

Natural Occuring Radioactivity Materials (norm) in Ecuadorian oil fields

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Summary

Many natural elements contain radioactive isotopes, and most of them are present in the soil.

In the gas and oil industries the most important radio nuclides are Ra-226 from the decay series of U-238, and in lower grade Ra-228 from the decay series of Th-232.

Water exit from the perforation and perforation mud in the Oil towers drowns the NORM materials. Changes in temperature and pressure, allows the presence of sulphates and carbonates in pipes and internal areas of equipment. A Ra and Ba similarity leads to the selective co-precipitation in mud and incrustations of radioisotopes.

A measure made in the pipe lines show that these industries generate important doses overcoming the levels of exemption and even the limits of established doses.

The research was done by finding a pipe at Shushufindi 52 B well of production near by Coca city in the Ecuadorian jungle.

La Comisión Ecuatoriana de Energía Atómica (CEEAA), supervises the pipe line and accessories that are used in PETROPRODUCCION fields accomplishing the radiological characterization, identifying the useless pipes and separate them in order of take care the good ones. Meanwhile the identification of the radioactive isotopes the CEEA proceed with the isolation of the radioactive disposals.

From 57.830 pipes and accessories there were 1.607 useless ones, 56.223 didn't show radioactivity. Those pipes were monitored from the PETRODUCCION'S warehouses in Coca, Lago Agrio and Guarumo from September 12th 2005 to September 12th 2006

The CEEA is interested in NORMS because inadvertent workers may get high levels of radioactivity exposition. The Oil industries should have a manual about the complete handling of these materials.