

WELCOME



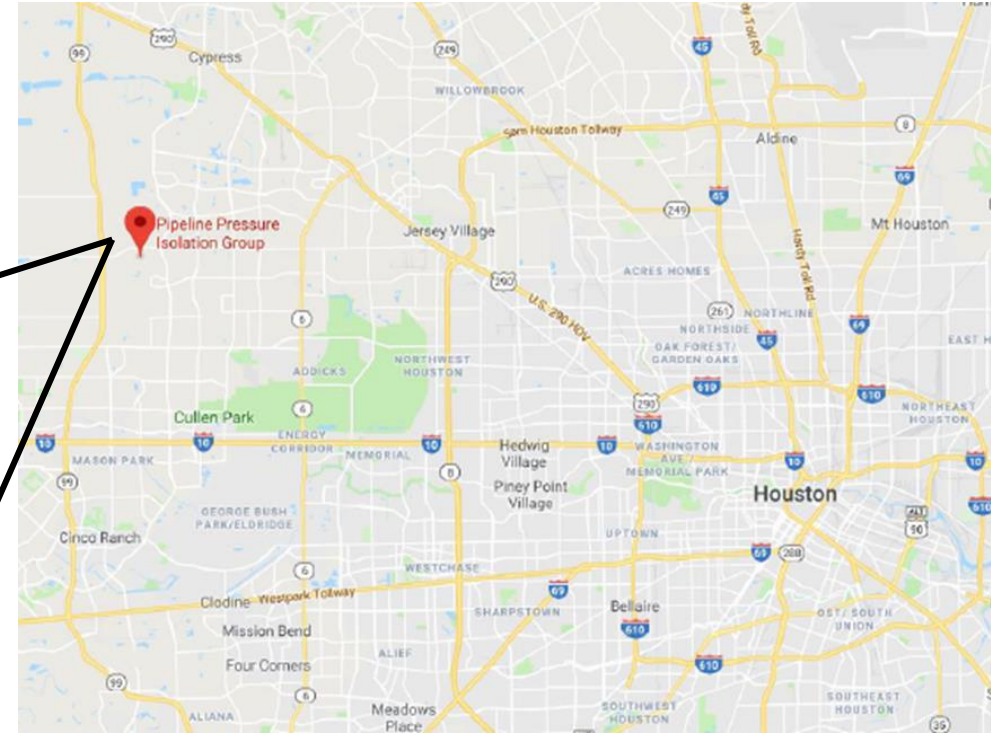
Agenda

- **PPIG** - Who are we ?
- The **IsoPig[®]** - What is it ?
- How does it work ?
- What do we do ?

IsoPig®
The "piggable blind flange"

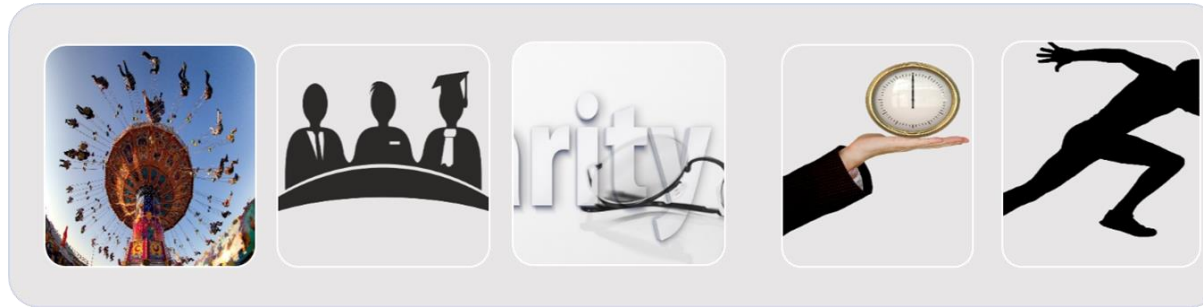


PPIG Location



**21233 West FM 529
Cypress, TX 77433-5139**

- Founded in 2015, 3 year old company
- 145 years combined pipeline experience
- Our Core Values (**F A C T S**):



