



FWP0001308

# BROGANS CREEK FORWARD PROGRAM

Thursday 3 October 2024 to Saturday 2 October 2027



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# Summary

DETAIL	
Mine	Brogans Creek
Reference	FWP0001308
Forward program commencement date	Thursday 3 October 2024
Forward program end date	Saturday 2 October 2027
Forward program revision (if applicable)	
Contact	Donald Cheong
Mining leases	PLL 502 (1924), PLL 1216 (1924), PL(MP)L 2903 (1906), PLL 501 (1924), PLL 1268 (1924), ML 6119 (1906), PLL 1195 (1924), PLL 1178 (1924), PL(MP)L 2905 (1906), PLL 1266 (1924), ML 6175 (1906), PLL 1265 (1924)
Project location	GRAYMONT (NSW) PTY LTD
Date of submission	Tuesday 5 March 2024

# Important

The department may make the information in your program and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your program to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.



# Three-year forecast – surface disturbance activities

# **Project description**

The Brogans Creek Quarry is inactive. Operations ceased in 1977 under prior ownership. Graymont acquired the inactive quarry in August 2019.

# Description of surface disturbance activities

# **Exploration activities**

No surface disturbance activities proposed.

# **Construction activities**

No construction activities planned.

# Mining schedule

Mining development method and sequencing and general mine features.

No mining is proposed within the next three years.

Areas identified for emplacements, the sequencing of emplacements, construction, and management.

No emplacement is proposed within the next three years.

Processing infrastructure activities and the location of tailings facilities and schedule for emplacement.

No processing activities are proposed within the next three years.

Waste disposal and materials handling operations.

Management of contaminated soils will be in accordance with the site remediation plan.

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# NSW Resources Regulator

# **Key production milestones**

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m³)	0	0	0
Rock/overburden	(m³)	0	0	0
Ore	(Mt)	0	0	0
Reject material <sup>1</sup>	(Mt)	0	0	0
Product	(Mt)	0	0	0

<sup>&</sup>lt;sup>1</sup> This includes coarse rejects, tailings and any other wastes resulting from beneficiation.



# Three-year rehabilitation forecast

# Rehabilitation maintenance and corrective actions

No rehabilitation maintenance or corrective actions are planned within the next three years.

# Rehabilitation schedule

Progressive rehabilitation is expected to recommence following the completion of contamination investigations, so as to avoid disturbance of potentially contaminated soils that may worsen the extent of the contamination or compromise the investigation.

# Progressive mining and rehabilitation statistics

# Three-yearly forecast cumulative disturbance and rehabilitation progression

FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A Total surface disturbance footprint	(ha)	51.35	51.35	51.35
<b>B</b> Total active disturbance	(ha)	0	0	0
P Total new area of land proposed for active rehabilitation	(ha)	0	0	0

# Attachment 1 – Reporting Definitions

REPO	ORTING CATEGORY	DEFINITION
Α	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities.
		The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below).
		Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
В	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
С	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation – decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these
		phases of rehabilitation.
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites.
		Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.

# Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	<ul> <li>This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria.</li> <li>For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile.</li> <li>This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.</li> </ul>
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

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WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the <i>Biodiversity Conservation Act 2016</i> and the <i>Fisheries Management Act 1994</i> (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the <i>Mining Act 1992</i> .
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	<ul> <li>Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: <ul> <li>upload rehabilitation geographical information system (GIS) spatial data</li> <li>develop rehabilitation GIS spatial data (using online tracing functions)</li> <li>generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities.</li> </ul> </li> <li>Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.</li> </ul>
Mining area	As defined in the <i>Mining Act 1992</i> .
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the <i>Mining Act 1992.</i>
Native vegetation	Has the same meaning as that term under section 60B of the <i>Local Land Services Act</i> 2013.
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

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WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: active mining decommissioning landform Establishment growth medium development ecosystem and land use establishment ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of <i>Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate</i> application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

# NSW Resources Regulator

WORD	DEFINITION
Relevant stakeholders	<ul> <li>Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: <ul> <li>the relevant development consent authority</li> <li>the local council</li> <li>the relevant landholder(s)</li> <li>community consultative committee (if required under the development consent) or equivalent consultative group</li> <li>affected land holder(s)</li> <li>government agencies relevant to the final land use</li> <li>affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities)</li> <li>local Aboriginal communities, and</li> <li>any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.</li> </ul> </li> </ul>
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water <sup>2</sup> .
Waste	Has the same meaning as that term under the <i>Protection of the Environment Operations Act 1997</i> .

Forward Program (SMALL MINE) v2.1

<sup>&</sup>lt;sup>2</sup> Commonwealth of Australia (DITR), 2007. *Tailings Management*.

Site Registration	Date January 2024
Complete the following fields p	prior to calculating the Security Deposit.
Mine Name:	Brogans Creek Mine
Lease(s):	ML 6119, ML6175, PL(MP)L 2903, PL(MP)L 2905, PLL 1178, PLL 1195, PLL 1216, PLL 1265, PLL12
Title Holder:	Graymont (NSW) Pty Ltd
Mine Operator:	Graymont (NSW) Pty Ltd
Term of RCE:	
Current Security:	\$1,104,000 Date of last Security Deposit review 18/03/2021
Mine Contact:	Wayne Wolfe
Position:	Mine Manager
Address:	78 Charbon Road Charbon NSW 2848
Phone:	02 6379 4423 Email: wayne.wolfe@graymont.com

# **Site Description**

The following site specific information is requested to provide background information in the context of calculating the Security Deposit.

Summary of Mine Activities		Environmental Sensitivities
Total annual production (tonnes):	0	Surrounding land use (tick all that apply):
Mine lease area (ha):	177.77	
	10.0	✓ Pasture
Area of extraction (ha):	10.2	Forest
Area of disturbance (ha):	34.97	Undisturbed habitat
Rehabilitation in progress (ha):	5.22	🗖 Urban
Rehabilitation complete (ha): Achieved ecosystem sustainability		Environmental Issues affecting site (tick all that apply)
Forward Program/MOP Utilised:		Threatened flora
Reference no. version and date		Threatened fauna
		Cultural heritage items
Forward Program/MOP Plan Utilised: Reference Plan no, version and date	1 Brogans Creek Care & Maintenar	Natural heritage features
Reference Flair no. Version and date	2	Mine subsidence
Plan(s) attached	-	Surface water pollution
	3	Ground water pollution
		Hydrocarbon contamination
		☐ Methane drainage/venting
		Spontaneous combustion
		Acid Mine Drainage
NOTE		Within drinking water catchment
Ensure rehabilitation cost estimation refle		Other (describe below)
the lease. Contingencies should be all		contamination identified due to historic
incorporated els estimat		
estinat	ion.	



Regional NSW

## **Open Cut Summary Rehabilitation Cost Estimation**

### Note: Sections of this page are automatically filled in from the registration page

Mine Name:	Brogans Creek Mine
Lease(s):	ML 6119, ML6175, PL(MP)L 2903, PL(MP)L 2905, PLL 1178, PLL 1195, PLL 1216, PLL 1265, PLL1266,
Authorisation Owner:	Graymont (NSW) Pty Ltd
Mine Operator:	Graymont (NSW) Pty Ltd
Term of RCE:	
Current Security:	\$1,104,000 Date of Last Security Deposit Review: 18/03/2021
Mine Contact:	Wayne Wolfe
Position:	Mine Manager
Address:	78 Charbon Road Charbon NSW 2848
Phone:	02 6379 4423 Email: wayne.wolfe@graymont.com

Domain	Security Deposit		
Domain 1: Infrastructure		\$139,396	
Domain 2: Tailings & Rejects			
Domain 3: Overburden & Waste			
Domain 4: Active Mine & Voids	\$55,000		
Domain 5: Management Activities	\$492,800		
Subtotal (Domains and Sundry Items)		\$687,196	
Contingency	10%	\$68,720	
Post Closure Environmental Monitoring	10%	\$68,720	
Project Management and Surveying	10%	\$68,720	
Total Security Deposit for the Mining Project (excl.	of GST)	\$893 355	

Note: GST is not included in the above calculation or as part of rehabilitation security deposits required by the Department.

Alterations have been made to unit prices within this spreadsheet. (Attach a separate sheet providing details of changes).

 $\hfill\square$  The proposed rehabilitation design is generally consistent with the development consent for the project.

This Registration Form, Summary Report and calculation pages are to be printed and attached as an appendix the AEMR or MOP.

This mine security calculation has been estimated using the best available information at the time. It is a true and accurate reflection of the total rehabilitation liability held by this mine.

#### Derick Korte

Company Respresentative's Name

Director

Company Representative's Role / Responsibility

Date Signature

#### **Domain 1a: Infrastructure**

#### **Total Cost for Infrastructure Domain**

\$139,396

Enter data b

Additional Assumptions: Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain Total Landform Establishment: Total Growth Media Development: Total Ecosystem Establishment:

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	Y	60	m	\$75.00		\$4,500	Three concrete pads to be removed	Includes both rails, does not include th conveyor system. Does not include transport to regional disposal facility of equivalent.
		Terr	nination of S		Demolition Wo		\$4,500		
					Rail Infrastruct		\$0 \$0		
	1			Contai	minated Mater	ials Subtotal	\$0		
Vents, Shafts and Boreholes	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	Y	32	each	\$415		\$13,280		Cut collar, remove, cap, backfill capp collar and cover with nearby organic growth material
				Vents, Shat	ts and Boreho	oles Subtotal	\$13,280		
Roads and Tracks	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y	1	ha	\$4,870		\$4,870	Removal of unused roads across mining lease.	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
				F	Roads and Tra	cks Subtotal	\$4,870		
Earthworks / Structural Works (Landform Establishment)	Minor reshaping and pushing	Y	1	ha	\$3,900		\$3,900	Crusher dust stockpile area shaping	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y	1	ha	\$1,600		\$1,600	Contour banks on western slopes	Combination of dozer and excavator work plus grader for ~4 hours each pe ha.
					m Establishm	ent) Subtotal	\$5,500		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Planting tube stock (<15 cm) Direct seeding / fertiliser (pasture grass species)	Y Y	100 21.3	allow ha	\$6.60 \$1,875		\$660 \$39,938		4 m centres. Includes treating, weighing, mixing wi fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	21.3	ha	\$420.00		\$8,946		Assumes 250 kg / ha. These rates ha fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand e this is a suitable standard rate.
	Construct no-climb stock fence around rehabilitated areas	Y	1000	m	\$22.00		\$22,000		Standard rate for no-climb stock fencing.
	Land Preparation and Revegetation (Gro	owth Media De	evelopment a	nd Ecosvste	m Establishme	ent) Subtotal	\$71,544		lonoing.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y	8	allow	\$2,500		\$20,000	Detailed design and construction of spillway. Mobilisation of equipment	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pastur grass.
				W	ater Managem	ent Subtotal	\$20,000		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	21.3	ha	\$925		\$19,703		Rehabilitation maintenance might include re-seeding, watering, fertilisin, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
			Maint	enance of Re	habilitated Ar	eas Subtotal	\$19,703		
	Total Cost fo				Additional Ite	ems Subtotal	\$0	\$139,39	

