Supplement 3 - debris-rich ice logging 2025/2026

November 27, 2025

15 cm of core brought up.

Name: bag RD#1-25-26

Loggers depth: Not available

Description: 0-7cm from top (of drilled core section), best preserved and most consolidated with basal material content low. From 2-4 cm from top, the core is uniformly muddy with small sediment fragments visible, somewhat layered structure. 8 cm to the bottom, significantly fragmented, likely due to exposure to the drilling fluid liquid. When extracting it from the drill, drilling fluid came out. Interpretation: probably melted ice that re-solidified after the drilling activity.

Processed under red light conditions.

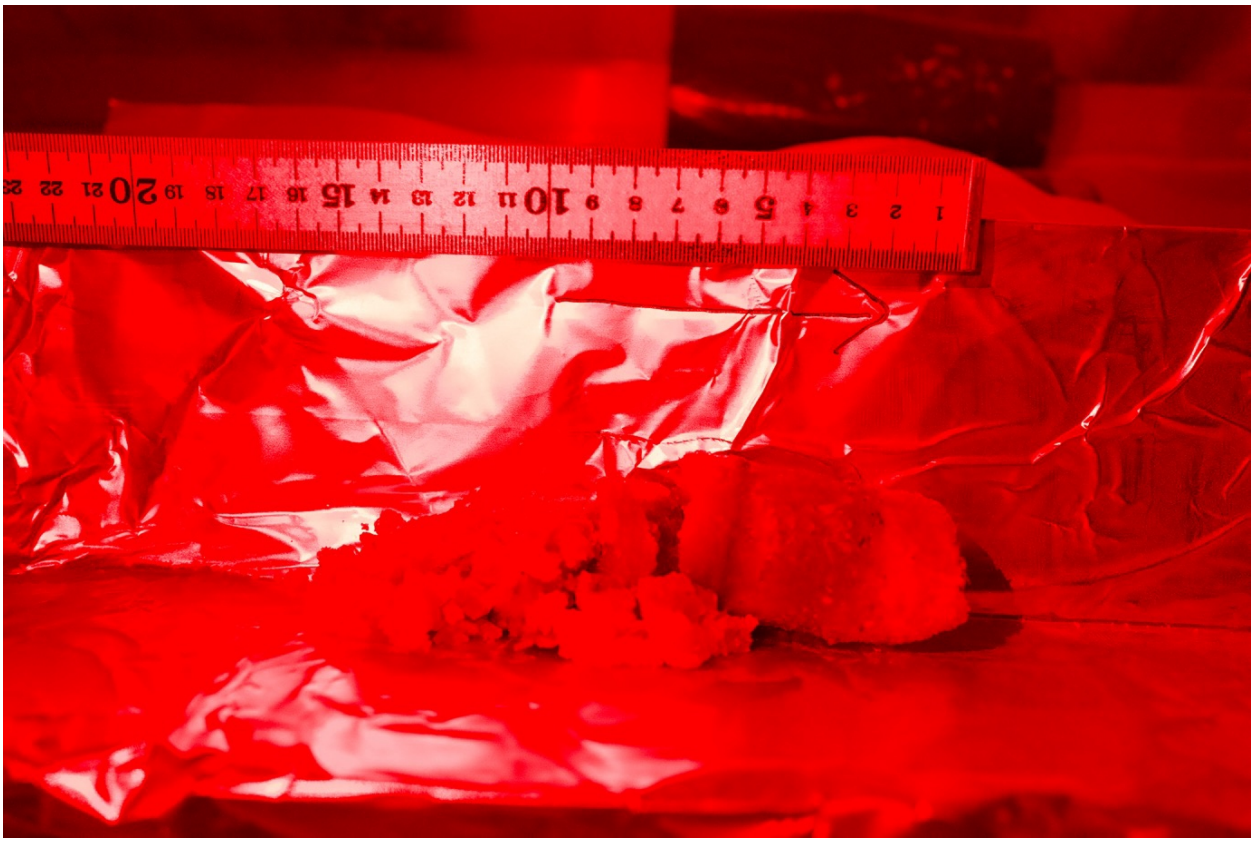

Figure S3_1: Bag RD#1-25-26 (15 cm) with red light. Top on the right.

4,7 cm of core brought up.

