

United States Coast Guard



Viscous Oil Pumping System (VOPS)

Background

T/B MORRIS J. BERMAN



M/V KUROSHIMA



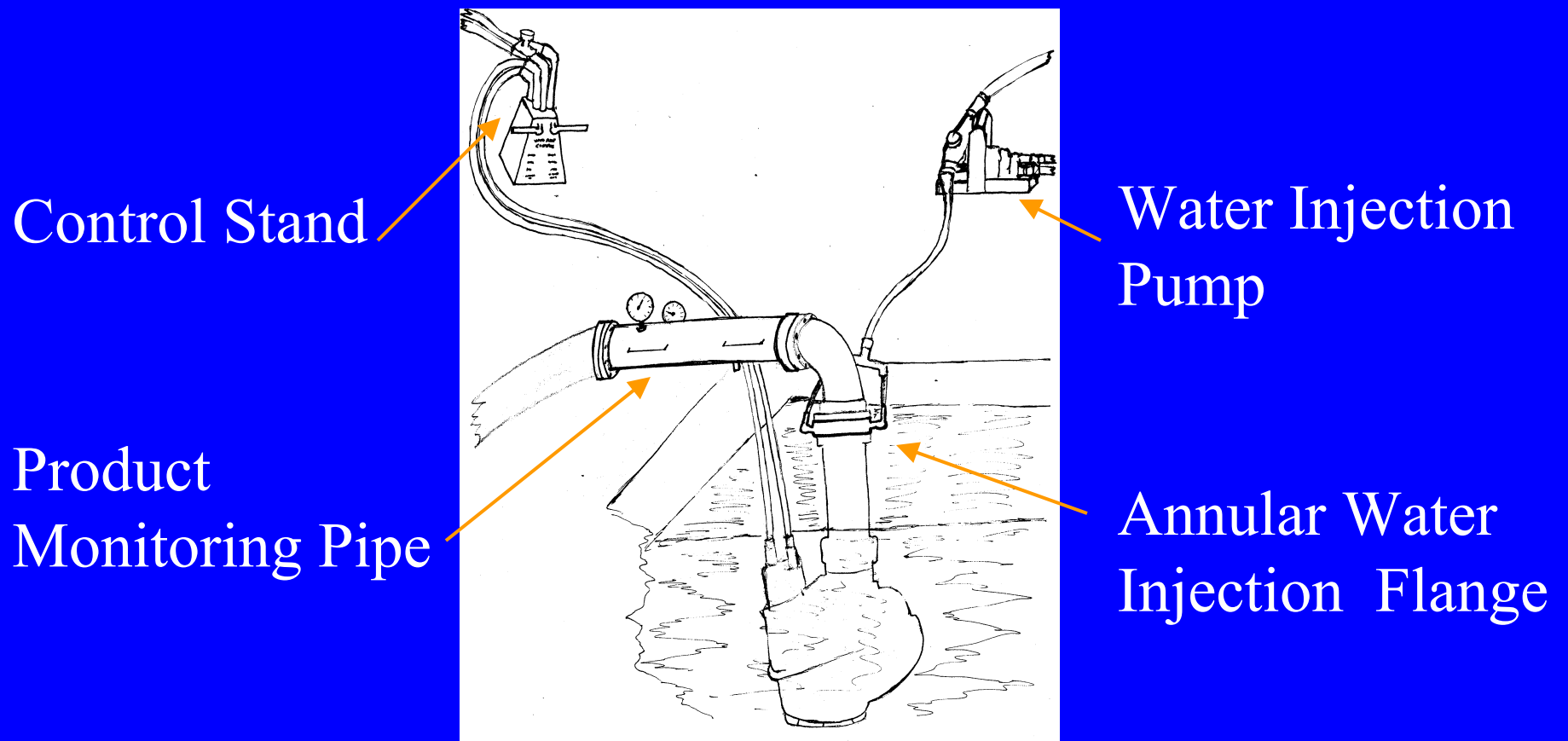
