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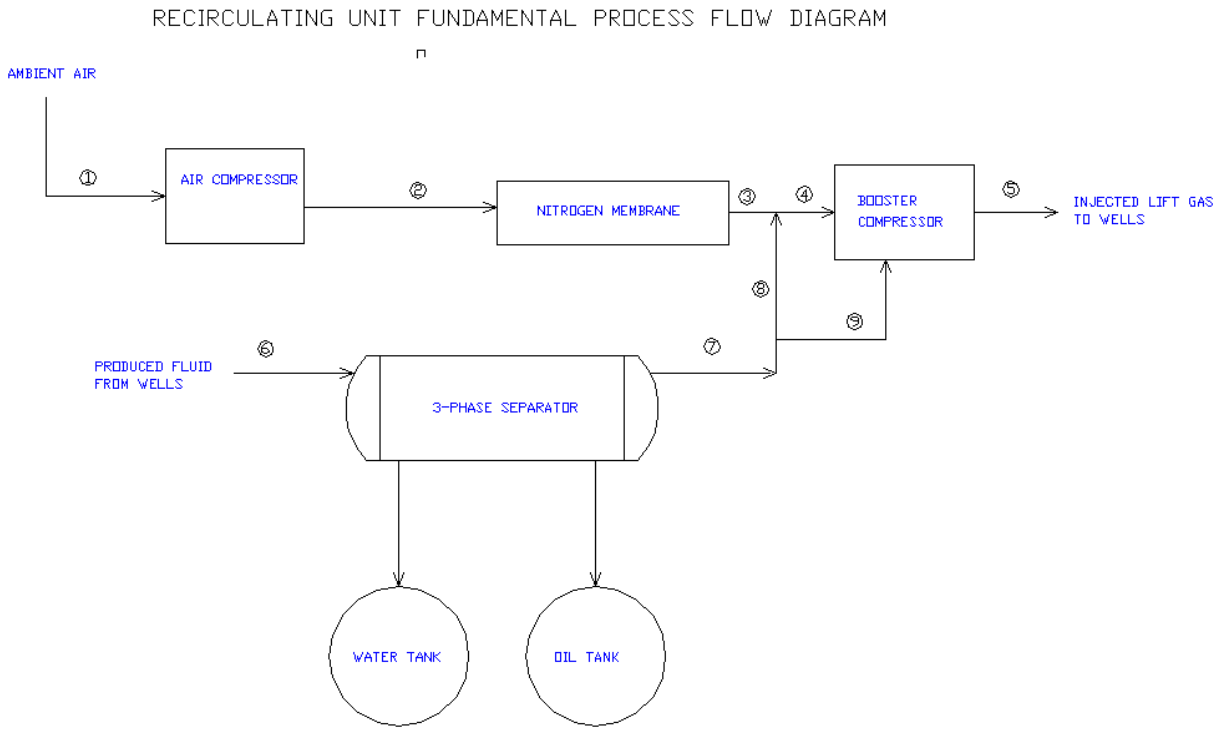
NITROLIFT RECIRCULATING® SYSTEM WITH ON-SITE NITROGEN GENERATION SERVICES

The patented Nitro-Lift Re-Circulating Gas Lift System (US patents 7,802,625 and 8,028,754) is an innovative solution for efficiently extending the life of oil and gas wells by providing artificial lift gas comprising nitrogen, well gas or a combination of nitrogen and produced well gas. This approach is a proven technology leveraging our experience from lifting over 10,000 wells over the last 15 years.

