

FWP0001306

SHEAHAN GRANTS / JUNCTION REEFS FORWARD PROGRAM

Tuesday 14 May 2024 to Thursday 13 May 2027



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Summary

DETAIL	
Mine	Sheahan Grants / Junction Reefs
Reference	FWP0001306
Forward program commencement date	Tuesday 14 May 2024
Forward program end date	Thursday 13 May 2027
Forward program revision (if applicable)	
Contact	Diana Bozzetto
Mining leases	MPL 273 (1973), ML 1243 (1973), ML 1189 (1973), MPL 272 (1973), ML 1242 (1973)
Project location	CLIMAX AUSTRALIA PTY LIMITED
Date of submission	Friday 1 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 Junction Reefs mining project is located across three mining leases (ML1189, ML1242 and ML1243) and 2 mining purpose leases (MPL272 and MPL273). The project was approved by the Blayney Shire Council in 1987, under development consent DA 58/68 and DA 166/90 (modification to DA 58/68). Mining operations ceased in 1995, with progressive rehabilitation at the site undertaken between 1995 and 2000/2001. Key rehabilitation activities included: backfilling of pits; capping of tailings in the main Tailings Storage Facility (TSF) and the Sheahan-Grants pit, and implementation of seepage management controls; reinstatement of native vegetation; and contouring, capping and revegetating waste rock storage areas. Since acquisition of the project in 2007, OceanaGold Corporation (OGC) has continued monitoring, site remedial works, and technical studies with a goal to relinquish the mining leases.

Description of surface disturbance activities

Exploration activities

There are no mining exploration activities proposed or likely proposed to be undertaken within the mining leases in the next three years.

Construction activities

There are no mining construction activities scheduled in the next three years. Care and maintenance activities over the next three years, will include some physical remedial works such as erosion and drainage control maintenance. In addition, remedial work will occur at the Frenchman's waste rock dump area of the surface leachate expression. This has been previously notified to the department via a s60 CLM Act notification. OceanaGold has engaged external expertise to identify the source of the surface leachate expression and develop a remediation plan. Generally, forecasted construction activities would be as advised by technical studies.

Mining schedule

Mining development method and sequencing and general mine features.

Mining operations at the Junction Reefs project ceased in 1995, with progressive rehabilitation at the site, and all mining features including tailings, waste rock dumps, were undertaken

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between 1995 and 2000/2001. There are no mining operations and associated activities scheduled for the next three years.

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

There are no emplacements, or sequencing of emplacements, construction and management, scheduled or proposed for Junction Reefs, over the next three years. Progressive rehabilitation of mine waste rock emplacements occurred between 1995 and 2000/2001. Remedial work is planned on an area of the Frenchmans waste rock dump.

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

There is no new processing infrastructure or tailings emplacement activities scheduled for the site over the next three years. The main out of pit tailings storage facility (TSF) and in pit TSF at Sheahan-Grant have been capped.

Waste disposal and materials handling operations.

There are no waste disposal and materials handling operations occurring at the site and none planned or scheduled over the next three years.

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 ¹	(Mt)	0	0	0
Product	(Mt)	0	0	0

¹ This includes coarse rejects, tailings and any other wastes resulting from beneficiation.



Three-year rehabilitation forecast

Rehabilitation maintenance and corrective actions

* Ongoing water quality monitoring across all Mining Leases, including recording of seepage water volumes below the main TSF area. * Ongoing maintenance activities of the Main TSF wetland area. * Completion of technical studies and supporting assessments, triggered through Mining Lease relinquishment process. ML1243 * Installation of groundwater monitoring wells around the Glendale Pit to monitor groundwater levels and quality to inform a hydrological model. * Investigate requirements for minor earthworks to address areas of erosion on the abandonment safety bund surrounding the Glendale Pit. * Capping of a number of old open exploration boreholes. ML1242 * Development and implementation of a remediation plan for the Frenchmans waste rock dump surface leachate area, including drilling works to identify source of leachate. * Investigate the need for minor earthworks to ease a section of the Cornishmens scree slope down to the approved angle of repose. * Investigate the need for surface drainage works associated with infiltration of the Cornishmens pit surface and scree slope, through historic mining tunnels. ML1189 * Investigate passive treatment or management options for the Main TSF seepage

Rehabilitation schedule

The key physical remediation and rehabilitation activities to be conducted over the next three years, as described in the above Rehabilitation and corrective actions section are: * Implementation of a remediation plan for the Frenchmans waste rock dump surface leachate area. * Identify and design a management solution for the Main TSF seepage. * Installation of groundwater monitoring wells at the Glendale pit. * Minor remedial earthworks to address erosion and drainage issues across the mining leases. * Ongoing technical assessments to confirm completion against completion criteria. No additional work is proposed on MPLs 272 and 273, other than minor erosion remediation and the necessary paperwork to transfer future land management responsibilities to landholders and / or Crown Lands, following relinquishment.



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)	0	0	0
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
A	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	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. 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. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
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.



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	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: upload rehabilitation geographical information system (GIS) spatial data develop rehabilitation GIS spatial data (using online tracing functions) generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. 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.
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.



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 Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate 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.



WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes:
	 the relevant development consent authority the local council the relevant landholder(s) community consultative committee (if required under the development consent) or equivalent consultative group affected land holder(s) government agencies relevant to the final land use affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) local Aboriginal communities, and any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
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 ² .
Waste	Has the same meaning as that term under the <i>Protection of the Environment Operations Act 1997</i> .

² Commonwealth of Australia (DITR), 2007. *Tailings Management*.

Forward Program (SMALL MINE) v2.1



Rehabilitation Cost Estimation Tool

The Mining Act 1992 and the Petroleum (Onshore) Act 1991 allow the Minister (or delegate) to impose and vary a security deposit condition on authorisations or titles granted under these Acts. The **security deposit** is required for the fulfilment of obligations under the authorisation or title (hereon in referred to as an authority), including those related to rehabilitation, and obligations that may arise in the future. Authority holders are required to submit a Rehabilitation Cost Estimate (RCE) whenever a potential change in rehabilitation liability occurs and at other key points throughout the tenure of an authority. The RCE is used by the Department to assist in determining the amount of the security deposit required for an authority.

The objective of the Rehabilitation Cost Estimation Tool (the RCE Tool) is to provide exploration, mining and petroleum operators with guidance on calculating an appropriate RCE for their operations by assisting in the assessment and quantification of rehabilitation risks and liabilities pursuant to the *Mining Act 1992 and Petroleum (Onshore) Act 1991*.

Please Note: The RCE Tool does not apply to the sealing of petroleum wells associated with exploration and production activities under the Petroleum (Onshore) Act 1991. Petroleum title holders can use the RCE Tool for guidance on calculating an appropriate RCE for disturbance associated with their activities. However, it is the expectation that a separate estimate is submitted for the sealing of petroleum wells, with the RCE prepared by a suitably qualified expert in consideration of the scale, nature, risks and age associated with petroleum wells specific to the petroleum title. For petroleum production use the Open Cut Button. For petroleum exploration use the Exploration Button.

Prior to calculating a RCE, authority holders using the RCE Tool should refer to *Guideline: Rehabilitation Cost Estimate* and the *Rehabilitation Cost Estimate Tool Handbook* which provide guidance information about, and step by step instructions on how to use, the RCE Tool. The guideline and handbook are available on the Department's website www.resourcesregulator.nsw.gov.au

Calculating a RCE

The framework of the RCE Tool has been developed in accordance with a tiered risk-based approach to calculating rehabilitation costs whereby the outcome of the estimation will be based on the nature, size, scale and complexity of the operation. While the authority holder has the opportunity to nominate unit rates* which are not the same as those in the RCE Tool, any other unit rate proposed by the authority holder must be based on a third party cost as it is assumed that if the authority holder defaults on their responsibility to rehabilitate the mine or exploration operation(s), a contractor will be engaged by the Government to carry out the required rehabilitation works.

Select Type of Mining/Exploration Operations from Buttons Below

By selecting the relevant type of mining/petroleum/exploration operation (below), followed by the **ENTER** button, the worksheet relevant to the operation type will be activated. Each worksheet shows the domains likely to be present for the operation type. A worksheet must be completed, with **ALL** relevant domains, in order to estimate the total rehabilitation costs for the exploration, petroleum operations and/or mining operation.

*Note: The Department may regularly make changes and updates to the spreadsheet as necessary. All authorisation holders are encouraged to use the most recent version of the spreadsheet, available on the Department's website.

Site Registration Date March 2024 Complete the following fields prior to calculating the Security Deposit. Junction Reefs Gold Mine Mine Name: ML1189, ML1242, ML1243, MPL272, MPL273 Lease(s): Title Holder: Climax Australia Pty Ltd OceanaGold Corporation Mine Operator: Annual Term of RCE: **Current Security:** \$163,000 Date of last Security Deposit review Diana Bozzetto Mine Contact: Group Environment Manager Position: Address: Level 3, 154 Melbourne Street South Brisbane QLD 4101 Phone: 0419 655 308 Email:

The following site specific information is in Deposit.	requested to provide background informa	ation in the context of calculating the Security
Summary of Mine Activities		Environmental Sensitivities
Total annual production (tonnes):	0	Surrounding land use (tick all that apply):
Mine lease area (ha):	668	Cropping
, ,		☑ Pasture
Area of extraction (ha):	0	Forest
Area of disturbance (ha):	0	Undisturbed habitat
Rehabilitation in progress (ha):	0	☐ Urban
Rehabilitation complete (ha): Achieved ecosystem sustainability	58.2	Environmental Issues affecting site (tick all that a
Forward Program/MOP Utilised:	FWP0001306	☐ Threatened flora
Reference no. version and date	FWF0001300	☐ Threatened fauna
		Cultural heritage items
Forward Program/MOP Plan Utilised: Reference Plan no. version and date	1 FWP0001306	☐ Natural heritage features☐ Mine subsidence
Noticities i lair no. vorsion and date	2	✓ Surface water pollution
Plan(s) attached		Ground water pollution
	3	Hydrocarbon contamination
		☐ Methane drainage/venting
		☐ Spontaneous combustion
		Acid Mine Drainage
NOTE	=:	Within drinking water catchment
Ensure rehabilitation cost estimation refle	ects all environmental issues affecting	Other (describe below)
the lease. Contingencies should be all incorporated els		
estimat		



Open Cut and Underground Summary Rehabilitation Cost Estimation

Note: Sections of this page	ge are automatically filled in from the registration page		
Mine Name:	Junction Reefs Gold Mine		
Lease(s):	ML1189, ML1242, ML1243, MPL272, MPL273		
Mine Owner:	Climax Australia Pty Ltd		
Mine Operator:	OceanaGold Corporation		
Term of RCE:	Annual		
Current Security:	\$163,000 Date of Last Se	ecurity Depo	osit Review: 1/05/2019
Mine Contact:	Diana Bozzetto		
Position:	Group Environment Manager		
Address:	Level 3, 154 Melbourne Street		
AGG1033.	South Brisbane QLD 4101		
Dhana	0440 CEE 200	rotto@aas=	magald asm
Phone:	0419 655 308 Email: <u>Diana.Bozz</u>	<u>cetto@ocea</u>	<u>шадою.com</u>
	Domain		Security Deposit
Domain 1: Infrastructu	re		4,150.00
Domain 2: Tailings & F			140,000.00
Domain 3: Overburder			186,700.00
Domain 4: Active Mine	e & Voids		51,700.00
Domain 5: Subsidence	e & Management		
Subtotal (Domains a	nd Sundry Items)		\$382,550.00
Contingency	acutal Maniferina	10%	\$38,255.00
Post Closure Environm		10%	\$38,255.00 \$38,255.00
Project Management a	and Surveying	10%	\$38,255.00
Total Security De	posit for the Mining Project (excl. of GST)	\	\$497,315.00
Total Occurry De	posit for the imming i roject (excit of ser		ψ+01,010.00
Note: GST is not include	ed in the above calculation or as part of rehabilitation sec	urity deposits	required by the Department
Alterations have been	en made to unit prices within this spreadsheet. (Attach a se	parate sheet p	roviding details of changes).
✓ The proposed rehal	pilitation design is generally consistent with the development	consent for th	ne project.
	Summary Report and calculation pages are to be printed		
This mine security coloris	ation has been estimated using the best qualishle information	at the time	
-	ation has been estimated using the best available information effection of the total rehabilitation liability held by this mine.	at the time.	
a sas and doodrate it			
Diana Bozzetto			29/02/2024
Company Represe	ntatives Name	_	Date
Group Manager Env			Electronic therefore uns
Company Represe	ntatives Role / Responsibility		Signature

Domain 1a: Infrastructure

Total Cost for Infrastructure Domain

¢n.

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:
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 stoble, 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		Item	\$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	Υ		Item	\$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 demoitsh and remove bridge supports pytons/bridge structure etc. and dispose of waste material on-sterlocally	Y		Item	\$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.
	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	Υ		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 onsite/locally	Υ	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 & gardines (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	Υ	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-siteflocally	Y	m	\$15	\$0	~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not 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 - boats, etc. and labour. Does not include transport to regional disposal facility or 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 \cdot \$5.12.0 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove bitumen (airstrip) and dispose on-site/locally	Y	m2	\$20.00	\$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 / km for transport.
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	Remove concrete pads & footings (<300 mm thickness) and disposal on-site/focally	Y		m2	\$36.00		\$0		Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$12.0' / km. depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/focally	Y		m2	\$75.00		\$0		Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 \cdot \$>12.0' / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Crush concrete to make road aggregate - 75 mm	Y		tonne	\$10.00		\$0		Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 50 mm	Y		tonne	\$13.00		\$0		Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 30 mm	Υ		tonne	\$15.00		\$0		Does not include haulage of materials - assumes crushing plant is readily available.
	Remove fence (cyclone/wire fence) and disposal on- site/locally	Y		m	\$20.00		\$0		Roll up fence and remove posts.
	Removal of small plastic tanks	Y		each	\$1,000.00		\$0		Remove small poly tanks used for water storage, etc.
	Demolish and remove galvanised/corrugated light weight tanks	Y		each	\$500.00		\$0		Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
	Demolish and remove communication towers	Υ		each	\$5,000.00		\$0		Cost includes demolition and removal of tower only, separate costs required for disconnection of services, demolition of 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. This cost covers all fees and charges
	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Υ		tonne	\$7.00		\$0		Rate accounts for round trip haulage to 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 to 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 to 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 to 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 to 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 to 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 waste to local Council landfill: transport rates separate. Please note that this is not applicable to operations with approval 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; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Pail Infractructure		Term	ination of Se	rvices and D	emolition Wo	rks Subtotal	\$0		
Rail Infrastructure	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Υ		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	Υ		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).
				R	ail Infrastruct	ure Subtotal	\$0		
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1	Contaminated Materials						
		Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are fusitered. 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) (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, rall 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. s.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.	٧	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 infrusive investigation (EP Act Section 39 (12) (in)) 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, etc. A cluster area where it is highly arready of the contamination areas and should be applied considering the rehabilitation, etc. A cluster area where it is highly arready of the contamination and contamination and program, sells history location; and contamination between the contamination and
		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.	٧	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 399 (20 (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; and account of the contamination and program, site history, location; and an advantage of the contamination and pipes that are known to have leaded, chemical stores with earthen bunds, around ineffective dilivative elevation of the contamination and/or a large area visit authority of the contamination and/or a large area visit authority investigation and testing (sets filts, 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	Υ	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.

