













# Quick Reference Sheet – Existing Hot Water Drills

October 2025 | NSF Ice Drilling Program

- This list has been put together to aid in discussions about the capabilities of a future hot water drill.
- This list is not a complete inventory of all hot water drills, just those deemed relevant to the discussions.
- This list is for reference use only and should not be used for field season planning.
- Information has been compiled from various presentations, publications, websites, and personal communications. Errors may be present.

System	Owner / Custodian	Max Depth	Clean	Requires Traverse	Comment
Small Hot Water Drills	IDP 	60m	No	No	
Arctic Hot Water Drill Scalable 200-800m	BAS 	800m	No	No	
Mid-Scale Hot Water Drill	IDP 	900m	No	No	IDP took custody from University of WY (Neil Humphrey)/University of MT (Joel Harper) in 2025.
Ice Shelf Hot Water Drill Scalable 500-1000m	BAS 	1000m	No	No	
Ice Shelf Hot Water Drill Scalable 500-1000m	NZ 	1000m	No	No	Copy of BAS drill with PLC/SCADA upgrades.
Ice Shelf Hot Water Drill Scalable 500-1500m	KOPRI 	1500m	No	No	Built by BAS for KOPRI.
WISSARD Clean Hot Water Drill	UNL 	1000m	Yes	Yes	Would require funding, staffing, and refurbishment for use.
BEAMISH Hot Water Drill	BAS 	2300m	No	Yes	Hose reel requires a traverse, everything else can transit via Twin Otter.
CASCA Clean Hot Water Drill	KOPRI 	2300m	Yes	Yes	Developed in collaboration with BAS. First use planned in 2028/29.
Enhanced Hot Water Drill (EHWD)	ICECUBE 	2650m	No	Yes	System has never left South Pole, likely impractical to traverse any significant distance in current state.
Sub-glacial Lake CECs Clean Hot Water Drill	BAS 	2700m	Yes	Yes	Add-on equipment to BEAMISH for depth and cleanliness. 80% completed before loss of funding.
Sub-glacial Lake Ellsworth Clean Drill (SLE)	BAS 	3300m	Yes	Yes	No longer exists.
Deep RAD – Sub-glacial Lake Qilin	PRC 	3600m	Yes	Yes	First use planned in 2026.