





TELEPHONE: (304) 348-3092



		•	State		County	7	Permit	
API V	Vell	No.	47	-	079	-	1068	
Opera Well	tor's No.	S A	mher	st	#2			
Date:	<u>.</u>	epr	embe		<u>,                                    </u>	19_	01	
	C	~~+	amba	~	Λ	10	81	

## STATE OF WEST VIRGINIA DEPARTMENT OF MINES, OIL AND GAS DIVISION

-		AND GAS WELI	DEDMIT		
WEII TVDE:	Oil/ GasXX		ZI ERWIE		
WELL TIFE.	(If "Car" Production	.' . / Undergrou	nd storage	/ Deep <u>XX</u> / Shallow	1)
TOCATION.	Elevation: 648		. Manilla C	reek	
LOCATION:	District: Pocatalico	County:	Putnam	Quadrangle: Bancroft	
TOP ATOP	Cabot Oil & Gas Corr		DESIGNATED A	AGENT Richard P. Parsons	;
	P.O. Box 628		Address	P.O. Box 628	
Address	Charleston, WV 2533			Charleston, WV 25322	
OIL & GAS ROYALTY OWNEI	R Amherst Coal Co.		COAL OPERATO	ORNONE	
Address	Attn: Vance Price		Address		
· .	Lundale, WV 25631				
Acreage —			COAL OWNER(	s) with declaration on recor	Œ:
	Amherst Coal Co.	• '	Name	Amherst Coal Co.	
Address	Attn: Vance Price			Attn: Vance Price	
Address	Lundale, WV 25631	4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	***************************************	Lundale, WV 25631	
A					
-	MADE) TO	The state of the s			
FIELD SALE (IF					
Address			COAL LESSEE	WITH DECLARATION ON RECORD:	5
OU 0 CAC INCIDE	ECTOR TO BE NOTIFIED		Name	SED 8 - 1981	10
	Martin Nichols		: Address	CFD 8 - 1981	
	P.O. Box 554			OIL AND GAS DIVISIO	\N.1
Address	Clendenin, WV 25045			WV DEPARTMENT OF MINE	
				X	X
				cation under a deed/ leaseX	
			the undersigned we	ell operator from Hatfield Relia	nce
	Hatfield Campbell Creek , or other contract has been reco				
Recorded onNo	ov. 5 , 19 36 , in the off	ice of the Clerk c	of the County Comm	nission of Putnam County,	We
Virginia in!	Deed Book 32 at page	<u>224</u> . A	permit is requested	i as follows:	
PROPOSED WOR	K: Drill XX / Drill deeper	/ Redri!	II/ Fractu	re or stimulate/	
	Plug off old formation				
	Other physical change in wel				
	Other physical change in wer	. (5)500)			
	—planned as shown on the w	vork order on th	e reverse side here	eof.	
The above named of				objection they wish to make or are requir	ed t
	•			ys after the receipt of this Application by	
Department.					
Copies of this Pern	nit Application and the enclosed pla	it and reclamation	n plan have been ma	ailed by registered mail or delivered by ha	nd t
he above named coa	l operator, coal owner(s), and coal	lessee on or befo	ore the day of the m	ailing or delivery of this Permit Application	on t
he Department of h	Mines at Charleston, West Virgin	ia.			
PLEASE SUBMIT C	OPIES OF ALL				
GEOPHYSICAL LO	GS DIRECTLY		CABO	T OIL AND GAS CORPORATION	odyn ,
WEST VIRGINIA (	OIL AND GAS	•		Well Operator	186
CONSERVATIO SION			Ву	Lectar Weenen	
615 WASHINGTON	STREET EAST		Its <u>Distr</u>	rict Drilling Superintendent	

