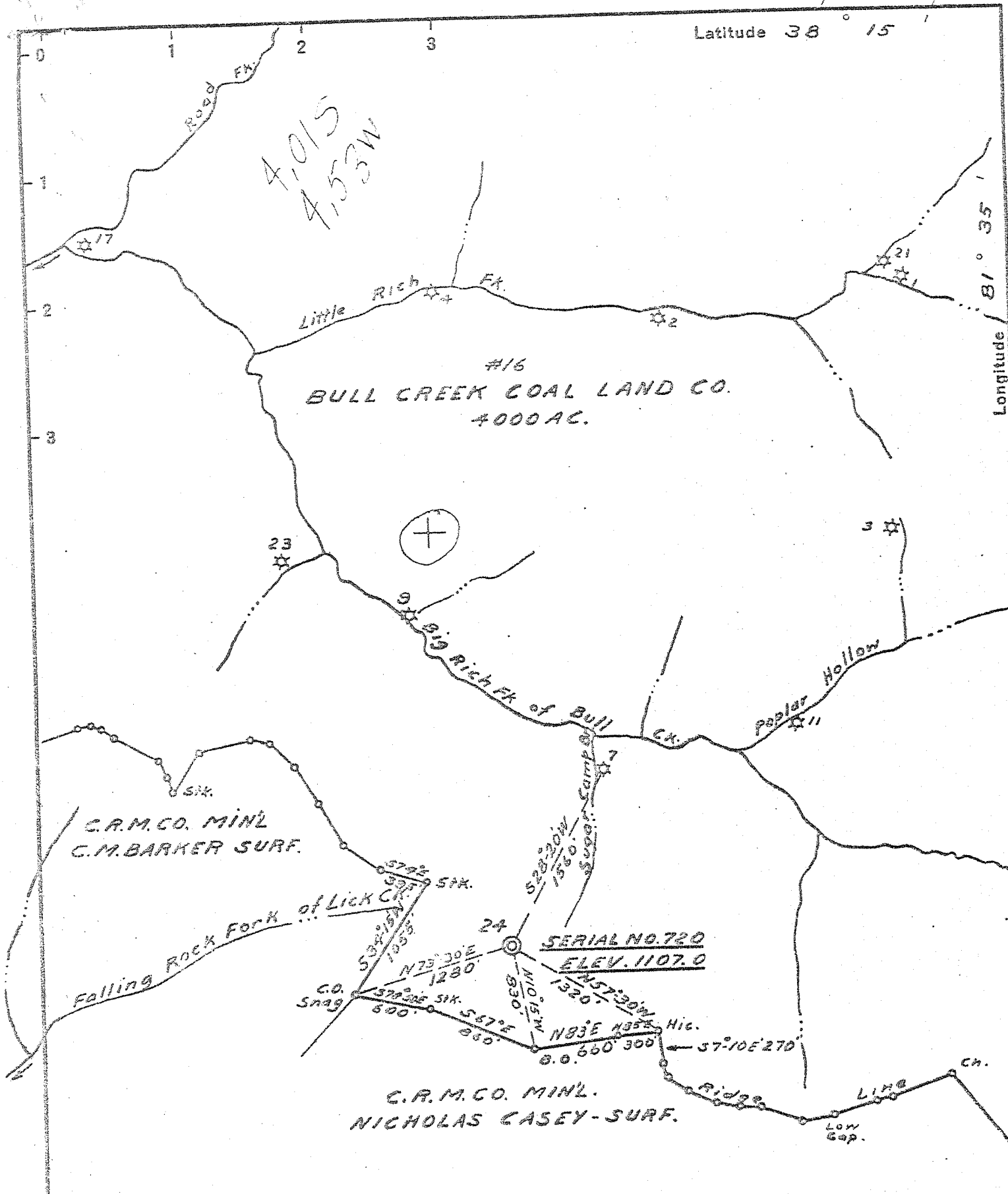




Latitude 38° 15'

Longitude 81° 35'



