

Name: Behnaz Bahroudi

Thesis Title: Topsoil-till cover depth and amendments: Influence on Ecosystem Reclamation of Tailings Storage Facilities

Supervisor: Dr. Lauchlan Fraser

Committee Members: Dr. Wendy Gardner, Dr. Thomas Pypker, Mr. Brandon Lewis

Abstract of your research - a brief overview of what your thesis research is or will be. Suggested length - 150 - 250 words, single-spaced.

The mining industry plays a pivotal role in British Columbia's economic development. However, the practice of mining creates landscape disturbances, that are particularly impactful on the province's ecologically fragile grassland ecosystems, highlighting the importance of reclamation practices to return disturbed grassland to a sustainable ecosystem. This study explores strategies to enhance reclamation efforts by conducting a greenhouse experiment and a field experiment in a reclaimed Tailings Storage Facility (TSF) to investigate the effects of different topsoil and subsoil cover depths (i.e. 10 cm topsoil, 20 cm subsoil and 15 cm topsoil and 15cm subsoil), and amendments including zeolite, leonardite, and compost in different ratios on soil quality and plant communities. Furthermore, this research examines the success of tilling closed TSFs after approximately 20 years of reclamation in order to increase soil quality and plant productivity. The findings of this study will provide valuable insights into sustainable practices to reclaim tailings storage facilities in the semiarid interior of BC.