

The wells listed below are operated by the Gulf Coast Division of Sun Oil Company. The performance of these wells, which is described briefly, shows how the Otis Multiple Completion Choke Assembly is used to increase hydrocarbon recovery, conserve natural gas, reduce costs, and increase current income.

Vicksburg Unit #3, Kinder Field, La.

Income has increased from \$2770 to \$8500 per month since the installation of the M. C. tool in March, 1960. The gas-oil ratio has decreased from 54,000 to 19,600 c.f. per bbl.

Belle Isle Unit #3-5, Belle Isle Field, La.

Hydrocarbons valued at \$97,000 were produced in the first year of operation from a zone which would not have been completed without use of the M. C. tool.

Belle Isle Unit #1-56, Belle Isle Field, La.

Saved approximately \$42,000 in equipment costs alone as compared to a twin string dual completion.

Dishman-Lucas #1, Sour Lake Field, Texas

Comparison between conventional gas lift and use of M. C. tool:

	<u>Conventional</u>	<u>M. C. Tool</u>
Number of valves	11	1
Input gas-liquid ratio	2800	170
Gas required, MCF per day	560	34

State Lease #1337 Well #22, Bateman Lake Field, La.

Saved \$25,000 in equipment costs on initial completion. The surplus gas associated with the oil from the lower zone was used to produce the "dead" upper zone from 1961 to 1964, negating use of external gas lift gas during this period.

Both zones are currently produced and will be depleted using the M. C. tool and one string of flow valves. Significantly less lift gas is required than would be necessary with a twin string completion and two sets of flow valves.

Houston Unit #3, Kinder Field, La.

Saved \$15,000 in equipment costs. Upper oil zone will be fully depleted without resorting to conventional artificial lift.

Hankamer #2, Stowell Field, Texas

Producing 3 BOPD economically by means of M. C. tool. The following excerpt is from a report on this operation from Mr. W. D. Tyler, Chief Engineer, Houston District, Railroad Commission of Texas, Oil & Gas Division.

"Mr. Daryl Frederick witnessed the testing of a down-hole separation and commingling tool for Sun Oil Co., Hankamer #2 in the Stowell Field. The tool has been made by Sun Oil Co. and Otis Engineering Co., and it appears to be a very valuable piece of equipment. It is deserving of Railroad Commission consideration and will perhaps meet with Commission approval.

It has a lot of merit and can be used to a good advantage in many places. On the Hankamer #2 Well it provides a method of producing oil from a weak zone which could not be economically produced by any other known methods, therefore oil is being recovered that otherwise would never be recovered."

State Lease 2620 Well #7, Lake Pelto Field, La.

Well was completed as twin string dual. Upper zone was gas lifted to "depletion" as judged by conventional standards, i.e., to a depth of 7500' by gas lift.

Well was re-worked to single string dual using M. C. tool. Upper zone is now producing top allowable of 134 BOPD.

Installation of M. C. tool on initial completion would have resulted in the following:

1. Saving of approximately \$30,000 in initial completion costs.
2. Elimination of one workover costing approximately \$42,000.
3. Avoided production down time of approximately 25,200 bbls of oil from Well #7-D.
4. Eliminated the necessity of furnishing external gas lift gas at 570 MCF per day since June, 1960 (a total of 830 million cu. ft.) and attendant compression.
5. Eliminated 10 flow valves costing \$2600.
6. Eliminated gas lift line costing \$2400.

D. S. & B. #84, Chacahoula Field, La.

Lower zone unable to flow alone, but produces 68 BOPD and 120 BSWPD using M. C. tool. Completed in 4-1/2" casing, this well illustrates the application of M. C. tool in producing duals to depletion in slim holes.

The wells described above are representative of the results obtained through Sun Oil Company's use of the M. C. tool in Texas and Louisiana.

The tool is being used by other oil companies in Louisiana, Texas, Mississippi, Oklahoma, Mexico, Kuwait, India, and possibly elsewhere, and a test has been approved in Canada.

The Department of Conservation in Louisiana, and the Railroad Commission in Texas, after reviewing performance of the tool in a number of wells, has in each instance approved permanent use of the tool.