BEFORE THE STATE OIL AND GAS BOARD OF MISSISSIPPI

DOCKET NO. 75-81-386
ORDER NO. 112-81

PETITION OF SHELL OIL COMPANY TO MAKE PERMANENT THE PRESENT SPECIAL FIELD RULES FOR THE SOUTHWEST PINEY WOODS FIELD, RANKIN AND SIMPSON COUNTIES, MISSISSIPPI.

O R D E R

This day this cause came on for hearing before the State Oil and Gas Board of Mississippi on the petition of Shell Oil Company requesting the Board to make permanent the existing Special Field Rules for the Southwest Piney Woods Field, Rankin and Simpson Counties, Mississippi, and the Board, having considered argument of counsel and having heard the testimony of witnesses and having been fully advised in the premises, finds as follows:

1.

Due proper and legal notice of the meeting of the Board for the purpose of considering and taking action with respect to this matter has been given in the time, manner and way as provided by law and the Rules and Regulations of the Board and due, legal and sufficient proofs of publication are on file with the Board and the Board has full jurisdiction of the parties and the subject matter and has authority to hear and determine said matter.

2.

The Board having fully considered said matter and the evidence and recommendations made in said hearing is of the opinion that the following Special Field Rules should be adopted for the prevention of waste and the protection of the coequal and correlative rights of all owners in said field.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED by the State Oil and Gas Board of Mississippi that the following Special Field Rules be and the same are hereby adopted for the Southwest Piney Woods Field located in Rankin and Simpson Counties, Mississippi, to take effect on and after 7:00 a.m., May 1, 1981, to-wit:

C. RED FLAG WITH NUMERAL 3 IN CENTER: EXTREME DANGER . . . When H_2S or SO_2 is determined to have reached the injurious level. Immediately evacuate all non-essential personnel.

(3) Signs shall be posted on or by each gate at well site, as follows:

A.	14" x 20"	DANGER RESTRICTED AREA KEEP OUT
B.	8" x 12"	CAUTION POISON GAS MAY BE PRESENT AT THIS SITE
C.	14" x 20"	DANGER NO SMOKING BEYOND THIS POINT

(4) Pipeline crossing of county or state road shall have sign on each side of road, as follows:

14" x 20"	CAUTION HIGH PRESSURE GAS LINE (COMPANY NAME) (TELEPHONE NUMBER)

RULE V - APPLICABILITY OF STATEWIDE RULES

(A) All rules and regulations contained in Statewide Order No. 201-51, Statewide Rules, and amendments thereto not in conflict with the foregoing special field rules are hereby adopted and shall apply in said field.

(B) The Board expressly reserves the right after notice and hearing to alter, amend or repeal any and all of the above and foregoing rules and regulations.

THIS ORDER shall take effect and be enforced from and after 7:00 a.m. on the 1st day of May, 1981.

SO ORDERED, this the 18th day of March, 1981.

STATE OIL AND GAS BOARD OF MISSISSIPPI

BY: Dan R. Lauchg, Jr.
CHAIRMAN

SPECIAL FIELD RULES FOR THE SOUTHWEST PINEY WOODS FIELD
SIMPSON AND RANKIN COUNTIES, MISSISSIPPI

FIELD LIMITS:

The Southwest Piney Woods Field as used herein is that area consisting of Sections 22, 25, 26, 27, 34, 35 and 36, Township 3 North, Range 2 East, and Section 31, Township 3 North, Range 3 East, Rankin County, and Sections 1 and 2, Township 2 North, Range 2 East, Simpson County, Mississippi, underlain by the Smackover Gas Pool as hereinafter defined and all productive extensions thereof correlative therewith and interconnected therewith.

