8"			1602'	1602'	730 sks
Prod	uction_	4-1/2"			5717'	5717'	322 sks
Tubi	ng						38
Line	rs						
PACK		ind izes epths set					
1319	n		2	Vork Penmi	and Gas Use	Only lamation Fun (Type)	d I WPCP

Form	3)	Date: October 13, 1993 Operator's well number Bull Creek A-14 API Well No: 47 - 005 - 1540-FRAC State - County - Permit
	STATE OF WEST DIVISION OF ENVIRONMENTAL PROTE	
	NOTICE AND APPLICATION F	OR A WELL WORK PERMIT
4)	Surface Owner(s) to be served: (a) Name Appalachian Power Co. Address attn: L.D. Price, Land Mgr. P.O. Box 2021, Roanoke, VA 24022-2021 (b) Name Address (c) Name Address	Name Not Operated Address (b) Coal Owner(s) with Declaration Name Appalachian Power Co. Address attn: L.D. Price, Land Mgr. P.O. Box 2021, Roanoke, VA 24022-2021
		Address
6)	Inspector Richard Campbell Address P.O. Box 163 Hamlin, WV 25523 Telephone (304) - 824-5828	(c) Coal Lessee with Declaration Name Address
	TO THE PERSON(S) NAMED A	
x Secti I hav accom	e served copies of this notice and	ed by Chapter 22B, Article 1, ia (see page 2) hapter 22B of the West Virginia Code application, a location plat, and on the above named parties, by: ttached) stal receipt attached)
famil attac respo is tr	iar with the information submitted	it issued under this application. I have personally examined and am on this application form and all ry of those individuals immediately on, I believe that the information ant penalties for submitting false
	Its:	Drilling Manager ()
Subsc	Address Telephone ribed and sworn before me this 190	Three Gateway Center, Suite 2000 Pittsburgh, PA 15222-1011 (412) 594-7000 Hoday of OCTOBER, 1993 Athia M. Bluelas Notary Public
Му со	Cynthia M. Bowles, Notary Public Chartiers Twp., Washington County My Commission Expires June 17, 1996 Member, Pennsylvania Association of Notaries	196



DEPARTMENT OF COMMERCE, LABOR & ENVIRONMENTAL RESOURCES DIVISION OF ENVIRONMENTAL PROTECTION

Gaston Caperton Governor

John M. Ranson Cabinet Secretary 10 McJunkin Road Nitro, WV 25143-2506

November 17, 1993

David C. Callaghan
Director
Ann A. Spaner
Deputy Director

Cabot Oil & GAs Corporation
Three Gatway Center, Suite 2000
Pittsburgh, Pennsylvania 15222-1011
Attn: Donald R. laughlin

In Re: Partial Plug - Fracs.

Dear Mr. Laughlin:

We are enclosing Plugging applications to be completed so we can have an affidavit showing how the well was plugged back to produce well in a new formation.

Please complete these plugging application for Partial Pluggings for the following:

- 1) 005-0567-PP Well # Bull Creek # A-21
- 2) 005-1540-PP Well # Bull Creek # A-14
- 3) 039-4485-PP Well # BSA #1

Please complete the plugging applications and return as soon as possible.

Sincerely,

James Stevens

JS/chm

Encl: Plugging Applications

HECEIVED
WY Division of
Environmental Protection

STATE OF WEST VIRGINIA

AUG 1 5 1996 DIVISION OF ENVIRONMENTAL PROTECTION SECTION OF OIL AND GAS

005-1540=A

Permitting AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Division, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

respective								
Farm name:	Appalachian P	ower Co.	O	perat	or Well N	o.: Bull Cr	eek A-14	}
LOCATION:	Elevation: District: Latitude: Longitude	1226.22 Peytona 3595 Fe 2045 Fe	Quadra et South et West	of of	Racine County: 1 38 Deg. 1 41 Deg. 4	300ne 12 Min. 30 40 Min.	Sec. Sec.	
Well Type:	OIL	GAS X	· · · · · · · · · · · · · · · · · · ·					
	ot Oil & Gas C Fairway Drive aopolis, PA 15	Control of the Contro		Coal or O	Operator wner	Not operat	ed	
Agent: Joh	n W. Abshire			Coal or O	wner	Appalachian attn: LD Pr	ice, Lar	nd Manage:
			AFFIDA			Roanoke, VA	24022	
STATE OF WE County of	ST VIRGINIA Boone	, the second		ATT				
the above and filling Gas Inspectommenced the well with the well well with the well well well with the well well well well with the well well well well well with the well well well well well well well we		operato well, an senting 24 and fil FROM 5210' 5050' 4147' 4047' 2125' 2025'	the Director day of Ied in Section 1	Richarector Mathe for 100 100 100 100 100 100 100 100 100 10	rd Campbell , say t arch ollowing PIPE 4½"- *1808'	hat said _, 1994 , manner:	Oil work and the	and was
and the 2 And furthur	nat the wor day of <u>Apr</u> deponents	k of plu :il saith not	gging and 199	d fil.	ling said	well was Louds Brankon	complet	ed on 9%
Sworn and s My commissi	My Commission	genga. Notary Pub Iwo. Washington Co Exoires June 17, 2	lic unty 000	ey	netrea N	otary Publ	enga Je	

BULL CREEK A-14 8/10/94 005 1540 16' cs @ 43' T.O.C. @ 1345' 85/8 css.@ 1602' 1650 23/2" TUSING @ 1669' 44° LS4. @ 1808' GEL 1808- 2025' CEMENT PLUG 2025'-2125 GEL 2125'-4047' CEMENT PLUE 4047'- 4147' 41/2 CSG. CUT @ 4270" T.O.C. @ 4526 ORISKANY C. I. B. P. @ 5210" W/ 5 SKS. LATEX CEMENT & TONOLOWAY. C.I.S.P. @ 5335' NEWBURG 4/2 CSG @ 5717'