

## Description of the dive in Plurdalen, Norway, February 2014

The plan was to dive in two teams. The first team consisted of two divers (hereafter “diver-1 and 2”), and the second team consisted of three divers (“diver-3, 4 and 5”). The second team was supposed to enter the water two hours after the first team’s start. The planned diving route went from Plura to Steinuglefåget, overnight in the rented house near the Plura entrance (while gears in the cave), and dive back the following day.

The estimated dive time was five hours, with maximum planned depth of 129 meters. A bail-out plan was communicated with the both teams, and adequate bail-out gas and bailout rebreathers were carried along.

### Preparations:

The first team begins to make a hole in the ice at the Plura start site. The second team transports the exchange clothes and gears to Steinuflåget end.

The second team returns to Plura dive starting site and helps the first team to start their dive.

After this, the second team starts with their own preparations and begins their dive approximately two hours after the first team.

### Dive:

#### The first team:

The first part of the dive was uneventful. After passing restrictions, which are located just before the maximum depth of 129 meters, the team started to ascend. Diver-2 gets stuck in a restriction at about 110 meters. Despite every effort, diver-2 can’t get out, and faces simultaneously problems with the rebreather. Diver-1 tries in every way to help, but despite these efforts, diver-2 dies at the restriction.

Diver-1 has to continue ascending alone to Steinuglefåget. Due to the excess time spent at the depth, diver-1’s estimated total dive time increases now from five hours to more than eight hours. This uses all the margins in the dive plan. Diver-1 has to cut about 45 minutes out of the last six-meter decompression stop, but survives without decompression sickness symptoms. Diver-1 stays at the Steinuflåget waiting for the diver-3, who was already visible in the water during the last decompression stops.

#### The second team:

The first part of the dive was uneventful. After passing restrictions, which are located just before the maximum depth of 129 meters, the team started to ascend. At 110 meters, diver-3 discovers the body of diver-2. Diver-3 tries to free diver-2, without success. Diver-3 starts to take off own equipment in order to negotiate through the restriction, the deceased, diver-2. At the same time, diver-4 has faced difficulties with the rebreather, and has started using the bail-out gas. Diver-5 tries to help diver-4, but diver-4 dies at a depth of 111 meters. Diver-5 tries to signal diver-3 about the situation, but can’t get message through. Diver-3 manages to pass the restriction and assumes that diver-4 and diver-5 have turned back. Diver-3 continues alone to ascend towards Steinuflåget.

Due to the excess time spent at the depth, diver-3’s estimated total dive time increases now from five hours to more than eight hours, consuming all the margins. Diver-3 meets diver-1 at about 12 meters. At six meters, diver-3 cuts off about 80 minutes of decompression time, resulting to mild joint pain. After an hour after surfacing, diver-3 begins climbing up and out from the cave with diver-1.

After the accident to diver-4, diver-5 turns back to the Plura direction. Diver-5 had tried to signal diver-3 to come along, but the message didn’t go through. Due to the excess time spent at the depth, nonoptimal dive route, and later malfunction of the diver propulsion vehicle, diver-5’s estimated total dive time increases now from five hours to more than eleven hours. Diver-5 has to cut off 90 minutes of decompression at six meters

depth, after having no more resources to commence the decompression. However, no decompression sickness symptoms occur.

Aftercare:

Divers 1 and 3 use a local resident to alarm the police and rescue forces.

After diver-5 surfaced, divers 1, 3 and 5 were transferred by medical helicopter and medical plane to Tromsø hospital. Diver-3 undergoes two chamber treatments, and divers 1 and 5 undergo one chamber treatment.