### Domain 2a: Tailings & Rejects

### **Total Cost for Tailings & Rejects Domain**

**\$0** 

Key Rehabilitation Area Data for Domain Enter data below manually

Additional Assumptions: Record any relevant assumptions to this domain below:

								Total Landform Establishment:	
							To	tal Growth Media Development:	
							1	otal Ecosystem Establishment:	
						-			
Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
	Contaminated Materials Subtotal								
Earthworks / Structural Works (Landform Establishment) Subtotal						\$0			
	Earthworks / Structural Works (Landform Establishment) Subtotal						\$0		
					Mine Wa	ste Subtotal	\$0		
	Land Preparation and Revegetation	Growth Media De	velopment ar	nd Ecosyst	em Establishm	ent) Subtotal	\$0		
		·		V	Vater Managem	ent Subtotal	\$0		
			Mainte	enance of R	ehabilitated Ar	eas Subtotal	\$0		
					Additional Ite	ms Subtotal	\$0		
	Total Cost for	or Tailings	& Reje	cts Do	main			<u>\$0</u>	
		n railings	u neje		mant			φU	

#### Domain 3a: Overburden & Waste

#### **Total Cost for Overburden & Waste Domain**

\$0

Key Rehabilitation Area Data for Domain Enter data below manually

Additional Assumptions: Record any relevant assumptions to this domain below:

							Key Kellabi	intation Area Data for Domain	Enter uata below manually
								Total Landform Establishment:	
							To	tal Growth Media Development:	
								otal Ecosystem Establishment:	
								·	
Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
	Contaminated Materials Subtotal								
	Roads and Tracks Subtotal					\$0			
		Earthworks / St	tructural Wor	ks (Landfo	orm Establishm	ent) Subtotal	\$0		
					Mine Wa	ste Subtotal	\$0		
	Land Preparation and Revegetation	(Growth Media Dev	velopment an	d Ecosyst	em Establishm	ent) Subtotal	\$0		
				١	Water Managem	ent Subtotal	\$0		
			Mainte	nance of R	Rehabilitated Ar	eas Subtotal	\$0		
					Additional Ite	ems Subtotal	\$0		
	Total Cost for	Overburd	en & Wa	aste D	omain		\$0		

#### **Domain 4a: Active Mine & Voids**

#### Total Cost for Active Mine & Voids Domain

\$55,000

Additional Assumptions: Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
					Open	Cut Subtotal	\$0		
	E	Earthworks / S	structural Wo	rks (Landfor	m Establishme	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem	Purchase and erect warning signs	Y	20	allow	\$250.00		\$5,000		Compliance with AS 1319-1994 - Safety signs for the occupational environment installed every 25 m.
	Land Preparation and Revegetation (Gro	wth Media De	velopment a	nd Ecosyste	m Establishme	ent) Subtotal	\$5,000		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y	8	allow	\$2,500		\$20,000	Detailed design and construction of spillway. Mobilisation of equipment	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
				W	ater Managem	ent Subtotal	\$20,000		
			Maint	enance of Re	habilitated Ar	eas Subtotal	\$0		
Additional Items	Construct abandonment bunds around pit perimeter	Y	3000	m3	This is	\$10.00	\$30,000		This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
					Additional Ite	ems Subtotal	\$30,000		
	Total Cost for A	ctive Mi	ne & Vo	oids Do	main			\$55,000	)

### **Domain 5a: Management Activities**

#### **Total Cost for Management Activities**

\$492,800

Additional Assumptions: Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	N		ML	\$3,600				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	N		ML	\$1,500				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
				W	ater Managen	nent Subtotal	\$0		
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	N		m	\$2,500				Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	N		m	\$1,500				Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	N		m	\$750.00				Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	N		m2	\$6.00				Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
				r	Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	N		ha	\$150.00				Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y	60	ha	\$400.00		\$24,000	Nominal allowance for land management excluding weed spraying captured at Row 413	Undisturbed areas within the lease boundary that require land management activities.
			Maint	enance of Re	habilitated A	eas Subtotal	\$24,000		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
	T	1		r	Heritage Ite	ems Subtotal	\$0		
Sundry Items	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater Subsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	N		allow	\$100,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range from ~\$75k to >\$1 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		allow	\$90,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	N		allow	\$15,000				Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Includes risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.

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	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	N		allow	\$300,000				Includes costs for key investigations and studies including designs e.g. geochemistry. Contamination Remediation Action Plan, subsidence risk, cover(capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range to >\$3 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		allow	\$125,000				Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	N		allow	\$27,950				Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
	Site security during closure	N		yr.	\$75,000				Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	N		allow	\$0			Select type of HAZMAT Clean up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	N		each	\$31,630				Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc). Source Isotope type, quantity, strength, weight, source holder type, source holder weight, pick-up location (among others) will directly affect pricing.
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	N		allow	Use alternate rate cell				Provisional sum.
Mobilisation and Demobilisation					Sundry Ite	ems Subtotal	\$0		
	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y	1	ltem	\$12,000		\$12,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	N		Item	\$35,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site <150 km)	N		item	\$100,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	N		item	\$150,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	N		item	\$300,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	N		item	\$500,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Additional Items	Weed spraying across Lease areas	Y	200	obilisation an weeks	d Demobilisa This is	\$2,034.00	\$12,000 \$406,800	Allow 2 days/wk for 40 wks/yr (average across 5	This item includes < <to added="" be="" by<="" td=""></to>
	Revegetation monitoring and reporting	Y	5	year	deliberately	\$10,000.00	\$50,000	year program) insert additional information	the operator>> This item includes < <to added="" be="" by<="" td=""></to>
I	and reporting		-	, 54	Juliony		+,000	here	the operator>>

Additional Items Subtotal Total Cost for Management Activities							\$456,800	\$492,80	0
	Other 3 <insert></insert>	N			left blank			nominal allowance for revegetation monitoring by ecologists, 5 year program	This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>

#### **Domain 1b: Infrastructure**

#### Total Cost for Infrastructure Domain

**\$0** 

Additional Assumptions: Record any relevant assumptions to this domain below:

 Key Rehabilitation Area Data for Domain
 Enter data below manually

 Total Landform Establishment:
 Total Growth Media Development:

 Total Growth Media Development:
 Total Ecosystem Establishment:

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		allow	\$35,000		\$0	Information	For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places), consider multiple disconnection fees.
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Y		allow	\$5,850		\$0		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	\$15,000		\$0		Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pytons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pyions/bridge structure etc. and dispose of waste material on- site/locally	Y		ltem	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Ŷ		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Y		m2	\$40.00		\$0		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y		m2	\$61.00		\$0		Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	Y		m2/floor	\$90.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y		m2/floor	\$130.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	Y		allow	\$750,000		\$0		Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.

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Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	Y	allow	\$2,000,000	\$0	Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	Y	m	\$75.00	\$0	Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Y	allow	\$92,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	Y	allow	\$77,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	Y	allow	\$62,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Y	allow	\$65,000	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Y	allow	\$460,000	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$185.00	\$0	Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$295.00	\$0	Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantifies (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally. This may include small scale fixed material stacking infrastructure	Y	m	\$850	\$0	Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	Y	m	\$150.00	\$0	Due to no canopy or infrastructure attached.
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	Y	m	\$950.00	\$0	Assumes this area will be used for another land-use that requires the structure to be dug up and re-buried somewhere else.
Demolition and removal of vent raise fans, electrical substation and winch and disposal on-site/locally	Y	allow	\$25,000	\$0	Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	Y	allow	\$10,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	Y	allow	\$30,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	Y	allow	\$45,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on- site/locally	Y	allow	\$100,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on-site/locally	Y	allow	\$100,000	\$0	Estimate only - may require a detailed assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or equivalent.
Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	Y	allow	\$21,000	\$0	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-site/locally	Y	allow	\$30,000.00	\$0	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	Y	m	\$25.00	\$0	For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y	m	\$60.00	\$0	For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Y	m	\$165.00	\$0	For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Y	m	\$12.00	\$0	-300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.

Remove surface pipelines (unsupported) and disposal on-site/locally	Y	m	\$15		\$0	-300 mm pipes and assumes pipes used for water transfer between pits similar) and remotely located. Does include transport to regional dispose facility or equivalent.
Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	Y	allow	\$20,000.00		\$0	Includes equipment for retrieval - bo etc. and labour. Does not include transport to regional disposal facility equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	Y	m2	\$10.00		\$0	Scalp bitumen and stabilised materi Generally haulage rates will be \$0.6 \$1.20 / km, depending on truck flee loaders etc. For off-site disposal use alternate rate option and add \$0.90 for transport.
Remove bitumen (airstrip) and dispose on- site/locally	Y	m2	\$20.00		\$0	Scalp bitumen and stabilised materi Generally haulage rates will be \$0.6 \$1.20 / km, depending on truck flee loaders etc. For off-site disposal use alternate rate option and add \$0.90 for transport.
Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	Y	m2	\$36.00		\$0	Breaking up slab and disposal or fo conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 depending on truck fleet, loaders et For off-site disposal use alternate rr option and add \$0.90 / km for trans
Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	Y	m2	\$75.00		\$0	Breaking up slab and disposal or fo conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 depending on truck fleet, loaders e For off-site disposal use alternate r option and add \$0.90 / km for trans
Crush concrete to make road aggregate - 75 mm	Y	tonne	\$10.00		\$0	Does not include haulage of mater assumes crushing plant is readily
Crush concrete to make road aggregate - 50 mm	Y	tonne	\$13.00		\$0	available. Does not include haulage of mater assumes crushing plant is readily
	Y	tonne	\$15.00		\$0	available. Does not include haulage of mater assumes crushing plant is readily
Crush concrete to make road aggregate - 30 mm Remove fence (cyclone/wire fence) and disposal on-		tonne				 available.
site/locally	Y	m	\$20.00		\$0	Roll up fence and remove posts. Remove small poly tanks used for
Removal of small plastic tanks	Y	each	\$1,000.00		\$0	storage, etc. Demolish and remove small lightw
Demolish and remove galvanised/corrugated light weight tanks	Y	each	\$500.00		\$0	metal tanks. No costs included for managing liquids, etc.
Demolish and remove communication towers	Y	each	\$5,000.00		\$0	Cost includes demolition and remo tower only; separate costs require disconnection of services, demolit footings, etc.
Removal of UG services (power within main gate areas, etc.)	Y	allow	\$50,000.00		\$0	Assume service disconnection at t mine boundary is at surface level. cost covers all fees and charges
Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Y	tonne	\$7.00		\$0	Rate accounts for round trip haula Council landfill but excludes landfi fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y	tonne	\$9.00		\$0	Rate accounts for round trip haula Council landfill but excludes landfi fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y	tonne	\$12.50		\$0	Rate accounts for round trip haula Council landfill but excludes landfil fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	Y	tonne	\$32.00		\$0	Rate accounts for round trip haula Council landfill but excludes landfil fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	Y	tonne	\$36.00		\$0	Rate accounts for round trip haula Council landfill but excludes landfil fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	Y	allow	Use alternate rate cell		\$0	Rate accounts for round trip haula Council landfill but excludes landfi fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill - fees (general waste)	Y	tonne	\$193.00		\$0	Fee for waste disposal of general to local Council landfill; transport n separate. Please note that this is a applicable to operations with appr for building and demolition waste disposal on site.
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Y	tonne	\$174.00		\$0	Fee for waste disposal of industria demolition / concrete / scrap mete waste to local Council landfill; trar rates separate. Rate does not as material is recyclable. Please not this is not applicable to operations approval for building and demolitii waste disposal on site.
		mination of Services and		ulua Cubtatal	\$0	I

