



Deep well

19-Sep-94 API # 47- 77-00017 F

Environmental Protection

State of West Virginia

JU/ Division of Environmental Protection Section of Oil and Gas

Permitting Office of Oll & Gastity, JOSEPH T.

Well Operator's Report of Well Work

Farm name:

Operator Well No.: 7391

LOCATION:

Elevation: 2,011.15 Quadrangle: TERRA ALTA

District: PORTLAND County: PRESTON
Latitude: 1725 Feet South of 38 Deg. 25Min. 0 Sec.
Longitude 10850 Feet West of 79 Deg. 32 Min. 30 Sec.

Company: COLUMBIA GAS TRANSMISSION P.O. BOX 1273

CHARLESTON, WV 25325-1273

Agent: RICHARD L. COTY

Inspector: PHILLIP TRACY

Permit Issued: 09/19/94

Well work Commenced: Well work Completed: 11-28-94 11-30-94

Verbal Plugging

Permission granted on:

Rotary — Cable — Rig coil tubing
Total Depth (feet) ______528|

Total Depth (feet) 528|
Fresh water depths (ft) 266 268'

Salt water depths (ft) UnKnown

Is coal being mined in area (Y/N)? N Coal Depths (ft): NONE

& Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size	K KS LY SORMITTO	?	
Sp1	ENODALKO	 	
	50°	 	

OPEN FLOW DATA

Producing formation Chert & Oriskany Pay zone depth (ft) Gas: Initial open flow 53,000 MCF/d Oil: Initial open flow	4955 top
Gas: Initial open flow 53,000 MCF/d Oil: Initial open flow	Bbl/d
Final open flow 30,000 MCF/d Final open flow	Bbl/d
Time of open flow between initial and final tests	Hours
Static rock Pressure /872 psig (surface pressure) after 24	Hours
Second producing formation Pay zone depth (ft)	
Gas: Initial open flow MCF/d Oil: Initial open flow	Bb1/d
Gas: Initial open flow MCF/d Oil: Initial open flow Final open flow MCF/d Final open flow	Bbl/d Bbl/d
Second producing formation Pay zone depth (ft) Gas: Initial open flow MCF/d Oil: Initial open flow Final open flow MCF/d Final open flow Time of open flow between initial and final tests Static rock Pressure psig (surface pressure) after	

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. Kr JUL - 0 1995 Date:



077-0017-F

AUG 2 2 1994

Page 2

Permitting WELL 7391
Office of Oil & Gas GENERAL PROCEDURES

- 1) Run in hole with coiled tubing and set packer at bottom of $5 \frac{1}{2}$ casing.
- 2) Load backside of coiled tubing with fluid and monitor pressure.
- 3) Pump acid treatment with diverter down coiled tubing.
- 4) Complete job. Allow pressure to fall below normal maximum operating pressure of well. Release packer and trip out of hole.
- 5) Trip in hole with jet nozzle on coiled tubing to kick off well.
- 6) Flow well back to flowback tanks.



STATE OF WEST VIRGINIA DEPARTMENT OF MINES

OIL AND GAS DIVISION

Quadrangle Kingwood

DRILL DEEPER

WELL RECORD Permit No. PRES. 17-D Oil or Gas Well. Atlantic Seaboard Corp. Left in Well Casing and Tubing Used in Drilling **Packers** Address P.O. Box 1273; Charleston 25, W. Va. Farm Bernadette Cole, et al Little Bucklick Run Size Location (waters)____ Elev. 2011.15 7391 Kind of Packer___ District Portland County_ Preston Size of... The surface of tract is owned in fee by_ ___Address Mineral rights are owned by Joseph P. Cassidy, et al Depth set. 3328 Glenmawr Ave. Address Pittsburgh, Penna. 5 3/16_ 49551 Drilling commenced November 12, 1959 Perf. top... November 12, 1959 Perf. bottom_ Drilling completed_____ Perf. top_ Date Shot No From Liners Used. Perf. bottom. With____ · Inch Open Flow /10ths Water in__ To Surface CASING CEMENTED Yes SIZE 52" __Inch _/10ths Merc. in_ _Cu. Ft. Volume___ November 14, 1959 ___hrs. _lbs. Rock Pressure COAL WAS ENCOUNTERED AT ___ _FEET__ _INCHES _bbls., 1st 24 hrs. Oil___ FEET____ INCHES _INCHES___ FEET___ WELL ACIDIZED. __INCHES___ FEET_ _ FEET____ WELL FRACTURED_ Storage Well RESULT AFTER TREATMENT____ ROCK PRESSURE AFTER TREATMENT _Feet Salt Water_ Fresh Water... Oil, Gas or Water Hard or Soft Depth Remarks Top **Bottom** Formation Color Drill Deeper Record From 5231' Helderberg Total Depth Well Surveys Run Gamma Ray



