

# PERFORMANCE OF DRILLING WASTE SUMPS, WESTERN ARCTIC CANADA

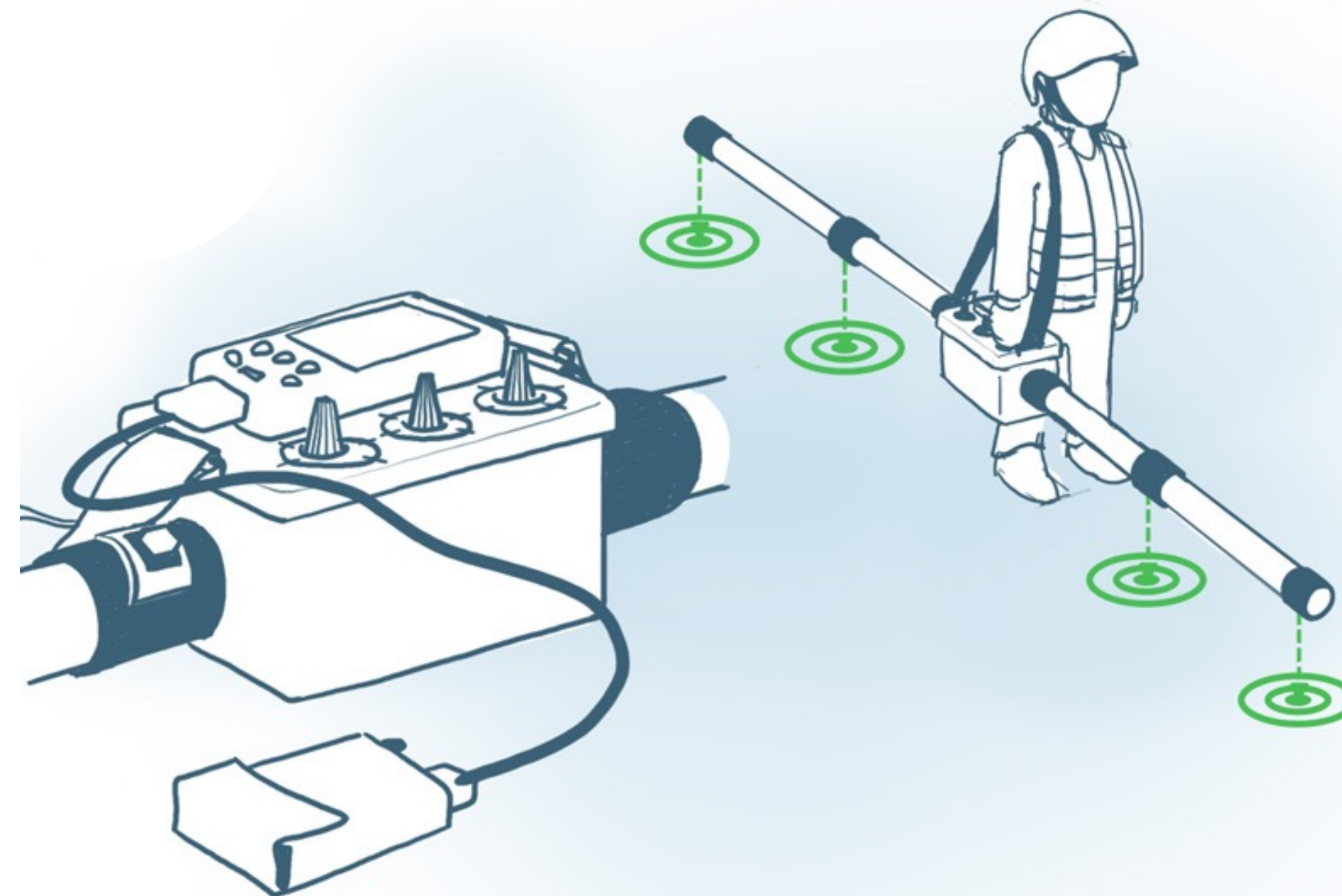
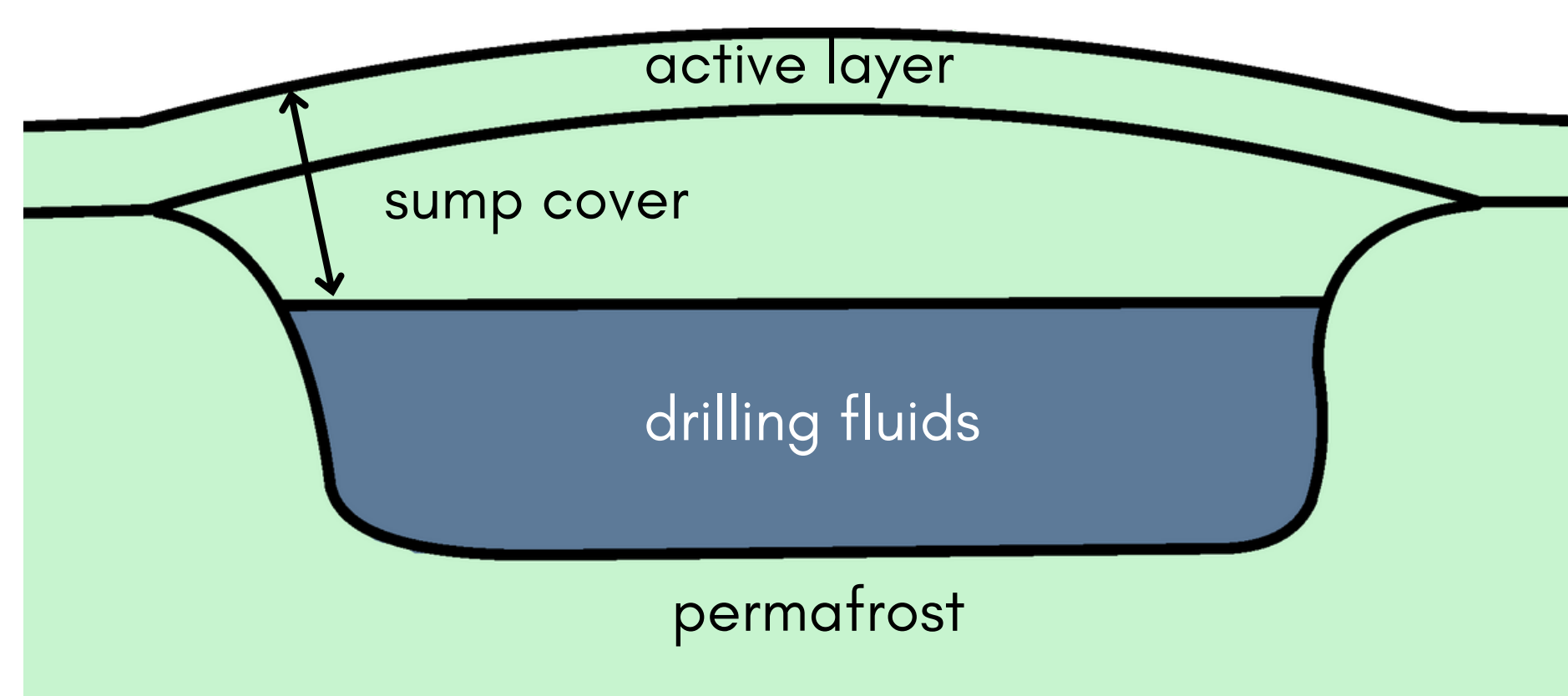
Capacity building

