



PROJECT SITUATION REPORT DISC Drill 08-09 Season

Project:	T-350-M				
Project Principal Investigator:	Dr. Charles Bentley				
Report No:	4	for period	12-15-08	through	12-21-08
Prepared by:	Jay Johnson			Date:	12-23-08

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ACTIVITIES DURING PERIOD

- Tanner arrived at WAIS on Thursday.
- Finished cleaning the slot drip pans. The slot has settled 6"-7" in relationship to the casing since last season. With this much movement the drip pan that is attached to the casing need to be re leveled so the drilling fluid will drain properly.
- Removed anti-torque section "A" from the drill string and replaced it with section "B". While connecting the Farmore to the "B" anti-torque section, one of the fiber optic connectors got caught and broke the fiber. We were able to re terminate the fiber without any problems. The drill string has since been working without any problems.
- Aligned the NICL core saw station.
- Finished welding the new t-handles into the screen section valves.
- Did a reaming run to the bottom of the bore hole.
- Test ran the pump up to 3600rpm in fluid. Nicolai reports that it ran well and also ran cool.
- On Tuesday we drilled the first core. As per NICL's request it was .926m long. We had to have the drill moving to get the cutter motor to start, but otherwise the drill run went smooth.
- After the first drill run we took the cutters off and ran the drill back to the start depth of the last run. At this point the cutter motor was cycled on and off without the drill moving. This was done ten more times at different depth increments. The cutter motor started without a current spike every time. This proved that the current spikes we see when starting the cutter motor are caused by the cutters.

- Took a sample of the bore hole fluid. The density was .918 at -31°C.
- Installed a new circuit board into the high voltage rack to allow it to be tied into the winch e-stop system. The high voltage power supply will now power down when a winch e-stop is pushed.
- Tested all of the winch e-stops. They are all functioning properly.
- Tried drilling two cores in one drill run (2 for 1 as we are now calling them). We were able to do the double core break every time, but initially we were able to drill a full second core only about 50% of the time because the cutter head would pack with chips due to a lose of drill fluid flow. When the first core break was done we would see a corresponding spike in the pump current followed by a dip. The pump would sometimes recover from the dip and others not. (For a given speed, a decrease in pump current correlates directly to a decrease in fluid flow.) The winch software was set up so that it would log the core break data only after traveling for 5m. We found that if we stopped the winch right after we saw the core break, approximately 1m, and then manually told the computer to record the data that we could prevent the pump current from spiking and dipping. We think the dip in pump current after a core break was due to the loosely packed chips in the screen section dropping down and plugging the butterfly valve at the bottom of the screen section. The pump could not clear this blockage and therefore it would loose flow. We are now achieving a 100% success rate when drilling 2 for 1 cores. The cores are coming up with very little or no damage to the ends. We are seeing up to a few cm chip pack between the cores now and then, but it isn't consistent. Our latest technique is drilling 3 for 1 cores! We drill two .98m cores followed by a .48m core and then reverse it on the following run. So far drilling 3 for 1 cores is working quite well.
- On Friday we started working in two shifts. On Monday we will go three shifts.
- On Sunday a bunch of us worked for a few hours doing maintenance. Bill M. and Dave cleared an ice plug in the hose connecting the 141B bulk fluid tank to the fluid handling system. Krissy, Elisabeth, and Bill N. went into the slot to again clean the slot drip pans and holes in the casing that let the drilling fluid drain back to the bore hole. Bill N. and I moved one of the core barrel rollers on the core transfer table and realigned the core barrel. Krissy, Dave, and I troubleshot the problems with the air monitor, See the safety report for information about the problems we were having with the air monitor.
- The new FED and core tray alignment system is working very well. Cores push out much easier than last season using the new netting deployment tube; however it takes some work to get the netting on the deployment sleeve and to deploy it properly. The core handlers are working on perfecting their technique.
- A total of 41.123m were drilled this week. The final bore hole depth for this week is -621.55.

COMMENTS

(Problems, Concerns, Recommendations, Etc.)