Name: bag RD#2-25-26

Description: preserved and mostly consolidated ice. The basal material content is low. Small sediment fragments are visible in a somewhat layered structure. When extracting it from the drill, a lot of drilling fluid came out. Interpretation: probably melted ice that re-solidified after the drilling activity.

Logged under red light conditions.

Figure S3_2: Bag n. RD#2-25-26 (4,7 cm) top on the left.

Core / basal material brought to surface.

Name: Bag RD#3-25-26

Description: Inconsistent ice extracted without a core catcher. For this reason, the bottom end, as well as two pieces of ice that fell out at the top during core extraction or drill travel. These pieces were exposed to sunlight. Everything taken out and logged under red light.

Figure S3_3: Bag n. RD3-25-26, top to the left.

Figure S3_4: Bag n. RD3-25-26. Left: The two pieces that fell out at the top of the drill. Right: refrozen material in and around the drillhead.

November 30, 2025

Core was brought up.

Name: Bag RD#4-25-26

Description: Inconsistent ice and pebbles extracted without core catchers on the drill. Under red light conditions the size of the pebbles seems to be a bit bigger than before.

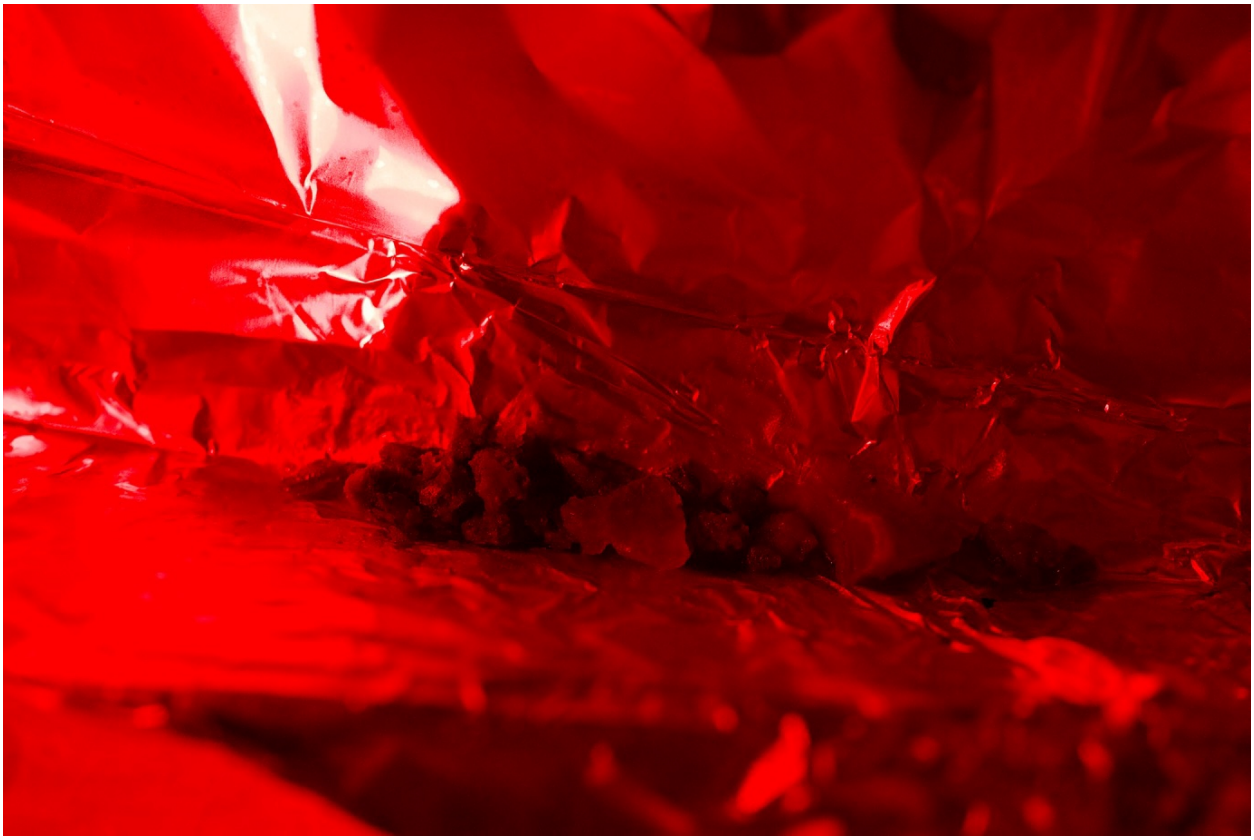

Figure S3_5: Bag n. RD#4-25-26.