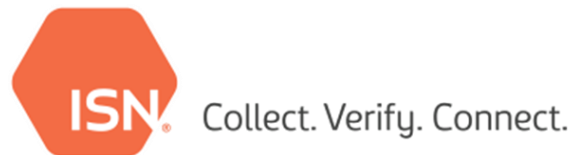
FN

ACADEMIA

CLARITY

TIME

SPEED



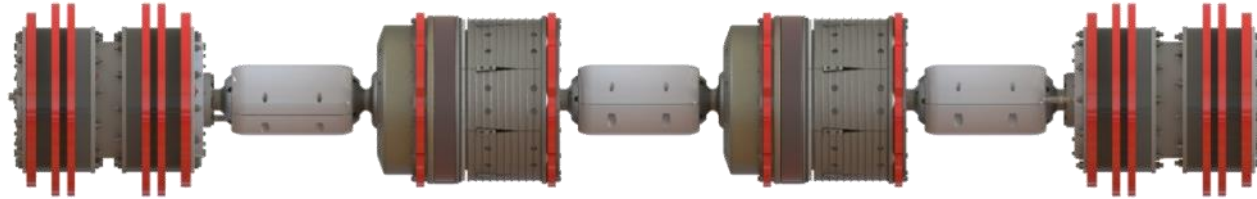
Fully compliant member of ISNetwork
PPIG, LLC (# 400-237318)



ADV Integrity Certified

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What Are Piggable Isolation Plugs?



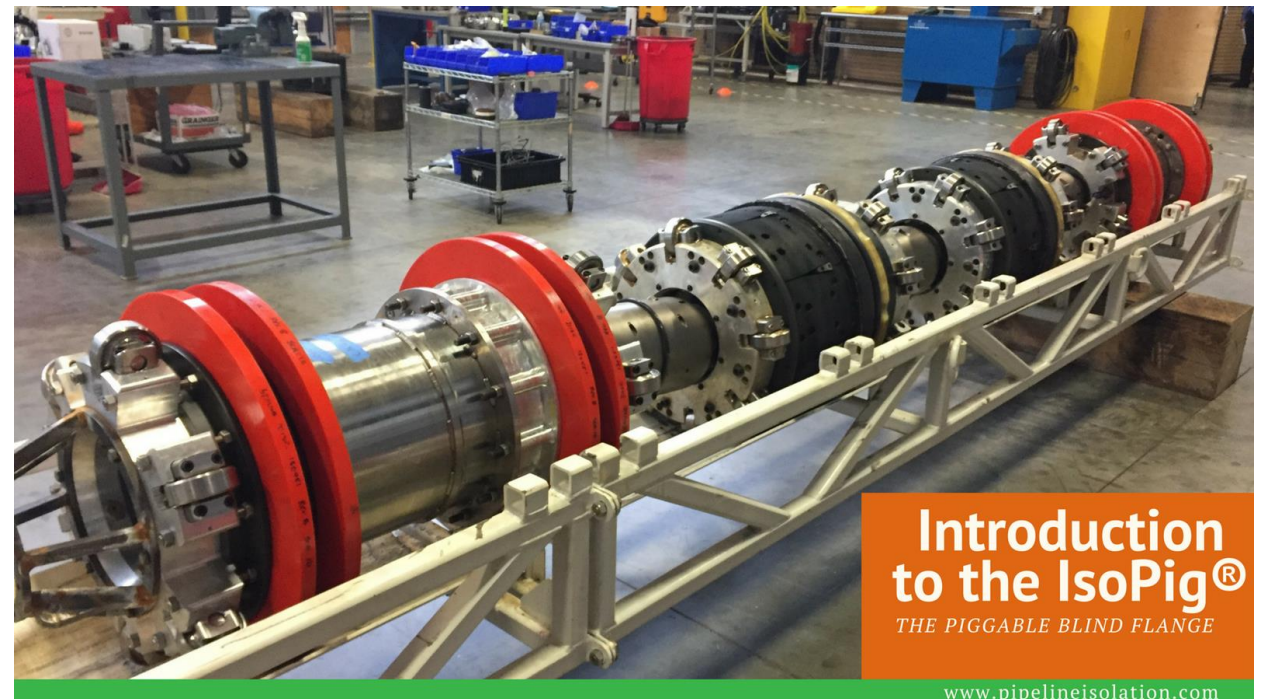
- **Used in Offshore and Onshore pipelines**
- **Bi-Directionally Piggable**
- **Stopped with Flow at Location**
- **“Set” - Grips and Packer form a seal and keep tool in position**
- **Pressure Barrier – Line remains packed and under pressure**
- **“Unset” and Piggaged out of the line**

