Innopipe Slug Catcher: An innovative and lower-cost approach to liquid-gas separation

Slug catchers separate liquid surges from gas streams, but conventional designs can require large vessels, significant civil footprint, and substantial transportation and installation costs.

Innopipe provides a compact, engineered alternative that delivers efficient liquid separation with a smaller footprint, lower cost and reduced steel requirements.

Key Features & Benefits

Enhanced Separation Efficiency

Engineered internals take advantage of the annular flow regime common at gas velocities above 3 m/s. Most gas continues downstream while free liquids are directed into a controlled collection vessel, minimizing disruption to gas flow.

Compact Design

Innopipe designs can reduce gas/liquid separation vessel size and steel requirements by approximately 50% compared with conventional slug catchers. An Innopipe separator reduces liquid retention volume required since it only requires gas equalization, not separation space. The comparative advantage of Innopipe vs vessel improves as pressure and/or flowrates increase.

Lower Cost & Easier Logistics

Smaller, lighter equipment reduces capital, transportation and installation costs and simplifies relocation between sites.

Automated Liquid Management

Collection vessels are sized for the application, with automatic liquid level monitoring as an option.

Application Example

A five-well pad required a slug catcher capable of managing approximately 160 MMSCF/d of initial flowback, with significant liquid slug potential during the first 30–180 days.

A conventional solution demands a 96" × 20' vertical separator that costs more than US$500,000, weighs approximately 46,000 lb, and costs more than US$200,000 to relocate once flowback is stabilized.

The Innopipe alternative is a 16" × 28" × 16' separator with a 500-gallon liquid reservoir. The total equipment cost is less than US$200,000, with an estimated weight of approximately 12,000 lb, significantly reducing transportation and relocation requirements.

How It Works

Patented Innopipe internals capture free liquids concentrated along the pipe wall under annular flow conditions and direct them through apertures, into an external collection vessel. The apertures also function as pigging bars, maintaining compatibility with inspection and maintenance programs.

Custom designs are typically delivered within 6–8 weeks following drawing approval.

Technical Insights

Slug catcher – Innopipe’s compact design is innovative

A More Efficient Approach to Slug Catching

Smaller footprint. Lower cost. Less steel. Simplified logistics.

Innopipe provides an engineered approach to liquid-gas separation designed to deliver effective performance while reducing the size, weight and overall cost of slug catcher systems.