

DTEA II™ CHEMISTRY

LABORATORY OPEN RECIRCULATION EVALUATION

- Project Manager: Ladell Jones, AMSA, Inc.
- Technical Advisor: Dr. Richard Walter, AMSA, Inc.



Objectives

- To Demonstrate Benefit of DTEA II™ Chemistry to a Traditional Corrosion Inhibitor Program
- To evaluate the corrosion performance of AMSA's DTEA II™ Chemistry with Organo-Phosphonate in a open re-circulating environment
- Corrosion profile of DTEA II™ Chemistry is based on linear polarization resistance measurement
- Metallurgy
 - Carbon steel
 - Admiralty brass
- Evaluate the dosage profile of DTEA II™ Chemistry with Organo-Phosphonate
- Confirm Field and Customer Experiences



Laboratory Set-up for Corrosion Studies



Treatment Program

Test Items	Tank 1	Tank 2	Tank 3
Organo-Phosphonate	5ppm	5ppm	5ppm
DTEA II™ Chemistry	0ppm	4.5ppm	7.5ppm
Carbon Steel	Yes	Yes	Yes
Admiralty Brass	Yes	Yes	Yes



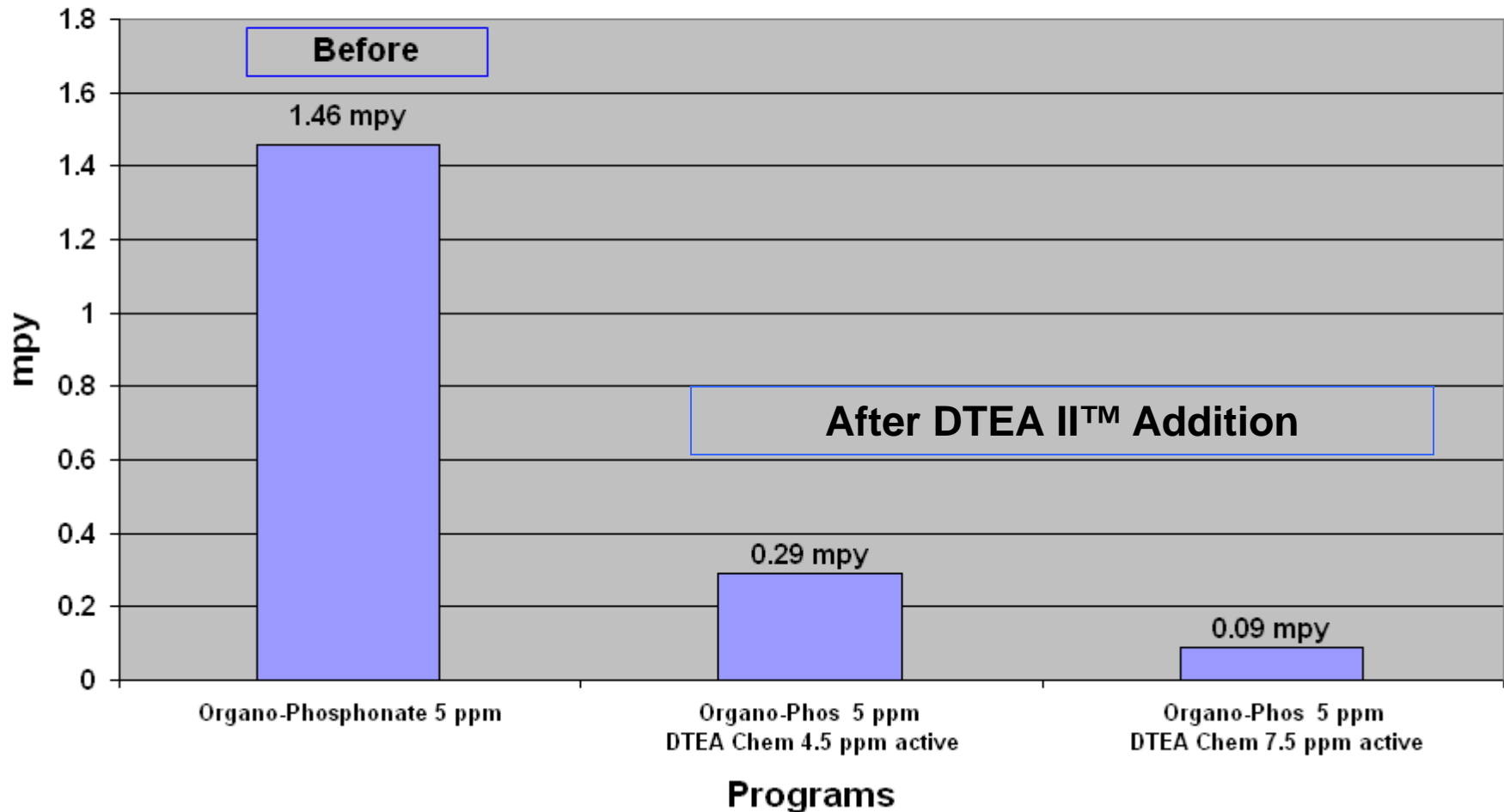
Tank* Water Analysis/Conditions

- Total Hardness
- Total Alkalinity
- pH
- Conductance
- Temperature
- Duration
- 100 ppm (as CaCO_3)
- 100 ppm (as CaCO_3)
- 8.00-9.00
- 200-300 mmhos
- 120 (F)
- 5 days

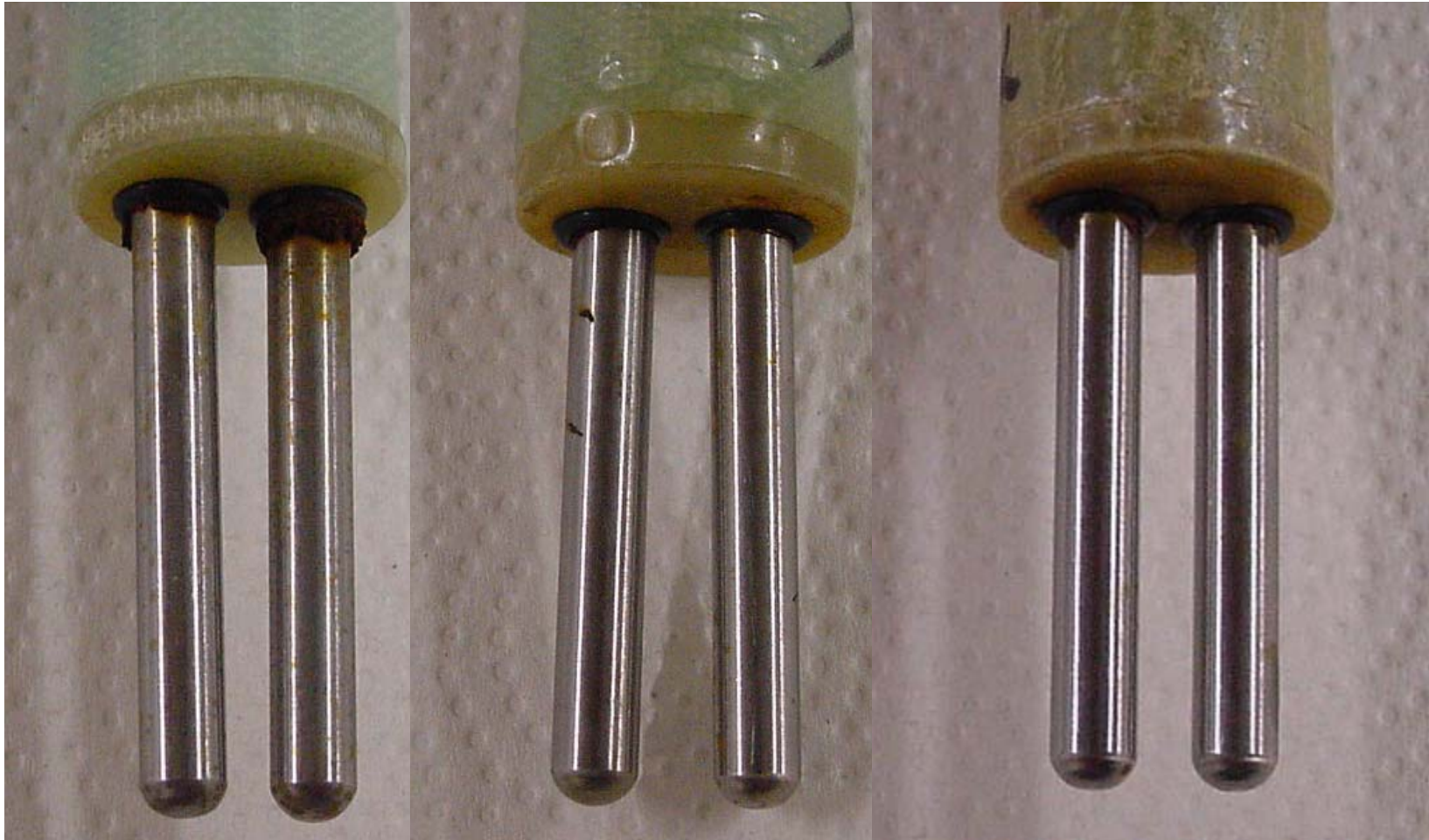
* Tank Volume – 22 liters



LABORATORY EVALUATION OF DTEA CHEMISTRY Carbon Steel in Open Recirculating Cooling System