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		Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a vold on-site (Select Haul Distance from list)	Y	m3	Select from List				removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
		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.
		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 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.
		Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Υ	m3	Select from List			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 de
		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.
		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.
		Remove and dispose of asbestos (>750 m2)	Y	m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
		Waste disposal to Council landfill - fees (asbestos)	Y	tonne	\$290		\$0		Landfill fees to regional landfill.
		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.
		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.
								Select Haul Distance Here	
		Long haulage brine/salt for disposal (Select Haul Distance from list)	Y	tonne	Select from List				Costs for haulage to location for authorised disposal.
		Brine disposal to landfill - fees only	Y	tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
		Long haulage water (clean or contaminated) (Select	Y	tonne	Select from			Select Haul Distance Here	Assumes transport in a 20,000 L tanker. Add disposal costs to
L		Haul Distance from list)			List				additional items where warranted.
þ	Vents, Shafts and Boreholes	Haul Distance from list)				ials Subtotal	\$0		additional items where warranted.
	Vents, Shafts and Boreholes	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m	Y			ials Subtotal	\$0		
	Vents, Shafts and Boreholes	Seal portats / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with	Y	Contam	inated Materi	ials Subtotal			additional items where warranted. This cost is not applicable to coal operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + hauf unaterial to backfill per >5 km distance + concrete pump and
	Vents, Shafts and Boreholes	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill		Contam	\$126,000	ials Subtotal	\$0		additional items where warranted. This cost is not applicable to coal operations which require backfilling to MOG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for seeling, - haud material to backfill per >5 km distance + concrete pump and secondary support. Cost includes engineering the bulkhead and underground construction (access available) followed by grout backfill via workings and rehabilitation (reshape, bulk push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7.250 for grouting. If no bulkhead required,
	Vents, Shafts and Boreholes	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill against a concrete bulkhead to be constructed Seal portals / drifts (width >3 m) not accessible by men or machinery – grout backfill against a concrete	Y	allow	\$126,000 \$250,000	ials Subtotal	\$0 \$0		additional items where warranted. This cost is not applicable to coal operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + haul material to backfill per >5 km distance + concrete pump and secondary support. Cost includes engineering the bulkhead and underground construction (excess stable) (continued to the construction of excess stable) (construction and excess diffusion of excess stable) (construction and excess directly above heading followed by grout backfill via boreholde every of the fill of excess and excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push and excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and rehabilitation (but push excess directly above heading followed by grout backfill via boreholde every 10 m to fill voicids and
	Vents, Shafts and Boreholes	Seal portals / drifts (width >3 m) — only entry seal / plug required with in front of access backfill with engineered fill for 5 m Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead — grout backfill against a concrete bulkhead to be constructed Seal portals / drifts (width >3 m) not accessible by men or machinery — grout backfill against a concrete bulkhead existing or to be constructed Seal small adits (width >3 m) accessible by men or machinery — grout backfill against a concrete bulkhead existing or to be constructed	Y	allow allow	\$126,000 \$250,000	ials Subtotal	\$0 \$0		additional items where warranted. This cost is not applicable to coal operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + haul material to backfill per >5 km distance + concrete pump and secondary support. Cost includes engineering the bulkhead and underground construction (access available) followed by grout backfill via workings and rehabilitation (reshape, bulk push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7,250 for grouting. If no blukhead if required and construction (adva access directly above heading followed by grout backfill via boreholes every 10 m to fill voids and rehabilitation (bulk push, final trin, seeding and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$8,700 for grouting. If no bulkhead required, deduct \$60,000. Cost includes engineering the bulkhead is observable by camera and satisfiles regulations and engineer (location, etc.). Costs estimated from executed works program in NSW from multiple sites. Rate assumes standard works program in NSW from multiple sites. Rate assumes standard works program in the vorkings are accessible to run grout lines via machine or seam dip is favourable ie. deps in bye in part of the program with part of the program with part of the program with suitable access, and additional ror of required.
	Vents, Shafts and Boreholes	Seal portals / drifts (width >3 m) — only entry seal / plug required with in front of access backfill with engineered fill for 5 m Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead — grout backfill against a concrete bulkhead to be constructed Seal portals / drifts (width >3 m) not accessible by men or machinery — grout backfill against a concrete bulkhead existing or to be constructed Seal small adits (width >3 m) accessible by men and/or machinery — grout backfill against a concrete bulkhead existing or to be constructed. Seal small adits (width >3 m) accessible by men and/or machinery or neither requiring a bulkhead —backfill with appropriate material against a concrete bulkhead existing or to be constructed. The rate includes reshaping and rehabilitation of the batter around the entrance of the adit Costs to grout fill tunnel via mine workings to seal and	Y	allow allow	\$126,000 \$250,000 \$250,000	ials Subtotal	\$0 \$0 \$0		additional items where warranted. This cost is not applicable to coal operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + haul material to backfill per >5 km distance + concrete pump and secondary support. Cost includes engineering the buildhead and underground constructed and underground constructed to the control of

	Seal and rehabilitate ventilation shafts on hard rock operations (no to low gas risk) or coal operations - allows for works in a remote location	Y		allow	\$150,000		\$0		Rate accounts for a range of factors including variations in depth and size, accessibility limitations, equipment transport to the shaft etc. Assumes engineered fill is available within 10 km round trip and no bulkhead required. Excludes demolition of ventilation fans.
	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y		allow	\$25,000		\$0		Assume 1 x day visual inspection (10hrs inc' trave) for suitably qualified / competent person + reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
	Install gate or grill over the adit (Where site might be used by bats)	Y		ltem	\$200,000		\$0		Rate accounts for a range of factors including establishing clear access, and/or working in remote locations without services, and/or stabilisation works to prevent the entry collapsing and compromising the gate etc.
	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y		depth (m)	\$44.55		\$0		Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Y		allow	\$42.50		\$0		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.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	Y		allow	\$5,700		\$0		Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y		allow	\$6,960		\$0		Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
	Boreholes – cap and seal open bore holes - surface-to- in-seam gas drainage	Y		allow	\$17,890		\$0		Surface-to-in-seam gas drainage boreholes.
	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 skin sleaves to prevent aquifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	Υ		allow	\$45,000		\$0		Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	Y		ltem	\$2,070		\$0		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
	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		Sealing required, but not complete filling with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	Y		each Vents, Shafts	\$415	los Subtotal	\$0 \$0		Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works	Y		ha	\$1,040.00	nes oubtotai	\$0		Assumes ~6 m road width - 16H
	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		Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture	Y							D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	grass)	·		ha	\$3,700		\$0		utilisation) - pasture grass seed
		Y		ha ha	\$3,700 \$4,485		\$0 \$0		utilisation) - pasture grass seed
	grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and								utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native treels/trub/grass) Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and	Y		ha	\$4,485		\$0		utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
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Earthworks / Structural Modes	grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) 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) 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 deep rip, ameliorate and seed (native tree/shrub/grass) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		ha ha ha	\$4,485 \$4,870 \$7,025 Select from List	cks Subtotal	\$0 \$0 \$0		utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - spasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - native tree/shrub seed 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 estabilishment of rehabilitation.
Earthworks / Structural Works	grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) Unsealed roads / haut roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass) Unsealed roads / haut 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) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y Y Y Y		ha ha ha	\$4,485 \$4,870 \$7,025 Select from List Select from List	cks Subtotal	\$0 \$0 \$0	Select Haul Distance Here Select Push Length Here	utilisation) - pasture grass seed D10 Dozer @ \$400 pers hour and 16 If grader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - native tree/shrub seed 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. Major bulk pushing to achieve grades nominated in the approvallipermit D10 Dozer @ \$400 per hour and 16
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Earthworks / Structural Works	grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) Unsealed roads / haut roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass) Unsealed roads / haut roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native sinal trim and deep rip, ameliorate and seed (native tree/shrub/grass) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y Y Y Y Y		ha ha ha m3 ha ha ha	\$4,485 \$4,870 \$7,025 Select from List ads and Tra Select from List \$3,900 \$1,600		\$0 \$0 \$0 \$0 \$0 \$0		utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation) - native tree/shrub seed 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. Major bulk pushing to achieve grades nominated in the approvall-permit D10 Dozer @ \$400 per hour and 16 If grader @ \$230 per hour (50% utilisation). Combination of dozer and excavator work plus grader for ~4 hours sech
Earthworks / Structural Works	grass) Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) 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) 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) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit - Select Push Length Minor reshaping and pushing Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y Y Y Y Y Y Y	E	ha ha m3 Rec m3 ha ha	\$4,485 \$4,870 \$7,025 Select from List ads and Tra Select from List \$3,900 \$1,600		\$0 \$0 \$0 \$0 \$0 \$0		utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 Irgrader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 Irgrader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 Irgrader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 Irgrader @ \$230 per hour (50% utilisation) - native tree/shrub seed 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. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 Irgrader @ \$230 per hour (50% utilisation). Combination of dozer and excavator work plus grader for ~4 hours each per ha. Installation of on-site rock material (infy-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 fiste, assume an additional

	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				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)	Υ	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.
	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.
	• • •							Includes treating, weighing, mixing
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,875		\$0		with fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		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 impallon 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.)	Υ	ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	Υ	ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated	Y	m	\$22.00		\$0		Standard rate for no-climb stock
	areas Construct standard stock fence around rehabilitated							fencing. Standard rate for standard stock
	areas	Y	m	\$13.00		\$0		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	Υ	 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	Υ	ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Υ	m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior
	Distriction of the control of the co		IIIE					to hydromulching.
Water Management				Rehabilitat	tion Subtotal	\$0		
	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	Υ	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.
	Removal of evaporation fans and/or other water transfer and management infrastructure	Υ	allow	\$25,000		\$0		Provisional sum for removal of water management infrastructure.
	· · · · · · · · · · · · · · · · · · ·		Wat	ter Managem	ent Subtotal	\$0		
								·

	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Υ		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, guilles, 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.
			Mainte	nance of Reh	abilitated Are	eas Subtotal	\$0		
Additional Items		N			This is				This item includes installation of groundwater monitoring wells to monitor groundwater levels.
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
						ms Subtotal	\$0		
	Total Cost fo	r Infras	tructur	e Doma	in			\$0	

Domain 2a: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

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:
	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.	٧		Cluster	\$15,000		\$0	montacen	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) (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 plaints (i.e., or and product storage, mine waste storage and disposal, rall 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. s15 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		so		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 infusive investigation (EP Act Section 399 (CRPM) Phase 2 infusive investigation (EP Act Section 399 (CRPM) Phase seasoned 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 coursed (i.e., underground tainst) pipes that are known to have leaked, accurred (i.e., underground tainst) pipes that are known to have leaked chemical stores with earthen bunds, around ineffective oillwater 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 as the walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPN) 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 (ie, underground tanks / pipes that are known to have leaked, 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. 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 Develop a Remediation Action Plan on sites with large	Υ		allow	\$35,000		\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	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 Here	resource activity - requires specialists to treat. This item includes scraping and

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				ks (Landform	Catabliahm		\$0		L
	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.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		utilisation). Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Υ		m3	Select from List			Galect Fusii Lengtii Here	Major bulk pushing to achieve grades nominated in the approval/permit
Earthworks / Structural Works			ı	Ro	ads and Tra	CKS SUBtotal	ψU	Select Push Length Here	
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List	aka Subtatal	\$0	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.
	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	Calcat Hard Distance Hard	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
	grass) 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		utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture	Y		ha	\$3,700		\$0		utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
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 Grader.
	Trace disposal to Council landin - 1000 (dSD6St0S)	·	<u> </u>		inated Mater	ials Subtotal	\$0		Caronii 1000 to regiona iailuilli.
	Remove and dispose of asbestos (>750 m2) Waste disposal to Council landfill - fees (asbestos)	Y		m2	\$40.00 \$290		\$0 \$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed. Landfill fees to regional landfill.
	Remove and dispose of asbestos (<750 m2)	Υ		m2	\$50.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	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.
	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 hydrocarbo contamination is required to be fast tracked.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y		m3	Select from List			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.
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Υ		m3	\$220.00		\$0		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.
	kernove material (carbonaceous / metaliirerous 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)	Υ		m3	Select from List				removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area an enable the establishment of rehabilitation.

Ī	Mine Waste			<u> </u>			1 1
		Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no 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 equipment choice, no artificial strengthening required)	٧	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 mand 0.15 mp. 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. medes 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 failings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
		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 propensity for spontaneous combustion) and moderate physical properties find significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	٧	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 are successful to the strength of the stren
		Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Dramage (NMD) / Saline Mine Dramage (SMD) and/or moderate to high propensity for sportaneous combustion) and moderate physical properties (not significantly hydrophile, 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 britchness of approximately >2 m + growth media up to 0.2 m depth. This may require adultional 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/ crusth / 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 failings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
		Difficult Tallings Capping-reshaping, capping / sealing of weak or soft surfaced tallings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required). ON stable adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	٧	ha	\$843,000	\$0	This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulfing in attailings shear strength that is very weak excituding access by weak excituding access by small equipment used for rehabilitation and provided and a strength of the strength o

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment	Υ		allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.)
	water quality values. Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from	.,			Use alternate				and / or additional requirements (i.e., geofabric / composite lining etc.). Include additional cost to import materials (i.e., shale / clay,
	runoff, seepage etc. meeting site-specific environment water quality values.	Y		allow	rate cell		\$0	Select Haul Distance Here	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. (Select Haul Distance from List)	Y		m3	Select from List	ste Subtotal	\$0		Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and Revegetation						iste Subtotai	\$ 0	Select Haul Distance Here	If topsoil is not available on-site, ther
(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	Virgin Excavated Natural Material (VENM) may need to be externally sourced. This item includes the volume of
	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				material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	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.
	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.
	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.)	Υ		ha	\$1,000.00		\$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	Υ		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.
		Y		m2	\$2.50		\$0		Material that can be applied as an
	Utilise biotic soil media - organic topsoil alternative		rolon-s-t			ont) Cultination			alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Grown Clean water dams to be retained after decommissioning – make safe and minor earthworks	th Media Dev	eiopment an	d Ecosystem allow	\$2,500	ont) Subtotal	\$0 \$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Doze (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	Υ		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.
					Wa	ter Managem	ent Subtotal	\$0		
	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, guilles, 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.
				Mainte	nance of Rel	abilitated Are	eas Subtotal	\$0		
	Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">></to>
		Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>
l		Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
ŀ						Additional Ite	ms Subtotal	\$0		
ı		Total Cost for T	Failings	& Reje	cts Dor	nain			\$0	

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$115,000

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

Surface expression of AMD leachate at Frenchmans Waste Rock dumo slope - reported as part of a s60 report to the Resources Regulator and EPA

Surface expression of AMD leachate at Frenchmans Waste Rock dump slope - reported as part of a s60 report to the Resources Regulator and EPA	Key Rehabilitation Area Data for Domain	Enter data below manually
Minor earthworks may be required to ease section of Cornishmens scree slope	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		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.
	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)	Υ		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 \$78.20 per tonne and authorised disposal to 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 tanker. Add disposal costs to additional items where warranted.
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works	ī		Contam		ials Subtotal			Assumes ~6 m road width - 16H
	including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	Y		ha ha	\$1,040.00 \$1,500		\$0 \$0		Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Υ		ha	\$3,700		\$0		utilisation) - no seed 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)	Υ		ha	\$4,485		\$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 / 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.
Earthworks / Structural Works	1	T		Ro	ads and Tra	cks Subtotal	\$0	Colort Breek Lorenth House	
(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.
	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 (fip-rap) where managing water rupon of from disturbed land and/or upon entry to water courses - prevents crosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
Mine Waste	Ea	rthworks / St	ructural Wor	ks (Landform	Establishme	ent) Subtotal	\$0		
	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no low risk Potential Acid Forming (PAF) / Neutral Mire Drainage (NMD) / Saline Mire 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)	٧		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 mand 0.15 m to 1 mand 0.15 m to 10 m to

	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical resolvity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Sailne Mine Drainage (SMD) and/or low to moderate propensity for spontianeous combustion) and 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 spreading, moisture conditioning spreading, moisture conditioning and an activate conditioning of the conditioning
	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) / Sailne Mine Drainage (SMD) and/or moderate to high propensity for sportaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		so		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to easy cover facilities of high genoment of a suitable volume of material to easy cover facilities of high genoment of the properties of high genoment of the properties of high genoment of the properties of the prope
	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) QR 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. If sith ehaulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading codes for tailings cap material included in rate for 30 EG 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.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Υ	m3	Select from List		50	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and Revegetatio (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y	m3	Mine Wa	ste Subtotal	\$0	Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Fill dams, volds 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
	Trim, rock rake & deep rip (includes levelling /	Y		ha	\$1,130.00		\$0		cut back and stabilised. Undertaken using D10 dozer and
	landscaping and rip in 1 direction) Planting mature trees (>15 cm)	Y		allow	\$1,130.00		\$0		16M grader. 4 m centres.
	Planting tube stock (<15 cm)	Y		allow	\$6.60		\$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	\$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.
	Hydromulich - 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	Y		m	\$13.00		\$0		Standard rate for standard stock
	areas								fencing. Compliance with AS 1319-1994 -
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Safety signs for the occupational environment - installed every 25 m. D7 to spread material at \$205/hr,
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		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	64.00				Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final
					\$4.86		\$0		rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0 \$0		rehabilitation location required or respreading where necessary. Addition of manure to improve soil quality.
					\$747.50		\$0		respreading where necessary. Addition of manure to improve soil
	Utilise biotic soil media - organic topsoil alternative	Y	(elon-mo-t	m2	\$747.50 \$2.50	ant) Subject	\$0 \$0		respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an
Water Management		Y	velopment an	m2	\$747.50 \$2.50	ent) Subtotal	\$0		respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Utilise biotic soil media - organic topsoil alternative	Y	relopment an	m2	\$747.50 \$2.50	ent) Subtotal	\$0 \$0		respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an alternative to spreading topsoil prior
Water Management	Utilise biotic soil media - organic topsoil alternative Land Preparation and Revegetation (Grow Clean water dams to be retained after	Y th Media Dev	/elopment an	m2 d Ecosystem	\$747.50 \$2.50 • Establishme	ent) Subtotal	\$0 \$0 \$0		respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching. 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
Water Management	Utilise biotic soil media - organic topsoil alternative Land Preparation and Revegetation (Grow Clean water dams to be retained after decommissioning – make safe and minor earthworks Large clean water dams (i.e. ≥ 2 ha) to be retained	Y th Media Dev	relopment an	m2 d Ecosystem allow allow	\$747.50 \$2.50 \$2.500 \$10,500 \$select from List		\$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching. 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) @ -3200 per hour and pasture grass. Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc.
	Utilise biotic soil media - organic topsoil alternative Land Preparation and Revegetation (Grow Clean water dams to be retained after decommissioning – make safe and minor earthworks Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select	Y Th Media Dev	relopment an	m2 d Ecosystem allow allow	\$747.50 \$2.50 Establishme \$2,500 \$10,500		\$0 \$0 \$0 \$0	Select Haul Distance Here	respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching. Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 force (or similar) @ -\$200 per hour and pasture grass. Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate sund-user. 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. This item includes the volume of contaminated sediment requiring removal using an excavator, fuck and dozer to clean out the dam.
Water Management Water Management	Utilise biotic soil media - organic topsoil alternative Land Preparation and Revegetation (Grow Clean water dams to be retained after decommissioning – make safe and minor earthworks Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select	Y Th Media Dev	relopment an	m2 d Ecosystem allow allow	\$747.50 \$2.50 \$2.500 \$10,500 \$select from List		\$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	respreading where necessary. Addition of manure to improve soil quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching. Provisional sum for earthworks and revegetation required to rehabilitate dam batters ets outlable for re-use by an alternate land-user - D6 Dozer (or similar) @ -5200 per hour and pasture grass. Provisional sum for earthworks and revegetation required to rehabilitate dam batters et suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ -basture grass. This item includes the volume of contaminated sediment requiring removal using an excavator, fruck

	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Υ		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	1	ha	\$40,000		\$40,000	Frenchmans waste rock dump leachate area (calculated at approximately 1 ha). Noting that further work is required to confirm extent of remediation and the appropriate remediation plan.	Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
			Mainte	nance of Rel	nabilitated Ar	eas Subtotal	\$40,000		
Additional Items	Frenchmans WRD leachate area - investigation and remediation plan development	Υ	1		This is	\$75,000.00	\$75,000		This item includes intrusive drilling works to delineate and confirm source of leachate, as well as development of a remediation action plan for the Frenchmans WRD leachate area.
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
			,		Additional Ite	ms Subtotal	\$75,000		
	Total Cost for O			\$115,000					

Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$11,700

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

Drainage and erosion maintenance works at Cornishmans scree slope	Key Rehabilitation Area Data for Domain	Enter data below manually
	Total Landform Establishment:	
	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	Basis for Costs Estimation and Additional Relevant	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	Y		Lm	\$1.93	Offic Rate	\$0	Information	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 stem 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.
Fasthwarder / Otanistana I Warder				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	3	ha	\$3,900		\$11,700	Minor earthworks at Cornishmens scree slope	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.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large calc/hments	Y		m2	\$27.00		\$0		Installation of on-site rock material (rip-rap) where managing water rupor 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.
Land Preparation and Revegetation	Ea	rthworks / St	ructural Wor	ks (Landforn	Establishm	ent) Subtotal	\$11,700	Select Haul Distance Here	
(Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List			Select naul distance nere	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Fill dams, volds 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.
	Planting mature trees (>15 cm)	Υ		allow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm)	Y		allow	\$6.60		\$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	\$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 imigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will leat 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.

