

# ILI Tool Support Services: Tool Propulsion

**Streamlined sourcing, reduced project timeline, ease of scheduling and increased first run success**

Baker Hughes, Process & Pipeline Services (PPS) is the only company able to provide best in class service and equipment that will ensure first time right in-line inspection (ILI) and off-line tool propulsion in one turnkey package.

Intelligent pipeline inspections provide the most sophisticated data for the integrity of a pipeline system and, in conjunction with hydrostatic testing, are a fundamental part of safe operation. ILI tools are generally propelled with pipeline product; but, occasionally, conditions exist where another medium is needed for propulsion, such as:

- Pipeline is offline, idled, decommissioned or brand new
- Normal operating parameters are not ideal for ILI tool (pressure and/or velocity)
- Product chemistry is incompatible or harmful to ILI tool materials
- Product temperature is above/below ILI tool limits
- Pipeline is dirty and requires mechanical/chemical cleaning ahead of ILI tool (multi-pig cleaning train)
- Commercial or operational constraints of certain mediums may dictate water, hydrocarbon liquid, compressed air or inert gases as the propulsion medium of choice

Detailed pre-engineering of the required flows and pressures for each individual application is imperative. PPS owns and operates proprietary modeling software that accurately simulates real-world pipeline conditions. PPS Pre-commissioning & Maintenance group (P&M) has developed this software over decades of implementation, resulting in the accurate prediction of the movement of smart pigs during gas and liquid propulsion scenarios. By utilizing customer supplied data, PPS P&M can design a custom tailored solution to provide optimal conditions for a successful first run, while also minimizing the cost impact to you.

Providing turnkey service, including engineering, project management, and precise run parameters is our standard. We have the equipment and personnel to manage tool loading and extraction, lifting support, tool propulsion, automated back pressure control, tracking, and tool decontamination.

PPS can provide the solution that works best for you and the inspection of your line.

## Features and benefits

- No disconnect between pumping design parameters and actual execution
- A single project manager is responsible for the overall project from the initial tool selection, launch, run, and tool retrieval to delivery of final run data
- Overall goal for the infield program is to gather the best quality data for a reliable inspection report
- No need to issue multiple purchase orders
- The use of multi-skilled crews onsite, driving project efficiencies

## Additional solutions

- Mechanical and chemical cleaning
- Separation
- AGM tracking and tool decontamination
- Bolt torquing and tensioning
- Nitrogen purging
- Fluid pumping
- Hydrotesting
- Mobile flaring
- Gas recompression



## Types of tool propulsion

### NITROGEN (N<sub>2</sub>)

- Available in most larger populations areas; capable of high pressure/flow
- Inert gases do not support combustion or interact with pipe wall or ILI tool
- Venting to atmosphere does not require disposal

### WATER

- Readily available
- Allows for ultrasonic inspection
- Incompressible fluids minimize speed excursions of ILI tool

- High forces and flushing effect can be used for very efficient cleaning
- Water disposal may be difficult and costly plus regulations vary by state/city
- Air clean and dry required after dewatering on gas pipelines

### BATCH

- Batch liquid will be propelled through the pipeline with gaseous nitrogen
- Enables ultrasonic inspections in gas lines with limited use of liquid
- Challenging for flow control and maintaining tool operational parameters