



# APPLICATIONS



## MINING

### HYDRAULIC SUBS

Canadian Mining and Power Operator Utilizes Hydraulic Submersible Pumps in Unique Applications

#### **Cornell's Hydraulic Submersible 6NNT Pumps Put to the Test—and Deliver!**

Abrasive slurry, temperature swings of more than 100 degrees Fahrenheit, remote locations...any of these things would test a pump system. A Canadian mining and power company faced all three obstacles to transfer solids out of waste ponds.

In one application, the company created a Hydraulic Tiller Dredge utilizing a Cornell hydraulic submersible 6NNT pump married with a CAT engine to remove bitumen from a retention pond. The pump package sits atop a six-foot long Caterpillar Landscape tiller. The tiller is lowered to the bottom of the pond and feeds constant slurry into the pump. The highly abrasive slurry is 50 percent harsh bitumen solids by weight, coursing through the pump at 2,000 gallons per minute.

The same company found another inventive use for a Cornell 6NNT and a Caterpillar tiller in a similarly challenging application. In order to pump sludge out of ponds, the package the company created had to be able to rapidly change locations, change pump depths, and tackle thick particulates. They ingeniously placed the hydraulic submersible pump on the end of a John Deere 410 excavator, replacing the Deere's bucket with the pump and tiller. The excavator's hydraulic system powers the pump. The pump is submerged in the sludge, and then the excavator boom moves the pump around like an egg beater to dredge out the pond.

Cornell pumps durability, reliability, and easy maintenance are keys to operating in the tough conditions and challenging environment. Cornell offers 10 versions of our submersible pump from three inch to 12 inch sizes.



**HYDRAULIC POWER PACK WITH CAT ENGINE**



**HYDRAULIC TILLER EXCAVATOR**



**TESTING THE TILLER AT A PRODUCTION FACILITY**