

## **NEEM - SITREP no. 16, Sunday 9 August 2009.**

This SITREP covers the period August 3 – August 9, 2009 (inclusive).

### **Movement of personnel:**

- 3 August: Daphne Buiron (F), Sebastian Bjerregaard (DK) and Aslak Grindsted (DK) from Kangerlussuaq to CPH by Air Greenland.
- 4 August: Jørn Ladegaard (DK) on holiday in Greenland.
- 5 August: Vas Petrenko (US) from Kangerlussuaq to Summit Camp by 109<sup>th</sup> (thereby transferring to U.S. Science program)

### **Movement of Cargo:**

No movement of cargo this week.

### **Camp activities:**

This week the very last construction items were completed. The field leader office in the Dome Cupola (4<sup>th</sup> floor in main dome) was outfitted with shelves and in Garage 3 storage shelves and a sauna has been constructed. Snow has been removed around camps and the establishment of an overwintering cargo line has begun. Pallets with retrograde cargo are being built. Otherwise, the NEEM camp is functioning well for the tasks it has been designed for: Drilling a deep core and support for other scientific activities.

### **Skiway:**

Skiway taxiway and apron are in fine condition. As normal, in weeks without flights, and because of the fine weather, the skiway area has turned into a recreational area. People are walking, skiing and jogging. A special exercise track "mountain trail" has been groomed to satisfy the needs of the crowds. A sofa has been placed on a snow hill W of camp and it is a popular picnic spot.

### **Drilling:**

Drilling during the week has been stable with several small mechanical issues that needed attention. After adjustments to the cutters and pitch and other minor adjustments, most runs produced the 3.3 m cores the drill has been designed for. Inclination is now under control and has gradually dropped from 2.6 degrees to 1.65 degrees. Core quality has been good all week. Driller's depth: 1620.75 m, production this week is 150.25 m.

### **Logging:**

Freshly drilled cores are logged immediately after drilling. Logging depth: 1635.42 m.

### **Science Trench:**

In the beginning of the week, the science trench ran out of ice to process. This was due to the low production in the days before due to crew change and week-end. The ice cores have to sit two days in the buffer before processing to insure that the drilling fluid has evaporated from the cores. Therefore, Monday thru Wednesday, the science trench crew worked half time. The other half time was spent doing pit studies and hand augered shallow core studies. Later in the week, the science trench was again in full swing. Results are pouring in, and the ice being processed now is from the last glacial maximum, some 23,000 years ago. The first Dansgaard/Oeschger cycles are supposed to show up soon. Monday the CFA team completed the analysis of the ice below the brittle zone. The rest of the week has been spent measuring some NGRIP samples, pit samples and three hand augered surface cores down to 12 m.

Processing depth: 1593.35 m.

CFA depth: 601.7 m.

### **Other science activities:**

Several GPS positions on the strain net around NEEM have been re-measured.

Biological experiments by Todd Sowers in NEEM2009 S2 hole, using the 3" shallow drill with fluid, operated by Steffen Bo Hansen has been successfully concluded.

Report on sampling activities of a snow pit and short firn cores

A group of scientists from the science trench and CFA team carried out snow firn sampling on August 4 to 7. A 3.2 meter pit was dug and 5 short firn cores up to 6 meters were retrieved for multi-purpose studies, including microbiology, CFA, mercury, metals and snow stratigraphy. In addition 2 12 m firn cores were retrieved for cfa studies. The cores were drilled 1 m apart. Sampling location was near the firn coring site at N77°25.721' and W51°06.594'. It is planned to further extend the pit to 4 meters during this season for studies of atmospheric contaminants.

**Biology:** To investigate seasonal variation of bacterial cell concentration. A total of 30 samples were taken. Also, 3 samples were taken from ice layers for purpose of isolation of microorganisms.

**CFA:** To have CFA data from the surface, to test contamination levels in firn cores and to investigate seasonal-spatial variations of atmospheric components. A total of over 60 samples down to 3 meters plus continuous analyses of the 5m firn core from 2.5 cm to 6.5 meters from surface. For the two 12 m firn cores the CFA 3.5 x 3.5 cm<sup>2</sup> sections are prepared and the sections are melted at the cfa melthead for continuous analysis.

**Mercury:** To compare Hg atmospheric depositions between Greenland and other Arctic regions. A total of 31 samples were taken for analyses of methyl mercury and 42 samples, for inorganic mercury.

**Metals/atmospheric contaminants:** To investigate the seasonal variations of atmospheric contaminants and as one of the sites for studies of spatial distribution in circum Arctic as well as inter-lab comparison.

**Stratigraphy/density:** To set up depth-age relationship at the sampling site.

#### **Weather at NEEM:**

All week sunny with moderate winds. Noon temperatures up to -5 deg C. Night temperatures now down to -17 deg C. Winds between 5 and 15 knots mainly from S.

**NEEM camp population:** 34

#### **Kangerlussuaq activities:**

Main activities in Kangerlussuaq office has been to rearrange the clothing from last week's visit and to clean out and reorganize the warehouse in Kangerlussuaq. New shelves have been mounted and a lot of old items have been cleaned out. During the week several tests on radios and antennas revealed, that the FOM HF radio in Kangerlussuaq now transmits and receives normally and that the NEEM HF radio transmits normally but the reception in NEEM is hampered by local interference, particularly from the frequency inverter controlling the winch motor. NEEM camp and FOM office now have reliable HF radio communication.

#### **Weather in Kangerlussuaq:**

Sunny with blue sky. Temperatures at day 16-20 °C, at night -2 C. Mosquitoes are gone, mushrooms and blueberries a plenty. Due to frost, vegetation is beginning to show traces of autumn colors.

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