IsoPig[®] Design Considerations

- **Thin-walled pipelines**
- **Develop pressure to plug/seal pipeline – safety barrier**
- **Double-block seal**
- **Operate remotely**
- **Negotiate bends, highly piggable**

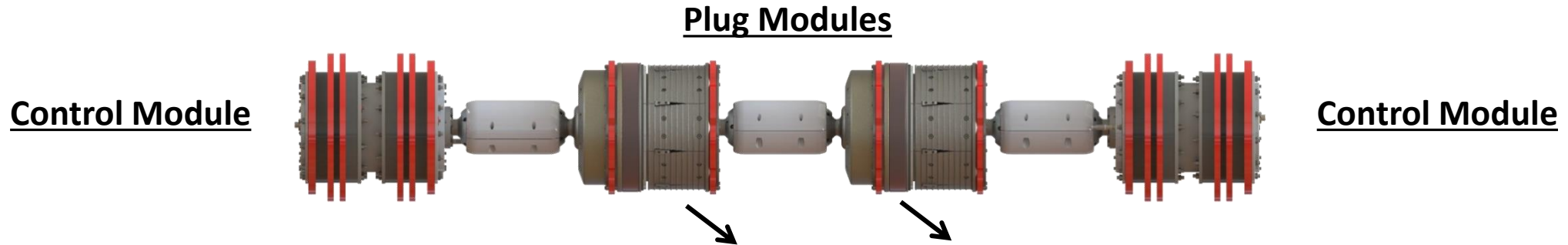


- **Advanced offshore isolation technology that leaves pipe in superior condition**
- **True double-block seal, bubble tight – used for liquids & gas**
- **Low-stress; designed to isolate in thin-walled pipe**
- **Safe, wireless communications**
- **Highly piggable tool**
- **Environmentally friendly solution**



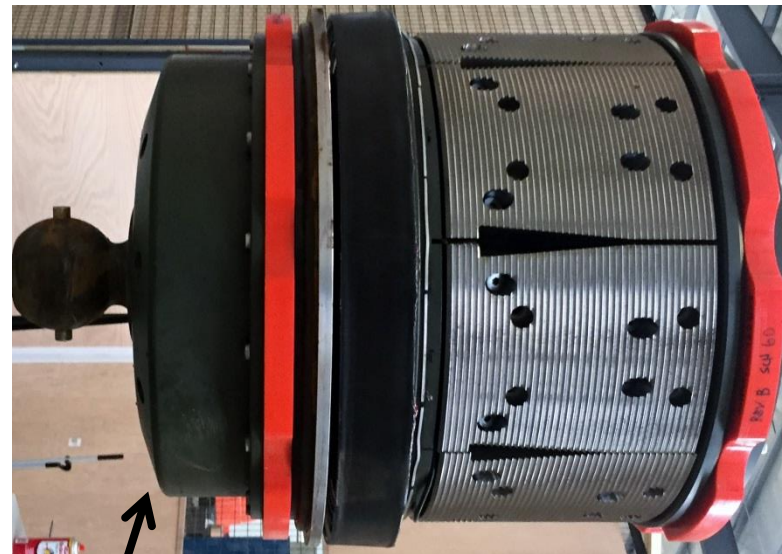
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How Does IsoPig[®] Grip and Seal?



Activation:

- Grips Extend and Engages Pipe
- Packer Extends and Seals Pipe
- More Pressure, More Activation