#### PROPOSED WORK ORDER

# THIS IS AN ESTIMATE ONLY: ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

Address P.O. Box 388  Elkwise, W 25071  GEOLOGICAL TARGET FORMATION, Orlakany  Estimated depth of completed well, 4795 [seet Rotary NX / Cable tools		<i>i</i>			~		Clint H	iirt & Assoc	c . Inc.		
Elivrine, WV 25071  Oriskany  Estimated depth of completed well, 4795 feet Rotary XX J Cable tools J  Approximate water starts depths: Fresh, 50 feet; salt, feet.  Approximate coal seam depths: Unknown Is coal being mined in the area? Yes J No XX J  CASING AND TUBING PROGRAM  AND TUBING PROGRAM  AND TUBING PROGRAM  CASING AND TUBING PROGRAM  CASING AND TUBING PROGRAM  CASING AND TUBING PROGRAM  TUBING PROGRAM  AND TUBING PROGRAM  THE WAIT OF TUBING PROGRAM  THE AND TUBING PROGRAM	DRILLING CO	ONTRAC	TOR (II	· KNOW.							
ESCIOGICAL TARGET FORMATION, Orieshany  Estimated depths of completed well, 4795 feet Rutary XX / Cable rools /  Approximate water strate depths: Fresh, 50 feet; sult, feet,  Approximate coal scan depths: Unknown is coal being mined in the area? Yes / Ne XX /  CASING AND TUBING PROGRAM  CASING AND TUBING PROGRAM  CASING AND TUBING PROGRAM  CASING STORES   Size   Cade   Size   Size   Size   Cade   Size   Size   Size   Cade   Size   Size   Size   Cade   Size   Size   Size   Size   Size   Size   Cade   Size   S					Ad	idress			1		
Estimated depth of completed well, 4795	-										
Approximate water strata depths: Unknown Is coal being mined in the area? Yes / NoXX									, XX / Cal	ale tools	
Approximate coal seam depths: Unknown Is coal being mined in the area? Yes / No XX    CASING AND TUBING PROGRAM  CASING OR SPECIFICATIONS   Size   Grass   Per fit   New   Under   Prograde   Intervals   Cament Fill-Lup   Coal Sacks   Coule feet)    Conductor   Size   Grass   Per fit   New   Under   Prograde   Intervals   Cament Fill-Lup   Coal Sacks   Coule feet)    Coal Sacks   Size   Size   Size   Size   Size    Conductor   Size   Size   Size   Size    Coal Sacks   Size   Size   Size   Size    Coal Sacks   Size   Size   Size    Coal Sacks   Size   Size   Size    Coal Sacks   Size   Size   Size   Size   Size    Coal Sacks   Size   Size   Size   Size   Size   Size   Size   Size										710 10013	· · · · · · · · · · · · · · · · · · ·
CASING AND TUBING PROGRAM  CASING OR SECCIFICATIONS Size Grace Series New Used For drilling Left in well (Cubic feet)  FOOTAGE INTERVALS  Conductor  Frost water 95/8 X 300 300 Circ. to Surf  Sizes  Conductor  A 2300 2300 Cric. to Surf  Sizes  Conductor  A 2300 2300 Cric. to Surf  Sizes  Conductor  A 41/2 X 4795 4795 200 skg. as Depths set  Conductor  This Department, acrompanied by (B) a plat in the form prescribed by Regulation 17, (B) a hond in one of the form prescribed by Regulation 17, (B) a hond in one of the form prescribed by Regulation 17, (B) a hond in one of the form IV-2. "Reclamation Plan", applicable to the reclamation required by Code 522-412, (B) From IV-9.  Reclamation Plan", applicable to the reclamation required by Code 522-412, (B) rem IV-9.  A separte Form IV-2 bull not be required for fracturing are stimulating as well where facturing or stimulating are stimulating as well where facturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.  FMIS PREMAT AUST ES FOSTED AT THE VIELL SITE  All rend-wave below in excerdence with Chepter 22, of this V. V. Code, the Secretary Separated Services and Services										/ No	vv /
Conductor  The INDEX SPECIFICATIONS SIZE Grass per ft New Uses For drilling Laft in well Count field)  Conductor  From Water 95/8 X 300 300 Circ. to Surf  From Water 95/8 X 2300 2300 Cric. to Surf  Forduction 4 1/2 X 4795 4795 200 sks. 22  Confidence of the Department of Mines provides that the original and four copies of Form IV-2 must be filled with the Department, accompanied by (1) a plat in the form presented by Regulation 1, (6) a hond in one of the form presented by Regulation 1, (6) a hond in one of the form presented by Regulation 1, (6) a hond in one of the form presented by Regulation 1, (6) a hond in one of the form presented by Regulation 1, (6) a hond in one of the form presented by Regulation 1, (6) a hond in one of the form presented by Regulation 12, or in lieu thereof the other security allowed by Code 5224-12, (ii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-12, (iii) from IV-9, "Reclamation Pian", applicable to the reclamation required by Code 5224-1						IKIIOW	is coa	i being mined	in the area: 103		AA
To provide the consent required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.  The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereo.  WAIVER  The undersigned coal operator/ owner/ lessee/ of the coal under this well location has examined by proposed well location, has becaused as completed the mine may perform the coal poperator has completed the mine may perform the well location, has been added to the mine may be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if me mine may exists which covers the area of the well location, has been added to the mine may be proposed well for coloration. The undersigned coal operator/ owner/ lessee/ of the coal under this well location has been added to the mine may be proposed well location, but so the mine may be started which covers the area of the well location, provided, the well location has been added to the mine may be proposed well location, provided, the well location has been added to the mine may be proposed well location, provided, the well location has been added to the mine may be proposed well location, provided, the well location has been added to the mine may be proposed to the mine may be that the course of the well location, has been added to the mine may be proposed to do done at this location, provided, the well location has been added to the mine may be complied with the mine may be complied which covers the area of the well location, the well location has been added to the mine may be complied with the mine may be complied to the work for a course of th	CASING AND	TUBING	j PRUG	KAM							