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Rail Infrastructure	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Y		m	\$60.00		\$0		Remove all materials to allow area to be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent.
	Remove train loading facilities and disposal on- site/locally	Y		m2	\$185.00		\$0		Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
	Reshape rail spur and load out areas. Does not include growth media and revegetation	Y		ha	\$2,860		\$0		D10 Dozer and 16 H Grader (50% utilisation).
	-		T	F	ail Infrastruc	ture Subtotal	\$0		
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Ŷ		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. A cluster may include: A cluster may include: Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle re fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for ourrent and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 388 (2) (w)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	٢		Cluster	\$106,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (w)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	\$35,000		\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	Use alternate rate cell		\$0		Assumes complex site; detailed design drawings required for cover.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y		L	\$0.35		\$0		Cost for recent sump clean-up from resource activity - requires specialists to treat.
I	l	I	I	I			l	Select Haul Distance Here	]

s	Remove material (carbonaceous / metalliferous							
	spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Y	m3	Select from List				I his item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
c	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Y	m3	\$800.00		\$0		Includes load, haul and dump fees to a licensed facility.
c	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	Y	m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
r	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Y	m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility.
							Select Volume Here	Spreading of contaminated soils on a
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y	m3	Select from List				prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
e	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Y	Item	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y	m3	\$165.00		\$0		Additional cost as the treatment process is fast tracked.
F	Remove and dispose of asbestos (<750 m2)	Y	m2	\$50.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
F	Remove and dispose of asbestos (>750 m2)	Y	m2	\$40		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
V	Waste disposal to Council landfill - fees (asbestos)	Y	tonne	\$290		\$0		Landfill fees to regional landfill.
۲	Treatment of known Acid Sulfate Soils	Y	ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
li I	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y	m2	\$1		\$0		Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y	tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
F	Brine disposal to landfill - fees only	Y	tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to
г	Long haulage water (clean or contaminated) (Select	Y	 tonne	Select from			Select Haul Distance Here	landfill. Assumes transport in a 20,000 L tanker.
	Haul Distance from list)	-		List ninated Mater	ials Subtotal	\$0		Add disposal costs to additional items
E	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y	depth (m)	\$44.55				Cost to grout and cap an open exploration borehole. Assume a 20 m x
			dopar (m)	ş44.33		\$0		20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
E	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Y	allow	\$43		\$0 \$0		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
E 	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary	Y						push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration /
E / C H - - C C C C C C C C C C C C C C C C	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)		allow	\$43		\$0		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
E 	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel	Y	allow	\$43 \$5,700		\$0 \$0		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface,
E / C E E E E	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-	Y Y	allow allow allow	\$43 \$5,700 \$6,960		\$0 \$0 \$0		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage
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E - - - - - - - - - - - - - - - - - - -	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG	Y Y Y Y Y	allow allow allow allow allow allow	\$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing.
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Roads and Tracks	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill hole Rehabilitation of reverse circulation drill holes Rehabilitation of reverse circulation drill holes Rehabilitation of drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of drill hole collars Rehabilitation drill hole collars	Y Y Y Y Y Y Y Y	allow allow allow allow allow allow allow ttem ttem	\$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000	Jes Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supping electricity (f6kV), compressed air, water, solsenic etc. Bog out cuttings, remove flencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill hole Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes and pad including sealing drill holes cor mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y Y Y Y Y Y Y Y Y	allow allow allow allow allow allow item Item Item Vents, Shaft ha	\$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000 \$45,000 \$1,340 \$1,340 \$415 \$ and Borehy \$1,040.00	Dies Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes targe diameter boreholes used tor supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material

	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
		-		F	Roads and Tra	icks Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	Deep rip hard stand / lay down areas	Y		ha	\$960.00		\$0		D10 deep ripping.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
Lond Promotion and	1	Earthworks /	Structural Wo	orks (Landfor	m Establishm	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm) Direct seeding / fertiliser (pasture grass species)	Y Y		allow ha	\$6.60 \$1,875		\$0 \$0		4 m centres. Includes treating, weighing, mixing with fertiliser + spreading by tractor or to be accessed to a direct dir
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from
					\$1.90		\$0		\$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$1.90		\$0 \$0		\$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepared surfaces under irrigation e.g. sewage
		Y							\$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well preparec surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and
	tack with pasture seed			m2	\$0.43		\$0		\$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is cost includes cover crop stability. This cost includes cover crop
	tack with pasture seed Hydromulch - base grade or standard for flat areas that can be irrigated by water cart Hydromulch - bonded fibre matrix grade for steep	Y		m2 m2	\$0.43 \$0.80		\$0 \$0		\$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepares surfaces under irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4.1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required. Assumes use on steep areas where stabilitisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only,
	tack with pasture seed Hydromulch - base grade or standard for flat areas that can be irrigated by water cart Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months Hydromulch - high performance flexible growth	Y		m2 m2 m2	\$0.43 \$0.80 \$1.80		\$0 \$0 \$0		\$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepares surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short lerm (less than 3 months) and ro vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required. Assumes use on steep areas where stabilisation is required to up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only, additional seeding required. Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of -4,000kg/ha minimum. This cost includes cover crop

	Total Cost fo	r Infras	structure <b>E</b>	Doma	in			\$0	
					Additional Ite		\$0		
	landform	T	Maintenar		\$40,000 habilitated Ar	eas Subtotal	\$0 \$0		construction of landform.
	Existing rehabilitation repair - major	Y		ha ha	\$2,500 \$40,000		\$0 \$0		gullies, growth media replacement, some level of additional surface wate management. Areas that require extensive rehabilitation repair - re-design and r
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rill significant growth media replacement Areas requiring major repair - rills,
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, n growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilis minor re-shaping, erosion control, inspections/audits - does not includ major repair works.
			· ·	Wa	ter Managem	ent Subtotal	\$0		
	Removal of evaporation fans and/or other water transfer and management infrastructure	Y		allow	\$25,000		\$0		Provisional sum for removal of wate management infrastructure.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use b alternate land-user - 06 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use te alternate land-user - 06 Dozer (or similar) @ -\$200 per hour and past grass.
WAMA A	Land Preparation and Revegetation (Gro	wth Media D	evelopment and E	Ecosysten	n Establishm	ent) Subtotal	\$0		
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		alternative to spreading topsoil prior hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality. Material that can be applied as an
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approxima depth of 0.2 m into stockpiles; load haul to final rehabilitation location required or respreading where necessary.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$60/m3 for imported material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$70/m3 for imported material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		signs for the occupational environm installed every 25 m.
	areas	Y		m	\$13.00		\$0		fencing. Compliance with AS 1319-1994 - Si
	areas Construct standard stock fence around rehabilitated	Y		m	\$22.00		\$0		fencing. Standard rate for standard stock
	growth media amelioration with biosolids Construct no-climb stock fence around rehabilitated	Y		ha	\$1,015		\$0		projects. Standard rate for no-climb stock
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate. Recent experience with agronomy

### Domain 2b: Tailings & Rejects

### **Total Cost for Tailings & Rejects Domain**

\$0

Additional Assumptions: Record any relevant assumptions to this domain below:

	d any relevant assumptions to this domain below:						1	tation Area Data for Domain fotal Landform Establishment: al Growth Media Development:	Enter data below manually
								tal Ecosystem Establishment:	
Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Y		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEEPM) Phase 1 assessment (EP Act Section 389 (2) (v)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle re- fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	¥		Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (tex) piss.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	¥		Cluster	\$106,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAOP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	\$35,000		\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	Use alternate rate cell		\$0		Assumes complex site; detailed design drawings required for cover.

