

New Location ..
 Drill Deeper
 Abandonment

Company COLUMBIAN CARBON COMPANY
 Address Box 873 CHARLESTON, W. VA
 Farm D.H. HILL ARNOLD CONSOLIDATION
 Tract _____ Acres 1200 Lease No. WV-159
 Well (Farm) No. 2 Serial No. GN-1293
 Elevation (Spirit Level) 2920.37' Grid 7.5' quad
 Quadrangle HORTON-9 5346 W181 SW
 County RAUNDOLPH District DRY FORK
 Engineer Wardell S. Moore
 Engineer's Registration No. 2113
 File No. _____ Drawing No. W-7-58
 Date 3 SEPT 58 Scale 1"=500'

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

WELL LOCATION MAP
 FILE NO. RAN-101-D

+ 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 DO-3-6 DPT 6-6 261

Deep Well to the Donkey.
 Gartin Do + Tossard



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Quadrangle Horton 9 SW

Permit No. Ran-101

WELL RECORD

Oil or Gas Well Gas
(KIND)

Company Columbian Carbon Company, Oper.
Address Box 873, Charleston 23, W. Va.
Farm D. H. Hill Arnold Consol. Acres 1200
Location (waters) Bill White Br. of East Fork
Well No. #2 - GW-1293 Elev. 2920.37'
District Dry Fork County Randolph
The surface of tract is owned in fee by Boyd Phares Heirs

Mineral rights are owned by Director, Bureau of Land Management et al Address Washington 25, D. C.
(for further addresses contact C. C. C.)
Drilling commenced 9-12-58

Drilling completed 10-7-58
Date Shot not shot From _____ To _____
With _____

Open Flow _____ /10ths Water in _____ Inch
_____ /10ths Merc. in _____ Inch
Volume see reverse side Cu. Ft.

Rock Pressure _____ lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.

WELL ACIDIZED _____

WELL FRACTURED see reverse side

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer _____
13 3/8" 48#	31'6"	31'6"	Tubing
10 3/4" 32#	745'2"	745'2"	Size of _____
8 1/2"			
7 1/2" 23#	5066'10"	5066'10"	Depth set _____
5 3/16"			
3 1/2" 9.2#	4726'3"	4726'3"	Perf. top _____
2			Perf. bottom _____
Liners Used			Perf. top _____
			Perf. bottom _____

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
see reverse side

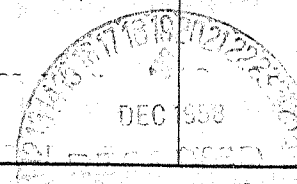
COAL WAS ENCOUNTERED AT none FEET _____ INCHES
_____ FEET _____ INCHES FEET _____ INCHES
_____ FEET _____ INCHES FEET _____ INCHES

RESULT AFTER TREATMENT 12,371,000 cubic feet
ROCK PRESSURE AFTER TREATMENT 158 hours Oriskany 1460# - Chert 1800#
Fresh Water 40-60' Feet Salt Water 2540-50' Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Top soil			0	25			
Lime			25	251	F. water	40-60'	hole full
Slate			251	419			
Sandy Lime			419	620	4753		
Slate and Lime			620	675			
Sandy Lime			675	720			
Lime			720	1465			
Shale and Shells			1465	1840			
Shale			1840	2140			
Shale and Lime			2140	2750	S. water	2540-50'	dust slightly damp
Lime			2750	3080			
Shale and Lime			3080	4375			
Limey shale streaks			4375	4561 SLM			
The following formations are from sample determinations:							
Onondaga			4561 SLM	4609 SLM			
Chert			4609 SLM	4672 SLM			
Shale <u>Needmore</u>			4672 SLM	4763			
Oriskany			4763 SLM	4960			
Lime, Shale & Chert			4960	5040' ROTARY =			
Total depth				5027' Landing Flange			
				5040' Rotary = 5027' Landing Flange.			
Cable tools	0 - 419'			485			
Rotary	419' - total depth						

(over)