M/V NEW CARISSA

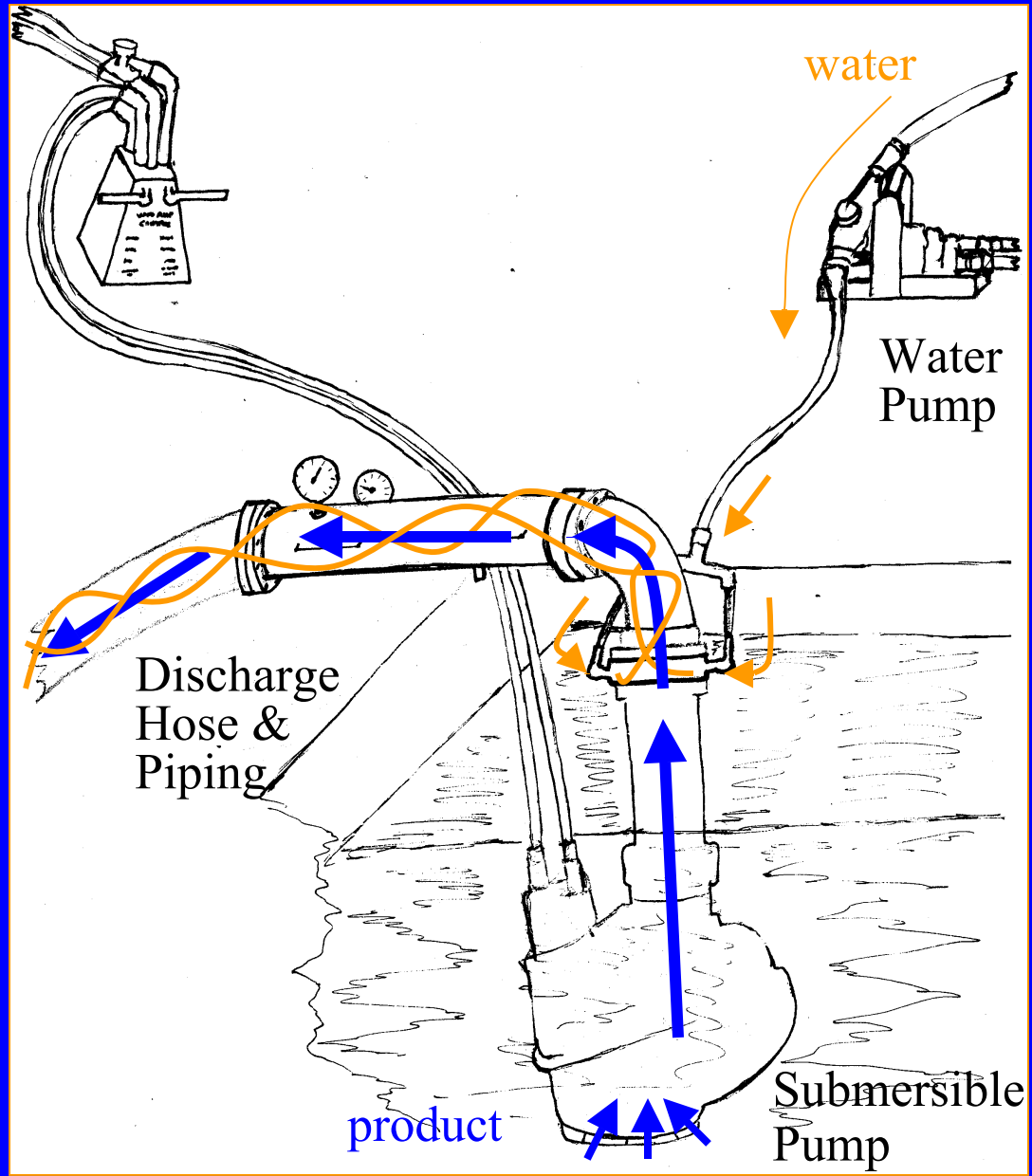
Partnership

- U.S. Coast Guard
- U.S. Navy Supervisor of Salvage
- Private Industry
- International