Image: Notice of and status and sta	Ins term includes scraping and removed     of the volume of carbonacous material     usion dnzer, drader etc. to make safe.     Includes load, haul and dump fees to i     licensed facility.     Includes load, haul and dump fees to i     licensed facility.     Includes load, haul and dump fees to i     licensed facility.     Includes load, haul and dump fees to i     licensed facility.     Spreading of contaminated soils on a     prepared surface and stimulation of     aerobic microbial activity within the so     through aeration and/or the addition of     norminerals, nutrients and moisture to     promote the aerobic degradation of     organic chemicals - time frame of up t     24 months.     Required if treatment of hydrocarbon     contamination is required to be fast     tracked.
spillage or otherwise) from footprint of the process         Y         m3         Select Full	d' the volume of carbonaceous materi usion dozer, arader etc. to make safe. Includes load, haul and dump fees to licensed facility. Includes load, haul and dump fees to licensed facility. Includes load, haul and dump fees to licensed facility. Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the so through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up t 24 months. Required if treatment of hydrocarbon contamination is required to be fast tracked. Where an assessment/estimation has been made to confirm the volume of asbestos to be removed. Where an assessment/estimation has
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contaminated material off site to a licensed landfill.         Y         m4         \$660.00         \$50         Includes laad, hall an licensed landfill.           Load, cart and disposal of Low Level contaminated for a licensed landfill.         Y         m3         \$220.00         \$50         Includes laad, hall an licensed landfill.           Load, cart and disposal of Low Level contaminated for catage to regional landfill         Y         m3         \$220.00         \$50         Includes laad, hall an licensed fault.           Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)         Y         m3         Select from List         Select from Prepared surface and Pr	licensed facility.           Includes load, haul and dump fees to licensed facility.           Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the so through aeration and/or the addition o minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up t 24 months.           Required if treatment of hydrocarbon contamination is required to be fast tracked.           Additional cost as the treatment proce is fast tracked.           Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.           Where an assessment/estimation has
material off site to a licensed landfill. Add \$50/m3       Y       m3       \$220.00       \$0       Include solution in licensed facility.         for cartage to regional landfill       for cartage to regional landfill       Y       m3       \$220.00       \$0       Sol       includes solution in licensed facility.         Onsite remediation of hydrocarbon contaminated solits manual land farming (Select Volume from List)       Y       m3       \$elect from List.       Select from List.       Select from List.       Sol       Required if treatment or contaminated actinity.         Mobilisation of cement stabilisation plant and equipment for hydrocarbon (c.e., PAH, long chain hydrocarbon contaminated solit treatment hydrocarbons, etc.) contaminated solit treatment or mobile treatment unit       Y       m3       \$150,000       \$0       \$0       \$0       \$0         On-site remediation of hydrocarbon contaminated solit treatment unit       Y       m3       \$150,000       \$0 </td <td>licensed facility. Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the so through aeration and/or the addition of organic chemicals - time frame of up t 24 months. Required if treatment of hydrocarbon contamination is required to be fast tracked. Additional cost as the treatment proce is fast tracked. Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.</td>	licensed facility. Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the so through aeration and/or the addition of organic chemicals - time frame of up t 24 months. Required if treatment of hydrocarbon contamination is required to be fast tracked. Additional cost as the treatment proce is fast tracked. Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Onsite remediation of hydrocarbon contaminated solis manual land farming (Select Volume from List)       y       m3       Select from List       poppared surface and arrow in minerals, untrinst san promotival activity acrobid activity activity and paration and/the acrobic minerals, untrinst san promotives activity in market, surface and activity in the activity of the activity	prepared surface and stimulation of aerobic microbial activity within the so through aeration and/or the addition of organic chemicals - time frame of up t 24 months.     Required if treatment of hydrocarbon contamination is required to be fast tracked.     Additional cost as the treatment proce is fast tracked.     Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.     Where an assessment/estimation has
equipment for hydrocarbon, (i.e., PAH, long chain hydrocarbon, etc.) contaminated soil treatment       Y       Item       \$150,000       \$0       \$0       contamination is requipment for hydrocarbon contaminated soil treatment         On-site remediation of hydrocarbon contaminated soil reatment unit       Y       m3       \$165.00       \$0       \$0       \$dddiioal cost as the is fast tracked.         On-site remediation of hydrocarbon contaminated soil treatment unit       Y       m3       \$165.00       \$0       \$0       \$dddiioal cost as the is fast tracked.         Remove and dispose of asbestos (<750 m2)	contamination is required to be fast tracked. Additional cost as the treatment proce is fast tracked. Where an assessment/estimation has been made to confirm the volume of asbestos to be removed. Where an assessment/estimation has
soils - using a mobile treatment unit     I     IIIS     \$105,00     \$00     \$10     \$100	is fast tracked. Where an assessment/estimation has been made to confirm the volume of asbestos to be removed. Where an assessment/estimation has
Remove and dispose of asbestos (<750 m2)     Y     m2     \$50.00     \$0     \$0     ben made to confirm asbestos to be remove absetos to be remove where and dispose of asbestos (>750 m2)     Y     m2     \$40.00     \$0     \$0     \$0     Where and asbestos to be remove absetos	been made to confirm the volume of asbestos to be removed. Where an assessment/estimation has
Remove and dispose of asbestos (>750 m2)     Y     m2     \$40.00     \$0     \$0     ben made to confirm absentso to be remove absentso to be remove to asbestos to be remove to torne       Waste disposal to Council landfill - fees (asbestos)     Y     tonne     \$290     \$0     \$0     Landfill fees to regotive to asbestos to be remove to asbestos to asbestos to asbestos to be remove to asbestos to asbestos to asbestos to asbestos to asbestos to be to asbestos to asbestos to asbestos to asbestos to asbestos to asbestos to asbestos to to asbestos to asbestos to asbestos to asbestos to to asbestos to to asbestos to asbestos to to asbestos to	
Contaminated Materials Subtotal     \$0       Roads and Tracks     Unsealed roads / vehicle park-up areas - minor     v     ba     \$1 pt 0 n     \$0	asbestos to be removed.
Roads and Tracks Unsealed roads / vehicle park-up areas - minor v ha \$1 no no \$0 Assumes - 6 m road w	Landfill fees to regional landfill.
	Assumes ~6 m road width - 16H Grad
areas with windrows and/or small earthen bunds – Y ha \$1,500 \$0 grader @ \$230 per ho minor earthworks and deep rip and trim bunds – Y ha	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H
earthworks, final trim and deep rip and seed Y ha \$3,700 \$0 grader @ \$230 per ho (pasture grass) \$0 utilisation) - pasture gr	grader @ \$230 per hour (50% utilisation) - pasture grass seed
earthworks, final trim and deep rip, ameliorate and Y ha \$4,485 \$0 grader @ \$230 per ho utilisation) - native tree (shrub/grass)	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
with windrows and/or small earlier bunds – Minor Y ha \$4,870 \$0 grader @ \$230 per ho	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
will windows and dee pri, a milor Y ha \$7,025 \$0 grader @ \$230 per ho earthworks, final tim and dee pri, a meliorate and	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
seed (native tree/shrub/grass)	tere This item includes the scraping and removal of the volume of stabilised material from the road, laydown or oth surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
seed (halve tree/shrub/grass) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) (Se	Maiashullusushing to a himus and a
seed (native tree/shrub/grass)       rel in the indiversal of the indindindiversal of the indiversal of the indivers	nominated in the approval/permit
seed (halve ree/shub/grass)       image: seed (halve ree	
seed (halve releishburgrass)       image: seed (halve releishburgras	grader @ \$230 per hour (50% utilisation).
seed (halve tree/shub/grass)       image: seed (halve tree/shub/gras	grader @ \$230 per hour (50% utilisation). itere This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
seed (native tree/shibb/grass)       image: seed (native tree/shibb/grass)       image: seed (native tree/shibb/grass)       image: seed (native tree/shibb/grass)       image: seed (native tree/shibb/grass)       Select from (natin tree/shibb/grass)       Select fr	grader @ \$230 per hour (50% utilisation). fere This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M
seed (naive relevandograss)       Image: Constraint of the second s	grader @ \$230 per hour (50% utilisation). tere This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M grader. Combination of dozer and excavator
Select (name releastholights)     V     Ma3     Select from List     Select from List     Select Haul Distance Here model is provided in the region and signed is general grader to enable the e rehabilition.       The includes the removal of the volume material from the rade of the vol	utilisation). tere This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M grader. Combination of dozer and excavator work plus grader for –4 hours each pe ha. Installation of on-site rock material (rip rap) where managing water run-off fro disturbed land and/or upon entry to water courses - prevents erosion of guly head (assumes competent material is locally available). If require to be sourced off site, assume an

Mine Waste	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with tittle chemical reactivity (no 10 wirsk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mad 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Ŷ	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or fow to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength timits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternata rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.) , and associated activities (i.e., load / hau/ / place / crush / specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional materials must be added spour thaterial to materials must be added spenately if required. If additional materials not be under my provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoft, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	¥	ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised material requiring haulage tonger than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Y	ha	\$843,000		\$0		This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. It site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Cong naturage soir / wearreren rock / seament e.g.	Y	allow m3	Use alternate rate cell		\$0	Select Haul Distance Here	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.). Capping/cover materia available within
	capping/covers, removal of contamination, etc.		1113	List Mine Wa	aste Subtotal	\$0	Gelect Haul Distance Here	50 km round trip e.g. waste /
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	у	m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	Y	 ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y	m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y	m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10

	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate. Assumes 2.5 t / ha as an average
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		application rate.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosyster	n Establishm	ent) Subtotal	\$0		Provisional sum for earthworks and
	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
Maintenance of Rehabilitated				Wa	ater Managem	nent Subtotal	\$0		Dehebilitation maintenant winte
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
			Maint	enance of Re	habilitated Ar Additional Ite		\$0 \$0		
	Total Cost for 1	Tailings	& Reie					\$0	
		anngo						Ψυ	

## Domain 3b: Overburden & Waste

#### Total Cost for Overburden & Waste Domain

**\$0** 

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Y		ha	\$2,580		\$0	moniaton	Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% b weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		Provisional sum for cutting using ripp tynes and on-site disposal of the liner
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78. per tonne and authorised disposal to landfill.
	Long naulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from List ninated Mater	ialo Subtotal	\$0	Select Haul Distance Here	Assumes transport in a 20,000 L tan Add disposal costs to additional item
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor	Y		ha	\$1,040.00	iais Subiolai	\$0		Assumes ~6 m road width - 16H Gra
	works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or or surface using an excavator, dozer a grader to enable the establishment rehabilitation.
		-	n na seconda de la companya de la co	R	oads and Tra	cks Subtotal	\$0		1
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grade nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate stee slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16 grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		Combination of dozer and excavato work plus grader for ~4 hours each ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material rap) where managing water run-off disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If requ

Mine Waste	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with tittle chemical reactivity (no 10 wirsk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mad 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Ŷ	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or fow to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength timits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternata rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.) , and associated activities (i.e., load / hau/ / place / crush / specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional materials must be added spour thaterial to materials must be added spenately if required. If additional materials not be under my provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoft, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

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	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m dept. The second strength that prohibits (i.e., capillar breaks, geofabric, etc.), specific material types (e.g. acid neutralish (i.e., capillar) breaks, geofabric, etc.), specific material types (e.g. acid neutralish, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional materials and the rial additional material to material at omaterial and the up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on leagor sites from chemical reactivity over lengthy exposure prior to rehabilitation	Y	ha	\$843,000		\$0		This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. If site haudage longer than 10 km round trip add the volume of the relevant material requiring haudage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haudage and spreading in additional to any long haudage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Long haulage soil / weathered rock / sediment e.g.	Y	allow m3	Use alternate rate cell Select from		\$0	Salaat Harit Divis	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.). Capping/cover material available within
	capping/covers, removal of contamination, etc.		1113	List Mine Wa	aste Subtotal	\$0	Select Haul Distance Here	50 km round trip e.g. waste /
Land Preparation and					Junitoidi		Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List) Planting mature trees (>15 cm)	Y Y	m3 allow	Select from List \$15.00		\$0		Virgin Excavated Natural Material (VENM) may need to be externally sourced. 4 m centres.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y Y	allow	\$15.00 \$6.60		\$0 \$0		4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y	m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y	m2	<b>\$0.43</b>		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10

									Assumes use on flat areas with a gradient of less than 4:1, and where
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		gradient of ress tran +, r, and write irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000		\$0		Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosysten	n Establishm	ent) Subtotal	\$0		Provisional sum for earthworks and
<b>g</b>	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
Maintenance of Rehabilitated		[		Wa	ater Managem	nent Subtotal	\$0		Dehebilitetien ersistererer
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
			Maint	enance of Rel	habilitated Ar Additional Ite		\$0 \$0		
	Total Cost for O	verburd	en & W					\$0	
							L	÷*	

## **Domain 4b: Active Mine & Voids**

## **Total Cost for Active Mine & Voids Domain**

**\$0** 

Additional Assumptions: Record any relevant assumptions to this domain below:		
	Key Rehabilitation Area Data for Domain	Enter data below manually
	Total Landform Establishment:	
	Total Growth Media Development:	
	Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	Y		Lm	\$1.93		\$0		Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Y		m3	\$0.95		\$0		Bulk Drilling say 8°9 pattern, assuming a stern height of 6 m, charge length of 19 m, explosive density of 0.9, diameter of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	Y		m	\$90.00		\$0		D10 dozer, 16H Grader and revegetation with pasture grass.
		1			Open	Cut Subtotal	\$0		revegetation with pasture grass.
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	Е	Earthworks /	Structural Wo	orks (Landfor	m Establishm	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y Y		allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Planting tube stock (<15 cm) Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only, additional seeding required.

	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0 <b>\$0</b>		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, mino growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
		L		Wa	ater Managem	ent Subtotal	\$0		L
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by a alternate land-user - D6 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by a alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosyster	m Establishm	ent) Subtotal	\$0		
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		necessary. Addition of manure to improve soil quality.
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		material. Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allo nominal rate of \$60/m3 for imported fil
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safe signs for the occupational environment installed every 25 m.
	Security fence around steep section of high wall	Y		m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh & 32 mm post not concreted
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		rate. Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of curre conditions (lower fuel prices, reduced demand etc) this is a suitable standard
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates hav fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand ett this is a suitable standard rate.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes when stabilisation is required for up to 18 months. Application rate of ~4,000kg/t minimum. This cost includes cover or only, additional seeding required.

