

FG-9-12

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-195-20957-00-03 VDMR Well Rep. No. _____
DMQ File No. WS-214

Operator ANR PRODUCTION COMPANY

Farm PENN VIRGINIA

Co. Well No. 10382

County WISE Quadrangle FLAT GAP 7-1/2'

Location (UTM) N4,096,940; E345,500 UTM Zone 17

(Lat. and Long.) _____

Field _____ Province APPALACHIAN PLATEAUS

Elev. (specify) 2834.62 TD 6080 Form. at TD CORNIFEROUS

INITIAL FLOW - NONE Age DEVONIAN

Date compl. or abandoned SEPTEMBER 13, 1986

Result GAS WELL

Gas Shows _____

Gas Pays _____

Main Production _____ Prod. Form. DEVONIAN; BEREA, WEIR

FINAL FLOW - 730,000 CU. FT. Age DEVONIAN, MISSISSIPPIAN

Treatment: LOWER DEVONIAN-75 QUALITY FOAM FRAC, 42,645 POUNDS OF 20/40 SAND, 7411 POUNDS OF 10/20 SAND, 722,000 SCF OF N2. UPPER DEVONIAN, BEREA-75 QUALITY FOAM FRAC, 42,645 POUNDS OF 20/40 SAND, 7411 POUNDS OF 10/20 SAND, 68,800 SCF OF N2. WEIR-75 QUALITY FOAM FRAC, 40,175 POUNDS OF 10/20 SAND, 500,000 SCF OF N2.

Initial Production _____

Oil shows _____

Water FW YES at 80' at _____ at _____

SW _____ at _____ at _____ at _____

Coal 331-334.3; 587-589.5; 632-635

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 _____

WS-214

API WELL NO. 45 - 195 - 20957
State County Permit

ANR PRODUCTION COMPANY
PENN VIRGINIA
10382
FLAT GAP-7 1/2'
WS-214
EL.-2834.62

Date: _____
Operator's Well Name 10382

VIRGINIA OIL AND GAS INSPECTOR
P. O. BOX 1416
ABINGDON, VA 24210
703-628-8115



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 13 day, September month, 19 86.

WELL TYPE: Oil ___ / Gas X / Enhanced recovery ___ / Waste Disposal ___ / If "Gas", Production X / Underground Storage ___
Exempt by Code Section 45.1-300.B.1. from general oil and gas conservation law: yes X / no ___
WELL WORK: Drill X / Deepen ___ / Redrill ___ / Stimulate X / Plug off old formation ___ / Perforate new formation X / Plug ___ / Replug ___ / Other physical change in well (specify _____)

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA SECTION 45.1-332.

X Ninety days from the filing of this report
OR
Two years from _____, 19____, 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 In the absence of A. B. Jernigan BB Jernigan
ITS District Operations Manager
ADDRESS 111 E. Capitol St., Ste 400, Jackson, MS
TELEPHONE 601/961-6215 39201

WS 214

API WELL NO. 45 - 195 - 20957
State County Permit

Date: _____
Operator's Well Name 10382

VIRGINIA OIL AND GAS INSPECTOR
P. O. BOX 1416
ABINGDON, VA 24210
703-628-8115



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 13 day, September month, 19 86.

WELL TYPE: Oil ___ / Gas X / Enhanced recovery ___ / Waste Disposal ___ / If "Gas", Production X / Underground Storage ___

Exempt by Code Section 45.1-300.B.1. from general oil and gas conservation law: yes X / no ___

WELL WORK: Drill X / Deepen ___ / Redrill ___ / Stimulate X / Plug off old formation ___ / Perforate new formation X / Plug ___ / Replug ___ / Other physical change in well (specify _____)

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA SECTION 45.1-332.

- X Ninety days from the filing of this report OR
- Two years from _____, 19 __, 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 In the absence of A. B. Jernigan [Signature]
ITS District Operations Manager
ADDRESS 111 E. Capitol St., Ste 400, Jackson, MS
TELEPHONE 601/961-6215 39201

FORM 16
 APPENDIX A,
 SHEET 1, (OBVERSE)

API WELL NO. 45 - 195 - 20957
 State County Permit

Date: _____
 Operator's Well
 Name 10382

REPORT OF COMPLETION OF WELL WORK
IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CONTRACTOR Clint Hurt & Associates, Inc.
 ADDRESS P.O. Box 1973, Midland, TX 79702
 TELEPHONE _____

GEOLOGICAL TARGET FORMATION Devonian Shale, Berea, Weir
 DEPTH OF COMPLETED WELL 6,080' FEET
 DATE DRILLING COMMENCED 7/23/86
 DATE DRILLING COMPLETED 8/5/86
 DRILLING RIG: ROTARY X / CABLE TOOL _____ /

