

University uses on-campus abandoned well to simulate deepwater well-control operations

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A new \$2-million facility for well control research and training was recently dedicated at Louisiana State University.

The facility is centered around a 6,000-ft well complete with subsurface equipment which allows essentially full scale modeling of the flow geometry present on a floating drilling vessel operating in 3,000 ft of water. Extensive new surface equipment also was installed to allow highly instrumented well-control experiments and training exercises to be conducted.

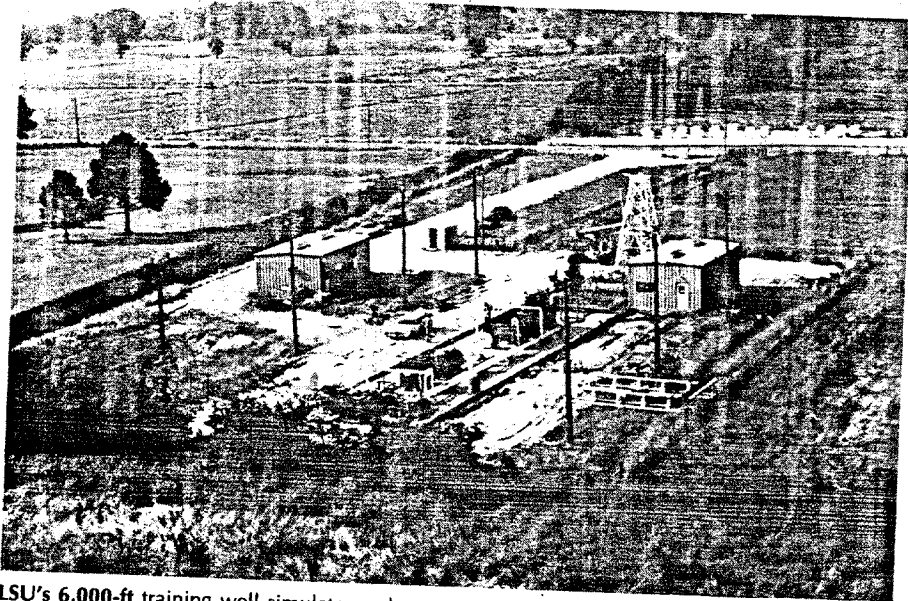
The new facility is a major expansion of the LSU Blowout Prevention Research & Training Center.

Funding for the new research and training well facility was obtained through the combined support of a consortium of 53 companies in the petroleum and construction industry (Table 1). The project was given a big boost when Goldking Production Co., after drilling a 10,000-ft, \$670,000 dry hole on the LSU campus agreed to donate the well to LSU.

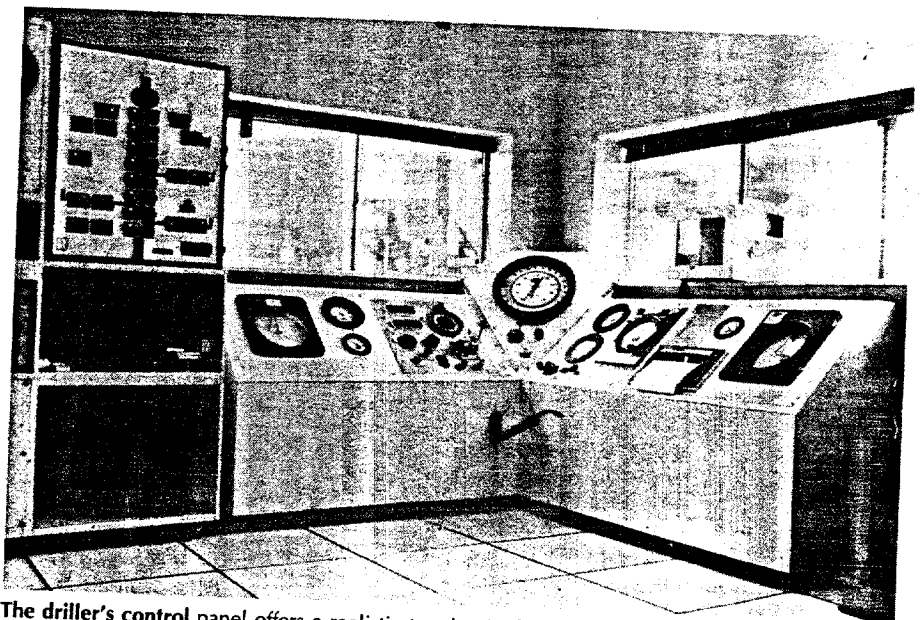
Thirteen major oil companies contributed special grants totaling \$200,000 for the needed well completion work and surface facilities. Grants of equipment and services valued at approximately \$1,200,000 were provided by 40 service companies in the petroleum and construction industries. In addition, approximately \$200,000 of the well completion and site preparation costs were provided as part of a research contract sponsored by the U.S. Minerals Management Service (formerly the U.S. Geological Survey).

Test well. The recently completed well facility is shown in Fig. 1. The main features of the facility include:

- A 6,000-ft well
- A choke manifold containing four 15,000-psi adjustable drilling chokes of varying design features
- A 250-hp triplex pump
- Two mud tanks with a combined capacity of 550 bbl



LSU's 6,000-ft training well simulates a deepwater well with subsea BOPs. Some surprising results have come from experimentation with the first facility able to model subsea well control (Fig. 1).



The driller's control panel offers a realistic touch, similar to an actual floating drilling vessel (Fig. 2).

- A high capacity mud-gas separator
- Three mud degassers of varying design
- A mud-mixing system
- An instrumentation and control

house

Figs. 2 and 3 show some of the instrumentation in the control house.

Special capabilities. The subsurface configuration of tubulars in the well was chosen so the well would exhibit