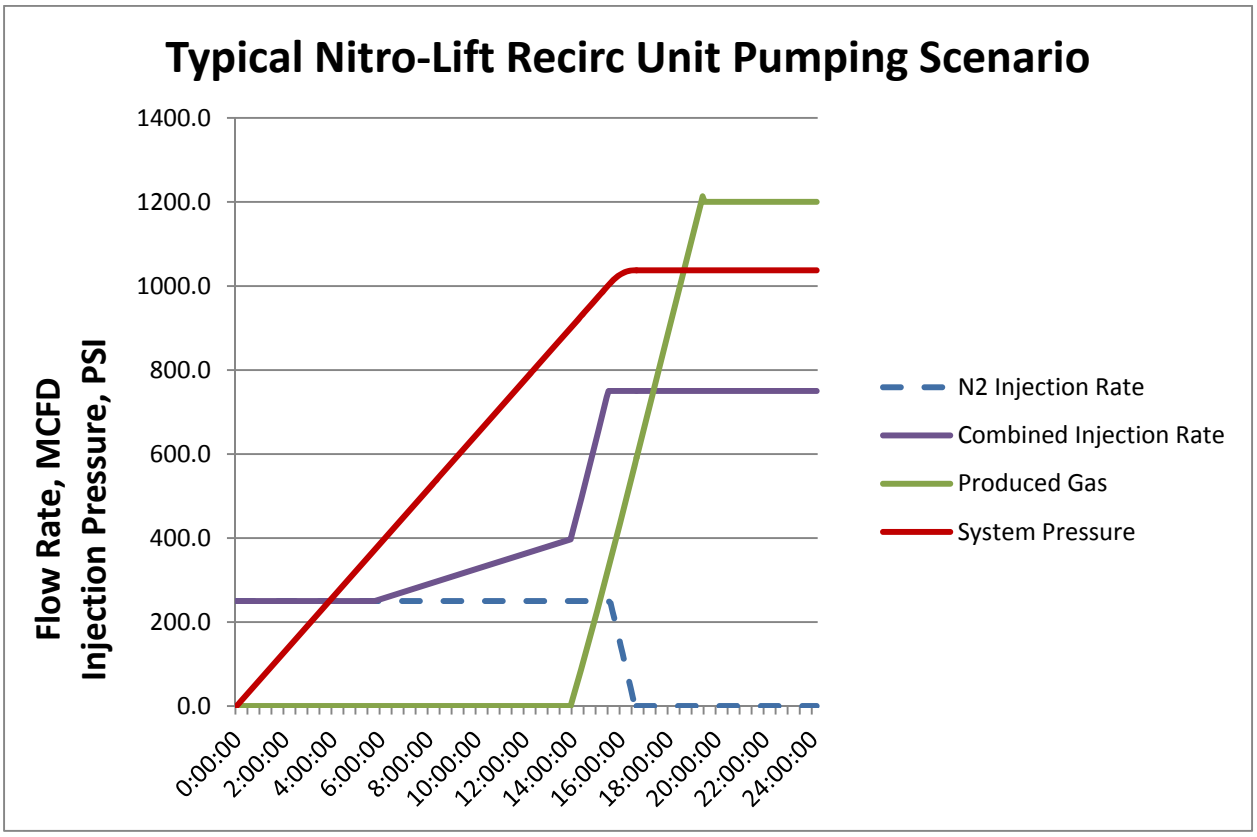
The greatest benefit this system provides is the unique ability to start lifting a non-producing well when there is no produced gas available from the well. Two key factors afford this benefit: 1) Ambient air is the source of the nitrogen gas, and 2) The compressors run on diesel or a diesel-natural gas mix.

The nitrogen is introduced into what is essentially a closed loop system consisting of the booster compressor, the injection pipeline, the wellbore, the production pipeline, the production separator, and back to the suction of the booster compressor. As the well starts to unload, the gas returning from the well is re-circulated back to the suction side of the booster compressor and added to the nitrogen being continuously generated and fed to the suction side of the booster compressor. As the volume of re-circulated gas increases, the demand for generated nitrogen decreases and eventually drops off altogether. The Re-Circulating Gas Lift System allows a great deal of operational flexibility in terms of nitrogen production rates, total injected gas flow rates and pressures, and the rate at which pressure at the well is allowed to increase to optimize the production of each well included in the program.



Typically, we start by lifting one well with one booster compressor, using a combination of nitrogen generated on-site and using whatever produced gas may be available from the shut-in wells. As the well begins to unload, the injection rate will increase due to the re-circulated gases being added to the generated nitrogen gas. Once the well has unloaded and starts flowing, we will begin injecting lift gas into the next well while continuing to lift the first well. When the second well kicks-off, we will begin pumping on the third well. As the booster compressor approaches its capacity a second booster will be brought on-line if needed, then as the injection rate for the multiple wells approaches the capacity for the two boosters, a third booster will be brought on line if needed, etc.

The Gas Lift Production Recovery Plan typically comprises different phases, depending on where the particular wells are in their life-cycle, and what existing equipment is available on-site and how well it is suited for the long term. A short term period can serve to kick-off wells and hand the gas lift requirements over to an existing compressor or can serve as "Proof of Concept" trial. An intermediate term phase bridges the gap between the short-term and long term solutions, and a customized long-term solution is designed to allow for many years of production from the wells in question.



We welcome the opportunity to discuss the details of your application in more detail. Call or email at any time, or visit us on the web.

Thank You and Stay Safe!

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