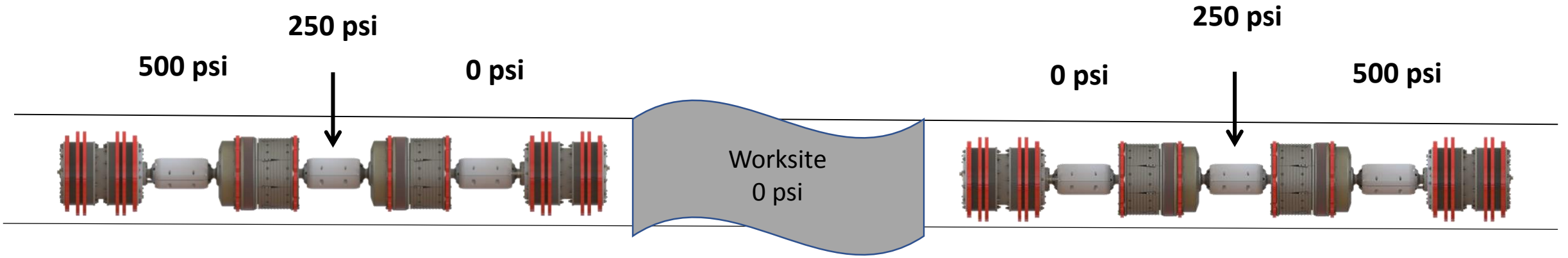


Pressure Head

Packer

Grips

IsoPig[®] - Block and Monitor

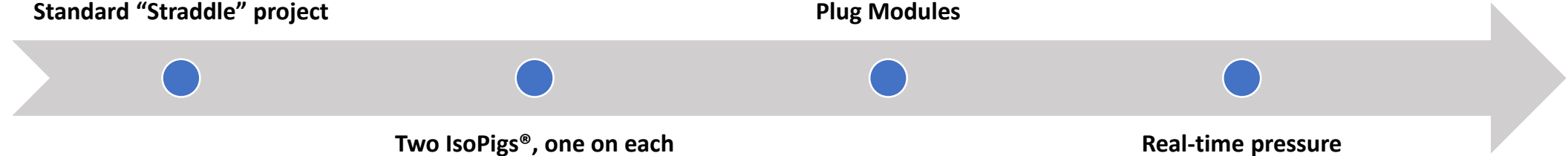


Standard "Straddle" project

True Double Block, with each IsoPig[®] having two Plug Modules

Two IsoPigs[®], one on each side of worksite, each facing the pressure side

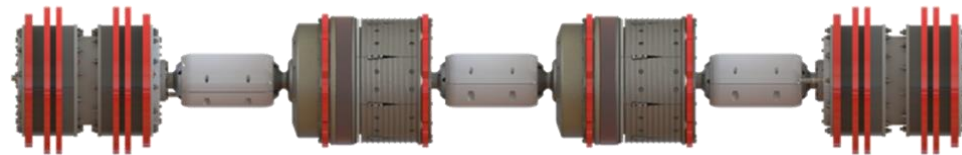
Real-time pressure monitoring at both sides (500 psi and 0 psi) and the annulus (250 psi)



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IsoPig[®] Applications

- Midline Repairs
- Valve Repairs/Replacements
- Launcher/Receiver Repairs (Doors, Valves, etc.)
- Laterals/Proper Barred T's
- Excavation Safety
- Hydrotesting



