

NATURAL AND ARTIFICIAL RADIONUCLIDES IN SOUTHERN OF GULF OF MEXICO MARINE SEDIMENTS

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Preliminary results of quantitative analysis of natural and artificial radionuclides in sediment cores of the southern Gulf of Mexico (Fig. 1), reveal the presence of 22.01 Bq/Kg ^{226}Ra , 15.56 Bq/Kg ^{214}Bi , 18.17 Bq/Kg ^{214}Pb , 1.79 Bq/Kg ^{212}Pb , 485.81 Bq/Kg ^{40}K and 2.84 Bq/Kg ^{137}Cs (Fig. 2).

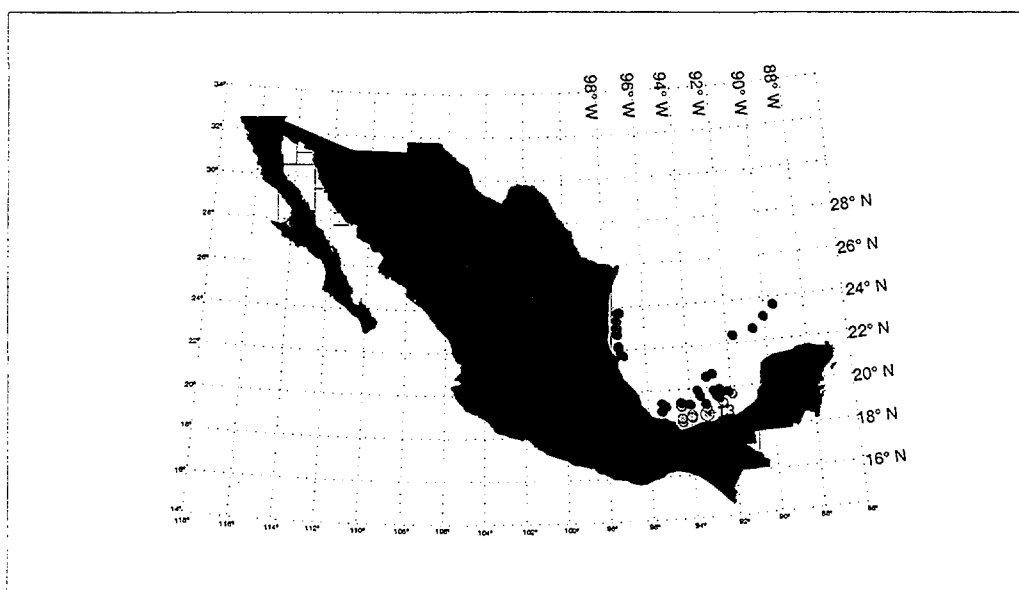


FIG. 1. Sediments samples collected in the Gulf of Mexico during 1993, 1994 and 1995.

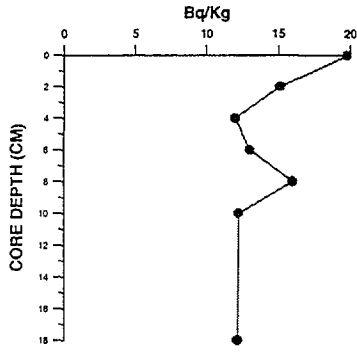
These results constitute the first ever sediment radionuclide data sampled in Mexican waters of the Gulf of Mexico. Fifty US Nel Box sediment cores were collected in water depths between 20 to 2000 m in the southern Gulf of Mexico (GOM). The results presented in this work correspond to the measurements made in the sediment core sampled at station 13 of the OGMEX XII oceanographic survey, during the summer of 1994, at a water depth of 60 m, in the delta of the Grigalva-Usumacinta River, Mexico (Figure 1). The 30-cm deep sediment core was sub-sampled in 2 cm thick slides and frozen for posterior analyses. pH was measured immediately after recovery aboard ship with plane bed electrode.

Sediment sub-samples were analyzed by XRD to determine mineral composition. The natural and artificial radionuclides were determined with a HpGe Gamma-Spectrometer using a 21000 second counting period, with a $\pm 8\%$ uncertainty, (95 % of detection confidence).

