Abstract
In Tenextepango region, Morelos state, the fluoride content in drinking groundwater population varies from 0.3 to 1.9 mg/L, highest fluoride content is observed in located wells in the northeast sector. Therefore, the objective of this study is to identify: (i) the groundwater flow systems involved and (ii) which groundwater flow system has highest fluoride content. Chemical analysis results of extracted groundwater were used as well as groundwater field temperature, stable isotope content and tritium. Data permit to identify possible relationship between fluoride content and the hierarchy of the groundwater flow system type as well as to identify the recharge zone. Fluoride content and water temperature are higher in wells that extract water continuously, and are lower in wells that pump water about seven hrs/day. 2H, tritium and 18O content, shows two types of groundwater flow system. The first corresponds to an enriched water, 2H -66 ‰ and 18O - 8.2 ‰ to recharged at low altitude about 2,500 meters. The tritium content varies between 1.1±0.7 y 2.4±0.6 TU indicating the existence of water with residence time less than 40 years, associated with a relatively recent local flow whose temperature is 23 to 25 °C. The second corresponds to a depleted water content of -71 ‰ 2H and 18O -9.9 ‰, compared to the previous one, recharged to a higher altitude about 3,500 m a.s.l.; while tritium content is <0.8±0.6 TU, and a well head temperature of 25 to 33 °C, suggesting a residence time older than 40, associated to a flow of local-intermediate type. Also, these values indicate that extracted water in these wells is a mixture of old water with younger water, and the higher fluoride content is mainly present in the local-intermediate flow.

Keywords
Flouride; groundwater flow system; Tenextepango; Mexico.