

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-051-20813-00-03 VDMR Well
Rep. No. _____
DMQ File No. DI-242

Operator PHILADELPHIA OIL COMPANY
Farm A. A. SKEEN
Co. Well No. P-196

County DICKENSON COUNTY Quadrangle NORA 7 1/2'
Location (UTM) N4,105,750; E380,180 UTM Zone 17
(Lat. and Long.) _____

Field _____ Province APPALACHIAN PLATEAUS
Elev. (specify) 2056.91' GR TD 6100 Form. at TD DEVONIAN SHALE

INITIAL FLOW 133,000 CU. FT. Age DEVONIAN
Date compl. or abandoned OCTOBER 28, 1985
Result GAS WELL

Gas Shows _____
Gas Pays 4054'; 4209'; 4616'; 5585'
Main Production _____ Prod. Form. BEREA; BIG Lime; DEVONIAN

FINAL FLOW ON 267,000 CU. FT. Age MISSISSIPPIAN; DEVONIAN
Treatment: DEVONIAN SHALE-445 BARRELS OF FLUID; 64,000 POUNDS OF SAND, 1,012,000 SCF OF N2
75 QUALITY FOAM; BEREA-75 QUALITY FOAM AND 75,000 POUNDS OF SAND, 480 BARRELS OF FLUID AND
874,000 SCF OF N2; BIG LIME 6000 GALLONS OF 15% HCL AND 70,000 SCF OF N2

Initial Production _____

Oil shows _____
Water FW YES at 39' at _____ at _____
SW _____ at _____ at _____ at _____

Coal 82' TO 86'; 215' TO 218'; 474' TO 478'; 901' TO 905'; 1760' TO 1764'; 1860' TO 1864'

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 _____

<u>Formation</u>	<u>Top</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
SAND AND SHALE	0	+ 2056.91	2688
RAVENCLIFF	2688	- 631.09	152
LITTLE STONE GAP	2840	- 783.09	72
SHALE	2912	- 855.09	300
MAXON	3212	-1155.09	373
SHALE	3585	-1528.09	152
LITTLE LIME	3737	-1680.09	51
LIME AND SHALE	3788	-1731.09	132
BIG LIME	3920	-1863.09	442
KEENER	4362	-2305.09	50
WEIR	4412	-2355.09	490
COFFEE SHALE	4902	-2845.09	75
Remarks <u>BEREA</u>	4977	-2920.09	111
BROWN SHALE	5088	-3031.09	832
WHITE SLATE	5920	-3863.09	180

References

Released to Open File: Completion MARCH 7, 1986Samples NO

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

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API No. 45-051-20813-00-03 VDMR Well
Rep. No. _____
DMQ File No. DI-242

Operator PHILADELPHIA OIL COMPANY

Farm A.A.SKEEN

Co. Well No. P-196

County DICKENSON Quadrangle NORA - 7½'

Location (UTM) N4,105,750; E380,180 UTM Zone 17

(Lat. and Long.) _____

Field _____ Province APPALACHIAN PLATEAUS

Elev. (specify) 2056.91 GR TD 6086 Form. at TD CORNIFEROUS

INITIAL FLOW - 133,000 CU. FT. Age DEVONIAN

Date compl. or abandoned OCTOBER 28, 1985

Result GAS WELL

Gas Shows _____

Gas Pays 4054'; 4209'; 4616'; 5585'

Main Production _____ Prod. Form. BEREA, BIG LIME; DEVONIAN

FINAL FLOW - 267,000 CU. FT. Age MISSISSIPPIAN; DEVONIAN

Treatment: DEVONIAN SHALE-445 BARRELS OF FLUID, 64,000 POUNDS OF SAND, 1,012,000 SCF OF N2; 75 QUALITY FOAM. BEREA-75 QUALITY FOAM AND 75,000 POUNDS OF SAND, 480 BARRELS OF FLUID AND 874,000 SCF OF N2; BIG LIME-6000 GALLONS OF 15% HCL AND 70,000 SCF OF N2.

