

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. \_\_\_\_\_  
 DRAWING NO. C7470.DWG  
 SCALE 1"=1320'  
 MINIMUM DEGREE OF 1:200  
 PROVEN SOURCE OF ELEVATION EXISTING WELL 7470

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY THE LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.  
 (SIGNED) [Signature]  
 R.P.E. \_\_\_\_\_ L.L.S. 499

PLACE SEAL HERE

WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS  
 #10 McJUNKIN ROAD  
 NITRO, WEST VIRGINIA 25143-2506



DATE MAY 5, 1997  
 OPERATOR'S WELL NO. 7470  
 API WELL NO. 47-083-00127-W  
 STATE COUNTY PERMIT

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS,") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 3264.03 WATER SHED EAST FORK OF GLADY FORK  
 DISTRICT DRY FORK COUNTY RANDOLPH  
 QUADRANGLE GLADY, WV COORDINATES LAT. 38°46'57" LONG. 79°41'33"  
 SURFACE OWNER UNITED STATES OF AMERICA DEPT. OF INTERIOR ACREAGE 4,540.89  
 OIL & GAS ROYALTY OWNER U.S.A. DEPT. INTERIOR LEASE ACREAGE 27,804.07  
 COAL OWNER UNITED STATES OF AMERICA DEPT. OF INTERIOR LEASE NO. 80700

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) STORAGE RECONDITION  
Existing well drilled 1966  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG   
 TARGET FORMATION Oriskany ESTIMATED DEPTH 5190'  
 WELL OPERATOR COLUMBIA GAS TRANSMISSION CORP. DESIGNATED AGENT ROBERT C. WEIDNER  
 ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273

47-083-00127 COUNTY NAME PERMIT

DEEP WELL

Latitude 38° 50'

Longitude 79° 40'

F.S. Standard Concrete Post In Mound Of Stones. Marked 698-1928.

Set stone in stone pile by fence. Double Wild Cherry & Maple Witness.

3.64 S  
1.40 W

U.S.A.

Concrete Post Marked 697. Double Birch Witness.

WHITE RUN

ELY C.A. CRIM, ET AL.

U.S.A.

Set A 4"x10"x20" stone in the mound of stone. Chiselled MT-1-1-71-F.S.

BENCH MARK DESCRIPTION

Nail in Base of Large Cherry Near Ground and Along Atlantic Seaboard Corp. Well Road No. 7435 & 50' East of Intersection of Well Road No. 7433.

DEGREE OF ACCURACY

One Part in Two Hundred

- Fracture Before 6/5/27
- New Location
- Drill Deeper
- Redrill
- Abandonment

I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by Paragraph 5 of the Rules and Regulations of the Oil and Gas Section of the Mining Laws of West Virginia.

The accuracy of this survey is within the limits and as prescribed in paragraph 5 by the Oil and Gas Division of the Department of Mines Regulations. **PROVEN ELEVATION 2957.39'**

Company ATLANTIC SEABOARD CORP.  
 Address CHARLESTON, W. VA.  
 Farm ELY C.A. CRIM, ET AL.  
 Tract \_\_\_\_\_ Acres 541.00 Lease No. AS-621  
 Well (Farm) No. \_\_\_\_\_ Serial No. 7470  
 Elevation (Spirit Level) 3264.03'  
 Quadrangle HORTON-SW  
 County RANDOLPH District DRY FORK  
 Engineer Seybert R. Kereell  
 Engineer's Registration No. 2529  
 File No. 166-89 Drawing No. \_\_\_\_\_  
 Date MARCH 23, 1966 Scale 1" = 1320'

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

**WELL LOCATION MAP**  
FILE NO. RAN-127

+ 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.

9-0 261

DEEP WELL

Oriskany Storage  
TO = No. 1 well



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

Rotary   
Spudder   
Cable Tools   
Storage

Tract No. Horton  
Permit No. RAW.-127

WELL RECORD

Oil or Gas Well Gas Storage  
(KIND)

Company Atlantic Seaboard Corporation  
Address P.O. Box 1273 Charleston, W. Va. 25325  
By C.A. Crim, et al  
(U.S.A. Tr. 32 Surface) Acrea. ---  
Location (waters) White Run  
Well No. X-77-7470 Elev. 3264.03'  
District Dry Fork County Randolph  
The surface of tract is owned in fee by ---  
Address ---  
Mineral rights are owned by Elizabeth A. Crawford Vilseck  
14 South Randolph St Address Elkins, W. Va. 28241  
Drilling commenced 7-16-66  
Drilling completed 7-24-66  
Date Shot --- From --- To ---  
With ---  
Open Flow --- /10ths Water in --- Inch  
--- /10ths Merc. in --- Inch  
Volume 32,510,000 - Oriskany Cu. Ft.  
Rock Pressure 1780 lbs. --- hrs.  
Oil --- bbls., 1st 24 hrs.  
WELL ACIDIZED (DETAILS) ---  
WELL FRACTURED (DETAILS) ---