Sump assessment

Monitoring priorities



- Over 220 sumps
- Drilling fluids in permafrost
- KCl is conductive



# CONCERNS WITH SUMPS

solute redistribution

snow accumulation

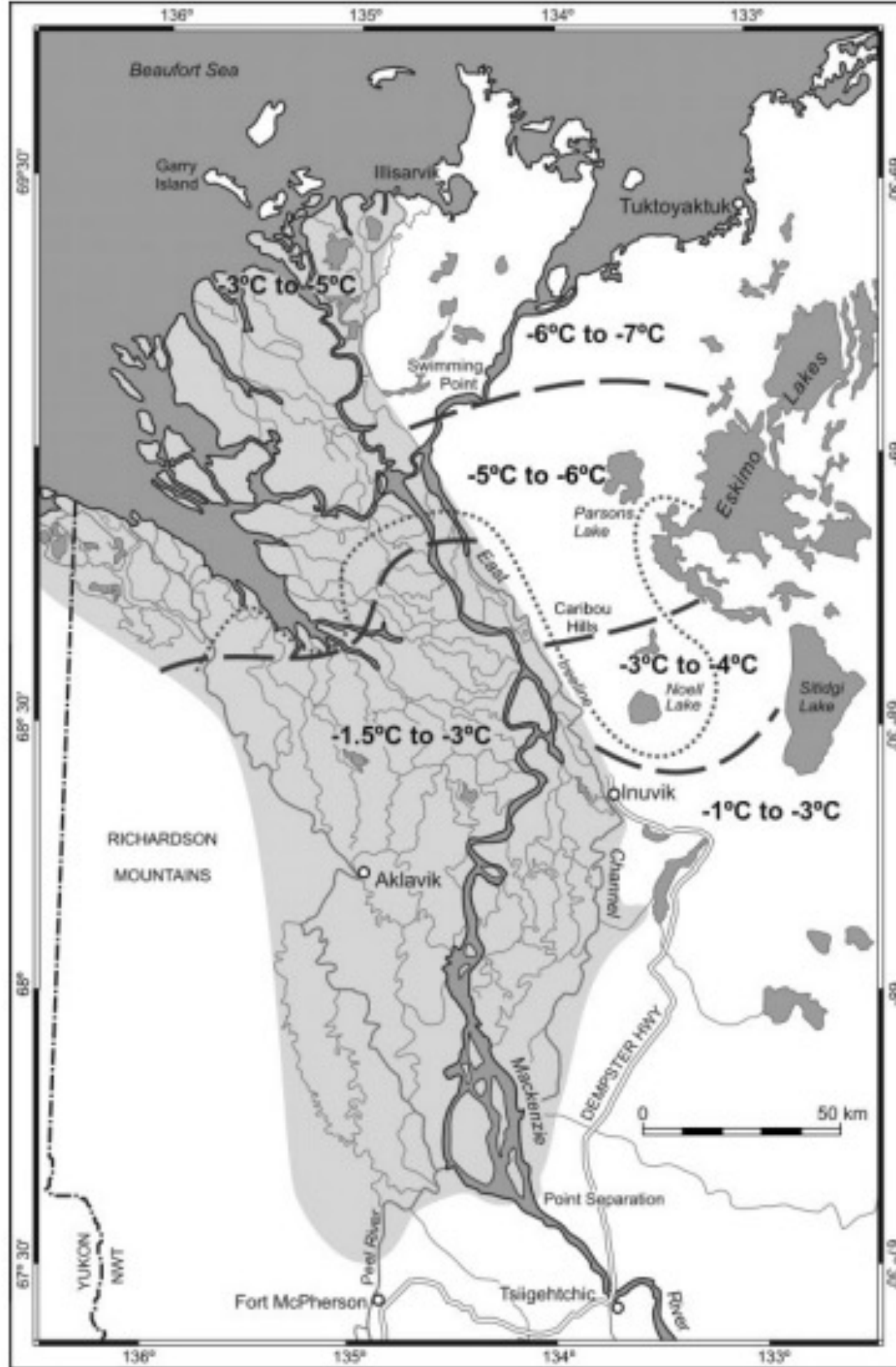
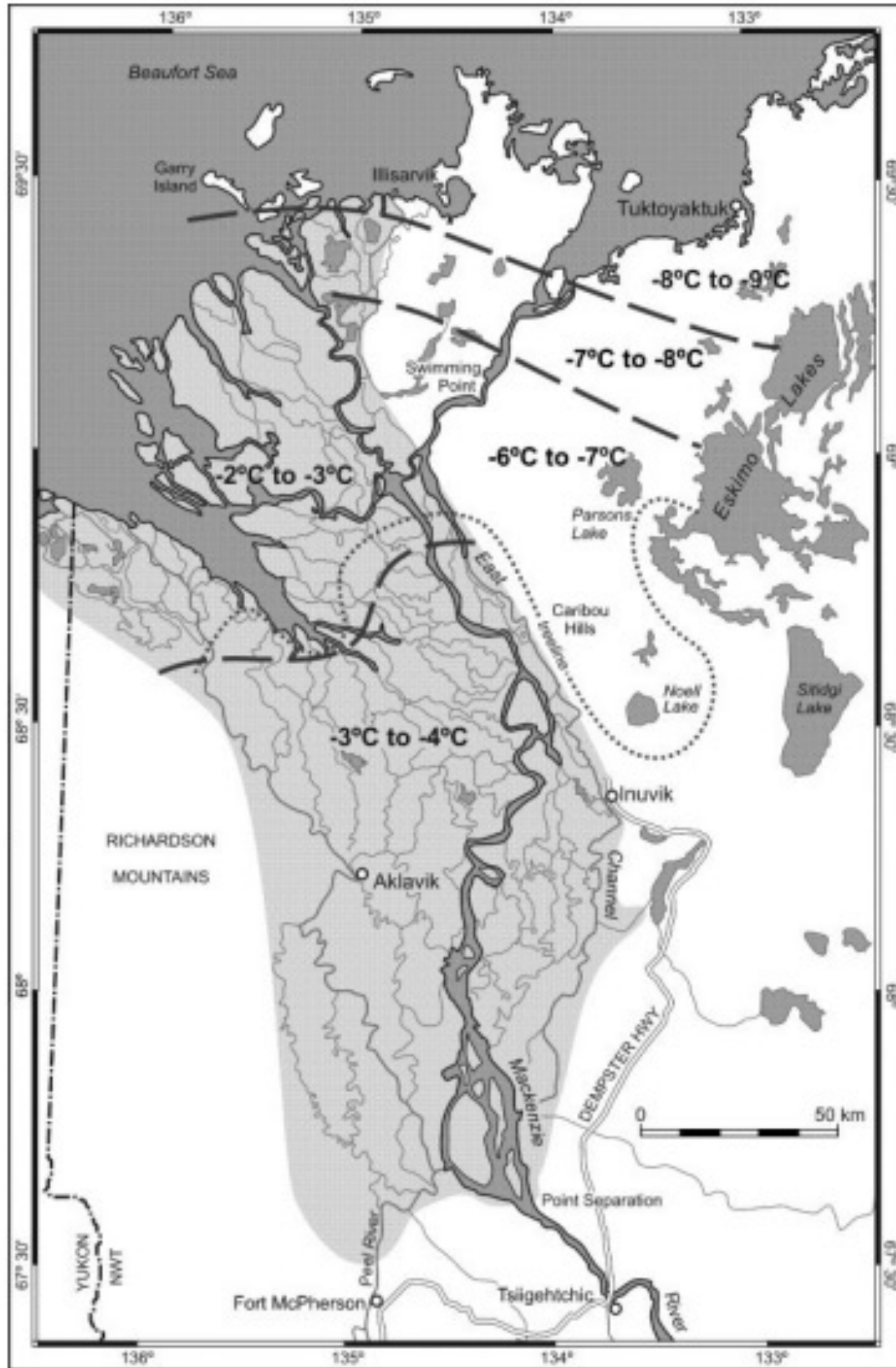
climatic warming