4752
2920
1832



Formation	Color	Hard or Soft	Top γ	Bottom	Oil, Gas or Water	Depth Found	Remarks
Ran Temperature Survey - showed show of gas in pipe. Set Baker bridge plug in bottom of pipe at 5020' to seal hole.							
Perforated Chert 4610-14' 4616-18' 4622-50' with 139 shots - 4 shots per foot. Gas gauged 26 MCF after perforating Chert.							
11-3-58 Ran 4606' of 3-1/2" tubing - set packer at 4551' - gas gauged 14,900 cubic feet. 16 hour pressure 300# - 402 hour pressure on Chert 1625#.							
Fractured the Chert 11-20-58. Pumped in 1500 gallons MCA - filled tubing - went to 2800#. Displaced 500 gallons acid with water and tergitol with 3 pumps at 2800#. Shut down 10 minutes - displaced 500 gallons acid with 1 pump at 1700#. Shut down 10 minutes - displaced 500 gallons acid with 4 pumps at 3000#. Pumped in 8,000 gallons water and tergitol with 6,300# sand. Pressure started at 3,000# - increased gradually to 3700# at end - 17 minutes - injection rate 470 gpm. Started perf balls when 3,000 gallons in - used 129 perf balls. Flushed with 2500 gallons water and tergitol - 9 minutes - pressure started at 3700#. Went to 5100#. Final pressure 4800#. Injection rate 280 gpm. Shut in at 1800#. Opened well and flowed back water. Chert gas gauging 28/10 W. 3 = 502 MCF. Pulled tubing and packer. Cleaned out sand on bottom.							
11-25-58 Perforated Oriskany as follows: 4957-62' 4943-46' gas gauged 120/10 W. 2" = 462 MCF 4905-15' 4920-26' gas increased to 20/10 M. 2" = 696 MCF 4860-68' increased to 3,120 MCF 4836-47' 4811-20' 4753-56' 4758-64' no change in gas. Total 253 shots - all gas gauging 3,224 MCF							
11-29-58 Ran 4729' of 3" tubing with packer set at 4706'							
12-1-58 1490# on tubing. Fractured the Oriskany. Pumped in 2 bbls. oil, 2,000 gallons MCA. Displaced 12 bbls. MCA at 1500# - waited five minutes and displaced 38 barrels MCA with 5 pumps at 3,000# maximum pressure. Pumping time 37 minutes - 12-2/3 barrels per minute. Gelled 12,000 gallons kerosene - started gel with 3/4# sand/gallon at 3,000# pressure. Maximum pumping pressure 3400# - started perf balls when 4,000 gallons gel in. Total pumping time 18 minutes - final pumping pressure 3400# - Injection rate 666 gpm. Flushed with 3579 gallons kerosene at 3400# pressure. Injection rate 595 gpm. Used 12,500 # 20-40 sand - tailed in with 1500# 10-30 sand - 195 perf balls. Shut in. 5 Minutes after quit pumping at 1100#.							
12-3-58 Final open flow on Chert 84/10 W. 3"						553 MCF	
Final open flow on Oriskany 43# on 3" spring gauge						11,818 MCF	
Total gas						12,371 MCF	
<u>Casing Record</u>							
9-25-58 Ran 10-3/4" casing at 715' DLM - cemented with 250 sacks.							
10-7-58 Ran 7" at 5027' Landing Flange Measurement with guide shot on bottom, float collar between 1st and 2nd joints and 5 centralizers. - cemented with 235 bags.							

Date December 17, 19 58

APPROVED Columbian Carbon Company, Opr., Owner

By R. B. Anderson, General Manager
(Title)

HAS BEEN DEEPEMED TO 9806'



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 13

Quadrangle Horton 9SW

Permit No. RAN-101D

WELL RECORD
DRILLING DEEPER

Oil or Gas Well Gas
(KIND)

Company Columbian Carbon Company, Oper.
Address Box 873, Charleston 23, W. Va.
Farm D. H. Hill Arnold Consol. Acres 1200
Location (waters) Bill White Branch of East Fork
Well No. 2 - GW-1293 Elev. 2920. 37'
District Dry Fork County Randolph
The surface of tract is owned in fee by Boyd Phares, hrs.

Mineral rights are owned by Director, Bureau of Land Management
Address Washington 25, DC.

Drilling commenced 9-8-59
Drilling completed 1-19-60

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 see attached report

WELL FRACTURED see attached report

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16			<u>Lynes</u>
13			Size of <u>2-3/8"</u>
10			Depth set <u>4980'</u>
8 1/4			Perf. top _____
6 5/8	<u>9851'8"</u>	<u>9851'8"</u>	Perf. bottom _____
4-1/2" #			Perf. top _____
3			Perf. bottom _____
2 3/8" 4#	<u>4993'4"</u>	<u>4993'4"</u>	
Liners Used			

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
see attached report

COAL WAS ENCOUNTERED AT none FEET _____ INCHES
_____ FEET _____ INCHES FEET _____ INCHES
_____ FEET _____ INCHES FEET _____ INCHES

RESULT AFTER TREATMENT 3,746,000 cu. ft. (Tuscarora 1646M - Chert-Oriskany 2, 100M)

ROCK PRESSURE AFTER TREATMENT 69 hours Tuscarora 2380# - Chert-Oriskany 550#

Fresh Water _____ Feet _____ Salt Water see attached report Feet _____

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
<u>Old Total depth</u>							
Lime, Shale & Chert			4960	5040' ROTARY = 5027' BANDING FLANGE			
<u>Drilled deeper</u>							
Lime, Sand and Shale			5027	6024			
Lime and Shale			6024	7137			
Shale and Sand			7137	7209			
Sand <u>Tusc.</u>			7209	7627			
Sand and Shale			7627	7648			
Sand			7648	7755			
Sandy Shale			7755	8214		<u>8214</u>	
Red Sand and Shale			8214	8230		<u>2920</u>	
Light Sand			8230	8267		<u>5294</u>	
Red Sand			8267	8304			
Red Sand & Blue Shale			8304	8360			
Red Shale and Sand			8360	8717			<u>7294</u>
Red and Green Sand			8717	8738			<u>2920</u>
White Sand			8738	8764			<u>4374</u>
Green Sand			8764	8781			
Red Shale and Sand			8781	8968			
Grey Lime			8968	8976			
Grey Sand			8976	8985			
Red and Green Shale			8985	9000			
Green Sand			9000	9039		<u>9820</u> <u>5040</u>	