TOBING TYPE    Size   Grade   Grade   New Time   New   Used   For drilling   Left in well   Collic (red)	Annual Control of the State of										
Prests Water 95/B	CASING OR TUBING TYPE			Weight	New	Used			OR SACKS	PACKER <b>S</b>	
Intermediate 7	Conduct <b>or</b>									Kinds	OLD THE STATE OF T
Intermediate 7	Fresh Wat <b>er</b>	9 <sup>5</sup> /8			Х		300	300	Circ. to Surf		The state of the s
Production 4 1/2 X 4795 4795 200 sks. A Deaths set    Perforstions	Coal									Sizes	
Univers  NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code \$22-4-22, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code \$24-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same and the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same set of the Well Coation and the fee required by Code \$22-4-12b and Regulation 23, (iv) unless previously paid on the same set of the Well Coation the well	intermed <b>iate</b>	7			Х		2300	2300	Cric. to Surf		
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NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (f) a plat in the form prescribed by Regulation 11, (fi) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code 5 22.4-2. (fi) Form IV-9, "Reclamation Plan", applicable to the reclamation Plan", applicable to the reclamation Plan", applicable to the reclamation Plan", applicable to the review of the provinces by Code 5 22.4-12 and (v) if applicable, the consent required by Code 5 22.4-12 and (v) if applicab	Tubing								into 7"		
NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-12, (iii) Form IV-9, "Reclamation Paul" applicable to the reclamation required by Code § 22-4-12 and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by	Liners					And a				Perforations:	
NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.  A separate Form Iv-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.  THIS PERMIT MUST BE POSTED AT THE WELL SITE  All provinces being in accordance with Chopier 22, of the W. Vo. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 5-29-82.  Deputy Director - Oil & Dission  The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.  WAIVER  The undersigned coal operator / owner / lessee / of the coal under this well location has been added to the mine ma pexits which covers the area of the well location, the well location has been added to the mine ma The undersigned has no objection to the work proposed to do done at this location, the well location has been added to the mine ma										Тор	Bottom
the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in the form prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-12b are from the owner of any water well or dwelling within 200 feet of the proposed well.  A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.  THIS PERMIT MUST BE POSTED AT THE WELL SITE  All provisions being in eccordance with Chapter 22, of the W. Vo. Code, tha location is hereby approved for drilling. This permit shall expire if operations have not commenced by 5-29-82.  Deputy Director - Oil & Department of the permit is to be issued within fifteen (15) days of receipt thereof.  WAIVER  The undersigned coal operator/ owner/ lessee/ of the coal under this well location has examined the proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has completed with		102 1 114	illur İsti i								
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WAIVER  The undersigned coal operator/ owner/ lessee/ of the coal under this well location has examined the proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine matches the undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with	prescon Recoprevious Code  As be pa  This Permit  All provious of the W. Voto drill: operations has	ribed by lamation ously paid \$22-4-8a eparate F rt of the v  MUST B  being in a Code, ing	Regulati Plan", a I on the s a from th form Iv-2 work for v  E POSTI the local	on 12, or pplicable ame well ne owner shall not which a p  ED AT Tance with the permit his permit h	to the food and th	ieu the e recla ee reque y wate uired f is soug	ereof the other imation required by Code § or well or dwell or fracturing or the and is noted.	r security allowed by Code \$ 2 22-4-12a, and (ling within 200 r stimulating a	wed by Code § 22-4-2 22-4-12b and Regulati v) if applicable, the co feet of the proposed well where fracturing	on 23, (iv) unle onsent required l d well.	y, ss by to
WAIVER  The undersigned coal operator/ owner/ lessee/ of the coal under this well location has examined the proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine matches the undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with							******				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
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proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine ma The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with											
THE PROPERTY OF THE PROPERTY O	proposed well The undersign	location. led has n	If a mine o objectio	map exis	sts whi	ich cov propos	ers the area of sed to be done	the well location at this location	n, the well location ha n, provided, the well	s been added to t	he mine map.

