RO System Conductivity Readings Relative to System Start-up and the AAMI Standard
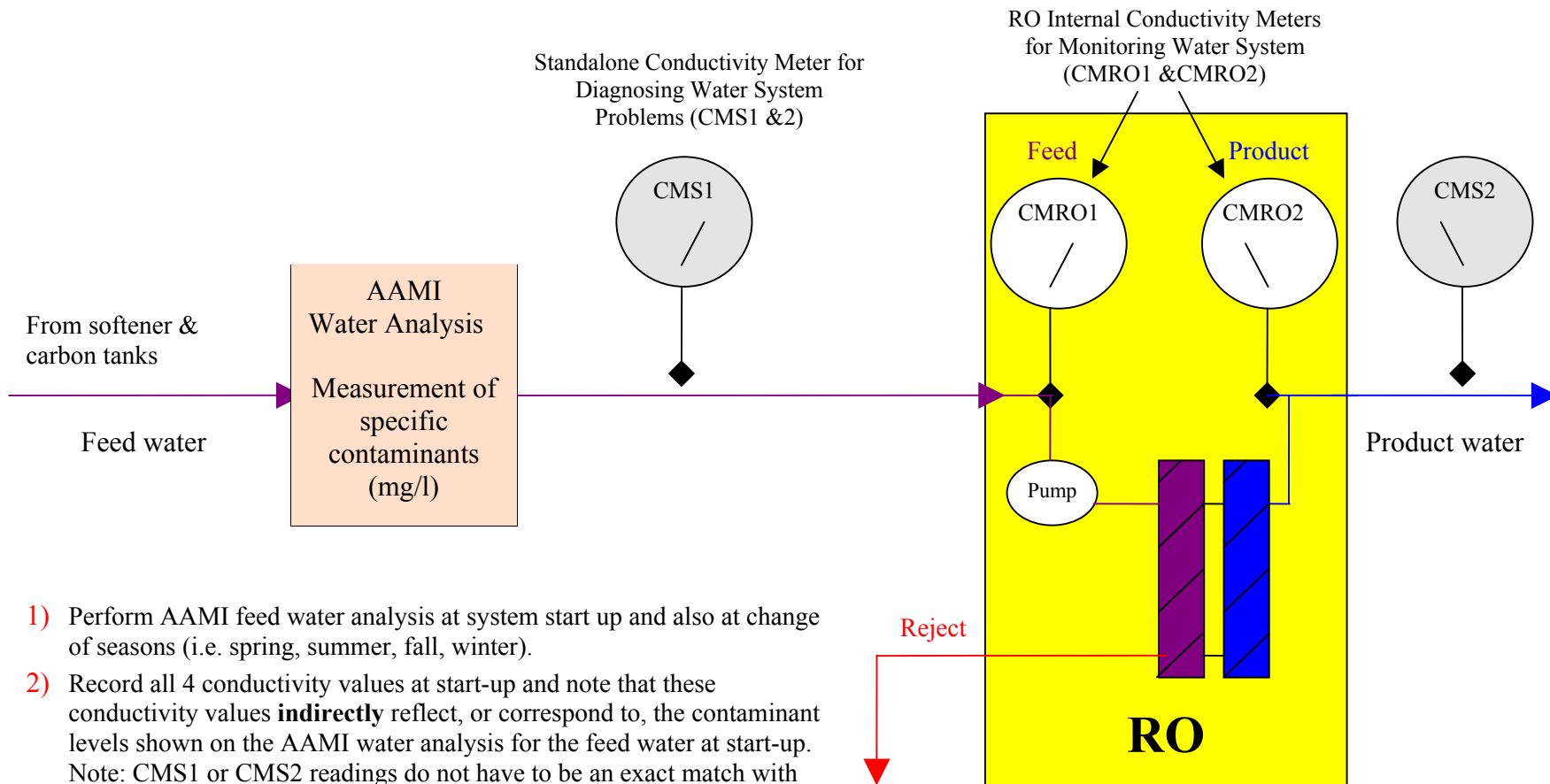
V. Taaffe – 2/28/04

RO Internal Conductivity Meters for Monitoring Water System (CMRO1 &CMRO2)

Standalone Conductivity Meter for Diagnosing Water System Problems (CMS1 &2)

Feed

Product

CMS1

CMRO1

CMRO2

CMS2

From softener & carbon tanks

AAMI Water Analysis

Measurement of specific contaminants (mg/l)

Feed water

Pump

Reject

Product water

RO

1) Perform AAMI feed water analysis at system start up and also at change of seasons (i.e. spring, summer, fall, winter).

2) Record all 4 conductivity values at start-up and note that these conductivity values **indirectly** reflect, or correspond to, the contaminant levels shown on the AAMI water analysis for the feed water at start-up. Note: CMS1 or CMS2 readings do not have to be an exact match with readings from CMRO1 and CMRO2. However, if the CMRO1 meter reading increased or decreased, then the CMS1 reading should increase or decrease by the same percentage. The same is true for CMRO2 readings vs. CMS2 readings.

3) Record RO percent rejection at start-up using standalone meters: ((CMS1 minus CMS2) divided by CMS1) times 100, and reading from RO. This value is typically 98-99 percent (rejection).

4) On AAMI analysis for feed water at start-up, apply percent rejection from step 3 to each listed contaminant and record remaining value. This list of remaining contaminants represents what will be in the product water at start-up. Check this list of remaining contaminants vs. the AAMI standard (for maximum allowable contaminants).

5) If conductivity reading on CMRO1 increases, use standalone meter CMS1 to check if it shows the same percent increase (compared to start-up values) as CMRO1. If so, then there has been an increase in the feed water conductivity (if not, check the RO sensors, meter, adjustments, etc). Softener issues (e.g. regeneration) may cause a spike in conductivity.

6) If the feed water conductivity has increased, then determine what percentage it has increased and apply this percent increase to each contaminant in the AAMI startup analysis for the feed water. Take action described in step 4, using new (higher) contaminant levels, to determine if water is still safe to use. Ultimately, the system should be set up to handle worst case AAMI analysis (compare seasonal reports).