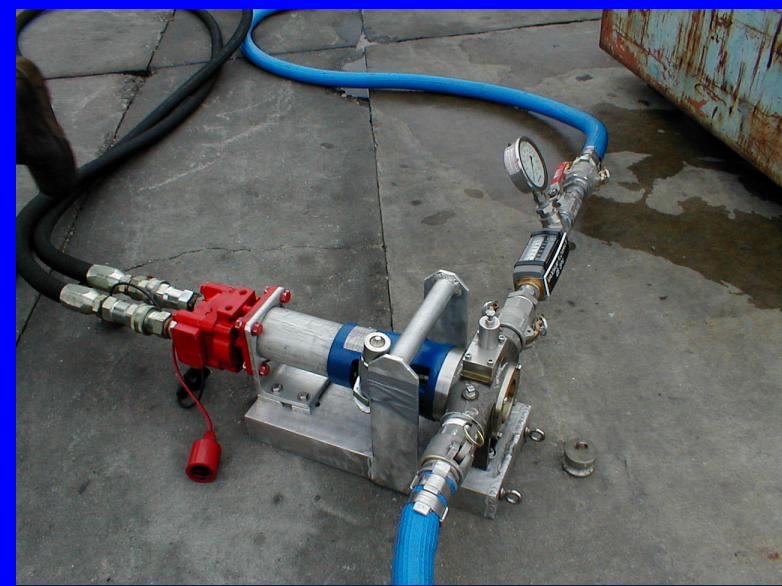
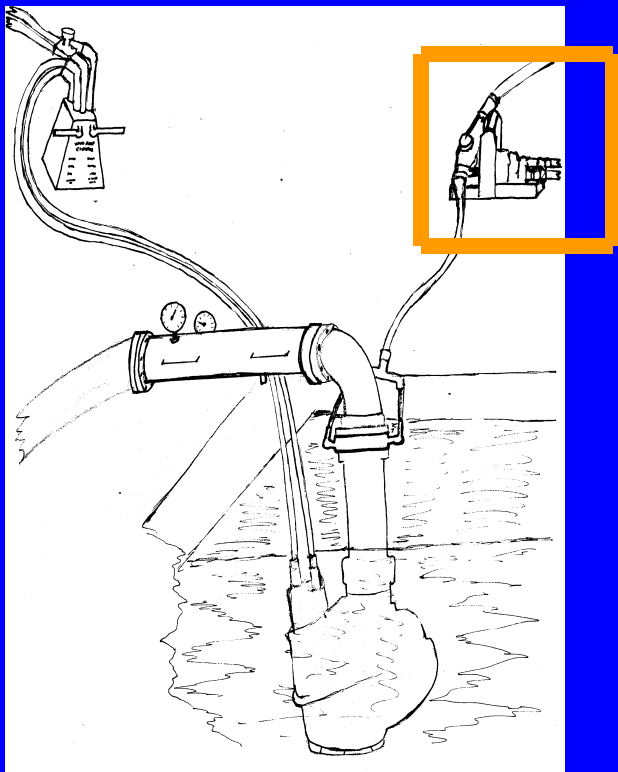