# RECEIVED

IV-35 (Rev 8-81) APR 20 1982



# OIL AND GAS DIVISION WY DEPARTMENT OF MEDIC OF M

Bepartment of Mines
Oil und Vas Bivision

Date	April	7, 3	1982	
Operato		#2		
Well No	)	# 2		
Farm_ 2	Amhers	t		
API No.	. 47 -	07	'9 _	1068

WELL OPERATOR'S REPORT

#### DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas XX/ Liquid Injection (If "Gas," Production / Undergroup)	n/Wast und Storag	e Disposa ge/ Deeg	l/ p/ Sha	ıllow <u>xx</u> /)
IOCATION: Elevation: 648' Watershed	Manilla Cr	reek		
District: Pocatalico County Put		······································	e Bancro	oft
COMPANY Cabot Oil & Gas Corporation				
ADDRESS P.O. Box 628, Chas., WV 25322	Caşing	Used in	Left	Cement
DESIGNATED AGENT Richard P. Parsons	Tubing	Drilling		fill up Cu. ft.
ADDRESS P.O. Box 628, Chas., WV 25322	Size			
SURFACE CWNER Amherst Coal Co.	20-16			
ADDRESS Attn: Vance Price, Lundale, WV 25631	Cond. 13-10"			
MINERAL RIGHTS OWNER Amherst Coal Co.	9 5/8	314	314'	125 sks
ADDRESS Attn: Vance Price, Lundale, WV 25631	8 5/8	214	314	123 383
OIL AND GAS INSPECTOR FOR THIS WORK Martin	7	2099.65	2099.65	345 sks
Nichols ADDRESS Clendenin, WV 25045	5 1/2	2099.03	2099.03	575 CFC
PERMIT ISSUED September 8, 1981	4 1/2	4824.51	4824.51	215 sks
DRILLING COMMENCED October 3, 1981	3	4024.31	4024.31	213 585
DRILLING COMPLETED October 10, 1981	1-1/2		2209.48	
IF APPLICABLE: PLUGGING OF DRY HOLE ON				
CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON	Liners used			
GEOLOGICAL TARGET FORMATION Oriskany		Proj Depi	o. h <u>479</u>	5 feet
Depth of completed well 4350' feet 1	Rotary XX	Cable	e T∞ls_	
Water strata depth: Freshfeet;	Salt_	feet		
Coal seam depths:	Is coal	being mine	ed in the	area?
OPEN FLOW DATA				
Producing formation Berea	Pay	zone dept	h 2228'-	2235' feet
Gas: Initial open flow TSTM Mcf/d				
Final open flow (112 Mcf/d)				<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>
Time of open flow between init				
Static rock pressure 700# psig(surface		_		
(If applicable due to multiple completion	)			
Second producing formation	Pay	zone depi	-h	feet
Gas: Initial open flow Mcf/d				
Final open flow Mcf/d	Oil: Fin	al open fi	Low	Bbl/d
Time of open flow between init.	ial and fi	nal tests	ho	urs
Static rock pressurepsig(surface	measureme	nt) after	hou	rs shut in
		(Contin	zie on re	verse bille

