



Geotechnical and mineralogical investigations at 15th May City, Cairo, Egypt.

T. Abdel-Hafez

National Research Institute of Astronomy and Geophysics, 11722 Helwan, Cairo, Egypt,
(t.abdel-hafez@gmx.net / Fax: +202 5548020)

The 15th May City is a new urban center, located south of Cairo, developed during the past 25 years. It rests on Eocene sediments. Some buildings were found to be cracked and severely damaged during last 10 years. The reasons behind this structural damage are not well known. As an attempt to investigate this problem, geophysical and geotechnical studies were carried out. Geoelectric investigations show existence of different geoelectric zones with different resistivities. The lowest resistivity in the geoelectric zone reveals shale intercalation with limestone while the high resistivity reveals limestone bedrock. Photomicrographs of Scanning electron microscopy (SEM) of Eocene shale show pores and micro-cracks, thin film of salts covering the carbonate and clay minerals in the rocks' internal structure. Energy dispersive system (EDS) analysis of some selected rock samples shows that the rock sample contains halite minerals