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Employer: International Bestwater
Hermann Löns Strasse 17
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Sample and order description of the employer: Removal of radionuclides by the Bestwater osmosis system

Sampling: -

IUT order no.: A 1307021644

Sample type: water charged with Caesium-137

Test specification: gamma-spectrometric analysis of radioactivity in water before and after treatment by Bestwater Jungbrunnen 66-10 osmosis system

Additional specification: none

Test duration: 31-07-2013

Sample archiving: -

Berlin, 01-08-2013

Responsible auditor

Execution

The most detrimental radionuclides released by nuclear incidents are Cs-137 (and Cs-134), Sr-90, and I-131. The tests were performed with Cs-137 as representative radionuclide due to its favourable detectability and half-life.

Water was charged with activity concentrations of several thousand Becquerel per liter (Bq/l) by Cs-137-standard solution. This solution was treated by the Bestwater Jungbrunnen 66-10 system. Before and after the treatment step 100 ml of liquid were filled into a PE-vessel and measured directly by gamma-spectrometry. The Measurement time was 100 s.

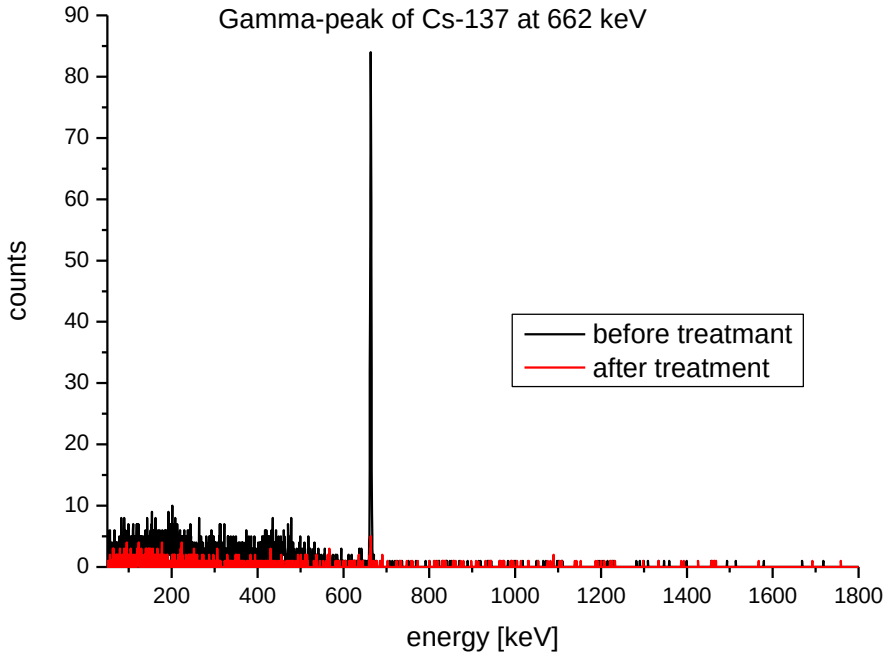
Procedure

Accredited procedure IUT/94/006-2 (2006-02).
High-resolution gamma-spectrometer Spectrum Master 919 by EG&G with Ge(Li)-detector. Evaluation software Gamma-W, Maestro.

Results

Specific activity of Cs-137 [Bq/l]		
Initial solution	**Treated water**	**Efficiency**
2200	< 50	> 97,8 %
5900	< 50	> 99,2 %

The figure is showing the Cs-137-peak of a solution containing 2200 Bq/l before and after treatment by the Bestwater Jungbrunnen 66-10 osmosis system



Appraisal

More than 99 % of Cs-137 in highly contaminated water are removed by the Bestwater Jungbrunnen 66-10 osmosis system yielding water of drinking water quality (< 50 Bq/l). The results can be transferred to similar radionuclides.

Dr. Bernhard Koch
Head of analytics department