

Bioremediation of Arsenic from Industrially Polluted Soil of Vatva, Ahmedabad, Gujarat, India

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Abstract : Arsenic is toxic to almost all living cells. Its contamination in natural sources affects the growth of microorganisms. The presence of arsenic is associated with various human disorders also. The attempt of this sort of study provides information regarding the performance of our isolated microorganisms in the presence of Arsenic, which have ample scope for bioremediation. Six isolates were selected from the polluted sample of industrial zone Vatva, Ahmedabad, Gujarat, India, out of which two were Thermophilic organisms. The thermophilic exopolysaccharide (EPS) producing Bacillus was used for microbial enhance oil recovery (MEOR) and in the bio beneficiation. Inorganic arsenic primarily exists in the form of arsenate or arsenite. This arsenic resistance isolate was capable of transforming As +3 to As+5. This isolate would be useful for arsenic remediation standpoint from aquatic systems. The study revealed that the thermophilic microorganism was growing at 55 degree centigrade showed considerable remediation property. The results on the growth and enzyme catalysis would be discussed in response to Arsenic remediation.

Keywords : aquatic systems, thermophilic, exopolysacchride, arsenic

Conference Title : ICEWRE 2015 : International Conference on Environmental and Water Resources Engineering

Conference Location : Melbourne, Australia

Conference Dates : December 13-14, 2015