

# Making the 2 ppm Nitrate Standard

## Option 2

### Lab Guide

#### Task

Make the nitrate-nitrogen standard for the quality control procedure using 1 mL stock nitrate-nitrogen solution.

#### What You Need

- |                                                                        |                                                        |
|------------------------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Standard nitrate-nitrogen solution (1000 ppm) | <input type="checkbox"/> Pipette                       |
| <input type="checkbox"/> 100-mL beaker (or larger)                     | <input type="checkbox"/> Distilled water               |
| <input type="checkbox"/> 500-mL beaker or flask                        | <input type="checkbox"/> Balance                       |
| <input type="checkbox"/> Latex gloves                                  | <input type="checkbox"/> 250-mL bottle or jar with lid |
| <input type="checkbox"/> Goggles                                       |                                                        |

#### In the Lab

1. Put on the gloves and goggles
2. Rinse a 100 mL beaker and a 500 mL cylinder with distilled water. Dry.
3. Measure the mass of the 100 mL beaker with a balance. Leave the beaker on the balance.
4. Using a pipette, add 1.0 g of 1000 ppm nitrate-nitrogen solution to the beaker on the balance.
5. Take beaker off balance and fill to the 100 mL line with distilled water. Stir the solution. Label this solution *10 ppm nitrate standard*.
6. Measure the mass of the 500-mL graduated cylinder. Leave the cylinder on the balance.
7. Measure 40 g of the 10 ppm nitrate standard into the 500-mL graduated cylinder. Use a clean pipette to add the last few grams of standard so you do not exceed 40 g.
8. Add distilled water until there is 200 g (10 ppm nitrate standard + distilled water) in the graduated cylinder. Use a clean pipette to add the last few grams of water so you do not exceed 200 g.
9. Swirl to mix. Pour into a bottle with a lid and label as *2.0 ppm nitrate-nitrogen standard*.
10. Rinse all glassware and pipettes with distilled water and store.