(over)

4780
expl. log

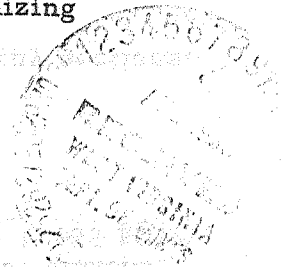
Record for West Virginia Department of Mines for Deepening Work on GW-1293,
D. H. Hill Arnold Consolidation #2

- 1-20-60 Ran 9,869'9" of 4-1/2" casing with guide shoe on bottom - float collar 2 joints off bottom and centralizers set at 9820' 9650' 9300' 9100' 8670' 8256' 7580' 7500' 7370' 7120' 4900' 4800'. Dumped in 225 sacks Uniflo cement into section from total depth to 7700'. Cemented 7700' to above Chert-Oriskany Horizon with 286 sacks of cement, Uniflo and 40 sacks of Gilsonite.
- 1-31-60 Perforated Oswego Sand 9097' to 9782'
- 2-17-60 Fractured the Oswego. Pumped in 2,000 gallons MCA - displaced with 2,000 gallons water with Tergitol at 3,500#. Used 27,000# 20-40 sand and 5,000# of 10-20 sand with 5 barrels Tergitol and 780 barrels of water.
- 2-26-60 Moved out rotary and moved in spudder 3-4-60.
- 3-14-60 to
3-29-60 Testing Oswego Section - salt water
- 3-29-60 Set bridge plug at 8442' - dumped 1-1/2 sacks cement on top of plug.
- 4-8-60 Set bridge plug at 8050' - dumped cement on plug to 7850'
- 4-11-60 Perforated 7712-7772' and tested. After perforating 7718-20' 7724-26' salt water and drilling mud. *Tuse.*
- 4-14-60 Set Baker Model "K" Cement retainer at 7657'. Pumped in 50 sacks cement below retainer.
- 4-18-60 Perforated 7602-11' *Tuse*
- 4-19-60 Perforated 7477-7523' and 7528-66' - Tested and found water. *Tuse.*
- 4-23-60 Set Baker Model "A" Cement retainer at 7586' to shut off perforated section 7602-11'. Pumped in 50 sacks cement below retainer.
- 4-27-60 Set Baker Model "K" Cement retainer at 7525'. Pumped 20 sacks cement below retainer.
- 5-2-60 Acidized 7478-7515' with 1,000 gallons acid. Pumped in acid at 3,000#. Tested - made 150' of salt water per hour in hole. *Tuse.*
- 5-6-60 Ran tubing and cemented back to 7,420' - tested - hole dry.
- 5-10-60 Perforated 7376-7403' *Tuse.*
- 5-16-60 Acidized 7376' to 7403'. Pumped in 1,000 gallons MCA. After acidizing gas gauged 44,730 cubic feet- 46 hour pressure 1400#. *Tuse.*

Ran-101-D

13A

9039
2920
6119



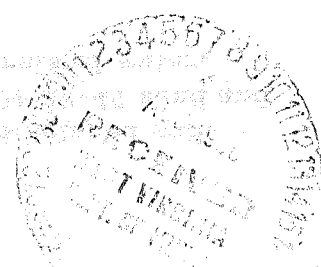
- 5-17-60 Fractured 7376-7403' Pumped in 1,000 gallons mud acid. Breakdown pressure 3700# - broke to 3200#. Pumped in 22,500# of 20-40 sand with 32,000 gallons water. Used 3 drums TMN and 3 drums T-08 Tergitol. Gas gauging 1,485 MCF after fracturing-making 2 gallons of salt water per minute.
- 6-1-60 Ran 2" tubing - 4 day rock pressure 2450#.
- 6-2-60 Killed Upper Section. - pulled tubing and perforated Chert and Oriskany sections.
- 6-27-60 Pulled tubing and cleaned out to 7,420'
- 6-28-60 Ran tubing to fracture Oriskany
- 7-1-60 Fractured the Chert and Oriskany. Used 15,000# sand and 16,000 gallons water, 2700# to 3000# treating pressure. Broke down with 1,000 gallons acid.
- 7-11-60 Closed port on packer to separate Tuscarora and Chert-Oriskany. Tuscarora rocked to 2,000# - held O. K.
- 7-12-60 Shut well in - final open flow

}	Tuscarora 112/10 M. 2"	1,646MCF
	Chert-Oriskany 36/10 M. 3"	<u>2,100MCF</u>
	Total, open flow	3,746 MCF

24 hour rock pressure Tuscarora 2375# - Chert-Oriskany 525#

69 hour rock pressure Tuscarora 2380# - Chert-Oriskany 550#

Bar-101-D



13A