Key Components



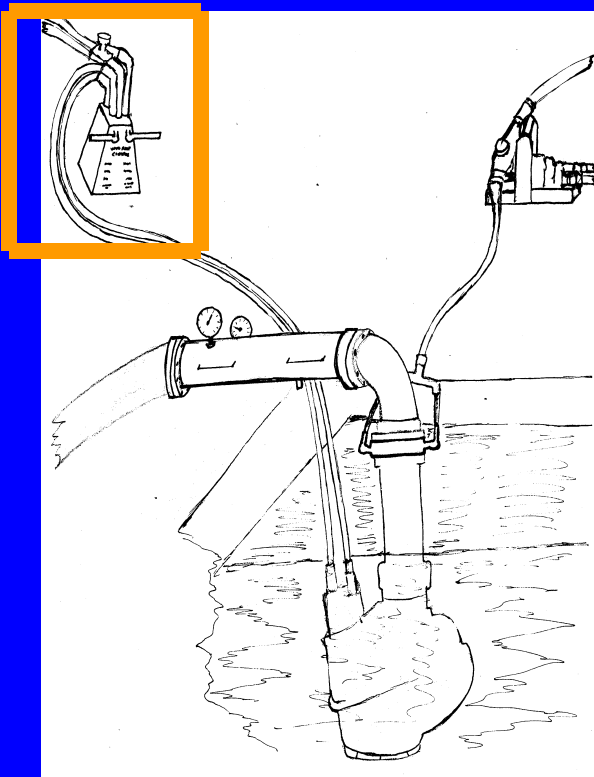


Water Injection Pump



Rotan Gear Pump

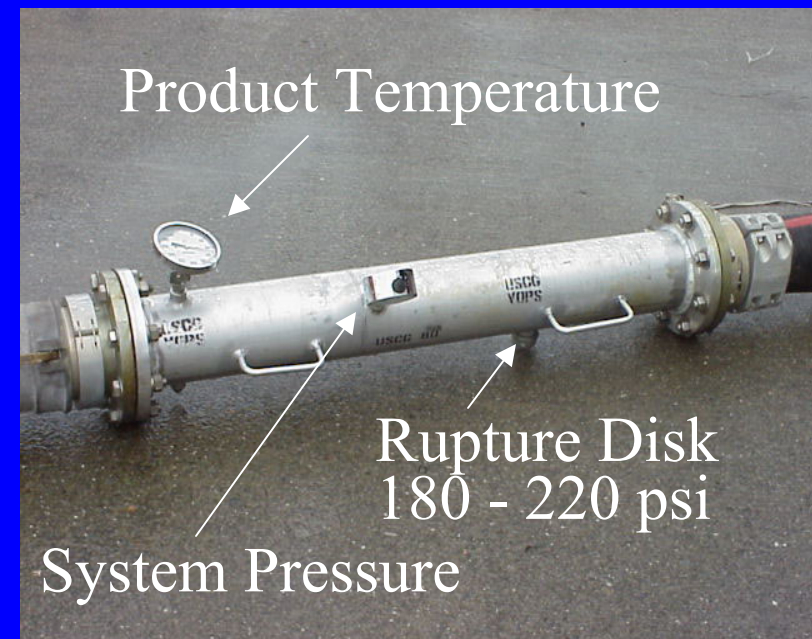
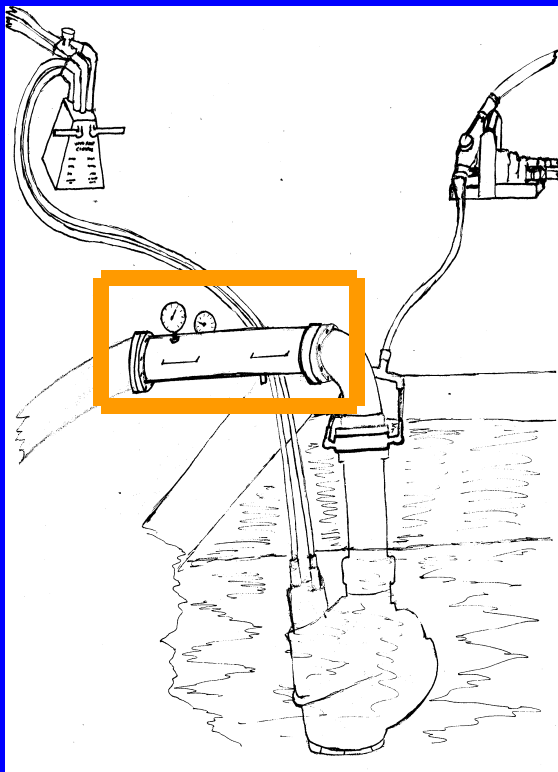
Control Stand