	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	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
	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	Υ		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Grow	th Media Dev	elopment an	d Ecosystem	Establishme	ent) Subtotal	\$0		
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 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 Areas				Wa	er Managem	ent Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		Wa ha	er Managem \$925	ent Subtotal	\$0 \$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
Maintenance of Rehabilitated Areas		Y				ent Subtotal			include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement.
Maintenance of Rehabilitated Areas	seeded and revegetation has been 'successful'			ha	\$925	ent Subtotal	\$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills,
Maintenance of Rehabilitated Areas	seeded and revegetation has been 'successful'	Y		ha ha	\$925 \$1,200	ent Subtotal	\$0 \$0		include re-seeding, watering fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement. Areas requiring moderate repair - rills, significant growth media
Maintenance of Rehabilitated Areas	seeded and revegetation has been 'successful' Existing rehabilitation repair - minor Existing rehabilitation repair - moderate	Y		ha ha ha	\$925 \$1,200 \$1,700 \$2,500		\$0 \$0 \$0 \$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits – does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement. Areas requiring moderate repair - rills, significant growth media replacement. Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surfacement, some level of additional surfacement, some level of additional surfacement.
	seeded and revegetation has been 'successful' Existing rehabilitation repair - minor Existing rehabilitation repair - moderate Existing rehabilitation repair - major	Y Y	Mainte	ha ha ha	\$925 \$1,200 \$1,700 \$2,500 \$40,000 abilitated Ar		\$0 \$0 \$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement. Areas requiring morate repair - rills, significant growth media replacement. Areas requiring major repair - rills, guilles, growth media replacement, areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management. Areas that require extensive rehabilitation repair - re-design and
Maintenance of Rehabilitated Areas	seeded and revegetation has been 'successful' Existing rehabilitation repair - minor Existing rehabilitation repair - moderate Existing rehabilitation repair - major	Y Y	Mainte	ha ha ha	\$925 \$1,200 \$1,700 \$2,500		\$0 \$0 \$0 \$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement. Areas requiring moderate repair rills, significant growth media replacement, are requiring major repair - rills, significant growth media replacement, some level of additional surface water management. Areas that require extensive rehabilitation repair - re-design and re-construction of landform. This item includes < <to added.<="" be="" td=""></to>
	seeded and revegetation has been 'successful' Existing rehabilitation repair - minor Existing rehabilitation repair - moderate Existing rehabilitation repair - major Existing rehabilitation repair - total failure of landform Other 2 <insert></insert>	Y Y Y	Mainte	ha ha ha	\$925 \$1,200 \$1,700 \$2,500 \$40,000 abilitated Ar		\$0 \$0 \$0 \$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement. Areas requiring moderate repair rills, significant growth media replacement. Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management. Areas that require extensive rehabilitation repair - re-design and re-construction of landform. This item includes < <to added="" be="" by="" operator="" the="">> This item includes <<to added="" be="" by="" operator="" the="">> This item includes <<to added<="" be="" td=""></to></to></to>
	seeded and revegetation has been 'successful' Existing rehabilitation repair - minor Existing rehabilitation repair - moderate Existing rehabilitation repair - major Existing rehabilitation repair - total failure of landform	Y Y Y N	Mainte	ha ha ha ha nance of Reh	\$925 \$1,200 \$1,700 \$2,500 \$40,000 abilitated Ar This is deliberately	eas Subtotal	\$0 \$0 \$0 \$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills, minor growth media replacement. Areas requiring moderate repair rills, significant growth media replacement. Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management. Areas that require extensive rehabilitation repair - re-design and re-construction of landform. This item includes < <to added="" be="" by="" operator="" the="">></to>

Domain 5a: Subsidence & Management

Total Cost for Subsidence & 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	Description / Notes:
Subsidence Repairs	Minor stabilisation works and maintenance of mine	Y		ha	\$1,470	Unit Rate	\$0	Information	Undertaken using Dozer. Costs subject to the extent of subsidence
	subsidence areas - ripping etc. Crack filling to repair subsidence impacts	Y		m	\$1,450		\$0		impacts Undertake more substantial works to backfill cracks and/or sink holes (e.g., filling with mulch prior to grouting, grouting, etc.) Costs subject to the extent of subsidence impacts. Include >5 km haul of fill.
	Water course restoration to repair subsidence impacts	Y		allow	Use alternate rate cell		\$0		Undertake more substantial works to remediate water courses (e.g., channel bed repairs, rock bar repairs, swamp stabilisation etc.)
	Create cut-through to re-establish natural water courses/drainage channels following subsidence	Y		allow	\$3,000		\$0		Includes all earthworks and revegetation required to re-establish the natural drainage profile of the subsided area.
				Sub	sidence Rep	airs Subtotal	\$0		
Vents, Shafts and Boreholes	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y		allow	\$25,000		\$0		Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person + reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
		•		Vents, Shaft	and Boreho	oles Subtotal	\$0		
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)	Υ		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	Υ		ML	\$1,500		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
Creek Diversions	T	ı		Wa	ter Managem	ent Subtotal	\$0		1
OTER 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. Assumes maintenance has been
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		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.
Land Management	L				reek Diversi	ons Subtotal	\$0		Feral animal baiting programs if
	Pest management on buffer lands, non-disturbed, and rehabilitated areas Land management of undisturbed areas	Y		ha	\$150.00		\$0		required and waste materials required to be removed. Undisturbed areas within the lease
	(rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha La	\$400.00 nd Managem	ent Subtotal	\$0 \$0		boundary that require land management activities.
Heritage Items									Item for the redistribution of
	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate rate cell	ems Subtotal	\$0 \$0		Aboriginal artefacts, preservation of European heritage items or a combination of activities.
Sundry Items	I				nemage ite	ilis Subtotai	\$0		
	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 / ptt 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, to the proper cut, no legacy operations historic in the area, little social dependence, the requirements and knowledge base investigations can range from -575 to >51 M. Sites with more than 1 pit to add \$55,000 to rate.
	Development of an 'Unplanned' Project Closure Plan- Non State Significant Development with at least \$2 of the following aspects requiring closure planning, but on significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known' likely contamination, tallings / 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 activated cost for developing closure plan including studies—basic to satisfy risks and decisions—basic to satisfy risks and decisions—basic used 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	٧		allow	\$300,000		\$0		Includes costs for key investigations and studies including designs e.g. geochemistry, Contamination subdidence in the Action Plan, subdidence in the overleaping and final landform site which surface water, etc. Provisional sum to be uclose to film the country of the plan with execution and the country of the plan with execution stellages for trahebilitation activities. Assume at least 15 vertices of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of a closure pla
	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, sic. 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 firs 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 require: - cleaning and decontaminating plan 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.
Third Party Project Management	Mobilisation & Demobilisation for small mine or quarry	Y		Item	Sundry Ite	ems Subtotal	\$0 \$0		May include specialist demolition equipment and/or suitable plant to
	- small fleet Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Y		Item	\$35,000		\$0		execute bulk earthworks as required 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
ı	Mobilisation & Demobilisation (Distance to site >1000	Y		item	\$500,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required
	km)								
Additional Hama	,	<u> </u>	Thi	rd Party Proje		ent Subtotal	\$0		This item includes acts he added
Additional Items	Other 1 <insert></insert>	N	Thi	rd Party Proje	This is	ent Subtotal	\$0		This item includes < <to added="" be="" by="" operator="" the="">> This item includes <<to added<="" be="" td=""></to></to>
Additional Items	,	N	Thi	rd Party Proje	This is deliberately	ent Subtotal	\$0		by the operator>> This item includes < <to added="" be="" by="" operator="" the="">> This item includes <<to added<="" be="" td=""></to></to>
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Domain 1b: Infrastructure

Total Cost for Infrastructure Domain

\$4,150

Additional Assumptions. Record any relevant assumptions to this domain below.		
ML1243 contains Glendale Pit and Waste Rock dump. There is no remaining mining infrastructure at this	Key Rehabilitation Area Data for Domain	Enter data below manually
Approximately 10 old exploration boreholes identified, which have not been previously capped.	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	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		allow	\$35,000		\$0	ondeon	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 di 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		Item	\$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		Item	\$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 onsite/locally	Y		Item	\$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.
	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	Υ		allow	\$92,500		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.

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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	Υ	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	Υ	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 onsite/locally	Υ	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 onsite/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 infrastructure.	Υ	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)	Υ	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	\$25,000.00	\$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	Υ	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	Υ	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	\$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	Υ	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	Υ	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	\$15.00	\$0	~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not 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	Υ	 allow	\$20,000	\$0	 Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or 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 \cdot \$5.120 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove bitumen (airstrip) and dispose on-site/locally	Y	m2	\$20.00	\$0	Scalp biturnen 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 / km for transport.

	Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	Υ		m2	\$36.00		\$0	Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck flex loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/focally	Y		m2	\$75.00		\$0	Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck flex, depending on truck flex loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Crush concrete to make road aggregate - 75 mm	Y		tonne	\$10.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 50 mm	Y		tonne	\$13.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 30 mm	Y		tonne	\$15.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
	Remove fence (cyclone/wire fence) and disposal on- site/locally	Y		m	\$20.00		\$0	Roll up fence and remove posts.
	Removal of small plastic tanks	Υ		each	\$1,000.00		\$0	Remove small poly tanks used for water storage, etc.
	Demolish and remove galvanised/corrugated light weight tanks	Y		each	\$500.00		\$0	Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
	Demolish and remove communication towers	Y		each	\$5,000.00		\$0	Cost includes demolition and removal of tower only, separate costs required for disconnection of services, demolition of 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. This 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 to 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 to Council landfill but excludes landfill fees. Input quantity against W aste 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 to 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 demolilion / concrete / scrap metal) - haulage >10 km but <15 km	Y		tonne	\$32.00		\$0	Rate accounts for round trip haulage to 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 to 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 to 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 waste to local Council landfil! transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
	Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Υ		tonne	\$174.00		\$0	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
			ination of Se	rvices and D	emolition Wo	rks Subtotal	\$0	1
		Term						 1
ail 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.
nii Infrastructure				m m2	\$60.00 \$185.00		\$0 \$0	be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent. Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
nii Infrastructure	on-site/locally Remove train loading facilities and disposal on-	Y						be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent. Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility

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	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.	¥	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 (NEW) Phase of assessment (EP Act Section 389 (2) (v)) or similar approximation of the section
		Undertake an intrusive site investigation on sites with small footprints to investigate e.g., s15 ha. This accounts for current and historial locations where areast foll eclustreare as on site multiple intrusive investigations should be included.	Y	Cluster	\$44,000	\$0		The intrusive investigation would include feat art minimum a site validova and field sampling as per the validova of field sampling as per the validova (field contaminated) Protection (Sitica Contaminated) Protection (Sitica Contaminated) Protection (Sitica Contaminated) Protection (NEPM) Phase 2 Intrusive investigation (EPP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An Intrusive investigation is not required to entire interval and should be applied considering the rehabilitation programs, site history, location, etc. A cluster area where it is highly anticipated that contamination has coursed (i.e., and where the contamination has coursed (i.e., and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g. ~10-15 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.	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 (20 (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 earthern 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 (est 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 Develop a Remediation Action Plan on sites with large	Υ	allow	\$35,000	\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
		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 Here	resource activity - requires specialists to treat. This item includes scraping and
		•				1		I his item includes scraping and

	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				removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	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.
	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 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.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y	m3	Select from List			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.
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Υ	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.
	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.
	Remove and dispose of asbestos (>750 m2)	Y	m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Y	tonne	\$290		\$0		Landfill fees to regional landfill.
	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.
	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.
	Brine disposal to landfill - fees only	Y	tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y	tonne	Select from List			Select Haul Distance Here	disposal to landfill. Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
Vents, Shafts and Boreholes			Contam	inated Mater	ials Subtotal	\$0		This cost is not applicable to coal
	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m	Y	allow	\$126,000		\$0		Inis ctsx is not applicable to ceal operations which require backfilling to MDc6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing. + haul material to backfill per >5 km distance + concrete pump and secondary support.
	Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill against a concrete bulkhead to be constructed	Y	allow	\$250,000		\$0		Cost includes engineering the bulkhead and undergrund construction (access available) followed by grout backfill via workings and rehabilitation (reshape, bulk push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7.250 for grouting. If no bulkhead required, deduct \$60.000.
	Seal portals / drifts (width >3 m) not accessible by men or machinery – grout backfill against a concrete bulkhead existing or to be constructed	¥	allow	\$250,000		\$0		Cost includes engineering the bulkhead if required and construction via access directly above heading followed by grout backfill via boreholes every 10 m to fill voids and rehabilitation, bulk push, final trim, seeding and full rehabilitation, Assume tunnel length of 20 m. For every additional mad 58,700 for grouting, if no bulkhead required, deduct \$800,000. Assumes any existing bulkhead is observable by camera and satisfies regulations and engineer (location, etc.).
	Seal small adits (width s3 m) accessible by men and/or machinery or neither requiring a butkhead -backfill with appropriate material against a concrete butkhead existing or to be constructed. The rate includes restpaing and rehabilitation of the batter around the entrance of the adit	Y	allow	\$25,000		\$0		Costs estimated from executed works program in NSW from multiple sites. Rate assumes standard works program with suitable access, and additional roof and rib stabilisation works etc. is not required.
								Workings are accessible to run
	Costs to grout fill tunnel via mine workings to seal and eliminate voids and/or likelihood of failures of ground	Y	m	\$7,250		\$0		grout lines via machine or seam dip is favourable i.e. dips inbye

	Demolish ventilation fans	Y		Item	\$30,000		\$0		Costs for demolition of ventilation fan prior to sealing shaft.
	Seal and rehabilitate ventilation shafts on hard rock operations (no to low gas risk) or coal operations - allows for works in a remote location	Y		allow	\$150,000		\$0		Rate accounts for a range of factors including variations in depth and size, accessibility limitations, equipment transport to the shaft etc. Assumes engineered fill is available within 10 km round trip and no bulkhead required. Excludes demolition of ventilation fans.
	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y		allow	\$25,000		\$0		Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person + reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
	Install gate or grill over the adit (Where site might be used by bats)	Y		ltem	\$200,000		\$0		Rate accounts for a range of factors including establishing clear access, and/or working in remote locations without services, and/or stabilisation works to prevent the entry collapsing and compromising the gate etc.
	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y		depth (m)	\$44.55		\$0		Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Y		allow	\$42.50		\$0		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.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	Υ		allow	\$5,700		\$0		Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y		allow	\$6,960		\$0		Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
	Boreholes – cap and seal open bore holes - surface-to- in-seam gas drainage	Y		allow	\$17,890		\$0		Surface-to-in-seam gas drainage boreholes.
	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 skin sleaves to prevent aquifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	Y		allow	\$45,000		\$0		Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.
	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		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
	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		Sealing required, but not complete filling with concrete/grout
	Option 6 - Rehabilitation of drill hote collars Rehabilitation of drill hote collars (mineral exploration)	Y	10	each Vents, Shafts	\$415	les Subtetal	\$4,150 \$4,150	Estimated exploration boreholes to be capped.	Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor works	Y		ha	\$1,040.00	nes Subtotai	\$0		Assumes ~6 m road width - 16H
	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		Grader. D10 Dozer @ \$400 per hour and 16 H 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 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 / 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 exavator, dozer and grader to enable the establishment of rehabilitation.
Earthworks / Structural Works				Ro	ads and Tra	cks Subtotal	\$0	Soloct Bush Learnth Ha	1
Laidiworks / Suuclural Works	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
1	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		utilisation). 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 (inj-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.
Rehabilitation			E	arthworks / S	tructural Wo	rks Subtotal	\$0	Select Haul Distance Here	

Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List				If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
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	Υ		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 \$0		D10 deep ripping. 4 m centres.
Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y		allow	\$6.60		\$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)	Υ		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	\$2		\$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		\$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	\$1		\$0		Assumes use on flat areas with a gradient of less than 41, and where implation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and wegetation 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	Υ		m2	\$2		\$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	\$1,000.00		\$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
Construct no-climb stock fence around rehabilitated								projects. Standard rate for no-climb stock
areas Construct standard stock fence around rehabilitated						·		fencing. Standard rate for standard stock
areas	Y		m	\$13.00		\$0		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. D7 to spread material at \$205/hr,
Supply from external sources virgin excavated natural material (VENM) for growth media.	Υ		m3	\$80.80		\$0		Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material. D10 push into void at \$270/hr,
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		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
					tion Subtatat			to hydromulching.
Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500	ion Subtotal	\$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.
	Distance from List) 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) Shotcrete application on cuttings and steep slopes Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction) Deep rip hard stand / lay down areas Planting mature tress (>15 cm) Planting tube stock (<15 cm) Direct seeding / fertiliser (pasture grass species) Direct seeding / fertiliser (tree or native grass species) Direct seeding with straw mulching and bitumen tack with native seed Hydro-seeding with straw mulching and bitumen tack with native 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 medium grade Single application of fertiliser (trees) Single application of fertiliser (pasture) Single application of fertiliser (pasture) Single application (adding lime / gypsum etc.) growth media amelioration with biosolids Construct standard stock fence around rehabilitated areas Construct standard stock fence around rehabilitated areas Supply from external sources a combination of virgin excavation for filing voids and/or capping etc. Clearing and grubbing of trees and vegetation Topsoil stripping Growth media supplementation with manure Utilise biotic soil media - organic topsoil alternative	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) Shotcrete application on cuttings and steep slopes Y Trim, rock rake & deep rip (includes levelling / Landscaping and rip in 1 direction) Deep rip hard stand / lay down areas Y Planting mature trees (>15 cm) Y Direct seeding / fertiliser (pasture grass species) V Direct seeding / fertiliser (free or native grass species) V Hydro-seeding with straw mulching and bitumen tack with native seed Hydroseding with straw mulching and bitumen tack with native seed Hydromulch - base grade or standard for flat areas that can be irrigated by water cart Hydromulch - base grade or standard for flat areas that can be irrigated by water cart Hydromulch - high performance flexible growth medium grade Single application of fertiliser (pasture) Y Supply from external sources virgin excavated natural material (vENM) for growth media material (vENM) for growth media material (vENM) and spoli from large excavation for filling vides and/or capping etc. Supply from external sources a combination of virgin excavated natural material (vENM) and spol from large excavation for filling vides and/or capping etc. Clearing and grubbing of trees and vegetation Y Clearing and grubbing of trees and vegetation Y Clear water dams to be retained after decommissioning — make safe and minor earthworks Large clean water dams to be retained after decommissioning — make safe and minor earthworks	Distance from List) Fill dams, voids etc Source local material, cart and spreams to cap or backfill; cap bink-ness determined by approval permit (Select Heat Distance from List) Shockrete application on cuttings and steep slopes Y Trim, rock rake & deep rip (includes levelling / young and rip in 1 diseason) Deep rip hard stand / ling down areas Planting nature teas 1-15 cm) Y Planting nature teas 1-15 cm) Y Planting tables stock (<15 cm) V Planting tables stock (<15 cm) V Proct seeding / fertiliser (pasture grass species) Y Hydro-seeding with straw mulching and bitumen tack with native seed Hydro-seeding with straw mulching and bitumen tack with native seed Hydro-seeding with straw mulching and bitumen tack with native seed Hydromulch - base grade or standard for flat areas that can be singated by water cart Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 morths Hydromulch - high performance flexible growth medium grade Y Single application of fertiliser (pasture) Y Construct standard stock fence around rehabilitated arises Construct standard stock fence around rehabilitated arises Supply from external sources virgin excavated natural arises arises arise and erect warning signs Y Clearing and grubbing of trees and vegetation Y Clearing and grubbing of trees and vegetation Y Clearing and grubbing of trees and vegetation Y Large clean water dams to be retained after decornmissioning — make safe	Distance from List) Fall dams, voids etc Source local material, cart and spread to age of backfill, cap thickness determined by approval permit (Select Hauf Distance from List) Shodorele application on cutlings and steep slopes Y	Distance from List) Fill dames, voids etc Source local material, cart and spread to ope to bookfill, cap thickness determined by approved / Jermit (Febrush fall Distance from List) Shuddred application on cuttings and steep slopes Y m2 \$185.00 Shuddred application on cuttings and steep slopes Y m3 \$11,000 Deep the back discept projectuates leveling / amount of the steep slopes and the steep slope in 1 direction) Deep the steep flying down areas Y setting material was to 55 cm; Persisting tables abook (citic citis) V persisting tables abook (citic citis) Fill discepting with steep steep slopes Y Ina \$1,1375 Direct seeding / fertiliser (paskure grass species) V Ina \$1,1375 Direct seeding with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with paskure seed Fill discepting with stream mulching and bitumen tack with paskure seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed Fill discepting with stream mulching and bitumen tack with native seed of the	Distance from List) Fill damm, yould edu Source board material, cart and spread for you hould fill cap inhibered soldermined by any model of pread to go or boardiff, cap inhibered soldermined by any model of pread to go or boardiff, cap inhibered soldermined by any model of pread to go or boardiff, cap inhibered soldermined by any model of pread to go or boardiff, cap inhibered soldermined by any model of pread to go or boardiff, cap inhibered soldermined by any model of pread to go or boardiff, cap inhibered pread	Course from List) Findings and set. Society and design and set of person of person set of person se	Character from Legit

	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				contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	Removal of evaporation fans and/or other water transfer and management infrastructure	Y		allow	\$25,000		\$0		Provisional sum for removal of water management infrastructure.
			•	Wa	ter Managem	ent Subtotal	\$0		
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	Υ		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, guilies, 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.
			Mainte	nance of Rel	nabilitated Ar	eas Subtotal	\$0		
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">></to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
					Additional Ite	ms Subtotal	\$0		
	Total Cost fo	r Infras	tructur	e Doma	in			\$4,150	

Domain 2b: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

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:	

		Applicable (Y			Default Unit	Alternative		Basis for Costs Estimation	
Management Precinct Contaminated Materials	Activity / Description	or N)	Quantity	Unit	Rate	Unit Rate	Total Cost	and Additional Relevant Information	Description / Notes:
	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) (iv)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle assessment entended assessment method. A cluster may include: - Jenocessing plants (i.e., ore and product storage, mine waate storage and disposal, rail load-out etc.) - Remote pi-t-op 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. s15 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.	٧		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 (20 (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all order administration of the contamination of
	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 (20 (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 arricipated that contamination has pippes 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 Assume site has a history of the stream of the
	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 large footprints based on outcomes of intrusive investigation	Y		allow	\$35,000 Use alternate		\$0		approval including designs and detailed costs. Costs may increase if detailed designs required for construction. Assumes complex site; detailed
	including strategies to address contamination exceedances Removal and disposal of contaminated water from	Y		allow	rate cell		\$0		design drawings required for cover. Cost for recent sump clean-up from
1	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y		L	\$0.35		\$0	Select Haul Distance Here	resource activity - requires specialists to treat. This item includes scraping and

Division of Resources and Geoscience Rehabilitation Cost Estimation Tool - Open_Cut_&_UG (ML1243)

[remove material (carbonaceous / metailiterous spillage or otherwise) from footprint of the process	l		_	Select from				removal of the volume of carbonaceous material using dozer,
	facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Y		m3	List				grader etc. to make safe an area and enable the establishment of rehabilitation.
	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.
	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 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.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aeroble microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic de
	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.
	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.
	Remove and dispose of asbestos (>750 m2)	Y		m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Υ		tonne	\$290	iale Subtotal	\$0 \$0		Landfill fees to regional landfill.
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,040.00	iais oubtotai	\$0		Assumes ~6 m road width - 16H Grader.
	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
	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 / 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 / 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.
		<u> </u>		Ro	ads and Tra	cks Subtotal	\$0		establishment of renabilitation.
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.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0 \$0		Installation of on-site rock material (rity-rap) where managing water run- off from disturbed land and/or upon entry to water courses - prevents erosino rif gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
Mine Waste	La	il diworks / 5	. actural vvor	Lanulofff	LStavilstime	onty Subtotal	Ţ.		
	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with Ittle chemical reactivity (no too wirsk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/cr 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 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 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonacous material covers). Water quality from runoff, seepage ctc. metes site-specific environment water quality values. If site haulage for constitution 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

	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 (NIMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties find significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	>		ha	\$146,500		\$0		This Item includes sourcing, carting, peraeding, michiter conditioning peraeding, michiter 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 rangling from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geoffice, etc.) - use alternate rate cells below, specific material types (e.g., cald neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / hauf / 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 haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate in 8.05 (spreading costs for trailings cap material included in rate form 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	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)	٧		ha	\$313,000		so		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 it or low she sectional to cap / cover facilities or high geochemical risk, and it or low she section and the construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately of the section of the compact of the
	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 sibilbe adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	٧		ha	\$843,000		\$0		This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a stailings shear strength that is very weak excluding access by corventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. In the stailing of the stailing of the stailing of the relevant material requiring hallage for this distance in 8.05 (preading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, user after from 9.02 for relevant hallage and spreading in additional to any long hallage 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.	Υ		allow	Use alternate rate cell		\$0	Salast Hard Nich	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. (Select Haul Distance from List)	Υ		m3	Select from List		\$0	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and Revegetation	1				wine wa	ste Subtotal	ΨŪ	Select Haul Distance Here	If topsoil is not available on-site, then
(Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List) Fill dams, voids etc Source local material, cart and	Y		m3	Select from List			Select Haul Distance Here	Virgin Excavated Natural Material (VEMM) may need to be externally sourced. This item includes the volume of material requiring backfill using an
	spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List) Trim, rock rake & deep rip (includes levelling /	Y		m3 ha	List		\$0		excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and
I	landscaping and rip in 1 direction)	· ·	j				L		16M grader.

	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	Υ		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 implation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and wegetation 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)	Υ		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	\$1,000.00		\$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
	Construct standard stock fence around rehabilitated	Y	<u> </u>	m	\$13.00		\$0		fencing. Standard rate for standard stock
	areas Purchase and erect warning signs	Y		allow	\$250.00		\$0		fencing. 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.	Υ		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 light
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		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
	Land Preparation and Revegetation (Grow	th Media Dev	velopment an	d Ecosystem	n Establishme	ent) Subtotal	\$0		to hydromulching.
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 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		\$0	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.
aintenance of Rehabilitated Areas				vva	iter Managem	Justoidi			Rehabilitation maintenance might
	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Υ		ha	\$925		\$0		Renabilitation 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.
		Y			\$2,500				Areas requiring major repair - rills, gullies, growth media replacement,

	Total Cost for Tailings & Rejects Domain							\$0		
Additional Items Subtotal \$0										
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>	
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added<br="" be="">by the operator>></to>	
Additional Items	Installation of groundwater monitoring wells	N			This is					
	Maintenance of Rehabilitated Areas Subtotal 50									
	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.	

Domain 3b: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$11,700

There are no tailings storage facilities at this Mining Lease.	Key Rehabilitation Area Data for Domain	Enter data below manually
Minor earthworks may be required to address some areas of erosion on the abondment safety bund (which surrounds Glendale Pit)	Total Landform Establishment:	
	Total Growth Media Development:	
	Total Ecosystem Establishment:	

Management Presinct	Activity / Departution	Applicable (Y	Quantity	Unit	Default Unit	Alternative	Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes
Management Precinct Contaminated Materials	Activity / Description	or N)	Quantity	Unit	Rate	Unit Rate	l otal Cost	Information	Description / Notes:
	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.
	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.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to 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 tanker. Add disposal costs to additional items where warranted.
				Contam	inated 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 Grader.
	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
	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 / 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 / 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)	Υ		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-siteflocally (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.
Earthworks / Structural Works		1	1	Re	ads and Tra	cks Subtotal	\$0		T
(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	3	ha	\$3,900		\$11,700	Minor earthworks to address small areas of erosion on the safety bund.	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.
	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.
Mine Waste	Ea T	rthworks / St	ructural Wor	ks (Landform	Establishme	ent) Subtotal	\$11,700		
	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 sportaneous 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 of the pr

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	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Nectral Mine Drainage (NIMD) / Saline Mine Drainage (SIMD) and/ord low to moderate propensity for spontaneous combustion) and moderate projects properties (not significantly hydrophilic, shear stereight limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$146,500		so		This tiem includes sourcing, carting, pareading, michieve 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 ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capilitary breaks, geofabric, etc.) - use alternate rate cells below properties of the control of t
	Adverse Tallings Capping - reshaping, capping / sealing of trafficable tallings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (MMD) / 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		so		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 with part prohibits on the conditions. This irate assumes suitable capping materials are available to native within 10 km, and an average cap thickness of approximately > 2 m + growth media up to 0.2 m dept thickness of approximately > 2 m + growth media up to 0.2 m dept thickness of approximately > 2 m + growth media up to 0.2 m dept thickness of approximately > 2 m + growth media up to 0.2 m dept thickness of approximately > 2 m + growth media up to 0.2 m dept thickness of approximately > 2 m + growth media up to 0.2 m dept and the condition of th
	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 properlies significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional 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. In side that the properties of the convention of the colevant material requiring haulage for this distance in a 5.6 (epreading costs for tailings cap material included in rate). If additional material to make up landform, provide butteres or other works aside from tailings cap, user after from 9.0 2 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.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Y	m3	Select from List	ste Subtotal	\$0	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and Revegetatio (Growth Media Development and Ecosystem Establishment)		Υ	m3	Select from List	C.C OUDIOISI	ŢŪ.	Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	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)	Υ	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.

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	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
	Trim, rock rake & deep rip (includes levelling /								cut back and stabilised. Undertaken using D10 dozer and
	landscaping and rip in 1 direction) Planting mature trees (>15 cm)	Y		ha allow	\$1,130.00 \$15.00		\$0 \$0		16M grader. 4 m centres.
	Planting tube stock (<15 cm)	Y		allow	\$6.60		\$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
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		or helicopter (aerial seeding). 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 41, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will leat 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	Υ		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	Υ		m	\$13.00		\$0		Standard rate for standard stock
	areas Purchase and erect warning signs	Υ		allow	\$250.00		\$0		fencing. 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
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from	Y		m3	\$72.50		\$0		\$70/m3 for imported fill material. D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported
	large excavation for filing voids and/or capping etc.								stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation Topsoil stripping	Y		ha m3	\$4,730.00 \$4.86		\$0 \$0		Clearing and grubbing of light vegetation growth e.g. regrowth Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		respreading where necessary. Addition of manure to improve soil
	Utilise biotic soil media - organic topsoil alternative	Υ		m2	\$2.50		\$0		quality. Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Grow	th Media Dev	relopment an	d Ecosysten	Establishme	ent) Subtotal	\$0		
vvater management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an atternate 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.
					Select from			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck
	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 Wa	List ter Managem	ent Subtotal	\$n		and dozer to clean out the dam.
Maintenance of Rehabilitated Areas	it to be converted into clean water structure (Select	Y			List ter Managem	ent Subtotal	\$0		and dozer to clean out the dam.
Maintenance of Rehabilitated Areas	it to be converted into clean water structure (Select	Y				ent Subtotal	\$0		

	Total Cost for Overburden & Waste Domain							\$11,700	
	•	ms Subtotal	\$0						
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
			ĺ	ĺ					
Additional Items									
			Mainte	nance of Reh	abilitated Ar	eas Subtotal	\$0		
	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, guilles, 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.

Domain 4b: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$40,000

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	Υ		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	Υ		m3	\$0.95		\$0		Bulk Drilling say 8°9 pattern, assuming a stem 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)	Υ		m	\$90.00	Cut Subtotal	\$0 \$0		D10 dozer, 16H Grader and revegetation with pasture grass.
Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the	Г			Select from	Cut Subtotal	\$0	Select Push Length Here	Major bulk pushing to achieve
(Landform Establishment)	approval/permit – Select Push Length	Y		m3	List				grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16
	Minor reshaping and pushing Structural works, banks, waterways - contour banks,	Y		ha	\$3,900		\$0		H grader @ \$230 per hour (50% utilisation). Combination of dozer and excavator
	drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		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 (fip-rap) where managing water runor 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.
	Ea	rthworks / St	ructural Wor	ks (Landform	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.
	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.
	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		allow	\$6.60 \$1,875		\$0 \$0		4 m centres. 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 we
	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.