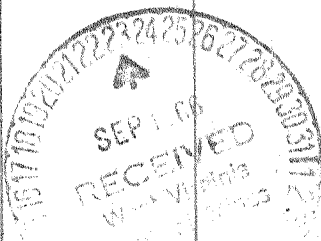
Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16			
13 3/8		41'	Cemented
10			Size of
9 5/8		1491'	Cemented
7"		4980'	Cemented set
3/16			
3			Perf. top
2 3/8		5187'	Perf. bottom
Liners Used			Perf. top
			Perf. bottom

Attach copy of cementing record.  
CASING CEMENTED --- SIZE --- No. Ft. --- Date ---  
Amount of cement used (bags) ---  
Name of Service Co. ---  
COAL WAS ENCOUNTERED AT --- FEET --- INCHES  
--- FEET --- INCHES --- FEET --- INCHES  
--- FEET --- INCHES --- FEET --- INCHES

RESULT AFTER TREATMENT (Initial open Flow or bbls.) ---  
ROCK PRESSURE AFTER TREATMENT --- HOURS ---  
Fresh Water --- Feet --- Salt Water --- Feet ---  
Reducing Sand --- Depth ---

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Surface			0	30	Hole wet at 165'		
Sand & Shale			30	220			
Shale			220	455	Gas 5090' estimated 750 M		
Sand			455	665			
Shale			665	995	Gas 5135' increased		
Sand & Shale			995	1425			
Sand			1425	1635	When drilling completed gas tested 4 1/2"		
Sand & Shale			1635	3490	spring gauge thru 4" 5,690 M		
Shale			3490	4470			
Tully Lime			4470	4495			
Marcellus			4495	4800	Test before acidized 4 1/2" spring gauge		
Onondaga			4800	4840	thru 4" 5,690 M		
Chert			4840	4900	Acidized 8-2-66 with 12,000 28% Hcl and		
Shale			4900	4973	overflushed with 4,000 gallons water.		
Oriskany			4973	5180	Test after acidized 7 1/2" spring gauge		
Helderberg			5180		4" 32,510 M		
Total Depth			5190'				

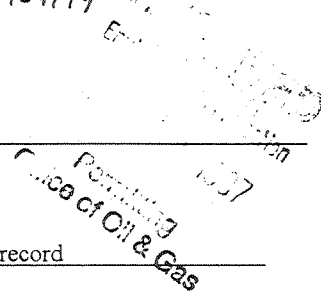
4973  
3264  
1709



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

- 1) Well Operator: COLUMBIA GAS TRANSMISSION CORPORATION 10450 (2) 369
- 2) Operator's Well Number: Glady Stg # 7470 (API 47-083-00127) 3) Elevation: 3,264.03 feet
- 4) Well type: (a) Oil / or Gas X /  
 (b) If Gas: Production / Underground Storage X /  
 Deep X / Shallow /
- 5) Proposed Target Formation (s): Oriskany
- 6) Proposed Total Depth: Cleanout to Original TD 5,190' KB
- 7) Approximate fresh water strata depths: water noted @ 165' on original driller's record
- 8) Approximate salt water strata depths: none recorded
- 9) Approximate coal seam depths: NONE
- 10) Does land contain coal seams tributary to active mine? Yes / No X /
- 11) Proposed Well Work: Columbia proposes to kill the well with a freshwater polymer based mud system. Remove the tubing and reconfigure the wellhead. The well will be cleaned out to original TD. The well will be logged with cased and open hole logs. The well will be acidized across the Oriskany section. The well will then be cleaned up, flow tested and placed back in service.

*Issued 07/07/97  
Expires 07/07/99*



**CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill - up (cu. ft.)
Conductor	13-3/8"	H-40	48#	41'	41'	20 sacks reg. w/ 3% CaCl
Fresh Water	9-5/8"	H-40	32#	1,491'	1,491'	460 cu ft Litepoz 100 cu ft regular
Coal						
Intermediate						
Production	7"	J-55 & N-80	23#	4,980'	4,980'	200 cu ft litepoz 500 gals latex
Tubing	2-3/8"	J-55 (TO BE RETIRED)	4.7#	5,187'	5,187'	
Liners						

PACKERS : Kind None  
 Sizes \_\_\_\_\_  
 Depths set \_\_\_\_\_

*206679  
19*

For Division of Oil and Gas Use Only

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

(Type)

23893

1) Date: 5/14/97  
2) Operator's well number  
GLADY WELL 7470  
3) API Well No: 47 - 083 - 00127 *w*  
State - County - Permit

*Office of Oil & Gas*

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner (s) to be served:  
a) Name United States Forest Service  
Address Monongahela National Forest  
P. O. Box 1548, Elkins, WV 26241  
b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
c) Name \_\_\_\_\_  
Address \_\_\_\_\_

5) (a) Coal Operator:  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
(b) Coal Owner (s) with Declaration  
Name United States Dept. Of Interior, Bureau Of Land Mgt.  
Address P.O. Box 631  
Milwaukee, WI 53201-0631 Attn: Tim Abing  
Name \_\_\_\_\_  
Address \_\_\_\_\_

6) Inspector Craig Duckworth  
Address Box 107, Davisson Route  
Gassaway, WV 26624 - 0107  
Telephone (304) 626 - 0789

(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

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 22, Article 6, Section 8 (d) of the Code of West Virginia (see page 2)

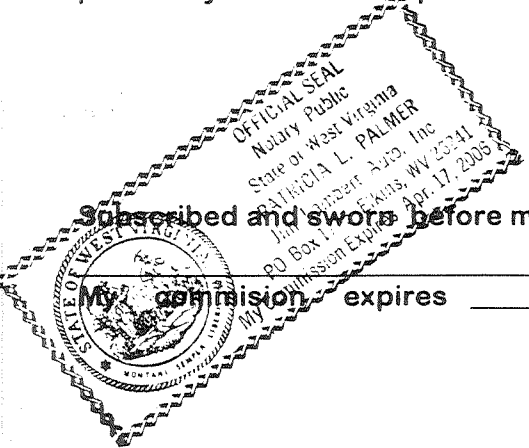
I certify that as required under Chapter 22 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through      on the above named parties, by:

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

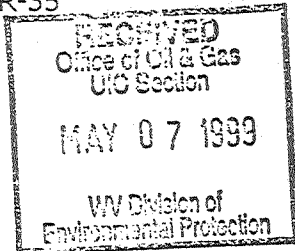
I have read and understand Chapter 22-6 and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.  
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, 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 COLUMBIA GAS TRANSMISSION CORP.  
By: William H. Foraker  
Its: Senior Storage Engineer / Well Services  
Address Route 3, Box 216  
Elkins, WV 26241  
Telephone \_\_\_\_\_

Subscribed and sworn before me this 20 day of May, 19 97  
Patricia L. Palmer Notary Public  
My commission expires April 17, 2006



WR-35



07-Jul-97  
API # 47- 083-00127-W

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Reviewed [Signature]

Well Operator's Report of Well Work

Farm name: U. S. FOREST SERVICE Operator Well No.: GLADY 7470

LOCATION: Elevation: 3,264.03' Quadrangle: GLADY

District: DRY FORK County: RANDOLPH  
Latitude: 3,250 Feet South of 38 Deg. 47 Min. 30 Sec.  
Longitude: 7,450 Feet West of 79 Deg. 40 Min. 0 Sec.

Compay: COLUMBIA GAS TRANSMISSION  
P.O. BOX 1273  
CHARLESTON, WV 25325-1273

Agent: RICHARD L. COTY  
Inspector: PHILLIP TRACY  
Permit Issued: 07/07/97  
Well work Commenced: 7/09/97  
Well work Completed: 09/12/97  
Verbal Plugging  
Permission granted on: \_\_\_\_\_  
Rotary \_\_\_\_\_ Cable \_\_\_\_\_ Rig  
Total Depth (feet) 5,190'  
Fresh water depths (ft) See Original Records  
Salt water depths (ft) See Previous  
Is coal being mined in area (Y/N) ? N  
Coal Depths (ft) : See Previous

Casing & Up Tubing Size	Used in Drilling	Left in Well	Cement Fill Cu. Ft.
PULLED & RETIRED 5,187' of 2-3/8", J-55, 4.7 #/FT EUE TUBING			
STIMULATION; SEE BACK FOR DETAILS			

OPEN FLOW DATA

Producing formation ORISKANY Pay zone depth (ft) 4,973' - 5,180'  
Gas : Initial open flow 16099 MCF/d Oil : Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 19299 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests 423 Days Hours  
Static rock Pressure 1997 psig (surface pressure) after 4 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 : COLUMBIA GAS TRANSMISSION CORP.

By : William H. Frisken  
Date : May 4, 1999

MAY 17 1999

RAN 0127 W

WR-35

07-Jul-97

API # 47- 083-00127-W

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Well Operator's Report of Well Work

**STIMULATION**

- Acidized on 09-10-97
- Halliburton Foamed Acid Job.
- Pre-flush with 1,008 gals equivalent 15% Halliburton 75 Quality FE Foamed Acid followed by 8,694 gals equivalent 75 Quality Foam.
- Treated with 9,912 gals equivalent 20% Halliburton 75 Quality FE Foamed Acid followed by 9,912 gals equivalent 15% Halliburton 75 Quality FE Foamed Acid. Flushed with 13,986 gals equivalent 75 quality foam and 840 gals H<sub>2</sub>O.
- Avg. Rate Approx. 20 BPM @ 2200 PSIG
- Total acid 3,465 gallons 28% Halliburton FE acid (uncut).
- Total nitrogen 784,000 scf.
- Additives: 34 gals FE-1A; 12 gals-HAI-81; 4 gals-SCA-130; 3 gals-FE5A; 12 gals-HC2; 18 lbs BA-2.