



## PROJECT SITUATION REPORT DISC Drill 09-10 Season

<b>Project:</b>	T-350-M				
<b>Project Principal Investigator:</b>	Dr. Charles Bentley				
<b>Report No:</b>	9	<b>for period</b>	01-04-10	<b>through</b>	01-10-10
<b>Prepared by:</b>	Kristina Dahnert			<b>Date:</b>	01-10-10

<b>ICDS Personnel on Site:</b>	Lou Albershardt Patrick Cassidy Kristina Dahnert Dave Ferris Josh Goetz Ben Gross Robb Kulin Nicolai Mortensen Elizabeth Morton Steve Polishinski Mike Jayred (RAM Drill – left on Friday, 1/8/10) Jim Koehler (RAM Drill – left on Friday, 1/8/10)
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### ACTIVITIES DURING PERIOD

- After the inclinometer failed in instrument section 'K' last week, we are now using section 'L'. This section appears to be working well and the inclinometer is reading similar to the other one when it was still functioning. Current drill configuration consists of Anti-torque section 'A', Instrument section 'L' and Motor pump section 'Y'.
- Inclination has shown some improvement this week. We appear to have corrected the hole by 0.5°, with an average inclination now of 4.6°. Our efforts this week regarding inclination include:
  - We are no longer reaming 6m prior to the start of each run, as the cutter current did not reflect active cutting. Removing this method now saves approximately 20 minutes per drill run.
  - We continue to use modified cutters, giving them more side-cutting ability. As the machined notch on each cutter was susceptible to wear, we plan to increase the size of this notch on any new cutter sets to 0.8mm x 4mm. We are currently using our third set of newly-machined cutters. A fourth set is in production.
- Core quality remains excellent, though with a slightly rougher surface. Typical core lengths range between 3.25m-3.40m.
- Core production per day ranges from 29m-35m, with 9-11 drill runs completed per day.
- Penetration rates remain around 3.5mm/s, but increases in speeds up to 4.9mm/s have been used at the end of coring runs to avoid cutter dropouts.
- Tripping speeds continue to max out at 1.2m/s on descent and 1.6m/s on ascent. For the majority of the week, we were still forced to slow payout to 0.5m/s on ascent

at the turnarounds. We exposed a new lower layer of cable this week, which was also found to have loose wraps. Nicolai and Robb worked with the winch on Saturday evening in an attempt to alleviate this issue and were successful at re-tightening the troublesome lower layer. We are now slowing only through one of the turnarounds. We are still keeping an eye on the winch on ascent, but have happily decreased our ascent time.

- We have experienced a few software crashes and winch faults this week, however crews are better prepared to recover from these faults this season.
- We continue using rear button shoes with two 0.10" shims. Shoe height is .196".
- An issue occurred with the new thin-kerf core barrel this week. Upon removing the barrel from the FED (Fluid Extraction Device used by NICL), it was noticed that two barrel sections were loose and spun independently of one another. Upon investigation, the set screws were loose at one section and the barrel threads had only loosened slightly. Difficulty pushing this particular core out was due to the fiberglass tube at this junction sitting at an angle inside the barrel. As we do not need a full 4-meter core barrel, this section was simply removed. All set screws were checked for tightness and will be now checked once per day.
- The small plastic hose ends on the centrifuge nitrogen purge were removed, snipped and re-inserted. This appears to have fixed the nitrogen leak and the tank now remains on at all times.
- Instrument section 'L' appears to be more accurate and consistent at determining azimuth, but this sensor still requires further investigation and testing.
- The shipping container skis were assembled and attached on Wednesday. Placing them under the container proved a bit more challenging than expected, but was completed with the help of Ben, Josh, Krissy, Theresa (the camp manager), Charlie (the camp mechanic) and Jason and Mark (the camp equipment operators). Both the D4 and 953 were used in this endeavor.
- Mike Jayred and Jim Koehler left WAIS Divide on Friday, 1/8/10. Kendrick Taylor arrived on Friday as well. The first LC-130 arriving in camp on Friday had to overnight due to a fuel leak. A second LC-130 arriving that night retrieved the air crew and three people leaving camp. A third plane on Saturday brought the necessary parts to repair the grounded Herc.
- Sickness has plagued much of the camp and our crew this season. We have had 3.5 sick days, which is 3.5 more days than all previous seasons combined. I have been able to fill in for these shifts, and shared a 3rd shift with Lou while Nicolai was out of commission. Despite the bugs going around, everyone has done a great job of keeping things moving along!
- Jane Marquard, the WAIS Divide Cargo Coordinator based in McMurdo, arrived in camp on Saturday, 1/9/10, for a weekend visit.
- Dave Ferris prepared his 2nd annual Mediterranean feast for the camp on Saturday night. The delicious dinner was enjoyed by all!
- The 3rd annual West Antarctic Olympic Games were held on Sunday 1/10/10. Events included 'ECW Gear Twister', 'Frisbee Toss', 'Outdoor Paddle ball' and 'Two-hole Mini Golf' complete with animatronic windmill and wheel of wonder.
- Final driller's depth for the week: -2194.799m. Total meters drilled this week: 193.050m.

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<b>SAFETY</b>
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| <ul style="list-style-type: none"><li>• Two slot entries were performed this week. One entry was made to again adjust the fluid hose to casing junction. The second entry was made to retrieve a pair of sunglasses.</li><li>• The hose on the chip vacuum has been grounded to the motor. Users wearing leather gloves experienced minor static electricity prior to this, however it is standard procedure to wear the yellow Dailove gloves when vacuuming, which do not present an issue.</li><li>• Daily and weekly safety checks continue.</li></ul> |
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<b>COMMENTS</b>
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<b>(Problems, Concerns, Recommendations, Etc.)</b>
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