Sir	ngle 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.
Sp	poil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000		\$0		Assumes 2.5 t / ha as an average application rate.
gro	owth media amelioration with biosolids	Υ		ha	\$1,015		\$0		Recent experience with agronomy projects.
Se	ecurity fence around steep section of high wall	Υ		m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh & 32 mm post not concreted
Pu	urchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
Su ma	upply from external sources virgin excavated natural aterial (VENM) for growth media.	Υ		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.
exc	upply from external sources a combination of virgin scavated natural material (VENM) and spoil from ge 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.
Cle	learing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
То	opsoil 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.
Gr	rowth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
Uti	tilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior
	Land Preparation and Revegetation (Grow	th Media Dev	relopment an	d Ecosystem	Establishme	ent) Subtotal	\$0		to hydromulching.
	lean water dams to be retained after commissioning – 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.
La aft	arge clean water dams (i.e. ≥ 2 ha) to be retained ter 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.
it to	emove sediments from the floor of the dam to enable to be converted into clean water structure (Select aul 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 Areas				Wa	ter Managem	ent Subtotal	\$0		Ī
Ma	aintenance of areas that have been shaped and eeded and revegetation has been 'successful'	Υ		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
Ex	xisting rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
Ex	xisting rehabilitation repair - moderate	Υ		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
Ex	kisting rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management.
Ex	xisting rehabilitation repair - total failure of landform	Υ		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
			Mainte	nance of Reh	abilitated Ar	eas Subtotal	\$0		This has believed a control
Additional Itama		l			This is	\$40,000.00	\$40,000	Monitoring well installation	This item includes installation of groundwater monitoring bores to monitor groundwater levels and
Additional Items	stallation of groundwater monitoring wells	Y	1		This is	,	* 13,112		quality to inform a hydrological model.
Ins	stallation of groundwater monitoring wells	Y N	1		left blank				quality to inform a hydrological
Ins		N			left blank Additional Ite	ems Subtotal	\$40,000	\$40,000	quality to inform a hydrological model. This item includes < <to added<="" be="" td=""></to>

Domain 5b: Subsidence & Management

Total Cost for Subsidence & Management Activities

\$በ

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	Description / Notes:
Subsidence Repairs	Minor stabilisation works and maintenance of mine	Y		ha	\$1,470	Unit Rate	\$0	Information	Undertaken using Dozer. Costs subject to the extent of subsidence
	subsidence areas - ripping etc. Crack filling to repair subsidence impacts	Y		m	\$1,450		\$0		impacts Undertake more substantial works to backfill cracks and/or sink holes (e.g., filling with mulch prior to grouting, grouting, etc.) Costs subject to the extent of subsidence impacts. Include >5 km haul of fill.
	Water course restoration to repair subsidence impacts	Y		allow	Use alternate rate cell		\$0		Undertake more substantial works to remediate water courses (e.g., channel bed repairs, rock bar repairs, swamp stabilisation etc.)
	Create cut-through to re-establish natural water courses/drainage channels following subsidence	Y		allow	\$3,000		\$0		Includes all earthworks and revegetation required to re-establish the natural drainage profile of the subsided area.
				Sub	sidence Rep	airs Subtotal	\$0		
Vents, Shafts and Boreholes	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y		allow	\$25,000		\$0		Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person + reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
		•		Vents, Shaft	and Boreho	oles Subtotal	\$0		
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)	Υ		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	Υ		ML	\$1,500		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
Creek Diversions	T	ı		Wa	ter Managem	ent Subtotal	\$0		1
OTER 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. Assumes maintenance has been
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		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.
Land Management	L				reek Diversi	ons Subtotal	\$0		Feral animal baiting programs if
	Pest management on buffer lands, non-disturbed, and rehabilitated areas Land management of undisturbed areas	Y		ha	\$150.00		\$0		required and waste materials required to be removed. Undisturbed areas within the lease
	(rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha La	\$400.00 nd Managem	ent Subtotal	\$0 \$0		boundary that require land management activities.
Heritage Items									Item for the redistribution of
	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate rate cell	ems Subtotal	\$0 \$0		Aboriginal artefacts, preservation of European heritage items or a combination of activities.
Sundry Items	I				nemage ite	ilis Subtotai	\$0		
	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 / ptt 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, to the proper cut, no legacy operations historic in the area, little social dependence, the requirements and knowledge base investigations can range from -575 to >51 M. Sites with more than 1 pit to add \$55,000 to rate.
	Development of an 'Unplanned' Project Closure Plan- Non State Significant Development with at least \$2 of the following aspects requiring closure planning, but on significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known' likely contamination, tallings / 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 activated cost for developing closure plan including studies—basic to satisfy risks and decisions—basic to satisfy risks and decisions—basic used includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate.

Description of Displaced Physic Classor Plant Dates (Plant Plant Dates (Plant Plant Dates (Plant Dates (and analyses on <5 samples, one study and Closure Plan.
Consequence of an integration of the proposed count the contraction of the contract of the county of		State Significant Development with only preliminary to	٧		allow	\$300,000		\$0		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 >53 M. Sites with more than 1 pit to add
Does a Review of Environmental Factors (REF) to facilitate respondential models of a distillated country of the process of the		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,	Υ		allow	\$125,000		\$0		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
Site sociulty during closure V			Y		allow	\$27,950		\$0		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
Choose type of ARAMAT Clean-up required - cleaming and decontainmining plant on department, chemical abrings bodies, or, and grave large, tanks, vessels, and pipe work of: Provisional sum of containmining plant or department, chemical abrings bodies, or, and grave large, tanks, vessels, and pipe work of: Removal and disposal of radiation devices Y each \$31,630 \$50		Site security during closure	Y		yr.	\$75,000		\$0		measures required during closure. This includes nightly patrols and firs response in the event of an out of
Removal and disposal of radiation devices V each \$31,830 \$0 \$10 \$20 \$20 \$20 \$20 \$20 \$20 \$20 \$20 \$20 \$2		and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels,			allow	\$0		\$0		locations, oil and grease traps,
Third Party Project Management Third Party Project Management Mobilisation & Demobilisation for small mine or quarry - y litem \$12,000 \$ 50 \$ 50 \$ 50 \$ 50 \$ 50 \$ 50 \$ 50		Removal and disposal of radiation devices	Υ		each	\$31,630		\$0		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
Third Party Project Management Mobilisation & Demobilisation for small mine or quarry - mail fleet Mobilisation & Demobilisation for small mine or quarry - medium to large fleet Mobilisation & Demobilisation for small mine or quarry - medium to large fleet Mobilisation & Demobilisation (Distance to site <150			Y		allow	rate cell	0.1444			Provisional sum.
Signature execute bulk earthworks as required Mobilisation & Demobilisation for small mine or quarry - medium to large fleet Mobilisation & Demobilisation (Distance to site <150 Y item \$100,000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	Third Party Project Manageme	Mobilisation & Demobilisation for small mine or quarry	Y		Item		ms Subtotal			May include specialist demolition equipment and/or suitable plant to
Mobilisation & Demobilisation (Distance to site <150 y litem \$100,000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		Mobilisation & Demobilisation for small mine or quarry								execute bulk earthworks as required May include specialist demolition
Mobilisation & Demobilisation (Distance to site >150 Y litem \$150,000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0			Y		item	\$100,000		\$0		May include specialist demolition
Mobilisation & Demobilisation (Distance to site >500 Y litem \$300,000 \$0 May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required with the plant to execute bulk earthworks as required with the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to the plant to execute bulk earthworks as required to execute bulk earthworks as r			Y		item	\$150,000		\$0		May include specialist demolition equipment and/or suitable plant to
Additional Items Other 3 <insert> N Item S500,000 S0 equipment and/or suitable plant to execute bulk earthworks as required **Third Party Project Management Subtotal** This is Other 1 <insert> N This is Other 2 <insert> N deliberately Other 3 <insert> N left blank Additional Items Subtotal **Additional Items Subtotal** Additional Items Subtotal **Additional Items Subtotal** **Additi</insert></insert></insert></insert>		Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	Y		item	\$300,000		\$0		May include specialist demolition
Additional Items Other 1 <insert> N This is Other 2 <insert> Other 2 <insert> N Other 3 <insert> N Interniculates <<to added="" be="" by="" operator="" the=""> N Interniculates <<to added="" be="" by="" operator="" the=""> N Interniculates <<to added="" be="" by="" operator="" the=""> Additional Items Subtotal Subtotal</to></to></to></insert></insert></insert></insert>			Y		item	\$500,000		\$0		equipment and/or suitable plant to
N This is by the operator> Other 2 <insert> N deliberately Other 3 <insert> N left blank Other 3 <insert> N left blank Additional Items Subtotal \$0</insert></insert></insert>		Other 1 <insert></insert>	- I ,.	Thi	rd Party Proje		ent Subtotal	\$0		This item includes < <to added<="" be="" td=""></to>
Other 3 < nsert> N left blank by the operator>> Additional Items Subtotal \$0 Additional Items Subtotal \$0	Additional Items		. N	i	Ì	i nis is		l	1	by the operator>>
Additional items Subtotal \$0	Additional Items	Other 2 <insert></insert>				deliberately				This item includes < <to added<="" be="" td=""></to>
	Additional Items		N							This item includes < <to added="" be="" by="" operator="" the="">> This item includes <<to added<="" be="" td=""></to></to>

Domain 1c: Infrastructure

Total Cost for Infrastructure Domain

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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:
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 stoble, 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		Item	\$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	Υ		Item	\$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 demoitsh and remove bridge supports pytons/bridge structure etc. and dispose of waste material on-sterlocally	Y		Item	\$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.
	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	Υ		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 onsite/locally	Υ	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 & gardines (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	Υ	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-siteflocally	Y	m	\$15	\$0	~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not 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	Υ	allow	\$20,000.00	\$0	Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or 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 \cdot \$12.01 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove bitumen (airstrip) and dispose on-site/locally	Y	m2	\$20.00	\$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 / km for transport.
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Particular control goals & foodings 1200 mm. If you have been control goals & foodings 1200 mm. Former control g								
Among control gain & Europy C-200 mm All control control or registrates from control gargates. From Y Control control to make a control gain of gains of the control control gargates. From Y Control control to make a control gains of gains of the control gargates. From Y Control control to make a control gains of gains of the control gains of gains		Y		m2	\$36.00		\$0	conversion to aggregate. 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
Count contracts in main and agroups 7-70 cm. Count contracts in make and agroups 7-70 cm. Value of the country of the countr		Y		m2	\$75.00		\$0	conversion to aggregate. 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 /
Cruch concrete treatment and agroups 4: 20 mm. Y Israel \$15.00 mm.	Crush concrete to make road aggregate - 75 mm	Y		tonne	\$10.00		\$0	materials - assumes crushing plant
Count concrete to relate coal agregate - 20 mm or Y I bring 195.00 10 control coal agregate - 20 mm or Y I bring 195.00 10 control coal agregate - 20 mm or Y I mm 195.00 10 control coal agregate - 20 mm or Y I mm 195.00 10 control coal agregate - 20 mm or Y I mm 195.00 10 control coal agree - 20 mm or Y I	Crush concrete to make road aggregate - 50 mm	Y		tonne	\$13.00		\$0	materials - assumes crushing plant is readily available.
Place of an all plants testes Y each 15,000 00 10 10 10 10 10 10 10 10 10 10 10		Y		tonne	\$15.00		\$0	materials - assumes crushing plant
Committee and among plantesistioning and spit english sets Domittee and among plantesistioning and spit english sets Committee and among plantesistioning and spit english sets Committee and spit sets Plantesistic sets Vision and spit sets Vision and spit sets Vision and spit sets Plantesistic sets Vision and VC sentors (pose within minh pite eners, etc.) Plantesistic sets Vision and spit sets Vision and	Remove fence (cyclone/wire fence) and disposal on- site/locally	Y		m	\$20.00		\$0	
Service of the servic	Removal of small plastic tanks	Y		each	\$1,000.00		\$0	
Demokal and remove communication bases V such SSR,000,00 SSR,00		Y		each	\$500.00		\$0	lightweight metal tanks. No costs
Removal of US services (power within main gibbs area. etc.) Which disposed to Council landfill (percel wisetio) Wash disposed to Council landfill (percel wisetio) Wash disposed to Council landfill (percel wisetio) Value disposed to Council landfill (percel visetio) Value disposed to Council landfill (percel wisetio) Value disposed to Council	Demolish and remove communication towers	Y		each	\$5,000.00		\$0	removal of tower only; separate costs required for disconnection of
Waste disposal to Cancel landfill (general weater) - Navages 10 km but 415 km Waste disposal to Cancel landfill (general weater) - Y torne 19.00		Y		allow	\$50,000.00		\$0	mine boundary is at surface level. This cost covers all fees and
Waste disposal to Council smill file recipional to Council smill file recipional pagnet 15 km but <25 km. Waste disposal to Council smill (general waste) - y borne \$12.50 Tonne \$12.		Y		tonne	\$7.00		\$0	to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill -
Waste disposal to Council landfill (general waste) - V tonne \$12,50	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y		tonne	\$9.00		\$0	to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill -
Waste disposal to Council landfill (industrial demolitor) concrete / scrap metal) - haulage >10 km	Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y		tonne	\$12.50		\$0	to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill -
Waste disposal to Council landfill (industrial demolition / corcrete/ scrap metal) - haulage >15 km	demolition / concrete / scrap metal) - haulage >10 km	Υ		tonne	\$32.00		\$0	to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill -
Waste disposal to Council landfill - fees (general vaste by tonne state of the council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste) but - 50 km Waste disposal to Council landfill - fees (general vaste but - 50 km Waste disposal to Council landfill - fees (general vaste but - 50 km Waste disposal to Council landfill - fees (general vaste but - 50 km Waste disposal to Council landfill - fees (general vaste but - 50 km Fee for waste disposal or industrial demolition waste disposal or industrial demolition vaste disposal or industrial vaste industrial demolition vaste disposal or industrial vaste indust	demolition / concrete / scrap metal) - haulage >15 km	Y		tonne	\$36.00		\$0	to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill -
Waste disposal to Council landfill - fees (general waste) Y tonne \$193.00 \$0 Waste disposal to Council landfill - fees (general waste) Waste disposal to Council landfill - fees (industrial demolition waste disposal on site. Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill - fees (industrial demolition / concrete / scrap metal / vaste disposal on taste include france) Termination of Services and Demolition Works Subtotal Permove rail loop and spur, ballast etc. and disposal on site / vaste / vas	demolition / concrete / scrap metal) - haulage >25 km	Y		allow			\$0	to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill -
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site. Termination of Services and Demolition Works Subtotal Remove rail loop and spur, ballast etc. and disposal on-site/locally Termination of Services and Demolition Works Subtotal Termination of Services and Demolition Works Subtotal Personation of Services and Demolition Works Subtotal Termination	Waste disposal to Council landfill - fees (general waste)	Υ		tonne	\$193.00		\$0	waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on
Remove rail loop and spur, ballast etc. and disposal on-site/locally m \$60.00 \$0 \$0 be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent. Remove train loading facilities and disposal on-site/locally m2 \$185.00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		Y		tonne	\$174.00		\$0	demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition
Remove rail loop and spur, ballast etc. and disposal on-site/locally m \$60.00 \$0 be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent. Remove train loading facilities and disposal on-site/locally m2 \$185.00 \$0 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).		Term	ination of Se	rvices and D	emolition Wo	rks Subtotal	\$0	
Remove train loading facilities and disposal on- site locally Reshape rail spur and load out areas. Does not including growth media and revegetation. Y m2 \$185.00 \$0 \$0 Remove rail load point infrastructure including gartrise 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).	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Y		m	\$60.00		\$0	be reshaped and rehabilitated - does not include transport to regional
Reshape rail spur and load out areas. Does not Include growth media and revegelation But S2,860 S0 D10 Dozer and 16 H Grader (50% utilisation).		Y		m2	\$185.00		\$0	including gantries and control structures. Does not include transport to regional disposal facility
		Y		ha	\$2,860		\$0	D10 Dozer and 16 H Grader (50%
		·		R	ail Infrastruct	ure Subtotal	\$0	

1 1	Contaminated Materials							
		Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are obstered. If there are multiple cluster areas on site, multiple studies may be required.	٧		Cluster	\$15,000	\$0	The preliminary investigation would include at minimum a desktop assessment of the area and site and s
		Undertake an intrusive site investigation on sites with small footprints to investigate e.g. s.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 399 (22 (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 or program, site history, location areas and should be applied considering the rehabilitation areas and should be applied considering the rehabilitation of the contamination of the contamination has occurred (i.e., underground tanks rypies that are known to have leaked, chemical stores with earther bunds, around ineffective dilivater separators etc), and further field work is required involving intrusive investigation. Assumes alle easily accessible and the state of the contamination of the contaminatio
		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 infrusive 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 (20 (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 earther bunds, around ineffective dilivater separators etc.) and further field work is required involving intrusive missessme site has a history of contamination and/or a large area >15 ha requires investigation and teating (lest falls, 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	Υ		allow	Use alternate rate cell	\$0	Assumes complex site; detailed design drawings required for cover.
, ,		Removal and disposal of contaminated water from	Y	ı	L	\$0.35	\$0	Cost for recent sump clean-up from resource activity - requires