Initial Production _____

Oil shows _____

Water FW YES at 39' at _____ at _____

SW _____ at _____ at _____ at _____

Coal _____

Plat _____ Plotted _____ Completion Report x

Drillers Log x Geologic Log _____

Samples _____ Interval Sheet _____

Sample Interval _____

Remarks _____

Geophysical Logs S.P. _____ Res _____ Gamma X Neutron _____

Density X Sonic _____ Other TEMPERATURE

<u>Formation.</u>	<u>Top.</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
TOP GREENBRIER	3920	- 1855	
BASE GREENBRIER	4364	- 2299	
SUNBURY	4676	- 2611	
BEREA	4915	- 2910	
DEVONIAN SHALE	5089	- 3024	
CORNIFEROUS	5930	- 3855	

Remarks

References

Released to Open File: Completion MARCH 7, 1986Samples NO

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

API WELL NO. 45 - 051 - 20813
State County Permit

Date: November 13, 1985

Operator's Well

Name A. A. Skeen, No. P-196

VIRGINIA OIL AND GAS INSPECTOR
205 W. MAIN STREET
ABINGDON, VA 24210
703-628-8115

*PHILADELPHIA OIL CO,
A. A. SKEEN
P-196
SUR. EL. - 2056.91
NORA 7 1/2'*

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 Ervington District, Dickenson County, Virginia on 28 day, October month, 19 85.

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 ___/

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 1101 N. Eastman Rd., Kingsport, TN 37664
TELEPHONE 615/246-4332



FORM 16
APPENDIX A,
SHEET 1, (OBVERSE)

API WELL NO. 45 -051 - 20813
State County Permit
Date: November 13, 1985
Operator's Well
Name A. A. Skeen, No. P-196

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

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

GEOLOGICAL TARGET FORMATION Devonian Shale
DEPTH OF COMPLETED WELL 6100 FEET
DATE DRILLING COMMENCED 9-13-85
DATE DRILLING COMPLETED 9-25-85
DRILLING RIG: ROTARY / CABLE TOOL /

GEOLOGICAL DATA Depth Thickness
 Top Bottom

Fresh water 39'

Salt water

Coal Seams Name MINING IN AREA
 Yes No Mined Out
82-86, 215-218, 474-478, 901-905, 1760-1764, 1860-1864

Oil Formation

Gas Formation
4054, 4209, 4616, 5585

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) _____

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.

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>	11-3/4"	Surface	36'			
<u>CASING CIRCULATED AND CEMENTED IN TO SURFACE:</u>	8-5/8"	Surface	2281'			
<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"	Surface	5985'		5756 - 5919	
					4981 - 5080	
					4268 - 4309	
<u>LINERS LEFT IN WELL UNDER CODE OF VIRGINIA SECTION 45.1-336 OR OTHERWISE:</u>	2-3/8"	Surface	5792'			

<u>PACKERS OR BRIDGE PLUGS:</u>	<u>KIND</u>	<u>SIZE</u>	<u>SET AT</u>
	Larkin	4-1/2" X 2"	4382'

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

SAMPLES AND CUTTINGS

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

Geolo- gical Age	Formation	General Lithology	Color	Depth (feet)		Thickness	Remarks
				Top	Bottom		
	Sand & Shale			0	2688	2688	
	Ravencliff			2688	2840	152	
	Little Stone	Gap		2840	2912	72	
	Shale			2912	3212	300	
	Maxon Sands			3212	3585	373	
	Shale			3585	3737	152	
	Little Lime			3737	3788	51	
	Lime & Shale			3788	3920	132	
	Big Lime			3920	4362	442	
	Keener			4362	4412	60 50	
	Weir			4412	4902	490	
	Coffee Shale			4902	4977	75	
	Berea			4977	5088	111	
	Brown Shale			5088	5920	832	
	White Slate			5920	6100	180	
	Logger's T. D.				6100		

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 0 BOD
Gravity and grade: _____

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation 133 MCFD
Rock pressure: N/A psig _____ hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: Brown Shale Formation *Utman*
_____ was stimulated with 445 Bbl. fluid, 64,000# sand, and
1,012,000 scfN₂ in a 75 Q foam.

