



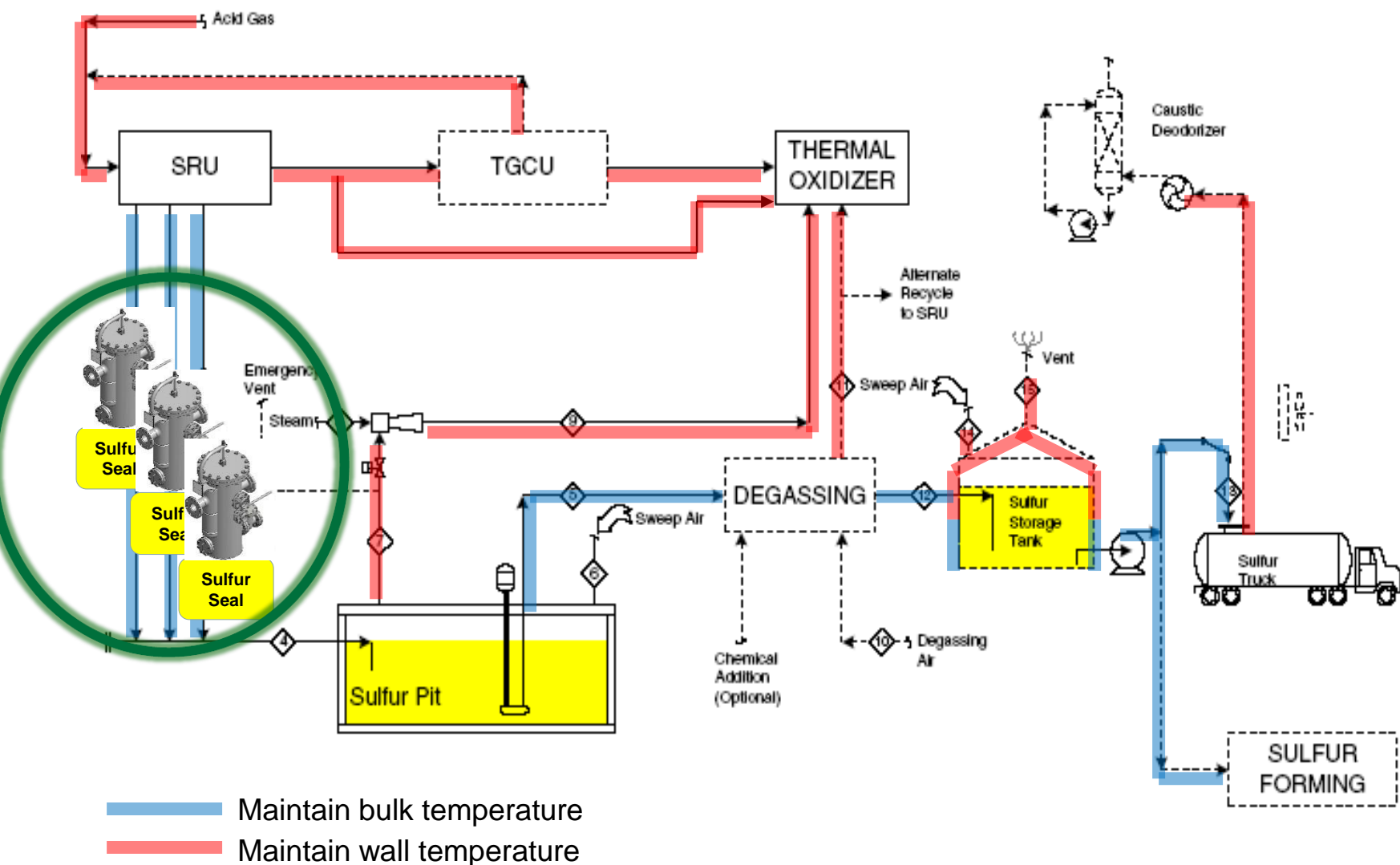
Moving to above-ground Sx Sealing

SxSeal 2000

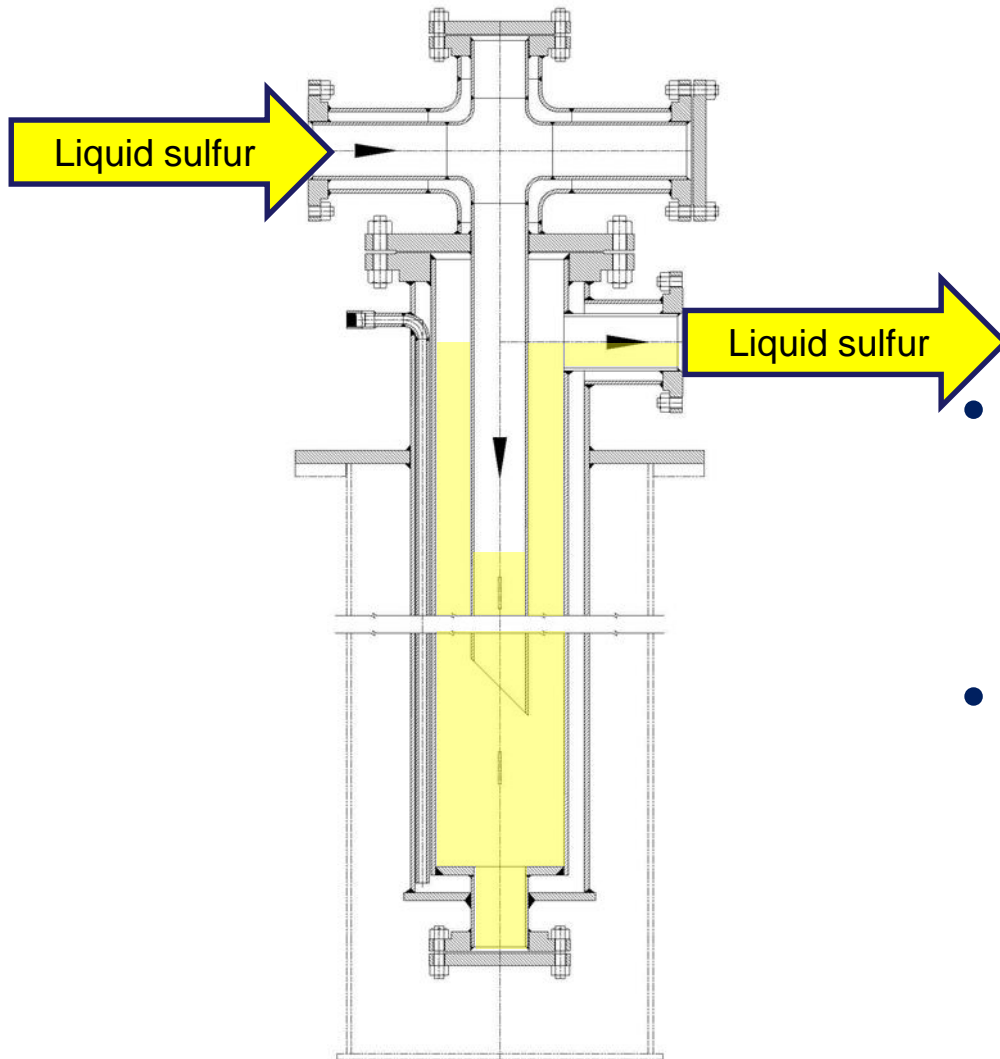
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Sulfur Sealing in the SRU

