# THE EFFECT OF PRECIPITATION COLLECTOR DESIGN ON THE MEASURED ACID CONTENT OF PRECIPITATION

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## ABSTRACT

In order to evaluate the effect of different types of collectors on the measured chemical constituents of monthly precipitation collections, an array of fourteen precipitation samplers of five different designs has been in operation at Woodbridge, Ontario since March 1974. The collectors are located in an open field near the city of Toronto in an area of approximately 325 square meters, and it is anticipated that the chemical constituents of the precipitation would be uniform across the array for monthly sample collections.

Of the five different collector designs, three have automatic covers which are only open during precipitation events, whereas the other two are open to the atmosphere for the entire precipitation collection period. As expected, dry deposition markedly effects the concentration of the chemical constituents in precipitation. Significant errors can also arise from evaporation losses as has been shown in separate evaporation tests.

The measured acid content of precipitation collected at the six Canadian WMO regional collection stations are discussed in view of the sampler evaluation program. Further analyses of the acidity of Canadian precipitation, collected during field studies in urban and industrial regions, are also presented.