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<p>Shallow wells provide fresh water to billions of people worldwide who are either not connected to the piped water or have intermittent supplies. These shallow wells are hand dug and, therefore, are mostly less than 20 meters in depth. This same sub-surface environment is also used as a repository of human waste. This study, which sets a basis for further investigation of the conjunctive use of the subsurface for water and sanitation in Kisumu City under the AfriWatSan project, aimed at appraising the groundwater and sanitation challenges based on a rapid survey, sampling, interviews, existing literature review and historical borehole data in Kisumu city, Kenya. Previous studies in the area have shown that the number of shallow wells, city buildings, the density of unimproved pit latrines and sanitary risks have increased tremendously between 1999 and 2015. Most of the wells are shallow and, therefore, prone to contamination by pollutants. Fluoride and chloride content in most boreholes are above the recommended WHO maximum values and the local KEBS standards. The study confirmed that the main water and sanitation challenges in Kisumu are poor and deteriorating water quality, poor waste disposal management systems and poor sanitation services. There is need for the introduction of new and sustainable groundwater approaches supported by scientific models and involving all stakeholders. Current deficiencies in the provision of adequate water and dignified sanitation to the poor in Kisumu can be remedied through improved knowledge on shallow aquifer dynamics and innovative research. It was noted that apart from the donor agencies and multi-national NGOs, the private investors are unwilling to invest in water projects in Kisumu due in part to government legislation that constrains the cost that may be levied on water.

