OIL AND GAS DOCKET NO. 04-0254847

THE APPLICATION OF MPG PETROLEUM INC FOR AN EXCEPTION TO STATEWIDE RULE 13, RITCHIE FARMS LEASE WELL NO. 1, SAN PATRICIO COUNTY, TEXAS

HEARD BY: Andres J. Trevino P.E., Technical Examiner
James M. Doherty, Hearings Examiner

APPEARANCES:

APPLICANT:	**REPRESENTING:**
George C. Neale Rick Johnston Margaret Graham Conway Waak, Jr. Toby Christiansen Phil A. McCool III Ursula Hammes, Ph.D Claudia Tijerina Wes Ritchie	MPG Petroleum Inc.
Michael Hornsby	Himself
PROTESTANTS:	
David Cooney Jr. Charles Ross Mark England Arnold Ott, P.E.	Railroad Commission of Texas

PROCEDURAL HISTORY

Application Filed:	December 18, 2007
Request for Hearing:	December 7, 2007
Notice of Hearing:	December 19, 2007
Date of Hearing:	January 10 & 29, 2008
Transcript Received:	February 13, 2008
Proposal For Decision Issued:	July 3, 2008

EXAMINERS' REPORT AND PROPOSAL FOR DECISION

STATEMENT OF THE CASE

MPG Petroleum Inc. ("MPG") requests authority pursuant to Statewide Rule 13(b)(4)(A) to operate Well No. 1 on its Ritchie Farms Lease in San Patricio County without 600 feet of cement above the production casing shoe. This application is protested by the Field Operations Section of the Railroad Commission of Texas. As an alternative to granting an exemption from Statewide Rule 13(b)(4)(A), MPG requested temporary approval to produce the well without cement behind the casing for six month intervals subject to periodic review.

DISCUSSION OF THE EVIDENCE

Applicant's Evidence

The subject well was drilled as a wildcat well that encountered a drilling problem. The well took a gas kick followed by lost circulation. During the lost circulation the wellbore apparently collapsed around the drill pipe, causing the drill pipe, drill collar assembly and drill bit to become stuck in the well. The depth of the well was 8,650 feet when the drill pipe became stuck. The proposed total depth of the well was 9,500 feet.

MPG Petroleum chose the location of the wildcat well based on 3D seismic data and the location of two wells drilled in 1952 and 1958 that had indications of hydrocarbons in the area. MPG holds 786 acres in the Ritchie Farm lease. During drilling, the well encountered four shows of oil and/or gas at depths of 6,130, 8,447, 8,500 and 8,624 feet. On the eleventh day of drilling, November 5, 2007, the well took a gas kick followed by a loss of circulation fluids. The following day MPG ran a free point test, stuck pipe log and a gamma ray long. The free point test determined the drill pipe was free at a depth of 2,600 feet. The stuck pipe log showed the well bore had apparently collapsed around the drill pipe and bonded at several spots up and down the drill pipe. Evidence of bonding was indicated at depths of 4,310, 6,986, 7,310 and 7,700 feet. MPG proposed a completion method for the well to Arnold Ott, Assistant Director of the Corpus Christi Office of the Railroad Commission, whereby the well would be considered properly completed as is without cement behind the drill pipe. MPG interpreted Mr. Ott's acknowledgment of receipt of this proposal as approval of the proposed completion method. MPG released the rig after setting a cast iron bridge plug (CIBP) at a depth of 8,200 feet inside the drill pipe to kill the well.

Having not heard from the Commission, MPG began completion procedures on Nov 28, 2007. MPG completed the well to produce by drilling out the CIBP on December 3, 2007. The well was flow tested at various rates with at maximum rate of 1.9 MMCFD of gas and 120 BOPD on a 12/64" inch choke flowing at 2,359 psi wellhead pressure. The well was flow tested until December 6, 2007 when MPG was notified by letter from the Corpus Christi District Office dated December 5, 2007, that the well was in violation of Rule

13(b)(4)(A), because production casing was not cemented as required by the rule. MPG was ordered to seal in the well. The well has remained shut in since then. MPG requested a hearing on Dec. 7th. On December 18, MPG ran temperature and noise log surveys to gather data for the hearing.