1	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				removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	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.
	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 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.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y		m3	Select from List			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 de
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Υ		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.
	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.
	Remove and dispose of asbestos (>750 m2)	Y		m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Y		tonne	\$290		\$0		Landfill fees to regional landfill.
	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.
	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.
	Brine disposal to landfill - fees only	Υ		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to 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 tanker. Add disposal costs to additional items where warranted.
Vents, Shafts and Boreholes			l	Cantan					
			l	Contain	inated Mater	iais Subtotai	\$0		ı
	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m	Y		allow	\$126,000	iais Subtotai	\$0		This cost is not applicable to coal operations which require backfilling to MDG8001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered in backfilled between 2 x1 m plugs for sealing, - hauf material to backfill per >5 km distance - concrete pump and secondary support.
	plug required with in front of access backfill with	Y				as Subtotal			operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + haul material to backfill per >5 km distance + concrete pump and
	plug required with in front of access backfill with engineered fill for 5 m Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill			allow	\$126,000	as Subtotal	\$0		operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + hauf material to backfill per > 5 km distance + concrete pump and secondary support. Cost includes engineering the buikhead and underground construction (access available) followed by grout backfill wa workings and rehabilitation (reshape, buik push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7,250 for grouting. If no buikhead required,
	plug required with in front of access backfill with engineered fill for 5 m Seal portals / driffs (width >3 m) accessible to men and machinery requiring a bukhead – grout backfill against a concrete bulkhead to be constructed Seal portals / driffs (width >3 m) not accessible by men or machinery – grout backfill against a concrete	Y		allow	\$126,000 \$250,000	as Subtotal	\$0 \$0		operations which require backfilling to MOG6001 or similar due to gases. Costs include engineering and GA/QC. Costs assume engineered fill backfilled between 2 x 1 mplugs for sealing. + hauf material to backfill per >5 km distance + concrete pump and secondary support. Cost includes engineering the buildhead and underground control to the control t
	plug required with in front of access backfill with engineered fill for 5 m Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill against a concrete bulkhead to be constructed Seal portals / drifts (width >3 m) not accessible by men or machinery – grout backfill against a concrete bulkhead existing or to be constructed Seal small adits (width >3 m) accessible by men and/or machinery – grout backfill against a concrete bulkhead existing or to be constructed Seal small adits (width >3 m) accessible by men and/or machinery or neither requiring a bulkhead –backfill with appropriate material against a concrete bulkhead existing or to be constructed. The rate includes reshaping and rehabilitation of the batter	Y		allow	\$126,000 \$250,000 \$250,000	as Subtotal	\$0 \$0		operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and GA/GC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + hauf material to backfill per > 5 km distance + concrete pump and secondary support. Cost includes engineering the buikhead and underground construction (access available) followed by grout backfill via workings and rehabilitation (reshape, bulk push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7.250 for grouting. If no buikhead required, deduct \$60.000. Cost includes engineering the buikhead if required and construction (ava access directly above heading followed by grout backfill via boreholes every 10 m to fill violds and rehabilitation). Assume tunnel length of 20 m. For every additional m add \$8,700 for grouting. If no buikhead required, and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$8,700 for grouting. If no buikhead required, deduct \$60.000.
	plug required with in front of access backfill with engineered fill for 5 m Seal portals / driffs (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill against a concrete bulkhead to be constructed Seal portals / driffs (width >3 m) not accessible by men or machinery – grout backfill against a concrete bulkhead existing or to be constructed Seal small adits (width >3 m) accessible by men and/or machinery – grout backfill against a concrete bulkhead existing or to be constructed Seal small adits (width >3 m) accessible by men and/or machinery or neither requiring a bulkhead –backfill with appropriate material against a concrete bulkhead existing or to be constructed. The rate cinculdes reshaping and rehabilitation of the batter around the entrance of the adit	Y Y		allow allow	\$126,000 \$250,000 \$250,000	as Subtotal	\$0 \$0 \$0		operations which require backfilling to MOG6001 or similar due to gases. Costs include engineering and OA/OC. Costs assume engineered fill backfilled between 2 x 1 mplugs for sealing. + hauf material to backfill per >5 km distance + concrete pump and secondary support. Cost includes engineering the builchead and underground construction (access available) followed by grout backfill via exhapition of the construction (access available) followed by grout backfill via exhapition of the construction of the construction (access available) followed by grout backfill via exhapition of the construction via access directly above heading followed by grout backfill via boreholes every 10 m to fill voids and rehabilitation. Assume tunnel length of 20 m. For every additional mades and the construction via access directly above heading followed by grout backfill via boreholes every 10 m to fill voids and rehabilitation. Assume tunnel length of 20 m. For every additional mades 38/700 for grouting mades 38/700 for grouting and some support of the construction via construc

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	Seal and rehabilitate ventilation shafts on hard rock operations (no to low gas risk) or coal operations - allows for works in a remote location	Y		allow	\$150,000		\$0		Rate accounts for a range of factors including variations in depth and size, accessibility limitations, equipment transport to the shaft etc. Assumes engineered fill is available within 10 km round trip and no bulkhead required. Excludes demolition of ventilation fans.
	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y		allow	\$25,000		\$0		Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person + reporting, for an annual inspection @ \$5.000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
	Install gate or grill over the adit (Where site might be used by bats)	Y		ltem	\$200,000		\$0		Rate accounts for a range of factors including establishing clear access, and/or working in remote locations without services, and/or stabilisation works to prevent the entry collapsing and compromising the gate etc.
	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y		depth (m)	\$44.55		\$0		Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes - backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Y		allow	\$42.50		\$0		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.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	Y		allow	\$5,700		\$0		Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y		allow	\$6,960		\$0		Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
	Boreholes – cap and seal open bore holes - surface-to- in-seam gas drainage	Y		allow	\$17,890		\$0		Surface-to-in-seam gas drainage boreholes.
	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	Y		allow	\$35.000		\$0		Includes multi skin sleaves to
	holes (i.e. where sealing aquifers)	•		unon	\$00,000		V		prevent aquifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	Y		allow	\$45,000		\$0		Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.
	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		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
	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		Sealing required, but not complete filling with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	Y		each	\$415		\$0		Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works		ı	Vents, Shafts	s and Boreho	oles Subtotal	\$0		Assumes ~6 m road width - 16H
Nodus dilu Tracks	including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds —	Y		ha ha	\$1,040.00 \$1,500		\$0 \$0		Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Υ		ha	\$3,700		\$0		utilisation) - no seed 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 / 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)	Υ		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)	Υ		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.
	etc.) from roadways and disposal on-site/locally	Y		-	List	cks Subtotal	\$0		removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the
Earthworks / Structural Works	etc.) from roadways and disposal on-site/locally	Y		-	List	cks Subtotal	\$0	Select Haul Distance Here Select Push Length Here	removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the
Earthworks / Structural Works	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the			Ro	List pads and Tra	cks Subtotal	\$0		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. Major bulk pushing to achieve grades nominated in the
Earthworks / Structural Works	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		Ro m3	Dads and Tra-	cks Subtotal			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. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
Earthworks / Structural Works	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing Structural works, banks, waterways – contour banks, drainage channels and other soil conservation	Y		m3	Select from List	cks Subtotal	\$0		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. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). Combination of dozer and excavator work plus grader for ~4 hours each
Earthworks / Structural Works Rehabilitation	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures Construction of spine drains / drop structures and/or stabilising water course entry points - required for	Y Y	E	Rc m3	List Select from List \$3,900 \$1,600		\$0 \$0		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. Major bulk pushing to achieve grades nominated in the approval/permit purporal purporal permit purporal

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)	Υ		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using a excavator and scraper to fill the v and enable the establishment of rehabilitation.
Shotcrete application on cuttings and steep slopes	Υ		m2	\$185.00		\$0		This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot cut back and stabilised.
Trim, rock rake & deep rip (includes levelling /	Y			64 400 00		**		Undertaken using D10 dozer and
landscaping and rip in 1 direction)			ha	\$1,130.00		\$0		16M grader.
Deep rip hard stand / lay down areas Planting mature trees (>15 cm)	Y		ha allow	\$960.00 \$15.00		\$0 \$0		D10 deep ripping. 4 m centres.
Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y		allow	\$6.60		\$0		4 m centres.
Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by trace or helicopter (aerial seeding).
Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		Includes treating, weighing, mixir with fertiliser + spreading by trac 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 irrigatio e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.1 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. 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 gradient of less than 4.1, and wh 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 stabil This cost includes cover crop on 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 wi stabilisation is required for up to months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seedi required.
Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slope where stabilisation is required for to 18 months. Application rate on 24,000kg/ha minimum. This concludes cover crop only, additions seeding required.
Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These ra 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 ove last few years however in light o current conditions (lower fuel pri 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 averaç
			116	\$1,000.00		40		application rate. Recent experience with agronor
growth media amelioration with biosolids	Y		ha	\$1,015		\$0		projects.
Construct no-climb stock fence around rehabilitated	Υ		m	\$22.00		\$0		Standard rate for no-climb stoo
areas Construct standard stock fence around rehabilitated								fencing. Standard rate for standard stoo
areas	Y		m	\$13.00		\$0		fencing.
Purchase and erect warning signs	Υ		allow	\$250.00		\$0		Compliance with AS 1319-199 Safety signs for the occupation environment - installed every 2
Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/ Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill materia
Supply from external sources a combination of virgin excavated natural material (VEMM) 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 o \$60/m3 for imported fill materia
Clearing and grubbing of trees and vegetation	Y		ha	\$4,730,00		\$0		Clearing and grubbing of light
Topsoil stripping	Y		m3	\$4.86		\$0		vegetation growth e.g. regrowth Stripping or topsoil at an approximate depth of 0.2 m int stockpiles; load and haul to fin rehabilitation location required
Growth media supplementation with manure	Y		ha	\$747.50		\$0		respreading where necessary. Addition of manure to improve quality.
Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as alternative to spreading topsoil
						***		to hydromulching.
1		1	ı	Rehabilitat	ion Subtotal	\$0		I
Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		allow	\$2,500		\$0		Provisional sum for earthwork revegetation required to rehab dam batters etc suitable for re by an alternate land-user - D6 (or similar) @ ~\$200 per hour pasture grass.
		1						Provisional sum for earthworks
Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0	Salact Haul Distress He	dam batters etc suitable for re- by an alternate land-user - D6 (or similar) + pasture grass.
Large clean water dams (i.e. ≥ 2 ha) to be retained	Y		allow m3	\$10,500 Select from		\$0	Select Haul Distance Here	dam batters etc suitable for re- by an alternate land-user - D6 I

				Wa	ter Managem	ent Subtotal	\$0		
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	Υ		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, guilles, 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.
			Mainte	nance of Ref	nabilitated Are	eas Subtotal	\$0		
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">></to>
		N			deliberately				This item includes < <to added<br="" be="">by the operator>></to>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
					Additional Ite	ms Subtotal	\$0		
	Total Cost fo	r Infras	tructur	e Doma	in			\$0	

Domain 2c: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

\$140,000

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

Main TSF and in-pit TSF (Sheahan-Grants pit) located in this Mining Lease. Main TSF Seepage management is ongoing.

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:
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 1 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 lead-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., s.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) (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 arreas and short or the site of the contamination of the state of the site of the si
	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 (20 (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 arricipated that contamination has popular and the program of the first policy of the program of the form of the form of the program of the program of the program of the form of
	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	Υ		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	Calcat Haul Distance U	Cost for recent sump clean-up from resource activity - requires specialists to treat.
	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			Select Haul Distance Here	This 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.

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	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.
	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 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.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y		m3	Select from List			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 de
	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.
	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.
	Remove and dispose of asbestos (>750 m2)	Y		m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Υ		tonne	\$290 inated Mater	ials Subtotal	\$0 \$0		Landfill fees to regional landfill.
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,040.00	Subtotal	\$0		Assumes ~6 m road width - 16H Grader.
	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
	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 / 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 / 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 exavator, dozer and grader to enable the establishment of rehabilitation.
Earthworks / Structural Wor	KS .	l	T	Ro	ads and Tra	cks Subtotal	\$0	Select Push Length Here	
(Landform Establishment)		Y		m3	Select from List			occoct and zongarrate	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing Structural works, banks, waterways - contour banks,	Υ		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		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 (fip-rap) where managing water run- off from disturbed land and/or pon- 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.
Mine Waste	Ea	rthworks / S	tructural Wor	ks (Landform	Establishme	ent) Subtotal	\$0		
	Ideal Tailings Capping - reshaping, capping / sealing of trafficiable tailings facility with title chemical reactivity (no low tesk Pedraid Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (NMD) and	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 mand 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 continuous countries of the continuous countries of the continuous countries of the continuous countries of the countries of the continuous countries of the

		Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Deriange (NMD) / Saline Mine Driange (SMD) and/or low to moderate propensity for spontaneous combustion) and 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 / coor facilities where the tailings or rejects base is at a strength that enables at a strength that enables at a strength that enables construction experience and the strength that enables capping material and an average cap thickness ranging from >1 m to 2 m 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 alternate rate cells below, specific material types (e.g., acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / hauf / 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 haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate in 8.05 (spreading costs for tailings cap material included in rate form 9.02 of relevant haulage and spreading in additional to any long haulage volume in 8.05.
		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		so		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to early cover facilities of high geochemical risk, and / or low facilities of high geochemical risk, and / or low source and or low source and risk and / or low source and risk and / or low source long filter and restriction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap britichers of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (e., capillary breaks, geofabric, etc.), specific material types (e.g. acid restriction) of consuming materials, competent rock etc.). Costs for haulage of specialised materials, competent rock 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 materials 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.
		Difficult Tallings Capping-reshaping, capping / sealing of weak or soft surfaced tallings 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. If sine 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 failings cap material included in rate). If additional materials to make up landform, provide buttress or other works saids 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.).
		Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Υ	m3	Select from List	and Surface	60	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
	and Preparation and Revegetation (Growth Media Development and	Source, cart and spread growth media (Select Haul	Y	m3	Select from	ste Subtotal	\$0	Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material
	Ecosystem Establishment)	Distance from List) Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by	Y	m3	List Select from List			Select Haul Distance Here	(VENM) may need to be externally sourced. This item includes the volume of material requiring backfill using an excavator and scraper to fill the void
1		approval / permit (Select Haul Distance from List)							and enable the establishment of rehabilitation.

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	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.
	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	Υ		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	Υ		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.)	Υ		ha	\$1,000.00		\$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	Υ		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Υ		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Υ		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.	Υ		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 (VENIM) 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
	Topsoll 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	Υ		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Υ		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior
	Land Preparation and Revegetation (Grow		relopment an			ent) Subtotal	\$0		to hydromulching.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		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 Doze (or similar) (@ \$500 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 Doze (or similar) + pasture grass.
								Select Haul Distance Here	This item includes the volume of
	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				contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	it to be converted into clean water structure (Select	Y				ent Subtotal	\$0		removal using an excavator, truck
nance of Rehabilitated Areas	it to be converted into clean water structure (Select	Y			List	ent Subtotal	\$0		removal using an excavator, truck and dozer to clean out the dam. Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion
	It to be converted into clean water structure (Select Haul Distance from list) Maintenance of areas that have been shaped and			Wa	List ter Managem	ent Subtotal			removal using an excavator, truck and dozer to clean out the dam. Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does no

	Existing rehabilitation repair - major	Υ		ha	\$2,500		\$0		Areas requiring major repair - rills, guilies, 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.
			Mainte	nance of Reh	abilitated Are	eas Subtotal	\$0		
Additional Items	Routine maintenance activities of Main TSF wetland infrastructure area	Y	1		This is	\$40,000.00	\$40,000	Maintenance	This item includes maintenance of pumps, etc. at the wetland seepage area.
	TSF seepage management investigation	Y	1		deliberately	\$100,000.00	\$100,000	Investigation and design	This item includes investigation of and development of design solution for managing TSF seepage.
					left blank				
					Additional Ite	ms Subtotal	\$140,000		
	Total Cost for 1	Failings	& Reje	cts Don	nain			\$140,000	

Open Cut and Underground Operations

Domain 3c: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$60,000

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

ML1189 risk assessment identified technical assessments, including ecological and geotechnical, required across the ML (not limited to overburden / waste domain)	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	morneds.	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.
	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.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to 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 tanker. Add disposal costs to additional items where warranted.
Roads and Tracks	Uppenled reads / vehicle park up areas _ miner works	ī		Contam		ials Subtotal	\$0		Assumes ~6 m road width - 16H
Rodus and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	Y		ha ha	\$1,040.00 \$1,500		\$0 \$0		Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture	Y		ha	\$3,700		\$0		utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	grass) 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		utilisation) - pasture grass seed 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)	Υ		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-siteflocally (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.
				Ro	ads 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 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.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Υ		m2	\$27.00		\$0		Installation of on-site rock material (fip-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.
Mine Waste	Ea	rthworks / St	tructural Wor	ks (Landform	Establishm	ent) Subtotal	\$0		
	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no 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 hydrophile, shear strength does not limit equipment choice, no artificial strengthening required)	٧		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 mand 0.15 m to -0.2 m growth media (assumed to a consideration of the control of the country of the control o

	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactively (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/olf row to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice scnewhat, 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 at a strength that enables at a strength that enables are suitable capping the construction methods with small pictic construction methods with small pictic applications are more suitable capping the construction and the compact of
	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, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high grochemical 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 (ecapillary breaks, geofabric, etc.), specific material bypes (e.g. acid intervalsing / consuming materials, competent rock 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 failings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, user rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength innits 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		so		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 sine 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 thaulage and spreading in additional thaulage 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.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Y	m3	Select from List			Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and Revegetatio (Growth Media Development and	Source, cart and spread growth media (Select Haul	Y	m3	Select from	ste Subtotal	\$0	Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material
Ecosystem Establishment)	Distance from List) Fill dams, voids etc Source local material, cart and			List Select from			Select Haul Distance Here	(VENM) may need to be externally sourced. This item includes the volume of material requiring backfill using an
	spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y	m3	List				excavator and scraper to fill the void and enable the establishment of rehabilitation.