Perforated 5756-5919 # Perfs. 23 Perf. Size .5
Breakdown 2800 psig. Avg. Injection 3000 psig.
Avg. I.R. 12 BPM Init. S.I.P. 3000 psig 15 Min. S.I.P. _____ psig

Zone 2: Berea Formation
_____ was stimulated with a 75 Q foam and 75,000# sand, 480 Bbl.
fluid and 874,000 scfN₂.

Perforated 4981-5080 # Perfs. 23 Perf. Size .5
Breakdown 1600 psig. Avg. Injection 2100 psig.
Avg. I.R. 14 BPM Init. S.I.P. 1700 psig 15 Min. S.I.P. _____ psig

Zone 3: Big Lime Formation
_____ was stimulated with 6,000 gal. 15% HCL and 70,000 scfN₂.

Perforated 4268-4309 # Perfs. 11 Perf. Size .5
Breakdown 1200 psig. Avg. Injection 1700 psig.
Avg. I.R. 10 BPM Init. S.I.P. 2100 psig 15 Min. S.I.P. _____ psig

Final production () natural () after stimulation

	BOD	MCFD	Hours Tested	Rock Pressure	Hours Tested
Zone 1:	<u>Co-mingled</u>	_____	_____	_____	_____
Zone 2:	<u>Co-mingled</u>	_____	_____	_____	_____
Zone 3:	_____	<u>358</u>	<u>7</u>	<u>775</u>	<u>48</u>

Final production if gas zones are comingled: 267 MCFD
7 hours tested: 750 psig. 48 hours tested

625

DEVIATION SURVEY

P-196

DEPTH

300'
513'
853'
1160'
1351'
1563'
1817'
2065'
2309'

DEGREES

1/2°
1/2°
1°
1°
1/2°
1/2°
1/2°
1/2°
1/4°

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

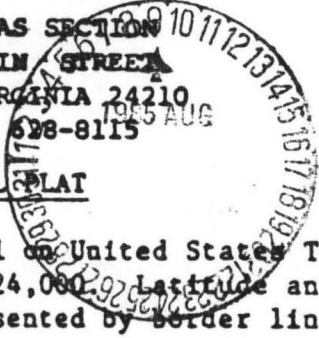
Date: July 2 / , 1985

Operator's Well No. P-196 DC-242

VIRGINIA OIL AND GAS INSPECTOR
DEPARTMENT OF LABOR AND INDUSTRY
DIVISION OF MINES

OIL AND GAS SECTION
205 W. MAIN STREET
ABINGDON, VIRGINIA 24210
PHONE 703 698-8115

WELL PLAT



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

Plat is new X / updated /

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

Operator Philadelphia Oil Company
1101 N. Eastman Road
Address Kingsport, TN. 37664
Name A. A. Skeen
Section T-186 Acres 327.39 Lease No. PO-148
Area 2056.91'
Location Nora, VA.
County Dickenson District Ervinton
Registered Engineer Registration No.
Certified Land Surveyor Cert. No.
File No. Drawing No.
Date 7-2-1985 Scale 1"=400'

