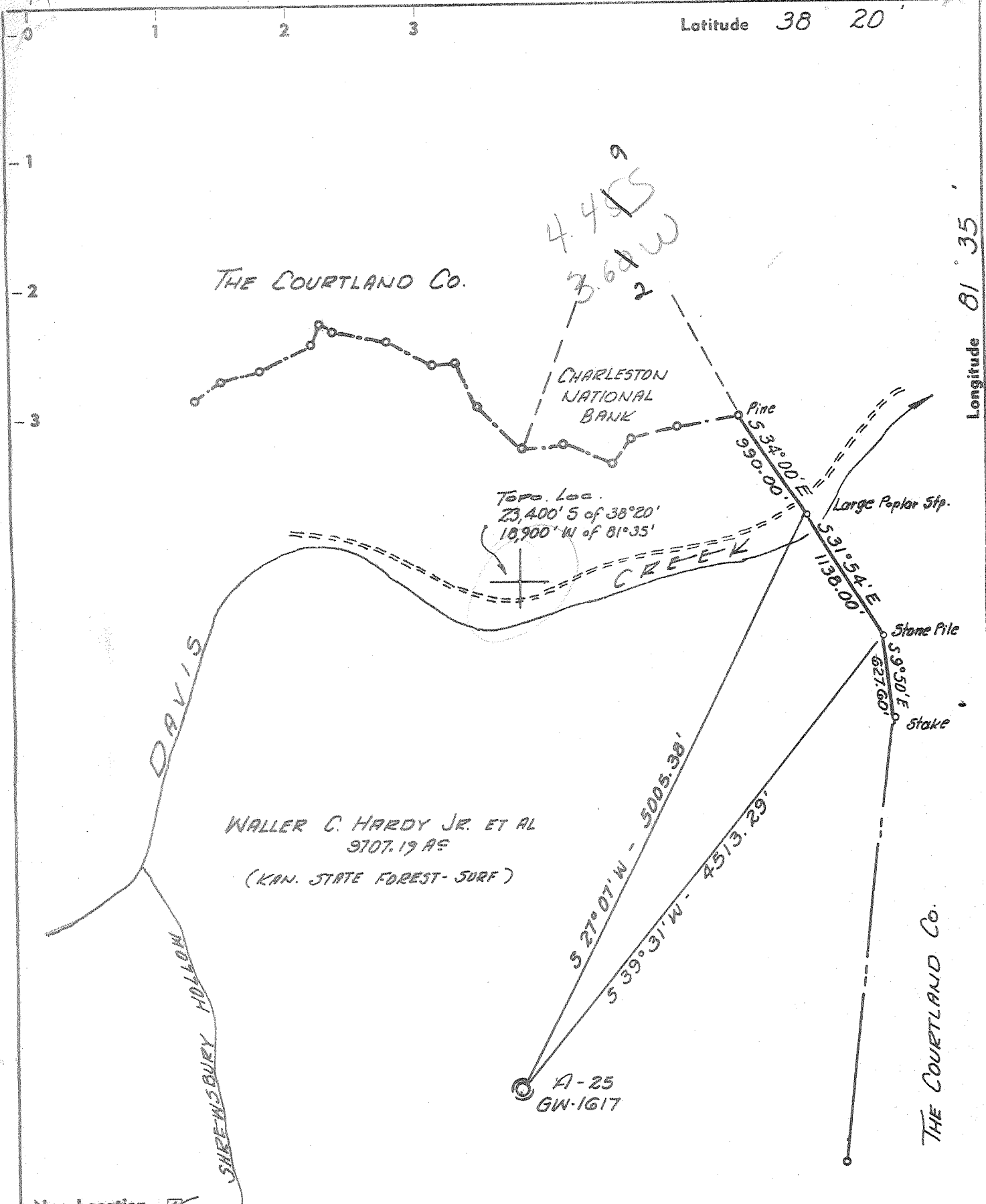


Latitude 38 20

Longitude 81 35



- New Location .
- Drill Deeper
- Redrill
- Abandonment

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company CITIES SERVICE OIL COMPANY
 Address BOX 873 CHARLESTON, W. VA.
 Farm WALLER C. HARDY JR., ET AL.
 Tract 6 Acres 9707.19 Lease No. CFW-234
 Well (Farm) No. A-25 Serial No. GW-1617
 Elevation (Spirit Level) 1235.01'
 Quadrangle CHARLESTON 5C
 County KANAWHA District LOUDON
 Engineer Wardell S Moore
 Engineer's Registration No. 2113
 File No. _____ Drawing No. W-1-67
 Date 24 FEB 67 Scale 1" = 1000'

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

WELL LOCATION MAP

FILE NO. KAN-2099

+ 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.