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	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
	Trim, rock rake & deep rip (includes levelling /	Y		ha	\$1,130.00		\$0		cut back and stabilised. Undertaken using D10 dozer and
	landscaping and rip in 1 direction) Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		16M grader. 4 m centres.
	Planting tube stock (<15 cm)	Y		allow	\$6.60		\$0		4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Υ		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	Υ		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)	Υ		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	Y		m	\$13.00		\$0		Standard rate for standard stock
	areas	Y		allow	\$250.00		\$0		fencing. Compliance with AS 1319-1994 -
	Purchase and erect warning signs	'		allow	\$250.00		\$ 0		Safety signs for the occupational environment - installed every 25 m. D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material. D10 push into void at \$270/hr,
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ		m3	\$72.50		\$0		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.
		Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior
l.	Utilise biotic soil media - organic topsoil alternative								to hydromulching.
			elopment en	d Ecosystem	Establishme	ent) Subtotel	\$0		. , ,
Water Management	Utilise biotic soil media - organic topsoil atternative Land Preparation and Revegetation (Grow		elopment an	d Ecosystem	Establishme	ent) Subtotal	\$0		i i
Water Management			elopment an	d Ecosystem allow	\$2,500	ent) Subtotal	\$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.
Water Management	Land Preparation and Revegetation (Grow	th Media Dev	elopment an			ent) Subtotal			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
Water Management	Land Preparation and Revegetation (Grow Clean water dams to be retained after decommissioning – make safe and minor earthworks Large clean water dams (i.e. 2 2 ha) to be retained	th Media Dev	elopment an	allow allow m3	\$2,500 \$10,500 Select from List		\$0 \$0	Select Haul Distance Here	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc sultable for re-use by an alternate land-user- D6 Dozed (or similar) g-200 per hour and pasture grass. Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Doze
	Land Preparation and Revegetation (Grow Clean water dams to be retained after decommissioning – make safe and minor earthworks Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select	th Media Dev	elopment an	allow allow m3	\$2,500 \$10,500 Select from		\$0	Select Haul Distance Here	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. Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for resultation alternate land-user - D6 Dozer (or similar) + pasture grass. This item includes the vokume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
Water Management Water Management	Land Preparation and Revegetation (Grow Clean water dams to be retained after decommissioning – make safe and minor earthworks Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select	th Media Dev	elopment an	allow allow m3	\$2,500 \$10,500 Select from List		\$0 \$0	Select Haul Distance Here	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) @_5200 per hour and pasture grass. 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. This item includes the volume of contaminated sediment requiring removal using an excavator, fuck

	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.
			Mainte	nance of Rel	nabilitated Are	eas Subtotal	\$0		
Additional Items	Technical studies (geotechnical, ecological) as identified in the ML1189 risk assessment	Υ	1		left blank	\$60,000.00	\$60,000	Investigations	This item includes other investigations to enable relinquishment. These apply to the whole of Mining Lease ML 1189 but has been included in this domain.
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
		-	,		Additional Ite	ms Subtotal	\$60,000		
	Total Cost for O	verburd	len & W	aste Do	main			\$60,000	

Open Cut and Underground Operations

Domain 4c: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

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	momaton	Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Υ		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 \$0		D10 dozer, 16H Grader and revegetation with pasture grass.
Earthworks / Structural Works	ı	ı		ı	Open	Cut Subtotal	Şυ	Select Push Length Here	
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Pash Lengar 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.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0 \$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.
Land Preparation and Revegetation	Ea	rthworks / St	ructural Wor	ks (Landform	Establishm	ent) Subtotal	\$0	Select Haul Distance Here	If topsoil is not available on-site, then
(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.
	Fill dams, voids etc Source local material, cart and							Select Haul Distance Here	This item includes the volume of material requiring backfill using an
	spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List				excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Υ		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.
	Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm)	Y		allow	\$6.60		\$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	\$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	Υ		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where impation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and wegetation 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	Υ		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.

Division of Resources and Geoscience Rehabilitation Cost Estimation Tool - Open_Cut_&_UG (ML1189)

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									These rates have fluctuated over the
	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		\$0		Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	Υ		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Security fence around steep section of high wall	Υ		m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh & 32 mm post not concreted
	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	Υ		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.
	Land Preparation and Revegetation (Grow	th Media Dev	velopment an	d Ecosystem	Establishme	ent) Subtotal	\$0		
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 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.
				Wa	ter Managem	ent Subtotal	\$0		
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.
		T	Mainte	nance of Reh		eas Subtotal	\$0		This item includes coto he added
Additional Itama	0.0	N		l	This is			1	This item includes < <to added="" be="" by="" operator="" the="">></to>
Additional Items	Other 1 <insert></insert>								This has been dealed a set of a control of
Additional Items	Other 1 <insert> Other 2 <insert></insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>
Additional Items					left blank	ems Subtotal	\$0		

Open Cut and Underground Operations

Domain 5c: Subsidence & Management

Total Cost for Subsidence & Management Activities

\$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	Description / Notes:
Subsidence Repairs	Minor stabilisation works and maintenance of mine	Y		ha	\$1,470	Unit Rate	\$0	Information	Undertaken using Dozer. Costs subject to the extent of subsidence
	subsidence areas - ripping etc. Crack filling to repair subsidence impacts	Y		m	\$1,450		\$0		impacts Undertake more substantial works to backfill cracks and/or sink holes (e.g., filling with mulch prior to grouting, grouting, etc.) Costs subject to the extent of subsidence impacts. Include >5 km haul of fill.
	Water course restoration to repair subsidence impacts	Y		allow	Use alternate rate cell		\$0		Undertake more substantial works to remediate water courses (e.g., channel bed repairs, rock bar repairs, swamp stabilisation etc.)
	Create cut-through to re-establish natural water courses/drainage channels following subsidence	Y		allow	\$3,000		\$0		Includes all earthworks and revegetation required to re-establish the natural drainage profile of the subsided area.
				Sub	sidence Rep	airs Subtotal	\$0		
Vents, Shafts and Boreholes	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	Y		allow	\$25,000		\$0		Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person + reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
		•		Vents, Shaft	and Boreho	oles Subtotal	\$0		
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)	Υ		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	Υ		ML	\$1,500		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
Creek Diversions	T	ı		Wa	ter Managem	ent Subtotal	\$0		1
OTER 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. Assumes maintenance has been
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		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.
Land Management	L				reek Diversi	ons Subtotal	\$0		Feral animal baiting programs if
	Pest management on buffer lands, non-disturbed, and rehabilitated areas Land management of undisturbed areas	Y		ha	\$150.00		\$0		required and waste materials required to be removed. Undisturbed areas within the lease
	(rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha La	\$400.00 nd Managem	ent Subtotal	\$0 \$0		boundary that require land management activities.
Heritage Items									Item for the redistribution of
	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate rate cell	ems Subtotal	\$0 \$0		Aboriginal artefacts, preservation of European heritage items or a combination of activities.
Sundry Items	I				nemage ite	ilis Subtotai	\$0		
	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 / ptt 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, to the proper cut, no legacy operations historic in the area, little social dependence, the requirements and knowledge base investigations can range from -575 to >51 M. Sites with more than 1 pit to add \$55,000 to rate.
	Development of an 'Unplanned' Project Closure Plan- Non State Significant Development with at least \$2 of the following aspects requiring closure planning, but on significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known' likely contamination, tallings / 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 activated cost for developing closure plan including studies—basic to satisfy risks and decisions—basic to satisfy risks and decisions—basic used 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 sportaneous combustion propensity, known limited contamination, small approved final void	Υ		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	Υ		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 firnal landforms, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan with execution strategies for rehabilitation activities. Assume at least 15 pipes of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume at least or 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 >53 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	Υ		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. Provisionals 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.	Υ		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 prease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	Υ		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, quantilly, 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	uma Subtotal	\$0 \$0		Provisional sum.
Third Party Project Management	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y		Item	\$12,000	ms Subtotal	\$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.
		Y		item	\$500,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)								
Additional Items			Thi	rd Party Proje		ent Subtotal	\$0		This item includes < <to added<="" be="" td=""></to>
Additional Items	km)	N	Thi	rd Party Proje	This is	ent Subtotal	\$0		by the operator>> This item includes < <to added<="" be="" td=""></to>
Additional Items	Other 1 <insert></insert>		Thi	rd Party Proje		ent Subtotal	\$0		by the operator>> This item includes < <to added="" be="" by="" operator="" the="">> This item includes <<to added<="" be="" td=""></to></to>
Additional Items	Other 1 <insert> Other 2 <insert></insert></insert>	N N N			This is deliberately left blank Additional Ite	ems Subtotal	\$0	\$0	by the operator>> This item includes < <to added="" be="" by="" operator="" the="">></to>

Assumptions and rehabilitation requirements
List or record any assumptions made when completing this tool:
Assumptions and commentary included within each tab corresponding to an ML.



Activity

Domain

Justification for Change of Rates in the Rehabilitation Cost Estimation Tool

DRG unit/rate

Tool. A ju altered in	=	oy a third party has k ion Tool.	= -	=	e Rehabilitation Cost Estimation ed in the above table have been
	Authorisation Representatives F				

Adopted Rates

Justification



Definitions for the Rehabilitation Cost Estimation Tool

Term	Meaning
adit	Entrance to an underground mine which is horizontal or nearly horizontal, by which
adit	the mine can be entered, drained of water and ventilated
amelioration	Addition of materials to change physical or chemical properties or soil, tailings, or
amelioration	other materials.
aquifer	Has the same meaning as it has in the Water Management Act 2000.
armouring	Application of a self-sustaining mechanism for erosion control typically utilising rock.
authority	Means an exploration licence, an assessment lease or a mining lease granted under the <i>Mining Act 1992</i> .
authorisation	Means an authority, a small-scale title or an environmental assessment permit granted under section 252 in force under the <i>Mining Act 1992</i> .
backfill	The act of placing material to refill an excavation or void (such as an open cut or dam).
ballast (rail)	A free draining coarse aggregate or metallurgical slag used to support railway tracks and allow for drainage.
batters	Slopes manufactured during mining and/or excavation activities.
borehole	A hole made by drilling or boring, but excludes sampling and coring using hand held equipment; and petroleum wells.
capillary break	A layer of coarse material placed between finer-textured materials to prevent the vertical movement of water (and associated salts) by surface tension from the lower, finer-textured material into the upper finer-textured material (such as topsoil or growth media). It can also function to limit root penetration into the underlying seal and more than one capillary break can be present within a cover design.
capping / sealing	The act of applying material (such as clay) in a usually engineered design to seal off underlying material (such as waste, contaminated soil or spoil) in order to prevent exposure of this material to the environment and outside conditions.
CHPP	Coal Handling and Processing Plant - A plant used to upgrade the quality of coal including crushing, sizing washing and drying.
Clearing of vegetation	Any one or more of the following: • cutting down, felling, thinning, lopping, logging or removing vegetation • killing, destroying, poisoning, ringbarking, uprooting or burning vegetation.
contaminated	Condition or state where there is/are potentially hazardous substance(s) at concentrations above background or recommended land use levels and where assessment shows it poses, or is likely to pose, an immediate or long-term hazard to human health or the environment.
contour banks	Earthen structures constructed across cultivated slopes.
crusher/crushing plant	Equipment that crushes ore or rock - also referred to as a mill
demountable	A transportable prefabricated structure/building produced off site and transported to site, designed to be movable rather than permanently located.
Department	Department of Regional NSW
desiccation	Process of removing moisture or extreme drying.
de-water	Removal or draining groundwater or surface water from a structure by pumping or evaporation.
diversion	A drain or channel that diverts stormwater runoff around a site or landform.
earthworks	Equipment activity involving the placement and working of large amounts of earth to engineering or other design specification (such as cut and fill operations for roads, dams, landforms, etc.).
evaporation fans	Fans used to evaporate water as an alternative to discharging water off-site.
excavation	The removal of the surface layer of land to a depth greater than 500 mm from the natural surface level of that land.

	Has the same meaning as it has in the State Environmental Planning Policy
exploration	(Mining, Petroleum Production and Extractive Industries) 2007.
	A method of reducing the in-situ gas content of the seam to within acceptable limits
gas drainage	by drilling holes into the seam or surrounding strata ahead of mining.
goaf	The space remaining following extraction of the mineral.
groundwater	Water that occurs beneath the ground surface in the saturated zone.
	A hard-surfaced area on which heavy vehicles can be parked and equipment can b
hardstand	stored.
haul road	Roads used to transport mine materials (product and waste).
	Anything that, when produced, stored, moved, used or otherwise dealt with without
HAZMAT	adequate safeguards to prevent it from escaping, may cause injury or death or
	damage to life, property or the environment.
	Means:
	any heritage items listed in one or more of the following:
	— the Commonwealth Heritage List
	— the World Heritage List
	— the National Heritage List
	— the State Heritage Register
	— an Environmental Planning Instrument
	any relic (being any deposit, object or material evidence which relates to the
	settlement of the area that comprises New South Wales, not being Aboriginal
Item of heritage significance	settlement, and which is 50 or more years old)
	within State Conservation Areas:
	— items that are listed on the DECC Historic Heritage Information Management
	System
	— in all other circumstances, any deposit, object or material evidence relating to the settlement or occupation of New South Wales or a part of New South Wales (not being Aboriginal settlement or occupation) if the deposit, object or material evidence is more than 25 years old at the date of the interference or removal.
leach	Dissolution and removal of a soluble substance from a substrate.
	Movement of strata resulting from the extraction of coal, metals or minerals and
mine subsidence	incorporates vertical ground movement (strain) and differential vertical movement (tilt).
	Open-cut mining occurs where mineral deposits are close to the surface and
open cut	typically involves blasting and removing surface layers of soil and rock to reach the
opon out	mineral deposit. Also referred to as open-pit, or open-cast mining.
overburden	Top soil/strata overlying a coal seam.
Overbarden	means an exploration licence, assessment lease, production lease or special
petroleum title	prospecting authority in force under the <i>Petroleum (Onshore) Act 1991</i> .
	Means a hole made by drilling or boring in connection with prospecting for
	petroleum or operations for the recovery of petroleum, but excludes:
	sampling and coring using hand held equipment
petroleum well	• a hole constructed and operated for the following purposes where the operation of that hole does not involve fracture stimulation or the recovery of petroleum:
	— stratigraphic definition



Item	Activity Description	Unit	U	nit Prices	Justification and Assumptions for Proposed Rates
1.01	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	allow	\$	35,000	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.
1.02	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	allow	\$	5,850	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.
1.03	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	km	\$	15,000	Applies to power lines on stobie, concrete or similar poles.
1.04	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	km	\$	100,000	Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
1.05a	Remove <u>small</u> 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	Item	\$	350,000	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).
1.05b	Remove <u>medium</u> 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	Item	\$	500,000	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).
1.05c	Remove <u>large / significant</u> 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	Item	\$	1,300,000	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).
1.06	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	m ²	\$	100.00	Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
1.07	Demolish and remove switchyard. Dispose of waste material on-site/locally	m ²	\$	75.00	Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
1.08	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	m ²	\$	40.00	Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
1.09	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	m ²	\$	61.00	Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
1.10	Demolish and remove light industrial buildings and disposal on-site/locally	m²/floor	\$	90.00	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.
1.11	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	m²/floor	\$	130.00	Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
1.12	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	m²/floor	\$	225.00	Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
1.13	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	m²/floor	\$	225.00	Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
1.14	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	allow	\$	750,000	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.
1.15	Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on- site/locally	allow	\$	2,000,000	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.
1.16	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	m	\$	75.00	Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
1.17	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	allow	\$	92,500	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.18	Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	allow	\$	77,500	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.19	Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	allow	\$	62,500	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.20	Collapse, Cut and Remove rail loading bins and disposal on-site/locally	allow	\$	65,000	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.20a	Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	allow	\$	460,000	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.21	Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	m	\$	185.00	Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
1.22	Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	m	\$	295.00	Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
1.23	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 infrastructure	m	\$	850	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.
1.24	Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	m	\$	150.00	Due to no canopy or infrastructure attached.
1.25	Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	m	\$	950.00	Assumes this area will be used for another land-use that requires the structure to be dug up and re- buried somewhere else.
1.26	Demolition and removal of vent raise fans, electrical substation and winch and disposal on-site/locally	allow	\$	25,000	Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
1.27	Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	allow	\$	10,000	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.
1.28	Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on-site/locally	allow	\$	30,000	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.
1.29	Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	allow	\$	45,000	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.
1.30	Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on-site/locally	allow	\$	100,000	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.
1.31	Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on- site/locally	allow	\$	100,000	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.
1.32	Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	allow	\$	21,000	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
1.33	Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on- site/locally	allow	\$	30,000	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
1.34	Remove small underground pipe and disposal on-site/locally	m	\$	25.00	For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
1.35	Remove medium underground pipe and disposal on-site/locally	m	\$	60.00	For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or
1.36	Remove large underground pipe and disposal on-site/locally	m	\$		equivalent. For example: 1 m pipes - 2 m deep.
1.50	Tromove large underground pipe and disposal off-site/locally	- "	φ	100.00	т от олатирие. Тит рирез - 2 пи чеср.

