
SLUG LAKE, MAMMOTH CAVE, JENOLAN

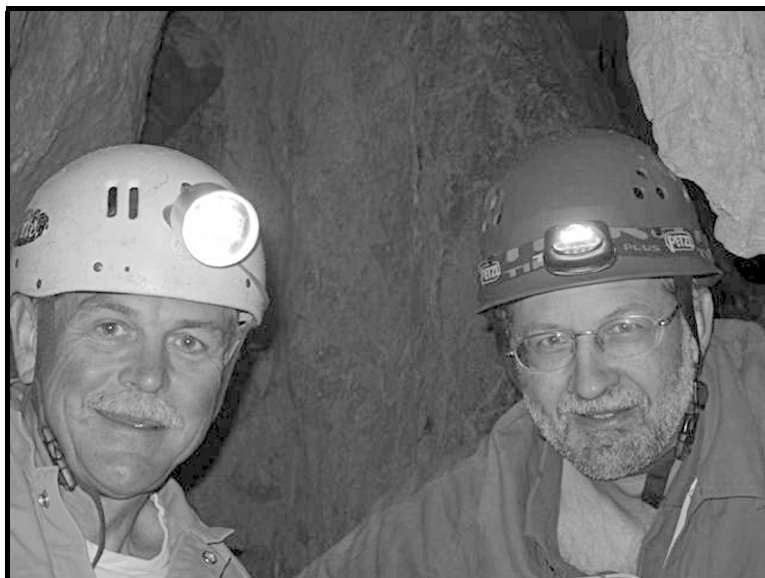
BY JOHN DALLA-ZUANNA, PHOTOS PAUL BOLER

[Written by JDZ for the Cave Divers Association of Australia. Thanks for permission to reprint this in the Bull! ed.]

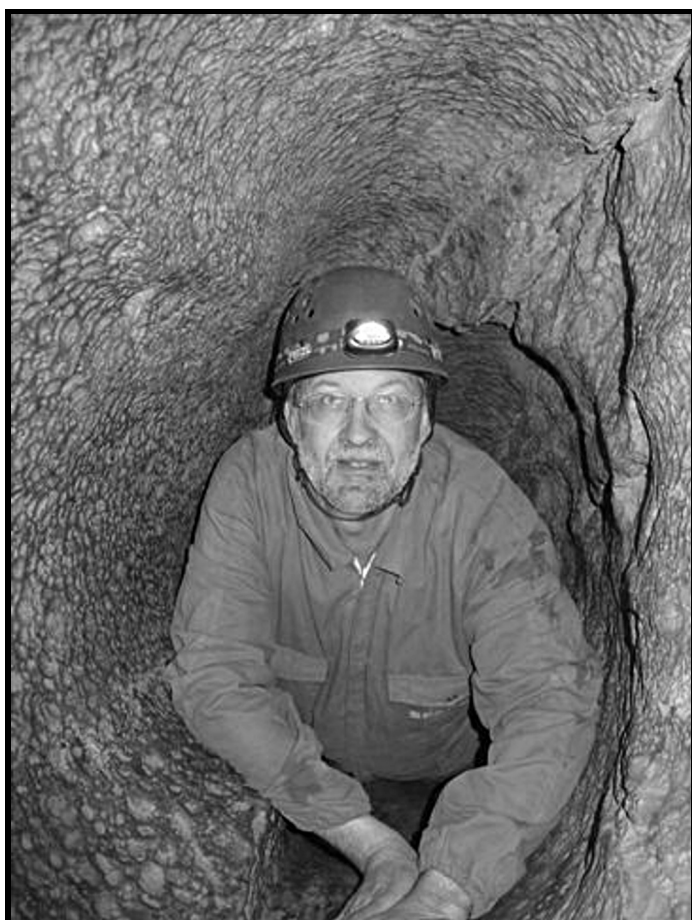
Slug Lake, what an uninviting name, that is, unless you're a cave diver.... arguably, one of the most exciting cave dive locations found in the Jenolan Caves region, NSW.

