ABSTRACT

In oil well field management the most important thing to note is the amount of production. In general, the amount of oil production at oil fields will decline along with the reduced capacity of the amount of remaining oil content in the reservoir, and will eventually run out. Under these conditions, we need a method of artificial lift with gas lift techniques. In this final project optimizing oil production in gas lift wells. This study uses particle swarm optimization algorithm to optimize the data rate of gas injection and the data production rate of oil wells and gas lift injection membandigkannya the exact test results.

The test results in this thesis show that the particle swarm optimization algorithm can optimize total oil production from oil wells by 1204488.0779 SCF / D. and the total amount of injected gas rate of 1997109.562 SCF / D. When compared with the test results exact results obtained for a total maximum oil production is obtained by 1201520.8716642 SCF / D and the amount of gas injected at 2.00E + 06 SCF / D. The results obtained by optimizing the particle swarm optimization algorithm approach to the exact method of testing the accuracy of 99.75%. On further testing, determine the amount of injected gas is limited by 1000000 SCF / D. The test results using particle swarm optimization algorithm obtained a total oil production of 1166208.2939 SCF / D. When compared with the test results in exact total maximum oil production in get for 1166206.2743938 SCF / D. The results obtained by optimizing the particle swarm optimization algorithm approach to the exact method of testing the accuracy of 99.99%.

Keywords: PSO, Gas Injection rate, rate of oil production.