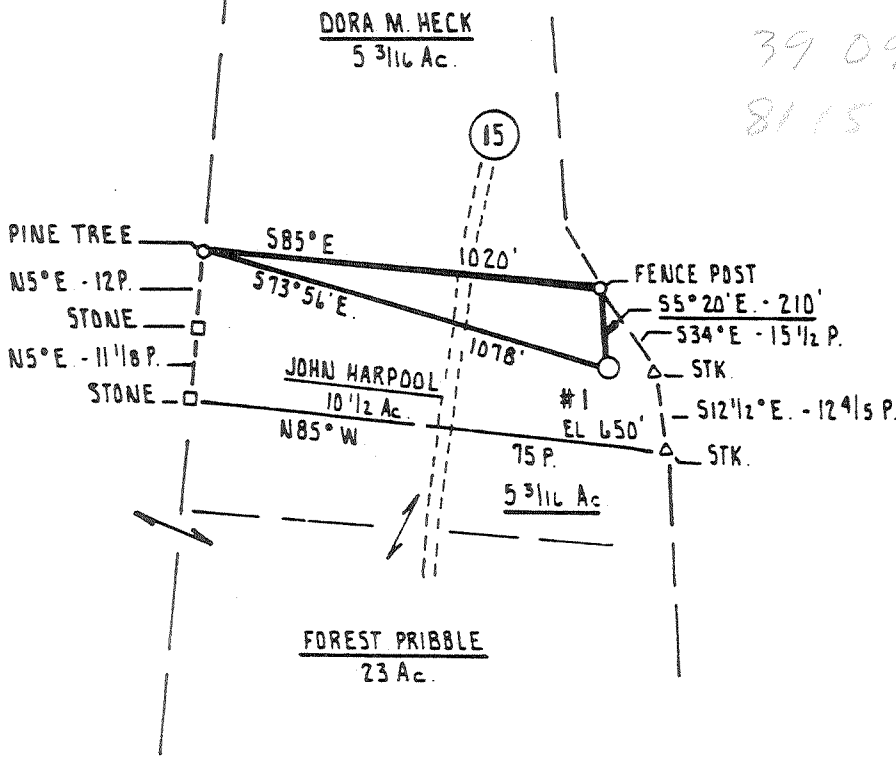


LATITUDE 39° 10' 00"

LONGITUDE 81° 15' 00"

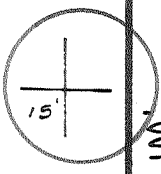
NORTH



0.96 S  
1000 S  
0.30 W

39 09 10  
81 15 20

0.96 S  
0.30 W



FILE NO. \_\_\_\_\_  
DRAWING NO. \_\_\_\_\_  
SCALE 1" = 500'  
MINIMUM DEGREE OF ACCURACY 1 PART IN 200  
PROVEN SOURCE OF ELEVATION B.M. 300' SOUTH OF INT. OF RT. # 11 AND RT. # 15. ELEV. 717'

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 ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.

(SIGNED) *Carl R. Main*  
R.P.E. \_\_\_\_\_ L.L.S. 711

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FORM IV-6 (8-78)



DATE JUNE 11<sup>th</sup> 19 81  
OPERATOR'S WELL NO. HARPOOL #1  
API WELL NO. \_\_\_\_\_  
47 - 085 - 5215  
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS.") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION 650' WATER SHED NORTH FORK HUGHES RIVER  
DISTRICT GRANT COUNTY RITCHIE  
QUADRANGLE PETROLEUM T.5' ELIZIS EC  
SURFACE OWNER JOHN HARPOOL ACREAGE 10 1/2 Ac.  
OIL & GAS ROYALTY OWNER JOHN HARPOOL LEASE ACREAGE 10 1/2 Ac.  
LEASE NO. \_\_\_\_\_  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION ALEXANDER ESTIMATED DEPTH 5500' GILLESPIE RUN JUL 27 1981  
WELL OPERATOR STONEWALL GAS DESIGNATED AGENT DENNIS XANDER  
ADDRESS P.O. BOX 225 ADDRESS P.O. BOX 225  
3-3 CLARKSBURG, WEST VIRGINIA 26301 CLARKSBURG, WEST VIRGINIA 26301



PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:  
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) \_\_\_\_\_  
Address \_\_\_\_\_

GEOLOGICAL TARGET FORMATION, Alexander

Estimated depth of completed well, 5500 feet Rotary X / Cable tools \_\_\_\_\_ /

Approximate water strata depths: Fresh, 60 feet; salt, 950 feet.