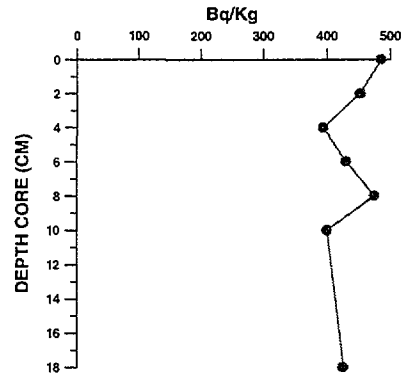
Acknowledgments

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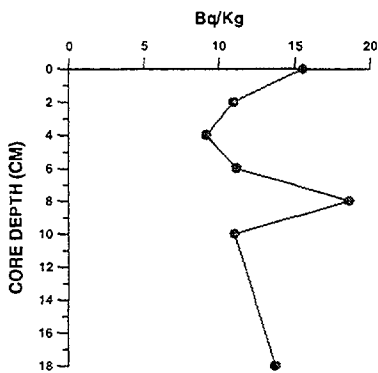
A
Pb-212 vs CORE DEPTH STATION 13 OGMEX-XII
 GULF OF MEXICO. LATITUDE 18 47.425 N
 LONGITUD 93 13.795 W.



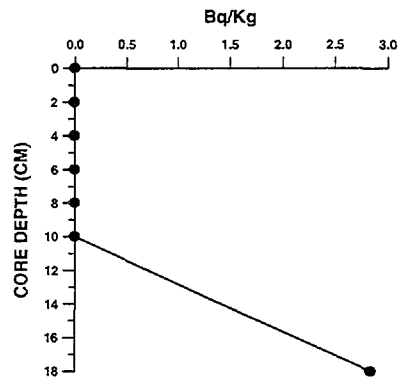
B
K-40 vs CORE DEPTH STATION 13 OGMEX-XII
 GULF OF MEXICO. LATITUDE 18 47.425 N
 LONGITUD 93 13.795 W.



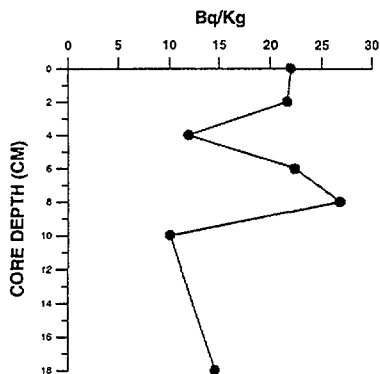
C
Bi-214 vs CORE DEPTH STATION 13 OGMEX-XII
 GULF OF MEXICO. LATITUDE 18 47.425 N
 LONGITUD 93 13.795 W.



D
Cs-137 vs CORE DEPTH STATION 13 OGMEX-XII
 GULF OF MEXICO. LATITUDE 18 47.425 N
 LONGITUD 93 13.795 W.



E
Ra-228 vs CORE DEPTH STATION 13 OGMEX-XII
 GULF OF MEXICO. LATITUDE 18 47.425 N
 LONGITUD 93 13.795 W.



F
pH vs CORE DEPTH IN CM. STATION 13, OGMEX-XII
 GULF OF MEXICO. LATITUDE 18 47.425 N
 LONGITUD 93 13.795 W

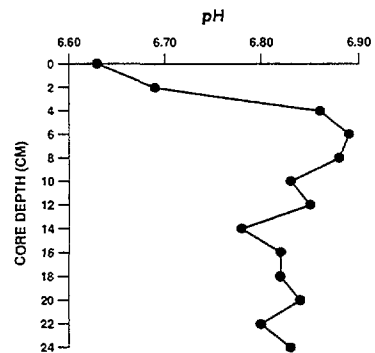


FIG. 2. Profiles of radionuclides concentrations and pH vs core depth of sediment in the station 13 OGMEX-XII in the Southern Gulf of Mexico, latitude 18. 47.425 N and longitude 93 13.795 W. a) ^{212}Pb , b) ^{40}K , c) ^{214}Bi , d) ^{137}Cs , e) ^{226}Ra and f) pH.