Midline Repairs or Valve Repairs



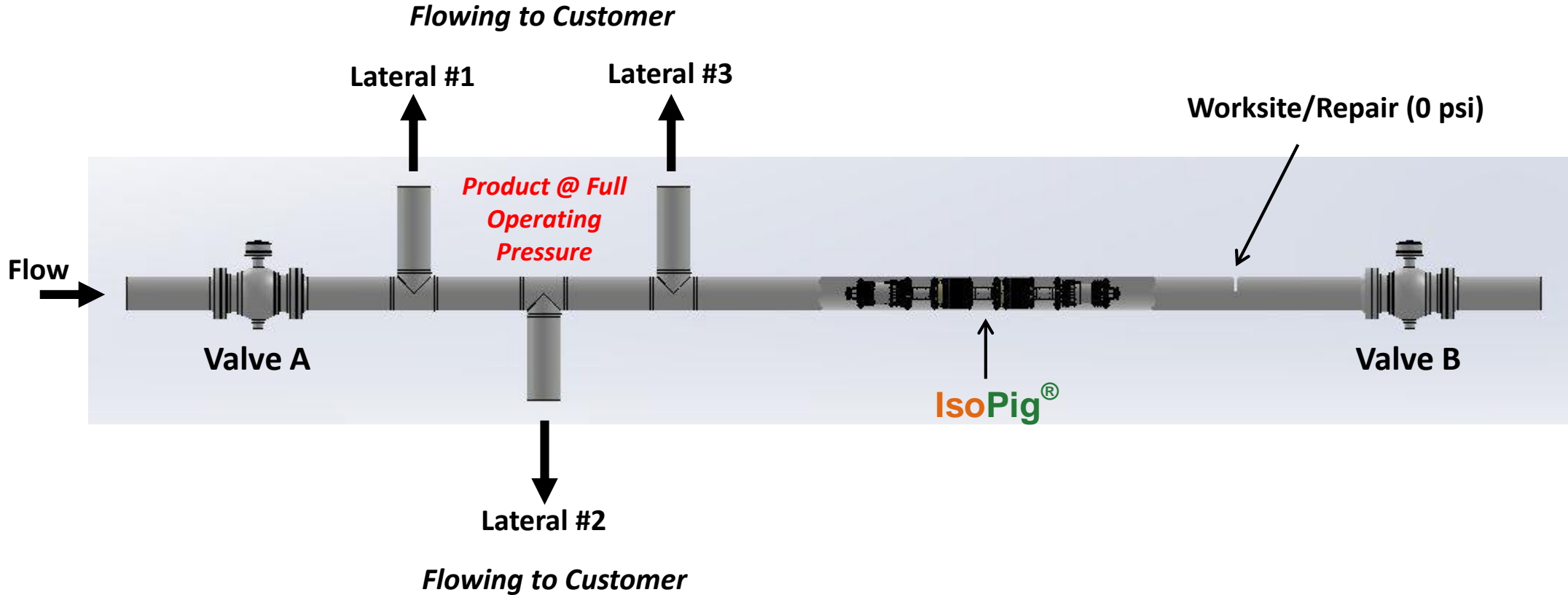
Or



Advantages over Venting Entire Line:

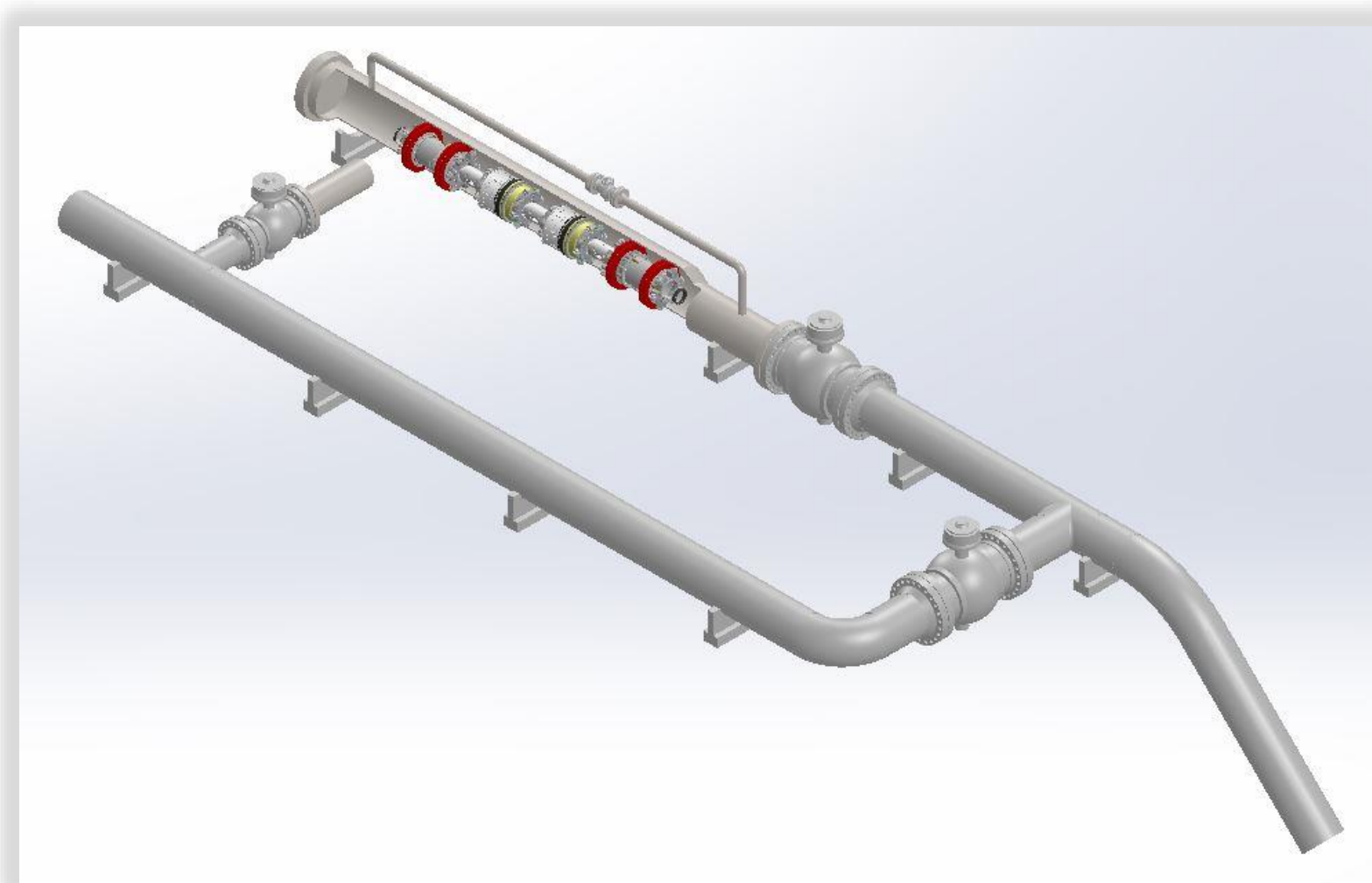
- Avoids Excessive Noise
- Reduces Emissions
- Minimum Gas Loss/Lower Cost
- Improved Public Relations (Nuisance calls eliminated)

