

Increased Pumping Capacity and Depth for Airlift System

Lead Organization: Airlift Services International, Inc.
Key Contact: Daniel Roberts
(765) 425-0638, [droberts@airliftservices.com](mailto:droboterts@airliftservices.com)
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Airlift Services International (ASI), a Division of Energy, Inc., is an Indiana-based oil service company. ASI, still in the initial start-up phase, is the first company to successfully and economically pump oil and other fluids using compressed air. The Airlift Oil Pumping System (Airlift) is designed to increase profits for owners of marginal or stripper wells by increasing well production through the reduction of maintenance costs and increase of uptime and efficiency.

Since 1993, America's marginal well producers have plugged and abandoned approximately 150,000 marginal wells and 150,000,000 bbls of crude oil. The pump jack system requires regular maintenance to replace worn out components and broken parts. Current technology offered by ASI has proven effective in opening many of these wells. The systems offered by ASI are capable of pumping up to 70 barrels per day of fluid from wells to a depth of 2000 feet.

ASI proposed the re-engineering of its innovative and proven pumping technology to improve the pumping capacity and increase the pumping depth. ASI proposed to develop computer modeling that will evaluate the current six stage, 1500 foot pumping system. This system will be modeled and optimized for fluid flow.

If ASI is able to re-engineer the system through computer modeling and develop a system with the ability to pump at depths of 3000 feet and 50 BPD, there will be a major increase in the number of now idle wells that can be put back online. The objectives of this grant proposal include:

1. Objective 1 – To increase the number of stripper wells currently in production.
2. Objective 2 – To validate the capability of computer simulation to predict fluid flow capacity in future wells.