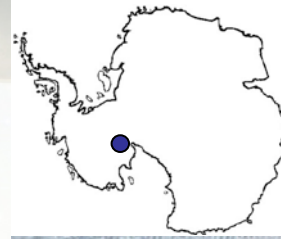


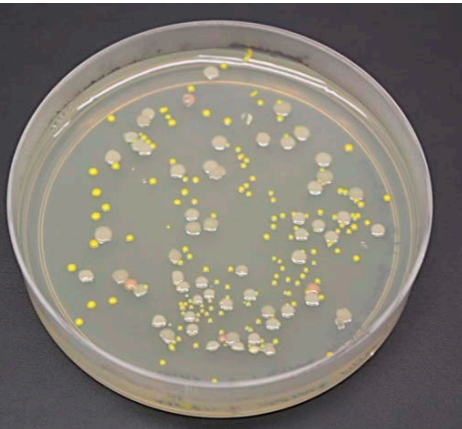
An Isolated Microbial World, Deep Under Antarctica

Water obtained directly from a subglacial lake was found to have microbial density similar to that of the deep oceans, despite being cut off from sunlight for at least 100,000 years, and perhaps as long as 1 million years.

Lake Whillans



- The team, funded by NSF and the NASA Astrobiology institute, was part of the Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) project.
- The team took a week to drill 800m (2600ft) through the ice sheet using UV radiation, water filtration and hydrogen peroxide to sterilize the equipment to keep surface microbes from contaminating the untouched lake.



- 30 liters (8 gallons) of the honey-colored lake water was collected. In addition to being much richer in minerals than expected, a total of 3931 different species were identified – many related to surface chemolithotrophs, organisms that get energy from breaking down minerals rather than from sunlight.
- Whether the microbes arrived from nearby seawater, or were deposited on the surface of the ice and worked their way down through the ice sheet is unknown, but organisms like these that live in isolated environments deep under ice may give scientists clues as to how life might exist on Europa, Enceladus, or other icy bodies.

Colonies of microbes cultured from water collected from Lake Whillans.