Product
Pump Control

Water Injection Control

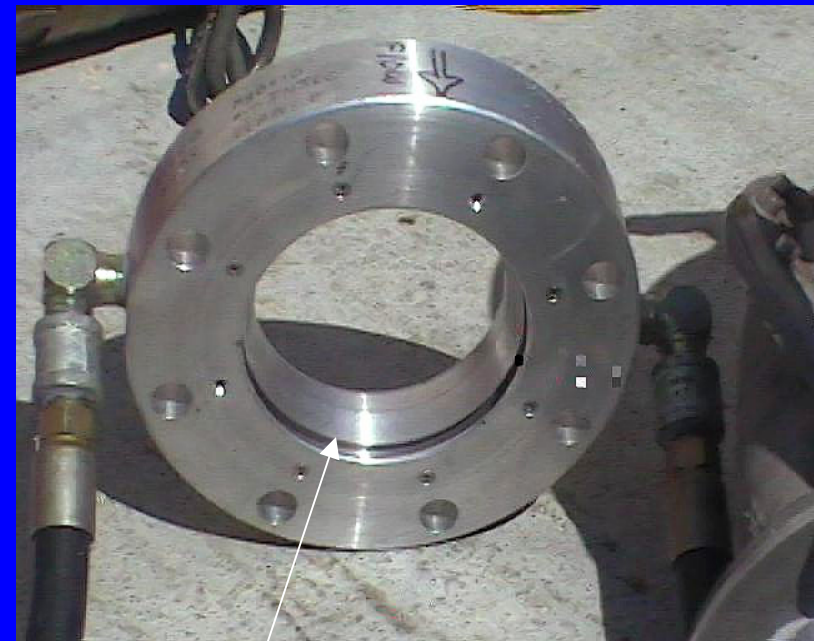
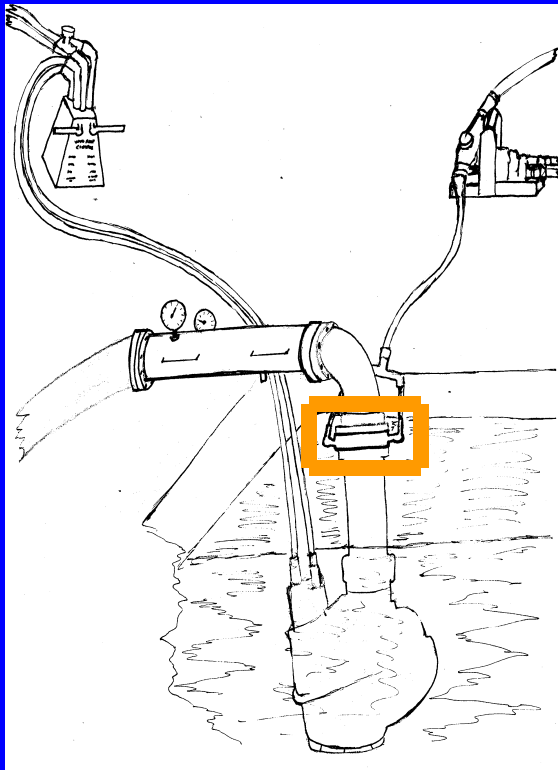
Product Monitoring Pipe