New Location   
 Drill Deeper   
 Abandonment

Issued 11-20-67

7.5 0615 topo loc	15' scale	
38°12'30"	1.095	3.975
81°37'30"	2.15W	4.42W

Company THE OWENS, LIBBEY-OWENS GAS DEPT.  
 Address BOX 211 CHARLESTON 28 W. VA.  
 Farm BULL CREEK COAL LAND CO.  
 Tract \_\_\_\_\_ Area 4000 Lease No. 16  
 Well (Farm) No. 24 Serial No. 720  
 Elevation (Spirit Level) 1107  
 Quadrangle PEYTONA 2-54.03 W 4.48  
 County BOONE District PEYTONA  
 Engineer T.S. FLOURNOY  
 Engineer's Registration No. 259  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date MAY 22 1945 Scale 1-IN. = 1000 FT.

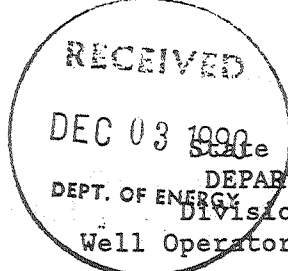
KANAWHA FOREST  
 STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

**WELL LOCATION MAP**  
 FILE NO. Doo-710-210

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.  
 - Denotes one inch spaces on border line of original tracing.

6-6 238

DEC 5 1967



State of West Virginia  
DEPARTMENT OF ENERGY  
Division of Oil and Gas  
Well Operator's Report of Well Work

Farm name: APPALACHIAN POWER CO. Operator Well No.: BULL CREEK #24  
Location: Elevation: 1107 Quadrangle: PEYTONA  
District: PEYTONA County: BOONE  
Latitude: 5770 Feet South of 38 Deg. 35 Min. 0 Sec.  
Longitude: 11400 Feet West of 81 Deg. 12 Min. 30 Sec.

Company: CABOT OIL & GAS CORPORATION  
P. O. Box 1473  
Charleston, WV 25325

Agent: DAVID G. MCCLUSKEY

Inspector: JERRY HOLCOMB  
Permit Issued: 09/09/90  
Well Work Commenced: 09/21/90  
Well Work Completed: 10/15/90  
Verbal Plugging  
Permission granted on: \_\_\_\_\_  
Rotary \_\_\_\_\_ Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) 4709  
Fresh water depths (ft) \_\_\_\_\_

Salt water depths (ft) \_\_\_\_\_

Is coal being mined in area (Y/N): Y  
Coal Depths (ft): 141-145, 242-247,  
262-266, 438-442

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size 10-3/4"	522'	522'	
8-5/8"	1374'	1374'	
7"	4655'	4655'	
4-1/2"	5386'	5386'	
1-1/2"		5227.21'	
Permanent Packer set @ 4756'			

OPEN FLOW DATA

Producing formation Oriskany Pay zone depth (ft) 5340-5367  
Newberg 4678-4690  
Gas: Initial open flow 60 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 350 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 240 Hours  
Static rock Pressure 500 psig (surface pressure) after \_\_\_\_\_ 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 (surface pressure) after \_\_\_\_\_ 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 FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: CABOT OIL & GAS CORPORATION

By: David G. McCluskey  
Date: 11-10-90

DEC 10 1990

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

Perforate Oriskany 4678'-4690' w/ 3-1/8" hollow carrier 2 SPF (25 holes). Break down Oriskany w/ 500 gal 15% HCl & displ w/ 226,000 scf N<sub>2</sub> 21,000 scfm. BDP 5500 psi. Treated w/ 10,600 lbs sand & 581,000 scf N<sub>2</sub> in 75Q foam.

