



PROJECT SITUATION REPORT DISC Drill 09-10 Season

Project:	T-350-M			
Project Principal Investigator:	Dr. Charles Bentley			
Report No:	5	for period	12-7-09	through 12-13-09
Prepared by:	Kristina Dahnert		Date:	12-13-09

ICDS Personnel on Site:	Kristina Dahnert Jay Johnson Elizabeth Morton Dave Ferris Nicolai Mortensen Lou Albershardt Steve Polishinski Patrick Cassidy Josh Goetz Robb Kulin Ben Gross
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ACTIVITIES DURING PERIOD

- Ben, Josh and Robb arrived at WAIS Divide on Monday.
- Finished terminating the drill cable and potted the Farmor connector. All 12 fiber connections work well when connected to the winch drum and sonde.
- Filled the bulk fluid tanks and positioned them outside the Arch.
- Connected and aligned the core transfer truss sections, the receiving table and the cutting station.
- Checked screw and bolt torque on the core barrel, both screen barrels and the tower.
- Hung the drill on the tower and aligned it with the borehole. The tower foot on the screen cleaning side was lowered and shifted towards the control room. This is as far as it can be moved without requiring major rework of the slot and handrails.
- Created a schematic for the Fluid Handling System.
- The carpenters lengthened the slot opening by 1m and have modified the access hatch to allow for an extension of the drill tower.
- Software work and updates continue. The new motor handoff procedure works well and does not stress the winch as did the previous method.
- Attempted to use a special box built by the carpenters to connect the backup heater to the screen heating tube. This box restricted air flow too much, so we have now returned to using the warming box from last season.
- Tested the centrifuge, chip blower and fluid handling system. All are working well and all staff have been trained on operation of this equipment.
- The side door of the Arch (the "moose" door) has been excavated and is now

operational.

- Leveled the optics table.
- Assembled the thin kerf core barrel.
- Ran the drill to the bottom of the hole for two cleaning runs. A filter bag was installed in three screens for one of the runs.
- Excessive amounts of void filler from the new cable are dirtying the borehole and drip pans. Successful attempts to clean the cable have been made by applying ScotchBrite pads to the cable during tripping. Extensive progress has been made, but void filler may continue to present challenges.
- Greased the winch motors.
- Four cores were drilled this week! During the first two runs, the drill had difficulty penetrating even at 1 mm/s, thus both runs were aborted with core lengths of 0.699 m and 0.456 m. Front shoes .192" were used. Both cores had random pitch spiral grooves.
- Removed the stabilizer bumps on one set of core dog cages. Void filler may have been lodging behind these bumps causing the drill to cut sideways.
- Replaced the .192" hight front shoes with .181" height rear shoes for the third run. Still low penetration even at 0.8 mm/s. Spirals continued on the core.
- Installed .146" hight rear shoes on the fourth run for a more aggressive penetration. This proved to be too aggressive, causing an over-current of the cutter motor. The core, however, has a smooth OD and 0.6 m was recovered.
- The pump on the Y Motor Section wouldn't hold grease after the third drill run. It was replaced with the pump from the Z Motor Section. Upon inspection of the original pump, the seal was still good and the issue was caused by the seal retaining nut backing out.
- On Sunday we remachined the crown sheave hub for the new bearings and installed the sheave back on the tower.
- Added a one meter extension on the tower in preparation for running the longer thin kerf barrel.

SAFTEY

- Elizabeth has been trained and has started doing Confined Space permits for slot work as well as completing the Daily and Weekly safety checklists.
- A safety walkthrough of the Arch was conducted on Saturday with all of the core handling and drilling staff as well as the two camp medics.

COMMENTS

(Problems, Concerns, Recommendations, Etc.)