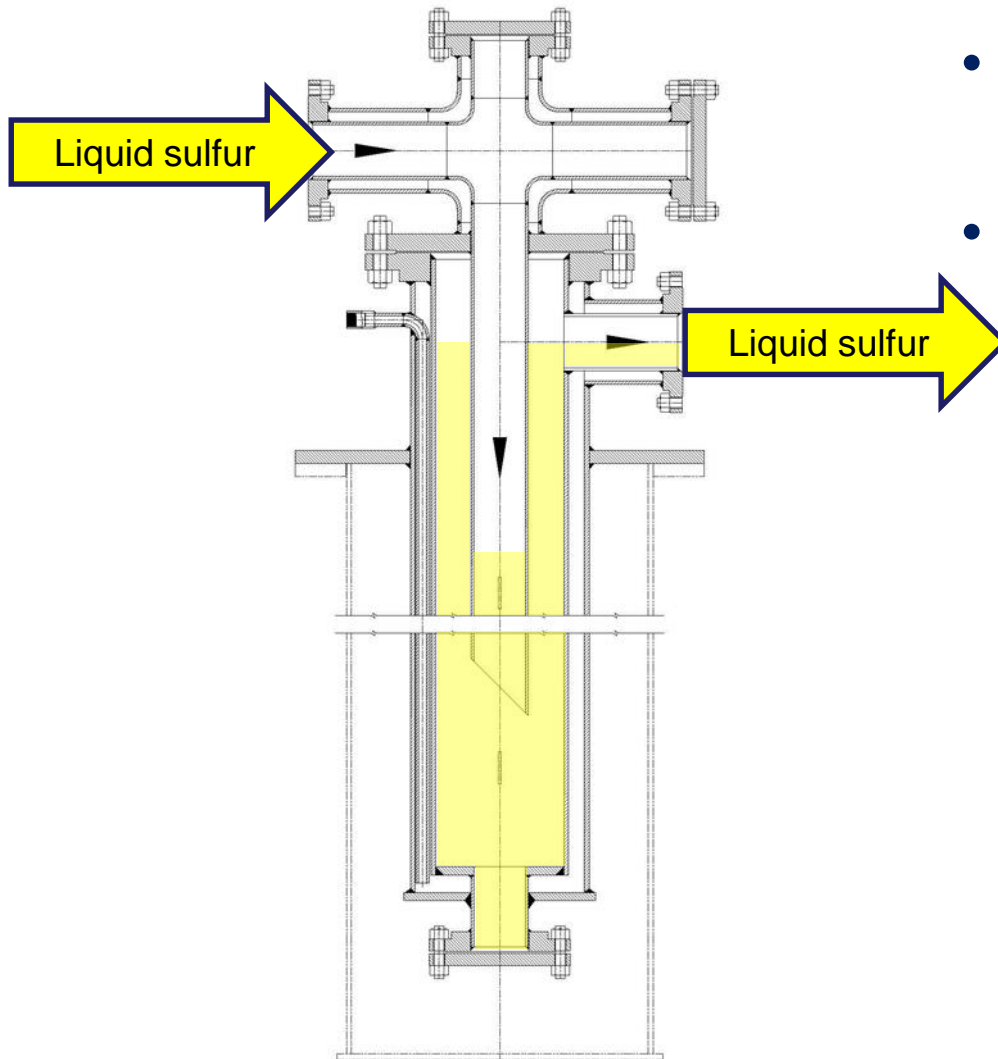


Traditional solution: Seal leg



- 20+ ft. below-grade sulfur seal
- Jacketed piping heating technology
- Sealing mechanism operates on hydrostatic pressure
- Liquid sulfur creates a vapor seal

