

WS-226

45-195-21007

API No: WS-226  
Well Name: 10014  
Date: December 28, 1987

ANR PRODUCTION CO.  
PENN VA RESOURCES  
10014

Virginia Oil and Gas Inspector  
P. O. Box 1416  
Abingdon, VA 24210  
703 628-8115

FLAT GAP 7 1/2'  
EL. - 2458.45' GR.  
WS-226

REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in Gladeville District, Wise County, Virginia on 27th day, December Month, 19 87.

WELL TYPE: Oil  / Gas  / Enhanced Recovery  / Waste Disposal  / If Gas-Production  / Underground Storage  / Exempt by Code Section 45.1-300.B.1 from general Oil and Gas Conservation Law yes  / no   
WELL WORK: Drill  / Deepen  / Redrill  / Stimulate  / Plug Off Old Formation  / Perforate New Formation  / Plug  / Replug  / Other physical change in well (specify) \_\_\_\_\_.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA SECTION 45.1-332

X Ninety days from the filing of this report

OR

Two years from \_\_\_\_\_, the date on which the referenced well was completed, the well being an exploratory well as defined in Code of Virginia, Section 45.1-288.21.

APPLICANT- ANR Production Company

BY- *A.B. Jensen*

ITS- District Operations Manager

ADDRESS- 111 East Capitol St., Suite 400, Jackson, MS 39201

TELEPHONE- (601) 961-6315



COMPLETION REPORT

Well Type: Oil( ) Gas Production (X) Gas-Underground Storage ( ) Enhanced Recovery ( ) Waste Disposal ( )

LOCATION

COUNTY Wise DISTRICT Gladeville

SURFACE ELEVATION 2458.45 QUADRANGLE Flat Gap

LATITUDE 12,000' S 37<sup>0</sup> 02 30 LONGITUDE 3,150' W 82<sup>0</sup> 37 30

DRILLING DATA

DATE DRILLING COMMENCED 9/11/87 DRILLING CONTRACTOR Clint Hurt & Assoc.  
DATE DRILLING COMPLETED 10/8/87 ADDRESS P. O. Box 1973, Midland, TX  
DATE WELL COMPLETED 11/5/87 TELEPHONE NUMBER \_\_\_\_\_  
TOTAL DEPTH OF COMPLETED WELL 6,130 RIG TYPE X ROTARY \_\_\_\_\_ CABLE TOOL \_\_\_\_\_

GEOLOGICAL DATA

FRESH WATER AT (1) 115 FEET \_\_\_\_\_ GPM: (2) \_\_\_\_\_ FEET \_\_\_\_\_ GPM \_\_\_\_\_  
SALT WATER AT (1) 2,205 FEET \_\_\_\_\_ GPM: (2) \_\_\_\_\_ FEET \_\_\_\_\_ GPM \_\_\_\_\_

COAL SEAMS:

<u>NAME</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>THICKNESS</u>	<u>YES</u>	<u>NO</u>	<u>MINED OUT</u>
	<u>45'</u>	<u>47'</u>	<u>2'</u>			<u>X</u>
<u>Dorchester</u>	<u>192'</u>	<u>195'</u>	<u>3'</u>		<u>X</u>	
	<u>2,073'</u>	<u>2,074'</u>	<u>1'</u>		<u>X</u>	

OIL AND GAS SHOWS:

<u>FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>THICKNESS</u>	<u>IPF (MCF/BOP)</u>	<u>PRESS.</u>	<u>HRS TESTED</u>
<u>Devonian</u>	<u>4562</u>	<u>5700</u>	<u>1138</u>	<u>-0-</u>		<u>-0-</u>

STIMULATION RECORD

ZONE (1) Lower Devonian FORMATION STIMULATED WITH 75 Quality Foam Frac  
42,504# 20/40, 7,500# 10/20; 774,000 SCF of N<sub>2</sub>  
PERFORATED 5260 TO 5700 NO. OF PERFORATIONS 66 PERFORATION SIZE .375  
FORMATION BROKE DOWN AT 3528 PSIG AVERAGE INJECTED RATE 4255 BPM  
INITIAL SHUT IN PRESSURE 3231 PSIG 15 MIN. SHUT IN PRESSURE 2543 PSIG

