IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Interactive Presentations - IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (IP)

Author: Ms. Rhonda O'Sullivan
University of Queensland, Australia

PROMOTING TRANSFORMATION THROUGHOUT THE SPACE MINING CYCLE.

Abstract

Resource utilisation in space will generate by-products and transform the extraction site. The by-products generated during terrestrial mining are typically labelled waste and require safe storage throughout and post mining activities. When mining ceases, mine sites have been abandoned (distant past), rehabilitated (recent past) and now are being repurposed (future) to ensure the productive use of mining properties are sustained where possible. With over 100 years of mining experience of numerous commodities, greater than 50,000 abandoned mines, and significant operations now coming to the end of their mining life, Australia is in a unique position to offer insights into challenges that occur at the end of a mine's life cycle.

Lessons learnt on Earth demonstrate that planning and preparation for closure of space mining operations is as important as opening operations. Learnings from terrestrial mining rehabilitation and recent re-purposing innovations could serve to lead the way we define the life cycle of resource utilisation activities in space. Abandoned space mines and inadequate by-product containment will undoubtedly result in additional space hazards and debris. The development of space mining legislation must aim to ensure foreseeable challenges are addressed to preserve the integrity of extraction activities to lead and preserve the global reputation of resource utilisation in space. Space resource utilisation will be an international, intercultural and intergenerational activity. Regulation facilitating innovation throughout the entirety of space mining life cycle will allow safe by-product containment (storage), recycling and the re-purpose of resource utilisation sites. These processes will be critical to ensuring and maintaining economic support a positive reputation for resource utilisation.