

The Determination of Np, U and Th in Urine

a presentation by

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A procedure has been developed at Lawrence Livermore National Laboratory to quantify the amount of Np, Th and U in urine. The procedure was developed in response to an incident at the Laboratory and was successfully used to analyze over 30 samples.

The procedure utilizes EIChroM Chromatographic materials to first separate out the uranium. A second EIChroM column is then run, and Np and Th are electroplated together. Test sample recoveries for the uranium fractions ranged from 73% to 89%. For the Np fraction, recoveries ranged from 59% to 74%, and for the Th fraction, the range was 82% to 97%.

This presentation will discuss the development of the procedure, test sample results, tracers used and the results of using the procedure in production. Costs and time issues will also be discussed.