STIMULATION RECORD

ZONE (2) Mid. Devonian FORMATION STIMULATED WITH 75 Quality Foam Frac  
42,504# 20/40, 7,500# 10/20, 760,000 SCF of N<sub>2</sub>  
PERFORATED 4854 TO 5214 NO. OF PERFORATIONS 66 PERFORATION SIZE .375  
FORMATION BROKE DOWN AT 3527 PSIG AVERAGE INJECTED RATE 4290 BPM  
INITIAL SHUT IN PRESSURE 2599 PSIG 15 MIN. SHUT IN PRESSURE 2014 PSIG

FINAL PRODUCTION: ( ) NATURAL (X) AFTER STIMULATION

BOD MCFD HRS TESTED ROCK PRESS HRS TESTED

ZONE (1) \_\_\_\_\_

ZONE (2) \_\_\_\_\_

FINAL PRODUCTION IF GAS ZONES ARE COMINGLED \_\_\_\_\_ MCFD \_\_\_\_\_ HRS TESTED \_\_\_\_\_ PSIG \_\_\_\_\_  
HRS TESTED



Samples and Cuttings

Will  Will not  be available for examination by a member of the Virginia Division of Mineral Resources.

Will  Will not  be furnished to the Virginia Division of Mineral Resources upon request.

Will  Will not  require sacks to be furnished by the Virginia Division of Mineral Resources.

Electric Logs and Surveys:

Type of Electric Log(s) Ran: Induction, Compensated Density, Neutron Porosity

Did log disclose vertical location of a coal seam? Yes  No   
 Log was conducted by Penn Virginia Resources.

Was log made at request of coal owner according to Section 45.1-33.B.1 of the Virginia Code ? Yes  No

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Section 45.1-33.B.3 of the Virginia Code.

Deviation Surveys:

Deviation surveys were  were not  required under Section 45.1-33.C of the Virginia Code "to the bottom of the lowest published coal seam depth".

Note: If a deviation survey(s) was/were required, the survey results are as follows:

"SEE ATTACHMENT"

Depth of Survey	Ft/Degree Dev f/True Vertical	Depth of Survey	Ft/Degree Dev f/True Vertical	Depth of Survey	Ft/Degree Dev f/True Vertical
150'	1-1/2°	1000'	/1°	2428'	/2°
258'	1-1/2°	1220	/1-3/4°	2800	/4°
450'	1-1/4°	1480	/3°	3130	/4-1/4°
598'	1-1/2°	1700	/3°		
850'	1-1/2°	2050	/1-1/2°		

A continuous survey was  was not  required, under Section 45.1-33.C of Virginia Code.

Note: If a continuous survey was required, the survey results are attached.

Changes in the Permitted Well Work:

The well operator did  did not  make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additional sheets if such are required.

Confidentiality Status:

Confidentiality status under Section 45.1-332 of the Virginia Code:

The operator requests that information herein and logs(s) be kept confidential (after COMPLETION DATE of the well) for a period of

Ninety (90) days

WELL NAME: 10014  
 FILE NUMBER: WS-226

CASING AND TUBING

	Size	Top	Bottom	Length	Perforations Feet to Feet	Packers or Bridge Plugs Kind Size Set
<u>CONDUCTOR</u>						
	13-3/8"	Surf.	36'			
<u>CASING</u> Circulated	10-3/4"	Surf.	565'			
& Cmted to Surface	7"	Surf.	3470'			

WATER PROTECTION

(Casing Set According to Sec. 45.1-334) 10-3/4" Surf. 565'

COAL PROTECTION

(Casing Set According to Sec. 45.1-334) 7" Surf. 3470'

OTHER CASING

And Tubing

Left in Well 4-1/2" Surf. 6104' 4562'-5700'

LINERS Remaining  
In Well \_\_\_\_\_

OTHER Used &  
Not Left \_\_\_\_\_

Is the well underlain by Red Shales X Yes \_\_\_\_\_ No, If Yes, was coal protection string set to Red Shales? X Yes \_\_\_\_\_ No.