Recently, Ken Smith, by now known as the legendary "Pinger Man" aka nuclear physicist and rocket scientist, and I, generally good-looking cave diver and all-round nice guy, got an invitation from the Sydney University Speleological Society (SUSS) to assist in their ongoing survey of the underground riverways throughout the Jenolan Caves region in NSW, Australia. In particular, the pinpointing of Ground Zero (GZ) of a place called the Gargle Chamber, which, at this point in time, is only accessible via Slug Lake!

What does all this mean? The story of the ongoing SUSS exploration of the Jenolan Caves started way back in 1948, with current preparations for SUSS's 60th Birthday Celebrations underway. (A link to their activities can be found here – <http://www.ee.usyd.edu.au/suss/>)



A Pinger Man and a generally good-looking diver in Mammoth



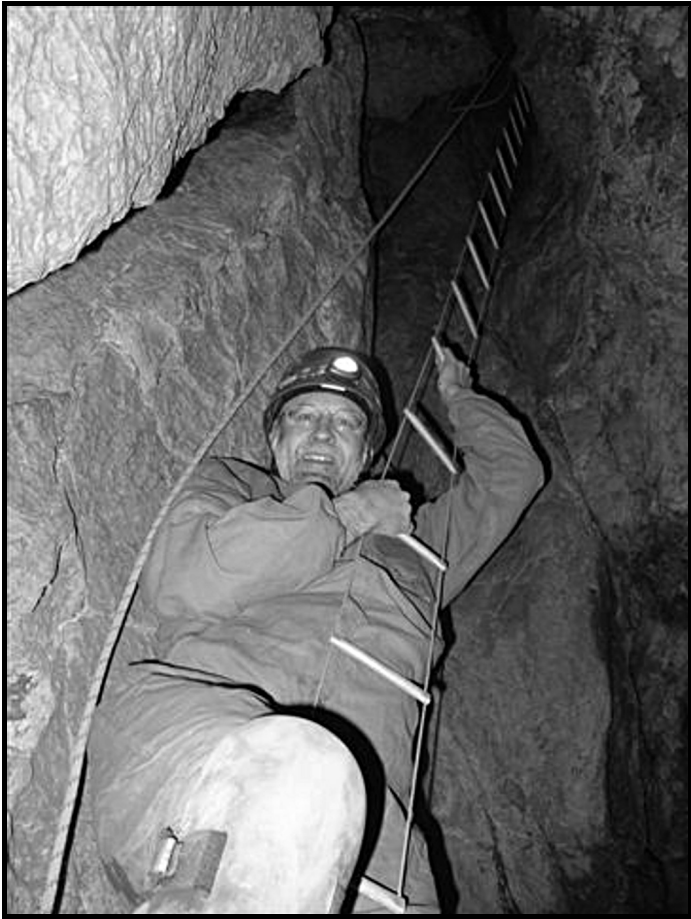
"The tanks have to go WHERE???"

Through numerous excursions over the years, and surveys, an excellent map of the underground system of one of the most complicated caves in the world, has slowly evolved. Add the presence of an underground river system and the map gets bigger and of course more complex and exciting....