MPG believes an exception to Rule 13(b)(4)(A) should be granted as it feels a hydraulic seal exists between the productive interval and the surface casing. MPG asserts that the hydraulic seal around the wellbore was created by the collapsed formation or "bridge". MPG believes this bridge is an effective hydraulic seal, as if cement was used to isolate the productive formation from the surface.

Cement bond log shows bonding

The stuck pipe log run on November 7, 2007 is identical to the cement bond log used to determine bonding between the drill pipe and the formation. Evidence of bonding was indicated at depths of 4,310, 6,986, 7,310 and 7,700 feet giving at total estimated bonded interval of 276 feet.

Differential pressure between drill pipe and surface casing annulus is proof of seal

MPG stated that the differential pressure between the drill pipe and the surface casing/drill pipe annulus is evidence a hydraulic seal is occurring. The pressure inside the drill pipe has been recorded as high as 3,000 psig, while the surface casing/drill pipe annulus pressure was 15 pisg. MPG had pumped mud down the surface casing/drill pipe annulus to prevent any fluids from reaching the surface.

Sonic log shows cross flow is occurring

The temperature and sonic logs run on December 18, indicate flow was occurring into the wellbore at various depths and cross flow was occurring from the productive sands to sands with lesser pressures up the wellbore. MPG's expert Rick Johnston, testified that reviewing both the temperature log and sonic log together shows, in his opinion, that fluids are entering the wellbore at depths of 8,000 feet and 8,600 feet. The fluids are then migrating up the wellbore and flowing into two zones at depths of 6,750 feet and 6,900 feet. This cross flow is causing the loss of reserves as gas and oil flow into other sands. Any decline of pressure from 2,825 psig on December 31, 2007 is an indication that reserves are being lost to a thief zone.

Remedial cementing is risky

Field Operations was not opposed to allowing MPG to produce the well on a temporary basis as long as MPG submitted and implemented a remedial cementing plan. MPG is opposed to performing any remedial cementing operation as it feels it is highly risky. The task of drilling out the cast iron bride plug requires a coiled tubing unit with a 2" coiled tubing to drill inside the drill pipe. Unlike casing, the inside diameter of the drill pipe varies between 3 5/16" and 4 17/64" as the drill collars are smaller diameter than the drill

pipe. These variances cause the annular fluid velocity to increase across the drill collars then decrease inside the drill pipe. The decrease in annular fluid velocity will cause drill cuttings to "fall" on to the drill collars and increase the possibility of having a stuck coiled tubing during remedial activities. MPG testified the coiled tubing got stuck numerous time and nearly junked the hole when they drilled out the cast iron bridge plug to flow the well. A coiled tubing unit expert, Toby Christiansen, testified he was also concerned with the cement setting up in the coiled tubing unit during the pumping phase of the cement remedial operation and then drilling out the cement inside the drill pipe later. He stated he would not recommend performing such a risky operation.

Benefits of producing the well

MPG stated allowing it to produce the well will reduce and ultimately eliminate cross flow. As the bottom hole pressure drops, the cross flow will reverse flow. Producing the well will also reduce bottomhole pressure thereby minimizing the risk of a blow out.

MPG requests temporary approval to produce

MPG requests temporary approval to produce the well if a permanent exception is not approved. MPG requests a six month approval to produce the well after which time the well will be evaluated to determine its ability to safely continue producing.

Surface owners and Zaffirini's office in support

MPG's request for an exception to Statewide Rule 13(b)(4)(A) is supported by Wes Ritchie, the grandson of the mineral and land owner, the Ritchie Farms, Limited. He stated he represents the Ritchie family which supports the exception to produce the well at least on a temporary basis. Also in support of the application is Texas Senator Judith Zaffirini. Claudia Tijerina, a legislative aide for Senator Zaffirini testified regarding Zaffirini's interest in the case as the well is located in San Patricio County, Zaffirini's District. Ms. Tijerina stated that Senator Zaffirini's Office had reviewed the technical aspects of the case and did not have a problem approving temporary approval. Dr. Ursala Hammes, the Project Manager of the State of Texas Research Recovery (STARR) Project is in support of drilling wells in this area. Dr. Ursala believes a deep seated structure under MPG's well exists that has potential to be viable and could lead to additional drilling into the structure. In turn the State of Texas will receive revenues from any production from this structure or "play" found under State land.

