

SAMPLING SUBGLACIAL LAKES



Around
360 known
lakes

Lake Ellsworth

British Antarctic Survey
to start drilling
December 5



Lake Whillans

U.S. team expected
to break through
in January 2013



Lake Vostok

Russian team
collected water
samples in February
2012 but questions remain
about sterility of equipment

UNDER THE SURFACE

1 Hot water drill melts through ice sheet with high-pressure jet of water, heated to 90°C. After drilling scientists have just 24 hours to collect samples before borehole re-freezes

2 Probe lowered through borehole to capture samples from various points in water column

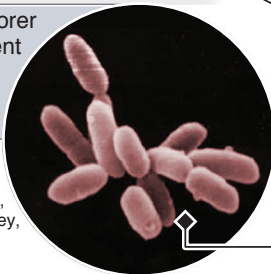
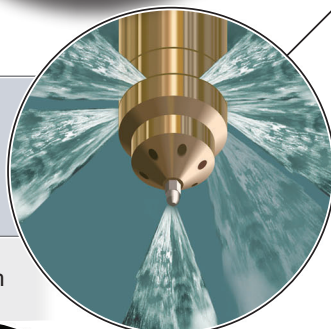
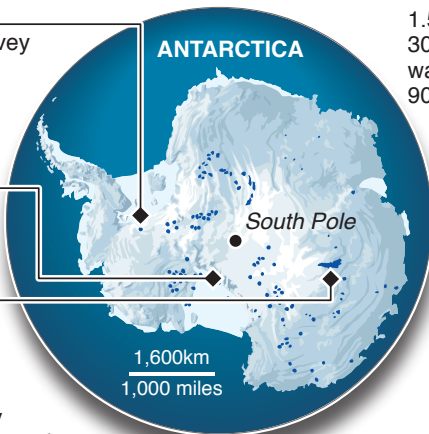
3 Specialised corer recovers sediment from lake floor through same borehole

Sources:
Subglacial Lake
Ellsworth Consortium,
British Antarctic Survey,
University of Bristol

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Hunt for life under Antarctic ice

British scientists are to begin drilling through 3km of ice to the ancient subglacial Lake Ellsworth in the hope of finding forms of life that have not seen the light in millions of years



Hot water sprayed
at 2,000psi creates
360mm borehole. Freezing
shrinks borehole by 6mm/hour

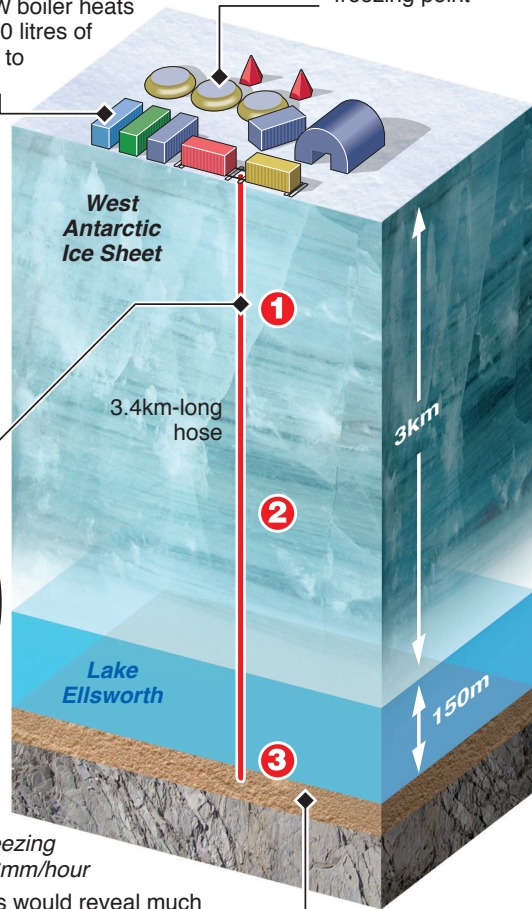
Discovery of microbes would reveal much
about evolution of life on Earth, and how
it withstands extreme environments

Single-celled organisms, e.g. archaea,
known to exist in Antarctic waters

DRILL SITE

Three tanks store
water above
freezing point

1.5MW boiler heats
30,000 litres of
water to
90°C



Sediments: 2m-thick layer
could yield vital clues to past
climate and when ice sheet
last broke up