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

10/22/81 - Perforated Oriskany from 4646' - 4656' (12 holes). Pumped 500 gal 15% HCL. Broke down Oriskany @ 2300 psi. Treated w/5000# 80/100 & 15,000# 20/40. Avg Inj Rate: 10 bbl/min w/3950 SCF N. Avg Treating Press: 1205#. Total fluid: 465 bbls. (Sand landen: 285 bbls). Total N: 179,000 SCF. Instant Shut In Press: 650#; after 15 min - 600#.

- 11/30/81 Final test on November 25, 1981: SIP 470#; TSTM.
- 12/2/81 Set bridge plug at 4350' w/2 sks calcele.
- 12/5/81 Perforated Berea from 2228' 2235' (12 holes).
- 12/8/81 Pumped 500 gals 15% HCL. Break dwn press 1500#. Treated w/14,000# 80/100 & 42,000# 20/40. Avg Inj Rate: 10.8 BPM. Avg Treating Press: 2410#. Total fluid: 540 bbls. (Sand laden: 460 bbls). Total 180,000 SCF N<sub>2</sub>. Instant Shut In Press: 2000#; after 15 min 1800#. WELL LOG

			REMARKS
FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	Including indication of all fresh
			and salt water, coal, oil and gas
Shale	0	300	
Sand	300	360	
Shale	360	435	
Sand	435	620	
Shale	620	710	
Sand	710	775	
Sand & Shale	775	1240	
Sand	1240	1495	
Sand & Shale	1495	1625	
Big Lime	1625	1740	
Shale	1740	1745	
Big Injun	1745	1804	
Shale	1804	2204	,
Sunbury Shale	2204	2224	
Berea	2224	2238	·
Shale	2238	3438	
Huron	3438	3975	
Shale	3975	4290	
Marcellus	4290	4550	
Onondaga	4550	4640	Gas ckeck @ 4550' - TSTM
Oriskany	4640	4658	
Helderberg	4658	4845	Gas check @ TD - small show of o
		DTD 4845	
		LTD 4850'	
		•	
•			
		•	
	a de la composition della comp		,
•			

(Attach separate sheets as necessary)

	CABOT OIL AND GAS CORPORATION	
Well (	Operator )	-
By:	R. M. Comm	
Date:	April 7, 1982	

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including and, encountered in the drilling of a well."



