

CRC ORE Research Program PROJECT PIPELINE

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March 2021



Development Projects (timeline is calendar year)	Partners	2015		2016				2017				2018				2019				2020				2021		
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
PROGRAM 1: DEFINE																										
P1-001 & P1-009 & P1-012 : Gamma Activation Analysis for geo-sensing	CSIRO					Concept TRL2-TRL3 P1-001					Design TRL4-TRL5 P1-009					Prototype TRL 5 P1-012										
P1-002 : PGNA elemental logging for Instrumenting the Bench	CSIRO					Prototype TRL5 P1-002																				
P1-003 : Magnetic resonance of covellite for geo-sensing	CSIRO					Prototype TRL4 P1-003																				
P1-004 : GE.View an online tool for assessing Grade Engineering® (GE) opportunities	MRIWA					Enhance database TRL4 P1-004																				
P1-005 : Upconversion fluorescence of minerals for geo-sensing	Uni of Adelaide					Phase 1: Design TRL2-TRL4 Phase 2: Testing TRL5 P1-005																				
P1-006 : Geological controls on grade by size department	UTAS					Phase 1 Models TRL2-TRL4 Phase 2: Testing TRL5 P1-006																				
P1-007 : Surface techniques for geo-sensing	UTAS					Review TRL4 P1-007																				
P1-011 : Resource scale heterogeneity evaluation	Uni of Adelaide																TRL2-TRL5 P1-011									
P1-013 , P1-015 & P1-019 : Magnetic Resonance Bench Analysis – Stage 1 Laboratory Feasibility	CSIRO																TRL 4 P1-013						Stage 2A: TRL 5 Demonstration P1-015	Stage 2B TRL 6 Site Demonstration P1-019		
P1-014 : Real-Time Fluorine Mineral Identification using Novel Fluorescence Technology	University of Adelaide																								TRL3-TRL6 P1-014	
P1-017 : Statistical Interpretation of Grade Distribution	UQ																								TRL1-TRL4 P1-017	
PROGRAM 2: SEPARATE																										
P2-001 : Sensors for rock mass characterisation	Mining ³											TRL4-TRL5 P2-001					Next phase dependent on outcomes of review									
P2-002 : Blast design optimisation for GE	Mining ³											TRL3-TRL5 P2-002														
P2-003 : Orebody DNA (M3-003)	Mining ³																									
P2-004 & P2-006 : LIBS analysis for Geo-sensing	NRC																								Prototype TRL5 P2-006	
P2-005 : Simulation of GE mining processes	UQ, Mining ³																									
P2-007 : Custom Blast Design Value Proposition	Mining ³																								TRL6 P2-007	
P2-008 : Heterogeneity Index for ORE Mixing	Mining ³																								TRL5 P2-008	
P2-009 : Elastic Limit Blast Design to Maximise the Grade Engineering Response	Mining ³																								TRL3 P2-009	
P2-010 : Valorisation of GE By-Products	Mining ³																								TRL2 P2-010	
P2-011 : Dynamic Size Separator	Mining ³																								TRL3 P2-011	
P2-012 : Value model for use of GE Simulation Software	Mining ³																								TRL5 P2-012	
P2-013 : DAS for non-tumbling ore mills	Mining ³																								TRL3 to 4 P2-013	
PROGRAM 3: EXTRACT																										
P3-001 : IES Baseline Project	CRC ORE																								IES Development TRL4-TRL6 P3-001	
P3-006 : AMIRA P9Q	UQ, Amira and others																								Models TRL5-TRL8 P3-006	
P3-005 : AMIRA P420F	Curtin																								Models – TRL5 P3-005	
P3-008 : Comminution optimisation for GE (Selective Breakage)	JKMRC, Gekko																								TRL4-TRL6 P3-008	
P3-007 : Validation of mass balance and model calibration in IES (P9Q AR)	UQ																								TRL5 P3-007	
P3-009 : Additional Research P9Q – IES Development Project	AMIRA, JKMRC, UFRU, UCT, Hacettepe, Chalmers, Anglo American, AngloGold Ashanti, Barrick, BGRIMM, JKTech, Magotteaux, Metso, Newmont, South32, Vale Technology, Weir Minerals																								TRL7 P3-009	
P3-010 : Beneficiation of Hard Rock Lithium Ores	Curtin																								TRL3 P3-010	
P3-012 : IES Foundation Project	AMIRA, Hatch, Sedgman, BHP, Anglo American, Teck																								TRL 7-9 P3-012	
P3-013 : Development of a gravity-based amenability test for coarse gangue rejection of base metal ores	Curtin																								TRL5 P3-013	
PROGRAM 4: CONTROL																										
P4-001 & P4-003 : Data driven models	QUT																								Plan TRL2 P4-001	
P4-004 : Implementation Accelerator	Clareo																								Models TRL2-TRL5 P4-003	
P4-007 : Optimised Production Scheduling for Grade Engineering	Curtin																								TRL4-TRL7 P4-004	
P4-008 : Business and eco-system management tools to overcome barriers to change	QUT																								TRL3-TRL5 P4-007	
P4-009 : Developing a risk management model to support new technology adoption in the mining industry	QUT																								TRL N/A P4-008	
P4-010 : Navigating socio-political stakeholder environments	QUT																								TRL N/A P4-009	
P4-012 : Minimising Mining's Footprint: Economic, managerial and social drivers and barriers to the decarbonisation of energy consumption in the mining sector	QUT																								TRL N/A P4-010	
																									TRL N/A P4-012	