

### **D-43: Investigation for kaolin in the low lying areas of some Colombo suburbs**

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The known economically valuable kaolin deposits in Sri Lanka are limited and they occur in Boralesgamuwa & Meetiyanoda areas. With the rapid expansion of the ceramic industry in the country, to locate further kaolin deposits to maintain sufficient supplies for the present and future needs of the industry has become a priority. A reconnaissance survey carried out to assess possible kaolin deposits within the Suburbs of Colombo have shown encouraging results.

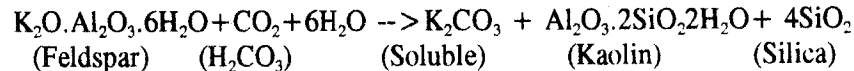
Guided by the information received from residents in the vicinity and by studying well sections, treaches & other man-made excavations in the area, reconnaissance auguring studies were carried out in 4 fields, namely, Arangala, Pore, Hokandara & Talangama.

The overburden thickness of these fields varied between 1.5- 3.5 m. Hence, all the holes had to be cased to 1.5 - 3.5 m depths, using 12.7 cm diameter casings. After installing casings, all holes were washed & cleaned and sand removed with the help of a sand pump. For auguring and sampling 10.2 cm Ivan-type hand auger was used. Samples were collected at every 1 m interval and also at points when colour differences were noted. In some holes, lack of cohesiveness of samples due to the absence of sand in the kaolin, made collection of samples difficult. The collected samples were analysed at the laboratory of Lanka Wall Tiles, Balangoda. Since only manually operated hand augers were used, the maximum depth which could be penetrated was limited to 10 or 11 m from the ground surface.

Several random holes were put down on a reconnaissance basis in each of the abovementioned fields. Most of these fields are abandoned paddy fields, marshes & swamps, where white-pale grey coloured kaolin occurred as lenses, pockets & beds. The kaolin deposits invariably occur in swampy ground surrounding the low hills of well developed laterite. In the low lying areas, a typical profile consists of sandy clays, clayey sands & sand layers, containing organic matter. The hard laterite layer commonly found on high ground becomes progressively thinner or absent towards the low lying area and a kaolinitic clay body with a thickness of several metres was observed to underlie the sands & clays. Auger holes put down in these fields reveal the presence of approximately 1.5 - 3.5 m thick sandy clay followed by greyish-white kaolinitic material with thickness varying from 0.5 - 7 m.

Kaolin is a secondary product resulting from kaolinization of the feldspars of the granites, pegmatites & other feldspar rich gneisses belonging to the basement complex. The localization of most of the deposits in swamps & recently evolved extinct marshes and swamps, indicate that carbonic & other related humic acids liberated in such environments have caused the kaolinization.

This reaction may be expressed as follows:-



The on-going investigation in the low lying areas in Colombo Suburbs indicate the occurrence of thick greyish-white coloured beds & pockets of kaolin at many sites. Auger hole results of the fields investigated indicate that possibly several thousand metric tonnes of kaolin suitable for production of walltiles, floor tiles, sanitaryware and ceramicware are available. Within these beds are found small pockets and lenses of super grade kaolin suitable for the manufacture of porcelain table and dinnerware products.