

Company COLUMBIAN CARBON COMPANY  
 Address BOX 873 CHARLESTON W.VA.  
 Farm ROBERT BREEDLOVE et al  
 (PART OF 304 Ac.)  
 Tract Acres 54 Lease No. CT-181  
 Well (Farm) No. 1 Serial No. GW-1196  
 Elevation (Spirit Level) 2545.74'  
 Quadrangle Oakland - 62500 S-7850'W-11075'  
 County PRESTON District UNION  
 Engineer K. D. Anderson  
 Engineer's Registration No. 2074  
 File No. \_\_\_\_\_ Drawing No. W-10-53  
 Date SEPT. 14 1953 Scale 1" = 660'

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

WELL LOCATION MAP  
 FILE NO. Pres-61

+ 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.

New Topo Survey 6-6-286 Deep Well

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

Quadrangle Tablerock  
Permit No. WRC-61

**WELL RECORD**

Oil or Gas Well Gas  
(KIND)

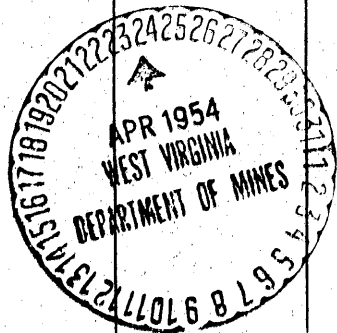
Company Columbian Carbon Company  
Address Box 873, Charleston 23, W. Va.  
Farm Robert Broadlove, et al Acres 30 1/2  
Location (waters) Maple Run  
Well No. A - G - 1196 Elev. 5515.7200  
District Union County Preston  
The surface of tract is owned in fee by Robert Broadlove, et al  
Address Horseshoe Run, W. Va.  
Mineral rights are owned by Robert Broadlove, et al  
(For further addresses contact G.C.C.)  
Address \_\_\_\_\_  
Drilling commenced 2-21-57  
Drilling completed 2-11-57  
Date Shot 2-21-57 From \_\_\_\_\_ To \_\_\_\_\_  
With see reverse side for hydraulic fracturing record  
Open Flow 13 /10ths Water in \_\_\_\_\_ Inch  
7 2/3 /10ths Merc. in 2 1/2 Inch  
Volume 5,488,000 Cu. Ft.  
Rock Pressure 3075 lbs. 92 hrs.  
Oil \_\_\_\_\_ bbls., 1st 24 hrs.  
Fresh water 50' 110' 200' feet \_\_\_\_\_ feet  
Salt water \_\_\_\_\_ feet \_\_\_\_\_ feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packets <u>bridges</u>
16			bottom hole
12 7/8 100'	27'	pulled	Size of <u>8-5/8"</u>
10 3/4 100'	250' 10"	250' 10"	Depth set <u>SOLID</u>
8 1/2 200'	500'	500'	Perf. top _____
6 5/8 200'	1011' 8"	1011' 8"	Perf. bottom _____
5 3/8 100'	1300' 6"	1300' 6"	Perf. top _____
3	(liner cemented in)		Perf. bottom _____
2 1/2 100'	1921' 9"	1921' 9"	
Liners Used	<u>(used as hydraulic)</u>		

