Utilizing McMurdo Station, Antarctica as a Lunar South Pole ISRU Analog Proving Ground

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Most of NASA’s Human Research Program-related activity is conducted at McMurdo Station, a coastal outpost located on the volcanic hills at the southern tip of Ross Island. Studies undertaken at McMurdo Station focus on variables such as isolation, telemedicine, and the human response to harsh environments.
13 Seasons as a Heavy Equipment Operator in Antarctica
3 Seasons on the USAF Dew-Line
Steep Slopes will be a challenge
Figure 5. Hypothetical Icy Regolith Profile
Percentage of Water (wt%) in Icy Regolith at Various Depths

0 cm
20 cm
100 cm
350 cm

0% water
4% water
10% water

Peter Smith's Martian Ice

https://researchcommons.waikato.ac.nz/handle/10289/934
Temperature Comparison

McMurdo Station, is located at Lat. 77.88°S, Monthly Averages

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan (°C)</th>
<th>Feb (°C)</th>
<th>Mar (°C)</th>
<th>Apr (°C)</th>
<th>May (°C)</th>
<th>Jun (°C)</th>
<th>Jul (°C)</th>
<th>Aug (°C)</th>
<th>Sep (°C)</th>
<th>Oct (°C)</th>
<th>Nov (°C)</th>
<th>Dec (°C)</th>
<th>Annual Mean (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>-2.9</td>
<td>-9.5</td>
<td>-18.2</td>
<td>-20.7</td>
<td>-21.7</td>
<td>-23</td>
<td>-25.7</td>
<td>-28.1</td>
<td>-24.8</td>
<td>-18.9</td>
<td>-9.7</td>
<td>-3.4</td>
<td>-18.9</td>
</tr>
</tbody>
</table>

Devon Island, is located at Lat. 75.45°N, the average temperature on Devon is -17 degrees Celsius, or 1 degree Fahrenheit,

But it is misleading because McMurdo Station’s temperatures are taken in the middle of town and the temperatures are much lower on the Ice Shelf or up on Arrival Heights. Today's temperature in McMurdo was +4° F, while at the same time today at Willy Field on the Ice Shelf, 10 miles away, it was -15° F.
Thank You!