

GROUND WATER AS AN ALTERNATIVE TO SURFACE WATER FOR MUNICIPAL, RURAL AND INDUSTRIAL USE: REGIÃO DOS LAGOS, RIO DE JANEIRO, BRAZIL

ALMEIDA, R.M.R. and STURDEVANT, J.A., Universidade Federal Fluminense, Niterói, RJ, Brazil

Municipal and industrial water supply in the littoral Lagoon Region of Rio de Janeiro state is primarily supplied from the Juturnaiba Reservoir, which is ample during most of the year. However, during the summer months this region of 1,900 square km with local population of 350,000 suffers a population increase of 200 to 500 percent. A two year Federal and State funded project seeks to answer the question. Is ground water a viable alternative to surface water on an annual or seasonal basis. Because no central repository of water resource information exists the projects first stage consists of meteorological and stream flow data, and the measurement of water levels, conductivity and pH in one hundred 20 m deep wells and eighteen 80 m deep wells. All data is stored in a relational GIS along with demographic data, chemical analyses, satellite images aerial photographs, topographic and thematic maps. Although still in its initial stages relationships between variables are apparent, and meaningful scientific and social questions are taking shape. It is expected that this type of data analysis will provide easily accessible information for to meet the new challenge of water resource management in Brazil.