Count Rate vs. Thickness of Lead Between Paddles

This experiment involved measuring the effect of lead thickness on the number of ions that pass through the paddles. We used two scintillation paddles and counted the number of ions per hour that passed through them with various thicknesses of lead (refer to diagram). We expected there to be a general decrease in the number of ions as we increased the thickness of lead. We actually noticed from the graph of our data that the number of ions reaching both paddles decreased to a certain thickness, at which point it remained fairly constant. The curve fit we received has slightly reduced on an increase in the mean current at a certain thickness is reached, but the general trend supports a steady current above about 3 cm of lead (shown by the blue line). What we did notice is that the counts per hour for 5 cm and 10 cm is almost identical. Also, one could see that our hypothesized results are generally within the reasonable error given at each point.