DEWATERING AN UNPIGGABLE GAS GATHERING LINE WITH AN ELASTOMERIC PIG
INTRODUCTION

• BP in San Juan Basin, CO, USA
• April 2017
• Land gas gathering line 4” by 2,400 ft
• Follows contour into gorge and back out the other side
• DP across gorge
“Dewatering an unpiggable gas gathering line with an elastomeric pig”

- Dewatering: Restricted flow, corrosion threat  
  (The requirement)

- Unpiggable: No launcher or receiver  
  (The challenge)

- Gas Gathering line: One of many feeding into main trunk line  
  (The asset)

- Elastomeric pig: Aubin’s EVO-Pig  
  (The solution)
DESCRIPTION OF CHALLENGE

- Water accumulation in low point

Photo credit: mid-day.com
OPTIONS

• Do nothing

• Install pig launcher and receiver

• Elastomeric pig
EVO-PIG

- Solid body like foam pig but not filled with air
- Deformable

*Previously L-Gel Pig*
EVO-PIG (CONT.)

- Cast from 2 liquids which cure and form a “memory”
- Designed to be over-sized
- Hugs contours of pipewall always providing hydraulic seal

*Previously L-Gel Pig
CANISTER
1. Mould for casting EVO-Pig in – creating “memory”
2. Storage, transport to site
3. Launching mechanism
PROPOSED SOLUTION

- Launch pig at dropped spool
  - EVO-Pig can be inserted from canister at flange
- Push with natural gas
  - EVO-Pig maintains a hydraulic seal to avoid losing drive or allowing bypass
- Receive through blowdown valve
  - EVO-Pig extrudes through complicated pipework
OPERATION: LAUNCH

Photo credit: www.pigracing.com
OPERATION: LAUNCH
OPERATION: LAUNCH

- Isolated 2,400 ft section
- Vented gas
- Removed spool (crane truck)
- Attached canister

- Pushed EVO-Pig into line with plunger
- Removed canister
- Spool reinstalled
- Purged air
OPERATION: RUN
OPERATION: RUN

- Teams at launch and receive sites, communicating by radio
- Choke controlling gas flow
- Pig speed correlated with gas flow entirely – no bypass
- Planned 3 ft/s
- BUT operator accidentally watched the wrong gauge!
- EVO-Pig ran at 15 ft/s
OPERATION: RECEIVING

Photo credit: Albion News Online
OPERATION: RECEIVING

Temporary tank placed on wellpad and plumbed into blowdown line
OPERATION: RECEIVING

- Closed valve
- 2” blowdown line
- Direction of flow
OUTCOMES

1. 2 bbl water received as expected
2. EVO-Pig retrieved through blowdown line as planned
3. Differential pressure reduced from 10 psi to 1.5 psi
4. Client regarded operation as a success
SUMMARY

“(Successfully) Dewatered an unpiggable gas gathering line with an elastomeric pig”

• Dewatered: Received water matched predicted
• “Unpiggable”: Saved around $70k on infrastructure modifications
• Gas gathering line: Needed an excellent hydraulic seal
• Elastomeric pig: No bypass, extruded through blowdown line
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Aubin

PPSA
THANK YOU

Questions welcomed

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