

Characteristics corrosion products of iron on the well pipes

Hiromi Segawa[1], Kazue Tazaki[2]

[1] Life and Earth Sci., Kanazawa Univ, [2] Dept. Earth Sci., Kanazawa Univ.

Corrosion products of three wells in Fukui city, Japan, were studied on geologically, mineralogically, and microbiologically. The formation of Fukui plain mostly consists of weathered clay and gravel beds with groundwater beds. Corrosion products, well water, and biomats were collected from each well with different depths. For comparison, Itagaki well water contains high Ca^{2+} and Mg^{2+} ions with Si oxides. XRD analyses of corrosion products indicated that corrosion products in Itagaki were rich in goethite and ferrihydrite, whereas corrosion products in other wells were rich in magnetite, lepidocrocite and goethite. Differential interference microscopic and episcopic fluorescence microscopic observation revealed that *Gallionella ferruginea*, *Leptothrix ochracea* and other bacteria were found in three wells. In Itagaki well, corrosion products well developed with SiO_2 in water, but a little microorganisms in it.

The differentiation of the water quality in Itagaki and other wells affects the existing bacterial types such as filamentous bacteria or iron bacteria. Characteristics of corrosion products depend on each lithofacies and water chemistries.