

Dear Sir or Madam,

NPL ENVIRONMENTAL RADIOACTIVITY PROFICIENCY TEST EXERCISE 2009

Thank you for your interest in participating in the 2009 exercise.

Electronic reporting forms can be found on the NPL web site
<http://www.npl.co.uk/content-categories/collaboration/npl-environmental-radioactivity-proficiency-test-exercise-2009>

On request, the forms can be sent to you via e-mail.

Reference Date

Activity concentrations should be reported with a reference date of 2009-10-01 12:00 UTC which is consistent with the format given in ISO 8601:2004. The date is stated in the format YYYY-MM-DD such that 2009-10-01 represents 1 October 2009.

Nuclear Decay Data

Recommended nuclear decay data can be found from the Decay Data Evaluation Project
http://www.nucleide.org/DDEP_WG/DDEPdata.htm

NPL also maintains an enquiry service for nuclear data.

Further information

Any queries, or requests for additional information should be emailed to radioactivity@npl.co.uk or by telephone to the radioactivity customer services team on +44 (0) 20 8943 8600.

Timetable

The timetable for the exercise is as follows:

Deadline for submission of results	01 December 2009
Workshop at NPL	20 January 2010
Report to be issued	March 2009

Composition of the Samples

- Alpha High (AH):** 20 g aqueous sample in HDPE bottle, nuclides 1-20 Bq/g
 ^{226}Ra , ^{237}Np , ^{238}Pu , ^{239}Pu , ^{241}Am and ^{244}Cm
Carrier Solution: 2 M nitric acid
- Alpha Low (AL):** 500 g aqueous sample in HDPE bottle, nuclides 1-20 Bq/kg
 ^{232}Th , ^{237}Np , ^{238}U , ^{239}Pu , ^{241}Am and ^{244}Cm
Carrier Solution: 2 M nitric acid
- Beta One (B1):** 500 g aqueous sample in HDPE bottle, nuclides 0.1-2 Bq/g
 ^3H , ^{14}C , ^{99}Tc and ^{129}I
Carrier Solution: 0.01 M NaOH and 50 ppm of carbonate and iodine
- Beta Two (B2):** 500 g aqueous sample in HDPE bottle, nuclides 0.1-2 Bq/g
 ^3H , ^{55}Fe , ^{89}Sr and ^{90}Sr
Carrier Solution: 0.1 M HCl, 10 ppm of iron and 10 ppm of Strontium
- Gamma High (GH):** 100 g aqueous sample in HDPE bottle, nuclides 1-20 Bq/g
Gamma Low (GL): 500 g aqueous sample in HDPE bottle, nuclides 1-20 Bq/kg
- Mixture of at least six γ -emitting radionuclides from the following candidate list:
- ^7Be , ^{22}Na , ^{40}K , ^{46}Sc , ^{51}Cr , ^{54}Mn , ^{59}Fe , ^{56}Co , ^{57}Co , ^{58}Co , ^{60}Co , ^{65}Zn ,
 ^{85}Sr , ^{88}Y , ^{91}Y , ^{95}Zr , ^{95}Nb , ^{103}Ru , ^{106}Ru , ^{109}Cd , $^{110\text{m}}\text{Ag}$, ^{111}Ag , ^{113}Sn ,
 $^{123\text{m}}\text{Te}$, ^{124}Sb , ^{125}Sb , ^{125}I , ^{129}I , ^{134}Cs , ^{137}Cs , ^{133}Ba , ^{140}Ba , ^{139}Ce , ^{141}Ce ,
 ^{144}Ce , ^{147}Nd , ^{152}Eu , ^{154}Eu , ^{155}Eu , ^{153}Gd , ^{160}Tb , $^{166\text{m}}\text{Ho}$, ^{170}Tm , ^{192}Ir ,
 ^{203}Hg and ^{207}Bi
- Carrier Solution: 2 M HCl and ~200 ppm of various metal ions
- Synthetic Sand (S):** 50 g synthetic sand (SiO_2) sample, which has been crushed and sieved to 500 μm , nuclides 0.1-20 Bq/g
 ^{55}Fe , ^{90}Sr , ^{134}Cs , ^{137}Cs , ^{133}Ba and ^{152}Eu

I look forward to receiving the results of your analysis.

Yours faithfully,



CHRIS GILLIGAN

(Coordinator for the NPL Environmental PTE 2009)