FORMATION

TOP

BOTTOM

WORKOVER

1158

WEST VIRGINIA DEPARTMENT OF MINES  
OIL & GAS DIVISION  
W E L L R E C O R D

Gas Well  
CASING & TUBING

Permit No. Boo # 710		
Peytona Quad.	The Owens, Libbey-Owens Gas Dept.	
Company	P.O. Box 2111, Charleston, 28, W. Va.	10 1/2 522 522
Address	Bull Creek Coal Land #24 Acres 4000	8 5/8 1374 1374
Farm		7 4655 4655
Location		2 3/8 4741 4741
Well No.	720 Elev. 1207.0	
District	Peytona Boone County	
Surface	Bull Br. Coal Land Co. 806 Ellicott Sq. Buffalo, N.Y.	
Mineral		Coal at 141' 48";
Commenced	7-13-45	242' 60"; 262' 43"
Completed	11-24-45	438' 48"
Date shot	11-2- Depth 4223 to 4585 with 3500# Detonite	
Open flow	32/10ths W in 1" 30/10ths W 2 "	
Volume	216 MGF	
Rock Pressure	525 lbs. 69 hrs.	
Fresh Water	155 3 bail hr.; 215 4 bail hr. 394 6 bail hr.; 640 H.F.	

Soil	Dk	S	0	5	Slate	Dk	S	1602	1604
Clay	Y	S	5	22	Slate & Shell	Lt	M	1604	1689
Sand	Y	S	22	66	Shell	Lt	H	1689	1719
Slate	Dk	S	66	87	Slate	Dk	S	1719	1735
Sand	Gr	H	87	102	Shell	Lt	H	1735	1762
Slate	Dk	S	102	141	Slate & Shell	Lt	M	1762	1945
Coal	Bk	S	141	145	Shell	Lt	H	1945	1960
Slate	Lt	S	145	147	Slate & Shell	Lt	M	1960	2016
Sand	Wh	H	147	162	Shale	Br	S	2016	2026
Slate	Dk	S	162	167	Perca Sand	Lt	H	2026	2037
Sand	Lt	H	167	202	Shell	Lt	H	2037	2054
Slate	Dk	S	202	207	Slate & Shell	Lt	M	2054	2062
Sand	Lt	H	207	227	Shell	Lt	H	2062	2093
Slate	Dk	S	227	242	Slate & Shell	Lt	M	2093	2115
Coal	Bk	S	242	247	Shell	Lt	H	2115	2179
Slate	Dk	S	247	262	Slate & Shell	Lt	H	2179	2201
Coal	Bk	S	242	266	Shell	Lt	H	2201	2250
Sand	Lt	M	266	327	Slate & Shell	Lt	H	2250	2268
Slate	Dk	S	327	341	Shell	Lt	H	2268	2308
Sand	Wh	M	341	407	Slate & Shell	Lt	M	2308	3205
Slate	Dk	S	407	438	Slate & Shell	Dk	M	3205	3255
Coal	Bk	S	438	442	Shell	Dk	H	3255	3265
Sand	Wh	S	442	469	Slate & Shell	Dk	M	3265	3287
Slate	Dk	S	469	533	Shell	Dk	H	3287	3323
Sand	Wh	H	533	565	Slate & Shell	Dk	M	3323	3329
Slate	Dk	S	565	584	Shell	Dk	H	3329	3352
Sand	Lt	H	584	891	Slate & Shell	Dk	H	3352	3493
Slate	Lt	S	891	914	Shell	Dk	H	3493	3511
Sand	Lt	H	914	919	Brown Shale	Br	S	3511	3543
Slate	Dk	S	919	934	Shell	Dk	H	3543	3573
Sand	Lt	M	934	975	Shale & Shell	Br	M	3573	3599
Slate	Lt	S	975	1014	Shell	Dk	H	3599	3629
Slate & Shells	Lt	M	1014	1034	Brown Shale	Br	M	3629	3646
Slate	Dk	S	1034	1063	Shale & Shell	Br	M	3646	3756
Red Rock		S	1063	1068	Shell	Br	H	3756	3780
Slate & Shells	Lt	H	1068	1117	Shale	Dk	M	3780	3793
Sand	Wh	H	1117	1197	Shale & Shell	Br	S	3793	3818
Red Rock		S	1197	1202	Slate & Shell	Dk	M	3818	3837
Slate	Lt	S	1202	1212	Slate	Lt	M	3827	3861
Shell	Lt	H	1212	1231	Slate & Shell	Wh	M	3861	4253
Sand	Lt	H	1231	1239	Shell	Dk	H	4253	4291
Slate & Shell	Lt	S	1239	1251	Shale & Shell	Dk	M	4291	4588
Red Rock		S	1251	1257	Corniferous Lm	Gr	H	4588	4680
Slate & Shell	Lt	S	1257	1282	Oriskany Sand	Gr	H	4680	4689
Shell	Lt	H	1282	1293	Lime	Gr	H	4689	4709
Slate	Lt	S	1293	1316	TOTAL DEPTH				4709
Lime	Dk	H	1316	1354	Gas 1468	1200 C.F.;	Gas 1496	2598 C.F.	
Lime	Gr	H	1354	1366	Gas 1508	4124 C.F.;	Gas 1581	19 M; 4260	582
Big Lime	Wh	H	1366	1561	M; 4681-82'	50M; 4682-84	93 M; 4684-85	100M;	
Injun Sand		H	1561	1602	Gas 4687-88	103 M; shot with	100# detonite		
1 hr. A.S.	208 M; Shot	2nd 3500# Det.		4679-4690	T.S.S.	109 M; 15 min. A.S.	220M		
T.S.S.	77 M; 15 hr. A.S.	77 M.							