Certification of Well Plat

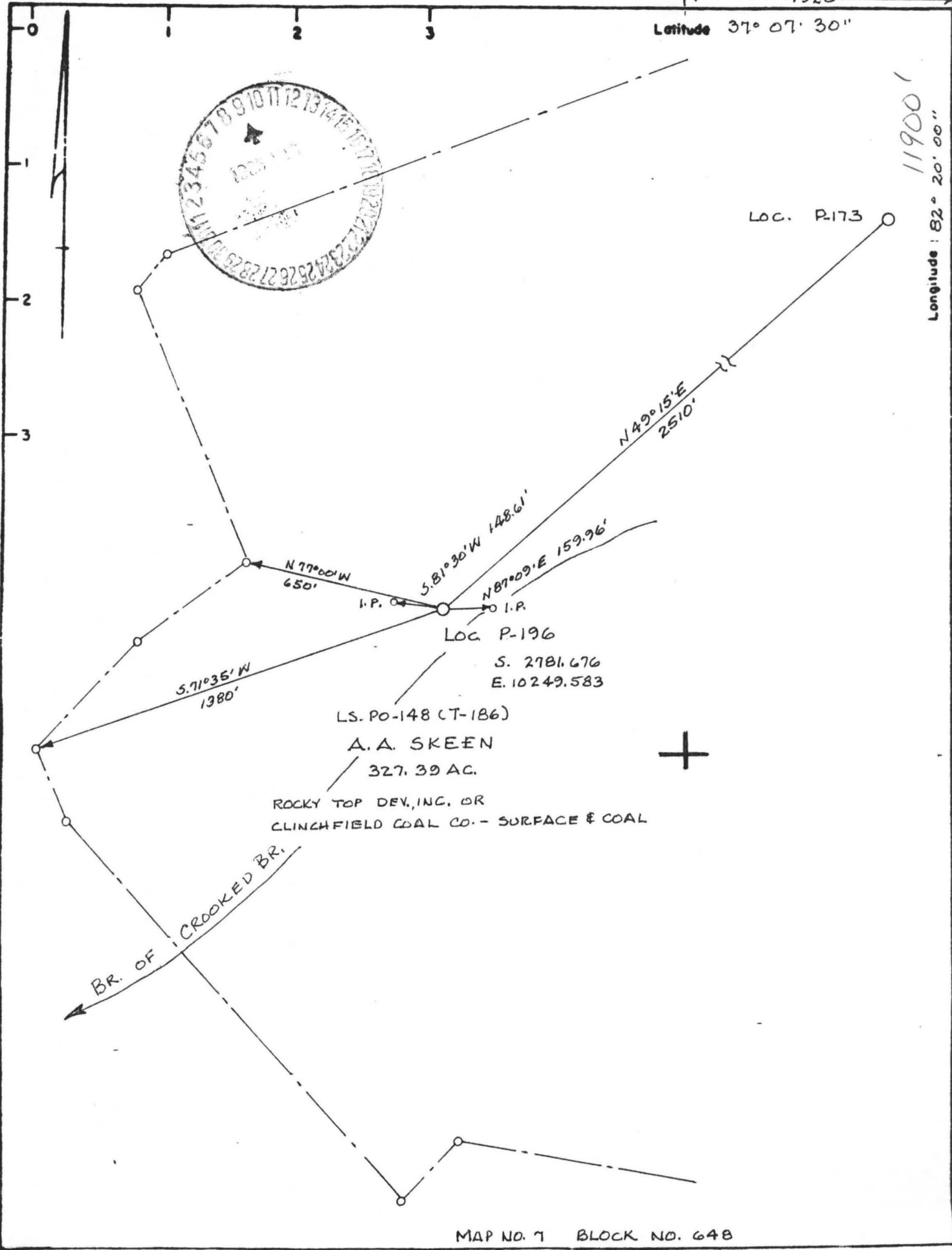
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief, and shows all the information required by law and the regulations of the Virginia Well Review Board.

Luther A. Skeen, Va. #971
~~Registered Engineer or Certified Land Surveyor~~
in Charge

4325'

Latitude 37° 07' 30"

11900'
Longitude: 82° 20' 00"



N 77° 00' W
650'

S 81° 30' W 148.61'

N 87° 09' E 159.96'

N 49° 15' E
2510'

S 71° 35' W
1380'

I.P. I.P.

LOC. P-196

S. 2781.676
E. 10249.583

LS. PO-148 (T-186)

A. A. SKEEN

327.39 AC.

ROCKY TOP DEV., INC. OR
CLINCHFIELD COAL CO. - SURFACE & COAL

BR. OF CROOKED BR.