



# A Pipeline Operator's Process Approach in Managing Internal Corrosion

PHMSA Internal Corrosion Workshop  
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Marathon

# Internal Corrosion Management Process



- ◆ Webster defines 'process' as: *“a series of actions, changes, or functions that achieve an end or result.”*
- ◆ *Marathon's internal corrosion process:*
  - *designed to incorporate preventive and mitigative measures that are monitored and assessed to ensure the structural integrity of our assets.*

# Internal Corrosion Management Process



## ◆ Preventive & Mitigative Measures:

- Internal Coatings and Linings
- Robust Cleaning Pig Schedule
- Corrosion Inhibitor
- Corrosive Property Standards
- Routine Line Movement/Flushing
- Construction Design/Modification



## ◆ Monitor & Assess Techniques:

- ILI 'Smart Tool' Data Analysis
- Risk Assessment
- Corrosivity Testing Results
- Coupon/Probe Analysis
- MIC Sampling Analysis
- Visual Examinations
- ICDA Projects

# Internal Corrosion Management Process



## ◆ Accentuating the Positive:

- Reduced internal corrosion related releases by 100% (2 to 0) on mainline pipe (5 year pre-process vs. 5 year post-process).
- Reduced internal corrosion related releases by 50% (14 to 7) on facility pipe (5 year pre-process vs. 5 year post-process).
- Process training increased communication and understanding between Pipeline Integrity Department and Field Operations

# Internal Corrosion Management Process



- ◆ **The most effective tools in the toolbox:**
  - Corrosivity Testing Requirements (keep it out)
  - Robust cleaning pig schedules (mechanically remove)
  - ILI ‘smart tool’ technology (assess/react/reassess)



## ◆ Our Focus on Continuous Improvement:

### – Facility Piping

- Most is non-piggable; minimizes use of most effective tools
- Hydraulic flow-modeling (liquid-gas/sludge relation) and maintenance activities
- Slip Line installations
- Tethered cleaning pigs/smart tool applications
- Supplemental corrosion inhibitor use
- ICDA

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**Questions?**

**Thank you**