**SAMPLE PREPARATION FOR LOS GATOS RESEARCH (LGR) LIQUID WATER ISOTOPE ANALYSER**

**Introduction**

The Los Gatos Research (LGR) Liquid Water Isotope Analyser provides measurements of δ18O, δ17O and δ2H of water in liquid and discrete vapour samples with unparalleled and unsurpassed stability and accuracy.  Measurements may be reported at the unmatched speed of (at least) 800 injections per day.

**Scope**

This Standard Operating Procedure (SOP) provides technical guidance and procedures that will be employed for sample preparation required for Los Gatos Research (LGR) Liquid Water Isotope Analyser.

**Procedure**

1. Please filter samples through a 0.22 µm non-sterile cellulose acetate or nylon syringe filter to remove particulate matter.
2. A sample size of 15 ml is required, preferably in 15 ml polyethylene centrifuge tubes. Please fill the tube to the brim, ensuring that there is no head space prior to capping the tube.
3. Remember to tightly cap the centrifuge tube to prevent evaporation of the sample and wrap the cap with parafilm as an extra measure.
4. Label samples according to your sample submission template (downloadable on the [website](http://www.sun.ac.za/english/faculty/science/CAF/Pages/BIOGRIP%20Sample-Requirements.aspx)).
5. Please indicate the sample matrix (surface, ground, rain, seawater, xylem extracts) in the *other info* column on your sample submission template.
6. Record the EC and also fill in these values in the sample submission template.
7. Store samples at ambient temperature.

**Important Additional Notes**

* Samples must not contain high concentrations of salts or contaminants such as volatile organics or proteins.
* Samples with an EC above 2 000 µS.cm-1 will have to be distilled before they are sent for analysis.