Can Waste Water Produced by Oil Companies be Reclaimed?

For many years now, oil companies have been using fresh water from local areas to extract petroleum. Anthropogenic forces have caused these oil sites to have an increased salinity in their soil, which collects other pollutants like petroleum hydrocarbons. The fresh water from nearby areas are pumped into the ground during extraction at oil sites. There it becomes brackish water when it is contaminated with the saline soil and hydrocarbons. In regions of the world, especially here in the United States like in Oklahoma where oil sites and water shortages are common, using fresh water is becoming more and more of a problem each passing day. However, a solution may be on the horizon.

An interview was recently conducted with Oklahoma State University faculty member Dr. Babu Fathepure, Associate Professor for the Department of Microbiology and Molecular Genetics of the College of Arts and Sciences. He has been with Oklahoma State University since early 2000’s and is currently working on several projects. One of which focuses on certain extremophilic microorganisms and their ability to degrade petroleum hydrocarbons when in high saline environments. Halophilic and halotolerant bacteria and archaeans are best suited for the hypersaline environment of oil fields. His study conducts tests to help determine which microorganism is best at degrading the petroleum hydrocarbons while still surviving the salty soil. The idea is once these organisms have degraded the hydrocarbons, then the salt can be removed, and the water reclaimed. He works with engineers to help find an efficient way to remove the salt. Once the water is reclaimed it can then be used for agricultural purposes, drinking water, or even reused by the oil site. That’s the goal of the project; to clean the water that is being used during extraction of petroleum and repurpose it.

Dr. Babu Fathepure’s current project is a continuation of past studies conducted by other scientists over microbial organisms and degradation of petroleum hydrocarbons. He is looking to find a way to clean the water used by oil companies and repurpose it, instead of the it being wasted. Dr. Babu has been working on the project for a few years now and is getting close to promising results. Although his work has yet to be published, he has written a review of an article from which he got his idea from. For more information about his review, please see the following link; <https://www.frontiersin.org/articles/10.3389/fmicb.2014.00173/full>. Also pay close attention to your favorite news outlet for any future publications of Dr. Babu Fathepure’s research. The news team looks forward to going in depth on this subject after his project has been completed.