**2m**

1960s - 1970s

2003 - 2007



increase  
of 2°C

Burn and Kokelj 2009

135°W

134°W

133°W






L-38

C-42

B-19

Tuktoyaktuk

-  Sump
-  Delta
-  Uplands



69.5°N

**STUDY AREA**

**2 L-38**



**L-38**



**3/4/5 L-38**



2002

2012



**SUMP      % PONDDED**

L-38      8%

2 L-38      16%

3/4/5 L-38      12%

B-19      13%

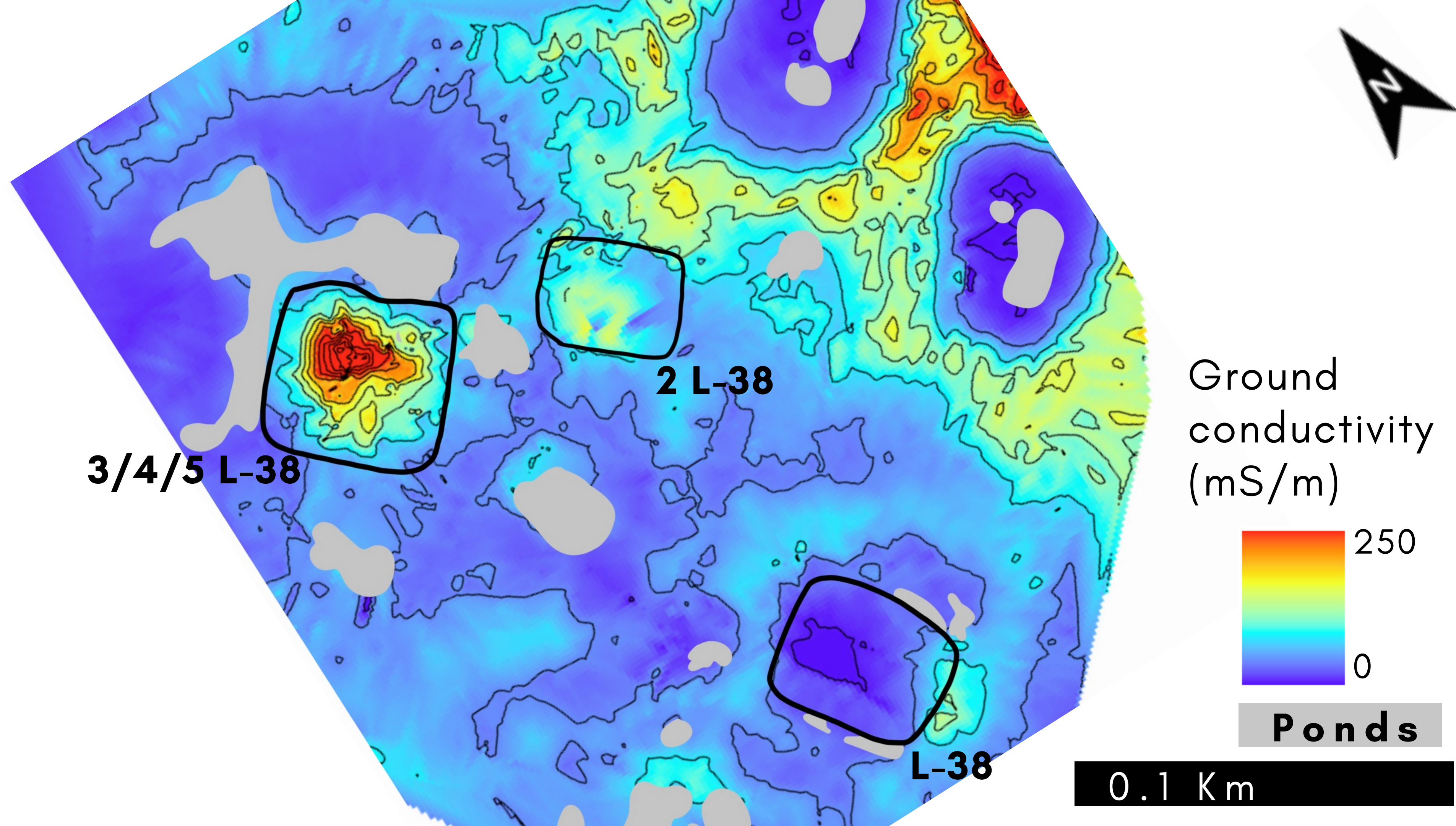
C-42      35%



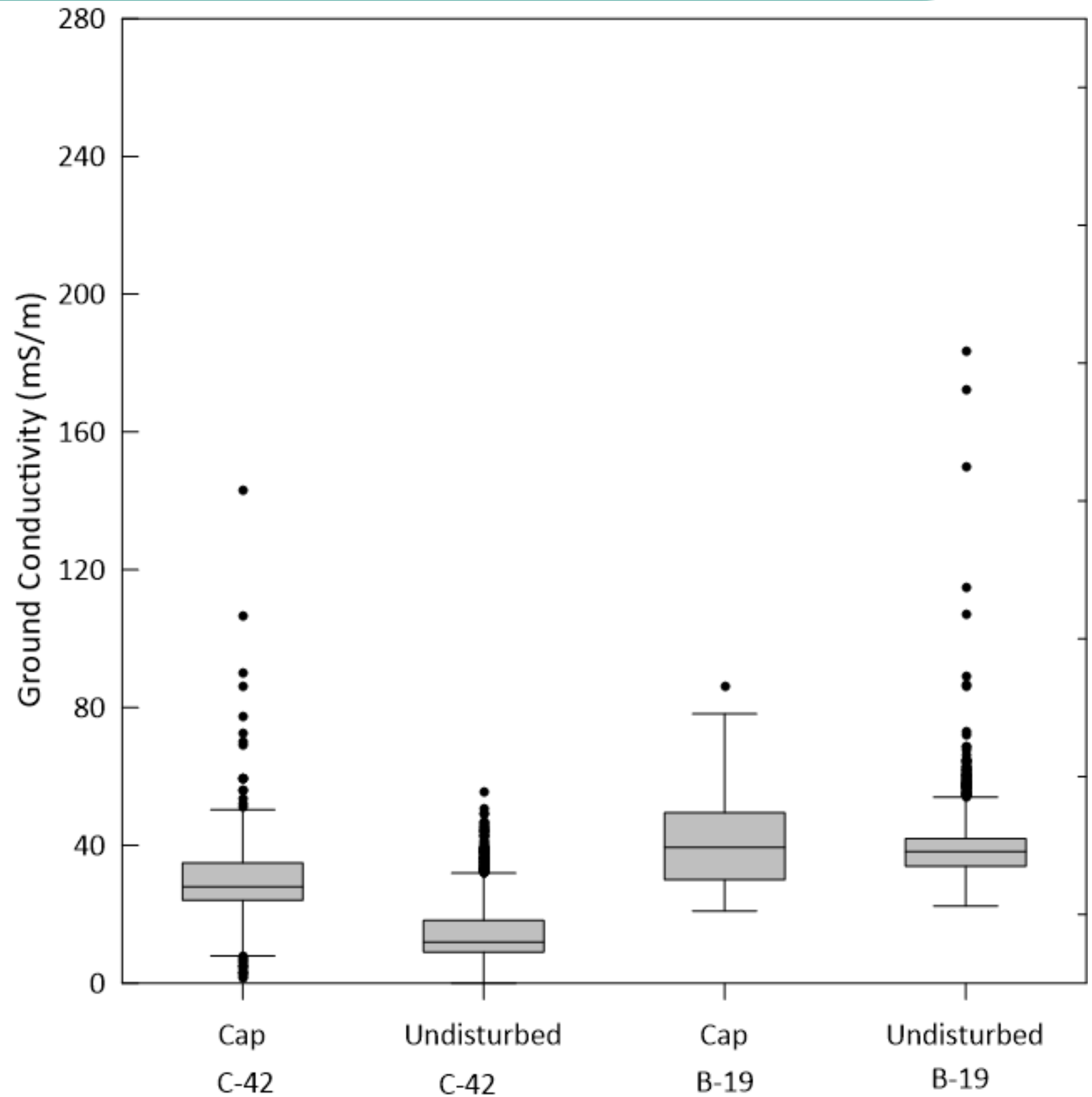
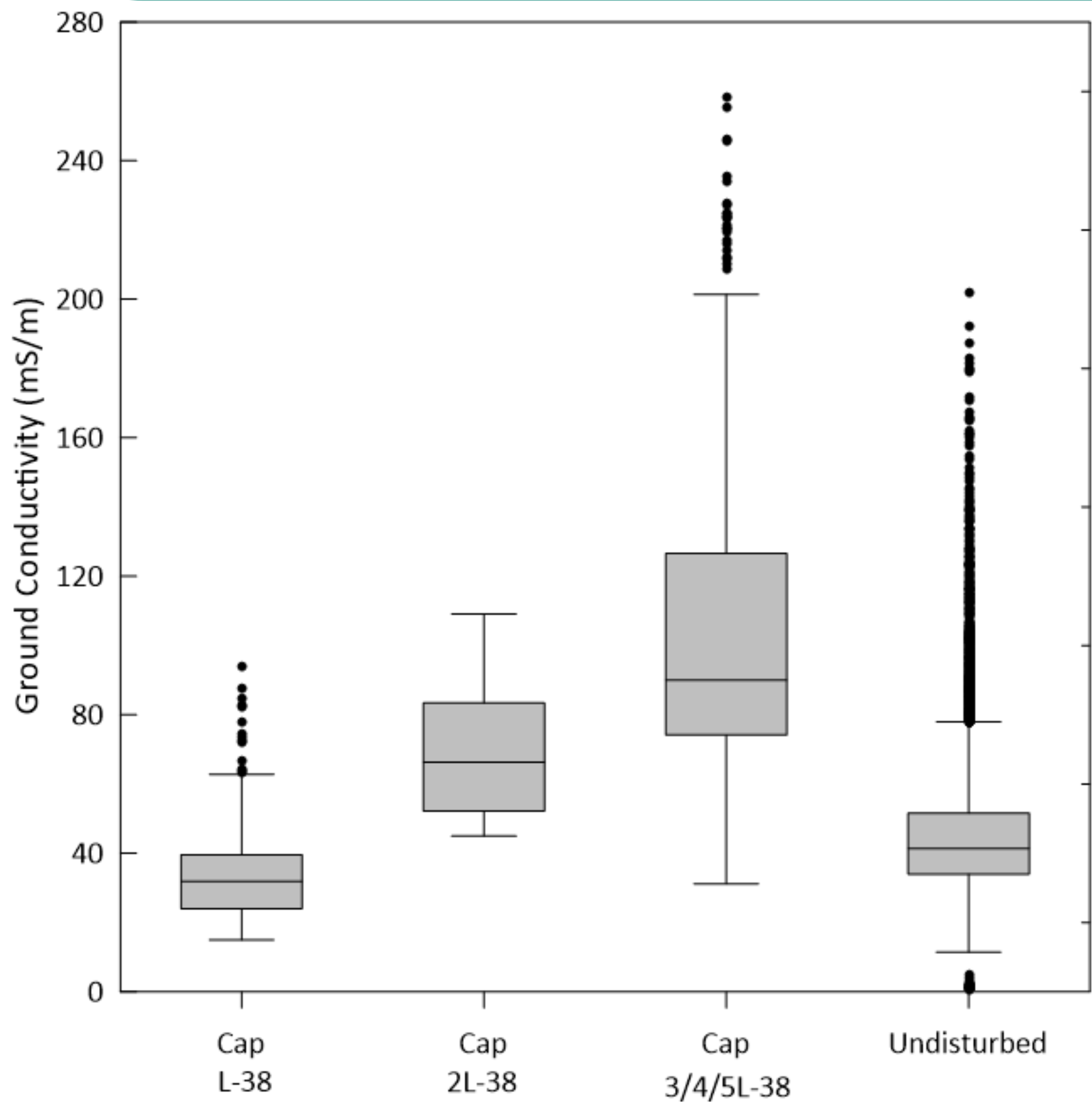
2022

**3/4/5 L-38**





# DISTRIBUTION OF EM-31 MEASUREMENTS



# CONCLUSIONS

Failure of sumps constructed in 1970

Mallik 3/4/5 L-38, remains intact

2 L-38, intermediate age and  
intermediate concentration

**B-19**



THANK YOU

