

Radium isotopes in the Ulsan Bay

J.S. Lee

K. H. Kim

D. S. Moon

During high discharge period, radium isotopes are shown distinct positive curvature within the mixing zone, representing the desorption of radium isotopes within the Ulsan Bay. The activities of radium isotopes increased gradually up to the salinity of 26.41. Above salinity of 26.41 the radium isotopes activities decreased to the values of the oceanic end-member. This addition increases the estuarine flux of ^{224}Ra , ^{226}Ra , and ^{228}Ra to the outer sea by a factor of 7, 15, and 92, respectively.

In order to estimate residence time of the Ulsan Bay waters, we applied mass balance model to the distribution of ^{224}Ra and ^{226}Ra activities in bay waters. The residence times of the Ulsan Bay waters were in range of 6.8 to 11 days. This result may provide useful information concerning the transport of estuarine waters and dissolved pollutants from the estuarine waters to the open sea.