Protestant's Evidence

Field Ops states no exceptions are allowed by rule

Commission staff with the Field Operations Division stated they have no authority to grant an exception to Rule 13 as the rule does not allow it. Statewide Rule 13(b)(4)(A) reads as follows:

> "(A) Cementing method. The producing string of casing shall be cemented by the pump and plug method, or another method approved by the commission, with sufficient cement to fill the annular space back of the casing to the surface or to a point at least 600 feet above the shoe. If any productive horizon is open to the wellbore above the casing shoe, the casing shall be cemented in a manner that effectively seals off all such possibly productive horizons by one of the methods specified for intermediate casing in paragraph (3) of this subsection. "

Seal is not permanent

Several technical representatives from the Field Operations Division testified they believe the bridge is not a complete seal, and if it is sealing it is not permanent, and therefore an exception should not be allowed.

Cross flow is occurring

Staff from the Field Operations Division believe cross flow is occurring and is causing waste of resources as fluids flow from the productive zones to thief zones. The Staff fears pressure could build up in the annulus and cause an underground blow out at the casing shoe of the surface casing.

Should not produce until remedial cement operations occur

The Commission's Field Operations staff would only allow the well to produce if MPG would submit a remedial cementing plan that would bring the well into compliance with Rule 13.

EXAMINERS' OPINION

The examiners believe that this application for permanent Rule 13 exception should be denied, however, approval should be granted to temporarily produce the well for a period of six months provided certain safeguard measures are taken.

The well currently offers ground water protection as the surface casing was set at 1,003 feet, below the base of the useable quality water estimated to occur at 850 feet. The surface casing was circulated with cement and the casing shoe was pressure tested. The well is located in the middle of a cotton field in an unpopulated area. There are no residences or structures within 1 mile of the well site.

Hydraulic seal is formed, but not permeant in nature

It is evident that the bridge in the well is forming a hydraulic seal in the drill pipe/ surface casing annulus. The drill pipe had registered pressure readings as high as 3,000 psig while the pressure reading on the annulus was 15 psig. In order to stabilize the bridge, MPG pumped mud down the annulus while it was releasing gas pressure built up by a gas bubble in the drilling mud. The mud in the annulus helps maintain the hydraulic seal by adding hydrostatic pressure to the bridge. It is estimated that there is approximately 276 feet of formation material forming a bond with the drill pipe. Unlike cement, this bonding may not be permanent, and for this reason only temporary approval is being recommended.

Remedial cement operations risky

The remedial cementing procedure (cement squeeze) required to bring the well into Rule 13 compliance is very risky with no guarantee of success. There is a high risk the well would be junked if a tool or coiled tubing became stuck inside the drill pipe. A cement squeeze would require multiple risky procedures, any one of which could cause the well to be junked.

No electric logs available.

Electric logs delineating the formation were not run prior to the drill pipe becoming stuck. MPG would be unable to determine where to perforate the well once cement was placed behind the drill pipe. As no logs exist, MPG could only guess where to perforate the well which may reduce the well's potential to produce.

Reservoir is small, and it is unlikely a second well is justified

The reservoir is estimated to be 16 to 20 acres is size based on the areal extent of the seismic "bright spots". It is unlikely the well will have a long life due to the limited size of the reservoir and the loss of hydrocarbons to an apparent thief zone up the wellbore. Plugging the well will cause the hydrocarbons in the thief zone to be lost forever and loss of most of the hydrocarbons in the productive zone. A replacement well would be required to be drilled to recover those reserves.

