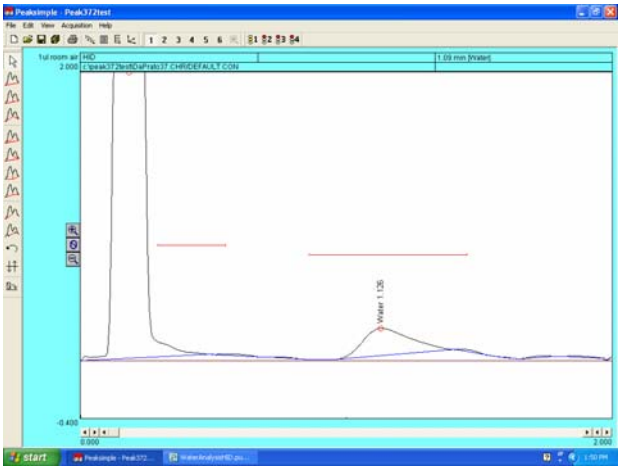
Water analysis using the SRI HID detector

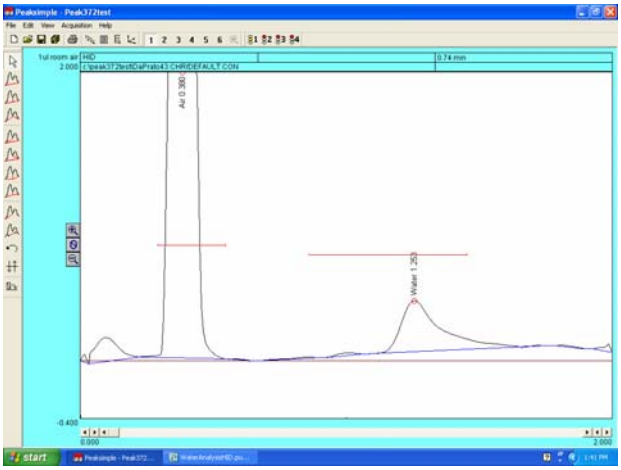
There is increasing interest in measuring water in air at low ppm levels.

We configured an SRI 8610C GC with Helium Ionization Detector (HID) and a 2 meter Haysep-D column. Oven temperature was set to 80C.

The chromatogram at right shows 1ul of room air. We calculated that room air contained about 21000 ppm of water, so a 1 ul injection should contain the same amount of water as 1 ml injection at 21ppm.



We then switched to a 15meter RTX Q-plot column and injected 1ul of room air. The Q-plot results were slightly better because of the sharper peak shape.



Finally we inserted a empty syringe into the injection port and saw a smaller water peak that we believe is the equivalent of 6ppm water.
Notice that the air peak is drastically smaller.