December 04, 2025

6,6 cm of core was brought up.

Name: Bag RD#5-25-26

Three well-preserved and highly consolidated pieces were recovered. The first one on the left corresponds to the top of the sample: it consists of a small ice fragment with a possible piece of sediment on its upper part. The middle piece—approximately 1.5 cm long—contans a high proportion of rock material and is noticeably darker than the other recovered fragments. The piece on the right corresponds to the bottom of the sample and consists of about 3 cm of ice with clearly visible sediment inclusions. The white plastic piece on the right (right of the measuring stick) is used for core extraction.

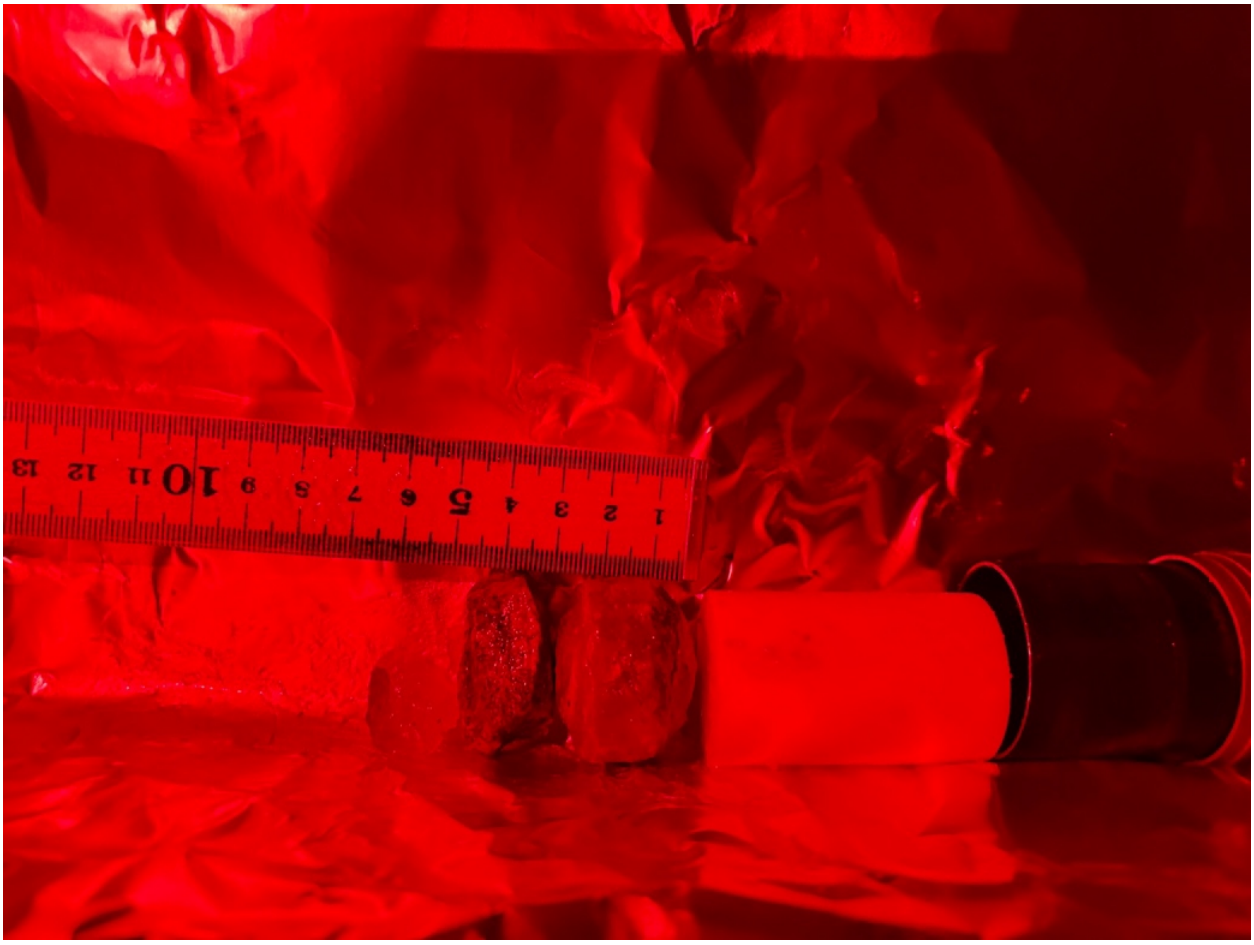

Figure S3_6: Bag n. RD5-25-26: top on the left.