Geology  
Notes

1917-2022  
2022-2023

4680  
1107  
-357

4588  
1107  
-345



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION 3

DRILL DEEPER

Quadrangle PEYTONA

Permit No. BOG-710 D.D.

WELL RECORD

Oil or Gas Well Gas  
(KIND)

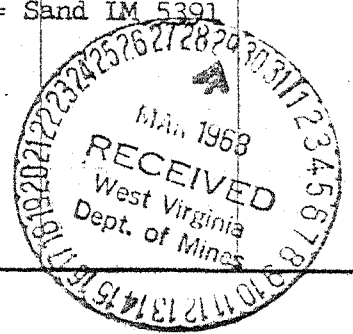
Company OWENS, LIBBEY-OWENS GAS DEPARTMENT  
Address P. O. Box 4168, Charleston, W. Va. 25304  
Farm Bull Creek Coal Land Co. Acres 4,000  
Location (waters) Bull Creek  
Well No. 24 (Serial No. 720) Elev. 1107.  
District Peytona County Boone  
The surface of tract is owned in fee by Orlandi Coal Co.  
5206 Washington Ave. S.E. Address Charleston, W. Va. 25304  
Mineral rights are owned by Bull Creek Coal Land Co.  
44 Lyman Road Address Buffalo, N. Y. 14226  
deeper  
Drilling/commenced 12-18-67  
Drilling completed 2-7-68  
Date Shot From To  
With  
Open Flow /10ths Water in Inch  
/10ths Merc. in Inch  
Volume Newberg Sand 117 M Cu. Ft.  
Rock Pressure lbs. hrs.  
Oil bbls., 1st 24 hrs.  
WELL ACIDIZED  
WELL FRACTURED 2-19-68 Dowell fraced Newberg Sand -- see remarks.

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16			
13			Size of
10			Depth set
6 1/2			
5 3/16			
4-1/2"	5386'2"	5386'2"	Perf. top 5336'
2-3/8"	4706'4"	Pulled	Perf. bottom 5337'
Liners Used			Perf. top 5340'
			Perf. bottom 5343'

CASING CEMENTED 4-1/2" SIZE No. Ft. 2-13-68 Date  
5389' to 4399' with 100 bags  
COAL WAS ENCOUNTERED AT FEET INCHES  
FEET INCHES FEET INCHES  
FEET INCHES FEET INCHES