6-6-67

Deep Well (Newburg)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Rotary
Spudder
Cable Tools
Storage

WELL RECORD

Oil or Gas Well Gas

Quadrangle Charleston

Permit No. Kan-2099

Company Cities Service Oil Company
Address Box 873, Charleston, W. Va. 25323
Farm Waller C. Hardy, Jr., et al. Acres 9707.19
Location (water) Davis Creek
Well No. 'A' #25 - GW-1617 Sec. 1235.01'
District London County Kanawha
The surface of tract is owned in fee by State of W. Va.
State Capital Bldg. Address Charleston, W. Va.
Mineral rights are owned by W. C. Hardy, Jr., et al.
5100 2nd Avenue Address Vienna, W. Va.
Drilling commenced 3-28-67
Drilling completed 4-14-67
Date shot not shot From To
With

Casing and Tubing	Used in Drilling	Left in Well	Remarks
Size			Kind of Packer
16			None
11 3/8" 45'	26'	26'	Size of
10			Depth set
8 1/2" 24'	1931'	1931'	
6 1/2"			Perf. top
5 3/16"			Perf. bottom
4 1/2" 11.6'	5766'	5766'	Perf. top
3			Perf. bottom
2 3/8" 4.7'	5374'	5374'	
Lines Used	with cage		

Open Flow /10ths Water in Inch
/10ths Merg. in Inch
Volume 2,477 MCF
Rock Pressure lbs. hrs.
Oil bbls. per 24 hrs.
WELL ACIDIZED (DETAILS) not acidized
WELL FRACTURED (DETAILS) see reverse side

Attach copy of cementing record.
CASING CEMENTED SIZE No.
Amount of cement used (bags)
Name of Service Co. see reverse side
COAL WAS ENCOUNTERED AT 235 FEET 36 INCHES
316 FEET 36 INCHES
FEET INCHES FEET INCHES

RESULT AFTER TREATMENT (initial open flow or test) 15,216 MCF (Newburg)
ROCK PRESSURE AFTER TREATMENT 26
Fresh Water 247' Foot
Producing Sand Newburg

Hour Tubing 1005.5' - Annulus 1687.5'
Salt Water 1515' Foot
Depth 5676-5697' (per electric logs)

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Shale and Sand			0	35			
Sand			35	175			
Sand and Shale			175	235			
Coal			235	238	Hole wet	247'	
Sand and Shale			238	250			
Sand			250	272			
Sand and Shale			272	316			
Coal			316	319			
Sand and Shale			319	700			
Sand			700	725			
Sand and Shale			725	1051			
Sand			1051	1179			
Sand and Shale			1179	1267			
Sand			1267	1420			
Sand and Shale			1420	1448			
Sand - <u>Salt</u>			1448	1640	Water	1515'	
Big Lime			1640	1865			
Big Injun Sand - <u>365</u>			1865	1896			
Shale - <u>Maccabey</u>			1896	1925			
Sand and Shale			1925	2014			
Shale			2014	4914			
Sandy Lime - <u>Ondabon</u>			4914	5162			
Lime			5162	5536			
Sand Dolomite			5536	5602			
Lime and Dolomite			5602	5682			
Sand - <u>Newburg</u>			5682	5708			



JUN 13 1967

Formation	Color	Hard or Soft	Top 4'	Bottom	Oil, Gas or Water	Depth Found	Remarks
Lime & Dolomite	-	Mckenzie	3768	3748			
Total depth						5748' Drillers' Meas. 5746' Schlumberger's Meas.	
Pinged back depth						5735'	
Electric Logs show							
Big Lime			1670	1865			
Big Injun			1865	1903			
Newburg Sand			5676	5697			

CASING RECORD

3-28-67	Set and cemented 13-3/8" H-40 28# new casing at 35' with 30 sacks cement.
4-3-67	Set and cemented 8-5/8" 24# B-Grade J-55 casing at 1,920' with 600 sacks Pozmix and 100 sacks regular cement. Pumped 50 bbls. gel with lost circulation material ahead of cement. Good circulation of gel but cement did not circulate to surface. Centralizers at 1897', 1801', 1707' and 1612'.
4-15-67	Set and cemented 4-1/2" 11.6# J-55 new casing at 5,746' with 136 sacks Pozmix and 51 sacks Latex. Baker Reciprocating Scratchers on 12" centers 5743-5491'. Centralizers 5702', 5636', 5536', 5338', 5209' and 5052'. Pumped plug to 5735'.
4-3-67	Ran Schlumberger Caliper, Gamma Ray and Compensated Formation Density Logs. Schlumberger's T. D. 1925', Big Lime 1670-1865', Big Injun 1865-1903'.
4-14-67	Ran Schlumberger Gamma Ray, Caliper, Induction and Compensated Formation Density Logs. Schlumbergers' T. D. 5,746'. Newburg 5676-5697'.
5-16-67	Ran Gamma Ray Correlation Log, Collar Locator Log and Cement Bond Log.
5-16-67	Perforated Newburg Sand 5676-5681' with 4 shots/foot - total of 13 holes. Swabbed to 2,000' and well kicked off. Gas gauging 2,477 MCFD after blowing 30 minutes.
5-17-67	FRACTURED THE NEWBURG SAND Fractured the Newburg Sand. Pumped 500 gallons of mud acid and 1000 gallons of regular 15% acid. Pumped into formation at 4300#. Fractured Newburg Sand with 22,000# 20-40 sand in 18,000 gallons of gelled water. Maximum treating pressure 5200#. AIR 17.2 bbl/min. Immediate S.I. pressure 3400#. Put radio active material in while fracing. Flowed back 20 minutes and tied. Ran 2" tubing
5-24-67	Final open flow <u>15,216 MCF (Newburg)</u>

Date JUNE 2

APPROVED Cities Service Oil Company

By L. D. Todd, District Superintendent
(1788)