

API WELL NO. 45 051 - 20518  
State County Permit

Date: November 21, 1986  
Operator's Well  
Name W. H. Trivett No. P-152

214

PHILA. OIL CO.  
W. H. TRIVETT  
P-152  
ELEV. - 1532.45'  
CLINTWOOD 7 1/2'

VIRGINIA OIL AND GAS INSPECTOR  
205 W. MAIN STREET  
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 Kenady District, Dickenson County, Virginia on 6 day, 11 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 \_\_\_ / no X /

WELL WORK: Drill X / Deepen \_\_\_ / Redrill \_\_\_ / Stimulate \_\_\_ / Plug off old formation \_\_\_ / Perforate new formation \_\_\_ / 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: Philadelphia Oil Company  
BY Brint Camp  
ITS District Geologist  
ADDRESS 1989 E. Stone Dr., Kingsport, TN 37660  
TELEPHONE 615-378-5101

Form 16  
Appendix A, Sheet 1 (Reverse)  
Continued from Obverse side

#### OTHER GENERAL INFORMATION

An electric log survey was \_\_\_/ was not \_\_\_/ conducted pursuant to Code of Virginia Section 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was X/ was not \_\_\_/ run for other purposes. This survey did \_\_\_/ did not X/ disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia Section 45.1-333.B.3.

Deviation surveys were X/ were not \_\_\_/ required under Code of Virginia Section 45.1-333.C "to the bottom of the lowest published coal seam depth."

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was \_\_\_/ was not X/ required under Code of Virginia Section 45.1-333.C.

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

#### CHANGES IN THE PERMITTED WELL WORK

The well operator did \_\_\_/ did not X/ 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.

FORM 16  
APPENDIX A,  
SHEET 1, (OBVERSE)

API WELL NO. 45 - 051 - 20518  
State County Permit  
Date: November 21, 1986  
Operator's Well  
Name W. H. Trivett No. P-152

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

DRILLING CONTRACTOR Union Drilling, Inc.  
ADDRESS P. O. Drawer 40, Buckhannon, WV 26201  
TELEPHONE 304-472-4610

GEOLOGICAL TARGET FORMATION Brown Shale  
DEPTH OF COMPLETED WELL 5142 FEET  
DATE DRILLING COMMENCED 9/25/86  
DATE DRILLING COMPLETED 10/6/86  
DRILLING RIG: ROTARY X / CABLE TOOL        /

GEOLOGICAL DATA      Depth      Thickness  
                            Top      Bottom

Fresh water      50, 651

Salt water

			MINING IN AREA	
			Yes	No
			<del>MINING OUT</del>	
Coal Seams	143-47	758-61	1121-23	
	190-92	770-76		
	274-76	1086-88		
	566-69	1091-94		

Oil      Formation

Gas      Formation

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

- 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 \_\_\_/ No X/  
If Yes, was a coal protection string set to the red shales? Yes \_\_\_/ No \_\_\_/

	SIZE	TOP	BOTTOM	LENGTH	PERFORATIONS	
					FROM	TO
<u>CONDUCTOR:</u>	11 3/4"	0	332	332		
<u>CASING CIRCULATED AND CEMENTED IN TO SURFACE:</u>	8 5/8"	0	2085	2085		
<u>COAL PROTECTION CASING SET UNDER SPECIAL RULE OF CODE OF VIRGINIA 45.1-334.B:</u>						
<u>OTHER CASING AND TUBING LEFT IN WELL;</u>	4 1/2"	0	5105	5105		4030-4052
	2 3/8"	0	4617	4617		4144-4088 4641-4990
<u>LINERS LEFT IN WELL UNDER CODE OF VIRGINIA SECTION 45.1-336 OR OTHERWISE:</u>						

<u>PACKERS OR BRIDGE PLUGS:</u>	<u>KIND</u>	<u>SIZE</u>	<u>SET AT</u>
	Butler-Larkin	2 3/8" X 4 1/2"	4198'

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

SAMPLES AND CUPPINGS

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

DRILLER'S LOG

Compiled by Brint Camp

Geological Age	Formation	General Lithology	Color	Depth (feet)		Thickness	Remarks
				Top	Bottom		
Pennsylvanian	Sand & Shale			0	2307	2307	
Mississippian	Ravencliff			2307	2442	135	
"	Little Stone Gap			2442	2500	58	
"	Shale			2500	2674	174	
"	Maxon Sands			2674	2939	265	
"	Shale			2939	3027	88	
"	Little Lime			3027	3068	41	
"	Lime & Shale			3068	3184	116	
"	Big Lime			3184	3494	310	
"	Keener			3494	3510	16	
"	Weir			3510	3932	422	
"	Coffee Shale			3932	3992	60	
"	Berea			3992	4054	62	
Devonian	Brown Shale			4054	5020	966	
Devonian/Silurian	Corniferous			5020	5142	122	
	Logger's Total Depth			5142			

Complete on supplemental sheet as necessary

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 \_\_\_\_\_ BOD  
Gravity and grade: \_\_\_\_\_

