

Compressibility and collapse characteristics of arid saline sabkha soils

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Abstract: A recent investigation indicated that flooding saline sabkha with distilled water in the conventional oedometer apparatus was incapable of producing a sudden reduction in volume and/or a significant collapse. This study proposes a modification to the conventional oedometer to allow water to percolate through the consolidating specimens under a constant head. Tests were, therefore, conducted on undisturbed sabkha specimens to assess their compressibility and collapse potential. Despite the low compressibility of sabkhas, results of these tests indicated that these arid, saline soils possess a high collapse potential attributable primarily to dissolution of sodium chlorides, leaching of calcium ions and soil grain adjustment.