SMACKOVER GAS POOL:

The Smackover Gas Pool as used herein shall be construed to mean those strata of the Smackover Formation productive of gas in the interval between 21,218 feet and 22,250 feet in the Shell-Ridgway Management No. 1 Well located 1548 feet north of the south line and 1661 feet east of the west line, Section 35, Township 3 North, Range 2 East, Rankin County, Mississippi, as indicated on the electric log of said well and all sand correlative of said strata and interconnected therewith productive of gas.

DRILLING UNIT SIZE:

The characteristics of the Smackover Gas Pool in said field are such that a well located as hereinafter prescribed and drilled upon a drilling unit consisting of 1280 surface acres, conforming to the requirements herein contained, will effectively drain and produce the recoverable gas from such unit in said gas pool without avoidable waste.

RULE I - SPACING OF GAS WELLS:

Every well hereinafter drilled as a gas well in the Southwest Piney Woods Field to the Smackover Gas Pool:

(A) Shall be located on a drilling unit consisting of two full governmental sections containing not less than 1200 acres or more than 1360 acres, upon which no other drilling or producible well to the same gas pool is located;

(B) Shall be located at least 1500 feet from every exterior boundary of the drilling unit;

(C) Shall be located at least 3000 feet from every other drilling or producible well to the same gas pool;

(D) The distance between any two points farthest apart on the drilling unit (measured entirely within the unit) upon which the well is located shall not exceed 12,250 feet; provided, no unit shall be permitted that will create island acreage.

RULE II - SAFETY REGULATIONS - DRILLING:

A. Casing. In addition to the surface casing and production casing required by Statewide Rules 11 and 12, an intermediate casing string shall be required. This string of casing shall be set at a depth at least into the top of the Cotton Valley Formation. A quantity of cement sufficient to bring the cement column to within 11,000 feet of the surface shall be used. All casing exposed to production shall be suitable for sour gas service.

Protective Casing - This string of casing shall be set into the lower Buckner or top of the Smackover Formation. A quantity of cement sufficient to bring the cement column to the base of the next larger casing shall be used. If a liner is used as the protective string, the cement shall be tested by a fluid entry or pressure test to determine whether a seal between the top of the liner and the next larger string of casing has been achieved. When such liner is used as production casing, it shall also be extended back to the surface to avoid the intermediate casing string being utilized as production casing.

(1) After cementing any of the above strings of casing, drilling shall not be commenced until a time lapse of at least 24 hours, or 12 hours under continuous pressure.

(2) Before drilling the cement plug in any of the above strings of casing, the casing shall be tested at a pressure in pounds per square inch calculated by multiplying the total casing length in feet by two-tenths (.2). If the pressure declines more than ten percent (10%) in 30 minutes, or if there is other indication of a leak, the casing shall be recemented and repaired or an additional casing string run and the casing tested again in the same manner.

(B) Blowout Prevention Equipment and Choke Manifold - Blowout preventors and related well control equipment used while drilling any

well in the Southwest Piney Woods Field shall be installed, used and tested in a manner necessary to prevent blowouts. Blowout prevention equipment shall consist of a minimum of four remotely controlled hydraulic operated blowout preventors, treated for sour gas service with a working pressure which exceeds the maximum anticipated surface pressure. This equipment shall include a bag type, or annular blowout preventor; a blowout preventor with blind rams; and blowout preventors with pipe rams for every drill pipe size in use; a choke manifold; a kill line and a fill-up line. The choke manifold shall be trimmed for sour gas service. Accumulators for activating blowout preventors shall be of sufficient size as to maintain a pressure reserve capacity at all times to open and close each and every hydraulic blowout preventor without recharging. Accumulators shall be equipped with an electric and air-operated pump. The accumulator system shall be located a safe distance from the rig and in a different direction from the choke lines. In addition to the accumulator station, the blowout preventors and choke equipment must be capable of being operated from the rig floor and additionally from a remote control area located away from the rig.

