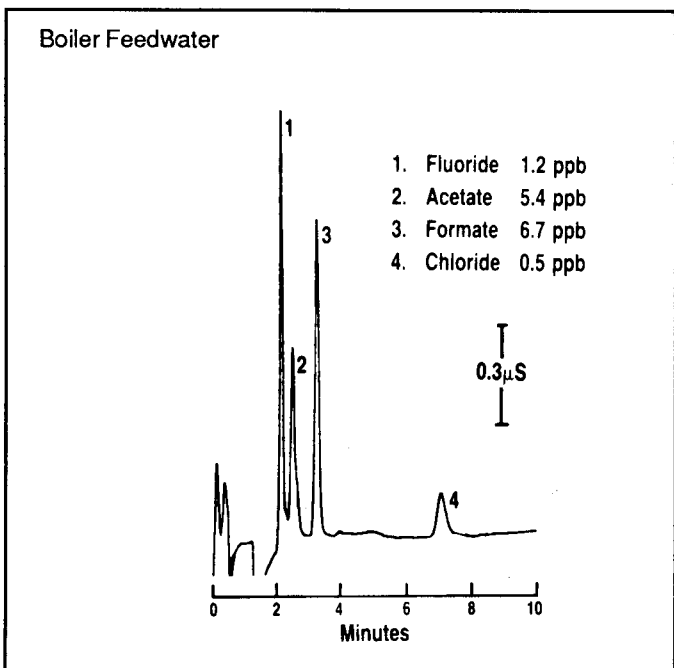
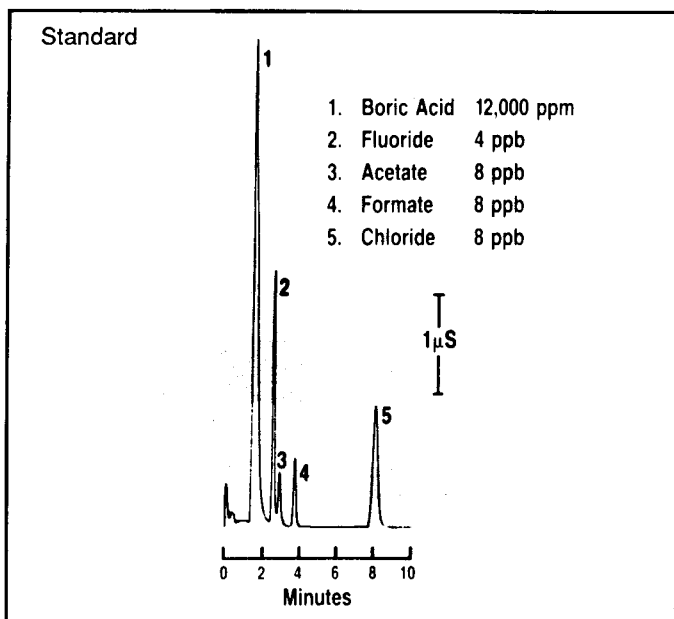


AU 102
May 1987

**TRACE ANIONS IN POWER PLANT
HIGH PURITY WATER AND BORATED WATER
METHOD B - FLUORIDE, ACETATE, FORMATE, CHLORIDE**



PERFORMANCE

Corrosive inorganic anions such as fluoride and chloride, as well as key organic acid anions such as acetate and formate, can be measured down to 0.1 ppb in 15 minutes.

COMMENTS

In the past, chloride and sulfate have been considered the only corrosive anions present in boiler water. Now, power industry researchers find that fluoride as well as acetic and formic acids often dominate the anion contaminants present. This method can be reliably applied to borated waters from PWR primary reactors.

APPLICATION AREAS

- Feedwater
- Boiler Blowdown
- Main Steam
- Condensate
- Condensate Polisher Effluent
- Make-up Water

CONDITIONS

Sample Volume: 10 to 20 mL
 Concentrator Column: HPIC-AG4A
 Guard Column: HPIC-AG4A
 Separator Column: HPIC-AS4A
 Eluant: 5.0 mM Sodium Tetraborate
 Eluant Flow Rate: 2.0 mL/min.
 Suppressor: Anion MicroMembrane (AMMS)
 Regenerant: 25 mN H₂SO₄
 Regenerant Flow Rate: 3 mL/min. with AutoRegen™ Accessory
 Expected Background Conductivity: 2 to 4 μS

SOLUTIONS AND REAGENTS

Eluant: 5.0 mM Sodium Tetraborate
(Borax)

Dissolve 1.90 g $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ per liter of deionized water.

Regenerant: 25 mN H_2SO_4

Dilute 1 bottle (400 mL) of Anion Suppressor Sulfuric Acid Regenerant (P/N 37164) with water in a 4 L container, or add 3 mL of concentrated sulfuric acid to 3 L water in a 4 L container. Fill to 4 L.

RECOMMENDED EQUIPMENT

Any Dionex Ion Chromatograph equipped with a Conductivity Detector: QIC, 2000i, 2000i/SP, or 4000i, Sample Pump.