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation 60 MCFD  
Rock pressure: N/A psig N/A hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: Brown Shale Formation  
stimulated with 75 Q foam using 90,000# sand, 336 gals.  
20% acid, 1,004,000 SCF/N<sub>2</sub> and 560 bbls. fluid.  
Perforated 4641-4990 # Perfs. 43 Perf. Size .39  
Breakdown 2105 psig. Avg. Injection 2100 psig.  
Avg. I.R. 5.9 BPM Init. S.I.P. 350 psig 15 Min. S.I.P. -- psig

*LHurn  
Java  
Angola  
RhineStreet*

Zone 2: Upper Shale Formation  
stimulated with 75 Q foam using 40,000# sand, 500 gals.  
20% acid, 450,000 SCF/N<sub>2</sub> and 268 bbls. fluid.  
Perforated 4144-4488 # Perfs. 15 Perf. Size .39  
Breakdown 2180 psig. Avg. Injection 1900 psig.  
Avg. I.R. 7.5 BPM Init. S.I.P. 1400 psig 15 Min. S.I.P. -- psig

*Cleveland  
Uthman  
Mithun ..*

Zone 3: Berea Formation  
stimulated with 75 Q foam using 60,000# sand, 500 gals.  
20% acid, 550,000 SCF/N<sub>2</sub> and 268 bbls. fluid.  
Perforated 4030-4052 # Perfs. 19 Perf. Size .39  
Breakdown 2294 psig. Avg. Injection 2290 psig.  
Avg. I.R. 9.5 BPM Init. S.I.P. 1650 psig 15 Min. S.I.P. -- psig

Final production ( ) natural ( ) after stimulation

	BOD	MCFD	hours Tested	Rock Pressure	Hours Tested
Zone 1:	_____	<u>179</u>	<u>6</u>	<u>700</u>	<u>48</u>
Zone 2:	<u>co-mingled</u>	_____	_____	_____	_____
Zone 3:	<u>co-mingled</u>	_____	_____	_____	_____

Final production if gas zones are coningled: 231 MCFD

6 hours tested: 750 psig. 48 hours tested

DIRECTIONAL SURVEY

P-152

<u>Depth</u>	<u>Degree</u>
445	1 1/4
694	2
788	1 1/2
883	1 1/4
1008	3/4
1256	1/2
1442	1
1629	1 1/4
2067	.1

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FORM 16

API WELL NO. 45 - 051 - 20518

State County Permit

Date: November 21, 1986

Operator's Well

Name W. H. Trivett No. P-152

PHILA. OIL CO.  
W. H. TRIVETT  
P-152  
CLINTWOOD - 7 1/2'  
EL. 1532.45

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WELL WORK: Drill X / Deepen \_\_\_ / Re-drill \_\_\_ / Stimulate \_\_\_ / Plug off old formation \_\_\_ / Perforate new formation \_\_\_ / Plug \_\_\_ / Replug \_\_\_ / Other physical change in well (specify \_\_\_\_\_)

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DATE DRILLING COMPLETED 10/6/86  
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GEOLOGICAL DATA      Depth      Thickness  
                            Top      Bottom

Fresh water      50, 651

Salt water

			Name	MINING IN AREA	
				<del>Yes</del> No	<del>WAS NOT</del>
Coal Seams	143-47	758-61	1121-23		
	190-92	770-76			
	274-76	1086-88			
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If Yes, was a coal protection string set to the red shales? Yes \_\_\_/ No \_\_\_/

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					FROM	TO
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<u>PACKERS OR BRIDGE PLUGS:</u>	<u>KIND</u>	<u>SIZE</u>	<u>SET AT</u>
	Butler-Larkin	2 3/8" X 4 1/2"	4198'

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

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Complete on supplemental sheet as necessary

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 \_\_\_\_\_ BOD  
Gravity and grade: \_\_\_\_\_

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation 60 MCFD  
Rock pressure: N/A psig N/A hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: Brown Shale Formation  
stimulated with 75 Q foam using 90,000# sand, 336 gals.  
20% acid, 1,004,000 SCF/N<sub>2</sub> and 560 bbls. fluid.  
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Avg. I.R. 15.9 BPM Init. S.I.P. 1350 psig 15 Min. S.I.P. -- psig

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Breakdown 2180 psig. Avg. Injection 1900 psig.  
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Zone 3: Berea Formation  
stimulated with 75 Q foam using 60,000# sand, 500 gals.  
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Perforated 4030-4052 # Perfs. 19 Peri. Size .39  
Breakdown 2294 psig. Avg. Injection 2290 psig.  
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Final production ( ) natural ( ) after stimulation

	BOD	MCFD	hours Tested	Rock Pressure	Hours Tested
Zone 1:	_____	<u>179</u>	<u>6</u>	<u>700</u>	<u>48</u>
Zone 2:	<u>co-mingled</u>	_____	_____	_____	_____
Zone 3:	<u>co-mingled</u>	_____	_____	_____	_____

