

**A STUDY ON THE INTERACTION BETWEEN THE INJECTION WATER  
AND RESERVOIR MINERALS AND THEIR EFFECTS ON RESERVOIR  
CHARACTERISTICS IN TIPAM RESERVOIR SAND OF GELEKI  
OILFIELD OF UPPER ASSAM BASIN**

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**Abstract**

Reservoir-rock injection water interaction is a significant area of research in the field of reservoir engineering, reservoir management and increased oil recovery operations with a view to assure preservation or enhancement of native permeability of the reservoirs.

Injection waters that may be available for injections in Upper Assam Galeki oil field area are usually a mixture of river water, effluent disposal water and bore well water. Such a mixture of water in Assam has been found to have elevated concentration of dissolved iron and oxygen and sulphate reducing bacteria and would require special treatments before injection to prevent (I) formation of solid iron oxide or sulphides in the reservoir (ii) swelling of smeared smectite on the sand grains and (ii) dislodging of kaolinite and illite present in the matrix of sandstone reservoir rock to assure preservation of the native permeability of the reservoir.

*Keywords:* Injection heater, Bacteria, oil reservoir, Reservoir minerals, Gelexi, oilfield, Upper Assam Basin