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# Advancement of the Canadian Space Agency's cleaning procedures for curation

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On October 20, 2020, the OSIRIS-REx mission collected a sample from the asteroid Bennu, which was delivered to Earth on September 24, 2023. In exchange for contributing the OSIRIS-REx Laser Altimeter (OLA) instrument, Canada will receive a portion of the Bennu sample. The Canadian Space Agency (CSA) is currently developing its Curation Facility, which will be the first laboratory of its kind in Canada (see the abstract by Morisset et al. at this conference).

In preparation, the CSA is actively working on the cleaning, monitoring, and handling protocols to ensure best practices are maintained throughout sample handling steps. Specifically, the CSA has also begun developing its cleaning procedures for all stainless steel, glass, aluminium, and Teflon tools and containers planned for storing and manipulating the sample. The basic cleaning procedure uses a series of high-purity solvents and ultra-pure water to clean and sterilise handling and storage materials. In addition to this basic cleaning, a cleaning procedure has been developed for the cleaning of trace metals from Teflon tools based on similar procedures used in laboratories involved in ultra-trace elements and isotopic analyses. This cleaning procedure involves a series of high-purity acids to remove any potential trace metal contamination.

In developing the cleaning procedure, to ensure no degradation of the materials that will be used in the storage and handling of the sample occurs due to adverse reactions with solvents, a series of tests were conducted to evaluate any reaction. In addition, the CSA has started to examine the efficacy of the cleaning procedure in reducing particles of post-cleaning ultrapure water rinses. An APSS-2000 Liquid Particle Counter has been used to count the particle within post-cleaning ultrapure water rinses. Several elements of the cleaning procedure have been investigated in these tests, including: the best order of the cleaning (i.e., the order of the basic cleaning and cleaning for trace metals); the advantage of a long hot-water bath as a final cleaning step; and various drying conditions for tools and containers