Asia Pacific Laboratory Accreditation Cooperation

DETERMINATION OF POLYCYCLIC AROMATIC HYDROCARBONS IN SEDIMENT

PROFICIENCY TESTING PROGRAM APLAC T078

FINAL REPORT

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PTP 001

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Summary of Results

1. The proficiency testing program (APLAC T078) aimed at evaluating the testing capability of participants on the quantitative analysis of five polycyclic aromatic hydrocarbons, *viz.* phenanthrene (PHE), fluoranthene (FLT), benzo(a)anthracene (BAA), benzo(a)pyrene (BAP) and benzo(ghi)perylene (BGP), in sediment.

2. A total of 69 laboratories from 25 economies enrolled in the program and 67 of them returned results to the organizers.

3. The reference values and standard deviations for performance assessment were respectively assigned by the organizers using an isotope dilution gas chromatography-mass spectrometry (ID-GCMS) technique and calculated using the Horwitz Equation[8.1]. The z-score was used as the numerical indicator to show participants' performance with respect to the assigned values in the program.

4. The z-scores of the five polycyclic aromatic hydrocarbons are summarized as follows:

z-Score	Number of Participants (Percentage)				
	PHE	**FLT**	**BAA**	**BAP**	**BGP**
$\|z\| \leq 2$	52 (78.8%)	54 (81.8%)	55 (84.6%)	42 (63.6%)	44 (66.7%)
$2 < \|z\| < 3$	6 (9.1%)	6 (9.1%)	5 (7.7%)	11 (16.7%)	11 (16.6%)
$\|z\| \geq 3$	8 (12.1%)	6 (9.1%)	5 (7.7%)	13 (19.7%)	11 (16.6%)
Total:	66 (100%)	66 (100%)	65 (100%)	66 (100%)	66 (100%)