Product Piping with Installed Gages and Sampling Port

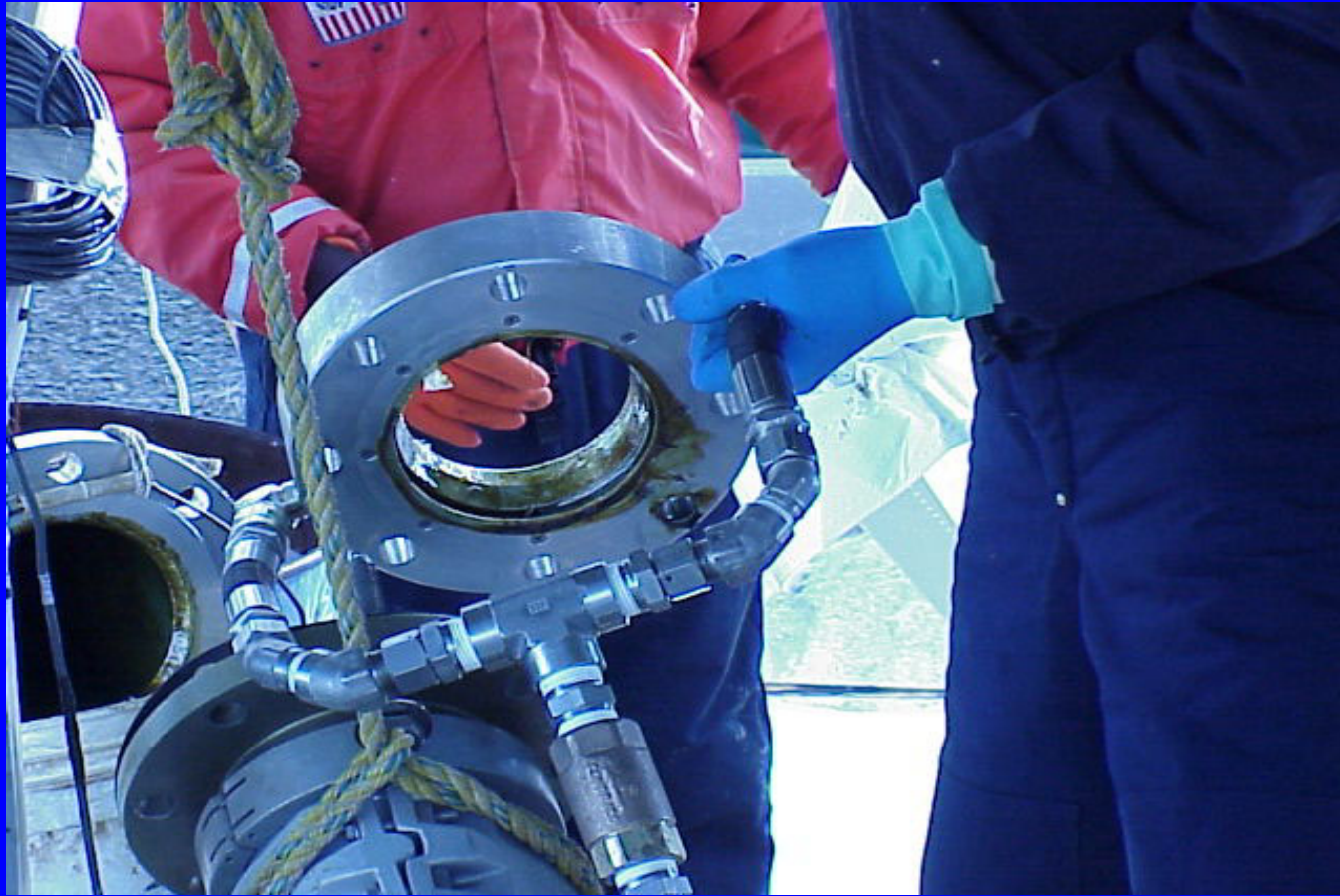


Annular Water Injection Flange



Removable Ring for
easy Cleaning

Water Injection Flange



Results

- Reduces head pressure.
- Push viscous oil greater distances.
- The three USCG Strike Teams have the VOPS in inventory.