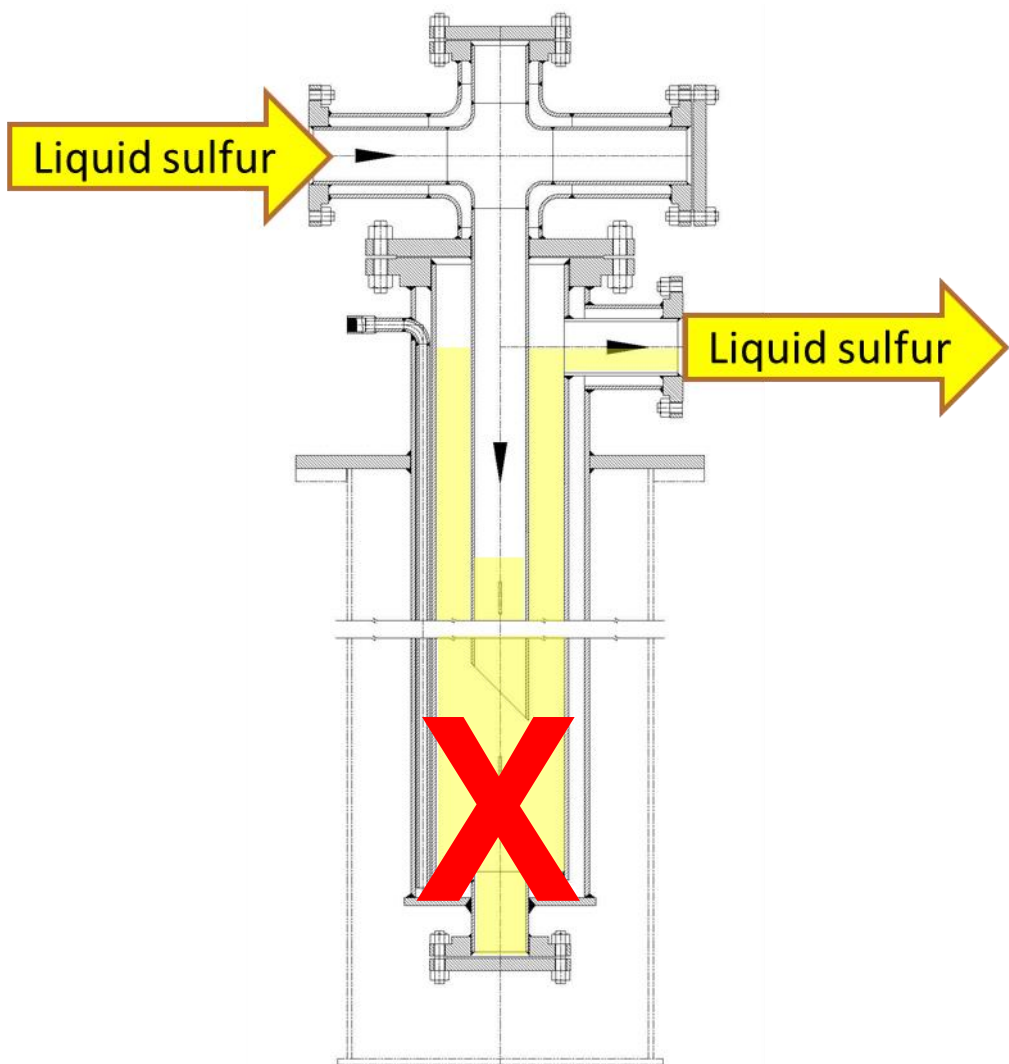
Seal leg - Benefits



- Supplemental pressure relief
- Long maintenance interval

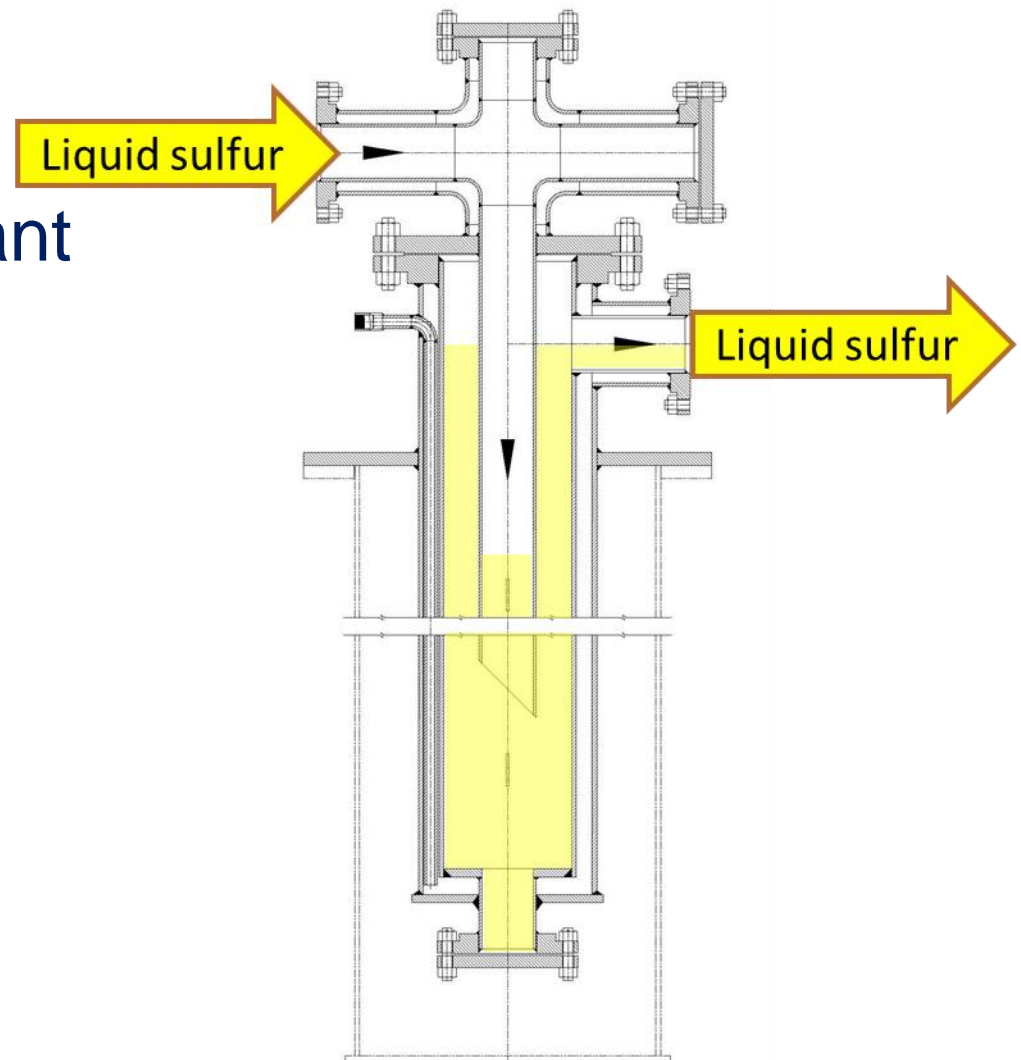
Seal leg: Prone to plugging

- Debris collects at the bottom of the seal leg
- Plugging can also occur at startup
- Costly maintenance



