Abstract: The Benefits of Gas Lift Optimization

Gas lift optimization enhances production efficiency by maximizing uplift and reducing operational costs by addressing common issues such as over-injection. Numerous majors and others admit that over injecting is a serious problem affecting produced oil rates and 30-50% overuse of injection gas. Key steps include gathering well parameters, monitoring casing and tubing pressures with data loggers, and measuring static bottom hole pressure (SBHP) to assess true well conditions. This process integrates field data collection, real-time monitoring, and advanced analytical tools. Nodal analysis is used to evaluate the flow performance of the well by analyzing pressure and flow relationships between the reservoir, wellbore, and surface facilities, helping to identify bottlenecks and optimize production. Additionally, dynamic well simulation models the real-time behavior of the well under varying operating conditions, enabling operators to predict future performance, optimize production strategies, and detect potential issues before they occur.

This paper explores how operators can effectively increase well production, enhance recovery, and reduce operational costs by ensuring that each well operates at peak efficiency. The integration of field data, real-time monitoring, and nodal analysis is fundamental to optimizing gas lift systems and realizing their full potential in maximizing uplift.