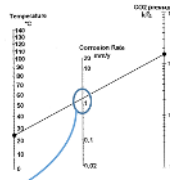


TRIAGE – Corrosion Assessment

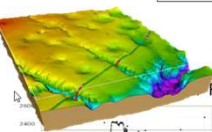
Operating Pressure:	992 psi	68.39 kPa
CO ₂ mol fraction:	0.322	
CO ₂ partial pressure:	24.6 psi	1.70 kPa

Operating Temperature:	60 F	15.6 C
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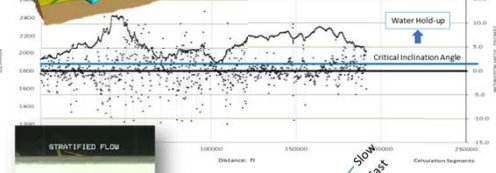
Maximum Unmitigated Corrosion Rate:	1.2 mm/year
	80 MPY
	4 years remaining life



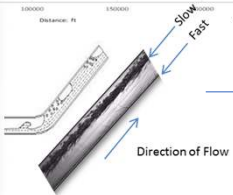
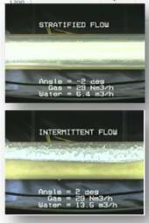
- NACE – CO₂ corrosion rate
- Environmental factors causing an increase in corrosion



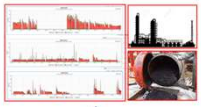
Film Thickness vs. Inclination Angle



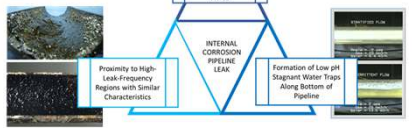
- Water-film transport
- Water-oil slippage & critical inclination angle to cause low pH water traps



- Factors that can cause increased corrosion within detrimental water traps



- Data pattern analytics to consider implication of upstream well behaviour
- Fugitive fluid ingress



Corrosion by Normal Produced Fluids

STEP 1 -- FLUID COMPOSITION FACTORS:

fc1(corrosion rate / NACE deWaard / age / remaining life)

ef1(corrosion scale by-product consideration of CO₂ / H₂S)

ef2(oxygen ingress ./ consideration of upstream facility)

"SUB-SCORE A" = Likelihood Score: Fluid Composition Aggressiveness

STEP 2 -- FLUID FLOW FACTORS:

Apply one of the Following:

apply: ff1(Gas Flow Severity: consideration of critical inclination angle exceedance)

or: ff2(Oil Flow Severity: water & oil phase slippage)

Sub-total – Fluid Flow Factors

environmental multiplier

apply greater of: ef3a (bacteria counts)

or: ef3b (suspended solids)

"SUB-SCORE B" = Likelihood Score: Fluid Flow Aggressiveness

STEP 3 -- SUB-TOTAL LIKELIHOOD SCORE "A" + "B"

Upstream Well Dynamics

STEP 4 -- CONSIDERATION OF TRIAGE / DATA ANALYTICS

TRIAGE Score A: UWI Severity Score (consider on-off-on cycles / production spikes / days-to-commission)

TRIAGE Score B: Spatial Score (consideration of historical failure data / sibling association)

STEP 5 -- TRIAGE SCORE C: Final IC Severity Score (considers TRIAGE A & B + Step 3)