Seal leg: Other potential issues

- Ground-water intrusion
- What happens if plant wants to increase pressure?
- Operation status confirmed via look box
- Crane needed for installation and removal





Look Box Safety



Seal Leg Safety



Seal Leg Safety

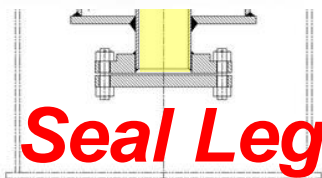
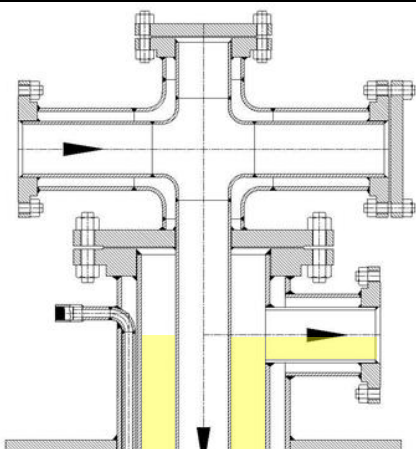


Safety Issues Seal Leg

- Exposure to H₂S vapors
- Burns from liquid sulphur
- Mess created in SRU
- How Serious?
 - “This area is the most dangerous in the SRU”
 - 40 Year SRU Veteran, Brimstone Vail 2013

Sulfur sealing options

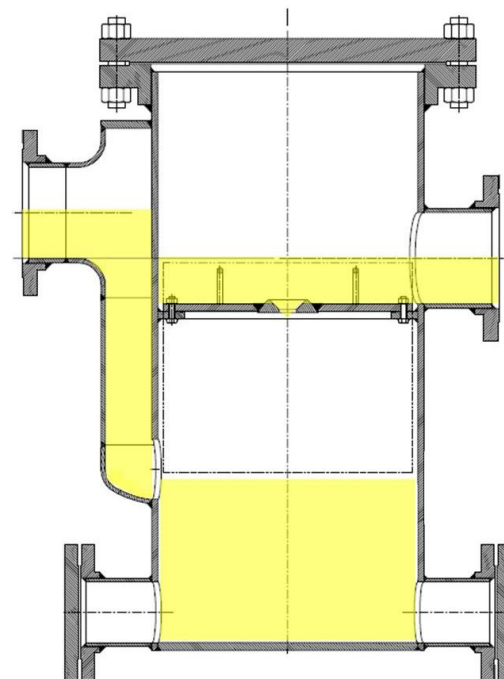
In-ground



Above-ground



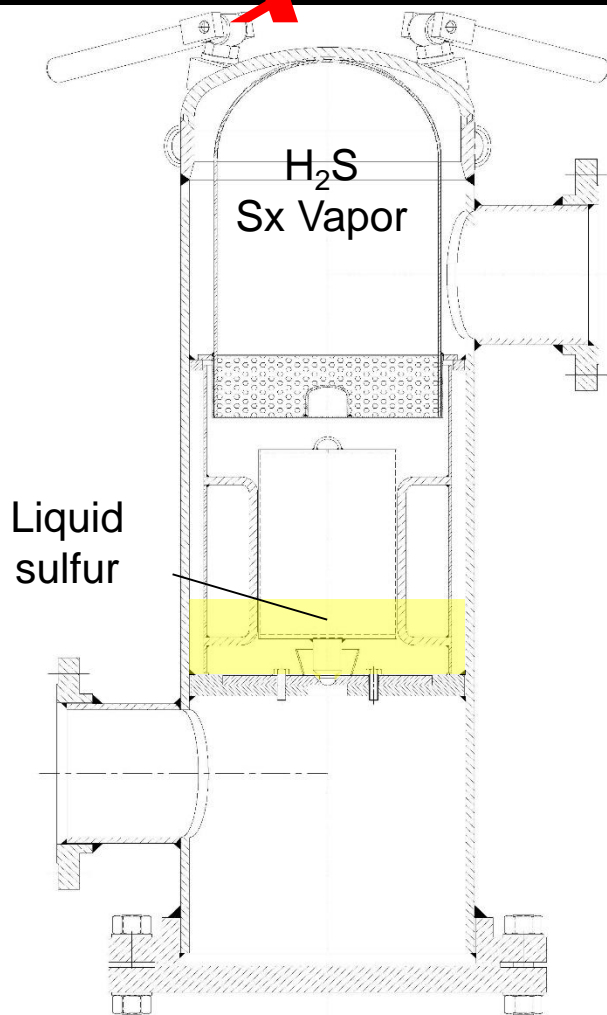
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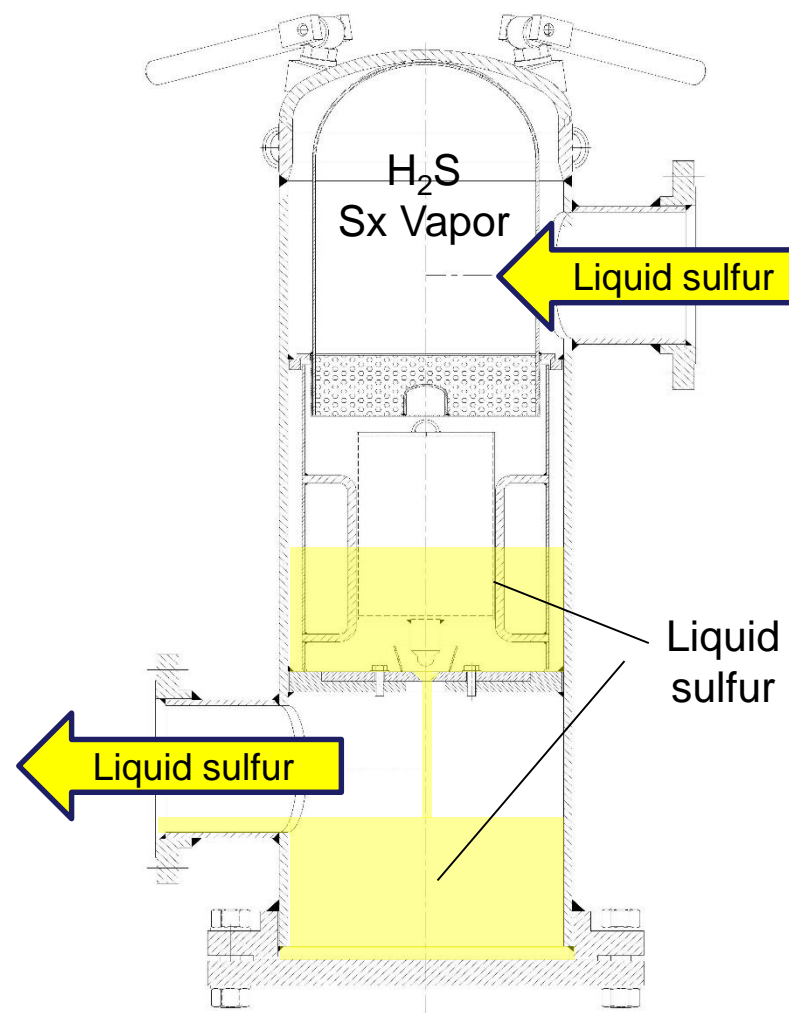
2000