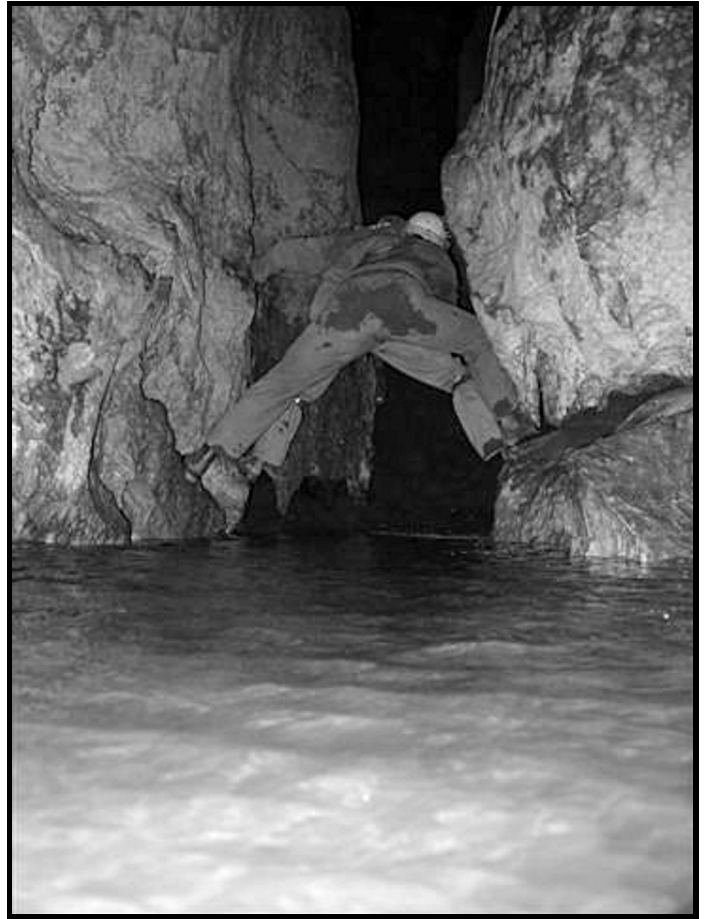
Thus, on the weekend of the 15/16 Sept 07, the plan included getting a party of 12 people including the two divers, Michael Collins (of <http://www.trimixdivers.com> fame) and myself to Slug Lake with our dive equipment. From here, we were to set up a series of pinger points to assist in bringing the accuracy of the current sketches of the waterway beyond Slug Lake, and in particular, locate the position of the Gargle Chamber within the mapped network of dry passages on either side of the waterways.

Early on Saturday morning, the party entered the enormous Mammoth Cave, and very quickly found ourselves on our hands and knees crawling through a myriad of passages, descending vertical drops by rope (the Forty Footer), sliding through scalloped tubes, bracing across crevices over streams, wading through chest high waterways, rigging a Tyrolean Traverse (flying fox) to transport packs and dive gear across the river and up the pitch on the far side and finally sliding down a 40 degree long muddy sloop to the waters edge of Slug Lake. The journey to the lake with all the equipment took approximately 3 hours!

Whilst Slug Lake was initially dived by Ron Allum as far back as 1980, further dive pushes into the waterway



On the Forty Foot



Crossing Lower River

on air only yielded more question marks as the depth of exploration reached 70 meters with no end in sight. In Dec, 1998, the SUSS team gained permission to explore further with Trimix Open Circuit and here, Ron Allum and Rod O'Brien descended to a depth of 96 meters leaving a continuing, descending passage....

Slug Lake is currently the only access point to what could very well be the deepest section of the Jenolan streamway with the very real potential of this being the deepest cave dive in Australia.

On entering the dive, you find yourself in a roughly round tube of approx 3–4 m diameter and dropping at an angle of approx 60 deg. At 5 m depth a streamway enters from your left and you can feel the gentle outpouring of the Lower River into the downwards passage. At 30 m the scene gets interesting.... you are at the base of the siphon tube and the soil and sediment has settled forming a restriction of less than 100 mm high! The guideline slips under the upside down apex and here the diver encounters a 40 cm length of line attached to the guideline with a trowel attached to the other end! Yes you guessed it, time to dig! The sediment floor does give way to digging and forward pushing by the diver, and after approx 2 meters you break out up into a rising passage and then the floor drops away from under you....

By the way, the visibility of the first diver on this dive was approx 100 mm, and the second diver, 0 mm. Yes, those figures are correct! The riverway visibility can reduce to zero, depending on prior upstream activ-



John with the pingers in Slug Lake

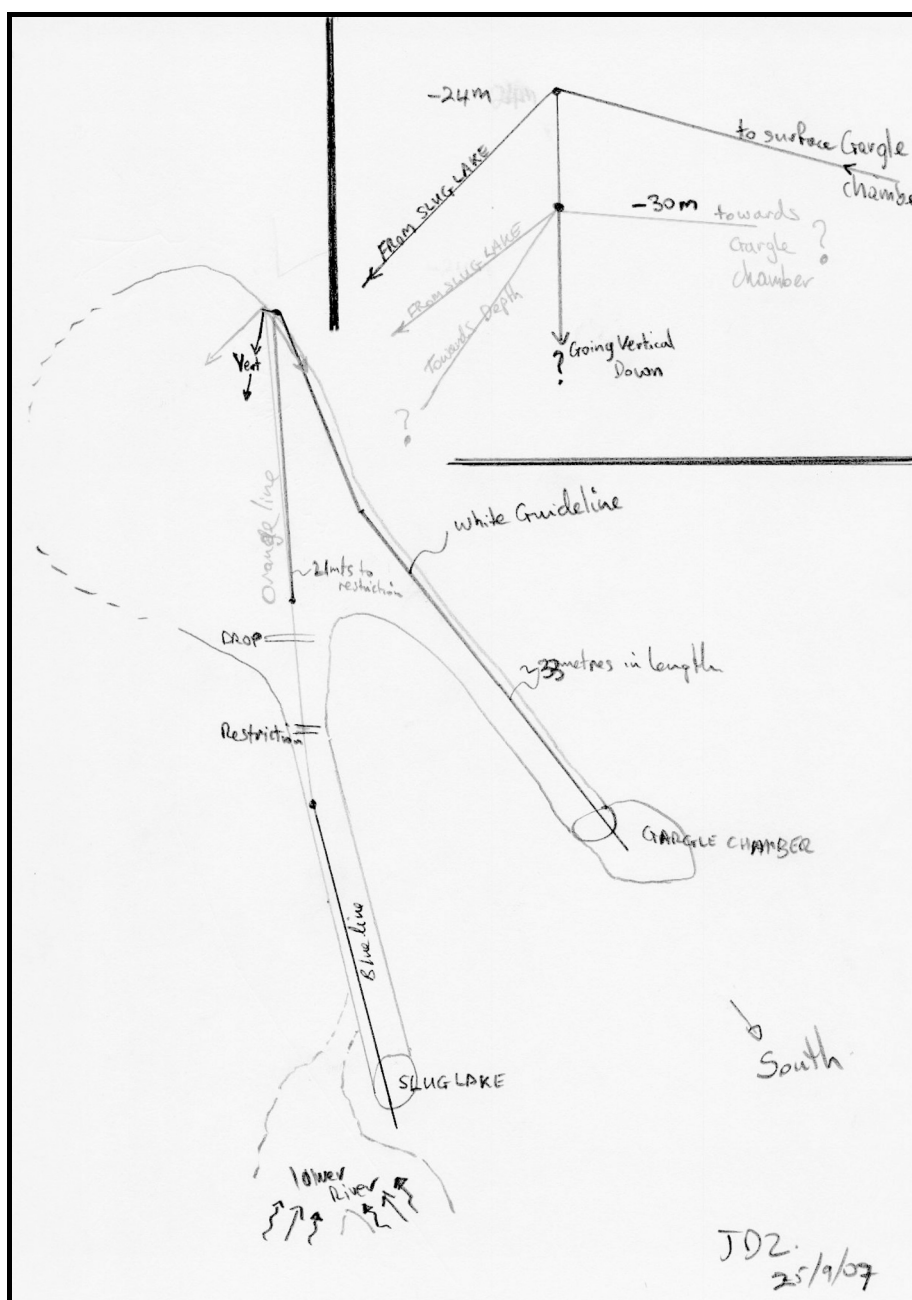
ity. Sometimes though, up to 10 m viz can be experienced. It all depends on the runoff and how people cross Lower River.

So, following the current fixed line finds you swimming in free space until reaching the far wall of the chamber at 24 m, where one line heads downwards into an abyss and the other heads upwards and right to another tube (similar to the entrance tube) rising also at approx 60 deg and surfacing into what is now called the Gargle Chamber.

The Gargle Chamber is a vertical fissure-like chamber with mainly smooth walls, little more than 5 m across and 10 m long, here, the diver exiting from the water's edge, is faced with a vertical wall of approx 10 m, which needs to be scaled in order to reach the upper levels with possibility of new passageways. The muddy sloping floor and sharp rocks need to be negotiated with extreme caution and then a vertical wall needs to be climbed. To date, it has been climbed to a height of approx 5 m by bolting the wall, and more trips are required to continue.

Back at the u/w junction, heading downwards into a somewhat large cavity, there is a floor at approx 60 m and an entrance to another sump, which heads down to a depth of at least 96 m and continues downwards.

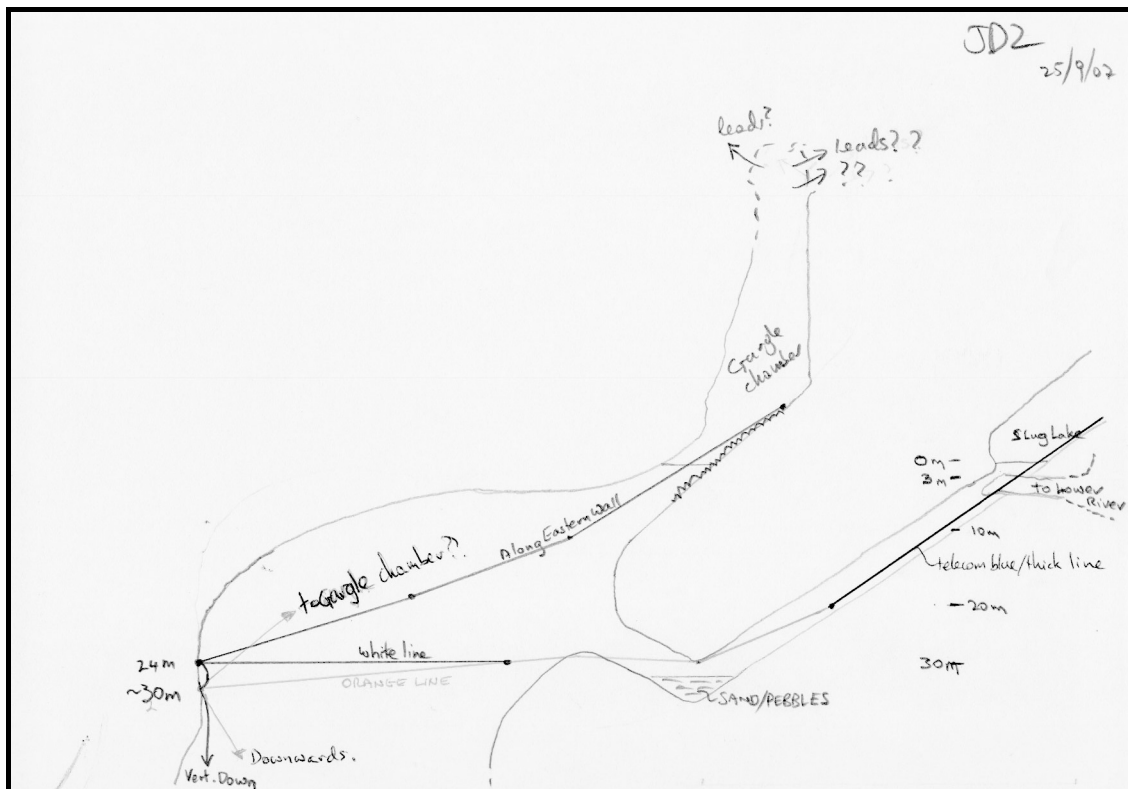
SUSS is committed to the ongoing exploration in this cave, however permits, logistics and personnel are required and access, notwithstanding trimix requirements, requires due process. Ken and I would like to express our gratitude to the SUSS team for giving us the opportunity in assisting with their exploration.



Plan sketch of Slug Lake



Lower River



Elevation sketch of Slug Lake