)	Date:	March	26	19_	84
---	-------	-------	----	-----	----

2) Operator's Well No. Amherst #2

3) API Well No. 47 - 079 - 1068-FRAC State County Permit

### STATE OF WEST VIRGINIA DEPARTMENT OF MINES, OIL AND GAS DIVISION

#### APPLICATION FOR A WELL WORK PERMIT

4) WELL TY	PE: A O	il	/ Ga	s	X/				.,
	B (I	f "Gas",	Production	401	X	/ Underground	storage	/ Deep	/ ShallowX/)
5) LOCATIO							Manilla Ci		Danaua 64 71 1
A MILL OF AN						County: of_WV			Bancroft 7½'
		). Box		<u> </u>	Luch	V William		P.O. Box 6	rt E. Horrell
Address			on, WV	253	22	<del></del>	Address		
8) OIL & GA			•				9) DRILLING CO	<u>Charleston</u>	, WV 23322
	Jerry H						Name[]		2000000
Address	•	5B		·			Address	AICIACIAIA	OF CELLY S
2 2 2 2 2 2 2 2			WV 251	1 7	587	_7299	7 1441 033		MU
0) PROPOSE				7			/ Redrill	/ Stimulata	1440 0 0 4004
U) FROFOSE	D WELL 1	WORK.					rate new formation_		MAR 2 9 1984
			-						packer& GAS DIVISIO
1) GEOLOGI	CAL TAR	GET FOR	MATION	,	Brown	Shale			
12) Estima	ated depth of	of complet	ed well.	·	435	0 fee		L	EPT. of MINE
						A CONTRACTOR OF THE CONTRACTOR	t,	feet	
									/ NoX/
5) CASING A									/ 110/
CASING OR			IFICATIONS			FOOTAGE	INTERVALS	CEMENT FILL-UP	PACKERS
TUBING TYPE	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well	OR SACKS (Cubic feet)	PROPOSED
Conductor	9-5/8	·	36		3302		314	150 🔏	Kinds Baker
Fresh water	3 37 0	-	J 9	·			717	120 3	Model R
Coal								ν <sub>2</sub>	Sizes 7 1 X 4 1 2
ntermediate	7	·····	20				2099,65	407 %	Jacks 1 2 A 72
Production	4-1/2		10.5	·····			4824.51	271 划	Depths set 2300 8
ubing	1-1/2	·······	2.75				3870	PROPOSED	2500
iners								1301.05.0	Perforations:
								·	Top Bottom
						41 Brida	e Plug @ 4350	- EXISTIN	G
					İ				
						OFFICE USE			
						DRILLING PI	ERMIT		
ermit number_	47-0	79-10	68-FRA	C .				April 16	6, 19 84
_						•		Da	
his permit cove	ering the we	ell operato	r and well	location	on shown	n below is evidence	of permission grante	d to drill in accordar	nce with the pertinent legal re-
uirements subje	ect to the co	onditions o	contained h	ierein a	ınd on th	ie reverse hereof. N	otification must be gi	ven to the District Oi	l and Gas Inspector, (Refer to
o. a) Prior to this strict oil and g	as inspector	non of ros	ads, locations before ac	ns and tual pe	pits for rmitted v	any permitted work work has commence	t. In addition, the we	il operator or his cor	ntractor shall notify the proper
everse hereof.	OIR IS AS UC	scribed in	the Notice	and A	гррпсано	on, plat, and recian	iation pian, subject to	any modifications a	and conditions specified on the
ermit expires _	Apri	1 16,	1986			unless wel	l work is commenced	prior to that date and	prosecuted with due diligence.
-									,
Bondawes	Ageat		Plat:	Casir	-	T <sub>aa</sub>			
BELYNKEI	Agost		lat.	Casin	8	12-			
	X1.	2 m	17-17-1	rn,	4 6	084	Market Control of the		La Lamana de la Caración de la Carac
								- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	And the second s
							Admi	nistrator, Office of (	Oil and Gas
OTE: Keep o	ne copy of	this perm	it posted a	t the d	rilling loo	cation.			
									File

DECEIVED

JUN 1- 1984

OIL & GAS DIVISION

T:-35 (Rev a-ol) DEPT. OF MINES

Date May 22, 1984

Operator's

ell No. #2

Sinte of Mest Hirginin Well No.