Corrator Carbon Steel Electrodes - 120 hrs exposure



OP - 5ppm

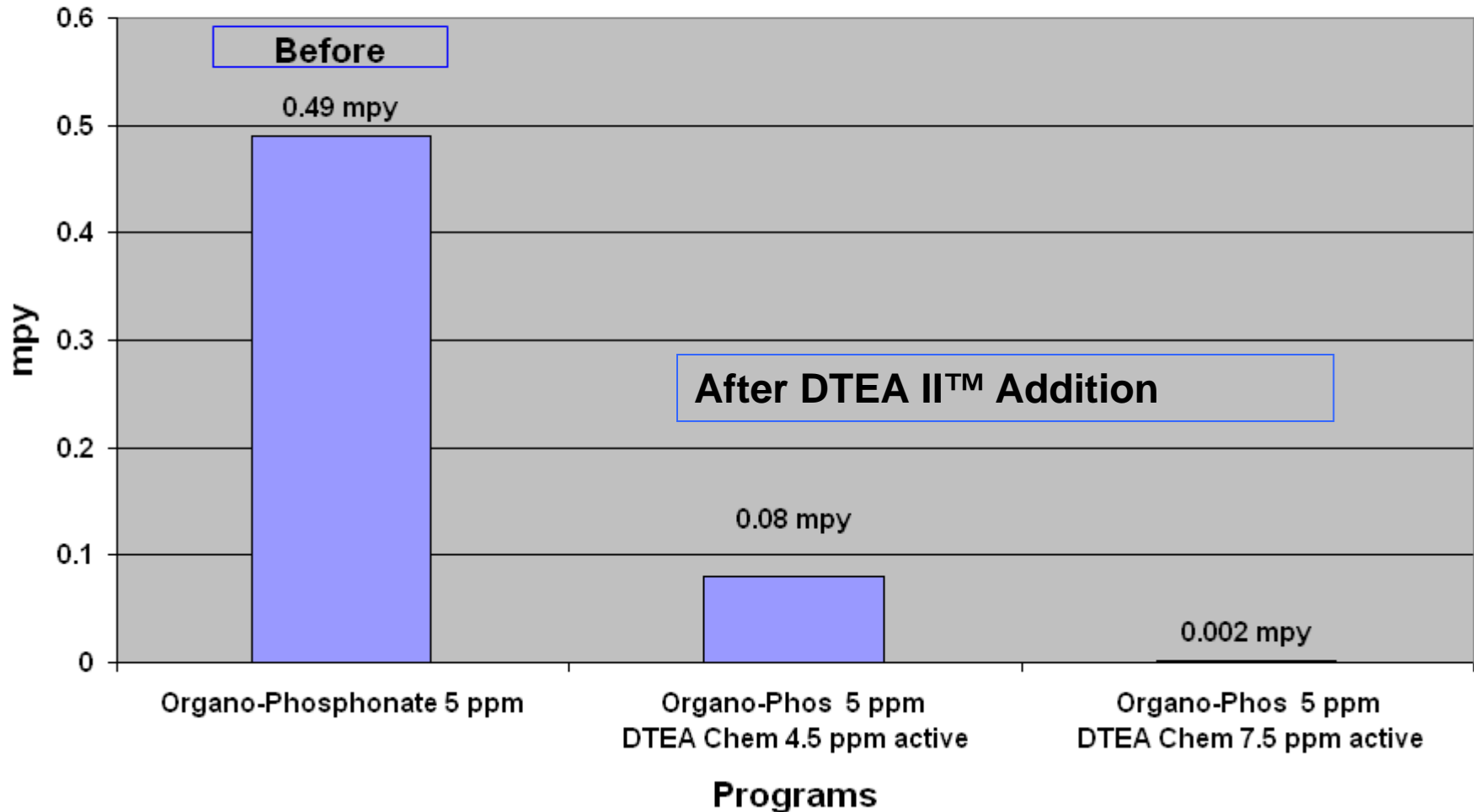
OP - 5 ppm
DTEA II™ 4.5ppm
active

OP - 5 ppm
DTEA II™ 7.5ppm
active

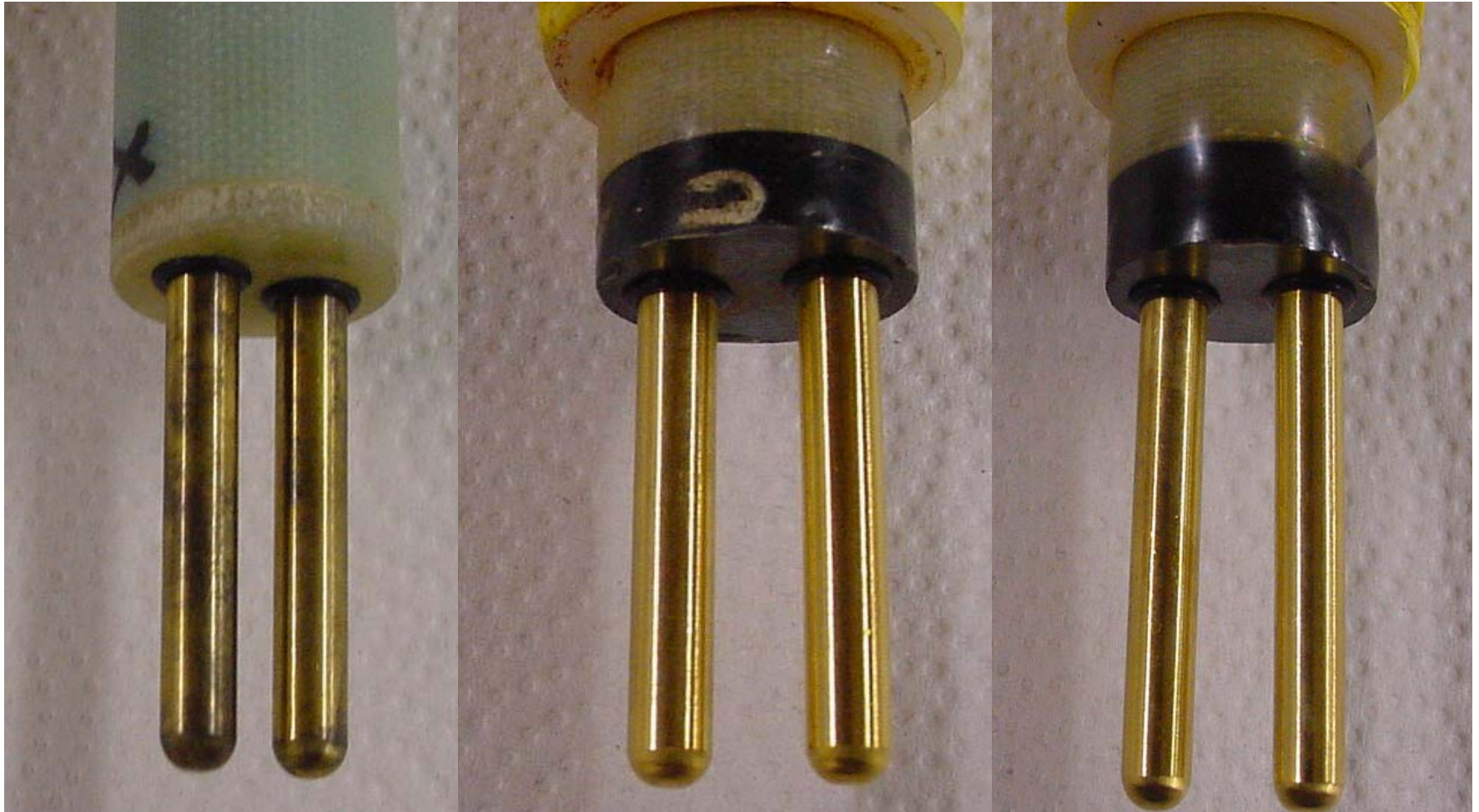


LABORATORY EVALUATION OF DTEA CHEMISTRY

Admiralty Brass in Open Recirculating Cooling System



Corrator Admiralty Brass Electrodes - 120 hrs exposure



OP - 5ppm

OP - 5 ppm
DTEA II™ 4.5ppm
active

OP - 5 ppm
DTEA II™ 7.5ppm
active



Conclusions from Open Recirculation System

- DTEA II™ chemistry significantly improved the corrosion performance of carbon steel when added to Organo-Phosphonate
- DTEA II™ chemistry significantly improved the corrosion performance of admiralty brass
- Lab Study Demonstrated Benefit of DTEA II™ Chemistry when added to a Traditional Corrosion Inhibitor Program*

* Note this program has not been optimized



Contact Information:

- Antimicrobial Specialists & Associates, Inc.
- 4714 S. Garfield Rd.
- Auburn, MI 48611
- Email: sales@amsainc.com
- Phone: 989-662-0377
 - Toll Free: 888-739-0377

