

## **Arsenic Pollution in Ground Water of West Bengal**

***C. K. Jain***

### **ABSTRACT**

It is well recognized that a huge alluvial tract along the river Hooghly covering a stretch of around 470 km., encompassing eight districts is affected by arsenic pollution of ground water. The probable source of occurrence of arsenic has been reported to be of geological formation of source material. Occurrence of iron-pyrite and the change of geo-chemical environment due to over-exploitation of groundwater or excessive fluctuation of ground water table are the possible reasons of decomposition of pyrite to ferrous sulphate, ferric sulphate and sulphuric acid. However, no definite explanation regarding the source of arsenic could be given.

The arsenic concentration in water samples collected from some selected villages of Nadia district, West Bengal shows elevated concentrations of arsenic. The ground water of the region is characterized by high iron content. The trace element data of lithological log of drill cuttings of the PHED bore hole site at Ghetugachi in Chakdah block, Nadia district shows a consistent arsenic contamination in the upper aquifer also.

The hydrochemical study of the river Hooghly also shows a consistent arsenic concentration in water and sediment samples of the river. The content of arsenic in the sediments were quite higher than the associated water due to the prolonged industrial activity along the banks of the river Hooghly.

The Farrakka Super Thermal Power Plant (STPP) operating in the state of West Bengal is the another source of arsenic contamination in the nearby area. The analysis of fly ash deposited in the fly ash disposal ponds indicates arsenic content of the order of 400-500 µg/g. The ash generated from thermal plant finds its way into open environment of air, water and soil from atmospheric precipitation, spillage from pipe lines carrying fly ash slurry to ash ponds and from decanted water of ash pond. It contaminates ground water due to seepage and mixing of fly ash into surface and subsurface water.