REMARKS: Shut down, fishing jobs, depths and dates, caving, etc.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DRILLER'S LOG

Compiled by: Ross Barranco, Geologist

Geological Age	Formation	General Lithology	Color	Depth		Thickness
				Top	Bottom	

Remarks

DRILLER'S LOG

#10014

Compiled by: Roswell K. Barranco

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth (feet)</u>		<u>Thickness</u>	<u>Remarks</u>
				<u>Top</u>	<u>Bottom</u>		
Pennsylvanian	Wise & Norton	Sandstone		0	1270	1270	
	Lee	Sandstone & Shale		1270	2705	1435	
<hr/>							
Mississippian	Bluestone	Sandstone & Shale		2705	2825	120	
	Ravencliff	Sandstone		2825	2915	90	
	Hinton	Sandstone & Shale		2915	3280	365	
	Maxton	Sandstone		3135	3280	145	
	Bluefield	Sandstone, Shale & Limestone		3280	3522	242	
	Greenbrier (Big Lime)	Limestone		3522	4100	578	
	Injun	Sandstone & Shale		4100	4134	34	
	Weir	Siltstone		4134	4330	196	
	Sunbury	Shale		4330	4542	212	
Berea	Siltstone		4542	4614	72		
<hr/>							
Devonian	Devonian Shale	Shale		4614	6060	1446	
	Decollement			5154	5295	141	
<hr/>							
Silurian	Corniferous	Limestone		6060	6130 (T.D.)	70	

(Complete on supplemental sheets as necessary.)

(FOR OFFICE USE ONLY: API Well No. 45 - -  
State County Permit

Date: 10-2-, 1986

Operator's Well No. 10014

*WS-226*

VIRGINIA OIL AND GAS INSPECTOR  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES  
219 Wood Avenue  
Big Stone Gap, Virginia 24219-1799  
Phone 703-523-0335

WELL PLAT

+ Denotes location of well on United States Topographic Maps, scale 1 to 24,000. Latitude and longitude lines are represented by border lines as shown.

This plat is new    / updated X /

This plat is X / is not    / based on a mine coordinate system established for the areas of the well location.

Well operator ANR PRODUCTION COMPANY

Address JACKSON, MISSISSIPPI

Farm P.V.R.C. (MINERAL) ARNOLD HUNSUCKER (SURFACE)

Tract 740 Acres 349.96 Lease No.           

Elevation 2458.45'

Quadrangle FLAT GAP

County WISE District GLADEVILLE

Registered Engineer X Registration No. 11439

Certified Land Surveyor            Cert. No.           

File No.            Drawing No.           

Date 9-14-87 Scale 1" = 400'

Certification of Well Plat

I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief, and shows all the information required by law and the regulations of the Virginia Well Review Board.

*Jack J. Gombach Jr.*  
Registered Engineer or Certified Land Surveyor  
in Charge



Latitude 37° 02' 30"

Longitude 82° 37' 30"

12,000'