SxSeal[™]

S Seal 1000 in operation



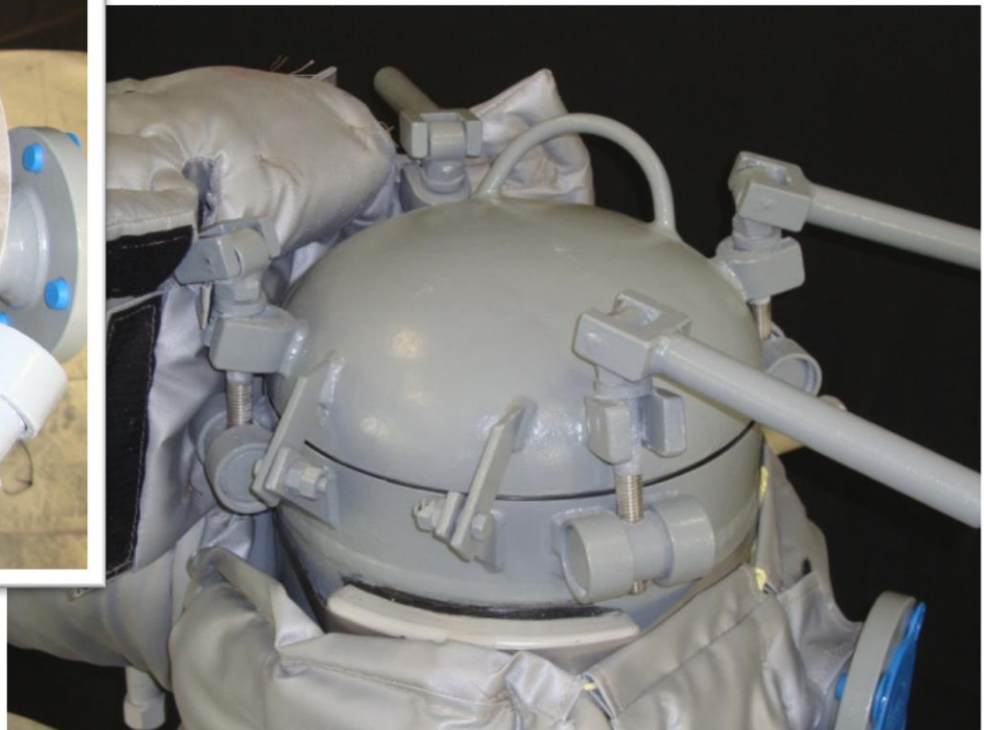
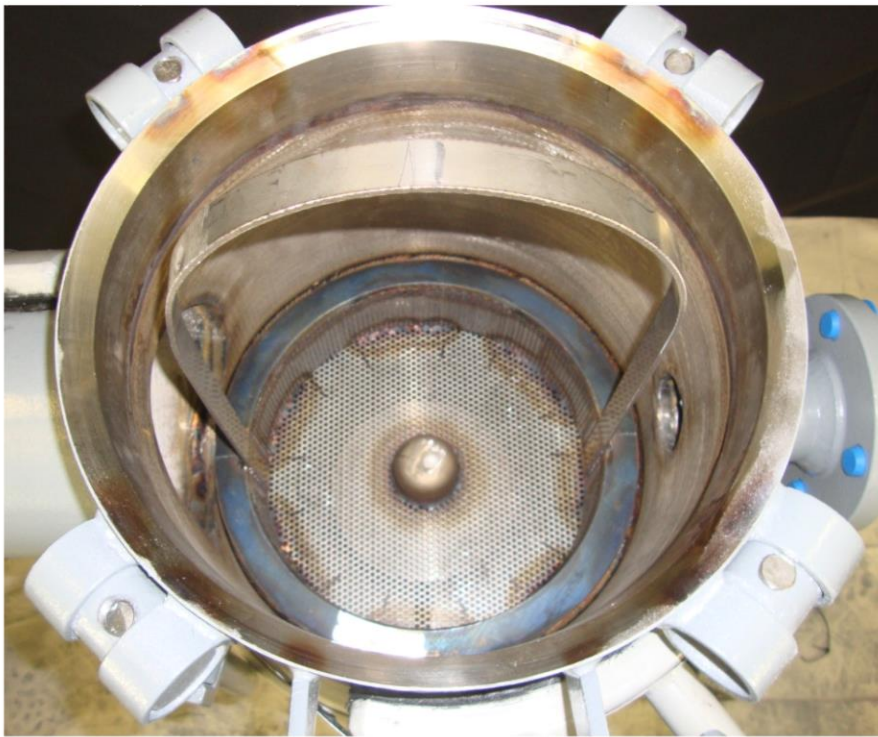
No-flow condition



