

## AREA H AND M EXERCISE - FEBRUARY 2008

### Background

Western Canadian Spill Services (WCSS) conducted some field testing on the Clearwater River near Rocky Mountain House, Alberta on Feb 5<sup>th</sup> 2008. This testing was done in conjunction with the area H/M winter exercise. The field testing included:

- Testing smaller lighter weight excavating equipment to dig slot openings in ice.
- Test the ability of the capstan winch to retrieve equipment off a river.

### 1. Testing Smaller Lighter Weight Excavating Equipment To Dig Slot Openings In Ice

One of the issues when working on frozen lakes is ensuring that the weight bearing capacity of the ice is sufficient to support the weight of the equipment required to cut slots, dig holes and perform various other functions on the ice. The object of this field test was to determine whether a smaller lighter excavator would be able to dig through a predetermined ice thickness. To do a comparison, a rubber tired Volvo BL 70 backhoe (weight 4000kg) and a Cat 303C Mini Track Hoe (weight 1800kg) were used.





The ice assessment indicated that the ice thickness varied from .4m to .6m. Although the weight bearing capacity graph indicated that it would have been safe to take the equipment onto the ice, the operators were reluctant to do so for an exercise, so the demonstration was conducted with the backhoe's working off the shore on dry ground.

The results indicated that the bigger Volvo backhoe was easily able to dig a slot through the .5m of ice and did so relatively quickly. The smaller Cat Mini hoe had difficulty. It was too light to be able to get the bucket started into the ice and was only able to do so when there was a test hole to start from. Although the mini hoe had no frost bucket, it is believed that it would still have had problems digging through that much ice.

## 2. Test The Ability Of The Capstan Winch To Retrieve Equipment Off A River

A capstan winch operates on the principle of wrapping rope around a spool which is turned by a small Honda motor. The engine rpm controls the turning speed of the spool and the number of wraps around the spool controls the tension. When operated correctly, the unit is designed to be operated with one person.



To test this winch, the airboat was positioned 15m out onto the river and a polytron rope attached to the front end. The results indicated that it could easily pull an 1800kg airboat off of the river and is a useful tool to be available if needed.