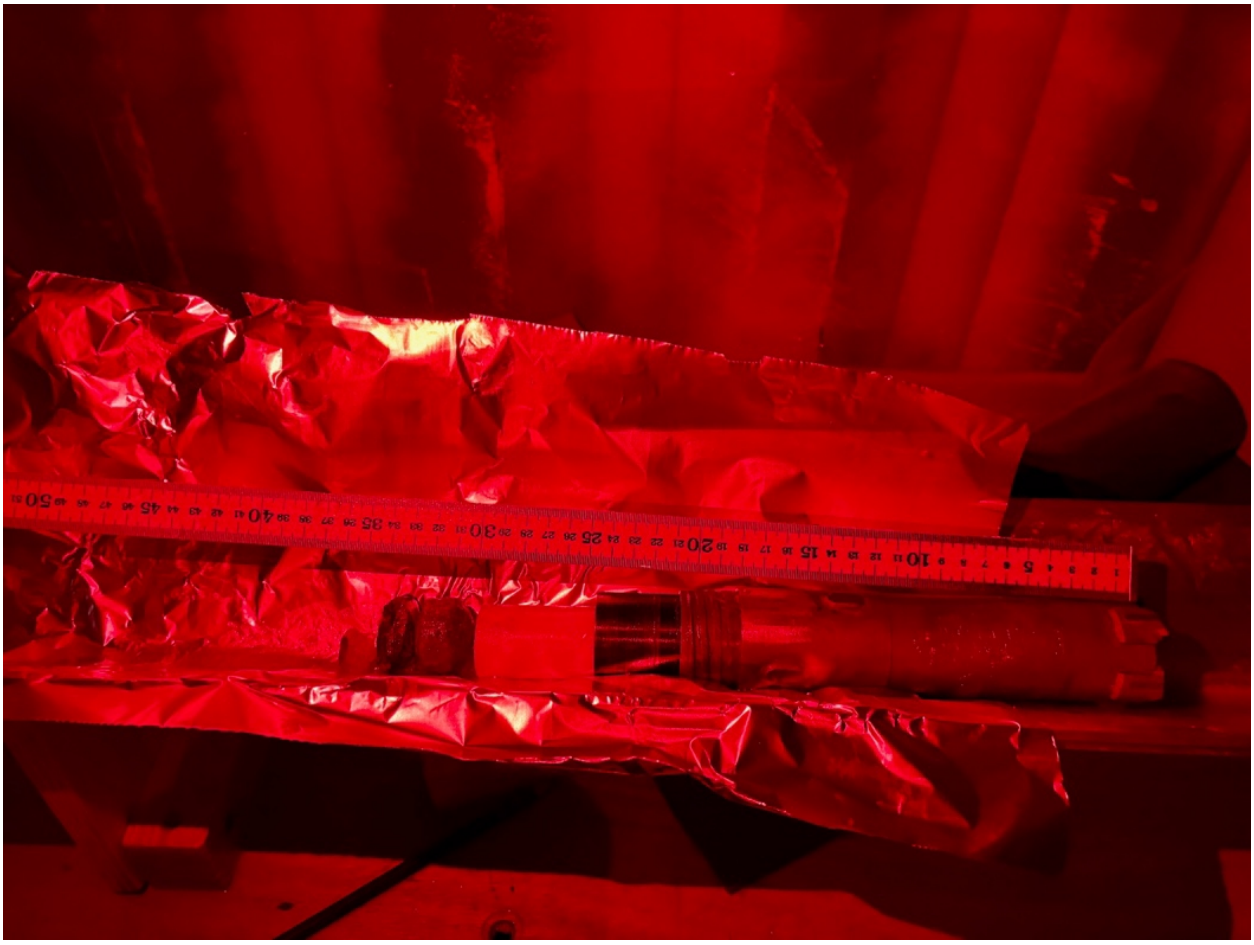

Figure S3_7: Bag n. RD5-25-26. top on the left.