Approximate coal seam depths: none Is coal being mined in the area? Yes \_\_\_\_\_ / No X /

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS	
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		Kinds	Sizes
Conductor	11 3/4	K-55	47	X		40	-	None		
Fresh Water	8 5/8	J-55	23	X		1300	1300	to surface		
Coal										
Intermediate										
Production	4 1/2	ERW	10.5	X		5500	5500	420 sx		Depths set
Tubing										
Liners										Perforations:
										Top Bottom

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

THIS PERMIT MUST BE POSTED AT THE WELL SITE

NO COAL IN THIS AREA. LESSORS ARE FEE SIMPLE OWNERS.

All provisions being in accordance with Chapter 22, of the W. Va. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 3-14-82.

*[Signature]*  
Deputy Director - Oil & Gas Division

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.

WAIVER

The undersigned coal operator \_\_\_\_\_ / owner \_\_\_\_\_ / lessee \_\_\_\_\_ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: \_\_\_\_\_, 19 \_\_\_\_\_

By \_\_\_\_\_  
Its \_\_\_\_\_

RECEIVED

DEC 17 1981



IV-35 (Rev 8-81) OIL AND GAS DIVISION WV DEPARTMENT OF MINES

State of West Virginia Department of Mines Oil and Gas Division

Date September 25, 1981 Operator's Well No. 89-SH Farm Jon Harpool #1 API No. 47-085-5215

WELL OPERATOR'S REPORT OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas x / Liquid Injection / Waste Disposal / (If "Gas," Production x / Underground Storage / Deep / Shallow x /)

LOCATION: Elevation: 650' Watershed North Fork Hughes River District: Grant County Ritchie Quadrangle Cairo 7.5'

COMPANY Stonewall Gas Company ADDRESS P. O. Box 225 Clarksburg, WV 26302

DESIGNATED AGENT J. Robert Hornor ADDRESS P. O. Box 225 Clarksburg, WV 26302

SURFACE OWNER Jon Harpool ADDRESS Route 1 Petroleum, WV 26161

MINERAL RIGHTS OWNER SAME AS SURFACE ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Deo Mace ADDRESS Route 1, Box 65 Sandridge, WV

PERMIT ISSUED July, 1981 DRILLING COMMENCED 09-01-81 DRILLING COMPLETED 09-07-81

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Table with 4 columns: Casing & Tubing, Used in Drilling, Left in Well, Cement fill up Cu. ft. Rows include sizes 20-16, 13-10, 9 5/8, 8 5/8, 7, 5 1/2, 4 1/2, 3, 2, and Liners used.

GEOLOGICAL TARGET FORMATION Marcellus Depth 5300 feet Depth of completed well 5452 feet Rotary x / Cable Tools Water strata depth: Fresh 300 feet; Salt 1500 feet Coal seam depths: 620' Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Shale ONON. Pay zone depth 5387-5406 feet Gas: Initial open flow 21 Mcf/d Oil: Initial open flow - Bbl/d Final open flow 158 Mcf/d Final open flow - Bbl/d Time of open flow between initial and final tests 30 hours Static rock pressure 1000 psig (surface measurement) after 30 hours shut in (If applicable due to multiple completion--)

Second producing formation Pay zone depth feet Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d Final open flow Mcf/d Oil: Final open flow Bbl/d Time of open flow between initial and final tests hours Static rock pressure psig (surface measurement) after hours shut in

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Frac: 10-07-81 1 Stage Shale Water Frac 40 with Acid

Perfs: 10-02-81 (5387-5406) 18 Holes 2 1/8 ceramic shots .39

Treatment: 790 Bbls Total fluid, 20000 80/100, 60000 20/40, 4400 Gals. Acid  
Ave. rate 28Bpm, Ave. Press. 1300#, ISIP 1000#

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Big Lime	G	H	1370	1450	
Big Injun	W	H	1450	1545	1/2" H <sub>2</sub> O @ 1500'
and	G	M	1545	1625	
shale	G	S	1625	2110	
silt	Br	M	2110	2145	
shale & Silt	G	S	2145	2480	
shale	G	S	2480	3230	
shale & Silt	G	S	3230	4225	
shale	Drk G	S	4225	5295	Smell Gas @ 4600'
marcellus	Blk	S	5295	5370	Smell Gas
sandy Lime	ONORG	H	5370	5452	
			5452		

5452  
2145  

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3307 EXPL FT.

(Attach separate sheets as necessary)

Stonewall Gas Company  
Well Operator

By: R. Dennis Xander  
R. Dennis Xander  
Date: September 25, 1981

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including ..., encountered in the drilling of a well."