# Chemical Analysis Results for Potable Water from ISS Expeditions 21 to 25

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## ABSTRACT

The Johnson Space Center Water and Food Analytical Laboratory (WAFAL) performed detailed ground-based analyses of archival water samples for verification of the chemical quality of the International Space Station (ISS) potable water supplies for Expeditions 21 to 25. Over a 14-month period, the Space Shuttle visited the ISS on five occasions to complete construction and deliver supplies. The onboard supplies of potable water available for consumption by the Expeditions 21 to 25 crews consisted of Russian ground-supplied potable water, Russian potable water regenerated from humidity condensate, and US potable water recovered from urine distillate and condensate. Chemical archival water samples that were collected with U.S. hardware during Expeditions 21 to 25 were returned on Shuttle flights STS-129 (ULF3), STS-130 (20A), STS-131 (19A), STS-132 (ULF4) and STS-133 (ULF5), as well as on Soyuz flights 19-22. This paper reports the analytical results for the~~se~~ returned ~~potable water~~ archival water samples and evaluates their compliance with ISS water quality standards. The WAFAL also received and analyzed aliquots of some Russian potable water samples collected in-flight ~~with Russian hardware~~ and pre-flight samples of Rodnik potable water delivered to the Station on the Russian Progress vehicle during Expeditions 21 to 25. These additional analytical results are also reported and discussed in this paper.

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