STATE OF WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS DIVISION

KINGWOOD Quadrangle ..

Company Hope Natural Gas Company

Address Clarksburg, W. Va. Farm Margaret C. Kraus

The surface of tract is owned in fee by_

Drilling commenced 12-27-56 Drilling completed 1-31-57

> /10ths Water in_ _/10ths Merc. in_

> > No

Hard or Soft

2240#

Permit No. PRES-17-D

Location (waters). Well No. 9462

Date Shot___ With_ Open Flow

Rock Pressure_

Fresh Water

Formation

Oriskany

Total Depth

Oil___

District Portland

Mineral rights are owned by_

Volume 12,228 M

None

WELL FRACTURED_

RESULT AFTER TREATMENT

ROCK PRESSURE AFTER TREATMENT.

Started Drilling Deeper @

Color

WELL ACIDIZED

WELL

Elev. 2012!

_bbls., 1st 24 hrs.

Top

5101

5101

County Preston

_Address.

ECORD		Oil or	Gas W	ell Gäs	
Casing and Tubing	Used in Drilling	Left in Well		Packers	
Size					
16			Kind	l of Packer	
13	27 494	27 494	 	_	
8¼	1611	1611	Size	of	
65/8	4945	4945	Dont	h set	
5 3/16				ii scu	
3			Perf	. top	
2			1	. bottom	
Liners Used			Perf	. top	
	·		Perf	. bottom	
COAL WAS EN BO COMMENT FEET	NCOUNTERED Coal LINCI	HES	FEET FEET FEET	niflo whenINCHEINCHE	
Salt Water		F	,		
Bottom	Oil, Gas or Water	Dept	h	Remarks	
5222	Gas	5218		12,228 M	
52221 Di	d not reac	h bottom	of Or	iskany	
	5121				

(over)

WEST VIRGINIA DEPARTMENT OF MINES OIL & GAS DIVISION WELLBECORD

Permit No. Pres. 17		ŧ	Gas Well
Kingwood Quad.		•	CASING & TUBING
Company	Норе	Natural Gas Company	
Address	445	West Main St., Clarksburg,	W. Va. 13 27 27
Farm		aret C. Kraus Acres 219	10 488 488
Location			8½ 1603 1603
Well No.	9462	Elev. 2012	6 5/8 4945 4945
District	Port	land Preston County	•
Surface	,	·	Casing comented:
Mineral			8" set in 37 bags
Commenced	Oct.	9,1950	cement
Completed	Jan.	16,1951	7" set in 60 bags
Not shot			cement 21 bags gel.
Volume	12,5	00,000 C.F.	- ·
Rock Pressure	2265	# - hrs.	No coal recorded
Fresh Water	107 9	; 500° 1/2 bailer per hr.	
	1200	Small amount; 1268 Some	water
Surface and slate	0	75	
Sand	75	138	
Slate shell	138	488	
Sand	488	512	
Lime	512	537	
Slate Shell	537	800	
Gray Sand	800	845	
Slate Shell	845	1155	
Benson	1155	1205	
Slate Shell	1205	3600	
Brown Shale	3600	3920	
Slate Shell	3980		
Brown Shale	3945	4100	
Tully Lime	4100	4135	
Brown Shale	4135	4700	
Black Shale	4700	4832	
Grey Lime	4842	4862	
Black Shale	4862	4900	
Dark Lime	4900	4914	
Corniferous Lime-	-4914	4942	
Chert -463	4942	5080	11914
Black Shale-Red motion		5087	4914
Ori skany	5087	5101	2012
T.D.	•	5101	Will a superior
Small gas 4990-5027		All the state of t	- 90
Gas 5090 to 5101		1415	Market Contract Contr
		Constitution and the second	

5087 2012 -3075

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Portland District, Preston County, W. Va.
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By Hope Natural Gas Co., Clarksburg, W. Va.
Located 0.4 mi. S. of 39° 25' and 4.42 mi. W. of 79° 30' - EC - Kingwood Quadrangle. Elevation, 2012' L.

Permit Pres-17.

Drilling commenced October 1950; completed January 20, 1951. Gas well; open flow, 12,500,000 cu. ft.

Rock pressure, 2,200#.

Ran 7" casing at 49421.

Gas at 5090-5101; big pay at 5101.

Section based on samples from 4000 to 5101; examined by Russell R. Flowers.

Record to RGT from Flowers Feb. 27, 1952.

	Top.	Bottom.	Thickness	_
				DEVONI AN SHALES, 316+ FEET
	4000	- 4100	100	Shale, dark-gray to grayish-black, some grayish-black to black earbonaceous
	41.00	- 4136	36	Shale, dark-gray, some dark-gray to grayish-black in the lower part; a very small amount is calcareous and dolomitic
	4136	- 4316	180	Shale, grayish-black to black, carbonaceous, calcareous TULLY LIMESTONE, 19 FEET
	4316	- 433 5	19	Limestone, olive-gray to dark-gray, shaly HAMILTON AND MARCELLUS SHALES, 583 FEET
		- 4425	90	Shale, dark-gray to grayish-black, small amount is calcareous, some grayish-black to black from 4400 to bottom
	4425	- 4450	25	Shale, dark-gray, some grayish-black to black
m	4450	- 4554	104	Shale, mostly grayish-black
	4554	- 4667	113	Shale, dark-gray to grayish-black, slightly pyritic (finely
****				disseminated throughout shale)
	4667	- 4692	25-	Shale, dark-gray to grayish-black; small amount of olive-gray
	11600	- 4738	46	to medium dark gray, highly dolomitic shale Shale, grayish-black
	•	- 4829	91	
	4 7)U	- 4027	71	Shale, grayish-black, some grayish-black to black (carbonaceous) a few pieces of shale are slickensided; a very small amount
				of vein calcite
	4829	- 4846	17	Shale, grayish-black to black, carbonaceous; trace of vein
	hohZ	- 4872	~~~	calcite
	4040	- 40/2	26	Shale, dark-gray, calcareous and dolomitic to a shaly limestone; a very large amount of grayish-black to black, carbonaceous shale; trace of calcite
	4872	- 4918	46	Shale, grayish-black to black (carbonaceous) and black (highly
		.,		calcareous), calcareous with vein calcite, pyritic in part HUNTERSVILLE CHERT, 169 FEET
	4918	- 4941	23	Shale, grayish-black to black, carbonaceous, highly calcareous
				to a dark-gray limestone (very shaly), pyritic in part; a large amount of brownish-gray to dusky yellowish brown
	4941	- 4945	4	metabentonite at the top Shale, dark-gray, highly calcareous, silicified to chert, light-
	4945	- 4950	5	to dark-gray, argillaceous in part, somewhat dolomitic Chert, medium dark to dark-gray, calcareous, highly argillaceous
				to a light- to dark-gray, ergillaceous in part, delemitic chert
	4950	- 4959	9	Chert, light-gray (translucent, spicular), to medium-gray ("dead to dark-gray (argillaceous), somewhat calcareous, dolomitic
	4959	- 4974	15	Chert, light- to medium-gray, mostly translucent (spicular to
			· · · · · · · · · · · · · · · · · · ·	"dead"), some dark-gray argillaceous layers and spots, some-
				The state of the s

(OVER)

what delomitie

Top.	Bottom.	Thickness.	
4974	- 4981	7 Chert,	mottled white (milky) to light-gray (translucent)
	ter our record records National Co.	en	dark-gray (argillaceous) to grayish-black (silicified
			ale), highly spicular, delemitic in part, highly fractured
			gillaceous and some quartz fillings
4981	- 4995		mottled light to medium-gray and dark-gray (highly
			gillaceous), spicular, slightly delomitic
4995	- 5011		medium- to dark-gray, some grayish-black, highly
			gillaceous, silty to silicified siltstone, highly
Z 0.1.1		do.	lomitie in part, somewhat glauconitie in the upper part
-2011	- 50 5 3	42 Chert	, medium dark gray to grayish-black, (highly argillaceous),
COCO	ZAON.	501	me medium-gray at the top, silty in part, slightly dolomitic
5053	- 5087	34 Shale	dark-gray to grayish-black, silicified in part; some
			ayish-black to black pyritic shale at the bottom
£607	FAOF		ORISKANY SANDSTONE, 144 FEET
7007	- 5095	8, Sands	tone, light-gray, fine-grained, fine- to medium-grained in
elimine species in the constant of the constant	******************************	pai (1:	t; subrounded to rounded, highly calcareous, a little dark attraction material
5095	- 5099	4 No sar	
5099	- 5101	2 Sands	tone, light to medium-gray, fine to coarse-grained, unded, very highly pyritic

Pertland District, Preston County, W. Va.

By Hope Natural Gas Co., Clarksburg, W. Va.

Located 0,4 mi. S. of 39° 25' and 4.42 mi. W. of 79° 30' - EC - Kingwood Quadrangle.

Elevation, 2012' L.

Permit Pres-17.

Drilling commenced Oct. 1950; completed Jan. 20, 1951. Gas well; open flow, 12,500,000 cu. ft. Reck pressure, 2200 lbs.

Ran 7" casing at 4942'.

Gas at 5090-5101; big pay at 5101'.

Section based on samples from 4000 to 5101'; examined by Russell R. Flewers..

Record to RCT from McCord Feb. 21, 1958.

Tep. Bettem.	Thickne	DEVONIAN SHALES, 316+ FEET
4000 4100	100	Shale, dark-gray to grayish-black, some grayish-black to black (carbonaceous)
4100 - 4136	36	Shale, dark-gray, some dark-gray to grayish-black in the lower part; a very small amount is calcareous and
		dolomitic
4136 - 4316	180	Shale, grayish-black to black, carbonaceous, calcareous TULLY LIMESTONE, 19 FEET
4316 - 4335	19	Limestone, olive-gray to dark-gray, shaly HAMILTON AND MARCELLUS SHALES, 583 FEET
4335 - 4425	90	Shale, dark-gray to grayish-black, small amount is calca- reous, some grayish-black to black from 4400' to bettem
4425 - 4450	25	Shale, dark-gray, some grayish-black to black
4450 - 4554 4554 - 4667	104	Shale, mostly grayish-black
	113	Shale, dark-gray to grayish-black, slightly pyritic (finely disseminated throughout shale)
4667 - 4692	25	Shale, dark-gray to grayish-black; small amount of olive- gray to medium dark gray, highly delemitic shale
4692 - 473 6	46	Shale, grayish-black
4738 - 4829	91	Shale, grayish-black, some grayish-black to black (carbonaceous), a few pieces of shale are slickensided; a very small amount og vein calcite
4829 - 4846	17	Shale, grayish-black to black, carbonaceous; trace of
		vein calcite
4846 - 4872	26	Shale, dark-gray, calcareous and dolemitic to a shaly
		limestone; a very large amount of grayish-black to black, carbonaceous shale; trace of calcite
4872 - 4918	46	Shale, grayish-black to black (carbonaceous) and black (highly carbonaceous), calcareous with vein calcite, pyritic in part
		HUNTERSVILLE CHERT, 169 FEET
4918 - 4941	23	Shale, grayish-black to black, carbonaceous, highly calcareous to a dark-gray limestone (very shaly),
		pyritic in part; a large amount of brownish-gray to dusky yellowish brown metabentonite at the top
4941 - 4945	4	Shale, dark-gray, highly calcareous, silicified to chert, light- to dark-gray, argillaceous in part, somewhat
		dolemitic
4945 - 4950	5	Chert, medium dark to dark-gray, calcareous, highly argil- laceous tto a chert, light- to dark-gray, argillaceous
		in part, delemitic
4950 - 4959	9	Chert, light-gray (translucent, spicular) to medium-gray ("dead") to dark-gray (argillacecous), somewhat calca-
		reous, delemitic

(OVER, p. 2)

MARGAR ET C. KRAUS NO. 9462 WELL (Continued).

Top. Bottom. Ti 4959 - 4974	15	Chert, light- to medium-gray, mostly translucent .
		(spicular to "dead"), some dark-gray argillaceous layers and spots, somewhat delomitic
4974 - 4981	7	Chert, mettled white (milky) to light-gray (trans-
· · · · · · · · · · · · · · · · · · ·		lucent) and dark-gray (argillaceous) to grayish-black (silicified shale), highly spicular, delomitic in
· ·		part, highly fractured (argillaceous and some quartz fillings)
4981 - 4995	74	Chert, mettle light- to medium-gray and dark-gray
4701 - 4777		(highly argillaceous), spicular, slightly delemitic
4995 - 5011	16	Chert, medium- to dark-gray, some grayish-black,
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	highly argillaceous, silty to silicified siltstone, highly delemitic in part, somewhat glaucenitic in the
		upper part
5011 - 5053	42	Chert, medium dark gray to grayish-black, (highly argillaceous), some medium-gray at the top, silty in part, slightly delemitic
5053 - 5087	34	Shale, dark-gray to grayish-black, silicified in part;
J055 - J007	<i>></i> ₩	some grayish-black to black pyritic shale at the
· · · · · · · · · · · · · · · · · · ·		bettem.
		MARKET CRISKANY SANDSTONE, 14+ FEET
5087 - 5095	8	Sandstone, light-gray, fine-grained, fine- to medium- grained in part: subrounded to rounded, highly calcareous, a little dark ginterstitial) material
till and the state of the state		ealcareous, a little dark Qinterstitial) material
5095 - 5099	4	No sample
5099 - 5101	2	Sandstone, light to medium-gray, fine to coarse- grained, rounded, very highly pyritic

		Environmental Prote	ection		077-00,	17- F		
FORM.	WW-2B	AUG 2 2 1		re of west	VIRGINIA	.0.0	Page 1 of 2	
	DIVI.	SION OF E	NVIRONMEN	TAL PROTE	CTION, OFFI APPLICATION			
1)	Wall On	Office of Oil of	Cass	175		-	nea 9/19/96	
1,					sion Corporat	ion /043	6)1	
9664			Number:			3)	Elevation: 2011'	
196	Well ty	pe: (a) (0il/	or Ga	s <u>X</u> /			
		(b)	If Gas:	Production	n/ Underg	round Stor	age <u>X</u> /	
	D	.			p_ /	Shall	Tow/	
					rt and Oriska	ny		
	Proposed	i Total De	epth:	5,281	feet			
7)	Approxim	mate fres	h water s	trata dep	ths:	268'		
8)	Approxim	mate salt	water de	pths:				
9)	Approxim	mate coal	seam dep	ths:	<u>No</u>	one		
10)	Does lar	nd contain	n coal sea	ams tribut	tary to act	ive mine?	Yes/ No_X_/	
11)							timulate deliver-	
12)			abilit	ty. See att	tached procedu	ire.	-	
•			CASIN	G AND TUB	ING PROGRAM			
TYPE		S	PECIFICAT.	IONS	FOOTAGE I	NTERVALS	CEMENT	
·		Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)	
Condu	ıctor	13 3/8	H-40	48#		27	No Record	
Fresh	n Water	10 3/4	J - 55	32.75#		488	No Record	
Frer	mediate	8 5/8 -	J-55	24#		1,603	37 Sacks	
Inter	mediate	7	J-55	23#	·	4,940		
	ction	5 1/2	J-55	17#			60 Sacks	
Tubir			0-33	17π		4,955	794 Sacks	
		None						
Liner	Liners							
PACKE	PACKERS: Kind None Sizes Depths set For Office of Oil and Gas Use Only Fee(s) paid: Well Work Permit Reclamation Fund WPCP							
Depths set								
		For Office of Oil and Gas Use Only						
040 %	18	F	or Office	or orr a	nd Gas Use	OHLY		
121 121	Fee(s) p	eaid:	or Office Well Wo				und WPCP	
, ·	_	· 	• •	ork Permit	: <u> </u> Rec		ind WPCP	

	1 or <u>1</u>	TOTAL PIOCECTION			013-74
	WW2-A	AUG 2 2 1994	2)	Operator	's well number
(09/8		1.00 2 2 1994			7391 No: 47 - 077 - 00017 - F
ile	Сору	Pomiu	3)	API Well	No: $47 - 077 - 00017$
		Permitting			State - County - Permit
		Office of Oil & Gas			
		STAT	E OF WEST	VIRGINIA	
	DEP.	ARTMENT OF E	NERGY, DI	VISION OF	OIL AND GAS
					·
	NOT	ICE AND APPL	ICATION F	or a well	WORK PERMIT
4)	Surface Owner				oal Operator:
	(a) Name <u>Jose</u>			Name	
	Address 239	<u>Singer Avenue</u>	100	Address	
		<u>es Rock, PA 15</u>			
	(b) Name				Owner(s) with Declaration
	Address		· · · · · · · · · · · · · · · · · · ·	Name	
				Address	
	(c) Name				
	Address			Name	
				Address	
<i>c</i> ,	- Dhi	llin Tungu		<u> </u>	
6)	Inspector Phi Address Rou	to 2 Pay 27 /			Lessee with Declaration
	Address Kou	te 2, BOX 3/-F	1	Name	
	Mon	1trose, WV 2020	33	Address	
	Telephone (30	4)-030-8/98			
	mo m	UD DDD 401/41		0.m m.un	Nomi on musm
	TO T	HE PERSON(S)	NAMED AE	OVE TAKE	NOTICE THAT:
	T12.2 : L	ha 1aaaa	1	-46	- L : : L L
					ntinuing contract or
Conti	acts by which				
Coot					pter 22B, Article 1,
sect.	ion 8(d) of th	e code or we	est virgin	la (see p	age 2) Dof bho Wood Winninin Godo
T h	i certify that	c as require	a under C	napter 22	B of the West Virginia Code
1 nav	e served copi	es of this r	notice and	applicat	ion, a location plat, and
accor	mpanying docum	ents pages 1	L through	on th	e above named parties, by:
	Personal				:-4 -444-31
	Certifie	ion (Notice	marked po	stal rece	ipt attached)
	Publicat	TOU (NOTICE	or Public	ation att	acned)
	I have read a	nd understa		220	20 000 11 10 T
to +1					38 CSR 11-18, and I agree under this application.
CO C1	T certify und	er penalty	r any perm	t Issued	personally examined and am
fami'	liar with the	information	or law that	on this	application form and all
attac	chments, and t	hat based or	n my inqui	ry of the	se individuals immediately
respo	onsible for ob	taining the	informati	on. I hel	ieve that the information
is ti	ue, accurate,	and complet	ie.	, 1 501	
				ant penal	ties for submitting false.
info	mation inclu	ding the pos	ssibility	of fine a	nd imprisonment.
	OFFICIAL SEAL	Well	Operator	Øolumbia	Gas Transmassion Corporation
OF THE REAL PROPERTY.	NOTARY PUBLI	C By:	. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Z. Cory
V. JE. JE. V	STATE OF WEST VIRG	INIA (= 1 -			

Manager - Well P. O. Box 1273

304/357-3034

5th day of

Charleston, WV 25325-1273

Notary Public

before me this

Telephone

STATE OF WEST VIRGINIA
MARY PARSONS

subscribed and sworp

My commission expires