GEOLOGICAL DATA Depth Thickness
 Top Bottom

Fresh Water +
 80

Salt water Not Known

MINING IN AREA
 Yes No Mined Cut

Coal Seams				Name	
	331'	334.3'	3.3'	"D"Bench Low Splint	X
	587'	589.5'	2.5'	Taggart	X
	632'	635'	3'	Marker	X

Oil Formation

None

Gas Formation

None

below: The data on depth of strata is based on the source(s) checked

- X Applicant's own drilling experience in the area
- X Information supplied by the coal operator in the area
- _____ Information already in possession of the Inspector
- _____ Other (as follows) _____

FORM 16
APPENDIX A,
SHEET 1, (OBVERSE)

API WELL NO. 45 - 195 - 20957
State County Permit

Date: _____
Operator's Well
Name 10382

REPORT OF COMPLETION OF WELL WORK
IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CONTRACTOR Clint Hurt & Associates, Inc.
ADDRESS P.O. Box 1973, Midland, TX 79702
TELEPHONE _____

GEOLOGICAL TARGET FORMATION Devonian Shale, Berea, Weir
DEPTH OF COMPLETED WELL 6,080' FEET
DATE DRILLING COMMENCED 7/23/86
DATE DRILLING COMPLETED 8/5/86
DRILLING RIG: ROTARY X / CABLE TOOL _____/

GEOLOGICAL DATA Depth Thickness
 Top Bottom

Fresh Water +80

Salt water Not Known

MINING IN AREA
Yes No Mined Out

Coal Seams		Depth		Name	MINING IN AREA	
		Top	Bottom		Yes	No
	331'	334.3'	3.3'	"D"Bench Low Splint	X	
	587'	589.5'	2.5'	Taggart	X	
	632'	635'	3'	Marker	X	

Oil Formation

None

Gas Formation

None

below: * The data on depth of strata is based on the source(s) checked

- Applicant's own drilling experience in the area
- Information supplied by the coal operator in the area
- _____ Information already in possession of the Inspector
- _____ Other (as follows) _____

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? Yes X / No /
If Yes, was a coal protection string set to the red shales? Yes X / No

	SIZE	TOP	BOTTOM	LENGTH	PERFORATIONS	
					FROM	TO
<u>CONDUCTOR:</u>						
	13-3/8"	Surface	36'	36'		
<u>CASING CIRCULATED AND CEMENTED IN TO SURFACE:</u>	10-3/4"	Surface	705'	705'		
	7"	Surface	3988'	3988'		
<u>COAL PROTECTION CASING SET UNDER SPECIAL RULE OF CODE OF VIRGINIA 45.1-334.B:</u>	7"	Surface	3988'	3988'		
<u>OTHER CASING AND TUBING LEFT IN WELL;</u>	4-1/2"	Surface	6053'	6053'		

LINERS LEFT IN WELL UNDER CODE OF VIRGINIA SECTION 45.1-336 OR OTHERWISE: None

PACKERS OR BRIDGE PLUGS: KIND SIZE SET AT
Noen

REMARKS: SHUT DOWN DEPTHS, DATES; FISHING JOB DEPTHS, DATES; CAVING; ETC.)

SAMPLES AND CUTTINGS

WILL XWILL NOT BE AVAILABLE FOR EXAMINATION BY A MEMBER OF THE VIRGINIA DIVISION OF MINERAL RESOURCES
WILL XWILL NOT BE FURNISHED THE VIRGINIA DIVISION OF MINERAL RESOURCES UPON REQUEST
WILL WILL NOT REQUIRE SACKS TO BE FURNISHED BY THE VIRGINIA DIVISION OF MINERAL RESOURCES.

DRILLER'S LOG

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>		
Pennsylvania	Wise & Norton	Sandstone		0	2012	2012	
	Lee	Sandstone & Shale		2012	3533	1521	
Mississippian	Bluestone	Sandstone & Shale		3533	3679	146	
	Ravenclyff	Sandstone		3679	3751	72	
	Hinton	Sandstone & Shale		3751	4151	400	
	Maxton	Sandstone		3991	4151	160	
	Bluefield	Sandstone, Shale & Limestone		4151	4372	221	
	Greenbrier (Big Lime)	Limestone		4372	4857	485	
	Injun	Sandstone & Shale		4857	4886	29	
	Weir	Siltstone		4886	5064	178	
	Sunbury	Shale		5064	5221	157	
	Berea	Siltstone		5221	5290	69	
Devonian	Devonian Shale	Shale		5290	6010	720	
	Decollement			5760	5819	59	
Silurian	Corniferous	Limestone		6010	6080	70	

