

PROJECT SUMMARY

Title of Project: Abating Water Pollution from Oil Refinery Effluents using Reed Beds	
Local Company: The Mauritius Oil Refineries Limited	
Main Collaborating Institution: University of Mauritius	
Project Leader: Mr Ravish Musruck	
Research Collaborator(s)	
Name	Organisation
Mr Arvinda Kumar Ragen	University of Mauritius
Technical Abstract	
<p>MOROIL best believes that business operations should be undertaken sustainably and with the going concern should have minimum on the environment. Energy efficiency programme and pollution abatement are sharing equal motivation weightage at MOROIL. The robust, easy to operate and low maintenance treatment technology of constructed wetland system is an innovativeness, partnered by the University of Mauritius (UOM). It does not only provide a cost effective solution as compared to traditional methods of pollution abatement but also dwells on a differentiation strategy.</p> <p>The main driver for such project is to reduce, with enough statistical evidence, the Chemical Oxygen Demand of MOROIL's effluent to the permitted threshold of 150 mg/L. The design, construction and set up of the treatment system have leaned against the expertise of the research unit of UOM and against international research papers. Statistical analyses using regression tests, 1- way ANOVA and non - parametric tests, all at 95 % confidence level will be performed to test the validity of the objectives set. Another research element will consist of the profiling of microorganisms in the wastewater as well as in the sediments and root systems of the bed. The statistical significance (95% C.I) on abatement of pollution will hence be tested. Finally the potentiality of microbial inoculation and addition of enzymes such as ureases will be investigated.</p> <p>The critical success parameter for this project resides in its potential to abate pollution loads in refinery effluent and this has opened doors for its outbound commercial applications. MOROIL is in talk with SPHB, an oil refinery in Reunion Island, and they have declared interest in this innovative green approach.</p>	
Key Words: Sustainability, water pollution, oil refinery, effluents, Constructed Wetland, differentiation, chemical oxygen demand (COD)	