



FILE NO. _____
 DRAWING NO. _____
 SCALE **1"=500'**
 MINIMUM DEGREE OF ACCURACY **1:200**
 PROVEN SOURCE OF ELEVATION **RD. INT. ELEV. 685'**

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) William F. Masser
 R.P.E. _____ L.L.S. **551**

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE **5 MARCH**, 19**82**
 OPERATOR'S WELL NO. **KERNS #1**
 API WELL NO. _____
47 - 085 - 5505
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION **1138'** WATER SHED **SOUTH FORK OF HUGHES RIVER**
 DISTRICT **GRANT** COUNTY **RITCHIE**
 QUADRANGLE **MACFARLAN 7 1/2' QUAD. Barnetts 15' WC**
 SURFACE OWNER **M.C. KERNS** ACREAGE **104**
 OIL & GAS ROYALTY OWNER **M.C. KERNS, ET. AL.** LEASE ACREAGE **105**
 LEASE NO. _____
 PROPOSED WORK: DRILL 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 **MARCELLUS SHALE** ESTIMATED DEPTH **5800'**
 WELL OPERATOR **TECHWELL, INC.** DESIGNATED AGENT **DARUS H. ZEHRBACH**
 ADDRESS **194-A EASTLAND AVENUE** ADDRESS **194-A EASTLAND AVENUE**
MORGANTOWN, W.VA. 26505 **MORGANTOWN, W.VA. 26505**

MAY 10 1982



IV-35
(Rev 8-81)

OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia

Department of Mines
Oil and Gas Division

Date March 15, 1982
Operator's
Well No. #1
Farm Kerns
API No. 48 - 085 - 5505

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

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

LOCATION: Elevation: 1138' GL Watershed Hughes River System
District: Grant County Ritchie Quadrangle Macfarlan

COMPANY Techwell, Inc.

ADDRESS 194-A Eastland Ave.

DESIGNATED AGENT Darus Zehrbach
Morgantown, WV

ADDRESS Same

SURFACE OWNER Merlin C. Kerns

ADDRESS Parkersburg, WV

MINERAL RIGHTS OWNER M. C. Kerns, et al

ADDRESS Parkersburg, WV

OIL AND GAS INSPECTOR FOR THIS WORK

Doe Mace ADDRESS Sandridge, WV

PERMIT ISSUED March 16, 1982

DRILLING COMMENCED March 18, 1982

DRILLING COMPLETED March 28, 1982

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

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8	1403'	1403'	To Surface
7			
5 1/2			
4 1/2		5772'	700 Sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Marcellus Shale Depth 5800 feet

Depth of completed well 5840 feet Rotary X / Cable Tools

Water strata depth: Fresh 60 feet; Salt 1100 & 1380 feet

Coal seam depths: N/A Is coal being mined in the area?

OPEN FLOW DATA

Producing formation Hamilton Shale Pay zone depth 5556-5640 feet

Gas: Initial open flow 600,000 Mcf/d Oil: Initial open flow Bbl/d

Final open flow Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 96 hours

Static rock pressure 1700 psig (surface measurement) after 72 hours shut in

(If applicable due to multiple completion--)

Second producing formation Ohio Shale Pay zone depth 3700-4300 feet

Gas: Initial open flow 600,000 Mcf/d Oil: Initial open flow 25 Bbl/d

Final open flow Mcf/d Oil: Final open flow Bbl/d

Time of open flow between initial and final tests 96 hours

Static rock pressure 1100 psig (surface measurement) after 72 hours shut in

MAY 17 1982

(Continue on reverse side)

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

1st Stage:

Rhine Street
5 556-5640 39 Perforations Nitrogen Foam.

2nd Stage:

Huron
3700-4300 39 Perforations Nitrogen Foam.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Soil			0	60	
Greenbrier Limestone			1799	1872	
Keener Sandy Dolomite			1880	1931	
Pocono Sandstone			1948	2104	Oil
Weir Sandy Shale			2310	2454	
Berea Sand			2495	2500	
Gantz Sand			2618	2630	
Gordon Sand			2814	2850	Oil
Fifth Sand			3070	3080	
Ohio Shale			3470	4356	Oil & Gas
Hamilton Shale			5500	5640	Gas
<u>Marcellus Shale</u>			5800	5840 TD	Gas

Rhine Street @ TD

5840
2500
3340

(Attach separate sheets as necessary)

Techwell, Inc.
Well Operator
By: Darus Zehrbach *Darus Zehrbach*
Date: March 15, 1982

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 coal, encountered in the drilling of a well."



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED

MAR 16 1982

OIL AND GAS DIVISION
WV DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

DATE MARCH 12, 1982

Surface Owner M.C. KERNS

Company TECHWELL, INC.

Address 1315 16th St., PARKERSBURG, WV 26101

Address 194 A EASTLAND AVE, MORGANTOWN

Mineral Owner M.C. KERNS, ET AL.

Farm KERNS Acres 105

Address SAME AS ABOVE

Location (waters) SOUTH FORK OF HUGHES RIVER

Coal Owner M.C. KERNS, ET AL.

Well KERNS #1 Elevation 1138'

Address SAME AS ABOVE

District GRANT County RITCHIE

Coal Operator NONE

Quadrangle MACFARLAN 7 1/2 QUAD.

Address _____

THIS PERMIT MUST BE POSTED AT THE WELL SITE.
ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22,
ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY

APPROVED FOR drilling THIS PERMIT SHALL EXPIRE 11-22-82 IF OPERATIONS HAVE NOT COMMENCED BY _____
BY [Signature] INSPECTOR DOE MACE
ADDRESS RT. 1, BOX 5, SANDRIDGE, WV 25274
PHONE 655-7398

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated 23 DECEMBER 1981 by PETROLEUM SERVICES INC made to TECHWELL, INC and recorded on the 31ST day of DEC. 1981 in RITCHIE County, Book 140 Page 349-350

NEW WELL _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days.

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address N/A day N/A before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN, WEST VIRGINIA 26505
AC-304 - 292-6331

Address of Well Operator

Very truly yours,
(Sign Name) Darius H Zehbach Jr.
Well Operator

194 A EASTLAND AVE.
Street
MORGANTOWN
City or Town
WEST VIRGINIA 26505
State

*SECTION 3 If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

47-085-5505

PERMIT NUMBER

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12.7 and will carry out the specified requirements."

Signed by Darius H Zehbach Jr.

BLANKET BOND

[Signature]

THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT _____
 NAME _____ NAME _____
 ADDRESS _____ ADDRESS _____
 TELEPHONE _____ TELEPHONE _____
 ESTIMATED DEPTH OF COMPLETED WELL: 5800' ROTARY X CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: MARCELLUS SHALE
 TYPE OF WELL: OIL _____ GAS _____ COMB. X STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10		40'	
9 - 5/8			
8 - 5/8		1800'	TO SURFACE
7			
5 1/2			
4 1/2		5800'	100 BAGS
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 400 FEET _____ SALT WATER 1200 FEET _____
 APPROXIMATE COAL DEPTHS N/A _____
 IS COAL BEING MINED IN THE AREA? NO BY WHOM? N/A

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for N/A Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the N/A Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

N/A

 For Coal Company

Official Title