*Aeromonas* species are recognized as causative agents of various infections in humans, including gastroenteritis, wound and systemic infections. The pathogenicity of *Aeromonas* species is potentially supported by several virulence factors such as production of toxins and their ability to adhere to and invade the epithelial cells. Evidence shows that *Aeromonas* infections in humans are often related to water exposure. This study isolated and characterized *Aeromonas* species from water wells and boreholes in Lamu, Ongata Rongai and Wajir towns. In addition the antimicrobial susceptibility profiles and toxin assays (haemolysis and enterotoxins) were determined. The ability of *Aeromonas* to harbor and transfer resistance plasmids to *Escherichia coli* was determined through conjugation assays. Out of the 87 *Aeromonas* species isolated from the three locations, 51 (59 %) were *A. hydrophila* while 21 (24.1 %) and 15 (17.2 %) were *A. caviae* and *A. sobria*, respectively. *A. hydrophila* was more prevalent than either *A. caviae* or *A. sobria* (*P*< 0.05). All the *Aeromonas* species were resistant to ampicillin, while resistance levels of *A. hydrophila* to nalidixic acid, chloramphenicol, cefotaxime, ceftazidime, tetracycline and co-trimoxazole were significant (*P* < 0.05). However, *A. sobria* varied significantly in resistance to nalidixic acid, chloramphenicol, cefotaxime, ceftazidime and ciprofloxacin (*P*<0.05) but not to tetracycline and co-trimoxazole (*P* > 0.05). Fifty (57.5 %) isolates of *Aeromonas* species had plasmids of different sizes while 56 (84.8 %) isolates of *E. coli* K12FNA+ Lac+ transconjugants had plasmids after transconjugation. Forty nine (96.1 %) *A. hydrophila* isolates, 12 (80 %) *A. sobria* and 16 (76.2 %) *A. caviae* were haemolytic. Only 10 (11.5 %) of the *Aeromonas* isolates produced enterotoxins, 6 (60 %) produced heat labile while 4 (40 %) produced heat stable enterotoxin. The results obtained illustrate *Aeromonas* species as important potential waterborne pathogens in Ongata Rongai, Wajir and Lamu where ground water constitutes large proportions of water source for the respective communities. The observation that there is increased resistance of *Aeromonas* species to the commonly used antibiotics, and the presence of virulence factors such as enterotoxins and haemolysins further strengthens the cases for their pathogenic potential.