APPENDIX TO REPORT OF COMPLETION OF WELL WORK
ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF

Indicated potential flow before stimulation 0 BOD
Gravity and grade: N/A

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation 0 MCFD
Rock pressure: Not psig 0 hour test
Measurable

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: Lower Devonian Formation
75 Quality Foam Frac, 42,645#s 20/40, 7,411#s 10/20
722,000 SCF of N₂
Perforated 5636'-6006' # Perfs. 69 Perf. Size 375
Breakdown 4260 psig. Avg. Injection 4460 psig.
Avg. I.R. 75 BPM Init. S.I. B324 psig 15 Min. S.I.P. 1829 psig

Zone 2: Upper Devonian, Berea Formation
75 Quality Foam Frac, 42,645#s 20/40, 7,411#s 10/20
688,000 SCF of N₂
Perforated 5276'-5520' # Perfs. 62 Perf. Size 375
Breakdown 5276 psig. Avg. Injection 4308 psig.
Avg. I.R. 80 BPM Init. S.I. P2531 psig 15 Min. S.I.P. 1459 psig

Zone 3: Weir Formation
75 Quality Foam Frac, 40,175#s 10/20
500,000 SCF of N₂
Perforated 4966'-5050' # Perfs. 55 Perf. Size 375
Breakdown 2459 psig. Avg. Injection 4023 psig.
Avg. I.R. 116.4 BPM Init. S.I. P1500 psig 15 Min. S.I.P. 530 psig

Final production () natural (X) after stimulation

	BOD	MCFD	Hours Tested	Rock Pressure	Hours Tested
Zone 1: Lower Devonian		146	3		
Upper Devonian		189	3		
Zone 2: Berea					
Zone 3: Weir		499	3		

Final production if gas zones are comingled: 730 MCFD

3 hours tested: _____ psig. _____ hours tested

DEVIATION SURVEY

Results 10382

Depth From	Depth To	Survey
0 0	200' 400'	1/4° 1/4°
0 0'	600' 800'	1/4° 1/4°
0' 0'	1000' 1500'	1/2° 1°
0' 0'	2000' 2500'	3/4° 1/4°
0' 0'	3000' 3500'	1/2° 1-1/2°
0' 0'	4500' 5000'	2-1/4° 2-1/4°
0' 0'	5500' 6000'	2-1/2° 3°

PERMIT INFORMATION SHEET

COMPANY NAME: ANR Production Company
WELL NAME: 10382
PERMIT NUMBER: 957
FILE NUMBER: WS-214
DATE PERMIT APPLICATION RECEIVED: 6-23-86
DATE PERMIT ISSUED: 7-7-86
FARM NAME: Penn Virginia Resources
DISTRICT: Gladeville
QUADRANGLE: Flat Gap
LATITUDE: 12300 ' S. 37° 02 ' 30 "
LONGITUDE: 8225 ' W. 82° 42 ' 30 "
SURFACE ELEVATION: 2834.62 '
PROJECTED DEPTH: 6090 '
PROJECTED TARGET FORMATION Devonian
API NUMBER: 45- 195-20957
COUNTY: Wise

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

Date: 9-23-, 1986

Operator's Well No. 10382

WS-214

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 PENN VIRGINIA RESOURCES CORPORATION
Tract 684 Acres 5010.46 Lease No. _____
Elevation 2828.66'
Quadrangle FLAT GAP
County WISE District GLADEVILLE
Registered Engineer X Registration No. 11439
Certified Land Surveyor _____ Cert. No. _____
File No. _____ Drawing No. _____
Date 6-10-86 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. Sembark
Registered Engineer or Certified Land Surveyor
in Charge

8,225'

Latitude 37° 02' 30"

Longitude 82° 42' 30"

12,300'

T-684
POWELL RIVER COAL & IRON
5010.46 AC.
P.V.R.C. FEE

EXISTING GAS
WELL 10082
N 66,745.81
E 70,652.66

GAS WELL
10382
N 65,002.89
E 68,885.84
EL. 2828.66'

Stonega 163
N 65,146.64
E 70,829.49

Stonega 161
N 63,110.66
E 71,299.35

PENN
BLUE

VIRGINIA
DIAMOND

RESOURCES
COAL

CORPORATION
COMPANY

507.59'

522.89'

S 51-54-11 E
3066.85'

N 85-46-13 E
1948.96'

N 43-43-17 E
2411.65'

FINAL LOCATION

WS-214