Final production if gas zones are coningled: 231 MCFD

6 hours tested: 750 psig. 48 hours tested

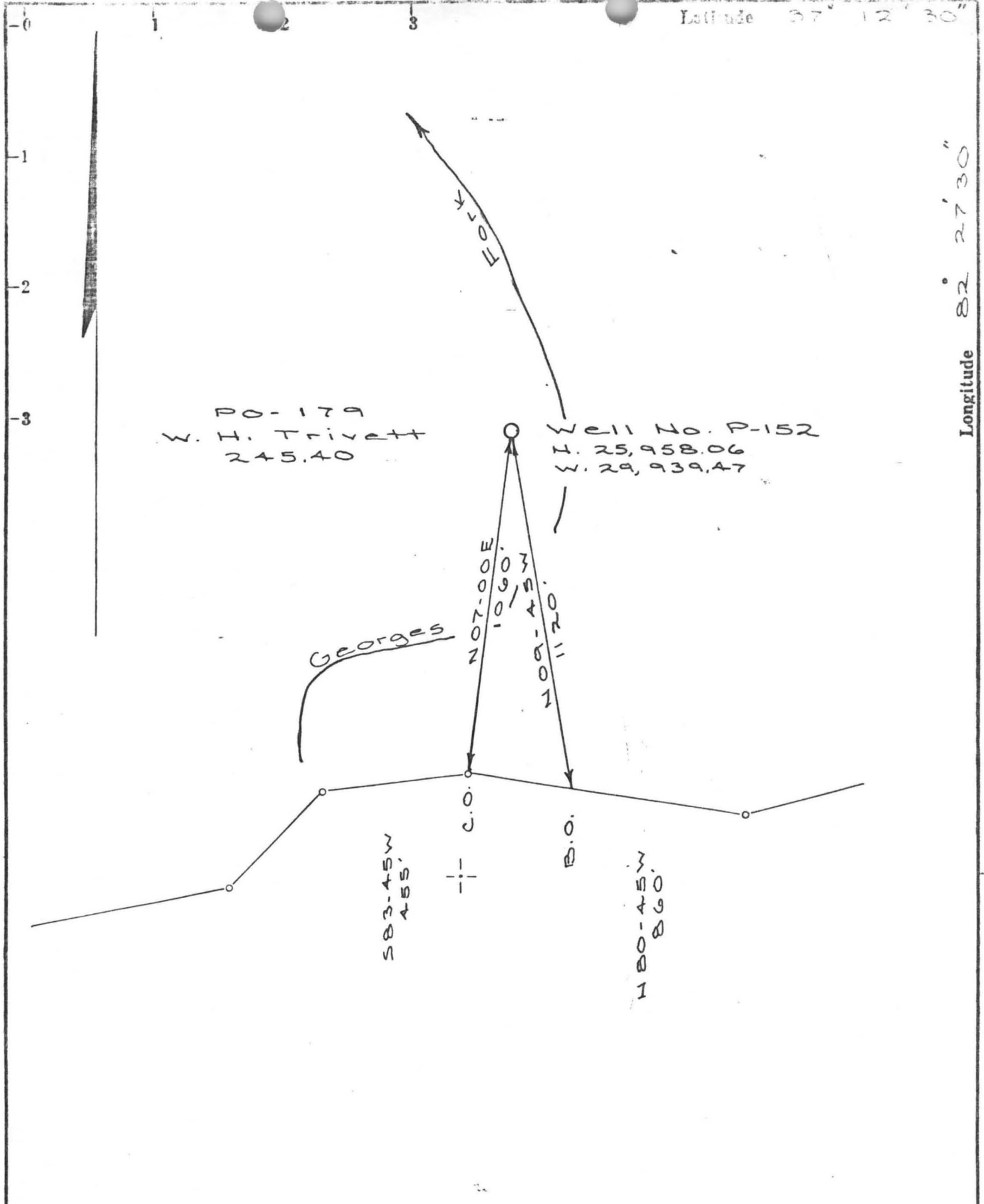
DIRECTIONAL SURVEY

P-152

<u>Depth</u>	<u>Degree</u>
445	1 1/4
694	2
788	1 1/2
883	1 1/4
1008	3/4
1256	1/2
1442	1
1629	1 1/4
2067	1

Latitude 37° 12' 30"

Longitude 82° 27' 30"



New Location.   
 Drill Deeper.....  
 Abandonment.....

MAP No. 5 Block No. 977

Company Philadelphia Oil Co  
 Address Nora, Va.  
 Farm W. H. Trivett  
 Tract Acres 245.40 Lease No. PO-179  
 Well (Farm) No.                      Serial No. P-152  
 Elevation (Spirit Level) 1532.45'  
 Quadrangle Clintwood, Va.  
 County Dickenson District Clintwood  
 Surveyor B. C. Spradlin  
 Surveyor Registration No. 782  
 File No.                      Drawing No.                       
 Date 6-9-82 Scale 1" = 400'

COMMONWEALTH OF VIRGINIA  
 DEPARTMENT OF LABOR & INDUSTRY  
 DIVISION OF MINES  
 BIG STONE GAP

**WELL LOCATION MAP**  
 FILE NO. DI-214

+ Denotes location of well on United States Topographic Maps, scale 1 to 24,000, latitude and longitude lines being represented by border lines as shown.  
 — Denotes one inch spaces on border line of original tracing.