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

COAL WAS ENCOUNTERED AT 2000 FEET \_\_\_\_\_ INCHES  
\_\_\_\_\_ FEET \_\_\_\_\_ INCHES  
\_\_\_\_\_ FEET \_\_\_\_\_ INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
top soil			0	13			
Red mud			13	25			
Blue Lino			25	200	F. water	50'	2-10" blrs/hr.
Brownish Lino			200	130	F. water	110'	8-10" blrs/hr.
Blue Lino			130	175	F. water	200'	1/3 10" blr/hr.
Grey Lino			175	708			
Slate & Shells			708	2265			
Shale			2265	2290			
Slate & Shells			2290	3140			
Dark Shale			3140	3215			
Slate & Shells			3215	3390			
Brown Shale			3390	3551			
Slate & Shells			3551	3688			
Shale			3688	1164	Gas	3802'	show
Brown Shale			1164	1270			
Black Shale			1270	1375			
Brown Shale			1375	1405			
Slate & Shells			1405	1517		4922	
Dark Shale			1517	1721		4753	
Black Shale			1721	1753		169	
Brown break - Metabenomite			1753	1756			
Coandaga Lino -			1756	1777			
Charo - Huntersville			1777	1850			
Black shale	<u>4922' CL</u>	<u>4909' DLI</u>	1850	1922	Gas pay	show	
Oriskany (unl.)			1922	5050	(4817' H)	2/10 W. 1"	14,900 cu. ft.
					(4853'	6/10 W. 1"	26 HCF
					(4922'	8/10 W. 1"	30 HCF
					(4910-48'	10/10 W. 1"	33 HCF
					(4921'	12/10 W. 1"	36 HCF
					(5011'	17/10 W. 1"	43 HCF
					(5032'		
TOTAL DEPTH				5050'			



4756 4922  
2546 2546  
210 2376

Fract  
3-13-57

Formation	Color	Hard or Soft	Top	Bottom	or Water
<u>Casing Records</u>					
9-25-53	Ran 27' of	13-3/8" drill pipe.		Columbian Carbon Company Crew.	
9-27-53	Ran 150'10" of	10-3/4" casing with shoe at 150'DMI		- Columbian Carbon Crew.	
10-1-53	Ran 507' of	8-5/8" casing at 502'DMI		- Columbian Carbon Crew.	
2-14-54	Ran 7" casing at	4791' (reduced hole to 7" at this point).		Columbian Carbon Crew.	
<u>Hydrifracing Record</u>					
<p>Filled back solid to 4916' and killed the gas with mud. Gas was gauging 17/10 H. 1" 43,460 cubic feet. Cemented 5" liner and 7" from 4736' to 4703'. Drilled cement out to 4736', bottom of cement, top of 5" liner. Cleaned mud out of 5" from 4736' to 4909'. Ran two Schlumberger Temperature Surveys - showed gas coming thru bottom of 5" from Oriskany - hole was tight between 5" and 7" where cemented. Set Baker Magnesium casing plug at 4900' in 5" to seal off Oriskany gas. Perforated 5" liner with Schlumberger tool from 4807' to 4817'. Well made 5/10 H. 2" 94 MCF. Set a Baker Model "K" Retainer above perforations in 5" at approximately 4770'. Ran 400 gallons Halliburton mud acid displaced with 20-1/2 barrels of water with Tergitol. Starting pressure 900% - finished up at 650%. Well cleaned itself - made lots of mud - gauging 8/10 H. 2" 440 MCF. Ran 250 gallons Halliburton mud acid - displaced with 26-1/2 barrels of water with Tergitol. Starting pressure 650% - finished up at 650% - gauging 15/10 H. 2" 603 MCF.</p>					
<p>Before hydrifracing chert on 4-2-54 gas gauged 15/10 H. 2" 603 MCF.</p>					
<p>On 4-2-54 pumped in 30 bbls. crude and diesel fuel mixed 2 to 1 at 1400, pressure to break formation down and establish injection rate. Pumped in 3200 gallons of kerosene mixed with 600% Nuogel and 5400% medium grained sand. Started pumping in kerosene gel at 2300' and went to maximum pressure of 3100%. Displaced with 80 barrels crude and diesel fuel mixed with gel breaker. Displaced this with 40 barrels clean diesel and crude mixture. While displacing gel, pressure broke down five times from maximum of 2700' to 1800' and built up again. When finished pumping pressure was 1000' on braden head. Shut down - two hours later 500' on braden head. Left well shut in 24 hours - 400' pressure on braden head. Opened well and cleaned self.</p>					
<p>Final open flow 13/10 H. 7" 23' 5,678,000 cubic feet - 92 hour pressure 1875'</p>					

Date April 23, 19 54

APPROVED Columbian Carbon Company, Owner

O. W. Van Petton, V.P.