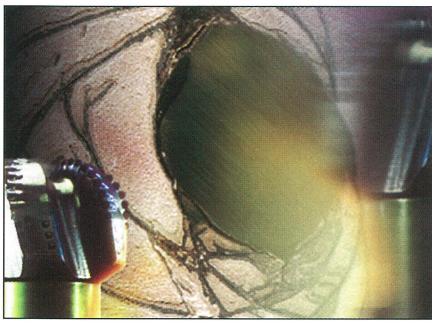


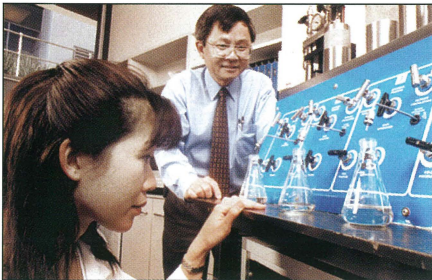
# Green Mud To Cleanse Oil And Gas Environment

Environmentally friendly 'green muds', with the potential to save the world oil and gas industry up to \$2 BB a year, have been developed by a team of Australian and American scientists.

CSIRO scientist Dr Chee Tan said oil wells had traditionally used oil-based and synthetic fluids to help prevent wellbores from collapsing, to cool and lubricate drill-strings and to keep out extraneous material. "Collapsed and sidetracked oil wellbores, lost tools and abandoned wells cost the global oil and gas industry \$2 BB annually, and there is an urgent need for a new generation of water-based drilling fluids", Tan said.



*Cross-section of tested borehole collapse sample.*



*CSIRO Petroleum's Ms Aileen Boudeville (left) and Dr Chee Tan (right), monitoring mud filtrate flow rate in CSIRO's Membrane Efficiency Screening equipment.*

"The new 'green muds' are an efficient, low-cost, water-based alternative that are hydrocarbon-free and designed to reduce drilling costs and improve oil well performance." He said the 'green muds' had special polymers which 'coat' the wellbore surface to prevent extraneous fluids destabilising the well.

Tan said the muds were as efficient as traditional methods. They were also more cost-effective and could be applied within existing environmental standards. "The 'green muds' also have the potential to reduce the number of oil wells", Tan said. "They will be particularly useful for operators of long reach oil wells that must maintain a delicate balance between drilling fluid pressure and rock stresses over lengthy periods."

"By helping oil companies drill successfully and economically, 10 km or beyond, fewer platforms will be needed to exploit an oil field." A world patent is being processed and field trials are being discussed with oil companies planning to drill wells in the South China Sea.

Tan said evaluation of the 'green muds' with cuttings and downhole cores from the region clearly demonstrated the superior shale inhibition performance of the muds over other water-based muds. Laboratory testing is also currently being conducted on a troublesome shale from the Middle East. Interest has also been expressed by companies in Australia, Malaysia, Brunei, United Arab Emirates, China and Japan.

The 'green muds' formulations are being commercialised by Baroid as the BarOmega™ (Osmotic Membrane Efficiency Generating Aqueous) drilling fluid system. The new substances have been jointly developed by a team of CSIRO Petroleum



*An oil rig in South China Sea.*

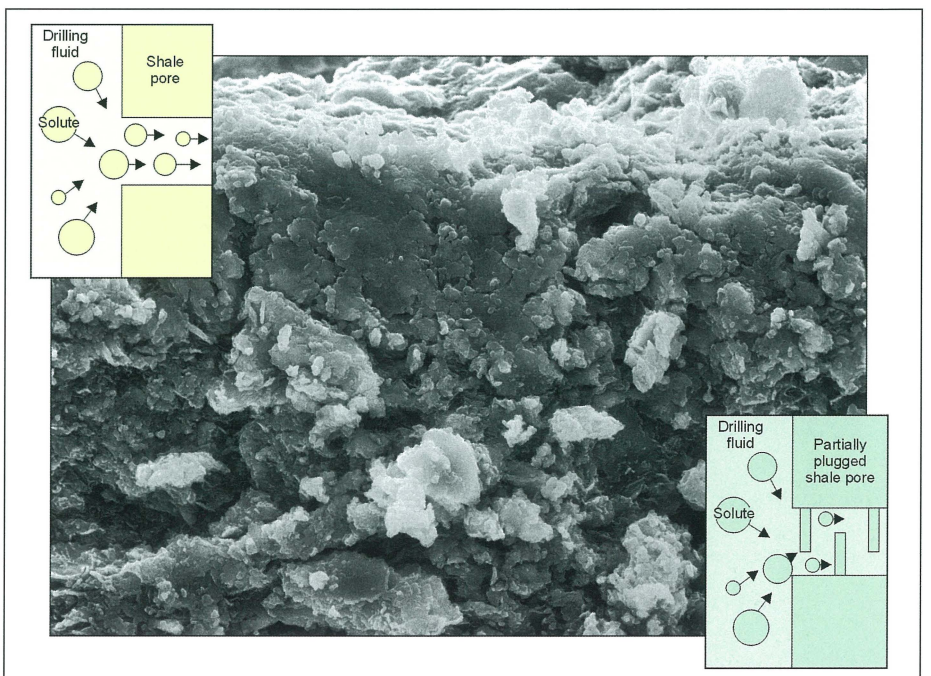
scientists working at ARRC (the Australian Resources Research Centre in Bentley, Western Australia) in conjunction with US firm Halliburton Energy Services' Baroid Drilling Fluids.



*Reactive shale cuttings drilled with BarOmega. Image provided by Halliburton Baroid.*



*Large scale laboratory testing with BarOmega. Image provided by Halliburton Baroid.*



*SEM Image of Shale Pores Plugged with Membrane Generation Compound.*