

Challenge

Issue

Concrete encased pump could not be removed for repair. Extensive cavitation and pitting corrosion reduced pump flow performance impacting plant efficiency.

Goals

- Repair in place with solution that provides long term protection at 50% of previous repair cost
- Extend MTBR to >10 years

Root Cause

A combination of cavitation and pitting corrosion attacked the pump's cast iron bell housing. Tolerances went out-of-spec due to metal loss of .750" (18 mm). Empirical data indicated pending catastrophic failure lower bell housing.



Three pumps were experiencing this failure

Solution

Preparation

- Decontaminate surfaces
- Grit blast to Sa 2.5 with 3 mils (75 µm) angular profile

Application

1. Apply **ARC 858** to zones of pitting corrosion and cavitation
2. Apply **ARC 855** in 2 coats to total DFT of 30-40 mils (.75-1 mm)



Cavitation and erosion of bell housing

Results

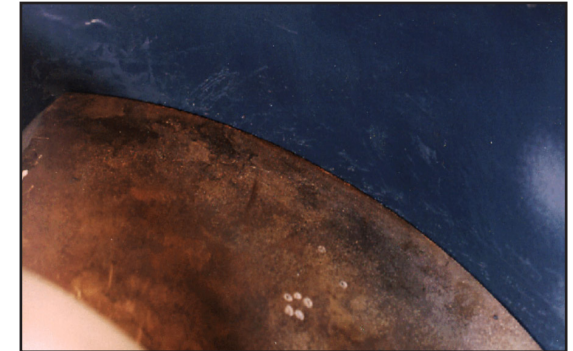
Client Reported

- Pumps have performed to expectations for 10+ years
- Each pump required 3 days to complete repairs

Client Reported Savings

Off site coating repairs (per pump):	\$15.0K
<u>Onsite ARC repairs (per pump):</u>	<u>-\$ 2.7K</u>
Total savings per pump:	\$12.3K
Total savings based on 3 pumps:	\$36.9K

\$=USD



Damaged area repaired with ARC 858