Production will reduce the possibility of blow out and allow reservoir evaluation

Allowing temporary production of the well will reduce the possibility of a blow out by reducing bottomhole pressure. If the reservoir is as small as it is believed to be (16 to 20 acres) the pressure should decline fairly rapidly. When a surface blow out occurs on a well

that can't be controlled at the surface, a relief well is often drilled to reduce bottom hole pressure around the wellbore experiencing the blow out to control the well. Producing the well will also minimize the risk of a large blow out should the bridges collapse inside the wellbore. Allowing the well to produce will allow production information to be gathered that can assist in evaluation of reservoir characteristics such as size.

Approve temporary production with additional surface equipment and safeguards

The approval is contingent on having adequate safeguards as determined by the staff of the Field Operations. The safeguards include but are not limited to: constant surface casing/drill pipe annulus pressure monitoring with real time notification of upset conditions, a pressure relief valve tied to equipment capable of handling fluids released from the pressure relief valve and a contingency plan describing how the operator will respond to well upsets to minimize risks to public safety, the environment and the well's integrity. A Rule 13 Compliance Plan (remedial cementing plan) is not required unless MPG seeks permanent authority to produce the well.

The evidence indicates that the temporary authority to produce the Ritchie Farms No. 1 will not adversely impact any surface or subsurface useable quality water.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the hearing.

2. Drilling Permit No. 647978 was issued to MPG Petroleum, Inc. on October 19, 2007 to drill the Ritchie Farms No. 1 to a depth of 9,600 feet.

3. A gas kick occurred while drilling at a depth of 8,624 feet on November 5, 2007. The well experienced a loss of circulation followed by stuck drill pipe.

4. MPG Petroleum requested approval to produce the well without cement behind the drill pipe, but did not receive the approval from the Corpus Christi District Office or the Field Operations Section.

5. The Ritchie Farms No. 1 has surface casing that is cemented in a manner to protect usable quality water but the production string is not cemented as required by Statewide Rule 13(b)(4)(A) .

    a. The subject well has 1,003 feet of 9⅝" surface casing cemented to surface.

    b. The Texas Commission on Environmental Quality recommends that usable-quality water be protected to 850 feet in the area of the well.

    c. The subject well has approximately 8,127 feet of 6⅛" drill pipe, 500 feet of 6⅛" drill collars with a 8 ¾" drill bit, and no cement above the shoe. There is approximately 24 feet of open hole below the drill bit.

6. A bridge was created by the collapse of the formation around the drill pipe due to the loss circulation condition reducing the drilling mud pressure against the formation.

7. There is evidence the bridge is isolating the produced fluids from the surface.

   a. The well was initially capable of production at rates up to 1,900 MCF gas and 120 BOPD.

   b. Surface pressure data and stuck pipe log data indicate bonding of drill pipe and the isolation of production fluids from the surface is occurring.

   c. Evidence of bonding/bridging was indicated at depths of 4,310, 6,986, 7,310 and 7,700 feet giving a total estimated bonding/bridged interval of 276 feet.

8. Cross flow of reserves in the subject well will likely cause waste of otherwise recoverable reserves if the well is not allowed to produce.

9. Surface pressure data is currently being monitored between the surface casing and drill pipe annulus.

10. Remedial cementing operations to squeeze cement behind the drill pipe is risky.

11. The hydraulic seal created by the formation bonding to the pipe may not be permanent.

12. The well is located in the middle of a cotton field away from residents and structures.

CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties entitled to notice pursuant to applicable statutes and rules.

2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.

3. Approval of a temporary exception for a period of six months, subject to certain conditions, to Statewide Rule 13(b)(4)(A) to produce the well will prevent waste of hydrocarbons and protect correlative rights.

4. Approval of a temporary exception for a period of six months, subject to certain conditions, to Statewide Rule 13(b)(4)(A) to produce the well will not cause pollution of usable quality water or threaten the public health and safety.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that the temporary authority to produce the Ritchie Farms No. 1 be approved as set out in the attached Final Order.

Respectfully submitted,

Andres J. Trevino
Technical Examiner

James M. Doherty
Hearings Examiner