RESULT AFTER TREATMENT Newberg Sand 810 MCF  
ROCK PRESSURE AFTER TREATMENT 7 days 1,770#  
Fresh Water Feet Salt Water 5222 - 5226 ft. Feet Hole filling

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
							<u>12-5-67</u> Pulled 4706'4" of 2-3/8" tubing. 53 hr. test. <u>12-18-67</u> Started to drill deeper.
Lime	Dark	Hard	4710	4753			
Gritty Lime	Light	Hard	4753	4762			
Austinburg Sand	Light	Hard	4762	4800			
Lime	Dark	Hard	4800	4804	SIM 4804 = Sand IM 4805		
Pink Lime	Pink	Hard	4804	4819			
Lime	Light	Hard	4819	4896			
Gritty Lime	Dark	Hard	4896	4924			
Lime	Dark	Hard	4924	5256	Test 5204 ft.		68 MCF
					Black Water 5222-5226, hole filling		
Gritty Lime	Dark	Hard	5256	5262	SIM 5251 = Sand IM 5251		
Lime	Dark	Hard	5262	5340	Top of water (5340) at 1200 ft.		
Newberg Sand	Light	Hard	5340	5367	No gas showing.		
					SIM 5340 = Sand IM 5338 ft.		
					Gas 5344-5349		185 MCF
Lime	Dark	Hard	5367	5391	Blew 1300 ft. of water out of hole.		
					SIM 5391 = Sand IM 5391		
			Total Depth	5391			
from Logs:							
Newberg Sand			5332	5359			
			Total Depth	5385-1/2			



(over)  
5391  
4710  
681

APR 8 1968

GEOLOG

Formation	Color	Hard or Soft	Top 3	Bottom	Oil, Gas or Water	Depth Found	Remarks
					2-7-68 McCullough ran Gamma-Ray, Density and Caliper logs.		
					2-13-68 Installed 4-1/2" casing to 5389 ft. Well Service cemented in 4-1/2" casing from 5389 to 4399 ft. with 100 bags of cement.		
					2-14-68 McCullough perforated 4-1/2" casing at 5336 to 5337 ft and 5340 to 5343 ft.		
					Total 12 holes. Swabbed hole dry. Test		24.8 MCF
					2-19-68 Dowell fraced the Newberg Sand using 15,000 lbs. 20-40 sand, 500 gal. mud acid and 565 bbls. water.		
					Breakdown Pressure		3000#
					Avg. Treating Pressure		5200#
					Max. Treating Pressure		6100#
					Injection Rate 18 bbl./minute. Well opened 2:30 P.M.		
					2-20-68 1st test 1:00 A.M.		183 MCF
					11:00 A.M. Swabbing		537 MCF
					4:00 P.M. Bailing		569 MCF
					Well shut in.		
					2-21-68 17-1/2 hr. R.P.		1610#
					Blew well six hours. Test		655 MCF
					2-23-68 17-1/2 hr. R.P.		1610#
					Blew well six hours. Test		665 MCF
					Light mist fluid.		
					3-1-68 44 hr. R.P.		1710#
					Blew well six hours. Test		776 MCF
					Light spray fluid.		
					3-8-68 44 hr. R.P.		1680#
					Blew well six hours. Test 1 hr.		1,502 MCF
					6 hrs.		810 MCF
					Light mist fluid.		
					3-15-68 44 hr. R.P.		1650#
					Blew well six hours. Test 1 hr.		1555 MCF
					6 hrs.		810 MCF
					Light mist Fluid. Well shut in.		