Bepartment of Mines Gil und Cas Bivision Farm Amherst

API No. 47 - 079 - 1068 Frac

WELL OPERATOR'S REPORT

#### DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

(If "Gas," Production X / Under No CATION: Elevation: 648' Watershe	ed M	anilla Cre	•			
District: Pocatalico County				<u>Bancrof</u>	t 7 1/2'	•
COMPANY Cabot Oil & Gas Corporation of WV						
ADDRESS P.O. Box 628, Charleston, WV 25322	- -	Casing	Used in	Tof+	Cament	
DESIGNATED AGENT Robert E. Horrell		<u>a</u>	Drilling		fill up	
ADDRESSP. O. Box 628, Charleston, WV 25322	, ,	Size				
SURFACE CWNER Diamond Shamrock Coal Company	, [] 3 7 3	20-16 Cond.		a-manufacture and the state of		e constituent de la constituen
Attn: Ervin Allen - 1200 First Security F ADDRESS Lexington, Kentucky 4	0537	13-10"				
MINERAL RIGHTS OWNER Amherst Coal Company		9 5/8				
ADDRESS Attn: Vance Price, Lundale, WV 256	31	8 5/8				
OIL AND GAS INSPECTOR FOR THIS WORK Jerr		7				- Administrative
Holcomb ADDRESS Box 5B, Indoor, WV 25		5 1/2				
PERMIT ISSUED April 16, 1984 WORKOVER	<del>11-2011110</del>	4 1/2				
**************************************	Official Company of the Company of t	3			Parmaco	
	one maint de l'internation	2:1-1/	2	3956.64'	Hookwal	1 Palc
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR		Liners	w/se	ating nip	set @ 2 ple	310
REXORKING. VERBAL PERMISSION OBTAINED ON		used				
	-				£.	
GEOLOGICAL TARGET FORMATION Hu						æt
Depth of completed well 4480 f						
Water strata depth: Freshf		_	reet being mir		0 37033	
Coal seam depths:	<u> </u>	15 COAL	being mu	ied iii ui	e area:_	
OPEN FLOW DATA		in comple		2442 1	2017 -	
Producing formation Huron Shale	·					
Gas: Initial open flow 0 Mc						
4 Hr. Final open flow 207 M						1/4
Time of open flow between Static rock pressure 510 psig(						in
			ieic, arc		عمالد دين	*
(If applicable due to multiple comp  Second producing formation Berea			v zone de:	oth	, F	eet
Gas: Initial open flow M						,744/
Final open flow M						
Time of open flow betwee						

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

- 10/22/81 Perforated Oriskany from 4646' 4656' (12 holes). Pumped 500 gal 15% HCL. Broke down Oriskany 3 2300 psi. Treated w/5000# 80/100 & 15,000# 20/40. Avg Inj Rate: 10 bbl/min w/3950 SCF N2. Avg Treating Press: 1205#. Total fluid: 465 bbls. (Sand landen: 285 bbls). Total N2: 179,000 SCF. Instant Shut In Press: 650#; after 15 min - 600#.
- 11/30/81 Final test on November 25, 1981: SIP 470#; TSTM. 12/2/81 Set bridge plug at 4350' w/2 sks calcele.

Orig. compl. Zones

12/5/81 - Perforated Berea from 2228' - 2235' (12 holes).

12/8/81 - Pumped 500 gals 15% HCL. Break dwn press 1500#. Treated w/14,000# 80/100 & 42,000# 20/40. Avg Inj Rate: 10.8 BPM. Avg Treating Press: 2410#. Total fluid: 540 bbls. (Sand laden: 460 bbls). Total 180,000 SCF N<sub>2</sub>. Instant Shut In Press: 2000#; after 15 min - 1800#. WELL LOG

				REMARKS
TODISMICAL COLOR			DOMESTICAL EXPERT	Including indication of all fresh
FORMATION COLOR I	HARD OR SUFT	TOP FEET	DUTOM FEET	and salt water, coal, oil and gas
				and sair water, coar, our and year
	-			
Shale		0	300	
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Shale		360	435	
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Shale		620	710	
Sand		710	775	
Sand & Shale		775	1240	
Sand		1240	1495	
Sand & Shale		1495	1625	-
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Onondaga		4550	4640	Gas ckeck @ 4550' - TSTM
		4	4658	
Oriskany		4640	1	Gas check @ TD - small show of ga
Helderberg		4658	4845	
			DTD 4845'	
			LTD 4845	
			LID 4850.	
				,
		auto-second		
		Personal Property of the Personal Property of		
•	•	NAME OF THE PARTY	• .	
		***************************************		

(Attach separate sheets as necessary)

	CABOT OIL AND GAS COR	PORATION	
Well	perator \		
By:	R. P. I com		
Date:	April 7, 1982		

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