Continuous Service During Repairs

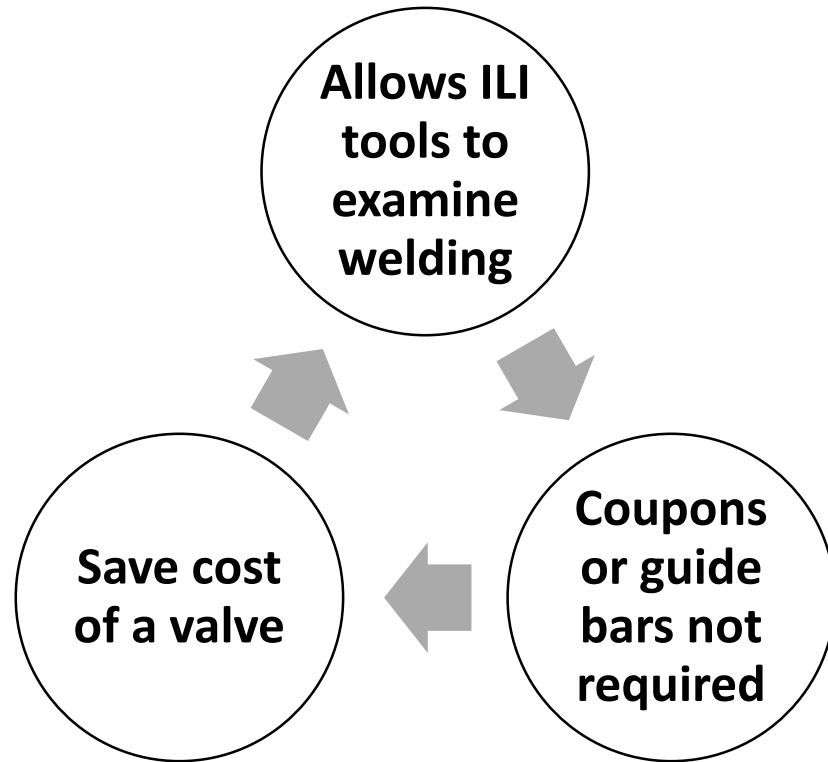


The IsoPig[®] can allow a repair to take place while keeping customers serviced !

Launcher or Receiver Valve Repair/Replacement



Laterals/Proper Barred "T"



Excavation Safety

Steve Kean, President and CEO –
Kinder Morgan:

“... I want to emphasize one specific area. That is working on, or around our pipelines ... We take notice of, and follow-up on any line hits. That’s because the consequences are potentially so severe, including death or serious injury ...”

https://www.kindermorgan.com/pages/work/contractor_co/

Contractor Safety Video



- Allows isolation of work areas prior to dig
- Achieves higher level of safety
- Minimize catastrophic damage in the event of a line hits:
 - 1) Environmental spills
 - 2) Explosions

Hydrotesting

- **Cutting the line is not required**
- **Welding end-caps is not required**
- **Welding new pipe is not required**
- **Progressive Hydrotest potential**
- **Reduced water disposal**



Pipeline Isolation: The **IsoPig[®]** Way !



***Pipeline Isolation:
The Old Way ...***



"Isolation Without Stress"

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