FROM: Tom Rich TO: Steve Heimel DATE: 24 Aug 2007

The project that brought me to Alaska which has just been successfully completed after 18 years, was to test the feasibility of tunneling into permafrost exposed on the 30 metre high left bank of the Colville River which flows across the North Slope for the purpose of collecting dinosaurs in a way never previously attempted.

The traditional method to collect dinosaurs there has been to excavate in the open. For two reasons, the alternative to tunnel for them came to mind. First, on a wet year unlike this one, within 1-2 km while on site, one hears the rumble of 1-10 tonnes of mud spontaneously slipping off the bank and plunging into the river. If one should be below such an event, one would either be buried in mud or swept into the freezing waters of the Colville River which flow just below where one is perched. When that nearly happned to me in the summer of 1989 on my first visit to Alaska, it concentrated my mind. Second, the fossil bones excavated by the conventional method have been repeatedly thawed and refrozen each year as they are near the existing surface of the bank. This means that the fossil bones are frequently riddled with fractures.

To overcome these two problems, it occurred to me that off-the-shelf procedures that Alaska miners had long used to excavate tunnels into permafrost elsehwere could be employed to uncover the dinosaur bones.

After this initial inspiration, there was the little matter of money. I knew that doing this sort of thing in the Arctic was not going to be cheap. Most of the next 18 years was spent in one futile attempt after another seeking support for what was regarded as an outlandish project by conventional funding agencies; e.g. the National Geographic Society and the Australian Research Committee, to name just two. I had given up ever doing this test dig when I chanced to describe it to a woman by the name of Ruth Berry. An Australian, too, she was making a documentary entitled, "The Terrible Lizards of Oz". As we were driving to one of my fossil sites one day to do some filming there for that documentary, after discussing politics and the ongoing drought and other burning issues of the moment, I just happened to outline this project to her. Her comment to this was, "That would make a good documentary." I never expected to hear anything more about it from her. I was guite wrong. By dint of a lot of hard work, she put together a consortium of media intersts in the United States, Australia, and Europe to sponsor the making of a documentary about the work as well as fund the work itself. Once she had done that, on the strength of her results, a relatively modest grant was obtained from the Australian Research Committee to also support the project.

This was to be the second dinosaur tunnel I had ever excavated. In fact as far as I know, although dinosaurs and other fossils have been collected in existing mines and tunnels for centuries, no one had ever started a tunnel from scratch for the express purpose of excavating fossils until I did this with the aid of a bevy of volunteers on the southeast coast of Australia beginning in 1984. No doubt it was that experience that

made me think of doing the same sort of thing on the North Slope. That Australian experience enabled me to work closely with an experienced Arctic miner, Robert "Bobby" Fithian of Lower Tonsina who supervised the first of the two phases of this project.

In late March, Bobby and his crew of three experienced miners together with Ruth and her filming crew of two plus Kevin May of the University of Alaska Museum of the North in Fairbanks journied overland to the site from Deadhorse with the aid of ConocoPhillips which provided accomodation for the crew at their 2P camp. The tunnel was cut into the bank to a depth of 8 metres {27 feet} and a snowshed or portico constructed at the front of it to keep the temperature inside the tunnel below freezing in the summer. This was done by the construction of two insulated walls, one inside the other. The presence of a snowshed meant that if debris slide down the slope above the entrance of the tunnel, it would not fall on someone entering at that moment but accumulate on the roof of the snow shed. The snow shed was closed at the end of the March/April dig in anticipation of a return to the site in August. At that time the plan was to excavate the fossils from the floor of the tunnel, the tunnel itself having been deliberately cut above the known level of the fossil layer.

In June, the Colville River was unusually high. This resulted in the flood of the tunnel. Upon returning to the site in August and opening the tunnel after shoveling away tonnes of debris that had fallen from the bank above in the meantime, we found about 60 cm {2 feet} of a witches brew of ice welding large timbers and rubbish to the floor of the tunnel. Nearly a week was required to remove all of that. It was only possible to do that because we had air tools [jack hammers and jack picks] on site. ConocoPhillips had kindly flown in a compressor that was vital to supply the compressed air to drive those tools. Without them, we never would have reached the fossils layer during this visit.

Once the witches brew was removed, a structure was constructed within the tunnel to prevent any permafrost on the ceiling from falling on the people working below to collect the fossils. Then, at last the fossil collecting could begin. Once this stage was reached, the fossils could be collected in much the same way as outside and this was done.

Why, you may well be asking, would an Australian vertebrate palaeontologist be interested in testing a method to collect dinosaurs on the North Slope? The answer is simple. 100 million years ago, southeastern Australia was well within the Antarctic Circle of the day. My wife, Patricia Vickers-Rich, and I came to Alaska in 1989 because we were interested in comparing the polar dinosuars of southeastern Austrlia with those from polar Alaska. Anything we could do to promote the study of Alaska's polar dinosaurs would thus ultimately benefit us. Hence, my desire to try out a method which may make a significant advance in the study of Alaskan polar dinosaurs possible.