## **Domain 5b: Management Activities**

## **Total Cost for Management Activities**

**\$0** 

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	Y		ML	\$3,600		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	Y		ML	\$1,500		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
				W	ater Managen	nent Subtotal	\$0		
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	Y		m	\$2,500		\$0		Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	Y		m	\$1,500		\$0		Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	Y		m2	\$6.00		\$0		Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
					Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y		ha	\$150.00		\$0		Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land management activities.
			Maint	enance of Re	habilitated A	reas Subtotal	\$0		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate rate cell		\$0		Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
					Heritage Ite	ems Subtotal	\$0		
Sundry Items	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, preliminary sead designs, etc. and only finalisation of detailed engineering deigns required	Y		allow	\$100,000		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demoilion, etc. Costs to finalise options by domain and finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range from ~\$75k to >\$1 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Y		allow	\$90,000		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	Y		allow	\$15,000		\$0		Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Includes risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.

	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	Y		allow	\$300,000		\$0		Includes costs for key investigations and studies including designs e.g. geochemistry. Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range to >\$3 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Y		allow	\$125,000		\$0		Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	Y		allow	\$27,950		\$0		Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
	Site security during closure	Y		yr.	\$75,000		\$0		Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	Y		allow	\$0		\$0	Select type of HAZMAT Clean- up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	Y		each	\$31,630		\$0		Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc). Source Isotope type, quantity, strength, weight, source holder type, source holder weight, pick-up location (among others) will directly affect pricing.
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	Y		allow	Use alternate rate cell		\$0		Provisional sum.
	passional and a for remaining of the mediation activities			l		ems Subtotal	\$0		
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y		ltem	\$12,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Y		ltem	\$35,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site <150 km)	Y		item	\$100,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	Y		item	\$150,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	Y		item	\$300,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	Y		item	\$500,000	tion Subtotal	\$0 \$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Additional Items	Other 1 <insert></insert>	N	MC	opinisation an	This is	allon Subtotal	ψυ		This item includes < <to added="" be="" by<="" td=""></to>
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		_			Additional Ite	ems Subtotal	\$0		

## **Domain 1c: Infrastructure**

## Total Cost for Infrastructure Domain

**\$0** 

Additional Assumptions: Record any relevant assumptions to this domain below:

 Key Rehabilitation Area Data for Domain
 Enter data below manually

 Total Landform Establishment:
 Total Growth Media Development:

 Total Growth Media Development:
 Total Ecosystem Establishment:

								Basis for Costs Estimation	
Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		allow	\$35,000		\$0		For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places), consider multiple disconnection fees.
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Y		allow	\$5,850		\$0		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	\$15,000		\$0		Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on- site/locally	Y		ltem	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Y		m2	\$40.00		\$0		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y		m2	\$61.00		\$0		Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	Y		m2/floor	\$90.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y		m2/floor	\$130.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	Y		allow	\$750,000		\$0		Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.

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Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	Y	allow	\$2,000,000	\$0		Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	Y	m	\$75.00	\$0		Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Y	allow	\$92,500	\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	Y	allow	\$77,500	\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	Y	allow	\$62,500	\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Y	allow	\$65,000	\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Y	allow	\$460,000	\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$185.00	\$0		Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$295.00	\$0		Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally. This may include small scale fixed material stacking interaction.	Y	m	\$850	\$0		Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
infrastructure Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	Y	m	\$150.00	\$0		Due to no canopy or infrastructure attached.
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	Y	m	\$950.00	\$0		Assumes this area will be used for another land-use that requires the structure to be dug up and re-buried somewhere else.
Demolition and removal of vent raise fans, electrical substation and winch and disposal on-site/locally	Y	allow	\$25,000	\$0		Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	Y	allow	\$10,000	\$0		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	Y	allow	\$30,000	\$0		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	Y	allow	\$45,000	\$0		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on- site/locally	Y	allow	\$100,000	\$0		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on-site/locally	Y	allow	\$100,000	\$0		Estimate only - may require a detailed assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or equivalent.
Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	Y	allow	\$21,000	\$0		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-site/locally	Y	allow	\$30,000.00	\$0		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	Y	m	\$25.00	\$0		For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y	m	\$60.00	\$0		For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Y	m	\$165.00	\$0		For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Y	m	\$12.00	\$0		-300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.

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Remove surface pipelines (unsupported) and disposal on-site/locally	Y	m	\$15	\$0	~300 mm pipes and assumes pipes ar used for water transfer between pits (o similar) and remotely located. Does no include transport to regional disposal facility or equivalent.
Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	Y	allow	\$20,000.00	\$0	Includes equipment for retrieval - boa etc. and labour. Does not include transport to regional disposal facility o equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	Y	m2	\$10.00	\$0	Scalp bitumen and stabilised material Generally haulage rates will be \$0.60 \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / for transport.
Remove bitumen (airstrip) and dispose on- site/locally	Y	m2	\$20.00	\$0	Scalp bitumen and stabilised materia Generally haulage rates will be \$0.6C \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / for transport.
Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	Y	m2	\$36.00	\$0	Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / depending on truck fleet, loaders etc. For off-site disposal use alternate rat option and add \$0.90 / km for transpo
Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	Y	m2	\$75.00	\$0	 Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / depending on truck fileet, loaders etc For off-site disposal use alternate rat option and add \$0.90 / km for transp
Crush concrete to make road aggregate - 75 mm	Y	tonne	\$10.00	\$0	Does not include haulage of material assumes crushing plant is readily available.
Crush concrete to make road aggregate - 50 mm	Y	tonne	\$13.00	\$0	Does not include haulage of material assumes crushing plant is readily available.
Crush concrete to make road aggregate - 30 mm	Y	tonne	\$15.00	\$0	Does not include haulage of material assumes crushing plant is readily
Remove fence (cyclone/wire fence) and disposal on-	Y	m	\$20.00	 \$0	available. Roll up fence and remove posts.
site/locally Removal of small plastic tanks	Y	each	\$1,000.00	 \$0	Remove small poly tanks used for w
Demolish and remove galvanised/corrugated light	Y	each	\$500.00	\$0	storage, etc. Demolish and remove small lightwei metal tanks. No costs included for
weight tanks	•	 Cacin	\$000.00	 ţŭ	managing liquids, etc. Cost includes demolition and remova
Demolish and remove communication towers	Y	each	\$5,000.00	\$0	tower only; separate costs required for disconnection of services, demolition footings, etc.
Removal of UG services (power within main gate areas, etc.)	Y	allow	\$50,000.00	\$0	Assume service disconnection at the mine boundary is at surface level. Th cost covers all fees and charges
Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Y	tonne	\$7.00	\$0	Rate accounts for round trip haulage Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y	tonne	\$9.00	\$0	 Rate accounts for round trip haulage Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y	tonne	\$12.50	\$0	 Rate accounts for round trip haulage Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	Y	tonne	\$32.00	\$0	Rate accounts for round trip haulage Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	Y	tonne	\$36.00	\$0	Rate accounts for round trip haulage Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	Y	allow	Use alternate rate cell	\$0	Rate accounts for round trip haulage Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill - fees (general waste)	Y	tonne	\$193.00	\$0	Fee for waste disposal of general wa to local Council landfill; transport rate separate. Please note that this is not applicable to operations with approva for building and demolition waste disposal on site.
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Y	tonne	\$174.00	\$0	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transp rates separate. Rate does not assur material is recyclable. Please note th this is not applicable to operations w approval for building and demolition waste disposal on site.
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Rail Infrastructure	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Y		m	\$60.00		\$0		Remove all materials to allow area to be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent.
	Remove train loading facilities and disposal on- site/locally	Y		m2	\$185.00		\$0		Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
	Reshape rail spur and load out areas. Does not include growth media and revegetation	Y		ha	\$2,860		\$0		D10 Dozer and 16 H Grader (50% utilisation).
Contaminated Materials				R	ail Infrastruc	ture Subtotal	\$0		
	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Y		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (ivi)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle re- fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 intrusive investigation (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (lest pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$106,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / occurred (i.e., underground tanks / occurred i.e., and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, borcholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances Develop a Remediation Action Plan on sites with	Y		allow	\$35,000		\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	Use alternate rate cell		\$0		Assumes complex site; detailed design drawings required for cover. Cost for recent sump clean-up from
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y		L	\$0.35		\$0	Select Haul Distance Har-	resource activity - requires specialists to treat.
1	Remove material (carbonaceous / metalliferous	1	I	I			I	Select Haul Distance Here	This item includes scraping and removal

