

# **Distribution Pump**

### Challenge

#### Issue

After 20 years in service, corroded pump internals reduced flow and efficiency. Client sought options to high capitol replacement cost with long lead time.

#### Goals

- Restore 4 pumps to optimal efficiency
- Reduce 30-week lead time and \$40K/pump projected spare parts replacement cost

#### **Root Cause**

Corrosion and erosion from entrained solids degraded internal tolerances and increased frictional drag through hydraulic passages.

## Solution

#### Preparation

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

#### Application

- 1. Apply ARC 858 to fare smooth and fill pitted surfaces rebuilding tolerances
- 2. Apply 2 coats of ARC S2 @ 15 mils (375  $\mu\text{m})$  DFT per coat

### **Results**

#### **Client Reported**

- Rebuilt pumps returned to 100% of BEP
- Lead time reduced from 30 weeks to 3 weeks
- ARC upgrade was <40% of replacement parts</li>
- Used ARC to upgrade for 15 more pumps

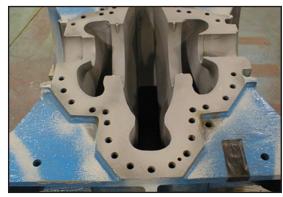
### **Client Reported Savings (4 pumps)**

Spare parts replacement:	\$160K
ARC repair costs:	\$ 64K
Savings vs. replacement:	\$ 96K
Estimated annual energy savings:	\$ 30K

#### \$=USD



Eroded and corroded pump volute



Surface after proper surface preparation



ARC-coated surfaces - casing and impellor

Technical data reflects results of laboratory tests and is intended to indicate general characteristics only

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