

*'Providing Tribological Solutions'*

## FOREWARNING

*As an added service a FORewarning is provided when a test parameter is either tending to go out of specification or is out of specification. This is so that effective corrective action can be taken as soon as possible.*

*Because of the many differences between designs and consumables, these have to be generic. However, specific suggestions for any system can be provided on request. Just call, fax or e-mail your inquiries. Technical Notes are also available for many fluid topics.*

## HIGH WATER CONTENT

**Background:** With many esters, including phosphate esters, water can cause hydrolysis. The possible consequences include higher acid numbers, lower fluid viscosities and/or the formation of degradation byproducts and deposits.

**Reason for Prompt Action:** The maximum limits from the turbine manufacturers are just that, the maximum. For day to day operation and to achieve full life of the fluid charge, less than 600-800 ppm can normally be achieved without equipment modification. In addition, if the purification media has gotten too wet from moisture in the fluid then it may not be effective at controlling the acidity. Also, a rising water content that is not seasonal should be addressed in case it is a cooler leak or other problems that might soon affect operation. Lastly, some types of fluids, including a blend, do not apparently have as good a resistance to hydrolysis.

**Cause:** The source can include atmospheric moisture as the reservoir breaths, make-up fluid not stored correctly, wet purification media, spent purification media, washdown water, steam valve leaks or cooler leaks. As little as a one pint of water or total accumulated moisture is all it takes in a small 250 gallon system to put it over a 1,000 ppm limit.

**Action:** Fresh purification media will usually help because each of the standard sized cartridges can reportedly hold almost a gallon of water. If the water content is higher, then dehydration rigs are available from contractors or for rent. A fluid bleed and feed can be beneficial if there are no other options.