Image: State of the		Itemore material (carbonaccous) metamicrous							
Image: Second		facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul	Y	m3					of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
Image: state of the		contaminated material off site to a licensed landfill.	Y	m3	\$800.00		\$0		Includes load, haul and dump fees to a licensed facility.
Image: Second biase in the second biase is a second biase in the second biase is a second biase second biase is a second biase is a second biase is a		contaminated material off site to a licensed landfill.	Y	m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
Process of the second later of system of the second later of the second laterof the second later of the second later of the second later of t		material off site to a licensed landfill. Add \$50/m3	Y	m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility.
Nome         Nome <th< td=""><td></td><td></td><td>Y</td><td>m3</td><td></td><td></td><td></td><td>Select Volume Here</td><td>Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.</td></th<>			Y	m3				Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
best         orising and electronic structure $\mathbf{v}$		equipment for hydrocarbon (i.e., PAH, long chain	Y	ltem	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
Processes         Processes         V         mc         SS0.00         SS0.00 <td></td> <td></td> <td>Y</td> <td>m3</td> <td>\$165.00</td> <td></td> <td>\$0</td> <td></td> <td></td>			Y	m3	\$165.00		\$0		
Review and dispose of disposed in $V = V$		Remove and dispose of asbestos (<750 m2)	Y	m2	\$50.00		\$0		
Interment of known Add Duffels Gold         Y         In         \$2,060         S0         Numeric AST, manuality of manuality of comparison and description and descripti		Remove and dispose of asbestos (>750 m2)	Y	m2	\$40		\$0		been made to confirm the volume of
Partner of None Acd Bulles Dols         Y         In         \$2.58         S0         S0         Rescue and discuss of summary and rescue and and		Waste disposal to Council landfill - fees (asbestos)	Y	tonne	\$290		\$0		Landfill fees to regional landfill.
Lach fail, sing out ()II <t< td=""><td></td><td>Treatment of known Acid Sulfate Soils</td><td>Y</td><td>ha</td><td>\$2,580</td><td></td><td>\$0</td><td></td><td>neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to</td></t<>		Treatment of known Acid Sulfate Soils	Y	ha	\$2,580		\$0		neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to
Distance from ting)         1         0.10 mm         List         0 deal (Natural Vision) and (Second Visi		leach pad, sump etc.)	Y	m2			\$0		Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
Brine disposite in containinated) (Select Log Andrage water (Neuron 2 containinated) (Select Exploration horeinated materials Subcess 1 and Select Neuron 1 and			Y	tonne				Select Haul Distance Here	
Index during the first of columnitation () lesses if v     torm     torm     Select Haul Distance Here     Add disposition cores to additional       Vertis, Shafts and Boreholes       Vertis, Shafts and Boreholes     Contaminated Materials Subtrait     50       Vertis, Shafts and Boreholes     Contaminated Materials Subtrait     50       Contaminated Materials Subtrait     50       Vertis, Shafts and Boreholes     Contaminated Materials Subtrait     50       Contaminated Materials Subtrait		Brine disposal to landfill - fees only	Y	tonne	\$288		\$0		
Verits, Shafts and Boreholes         Contaminated Materials Subtots         50         Latent and subtrime           Verits, Shafts and Boreholes         Option 1 - Coal tore hole and difl polds is required         Y         depth (m)         544.55         S0         20 m difl pold register shabits pold notice is basis pold notice. Assume 1 pold notice is required with the pold notice is required with the pold notice is required with cutrups         Y         depth (m)         544.55         S0         20 m difl pold register shabits pold notice is required with pold notice is required with pold notice is required with cutrups           Option 3 - Meant PAB and alrance diff holes and diff pold a pold notice with cutrups         Y         allow         543         S0         May require simplify requires thabits pold notice is required with pold notice is required with cutrups           Option 2 - Meant diff holes with cutrups         Y         allow         55.700         S0         May require with pold notice is required pold notice is required with and cutrups         biotastice provide and cap in the exploration brokens one requirements of Departments (c) contraminated with the exploration brokens one requirements of Departments (c) contraminate with pold (c) con			Y					Select Haul Distance Here	Add disposal costs to additional items
Option 1 - Coal bore hole and dill pada as required         Y         deph (m)         \$44.55         \$50         performance production borehole. 20 m dill pada as required         exploration pada cover of nearby growth me and select           Option 3 - Mineral RAB and aircore drill holes Exploration boreholes backfill oper. Rotary Altista (RAB) of and aircore drill holes Exploration boreholes - backfill oper. Rotary Altista (RAB) and aircore drill holes Exploration boreholes backfill oper. Rotary Altista (RAB) and aircore drill holes Exploration boreholes grout and cap open bore holes.         Y         aircore         \$53         \$50         May include caling open. and select           Option 2 - Mineral RAB and aircore drill holes Exploration boreholes grout and cap open bore holes.         Y         aircore         \$53.00         \$50         Include selecting open. and addition open. boreholes grout and cap open bore holes.         Y         aircore         \$57.80         \$50         Include selecting open. and caling open. open.         Strates-formance open.         Y         aircore         \$57.80         \$50         Include selecting open. open.         Strates-formance open.				 Contan	ninated Mater	ials Subtotal	\$0		where warranted.
Option 3 - Mineral RAB and alcore drill holes         Y         allow         \$43         \$0         Installation of a casing cab, not cutting, holes with cutting, holes with cutting, holes with cutting, holes with cutting, and capping 1         Installation of a casing cab, not cutting, holes with cutting, holes with cutting, holes of thicker of the set of the							•		
Dependencies         Dependencies         Opendencies	vents, shafts and Boreholes	Exploration boreholes - rehabilitate coal boreholes	Y						exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip
Bound Holes - Cap and Seal open lobe index win Seel     Y     allow     \$5,960     \$0     cutting seal clar for the bev as ground seal open lobe index win Seel     ground seal open lobes - surface - to -in-seam gas drainage     ground seal open lobes - surface - to -in-seam gas drainage     Y     allow     \$17,890     \$0     \$00     S0     Surface-to-in-seam gas drainage borboles - surface - to -in-seam gas drainage borboles.       Boreholes - cap and seal open bore holes - vertical gas drainage     Y     allow     \$16,000     \$0     \$00     Vertical gas drainage borboles - grout (with concrete) cap and seal open bore holes - grout cap and cap and car and part (with concrete) cap and seal open bore holes - grout cap and ca	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary		depth (m)	\$44.55		\$0		exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration /
Includes and frammage     Y     allow     \$17,390     \$0     boreholes.     oreholes.       Boreholes - cap and seal open bore holes - vertical gas drainage     Y     allow     \$16,000     \$0     Vertical gas drainage boreholes       Boreholes - grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)     Y     allow     \$35,000     \$0     Includes multi shares to pr aquifer multi shares	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore	Y	depth (m) allow	\$44.55 \$43		\$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill / cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental
gas drainage     Y     allow     \$16,000     \$0     Vertical gas drainage benefores       Boreholes - grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)     Y     allow     \$35,000     \$0     includes multi skin sleaves to pr aquifer mixing.       Boreholes - cap and seal service boreholes for UG coal operations     Y     allow     \$45,000     \$0     \$0     includes multi skin sleaves to pr aquifer mixing.       Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes Rehabilitation of diamond drill holes Rehabilitation of reverse circulation drill holes Rehabilitation of reverse circulation drill holes Rehabilitation of drill holes for mineral exploration relucing sealing drill holes for mineral exploration     Y     Item     \$1,340     \$0     \$0     Sealing required, but not complet with concrete/grout       Option 5 - Mineral reverse circulation drill holes Rehabilitation of drill holes for mineral exploration     Y     Item     \$1,340     \$0     \$0     Sealing required, but not complet with concrete/grout       Option 5 - Mineral reverse circulation drill holes Rehabilitation of drill hole collars Rehabilitation of drill	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y	depth (m) allow allow	\$44.55 \$43 \$5,700		\$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
holes (i.e. where sealing aquifers)     Y     allow     \$35,000     S0     aquifer mixing.       Boreholes - cap and seal service boreholes for UG coal operations     Y     allow     \$45,000     \$0     \$0     Includes large diameter borehol for supplying electricity (66X), compressed air, water, solesnic       Option 4 - Mineral diamond drill hole     Y     allow     \$45,000     \$0     \$0     Bog outlings, remove fencin remove rubbish, push sumps in, rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration     Y     Item     \$2,070     \$0     \$0     Sealing required, but not comple with concrete/grout       Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration     Y     Item     \$1,340     \$0     \$0     Sealing required, but not comple with concrete/grout       Option 5 - Mineral reverse circulation drill holes and pad including sealing drill holes for mineral exploration     Y     leach     \$1,340     \$0     \$0     Sealing required, but not comple with concrete/grout       Option 5 - Mineral reverse circulation drill hole collars     Y     each     \$415     \$0     Cut collar, remove, cap, backfill collars drill hole collars (mineral exploration)       exploration     Unsealed roads/ vehicle park-up areas - minor works including dee	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage	Y Y Y	depth (m) allow allow allow	\$44.55 \$43 \$5,700 \$6,960		\$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage
Boreholes – cap and seal service boreholes for UG coal operations         Y         allow         \$45,000         \$0         Includes large diameter boreholes for UG for supplying electricity (66KV), compressed air, water, solsenic           Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes and pad including sealing drill holes for mineral exploration         Y         Item         \$22,070         \$0         S0         Includes large diameter boreholes for UG or supplying electricity (66KV), compressed air, water, solsenic merver verbibilitation of drill holes and pad including sealing drill holes for mineral exploration         Y         Item         \$22,070         \$0         \$0         Bore of the sead of tracks, currence includion drill holes and pad including sealing drill holes for mineral exploration         Y         Item         \$1,340         \$0         \$0         Sealing required, but not comple with concrete/grout           Option 5 - Mineral reverse circulation drill holes and pad including sealing drill holes for mineral exploration         Y         each         \$1,340         \$0         \$0         Sealing required, but not comple with concrete/grout           Option 6 - Rehabilitation of drill hole collars         Y         each         \$415         \$0         Cut collar, remove, cap, backfill collar does or with nearby org growth material           The coll of the collars (mineral exploration)         Y         each         \$415         \$0         Cut collar, rem	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical Boreholes – cap and seal open bore holes - vertical	Y Y Y Y	depth (m) allow allow allow allow	\$44.55 \$43 \$5,700 \$6,960 \$17,890		\$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage
Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration       Y       Item       \$2,070       \$0       \$0       rehabilitate pads and tracks, ou plug collars. Includes labour an equipment, disposal of rubbish on site         Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes Rehabilitation of reverse circulation and pad including sealing drill holes for mineral exploration       Y       Item       \$1,340       \$0       Sealing required, but not comple with concrete/grout         Option 6 - Rehabilitation of reverse circulation drill hole collars Rehabilitation of drill hole collars (mineral exploration)       Y       each       \$415       \$0       Cut collar, remove, cap, backfill collar and cover with nearby org growth material         Terms       Unsealed roads / vehicle park-up areas – minor works including deep rip an trim Unsealed roads / access tracks / vehicle park-up       Y       ha       \$1,040.00       \$0       Assumes -6 m road width - 16H	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gardrainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore	Y Y Y Y Y	depth (m) allow allow allow allow	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting sted collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent
Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration       Y       Item       \$1,340       \$0       \$0       Sealing required, but not complex with concrete/grout         Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration       Y       each       \$415       \$0       \$0       Cut collar, remove, cap, backfill collar or with nearby or growth matter or grow	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e. goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG	Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing.
Rehabilitation of drill hole collars (mineral exploration)     Y     each     \$415     \$0     \$00     collar and cover with nearby org growth material growth material       Unsealed roads / vehicle park-up areas – minor works including deep rip and trims     Y     ha     \$1,040.00     \$0     \$0     Assumes -6 m road width -16F       Unsealed roads / vehicle park-up areas – minor works including deep rip and trims     Y     ha     \$1,040.00     \$0     Assumes -6 m road width -16F       Unsealed roads / access tracks / vehicle park-up         D10 Dozer @ \$400 per hour and set or park - 100	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad	Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow allow allow	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66KV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally
Roads and Tracks     Unsealed roads / vehicle park-up areas - minor works including deep rip and trim     Y     ha     \$1,040.00     \$0     Assumes ~6 m road width - 16H Unsealed roads / access tracks / vehicle park-up       Unsealed roads / access tracks / vehicle park-up     Image: Comparison of the tracks / access tracks / vehicle park-up     Image: Comparison of the tracks / access tracks / vehicle park-up     Image: Comparison of the tracks / access tracks / vehicle park-up     Image: Comparison of the tracks / access tracks / vehicle park-up	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gardnange Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes Rehabilitation of reverse circulation drill holes Rehabilitation gealing drill holes for mineral exploration	Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow ttem	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes large diameter boreholes used for supping electricity (f6kV), compressed air, water, solsenic etc. Bog out cuttings, remove flencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Include slave and tracks, cut and plug collars. Includes large autient, sicposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout
works including deep rip and trim <b>r</b> na <b>\$1,040.00 \$0</b> Assumes -b m road width - 10- Unsealed roads / access tracks / vehicle park-up D10 Dozer @ \$400 per hour an	vents, shafts and Boreholes	Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of reverse circulation drill holes Rehabilitation of reverse circulation drill holes Rehabilitation of drill hole collars (mineral exploration	Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow ttem Item ttem	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		exploration borehole. Assume a 20 m x 20 m drill part equires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fenoling, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes lour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout
areas with windrows and/or small earthen bunds - Y ha \$1,500 \$0 grader @ \$230 per hour (50%		Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- tein-seam gas drainage Boreholes – cap and seal open bore holes - surface- tein-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical coal operations Option 4 - Mineral diamond drill holes nd pad including sealing drill holes for UG coal operations Option 5 - Mineral reverse circulation drill holes Rehabilitation of drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow allow tem tem tem	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$41,000 \$45,000 \$41,0000\$40,000 \$41,000\$40,000\$40,000\$40,000\$40,000\$40,000\$40		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill / cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66KV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed Y ha		Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow allow item item item teach ha	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$41,340 \$415 <b>S and Borehe</b>		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove flencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
(pasture grass) dutilisation) - pasture grass seed Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) V has \$4,485 \$0 \$0 grader @ \$230 per hour (50%) utilisation) - native tree/shrub/grass)		Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 5 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of drill holes for mineral exploration Option 6 - Rehabilitation of drill holes for mineral exploration Unsealed roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks ind thice park-up areas – Minor	Y Y Y Y Y Y Y Y Y Y Y	depth (m) allow	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$45,000 \$1,340 \$1,340 \$1,000 \$1,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		exploration borehole. Assume a 20 m x 20 m drill part requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66KV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material Assumes –6 m road width - 16H Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%