Flowing condition

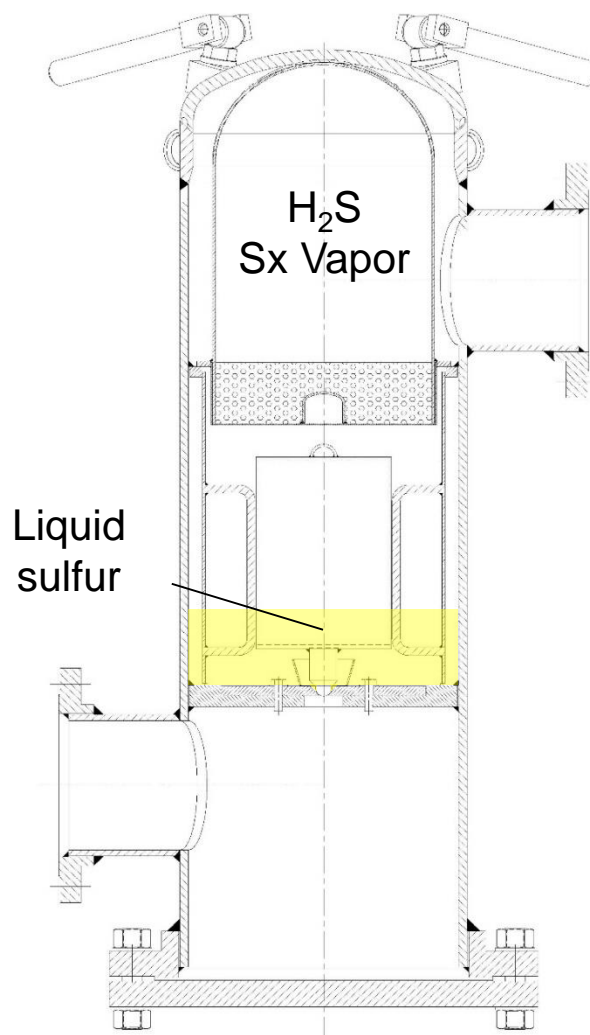
Requires regular maintenance

- Need for fresh air suit?



Safety Issues SxSeal 1000

- Regular Maintenance
- Exposure to H₂S vapors
- Exposure to liquid Sulphur
- No pressure relief path
 - Rupture disk
- Still need for lookbox

