AGAT Laboratories

Environmental sampling using Polypropylene bags for soils and sediments

The use of plastic bags for environmental sampling has been in practice for a number of years in Ontario for the collection of soils and sediments. Now, more than ever, the laboratories are faced with an increasing shortage of sample containers and the need for a viable alternate to standard glass jars for sampling.

In order to meet the growing needs of our clients and to bridge the gap between supply and demand, AGAT Laboratories is moving towards the use of polypropylene (PP) plastic bags for soil and sediment sampling.

Keeping with the regulatory requirements as per Ontario's Analytical Protocol (Version 3.1) in support of O.Reg.153/04 and O.Reg.406/19, the use of soil bags will be strictly limited to the testing of Inorganic parameters as seen below on Table A.

If ever required for analytes outside of this scope, the data will be subjected to a data qualifier. There will be no change to holding times or storage conditions as specified below with the use of a soil bag.

TABLE A: SOIL AND SEDIMENT Sample Handling and Storage Requirements [1]

SOIL Inorganic Parameters	Container 1	Field Preservation	Storage Temp. 2	Preserved Holding Time 3	Unpreserved Holding Time 3
Chloride, Electrical conductivity (EC)	Glass, HDPE, PP or PET	None	5 ± 3 °C		30 days as received (without lab drying); indefinite when dried at the lab
Cyanide (CN-)	Glass jar (Teflon ™ lined lid or PP	Protect from light	5 ± 3 °C		14 days
Fraction organic carbon (FOC), Nitrogen (total)	Glass, HDPE, PP or PET	None	5 ± 3 °C		28 days as received (without lab drying); indefinite storage time
Hexavalent chromium	Glass, HDPE or PP	Protect from light	5 ± 3 °C		30 days as received
Metals (included hydride-forming metals, SAR, HWS, boron, Calcium, Magnesium, Sodium)	Glass, HDPE or PP	None	5 ± 3 °C		180 days as received (without lab drying); indifinite when dried at the lab
Mercury, Methyl mercury	Glass, HDPE, PP or PET	None	5 ± 3 °C		28 days
pH	Glass, HDPE, PP or PET	None	5 ± 3 °C		30 days as received

[1]Ontario Ministry of the Environment, Conservation and Parks (MECP) Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality, O.Reg. 153/04, O. Reg. 406/19, amended as of July 1,2011 and as of February 19,2021, Version 3.1

AGAT's polypropylene bags are 6 X 9" in size, highly durable, inert and lightweight with a reclosable seal. This allows for the sampling of soils of varying moistures inclusive of high moisture sediments. The bag has been tested using varying sample weights and extreme temperatures and found to hold more than 1000 grams while maintaining a tight seal.

Advantages of sampling using polypropylene bags

As an added advantage to our clients, using approved polypropylene bags for your sample collection are an ideal sampling tool as they are:

- More resistant to moisture and grease, making them ideal for packaging with ice for keeping samples cool during transportation
- Easier to work with and cut down on collection and packing time significantly
- Resistant to breakage or potential sample loss
- Light weight which makes it easier for field technicians to carry as well as reduce transportation cost.

Sampling Guide when using AGAT approved polypropylene bags

1. For proper labeling, it is recommended to use a water-proof marker prior to filling the bags with soil.

2. To provide enough sample to run the approved analyses listed above, sample no more than half the capacity of the soil bag. If the sample has a high moisture content or free water, it is encouraged to collect as much solids as possible and dispose of any excess water. If the sample is highly organic and lightweight, collecting more than half a bag of product is recommended.

3. Once sampled, make sure there is no excess water collected above the soil, wipe the seal clean of any dirt and close it tight. Double check the seal before packing in the cooler.

4. For light-sensitive tests such as cyanide and hexavalent chromium, place the samples in a sealed cooler as soon as possible to minimize exposure to light.