InterfactNote of the part of										
Mathematical construction of and and any other of any other		with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and	Y		ha	\$4,870		\$0		grader @ \$230 per hour (50%
Image: Solution of the		with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and	Y		ha	\$7,025		\$0		grader @ \$230 per hour (50%
Interaction between two interactions of the second set of th		etc.) from roadways and disposal on-site/locally	Y		m3				Select Haul Distance Here	removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and
Leader Existence         No. 2			-		F	loads and Tra	cks Subtotal	\$0		
Image: stand									Select Push Length Here	
Image: set of the set of th	(Landform Establishment)		Y		m3					nominated in the approval/permit
Image: product of and of all of constraints of the set of th			Y		ha	\$3,900		\$0		grader @ \$230 per hour (50% utilisation).
Product of the second		drainage channels and other soil conservation	Y		ha	\$1,600		\$0	Select Haul Distance Here	work plus grader for ~4 hours each per ha.
Partors explando m or drog and drog and or         N         n         n         1913         0 </td <td></td> <td>spread to cap or backfill, cap thickness determined</td> <td>Y</td> <td></td> <td>m3</td> <td></td> <td></td> <td></td> <td></td> <td>material requiring backfill using an excavator and scraper to fill the void and enable the establishment of</td>		spread to cap or backfill, cap thickness determined	Y		m3					material requiring backfill using an excavator and scraper to fill the void and enable the establishment of
$\frac{1}{10000000000000000000000000000000000$			Y		m2	\$185.00		\$0		slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
Begin had and if yowa areas $\mathbf{v}$ $\mathbf{v}$ $\mathbf{ho}$ $\mathbf{Ford}$ $\mathbf{Ford}$ $\mathbf{Ho}$			Y		ha	\$1,130.00		\$0		
Image: construction of goins database of dogs initiations and offy the set of sources offy goins and going initiations and offy the set of sources offy goins and going sources offy going initiations and going integrations and going and going models (initiations)         Image: construction of goins database of going initiations and going and construction of going and going models (initiations)         Image: construction of going and going models (initiation)			Y		ha					
List of Programmer         Select Head         Description         Find and an origination of the anomaly includes and the end of th		Construction of spine drains / drop structures and/or stabilising water course entry points - required for								Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an
Lase Programme and Development and C private Development and C private Lase Sistement Establishment Estab			arthworks /	Structural Wo	rks (Landfor	m Establishm	ent) Subtotal	\$0		
Intering matrix masks (5 d m)     V     alwork     \$1500     \$10     Am carries.       Pillaring matrix masks (5 d m)     V     alwork     \$160     Am carries.       Direct seeding / celliber (pasture grass gencies)     V     ha     \$1,875     \$00     \$10     Includes tending many many many many many many many many	Revegetation (Growth Media Development and Ecosystem	Source, cart and spread growth media (Select Haul				Select from			Select Haul Distance Here	Virgin Excavated Natural Material (VENM) may need to be externally
Direct seeding / fettiliser (pasture grass species)     Y     ha     \$1,875     \$10     Holdes treams, weighing, mindry with trelliner - species of treams and right part or the interpret seeding. Use of the interpret seeding, by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding by tractor of the interpret seeding. Use of the interpret seeding by tractor of the interpret seeding						-				
Direct accoding / milling (instance grass species)     Y     ha     91,75     90     Interface of the instance grass is precised by tractor or hadrops the instance of the instance grass is gradering. In our with instance seed, instance is gradering or with instance seed, instance is gradering or with instance seed.     Y     ha     91,175     90     100     Indexpect feature is gradering or with instance seed.       1 - y-p-o-seeding with stars muching and blumen is skd with native seed.     Y     Ing     91,38     90     900     Process to be used on fits will properties that stars muching and blumen is skd with native seed.     Y     Ing     91,43     80     900     Process to be used on fits will properties that stars muching and blumen is skd with native seed.     Y     Ing     91,43     80     80     Process to be used on fits will properties that stars muching and blumen is skd with native seed.     Y     Ing     91,43     80     80     Process to be used on fits will properties that stars with a gradering on its and ingoling on its and ingoling on its and ingoling on its and insoling properties that stars with a gradering on its and ingoling on its and its will properties that stars with a gradering on its and ingoling on its and its will properties that stars with a gradering on its and its and ingoling on its and its and ingoling on its and its and its and ingoling on its and its		Planting tube stock (<15 cm)	Y		allow	\$6.60		\$0		
product of human prices       Y       ha       \$4,135       50       tentilier - spreading tright or in Antiop prices or tender of human prices         Hydro seading with draw mulching and blumen tack with native seed       Y       m2       \$1,90       \$00       Process to be used on fill will prepare tright or in antiop prices or tender of prices or tender of prices or tender of prices or tender of tender or tender or tender or tender of tender or tender		Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
Hydro-accelling with starw mulching and bitumen lack with native seed       Y       m2       \$1.50       S0       S0       Buffaces under infjation 6, sersage presented infjation 6, sersage treatment infjation 6, sersage trea			Y		ha	\$4,135		\$0		fertiliser + spreading by tractor or
Hydro-seeding with straw mulching and bitumen tack with pasture seedYm2S0.43S0surfaces under infigation e.g. ewage restantingHydro-seeding with straw mulching and bitumen tack with pasture seedYm2S0.43S0straw mulching set and set and set restantingHydro-mulch - base grade or standard for flat areas that can be ingited by water cartYm2S0.80S0straw mulching and set and set and set and set and set and set and set and set and set and set and set and set and set and set and set and set and set and set and and set a			Y		m2	\$1.90		\$0		treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and
Hydromulch - base grade or standard for flat areas that can be irrigated by water cart       Y       m2       \$0.80       \$50       gradient of less than 4.1, and wate possible. Inclustry standard application rate of 2500kgh. Product will as that can be irrigated by water cart         Hydromulch - base grade or standard for flat areas that can be irrigated by water cart       Y       m2       \$0.80       \$50       gradient of less than 4.1, and water possible. Inclustry standard application rate of 2500kgh. Product will as that an one possible. Inclustry standard application is required to required.         Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months       Y       m2       \$1.80       \$50       Assumes use on steep areas where stabilisation is required for up to 13200kgh. Product or up to 3200kgh. Product or up to			Y		m2	\$0.43		\$0		treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and
Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months       Y       m2       \$1.80       \$0       stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.         Hydromulch - high performance flexible growth medium grade       Y       m2       \$2.50       \$0       \$0       Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha. This cost includes cover crop only, additional seeding required.         Single application of fertiliser (pasture)       Y       m2       \$2.50       \$0       \$0       Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc.) this is a suitable standard rate.         Single application of fertiliser (trees)       Y       haa       \$140.00       \$0       \$0       These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc.) this is a suitable standard rate.         Single application of fertiliser (trees)       Y       haa       \$140.00       \$0       \$0       Assumes 251 / ha as an average			Y		m2	\$0.80		\$0		gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop
Hydromulch - high performance flexible growth medium grade       Y       m2       \$2.50       \$0       statilisation is required for up to 18 months. Application rate of -4.000 kg/minimum. This cost includes cover crop only, additional seeding required.         Single application of fertiliser (pasture)       Y       ha       \$420.00       \$0       \$00       Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.         Single application of fertiliser (trees)       Y       ha       \$140.00       \$00       \$00       These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.         Single application of fertiliser (trees)       Y       ha       \$140.00       \$00       \$00       Assumes 25.1 / ha as an average			Y		m2	\$1.80		\$0		stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only,
Single application of fertiliser (pasture)       Y       ha       \$420.00       \$0       fluctuated over the last few years however in light of current conditions (lower frue) prices, reduced demand etc) this is a suitable standard rate.         Single application of fertiliser (trees)       Y       ha       \$140.00       \$0       These rates have fluctuated over the last few years however in light of current conditions (lower frue) prices, reduced demand etc) this is a suitable standard rate.         Single application of fertiliser (trees)       Y       ha       \$140.00       \$0       These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.         Social amelioration (adding lime (musum etc.))       Y       ha       \$140.00       \$0       Assumes 2.5 t / ha as an average			Y		m2	\$2.50		\$0		stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop
Single application of fertiliser (trees)       Y       ha       \$140.00       \$0       \$0       Iast few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.         Social amelioration (adding lime / musum etc.)       Y       ba       \$140.00       \$0       Assumes 2.5 t / ha as an average		Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc)
		Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
		Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate.

	Total Cost fo	r Infras	structur			enis Subtotal	φυ	\$0	
		_	Maint		habilitated A		\$0 \$0		construction of landform.
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re construction of landform
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface wate management.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills significant growth media replacement
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, m growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilis minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	transfer and management infrastructure		<u> </u>		ater Managen	nent Subtotal	\$0 \$0		management infrastructure.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water	Y		m3 allow	Select from List \$25,000		\$0		contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam. Provisional sum for removal of wate
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0	Select Haul Distance Here	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use b alternate land-user - D6 Dozer (or similar) + pasture grass. This item includes the volume of
vvater management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use b alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and past grass.
Water Management	Land Preparation and Revegetation (Gro	wth Media D	evelopment a	Ind Ecosyster	m Establishm	ent) Subtotal	\$0		
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximal depth of 0.2 m into stockpiles; load haul to final rehabilitation location required or respreading where necessary.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$60/m3 for imported material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$70/m3 for imported material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Sa signs for the occupational environm installed every 25 m.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.

## Domain 2c: Tailings & Rejects

## **Total Cost for Tailings & Rejects Domain**

\$0

	d any relevant assumptions to this domain below:						1	tation Area Data for Domain Total Landform Establishment:	Enter data below manually
								al Growth Media Development: tal Ecosystem Establishment:	
Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Y		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pli-top facilities (i.e., vehicle re- fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (w)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (tex) pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$106,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (vi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oilwater separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SACP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	\$35,000		\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y		allow	Use alternate rate cell		\$0		Assumes complex site; detailed design drawings required for cover.