Date March 28, 1968

APPROVED OWENS, LIBBEY-OWENS GAS DEPARTMENT, Owens

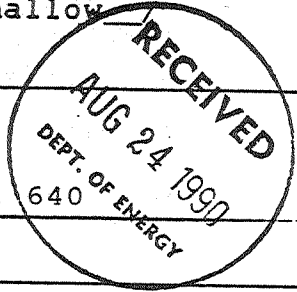
By T. E. Mollenkopf  
(Title)

005-0110 EW  
Issued 9/20/90

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

Expires Page 1 of 1  
9/20/92

- 1) Well Operator: CABOT OIL & GAS CORPORATION <sup>149</sup> 8145 (2) 696
- 2) Operator's Well Number: Bull Creek #24 3) Elevation: 1107'
- 4) Well type: (a) Oil   / or Gas   / X  
(b) If Gas: Production   / X Underground Storage   /  
Deep   / X Shallow   /  
475
- 5) Proposed Target Formation(s): Oriskany
- 6) Proposed Total Depth: 5386 feet
- 7) \* Approximate fresh water strata depths: 155, 215, 394, 640
- 8) \* Approximate salt water depths: 5222
- 9) \* Approximate coal seam depths: 141-145; 242-247; 262-266; 438-442
- 10) Does land contain coal seams tributary to active mine? Yes   / No X
- 11) Proposed Well Work: Recomplete the Oriskany Sand (4680-4689).  
\* Based on Drilling Record
- 12)



CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor						
Fresh Water	10-3/4*	N/A	N/A	522	522	N/A
Coal	8-5/8*	N/A	N/A	1374	1374	N/A
Intermediate	7*	N/A	N/A	4655	4655	N/A
Production	4-1/2*	N/A	N/A	5386	5386	N/A
Tubing	1-1/2	CW42	2.75	-	5350	N/A
Liners						

\* Currently in well.

PACKERS : Kind Arrowdrill Permanent Packer  
 Sizes 4-1/2"  
 Depths set 4900'

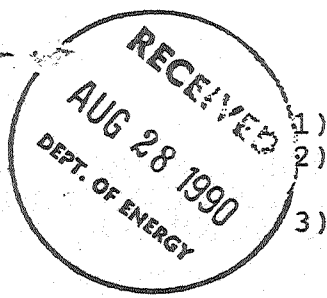
For Division of Oil and Gas Use Only

Fee(s) paid:    Well Work Permit    Reclamation Fund    WPCP     
 Plat    WW-9    WW-2B    Bond Blanket Sure Agent     
 (Type)

1150

019271  
24





Date: August 27, 1990  
Operator's well number  
Bull Creek #24 - Workover  
API Well No: 47 - 005 - 00710-W  
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:
- (a) Name Appalachian Power Co.  
Address Attn. Dan Price, Land Dpt.,  
P. O. Box 2021, Roanoke, VA 24022
  - (b) Name \_\_\_\_\_  
Address \_\_\_\_\_
  - (c) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 5) (a) Coal Operator:
- Name Servco Inc.  
Address P. O. Box 6100  
Huntington, WV 25770
  - (b) Coal Owner(s) with Declaration  
Name Appalachian Power Co.  
Address Attn. Dan Price, Land Dept.,  
P. O. Box 2021, Roanoke, VA 24022
  - Name \_\_\_\_\_  
Address \_\_\_\_\_
  - (c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_
- 6) Inspector Jerry Holcomb  
Address Rt. 2 Box 159 Hwy #34  
Hamlin, WV 25523  
Telephone (304)-824-5963

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

\_\_\_\_\_ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

X Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties, by:

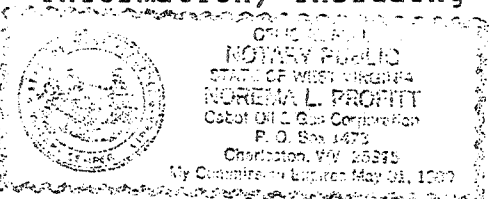
- \_\_\_\_\_ Personal Service (Affidavit attached)
- X Certified Mail (Postmarked postal receipt attached)
- \_\_\_\_\_ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator CABOT OIL & GAS CORPORATION  
By: Dana M. Chusky  
Its: Drilling Superintendent  
Address P. O. Box 1473  
Charleston, WV 25325  
Telephone (304) 347-1600



Subscribed and sworn before me this 27th day of August, 1990

Norma L. Proffitt

Notary Public

My commission expires May 31, 1990