# FINAL LOCATION

**T-743**  
**WENTZ CORP.**  
**162.92 AC.**  
**ALL P.V.R.C. MINERAL**

**T-740**  
**I. F. WAMPLER**  
**349.96 AC.**  
**ALL P.V.R.C. MINERAL**

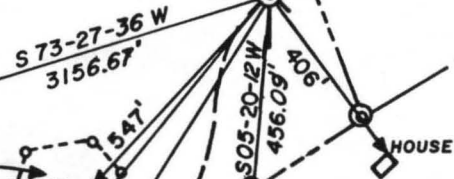
**ARNOLD HUNSUCKER**  
**SURFACE ONLY**

**GAS WELL**  
**10014**  
**N 65,357.78**  
**E 98,280.99**  
**EL. 2458.75**  
**P.V.R.C. 4294A**

**MITCHELL CLEO NIECE**  
**SURFACE ONLY**

**P.V.R.C. 236**  
**N 64,459.13**  
**E 95,254.94**

**RICKY & MARLENE HUNSUCKER**  
**SURFACE ONLY**

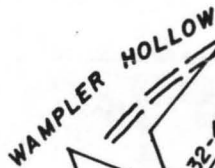


**P.V.R.C. 4253A**  
**N 64,903.67**  
**E 98,238.57**

**MAXIE HUNSUCKER**  
**SURFACE ONLY**

**T-740**  
**I. F. WAMPLER**  
**349.96 AC.**  
**ALL P.V.R.C. MINERAL**

**P.V.R.C. 6943**  
**N 63,375.96**  
**E 96,631.56**



**EXISTING GAS WELL 144**  
**N 63,273.59**  
**E 96,941.90**

WS-226



FG-7

OIL AND GAS WELL  
SUMMARY REPORT

API No. 45-195-21007 VDMR Well Rep. No. \_\_\_\_\_  
DMQ File No. WS-226

Operator ANR Production Company  
Farm Penn Va Resources  
Co. Well No. 10014

County Wise Quadrangle Flet Gap - 7 1/2'  
Location (UTM) N4,096,890 ; E.354,450 UTM Zone 17  
(Lat. and Long.) \_\_\_\_\_

Field \_\_\_\_\_ Province Appalachian Plateaus  
Elev. (specify) 2458.45' GR TD 6130 Form. at TD Coniferous  
Age Devonian

Initial Flow - \_\_\_\_\_  
Date compl. or abandoned November 5, 1987

Result Gas well  
Gas Shows Devonian - 4562-5700.  
Gas Pays \_\_\_\_\_

Main Production \_\_\_\_\_ Prod. Form. Devonian, Wen  
Final Flow - 516,000 CU.FT. Age Devonian; Mississippian

Treatment: Lower Devonian - 75 quality foam frac, 42,504 pounds of 20/40 sand, 7500 pounds of 10/20 sand, 774,000 SCF of N2. Middle Devonian - 75 quality foam frac, 42,504 pounds of 20/40 sand, 7500 pounds of 10/20 sand, 760,000 SCF of N2. Upper Devonian - 75 quality foam frac, 42,504 pounds of 20/40 sand, 7500 pounds of 10/20 sand, 766,000 SCF of N2. Wen - 75 quality foam frac, 84,090 pounds of 10/20 sand, 874,000 SCF of N2.

Oil shows \_\_\_\_\_  
Water FW Yes at 115' at \_\_\_\_\_ at \_\_\_\_\_  
SH Yes at 2205' at \_\_\_\_\_ at \_\_\_\_\_

Coal 45-47 ; 192-195 ; 2073-2074

Plat \_\_\_\_\_ Plotted \_\_\_\_\_ Completion Report X

Drillers Log X Geologic Log \_\_\_\_\_

Samples \_\_\_\_\_ Interval Sheet \_\_\_\_\_

Sample Interval \_\_\_\_\_

Remarks \_\_\_\_\_

Geophysical Logs S.P. \_\_\_\_\_ Res \_\_\_\_\_ Gamma \_\_\_\_\_ Neutron \_\_\_\_\_

Density \_\_\_\_\_ Sonic \_\_\_\_\_ Other \_\_\_\_\_

Stratigraphic Data Source

Roswell K. Baranco

Formation.	Top	Datum (Subsea)	Thickness
Willard Norton	0	+ 2458.45	1270
Lee	1270	+ 1188.45	1435
Bluestone	2705	- 246.55	120
Parvanchiff	2925	- 366.55	90
Hinton	2915	- 456.55	365
✓ Maxton	3135	- 676.55	145
Bluefield	3280	- 821.55	242
Greenbrier	3522	- 1063.55	578
Jaykin	4100	- 1641.55	34
Weir	4134	- 1675.55	196
Sumbury	4330	- 1871.55	212
Remarks Blue	4542	- 2083.55	72
Devonian Shale	4614	- 2155.55	1446
Decollement	5154		141
Carboniferous	6060	- 3601.55	70

References

Released to Open File: Completion

March 30, 1988

Samples

None

(Note: UTM measurements in meters, all others in feet)