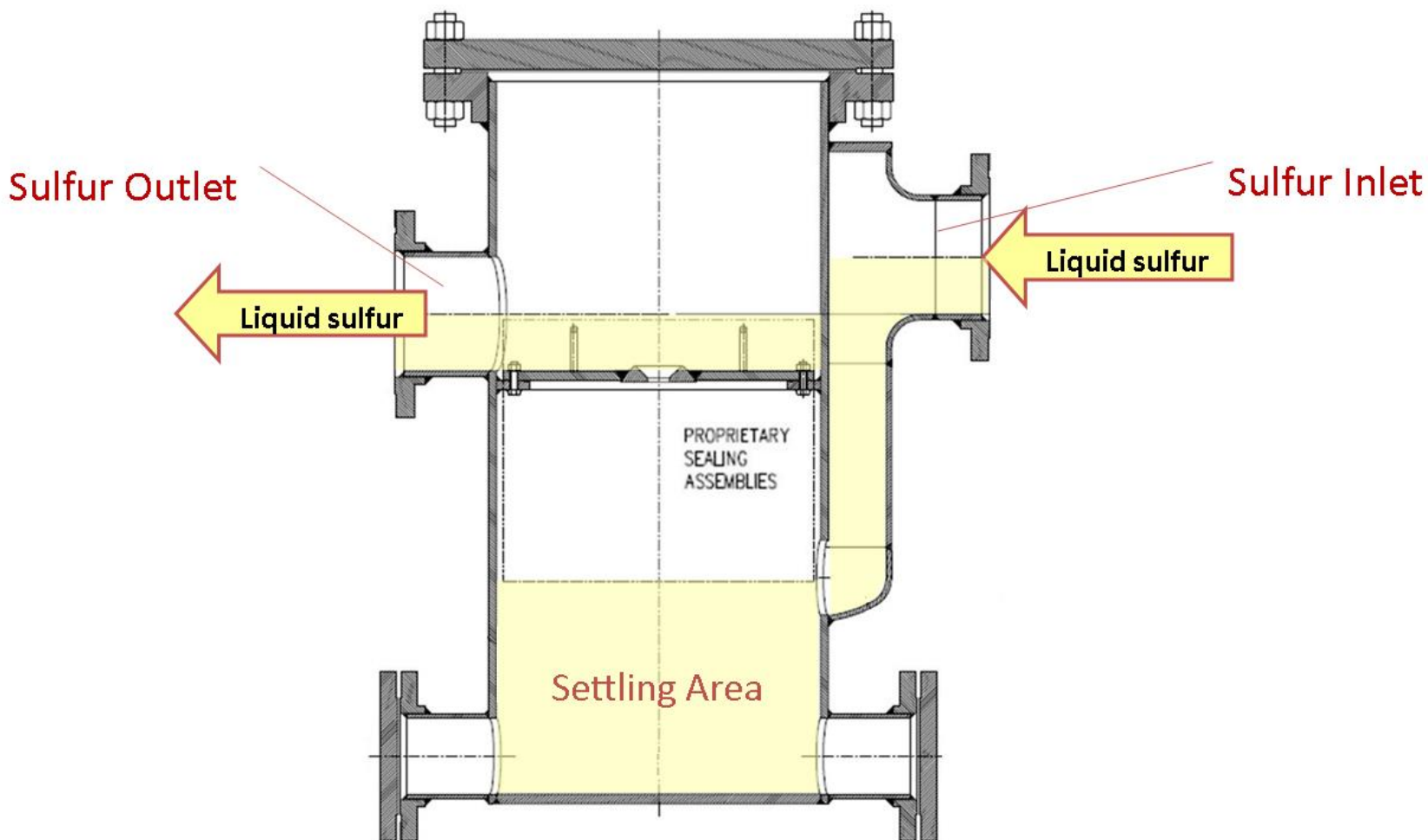


SxSeal 2000



- Best of both worlds in sulfur sealing technology

S_x Seal 2000 in operation



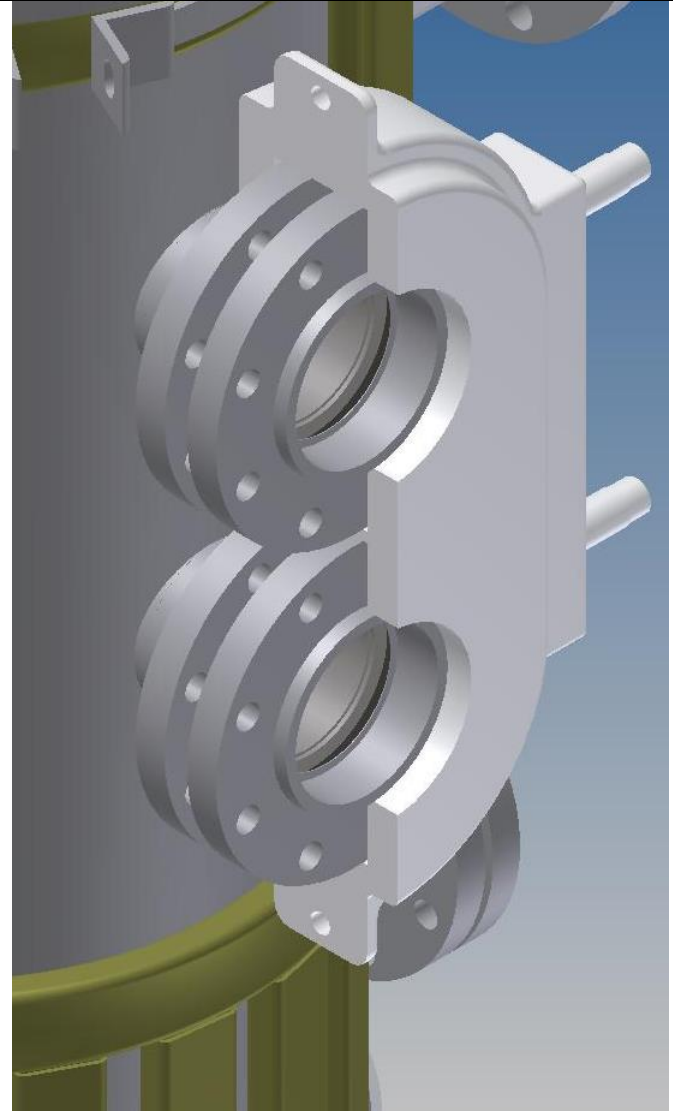
Construction and Components



Operating status indicators



Operating status indicators

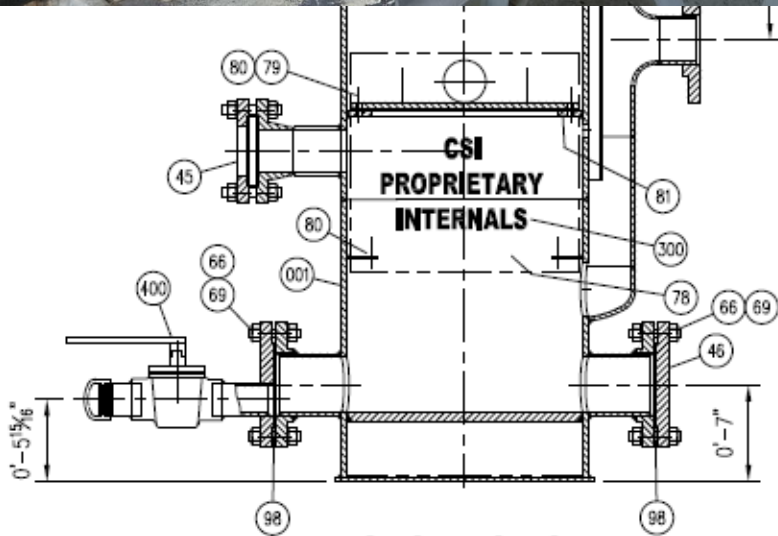


Low maintenance



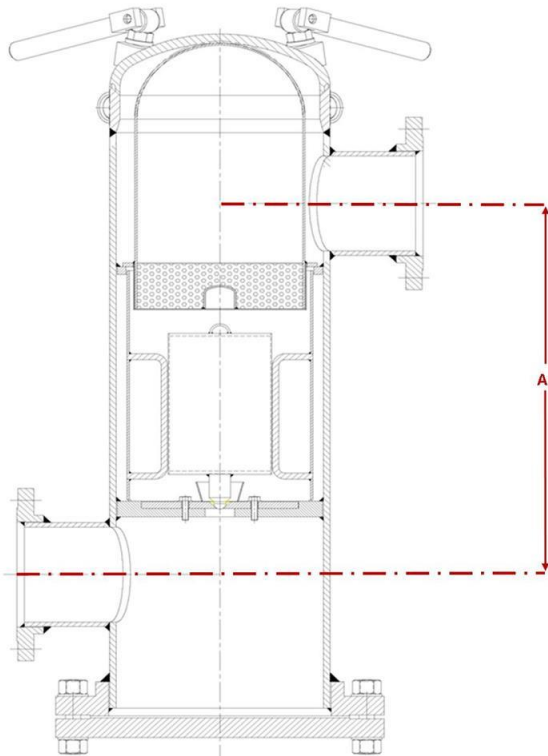
Debris can be cleared during turnaround.

Built-in clean out facilitates quick, easy maintenance.

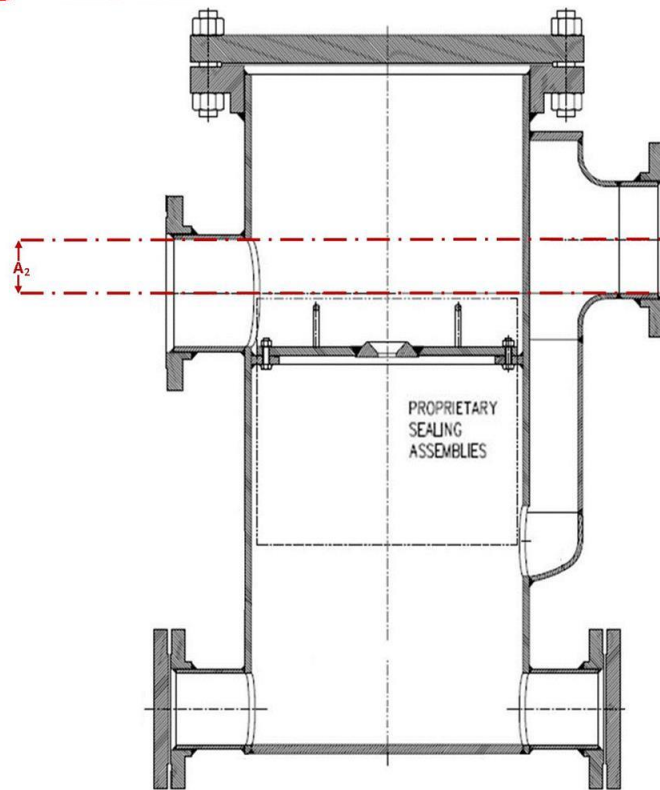


Easy retrofit

SxSeal[™]



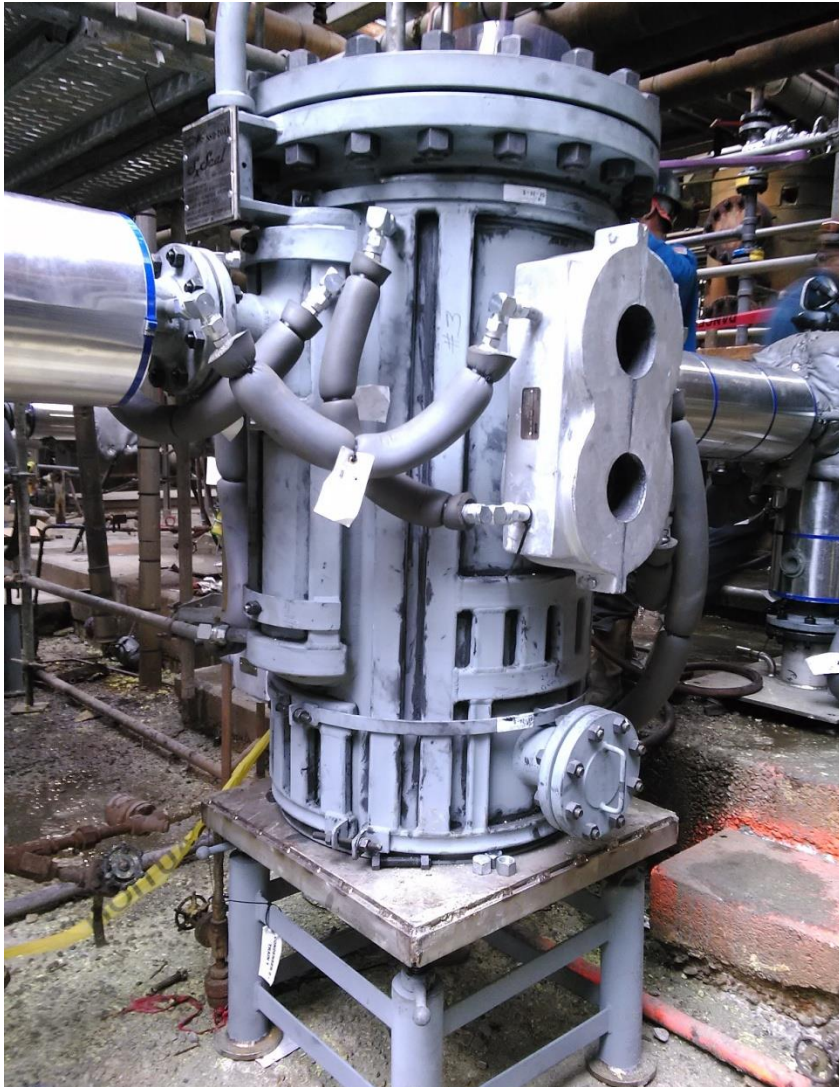
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2000

- Minimal elevation difference between inlet & outlet
- Facilitates retrofit

Heated with ControTrace



Summary of benefits

SxSeal 2000

- Safe, visual confirmation of performance – no look box required
- No filter maintenance
- Online cleaning possible
- No water intrusion, cross-contamination, or plugging
- Supplemental relief path



SxSeal 2000 – 200+ in operation



Video



Questions?

