

ESI 1. Laboratory QA/QC Blanks Procedure

QA/QC- Air Blank

The air blank consists of a Whatman 47mm diameter, 0.45µm gridded filter placed on a triple rinsed glass petri dish. One blank was placed by the filtration apparatus and one by the counting microscope. The filters were exposed to air for 24 hours (on counting bench) and 48 hours (at filtration apparatus). The filter at the filtration apparatus contained two clear fibers. The filter at the counting bench contained 11 fibers (2 blue, 6 clear, 3 other color). Erring on the conservative side we did this calculation:

$$13/1440 = 0.0090 * 31 = 0.27$$

13 = number of plastic pieces

1440 = minutes in 24-hour period

0.0090 = plastic contamination per minute

31 = estimated average sample exposure time in minutes (counting time of each filter was recorded) we added an extra minute to compensate for air exposure during filtration (normally less than 15 seconds)

0.27 = Potential piece contamination per sample

QA/QC-Water Blank

We processed a distilled water blank and a filtrate blank in the lab to determine potential contamination from water in contact with the sample. The filtrate blank came from sample water that had passed through the 0.45µm filter and collected in a triple rinsed beaker. The filtrate water was placed in a Fisher 1 L squeeze bottle for rinsing down sample jar and flask during filtration as well as used for making the hyper saline solution. We filtered 1 L of DI water and 1.1 L of filtrate water following sample laboratory protocols. The DI water contained 3 plastic fibers (2 blue, 1 clear) and the filtrate water contained two fibers (1 red, 1 blue).

Our calculations, based on a generous amount of laboratory water in contact with the sample (100ml):

$$5/2100 = 0.0023 * 100 = 0.238$$

5 = number of plastic pieces

2100 = volume (ml) of water sampled

0.0023 = plastic contamination per ml

100 = maximum amount of laboratory water introduced to the sample

0.238 = potential plastic pieces per 100 ml

Combining air blank total contamination and water blank total contamination:

$$0.27 + 0.238 = \mathbf{0.5} \text{ pieces of potential plastic contamination per sample}$$

ESI 2. Table 1. Microplastics per liter (mean ± standard deviation) collected with each method in relation to size class, shape, and color.

		Grab Sampling Mean ± SD	Neuston Net Sampling Mean ± SD
Size	<i>100µm-1.5mm</i>	3.6 ± 3.2	0.001 ± 0.001
	<i>1.6mm-3.2mm</i>	1.2 ± 1.2	0.001 ± 0.001
	<i>3.2mm-5mm</i>	1.1 ± 1.0	0.003 ± 0.003
Shape	<i>Fiber</i>	5.4 ± 3.9	0.005 ± 0.004
	<i>Other shape</i>	0.53 ± 1.1	9.7 E-5 ± 1.2 E-4
Color	<i>Blue</i>	2.8 ± 2.6	0.002 ± 0.002
	<i>Transparent</i>	2.6 ± 2.1	0.002 ± 0.002
	<i>Other color</i>	0.53 ± 0.63	4.7 E-4 ± 0.001
	Total	5.9 ± 4.4	0.005 ± 0.004