	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	by approval / permit (Select Haul Distance from List)	, 			Líst				and enable the establishment of rehabilitation.
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined	у		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
Fasthmarks (0: 1997)	1	Earthworks / S	Structural Wo	rks (Landfori	m Establishm	ent) Subtotal	\$0		1
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	removal of the volume of stabilised material from the road, laydown or othe surface using an excavator, dozer and grader to enable the establishment of nebabilition
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor works including deep rip and trim	Y		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Grade
			I		minated Mater	ials Subtotal	\$0		
	Remove and dispose of asbestos (>750 m2) Waste disposal to Council landfill - fees (asbestos)	Y Y		m2 tonne	\$40.00 \$290		\$0 \$0		been made to confirm the volume of asbestos to be removed. Landfill fees to regional landfill.
	Remove and dispose of asbestos (<750 m2)	Y		m2	\$50.00		\$0		been made to confirm the volume of asbestos to be removed. Where an assessment/estimation has
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y		m3	\$165.00		\$0		Additional cost as the treatment proces is fast tracked. Where an assessment/estimation has
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Y		ltem	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	у		m3	Select from List				prepared surface and stimulation of aerobic microbial activity within the soil through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of annanic chemicals - time frame of up to
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Y		m3	\$220.00		\$0	Select Volume Here	Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	Y		m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Y		m3	\$800.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROW product) / roads and dump in a void on-site (Select Haul Distance from list)	Y		m3	Select from List			Select had bistance here	This item includes scraping and remov of the volume of carbonaceous materia using dozer, grader etc. to make safe an area and enable the establishment rehabilitation.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y		L	\$0.35		\$0	Select Haul Distance Here	Cost for recent sump clean-up from resource activity - requires specialists treat.

Mine Waste	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with tittle chemical reactivity (no 10 wirsk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propersity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mad 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Ŷ	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or fow to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength timits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternata rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.) , and associated activities (i.e., load / hau/ / place / crush / specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional materials must be added spour thaterial to materials must be added spenately if required. If additional materials not be under my provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoft, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate), If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runolf, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc.	Y	m3	Select from List		<b>^</b>	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste /
Land Preparation and				wine w	aste Subtotal	\$0	Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	У	m3	Select from List				Virgin Excavated Natural Material
								(VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,875		\$0		
	Direct seeding / tertiliser (pasture grass species) Direct seeding / fertiliser (tree or native grass species)	Y Y	ha ha	\$1,875 \$4,135		\$0 \$0		sourced. Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass							sourced. Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass species) Hydro-seeding with straw mulching and bitumen	Y	ha	\$4,135		\$0		sourced. Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation e.g. sewage treatment irrigation gon size and
	Direct seeding / fertiliser (tree or native grass species) Hydro-seeding with straw mulching and bitumen tack with native seed Hydro-seeding with straw mulching and bitumen	Y	ha m2	\$4,135 \$1.90		\$0 \$0		sourced. Includes treating, weighing, mixing with feriliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with feriliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepared surfaces under irrigation ac. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepared surfaces under irrigation acreas. Ranges from \$0.15 - \$0.50 depending on size and \$0.15 - \$0.50 dep
	Direct seeding / fertiliser (tree or native grass species) Hydro-seeding with straw mulching and bitumen tack with native seed Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y Y Y	ha m2 m2	\$4,135 \$1.90 \$0.43		\$0 \$0 \$0		sourced. Includes treating, weighing, mixing with feriliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with feriliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepared surfaces under irrigation ace, sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepared surfaces under irrigation ace, sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Assumes use on flat areas with a gradient of less than 4:1, and where possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 unths) and vegetation is required to grow ASAP for stability. This cost includes cover crop
	Direct seeding / fertiliser (tree or native grass species) Hydro-seeding with straw mulching and bitumen tack with native seed Hydro-seeding with straw mulching and bitumen tack with pasture seed Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y Y Y	ha m2 m2 m2	\$4,135 \$1.90 \$0.43 \$0.80		\$0 \$0 \$0 \$0		sourced. Includes treating, weighing, mixing with feriliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with feriliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepared surfaces under irrigation a.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepared surfaces under irrigation a.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required. Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only.

	Total Cost for 1	Tailings	& Reie	cts Dor	nain			\$0	
					Additional It		\$0		
	landform	1	Maint		habilitated A	eas Subtotal	\$0		construction of landform.
	Existing rehabilitation repair - major Existing rehabilitation repair - total failure of	Y		ha	\$2,500 \$40,000		\$0 		some level of additional surface wa management. Areas that require extensive rehabilitation repair - re-design and
									significant growth media replacement Areas requiring major repair - rills, gullies, growth media replacement,
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - I
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		major repair works. Areas requiring minor repair - rills, growth media replacement.
laintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertil minor re-shaping, erosion control, inspections/audits - does not inclu-
				W	ater Managen	nent Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks an revegetation required to rehabilitat dam batters etc suitable for re-use alternate land-user - D6 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitat dam batters etc suitable for re-use alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pas grass.
	Land Preparation and Revegetation (Gro	wth Media D	evelopment a	nd Ecosyste	m Establishm	ent) Subtotal	\$0		• • • • • • • • • • • • • • • • • • •
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prio hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		necessary. Addition of manure to improve soil quality.
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approxim depth of 0.2 m into stockpiles; load haul to final rehabilitation location required or respreading where
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truc (90c/km) from imported stockpile - nominal rate of \$60/m3 for importe material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truc (90c/km) from imported stockpile - nominal rate of \$70/m3 for importe material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - signs for the occupational environ installed every 25 m.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		application rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over t last few years however in light of d conditions (lower fuel prices, redu demand etc) this is a suitable stan rate. Assumes 2.5 t / ha as an average

## Domain 3c: Overburden & Waste

#### **Total Cost for Overburden & Waste Domain**

**\$0** 

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Y		ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		Provisional sum for cutting using rip tynes and on-site disposal of the line
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location to authorised disposal.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78 per tonne and authorised disposal t landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L ta Add disposal costs to additional ite
	Hadi Distance Horn ist)			Contar	ninated Mater	ials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Gr
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 10 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 1 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 10 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 1 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or surface using an excavator, dozer a grader to enable the establishment rehabilitation.
				F	Roads and Tra	cks Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grad nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 1 grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the voi and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate stee slopes of weathered rock, roadway cuttings, etc that cannot be cut bac and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 1 grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		Combination of dozer and excavate work plus grader for ~4 hours each ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material rap) where managing water run-off disturbed land and/or upon entry to water courses - prevents erosion o gully head (assumes competent material is locally available). If requ to be sourced off site, assume an additional \$20/m2.

Mine Waste						
	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit eujoment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mad 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternata rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring hauleging costs for tailings cap material included in rate). If additional materials materials morks aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for talindform, provide buttress or ther works aside from talings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Ŷ	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Y	ha	\$843,000		\$0		This option is vipically arriven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform participate this participate this area
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc.	Y	m3	Select from List			Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste /
Land Preparation and		1	1	Mine Wa	aste Subtotal	\$0		
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y	m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y Y	allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y	m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y	m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y	m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y	m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.

	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (how of the) prices, reduced domand etc).
									(lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000		\$0		Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Gro	wth Media D	evelopment a	nd Ecosyster	m Establishm	ent) Subtotal	\$0		Deviciental ever for continuation and
Hate, management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
Maintenance of Rehabilitated	-	-	1	W	ater Managen	nent Subtotal	\$0		
Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
		Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - moderate								Areas requiring major repair - rills,
	Existing renabilitation repair - moderate	Y		ha	\$2,500		\$0		gullies, growth media replacement, some level of additional surface water management.
		Y Y		ha	\$40,000		\$0		some level of additional surface water
	Existing rehabilitation repair - major Existing rehabilitation repair - total failure of		Maint	ha	\$40,000 habilitated Ar	reas Subtotal ems Subtotal			some level of additional surface water management. Areas that require extensive rehabilitation repair - re-design and re-

## **Domain 4c: Active Mine & Voids**

## **Total Cost for Active Mine & Voids Domain**

**\$0** 

Key Renabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	Y		Lm	\$1.93		\$0		Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Y		m3	\$0.95		\$0		Bulk Drilling say 8*9 pattern, assuming a stern height of 6 m, charge length of 19 m, explosive density of 0.9, diameter of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	Y		m	\$90.00		\$0		D10 dozer, 16H Grader and revegetation with pasture grass.
	-		1	1	Open	Cut Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	8 	arthworks /	Structural Wo	orks (Landfori	n Establishm	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y Y		allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	<b>\$0.43</b>		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only, additional seeding required.

	Total Cost for A	ctive M			Additional It		\$0	\$0	
	Existing rehabilitation repair - total failure of landform	Y	Maint	ha enance of Re	\$40,000	reas Subtotal	\$0 <b>\$0</b>		rehabilitation repair - re-design and re- construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management. Areas that require extensive
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, mino growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising minor re-shaping, erosion control, inspections/audits - does not include major repair works.
			1	W	ater Managen	nent Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by a alternate land-user - D6 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by a alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
-	Land Preparation and Revegetation (Gro	wth Media D	evelopment a	nd Ecosyster	m Establishm	ent) Subtotal	\$0		
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		necessary. Addition of manure to improve soil
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load an haul to final rehabilitation location required or respreading where
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - alla nominal rate of \$60/m3 for imported fi material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - all nominal rate of \$70/m3 for imported f material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safe signs for the occupational environmer installed every 25 m.
	Security fence around steep section of high wall	Y		m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5n mesh & 32 mm post not concreted
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		rate. Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of curr conditions (lower fuel prices, reduced demand etc) this is a suitable standar
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates har fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand et this is a suitable standard rate.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes whe stabilisation is required for up to 18 months. Application rate of ~4,000kg/ minimum. This cost includes cover cr only, additional seeding required.

## **Domain 5c: Management Activities**

## **Total Cost for Management Activities**

**\$0** 

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	Y		ML	\$3,600		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	Y		ML	\$1,500		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
				W	ater Managen	nent Subtotal	\$0		
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	Y		m	\$2,500		\$0		Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	Y		m	\$1,500		\$0		Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	Y		m2	\$6.00		\$0		Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
					Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y		ha	\$150.00		\$0		Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land management activities.
			Maint	enance of Re	habilitated A	eas Subtotal	\$0		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate rate cell		\$0		Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
				•	Heritage Ite	ems Subtotal	\$0		-
Sundry Items	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater Xubsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	Y		allow	\$100,000		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range from -\$75k to >\$1 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Y		allow	\$90,000		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated costs for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	Y		allow	\$15,000		\$0		Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Includes risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.

				Ī					Includes costs for key investigations and
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	Y		allow	\$300,000		\$0		studies including designs e.g geochemistry. Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide sufface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range to >\$3 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Y		allow	\$125,000		\$0		Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	Y		allow	\$27,950		\$0		Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
	Site security during closure	Y		yr.	\$75,000		\$0		Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	Y		allow	\$0			Select type of HAZMAT Clean- up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	Y		each	\$31,630		\$0		Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium – 137 etc). Source Isotope type, quantity, strength, weight, source holder type, source holder weight, pick-up location (among others) will directly affect pricing.
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	Y		allow	Use alternate rate cell		\$0		Provisional sum.
Mahillanda		I	1	1	Sundry Ite	ems Subtotal	\$0		
Mobilisation and Demobi	Ilisation Mobilisation & Demobilisation for small mine or quarry - small fleet	Y		Item	\$12,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Y		Item	\$35,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site <150 km)	Y		item	\$100,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	Y		item	\$150,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	Y		item	\$300,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	Y	M	item	\$500,000 d Demobilisa	tion Subtotal	\$0 \$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by<="" td=""></to>
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		I		I		ems Subtotal	\$0		the operator>>

Total Cost for N	anagement Activities \$0

# Assumptions and rehabilitation requirements

List or record any assumptions made when completing this tool:
