

Company COLUMBIAN CARBON COMPANY

Address BOX 873 CHARLESTON W.VA.

Farm THE COURTLAND COMPANY

Tract 64 Acres 5350.00 Lease No. C-5174

Well (Farm) No. 1 Serial No. GW-1306

Elevation (Spirit Level) 725.04'

Quadrangle CHARLESTON S-290 W-337-SC

County KANAWHA District LOUDON

Engineer _____

Engineer's Registration No. 2074

File No. _____ Drawing No. W-13-59

Date MAY 29 1959 Scale 1" = 1320'

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

WELL LOCATION MAP

FILE NO. KAN-1692

+ 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.

SAMPLES (4456-5320) 19-F 6-6305 Deep Well



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 6

Quadrangle Charleston, S. W.

Permit No. KAN-1692

WELL RECORD

Oil or Gas Well gas

Company <u>Columbian Carbon Company</u>	Casing and Tubing	Used in Drilling	Left in Well	Packers
Address <u>Box 873, Charleston 23, W. Va.</u>	Size			
Farm <u>The Courtland Company</u> Acres <u>5350.</u>	16" 65#	29' 4"	29' 4"	Kind of Packer <u>none</u>
Location (waters) <u>Davis Creek</u>	1 3/8" 48#	294' 9"	294' 9"	Size of <u></u>
Well No. <u>1 GW-1306</u> Elev. <u>725.04' G</u>	10			Depth set <u></u>
District <u>Louden</u> County <u>Kanawha</u>	8 1/2" 24#	1248' 6"	1248' 6"	Perf. top <u></u>
The surface of tract is owned in fee by <u>Frank Clements</u>	8 7/8" 23#	4521' 1"	4521' 1"	Perf. bottom <u></u>
Rte. #2, Box 272 Address <u>Charleston, W. Va.</u>	5 3/16			Perf. top <u></u>
Mineral rights are owned by <u>The Courtland Company</u>	3			Perf. bottom <u></u>
#205 Odd Fellows Bldg. Address <u>Charleston 1, W. Va.</u>	2 3/8"	5178'	5178'	Perf. top <u></u>
Drilling commenced <u>6-25-59</u>	Liners Used w/ cage at 5152'			Perf. bottom <u></u>
Drilling completed <u>11-9-59</u>	5-1 1/2" 15#	825' 5"	825' 5"	Perf. top <u></u>
Date Shot <u>not shot</u> From <u></u> To <u></u>	from 4444' to 5262'			Perf. bottom <u></u>
With <u></u>				
Open Flow <u>/10ths Water in</u> Inch <u></u>				
<u>/10ths Merc. in</u> Inch <u></u>				
Volume <u>show in Oriskany</u> Cu. Ft. <u></u>	CASING CEMENTED <u>SIZE</u> No. Ft. <u></u> Date <u></u>			
Rock Pressure <u></u> lbs. <u></u> hrs. <u></u>	<u>see reverse side</u>			
Oil <u></u> bbls., 1st 24 hrs. <u></u>	COAL WAS ENCOUNTERED AT <u>44</u> FEET <u>24</u> INCHES			
WELL ACIDIZED <u>not acidized</u>	<u>254</u> FEET <u>60</u> INCHES FEET INCHES			
WELL FRACTURED <u>see reverse side</u>	<u></u> FEET <u></u> INCHES FEET INCHES			

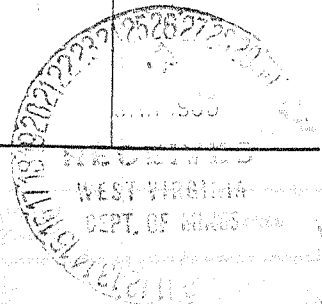
RESULT AFTER TREATMENT 12/10 Mercury 2" = 539,000 cu. ft. (Oriskany)

ROCK PRESSURE AFTER TREATMENT 5 days 511#

Fresh Water 60' Feet Salt Water 891-897' Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Soil			0	10			
Sand			10	30			
Slate			30	44			
Coal			44	46			
Slate			46	60	F. water	60'	hole full
Sand			60	73			
Slate			73	119			
Slate & Shells			119	254			
Coal			254	259			
Slate & Shells			259	264			
Sand			264	280			
Slate			280	306			
Slate & Shells			306	325			
Sand			325	394			
Slate			394	427			
Sand			427	568	Gas	533-40'	show
Slate & Shells			568	592			
Sand			592	700			
Lime			700	743			
Sand			743	770			
Slate			770	835			
Sand			835	996	S. water	891-97'	hole full
Slate and Shells			996	1021			
Sand			1021	1053			
Lime			1053	1067			
Slate			1067	1090			
Black Lime			1090	1098			

(over)



Formation	Color	Hard or Soft	Top ⁶	Bottom	Oil, Gas or Water	Depth Found	Remarks
Red Rock			1098	1100			
Slate			1100	1108			
Red Rock			1108	1111			
Lime			1111	1128			
Sand			1128	1133 DLM 1143 SLM			
Lime and Shells			1143	1162			
Slate			1162	1179			
Lime			1179	1219			
Pencil Cave			1219	1222			
Big Lime			1222	1416	1240'DLM=1240'SLM		
Sand			1416	1450	Gas	1397'-1409'	show
Slate			1450	1473	1438'DLM=1438'SLM		
Slate & Shells			1473	1850			
Black Shale			1850	1864			
Brown Shale			1864	1873			
Berea			1873	1878			
Slate & Shells			1878	3432			
Brown Shale	Huron		3432	3615			
Slate & Shells			3615	4148	4006'DLM=4033'SLM		
Brown Shale	Rhinestreet		4148	4384			
White Slate			4384	4409			
Black Shale			4409	4469			
Corniferous Lime			4469	4562			
Oriskany Sand			4562	4624	Gas	4568'	show
Lime			4624	5261	4575'DLM=4573'SLM		
Newburg Sand			5261	5282	5249'DLM=5251'SLM		
Total depth-----				5327'			
Plugged back to-----				5243'			
Casing Record							
7-3-59	13-3/8" ran with shoe at 293'DLM						
7-23-59	Ran 8-5/8" casing with shoe 1240'DLM=1240'SLM - 13 sacks Aquagel and 30 sacks cement. Pumped plug to 1223'						
9-4-59	Ran 7" casing at 4509'DLM - 11 sacks cement.						
12-20-59	Ran 825' of 5-1/2" 15.5# liner with Baker Whirlpool Duplex Shoe on bottom and Texas pattern shoe on top - centralizers on 1st and 4th joints from bottom and on 1st, 4th and 7th joints from top. Ran from 4444' to 5262'. Cemented with 50 sacks. Perforated 5-1/2" from 4560' to 4571' with 4 perforations per foot and from 4571' to 4587' with 2 perforations per foot.						
See fracturing record on attached sheet.							

Don Gp 4470 - 4567
Do 4567 - 4592
Dhl Gp 4592 - 4786
Top of Siluria 4786
Newburg 5250 - 5275
10 5327

Date January 20, 19 60

APPROVED Columbian Carbon Company, Owner
By W. S. Moore, Mgr. of Production
(Title)

KAN--1692

NOGA

Fracturing Record on GW-1306, The Courtland Company #1

10-30-59 Fractured the Oriskany. Pumped in 1 bbl. oil and 750 gallons MCA. Loaded hole with water and 3/4% Tergitol. Staged MCA. Started sand at 1/2#/gallon. Pressure dropped to 2800#. Pressured to 2750#. Increased sand to 1#/gallon. Pressure started up - at 3100# decreased sand to 3/4#/gallon - then to 1/2#/gallon at 3200#. At 3300# cut sand off. Flushed with 70 barrels water at 3300#. For breaking down and treating used 11,200 gallons - injection rate 659 gpm. Flushed with 3,000 gallons - total fluid 16,050 gallons, 8,000# 20-40 sand, 110 gallons TMN - 110 gallons T-08. 10 minutes after breakdown 1600# pressure. Opened well-would not flow. Swabbed-before fracturing show of gas.

11-2-59 Released packer and pulled tubing. Bailed fluid and cleaned out. Drilled ahead to Newburg.

11-9-59 Ran Baker Model "A" packer on 3" tubing. Set packer in middle of 2nd joint off bottom. No gas from Newburg.

11-10-59 Attempted to fracture Newburg. Pumped in 1,000 gallons MCA-filled tubing. Started to breakdown. Pressure went to 3300#-dropped to zero. Reset packer-would not hold. Pulled tubing and found fifth joint from bottom split open.

11-13-59 Ran 3-1/2" 9.2# tubing with Baker Model "A" packer set at 5217' - 5-1/2" liner - show of gas in tubing.

11-14-59 Fractured the Newburg. Pumped in 500 gallons MCA - loaded tubing with 1500 gallons water and tergitol - 1,000# pressure on tubing. Broke down formation at 4850#. Injection rate 7 bbls. per minute for 7 minutes. Started sand at 1/4#/gallon-increased to 3/4#. Used 171 barrels water and 6,000# 20-40 sand. Pressure started at 4650#-dropped to 4300#-went to 4800#-quit sand. Flushed with 60 barrels in 13 minutes-5100# maximum-4700# final. 10 minutes after shut down 3900#. Used 110 gallons TMN and 110 gallons T-08. Opened well-flowed gradually and died.

Released packer and pulled tubing. Swabbed hole-hole filling gradually with salt water. Test shows salt water coming from section below Oriskany horizon.

Ran 3-1/2" tubing with Baker Model "A" packer sealed at bottom set at 4646' to shut off area below Oriskany.

Pulled 3" tubing and plugged to 5243'. Ran 2-3/8" tubing. Final open flow from Oriskany 12/10 M. 2" = 539 MCF- 5 day pressure 511#.

4470	4567	4592
729	729	729
<hr/>	<hr/>	<hr/>
3741	3838	3863

1213
729
10 48

