

SALSA SCIENCE REPORT: 27 December 2018. Compiled by Billy Collins.

Location: Mercer Subglacial Lake Camp

- After four days of troubleshooting components that sustained wear and tear from sitting through two winters on ice, the Drill Team began drilling the main borehole on the evening of December 23rd and reached the lake faster than expected at 10:30pm on December 26th with a borehole depth of 1084 meters. The drill team then reamed (smoothed and widened) the borehole so that instruments can be sent down.
- Part of the drilling process involves sampling the drill water to test its cleanliness. The water has been tested twice thus far, and both tests showed the water was “as clean as filtered water can get” in the words of SALSA PI Brent Christner. The drill water is run through filters that catch 99.9% of bacteria and particles. When the drill broke through the ice over the lake, only a tiny fraction of drill water mixed into the lake as the pressurized lake water rushed up the borehole and prevented most of the drill water from mixing into the lake. Although very little drill water will mix into the lake, the SALSA team has taken every precaution available to maintain clean access into Lake Mercer.
- On December 24th Al Gagnon and two SALSA Marine Techs Michael Tepper-Rasmussen and Jack Greenberg, successfully tested the WHOI (Woods Hole Research Institute) Gravity Corer in a ‘mock’ borehole. The Gravity Corer, also known as a Deep Corer uses its heavy weight to take up to 20-foot core samples. The Gravity Corer will lower down the borehole to a specified height and then make a controlled freefall and use its weight to dive deep into the sediment.
- The Geophysics team rode in to camp via snowmobiles on December 27th after about five weeks of servicing and installing GPS Stations and installing electromagnetic sensors to map the region’s subglacial lakes. The team will continue their GPS station maintenance using SALSA camp as home base.
- The rest of the science team have continued preparing science equipment and adapting sampling plans. While waiting for borehole science operations to begin, the team have had a little extra time to sample snow layers near camp, play cribbage, build snow walls around tents, and enjoy the company of the SALSA team in the close quarters of the camp RAC tent.
- On Christmas Eve, several members of the SALSA Team participated in the annual Antarctic HF radio field camp Christmas caroling. Although the fuzzy transmission made some of the radio calls very challenging to listen to, the SALSA team sang their own version of “Feliz Navidad” accompanied by Al Gagnon on the ukulele.