

APPENDIX E SUMMARY OF RECLAMATION RESEARCH

Summary of Reclamation Research completed since 2013 by Project Component

Project Tracking and Schedule	Site Wide			North Pile		Underground Mine	Infrastructure	
Year	Community Engagement and Traditional Knowledge	Revegetation	Development of Closure Criteria	North Pile Closure Performance (Water Quality)	North Pile Rock Cover and Physical Stability	Post-Closure Groundwater Conditions	Management and Disposal of Non-Hazardous Solid Waste	Disposal of Contaminated Soils and Sediments
2013 (completed as described in ICRP v3.2)	Presentation to communities	Rock Pad Reclamation Research	No activities planned	Desktop review of thermal and water quality monitoring data collected at the North Pile area	Starter Cell Rock Cover 50% design	No activities planned	Confirmation and/or refinement of the predicted volumes of non-hazardous debris at closure	No activities planned
	Summer site visits	Seed Development Research		Installation of replacement thermistors at the Starter Cell and East Cell	Continued visual inspections and monitoring			
	Snap Lake fish tasting site visits	Organic Stockpile Research		Continued monitoring of the water control structures, standpipe piezometers and thermistors network	Continued monitoring of trial cover pads Installation of replacement thermistors and piezometers at the Starter and East Cells			
2014-2016 (completed)	Snap Lake fish tasting site visits (Annually)	Continued monitoring, advancement and interpretation of ongoing research projects	Desktop review and gap analysis	Field investigation and instrument installation of Starter Cell waste materials (2015)	Starter Cell drilling, PK geotechnical investigation and instrumentation installations (2015)	Desktop review	Assess the sequence of closure at the various infrastructure areas at the mine site	Desktop review and risk assessment (2016)
	Continued collaboration with communities (method and frequency to be determined)	Development of preliminary closure criteria for revegetation success at project areas		Development of preliminary closure criteria	Geochemical assessment of waste materials and potential impacts to seepage water quality	Updates to geotechnical numerical models (2016)		
		Closure Criteria Workshop	Development of operations and management plans to support revegetation methods		Continued monitoring of the water control structures, standpipe piezometers and thermistors network (2014-2016)	Starter Cell Rock Cover 100% design (2016)	Laboratory testing of PK backfill	
					Continued visual inspections and monitoring	Continued monitoring of trial cover pads		
After 2016 (planned)	Snap Lake fish tasting site visits (Annually)	Assessment of developed vegetation communities	Refinement of closure criteria as necessary	Field investigation and instrument installation of East Cell and West Cell waste materials (will commence following completion of deposition activities at each cell)	Instrumentation and performance monitoring of the Starter Cell Rock Cover	Additional research will be identified based on findings of completed work No additional activities planned	Develop standard operating procedure for decommissioning tasks	To be determined based on findings of the Environmental Hazards Assessment during Closure activities
	Additional site visits, community meetings and workshops prior to each revision of the ICRP document	Desktop review focused on potential metal uptake within the North Pile Rock Cover		Continued monitoring of the water control structures, standpipe piezometers and thermistors network and preparation of summary reports (2016 to end of mining)	Findings of completed research will be used to revise the closure design concept used at the Starter Cell and apply updated methods to the East Cell and West Cell			
				Installation of additional monitoring equipment will be completed as recommended based on research findings				

LEGEND:		ADDRESSED
		ONGOING