WEll Operators Report of Well Work

Location: Elevation: 778.00 Quadrangle: West Union

District: West Union County: Doddridge
Latitude: 14600 Feet South of 39 Deg. 22 Min. 30 Sec.
Longitude: 200 Feet West of 80 Deg. 47 Min. 30 Sec.

Company: Quaker State Corporation
1226 Putnam Howe Dr. P O B 189 Casing Used in Left Cement
Belpre, OH 45714-0000

Agent: Frank R. Rotunda

Inspector: Mike Underwood
Permit Issued: 06/16/89
Well work commenced: 08/10/89
Well work completed: 08/15/89

Verbal Plugging
Rig: N/A
Total depth (feet): 4806'
Fresh water depths (ft): N/A
Salt water depths (ft): N/A

Is coal being mined in area (Y/N)? N
Coal depths (ft): ______

Open Flow Data

Producing formation Benson Pay zone depth (ft): 4694
Gas: Initial open flow 150 MCF/d Oil: Initial open flow --- Bbl/d
Final open flow 150 MCF/d Final open flow --- Bbl/d
Time of open flow between initial and final tests --- Hours
Static rock pressure 1850 psig (surface pressure) after 24 Hours

Second producing formation Riley Pay zone depth (ft): 4240
Gas: Initial open flow combined 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 --- Hours
Static rock pressure --- psig (surface pressure) after --- Hours

Note: On back of this form put the following: 1). Details of perforated intervals, fracturing or stimulating, physical change, etc. 2). The well log which is a systematic detailed geological record of all formations, including coal encountered by the wellbore.

For: Quaker State Corporation
By: Duane Clark
Date: September 25, 1989
PERFORATION INFORMATION:
Perforated 1st stage in Benson from 4649' - 4698' with 17 shots, .39 hole.
Perforated 2nd stage in Riley from 4247' - 4281' with 19 shots, .39 hole.

FRAC INFORMATION:
Frac'd 1st stage with 75 sx. 80/100 sand, 400 sx. 20/40 sand, and 790 bbl. water with 158,000 SCF of N₂. Average pressure: 2375 PSI, average rate: 20 BPM foam (5 BPM fluid), ISIP: 1873 PSI, at 5 minutes: 1613 PSI.
Frac'd 2nd stage with 195 sx. 20/40 sand, 75% Q/Foam, 382,000 SCF N₂, 230 bbl. total fluid. Average pressure: 3110 PSI, average rate: 20 BPM foam (5 BPM fluid), ISIP: 1873 PSI, at 5 minutes: 1613 PSI.

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LTD
State of West Virginia  
Department of Energy, Division of Oil and Gas  
Well Work Permit Application

1) Well Operator: Quaker State Corporation  
   Operator's Well Number: W.F. Smith #5  
   3) Elevation: 778  
4) Well type: (a) Oil_/ or Gas_/  
   (b) If Gas: Production/X_/ Underground Storage_/  
      Deep_/ Shallow_/  
5) Proposed Target Formation(s): Riley, Benson  
6) Proposed Total Depth: 4800 feet  
7) Approximate fresh water strata depths: 129', 30-33, 205, 233'  
8) Approximate salt water depths: 1207'  
9) Approximate coal seam depths: N/A Possible pit on C 274-277'  
10) Does land contain coal seams tributary to active mine? Yes_/ No/X  
11) Proposed Well Work: Drill & Stimulate / New Well  
12)  

Casing and Tubing Program

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RECEIVED JUN 15 1989

For Division of Oil and Gas Use Only  
Department of Energy  
Fee(s) paid:  
Well Work Permit  
Reclamation Fund  
WPCP  
Plat WW-9 WW-2B Bond Agent  
Type
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
   (a) Name Mayme R. Cutright
       Address Rt. 2, Box 314
                      West Union, WV 26456
   (b) Name
       Address
   (c) Name
       Address

5) (a) Coal Owner:
       Name N/A
       Address
   (b) Coal Owner(s) with Declaration
       Name N/A
       Address
   (c) Coal Lessee with Declaration
       Name N/A
       Address

6) Inspector Harold Mike Underwood
       Address Rt. 2, Box 114
                      Salem, WV 26426
       Telephone (304)-782-1043

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

XX Included is the lease or leases or other continuing contract or
   contracts by which I hold the right to extract oil and gas OR
XX Included is the information required by Chapter 22B, Article 1,
   Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code
I have served copies of this notice and application, a location plat, and
accompanying documents pages 1 through 6 on the above named parties, by:
   XX Personal Service (Affidavit attached)
   ___ Certified Mail (Postmarked postal receipt attached)
   ___ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree
to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am
familiar with the information submitted on this application form and all
attachments, and that based on my inquiry of those individuals immediately
responsible for obtaining the information, I believe that the information
is true, accurate, and complete.

I am aware that there are significant penalties for submitting false
information, including the possibility of fine and imprisonment.

Well Operator  Quaker State Corporation
   By: Frank Rotunda ____________________________
      Its: Designated Agent
      Address  P.O. Box 823
                Parkersburg, WV 26102
      Telephone (614)-423-9543

Subscribed and sworn before me this 23rd day of June, 1989.

Dolores E. Branch  Notary Public
My commission expires  March 14, 1994