

*Jamie*  
*1/8/97*

10400'

LATITUDE 38°45'00"

3" X 3" X 36" SPRUCE  
POST IN A MOUND  
OF STONES SCRIBED  
WLCO 23-52FS

UNITED STATES  
OF AMERICA  
DEPARTMENT OF INTERIOR

LONGITUDE 79°42'30"

13025'

WELL # 7449

WELL # 7450

WELL # 7451

+ 2475  
(195W)

S 81°17' E  
5490'

N 37°50' E  
8001'

*Well 7451*

*Simplex of Candy Guard.*

2400'  
7451

\*91

\*86

\*31

\*39

\*27

\*10

*Polehammer Co.  
Ponaha Co.*

C-95 IRON PIPE  
IN STONE PILE  
BY LARGE HEMLOCK

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS (7 1/2")

FILE NO. \_\_\_\_\_  
DRAWING NO. 7451  
SCALE 1" = 1000'  
MINIMUM DEGREE OF  
ACCURACY 1/200  
PROVEN SOURCE OF  
ELEVATION \_\_\_\_\_

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 LAW AND THE REGU-  
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-  
MENT OF ENERGY.  
(SIGNED) *Edwin Nicholson*

R.P.E. \_\_\_\_\_ L.L.S. 798

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
PLACEMENT SEAL HERE

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



DATE NOVEMBER 1, 1996  
OPERATOR'S WELL NO. 7451  
API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_\_\_ GAS X LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
(IF "GAS," ) PRODUCTION \_\_\_\_\_ STORAGE X DEEP \_\_\_\_\_ SHALLOW \_\_\_\_\_  
LOCATION: ELEVATION 3394' WATER SHED SNORTING LICK RUN  
DISTRICT GREENBANK COUNTY POCAHANTAS  
QUADRANGLE SINKS OF GANDY COORDINATES LAT: 38°02'41" LONG: 79°44'41"  
SURFACE OWNER UNITED STATES OF AMERICA ACREAGE 1882±  
OIL & GAS ROYALTY OWNER \_\_\_\_\_ LEASE ACREAGE 48212.3±  
COAL OWNER \_\_\_\_\_ LEASE NO. 90700

47 075 00007  
STATE COUNTY PERMIT *CANC.*

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  
Re-work Acidize, stop storage well.  
PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_  
TARGET FORMATION Dickinson Chert ESTIMATED DEPTH 6250' *drilled in 1957*  
WELL OPERATOR COLUMBIA GAS TRANS. CORP. DESIGNATED AGENT RICHARD L. COTY  
ADDRESS P.O. BOX 1273, CHALESTON, WY ADDRESS P.O. BOX 1273, CHALESTON, WY  
25325-1273 25325-1273

MAY 24 1999

POCAHANTAS  
COUNTY NAME  
00007  
PERMIT  
CANC.

Deep Well Sinks of Gandy 1

UNITED STATES OF AMERICA  
DEPARTMENT OF INTERIOR

WELL # 7449

WELL # 7450

WELL # 7451

2.485  
1.940

3" X 3" X 36" SPRUCE POST IN A MOUND OF STONES SCRIBED WLCO 29-52FS

N 37°50' E  
800'

S 81°17' E  
5490'

LATITUDE 38°45'00"

LONGITUDE 79°42'30"

C-95 IRON PIPE IN STONE PILE BY LARGE HEMLOCK

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS (7 1/2")

FILE NO. \_\_\_\_\_  
DRAWING NO. 7451  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEVATION \_\_\_\_\_

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 LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

(SIGNED) Edwin Nicholson  
R.P.E. \_\_\_\_\_ L.L.S. 798

PLACE SEAL HERE

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



DATE NOVEMBER 1, 1996  
OPERATOR'S WELL NO. 7451  
API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_\_\_ GAS \_\_\_\_\_ LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
(IF "GAS," ) PRODUCTION \_\_\_\_\_ STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW \_\_\_\_\_

47 075 00007-7  
STATE COUNTY PERMIT

LOCATION: ELEVATION 3394' WATER SHED SNORTING LICK RUN

DISTRICT GREENBANK COUNTY POCAHANTAS  
QUADRANGLE SINKS OF GANDY COORDINATES LAT: 38°02'41" LONG: 79°44'41"

SURFACE OWNER UNITED STATES OF AMERICA ACREAGE 1882

OIL & GAS ROYALTY OWNER \_\_\_\_\_ LEASE ACREAGE 48212.3

COAL OWNER \_\_\_\_\_ LEASE NO. 90700

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

PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_

TARGET FORMATION Chickamaug Chert ESTIMATED DEPTH 6250'

WELL OPERATOR COLUMBIA GAS TRANS. CORP. DESIGNATED AGENT RICHARD L. COTY

ADDRESS P.O. BOX 1273, CHALESTON, WV ADDRESS P.O. BOX 1273, CHALESTON, WV

25325-1273

25325-1273

POCAHANTAS COUNTY NAME

PERMIT

JAN 21 1997

*Janice 1/8/97*

*Wildcat 7.5*

*Sinks of Gandy Quad.*

*Pocahontas Co. Hazardous Co.*

*7451*

*2400'*

*27*

*39*

*10*

*91*

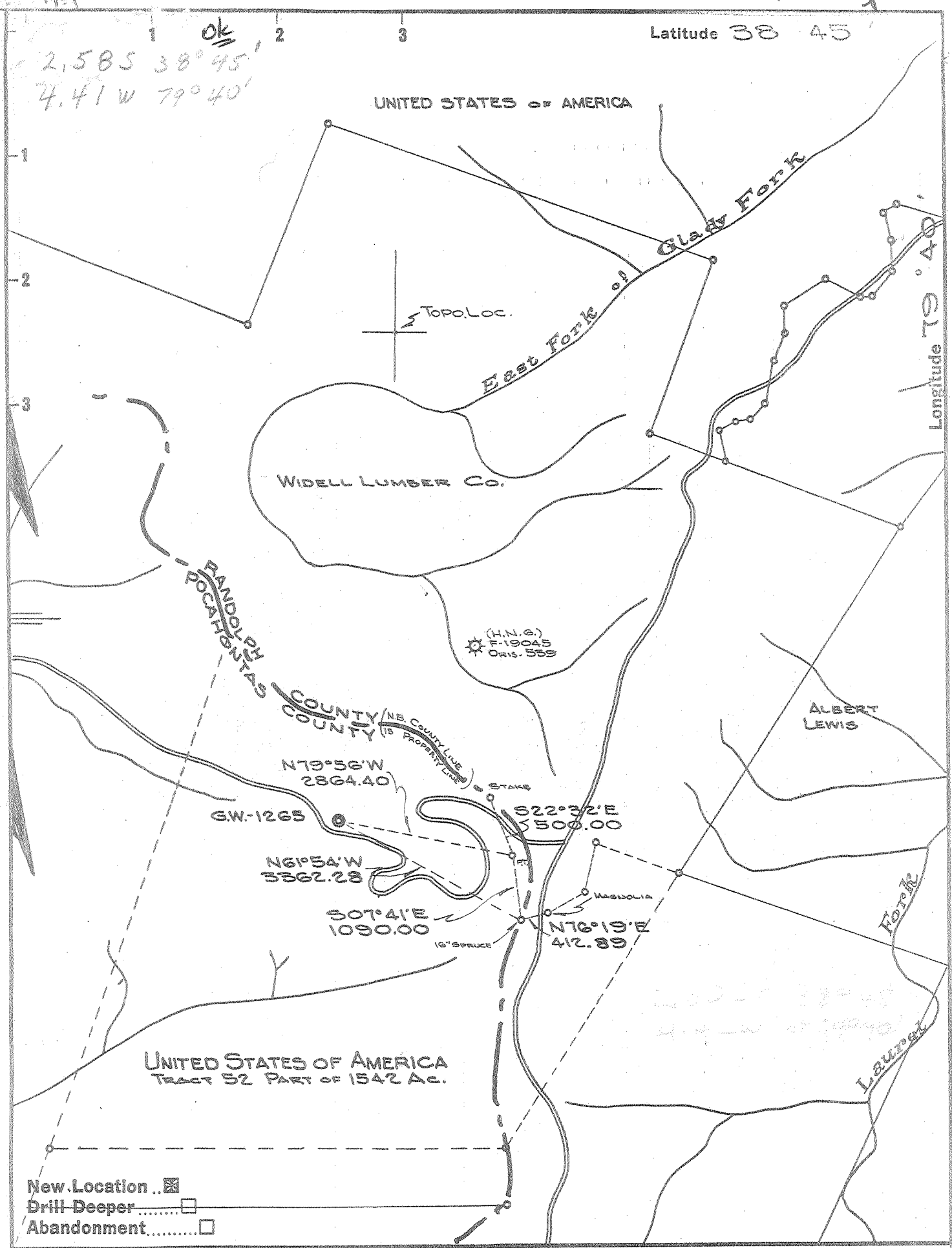
*80*

*37*

NORTH

13025'

10400'



Company COLUMBIAN CARBON Co.  
 Address Box 873 CHARLESTON, W.VA.  
 Farm UNITED STATES OF AMERICA  
 Tract 52 Acres 1542 Lease No. C-4223 BLM-A-022923  
 Well (Farm) No. H-1 Serial No. G.W. 1265  
 Elevation (Spirit Level) 3394.29  
 Quadrangle SPRUCE KNOB-3-NW S. 245 W. 445  
 County POCAHONTAS District GREEN BANK  
 Engineer R. B. [Signature]  
 Engineer's Registration No. 2074  
 File No. \_\_\_\_\_ Drawing No. W-5-57  
 Date 3-15-57 Scale 1"-2000'

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

**WELL LOCATION MAP**  
 FILE NO. POCA-7

+ 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 (261)  
 7-1 322 Deep Well



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

Quadrangle Spruce Knob 3 N. W.

**WELL RECORD**

Oil or Gas Well Gas  
(KIND)

Permit No. POCA-7

Company Columbian Carbon Company, Operator  
Address Box 873, Charleston 23, W. Va.  
Farm United States of America Acres 1542

Location (waters) East Fork of Glady Fork  
Well No. H-1 GW-1265 Elev. 3394.29' G

District Green Bank County Pocahontas  
The surface of tract is owned in fee by Director, Bureau of Land Management  
Interior Building Address Washington 25, D.C.

Mineral rights are owned by Same  
Address \_\_\_\_\_

Drilling commenced 8-3-57  
Drilling completed 10-25-57

Date Shot not shot From \_\_\_\_\_ To \_\_\_\_\_

With \_\_\_\_\_  
Open Flow /10ths Water in \_\_\_\_\_ Inch  
/10ths Merc. in \_\_\_\_\_ Inch

Volume \_\_\_\_\_ Cu. Ft.  
Rock Pressure \_\_\_\_\_ lbs. \_\_\_\_\_ hrs.

Oil \_\_\_\_\_ bbls., 1st 24 hrs.

WELL ACIDIZED not acidized

WELL FRACTURED See reverse side.

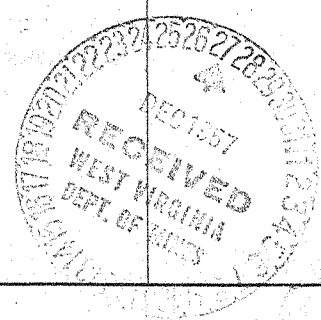
Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
18 3/8" 48#	47'4"	47'4"	Baker Full Bore Pkr.
10 3/4" 40.5#	877'9"	877'9"	Size of 3 1/2"
8 7/8" 23#	6286'6"	6286'6"	Depth set 5407' dlm.
5 3/16"			
3 1/2" 9.3#	5474'11"	5474'11"	Perf. top
2"			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED \_\_\_\_\_ SIZE \_\_\_\_\_ No. Ft. \_\_\_\_\_ Date \_\_\_\_\_  
See reverse side.

COAL WAS ENCOUNTERED AT none FEET \_\_\_\_\_ INCHES \_\_\_\_\_  
FEET \_\_\_\_\_ INCHES FEET \_\_\_\_\_ INCHES  
FEET \_\_\_\_\_ INCHES FEET \_\_\_\_\_ INCHES

RESULT AFTER TREATMENT 25,480,000 cubic feet  
ROCK PRESSURE AFTER TREATMENT 1985# in 5 days  
Fresh Water 71' Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet \_\_\_\_\_

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Shale			0	40			
Lime			40	50			
Slate			50	64			
Lime			64	135	Fresh water	71'	
Gritty Lime			135	425			
Lime			425	714			
Sand			714	861			
Lime			861	928	869'dlm - 870'slm		
Slate & Lime			928	962			
Sand			962	975			
Lime			975	1240			
Lime & Shale			1240	1395			
Lime			1395	1635			
Shale & Lime			1635	2156			
Shale			2156	2300			
Lime			2300	2420			
Lime & Shale			2420	2605			
Shale			2605	2760	Gas	2730-60'	Show
Lime & Shale			2760	3170			
Shale			3170	3760			
Lime and Shale			3760	3878			
Shale			3878	3920			
Lime			3920	4080			
Lime & Shale			4080	4400			
Shale			4400	4750			
Lime & Shale			4750	4835			
Shale			4835	5070			
Dark Shale			5070	5310			
Shale			5310	5510			



(over)

Formation	Color	Hard or Soft	Top $\frac{1}{8}$	Bottom	Oil, Gas or Water	Depth Found	Remarks
The following is from sample determination:							
Onondaga			5510	5550			
Chert			5550	5625			
Shale & Chert			5625	5712			
Oriskany			5712	5915			
Sand and Lime			5915	6250			
Total depth				6250'			Rotary Measurement
				6254'			Schlumberger Measurement
Cable tools	0	1023					
Rotary tools	1023						6250 Rotary Measurement 6254' Schlumberger Measurement
<u>GASING RECORD</u>							
9-10-57	- Ran 877'9" of 10 3/4" 40.5 Casing at 870' slm with shoe. Perforated pipe with 8 shots per foot. Cemented with 250 sacks. Pumped plug to 828'. Circulation and returns.			858-862			
10-26-57	- Ran 6286'6" of 7" 23# casing with shoe at 6250' Measurement. Cemented with 247 sacks of cement.			Rotary Measurement - 6254' Schlumberger			Ran 5 centralizers and perforated.
<u>FRACTURING RECORD</u>							
Perforated 7"	from 6176-6210 - 2 shots per foot. 6058-6066 - 2 shots per foot 5770-5836 - 4 shots per foot 5720-5746 - 4 shots per foot 5858-5870 - 4 shots per foot			} Wendel Moore says this well fractured in Oriskany only.			
11-26-57	- Set packer at 5407'. Pumped in 1500 gallons mud acid. Displaced mud acid in 5 stages. 1st-1000#, 2nd-1100#, 3rd-1200#, 4th-1600#, 5th-1400#. Maximum pressure 2900#. Injection rate 22 barrels per minute. Used 8000 gallons gelled kerosene and 8200# sand. Started perforation balls when 3000 gallons in. Used 200 perforation balls. Pumping time 12 minutes. Injection rate 16 barrels per minute. Flushed with 90 barrels kerosene. Maximum pressure 2900# - final pressure 2800#.						
	Final open flow 25,480,000 cubic feet. 5 day pressure 1985#.						
			5510	5712	5915		
			3394	3394	3394		
			2116	2318	2521		
						$\frac{2190}{378} = 5780$	1935

Date December 20, 1957

APPROVED Columbian Carbon Company Owner

By O. W. Van Patten, Vice President  
(Title)

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

075-0007-F

1) Well Operator: COLUMBIA GAS TRANSMISSION CORPORATION <sup>175</sup> <sup>40450 (2) 608</sup>

2) Operator's Well Number: Glady Stg # 7451 (API 47-075-00007) 3) Elevation: 3,394.29 feet

4) Well type : (a) Oil    / or Gas X /  
(b) If Gas : Production    / Underground Storage X /  
Deep X / Shallow    /

*Issued 01/13/97  
Expires 01/13/99*

5) Proposed Target Formation (s) : Chert & Oriskany <sup>475</sup>

6) Proposed Total Depth : 6250 feet

7) Approximate fresh water strata depths : 71'

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 string and fish for old tubing. Reconfigure the wellhead. The well will be cleaned out to TD and logged with cased hole logs. The well will be re-perforated and acidized across the Oriskany and Chert sections as determined by the well logs. The well will then be cleaned up, flow tested and placed back in service.

**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	13-3/8"	H-40	48#	47'4"	47'4"	no record
Fresh Water	10-3/4"	no record	40.5#	877'9"	877'9"	250 sacks
Coal						
Intermediate						
Production	7"	J-55 & N-80' (TO BE RETIRED)	23#	6,286'6"	6,286'6"	orig. 247 sks - 100 sks poz & 100 gal cealment to surf (1965)
Tubing	2-3/8"	J-55	4.6#	6004.98'	6004.98'	
Liners				Approx. 386' of tubing to be fished out		

**RECEIVED**  
W. Virginia  
Environmental Protection  
DEC 27 1996  
Permitting  
Office of Oil & Gas

**PACKERS** : Kind     
Sizes     
Depths set    *from well record 5414 by 32?*

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)*

23049

*06/17/60*

RECEIVED  
WV Division of  
Environmental Protection  
DEC 27 1996

- 1) Date: 10/24/96
- 2) Operator's well number  
GLADY WELL 7451
- 3) API Well No: 47 - 075 - 00007 D D  
State - County - Permit

Permitting  
Office of Oil and 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 \_\_\_\_\_
- 6) Inspector Phillip Tracy  
Address Route 2, Box 37-A  
Montrose, WV 26283  
Telephone (304) - 636-8798

- 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 \_\_\_\_\_
  - (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)

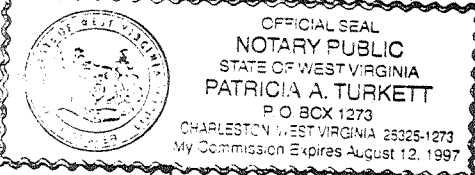
I certify that as required under Chapter 22 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties, by:

- \_\_\_\_\_ 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: W.H. Foraker  
Its: Senior Storage Engineer / Well Services  
Address Route 3, Box 216  
Elkins, WV 26241  
Telephone 304/636-6129

Subscribed and sworn before me this 4th day of November, 19 96

Patricia A. Turkett Notary Public  
My commission expires August 12, 1997

*Copy of lease in Hamilton office*