C. Testing or Blowout Prevention Equipment - The ram type blowout preventors and related control equipment shall be tested with water to at least three-fourths (3/4) the rated working pressure, or two-thirds (2/3) the working pressure of the casing, whichever is the lesser when installed, before drilling out after each string of casing is set, and not less than once each month while drilling and also following all repairs that require disconnecting a pressure seal in the assembly. The bag type or annular preventor shall be tested to one-third (1/3) of its rated working pressure at similar times. The Operator shall notify the State Oil and Gas Board eight (8) hours in advance of such tests in order that a representative of the Board may be present, except in emergencies. While the drill pipe is in use, and while drilling below the protective casing, the ram type preventors shall be actuated once each trip, but in no event less frequently than daily to test proper functioning. Blowout prevention drills shall be conducted weekly for each drilling crew to insure that all equipment is operational and that drilling crews are properly trained to carry out emergency duties.

D. Other Equipment - When drilling in the Buckner and deeper formations, the following additional safety equipment is required: (a) an inside blowout preventor assembly adaptable to each type of connection in use with the drilling string shall be maintained on the floor at all times. A Kelly cock (or valve) shall be installed both below the swivel and another full opening Kelly cock (or valve) shall be installed at the bottom of the kelly of such design that it can be run through the blowout preventors and into the casing;

(1) A pit level recorder and mud flow indicator must be installed in such a manner that graphs of the readings may be readily read and observed by the driller;

(2) A special trip tank will be used with the mud flow diverted therein on all trips. The trip tank must be sufficiently accurate to detect the gain or loss of one barrel of mud or less over normal trip displacement;

(3) Rig electric power will be separated from the rig structure so that it may be used under emergency conditions when it otherwise would be shut down.

E. Rig Layout.

(1) When feasible, the drilling rig shall be situated on a location so that the anticipated prevailing winds, while drilling in the Buckner and Smackover blow across the rig and toward the reserve pits.

(2) Mud tanks are to be located at least 90 feet from the well bore.

(3) A mud logging trailer or similar device will be used below the top of the Buckner formation and equipped with an automatic H_2S monitor with its detector stationed at the shale shaker. Another H_2S detector will be positioned on the rig floor with a monitor located in the mud logging trailer.

(4) An emergency equipment trailer will be on location at all times and positioned in a safe normally up-wind area. Said trailer will be equipped with sufficient gas masks, self-contained breathing units, resuscitators, H_2S and SO_2 detectors and auxiliary equipment for use in an emergency.

(5) A sufficient sized electric fan with an explosion-proof motor will be positioned on the rig floor and another fan under the rig floor so that when used, same shall be sufficient to clear any accumulated gas from the substructure and away from the stairway.

F. Directional Surveys - Directional surveys will be made from the surface to the top of the Buckner Formation and an additional survey from the Buckner to total depth, or as deep as mechanically possible. Surveys may either be gyroscopic or magnetic type but will not be calculated from a dipmeter.

G. Accident and Contingency Plan - An accident and contingency plan shall be developed and filed with the application to drill. The plan shall include a plot of the well site upon a map having a radius of at least 3 miles around the well, upon which shall be shown all good roads, the residences of all occupants in the area (with homes, telephone numbers, names and numbers of residents listed). Churches and public areas shall also be shown on said map. The Emergency Plan shall also be accompanied by Exhibits as follows:

(1) An emergency evacuation plan.

(2) A list of medical personnel and facilities that are prepared to treat personnel exposed to toxic gas showing addresses and telephone numbers.

(3) Supervisory personnel must be familiar with all roads to the subject residences and be trained in removal of personnel in the event of evacuation. Those persons residing in places in low elevations within a one mile radius of the well bore shall be given priority in evacuation.

(4) Agencies to be notified in case of emergency with addresses and telephone numbers.

(H) Blowouts - in case of a blowout, the well must be ignited in a situation where it is clear that human life is endangered or there is no hope of controlling the blowout under the prevailing conditions of the well. Equipment must be kept on location at all times capable of igniting the well.