USCG Viscous Oil Pumps



DOP-250 Pump with AWI Flange



DOP-160 Pump

VOPS Tested at OHMSETT



**Hydra-search
Fitting**



400 meters of 6" hose
30,000 cst oil

VOPS Tested at Alaska Clean Seas, Prudhoe Bay, AK



Approx. 50,000 cst oil



100 cu.m/hr

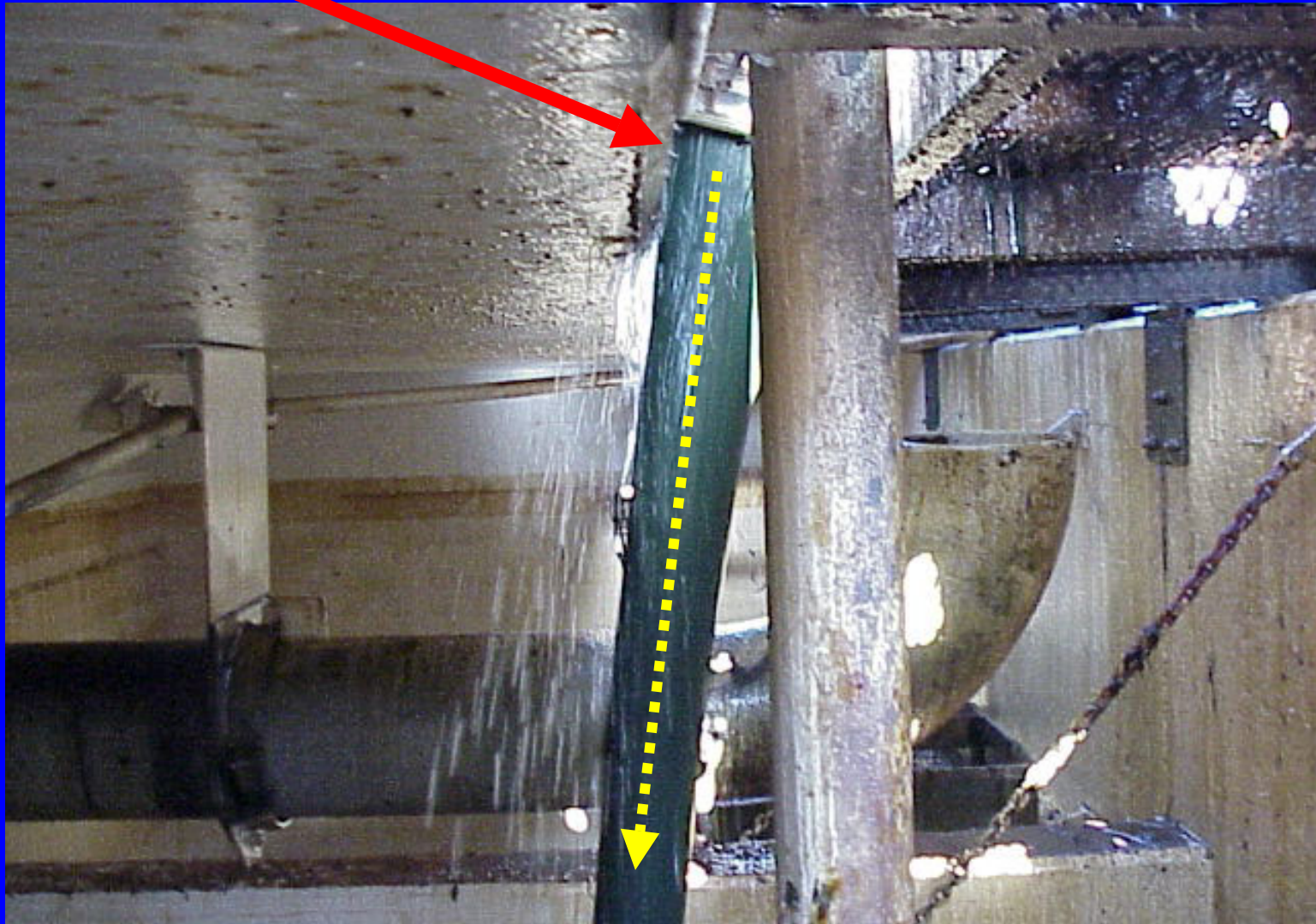
With Water Injection

Future Plans



- Continue Partnership
- Testing / Exercises
- Develop Uniform Job Aids
- Actual Response Use

Water and oil discharging out of 6" lay flat hose at 800'



Questions?

