



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Daphne Chien</b>	<b>Project Number</b> <b>J0508</b>
<b>Project Title</b> <b>What's the Flow?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The problem was, How did changing different methods of crude oil affect its viscosity outcome? It was originally hypothesized that the method of adding hot water with oil would make the viscosity of crude oil lower and be able to come out with an easier flow, rather than adding detergent, cold water, or oil by itself. This was hypothesized because hot water contains heat, and heat could have made the oil looser, and so it could flow more easily. <b>Methods/Materials</b> Four different methods were tested with crude oil to make it able to be pumped more easily. The oil pumped was measured with a graduated cylinder in milliliters. The experiment started by adding gravel and vegetable oil. For each method, the amount added to the oil varied. The methods of adding cold water, hot water, and detergent were tested, each for 5 trails. Data along observations were recorded. <b>Results</b> The results and the observations made did not support the hypothesis. The detergent mixed with oil was the method that pumped the most amount of oil recovered. <b>Conclusions/Discussion</b> Information gathered from this experiment expands the knowledge about the many ways in which oil's viscosity may be lowered. Since crude oil is located between thick layers of sandstone and sedimentary rock, it becomes very difficult to pump for the oil that is stuck deep down.	
<b>Summary Statement</b> My project is about testing different methods to lower the viscosity of crude oil.	
<b>Help Received</b> Mother and friends helped to look and buy the materials.	