RULE III - SAFETY REGULATIONS - TESTING, PRODUCING AND GATHERING:

A. Before testing any well and before conducting workover operations involving bleeding fluid from well, the State Oil and Gas

Board shall be notified at least four (4) hours in advance. In emergency situations where applicable air standards are exceeded, the State Oil and Gas Board and the Mississippi Air and Water Pollution Commission shall be given immediate notification by telephone.

(1) Tubing and Flowlines - All tubing and flowlines shall be suitable for sour gas service and the tubing may have a diameter of at least 4-1/2 inches in order that a kill string may be installed inside the tubing upon the completion of the well. Inhibitor oil or other fluid shall be continually injected into the well so that the tubing and flowlines shall be additionally protected from corrosion unless suitable corrosion proof material is utilized.

(2) Wellhead Equipment - All completed wells shall be equipped with casingheads, wellhead fittings, valves and connections with a rated working pressure equal to or greater than the surface shut-in pressure of the well and all such fittings shall be suitable for sour gas service. Shut-off devices in connection with the wellhead assembly shall include a manually operated shut-off valve, a stand-by (reserve) manually operated shut-off valve and a self-operating (automatic safety shut-off valve that automatically closes in the well if flowline pressure drops indicating a rupture in the flowline.

(3) Equipment for a production test shall include a flare stack designed to meet applicable air standards, flare knock-out drum and automatic hydrogen sulfide monitor.

(4) The wellhead shall have tubing and casing pressure recorders installed and operative during all testing operations. Recorders shall be deadweight tested for accuracy prior to start of operations.

(5) A control center with adequate communications will be provided at the well site and located so that an unobstructed view of the wellhead is available throughout the operation. The automatic hydrogen sulfide monitor will be positioned in the control center with its detectors located at suitable locations.

(6) Pits used in conjunction with testing or workover operations shall be used to retain only mud or other liquid. When testing or bleeding a well during workover, mud, oil, water and other liquids may be diverted directly to the pit until the presence of gas is determined

by small and/or on-site detectors. Thereafter, gas or gas liquid mixtures must be processed through a flare knockout drum and a flare stack. The pits shall have several pilots extending over the pits. The flare stack pilot shall be equipped with an auxiliary fuel source and automatic igniter. The flare stack ignition system shall have a suitable backup ignition system.

(7) All producing wells shall be equipped with monitoring devices that may be read from a central location to monitor whether the well is shut in, flaring to the flare stack or producing. In addition, each well site will be equipped with a hydrogen sulfide detector which can be monitored from a central location and a device to remotely shut the well in from a central location.

(8) A mud system containing mud of sufficient weight and volume to offset the hydrostatic pressure of the productive interval will be maintained at a central point in the field. The system will have means to condition the mud and will be checked at least monthly by a competent mud engineer for weight (pounds per gallon) yield point and plastic viscosity.

RULE IV - VISIBLE WARNING SYSTEM:

(1) Wind indicators shall be installed at prominent locations in order that all personnel can readily determine wind direction at all times. These wind indicators will aid personnel in determining safe upwind areas in the event H_2S or SO_2 is present in the atmosphere.

(2) Operational flags shall be displayed from high points visible to all personnel. These flags are to indicate the following operational conditions:

A. YELLOW FLAG WITH NUMERAL 1 IN CENTER: POTENTIAL DANGER . . . while drilling in known H_2S zones or when H_2S has been detected in the drilling fluid or atmosphere. Protective equipment shall be inspected and all working personnel shall be ready to use this equipment.

B. ORANGE FLAG WITH NUMERAL 2 IN CENTER: MODERATE DANGER . . . when the threshold limit value of H_2S (10 ppm) or of SO_2 (5 ppm) is reached. If the concentration of H_2S or SO_2 reaches 20 ppm, protective equipment must be worn by all personnel and all non-working personnel shall proceed to the safe briefing areas.