Item	Activity Description	Unit	Unit Prices	Justification and Assumptions for Proposed Rates
1.37	Remove above ground pipe (supported) and disposal on-site/locally	m	\$ 12.00	~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
1.38	Remove surface pipelines (unsupported) and disposal on-site/locally	m	\$ 15.00	~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
1.39	Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	allow	\$ 20,000	Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent. Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km,
1.40	Remove bitumen (car park and access roads) and dispose on-site/locally	m ²	\$ 10.00	depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport. Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km,
1.41	Remove bitumen (airstrip) and dispose on-site/locally	m ²	\$ 20.00	depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport. Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60
1.42	Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	m ²	\$ 36.00	- \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport. Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60
1.43	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally Crush concrete to make road aggregate - 75 mm	m ²		- \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport. Does not include haulage of materials - assumes crushing plant is readily available.
1.45	Crush concrete to make road aggregate - 50 mm Crush concrete to make road aggregate - 50 mm Crush concrete to make road aggregate - 30 mm	tonne	\$ 13.00	Does not include haulage of materials - assumes crushing plant is readily available. Does not include haulage of materials - assumes crushing plant is readily available.
1.47	Remove fence (cyclone/wire fence) and disposal on-site/locally Removal of small plastic tanks	m each	\$ 20.00	Roll up fence and remove posts. Remove small poly tanks used for water storage, etc.
1.49	Demolish and remove galvanised/corrugated light weight tanks	each	,	Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
1.50	Demolish and remove communication towers	each	\$ 5,000.00	Cost includes demolition and removal of tower only; separate costs required for disconnection of services, demolition of footings, etc.
1.51	Removal of UG services (power within main gate areas, etc.)	allow	\$ 50,000.00	Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
1.52	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	tonne	\$ 7.00	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
1.53	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	tonne	\$ 9.00	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
1.54	Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	tonne	\$ 12.50	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
1.55	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) -	tonne	\$ 32.00	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type. Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity
1.56	haulage >15 km but <25 km	tonne	\$ 36.00 Use	against Waste disposal to Council landfill - fees for relevant waste type.
1.57	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	allow	alternate rate cell	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type. Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please
1.58	Waste disposal to Council landfill - fees (general waste)	tonne	\$ 193.00	note that this is not applicable to operations with approval for building and demolition waste disposal on site.
1.59 Rail Infrastructure	Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	tonne	\$ 174.00	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
2.01	Remove rail loop and spur, ballast etc. and disposal on-site/locally	m	\$ 60.00	Remove all materials to allow area to be reshaped and rehabilitated - does not include transport to
2.02	Remove train loading facilities and disposal on-site/locally	m ²	\$ 185.00	regional disposal facility or equivalent. Remove rail load point infrastructure including gantries and control structures. Does not include
2.03	Reshape rail spur and load out areas. Does not include growth media and revegetation	ha	\$ 2,860	transport to regional disposal facility or equivalent. D10 Dozer and 16 H Grader (50% utilisation).
Contaminated Mate				
3.01a	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.	Cluster	\$ 15,000	history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 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 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	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. Assumes site is easily accessible and a small area e.g. ~10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
3.01c	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	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 SAQP, fieldwork, sampling and analysis.
3.01d	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	allow	\$ 35,000	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	allow	cell	Assumes complex site; detailed design drawings required for cover.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps 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)	m ³	\$ 0.35 Select from List	Cost for recent sump clean-up from resource activity - requires specialists to treat. This 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.
3.03a	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 (haul distance < 1km)	m ³	\$ 3.90	Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.03b	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 (haul distance >1 km but <2 km)	m ³	\$ 5.63	Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.03c	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 (haul distance >2 km but <5 km)	m ³	\$ 7.81	Assumes 1 Excavator, 7 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.03d	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 (haul distance >5 km)	m ³	\$ 9.26	Assumes 1 Excavator, 9 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.04a	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	m ³	\$ 800.00	Includes load, haul and dump fees to a licensed facility.
3.04b	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	m ⁴	\$ 660.00	Includes load, haul and dump fees to a licensed facility.
3.05	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m³ for cartage to regional landfill	m ³		Includes load, haul and dump fees to a licensed facility. Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity
3.06-	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	m ³	Select from List	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.

ltem	Activity Description	Unit	Un	it Prices	Justification and Assumptions for Proposed Rates
3.06a	Onsite remediation of hydrocarbon contaminated soils (<50 m³) - manual land farming	m ³	\$	100.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading 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 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.06b	Onsite remediation of hydrocarbon contaminated soils (>50 m³ but <100 m³) - manual land farming	m³	\$	89.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading 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 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.06c	Onsite remediation of hydrocarbon contaminated soils (>100 m³ but <500 m³) - manual land farming	m ³	\$	78.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading 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 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.06d	Onsite remediation of hydrocarbon contaminated soils (>500 m³) - manual land farming	m ³	\$	75.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading 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 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.07	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Item	\$	150,000	Required if treatment of hydrocarbon contamination is required to be fast tracked.
3.08	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	m ³	\$	165.00	Additional cost as the treatment process is fast tracked.
3.09	Remove and dispose of asbestos (<750 m²)	m ²	\$	50.00	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
3.10	Remove and dispose of asbestos (>750 m²)	m ²	\$	40.00	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
3.11	Waste disposal to Council landfill - fees (asbestos)	tonne	\$	290	Landfill fees to regional landfill.
3.12	Treatment of known Acid Sulfate Soils	ha	\$	2,580	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.
3.13 3.14-	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.) Long haulage brine/salt for disposal (Select Haul Distance from list)	m ² tonne	-	1.00 ect from	Provisional sum for cutting using ripping tynes and on-site disposal of the liner. Costs for haulage to location for authorised disposal.
3.14a	Long haulage brine/salt for disposal >10 km but <15 km	tonne	\$	10.25	Costs for haulage to location for authorised disposal.
3.14b	Long haulage brine/salt for disposal >15 km but <25 km	tonne	\$		Costs for haulage to location for authorised disposal.
3.14c	Long haulage brine/salt for disposal >25 km but <50 km	tonne	\$		
3.14d	Brine disposal to landfill - fees only	tonne	\$		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
3.15-	Long haulage water (clean or contaminated) (Select Haul Distance from list)	tonne	Sel List	ect from	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
3.15a	Long haulage water (clean or contaminated) >10 km but <15 km	tonne	\$	9.00	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
3.15b	Long haulage water (clean or contaminated) >15 km but <25 km	tonne	\$	12.00	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
3.15c	Long haulage water (clean or contaminated) >25 km but <50 km	tonne	\$	15.00	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.

Item	Activity Description	Unit	Uı	nit Prices	Justification and Assumptions for Proposed Rates
Vents, Shafts and	Boreholes				
4.01a	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m	allow	\$		This cost is not applicable to coal operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + haul material to backfill per >5 km distance + concrete pump and secondary support.
4.01b	Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill against a concrete bulkhead to be constructed	allow	\$	250,000	Cost includes engineering the bulkhead and underground construction (access available) followed by grout backfill via workings and rehabilitation (reshape, bulk push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7,250 for grouting. If no bulkhead required, deduct \$60,000.
4.01c	Seal portals / drifts (width >3 m) not accessible by men or machinery – grout backfill against a concrete bulkhead existing or to be constructed	allow	\$	250,000	Cost includes engineering the bulkhead if required and construction via access directly above heading followed by grout backfill via boreholes every 10 m to fill voids and rehabilitation (bulk push final trim, seeding and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$8,700 for grouting. If no bulkhead required, deduct \$60,000. Assumes any existing bulkhead is observable by camera and satisfies regulations and engineer (location, etc.).
4.01d	Seal small adits (width ≤3 m) accessible by men and/or machinery or neither requiring a bulkhead –backfill with appropriate material against a concrete bulkhead existing or to be constructed. The rate includes reshaping and rehabilitation of the batter around the entrance of the adit	allow	\$	25,000	Costs estimated from executed works program in NSW from multiple sites. Rate assumes standard works program with suitable access, and additional roof and rib stabilisation works etc. is not required.
4.02a	Costs to grout fill tunnel via mine workings to seal and eliminate voids and/or likelihood of failures of ground	m	\$	7,250	Workings are accessible to run grout lines via machine or seam dip is favourable i.e. dips inbye
4.02b	Costs to grout fill tunnel by drilling directly above to seal and eliminate voids and/or likelihood of failures of ground	m	\$	8,700	Area directly above heading is accessible by drill rig with depth of cover <30 m and access outbye. One borehole required every 10m to fill void.
4.03a	Demolish ventilation fans	Item	\$		Costs for demolition of ventilation fan prior to sealing shaft. Rate accounts for a range of factors including variations in depth and size, accessibility limitations,
4.03b	Seal and rehabilitate ventilation shafts on hard rock operations (no to low gas risk) or coal operations - allows for works in a remote location	allow	\$	150,000	equipment transport to the shaft etc. Assumes engineered fill is available within 10 km round trip and no bulkhead required. Excludes demolition of ventilation fans. Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person +
4.04	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	allow	\$		reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc). Rate accounts for a range of factors including establishing clear access, and/or working in remote
4.05	Install gate or grill over the adit (Where site might be used by bats)	Item	\$		locations without services, and/or stabilisation works to prevent the entry collapsing and compromising the gate etc.
4.06a	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	depth (m)	\$	44.55	Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
4.06b	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	allow	\$		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.
4.07	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	allow	\$		Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
4.08	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	allow	\$	6,960	Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
4.09 4.10	Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage	allow allow	\$		Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes.
4.11	Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)	allow	\$,	Includes multi skin sleaves to prevent aquifer mixing.
4.12	Boreholes – cap and seal service boreholes for UG <u>coal</u> operations	allow	\$	45,000	Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.
4.13	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	Item	\$		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
4.14	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	Item	\$	1,340	Sealing required, but not complete filling with concrete/grout
4.15	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	each	\$	415	Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks		1 1-	I &	1.040	Accumpant Caracad width ACI Candon
5.01 5.02	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small	ha ha	\$,	Assumes ~6 m road width - 16H Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
5.03	earthen bunds – minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and	ha	\$	3,700	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass
5.04	seed (pasture grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip,	ha	\$	4,485	seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub
5.05	ameliorate and seed (native tree/shrub/grass) 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)	ha	\$	4,870	seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
5.06	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	ha	\$	7,025	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub
5.07-	tree/shrub/grass) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-	m ³		elect from	seed 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
<i>5.</i> 07-	site/locally (Select Haul Distance from list) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-	3	Lis		rehabilitation.
5.07a	site/locally (haul distance < 1km) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-	m ³	\$		Assumes 1 excavator, 3 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
5.07b	site/locally (haul distance >1 km but <2 km) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-	m ³	\$		Assumes 1 excavator, 4 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
5.07c	site/locally (haul distance >2 km but <5 km) Remove stabilised material (blue metal, aggregate etc.) from roadways and dump in a	m ³	\$		Assumes 1 excavator, 6 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
5.07d Open Cut	void on-site (haul distance >5 km)	m ³	\$	9.45	Assumes 1 scrapers 623, 9 trucks 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
6.01	Active pit area – benches blasted and doze to acceptable grade	Lm	\$		Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m. Bulk Drilling say 8*9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive
6.02	Drill & blast faces to make safe	m ³	\$	0.95	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.
6.03 Earthworks / Struc	High wall treatment – (trench and safety berm)	m	\$		D10 dozer, 16H Grader and revegetation with pasture grass.
7.01-	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push	m3		lect from	Major bulk pushing to achieve grades nominated in the approval/permit
7.01a	Length Major bulk pushing to achieve grades nominated in the approval/permit – 50 m push	m3	List \$		Assumes D11 dozer push @ 400 bcm/hr.
	length Major bulk pushing to achieve grades nominated in the approval/permit – 50 m-75 m		H		
7.01b	push length Major bulk pushing to achieve grades nominated in the approval/permit – 75 m-100 m	m3	\$		Assumes D11 dozer push @ 375 bcm/hr.
7.01c	push length)	m3	\$	1.42	Assumes D11 dozer push @ 250 bcm/hr.
7.01d	Major bulk pushing to achieve grades nominated in the approval/permit – 150 m push length)	m3	\$		Assumes D11 dozer push @ 175 bcm/hr.
7.02 7.03	Minor reshaping and pushing Structural works, banks, waterways - contour banks, drainage channels and other soil	ha ha	\$		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). Combination of dozer and excavator work plus grader for ~4 hours each per ha.
7.04	conservation measures Construction of spine drains / drop structures and/or stabilising water course entry	m ²	\$	-	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
Mine Waste	points - required for large catchments	""			locally available). If required to be sourced off site, assume an additional \$20/m2.
8.01	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 equipment choice, no artificial strengthening required)	ha	\$	82,000	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 mand 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.

ltem	Activity Description	Unit	Unit Prices	Justification and Assumptions for Proposed Rates
8.01a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.01b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.02	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 propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	ha	\$ 146,500	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 ranging from >1 m to 2 m 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 alternate 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 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.
8.02a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.02b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.03	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	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.
8.03a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.03b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.04	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	ha	\$ 843,000	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 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.
8.04a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.04b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.05-	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	m3	Select from List	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc. Assume haulage required from location to site stockpile or site to off-site disposal area - round trip
8.05a	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. >10 km but <15 km	m3	\$5.50	haulage distance. Excludes costs for spreading. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance here (spreading costs included in tailings rates 8.01 to 8.04). 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.
8.05b	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. >15 km but <25 km	m3	\$6.00	Assume haulage required from location to site stockpile or site to off-site disposal area - round trip haulage distance. Excludes costs for spreading. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance here (spreading costs included in tailings rates 8.01 to 8.04). 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.
8.05c	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. >25 km but <50 km	m3	\$8.00	Assume haulage required from location to site stockpile or site to off-site disposal area - round trip haulage distance. Excludes costs for spreading. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance here (spreading costs included in tailings rates 8.01 to 8.04). 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.

Item	Activity Description	Unit	Unit Prices	Justification and Assumptions for Proposed Rates
Rehabilitation				
9.01-	Source, cart and spread growth media (Select Haul Distance from List) Source, cart and spread growth media - haul distance <1 km	m ³	List	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced. Undertaken with 623 scraper and 14 M grader.
9.01a 9.01b	Source, cart and spread growth media - haul distance <1 km	m ³		Undertaken with scraper and D10 dozer.
9.01c	Source, cart and spread growth media - haul distance >1 km but <2 km	m ³	· ·	Undertaken with D10 dozer, excavator and trucks.
9.01d	Source, cart and spread growth media - haul distance >5 km	m ³		Undertaken with D10 dozer, excavator and trucks.
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap		Select from	This item includes the volume of material requiring backfill using an excavator and scraper to fill the
9.02-	thickness determined by approval / permit (Select Haul Distance from List) Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap	m ³	List	void and enable the establishment of rehabilitation.
9.02a	thickness determined by approval / permit (haul distance <1 km)	m ³	\$ 3.90	Undertaken using a 623 scraper and D10 Dozer.
9.02b	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >1 km but <2 km)	m ³	\$ 5.22	Undertaken using 623 scraper and D10 Dozer.
9.02c	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >2 km but <5 km)	m ³	\$ 6.88	Undertaken using a 45T excavator, truck, grader and D10 Dozer.
9.02d	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >5 km)	m ³	\$ 9.13	Undertaken using a 45T excavator, truck, grader and D10 Dozer.
9.03	Shotcrete application on cuttings and steep slopes	m ²	\$ 185.00	This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
9.04	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	ha		Undertaken using D10 dozer and 16M grader.
9.05	Deep rip hard stand / lay down areas	ha		D10 deep ripping.
9.06	Planting mature trees (>15 cm)	allow		4 m centres.
9.07	Planting tube stock (<15 cm)	allow	\$ 6.60	4 m centres. Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial
9.08	Direct seeding / fertiliser (pasture grass species)	ha	\$ 1,875	seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or neicopter (aerial seeding).
9.09	Direct seeding / fertiliser (tree or native grass species)	ha	\$ 4,135	seeding).
9.10a	Hydro-seeding with straw mulching and bitumen tack with native seed	m ²	\$ 1.90	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
9.10b	Hydro-seeding with straw mulching and bitumen tack with pasture seed	m2	\$ 0.43	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
9.10c	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	m2	\$ 0.80	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.
9.10d	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	m2	\$ 1.80	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.
9.10e	Hydromulch - high performance flexible growth medium grade	m2	\$ 2.50	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.
9.11	Single application of fertiliser (pasture)	ha	\$ 420.00	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.
9.12	Single application of fertiliser (trees)	ha	\$ 140.00	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.
9.13	Spoil amelioration (adding lime / gypsum etc.)	ha	\$ 1,000.00	Assumes 2.5 t / ha as an average application rate.
9.14	growth media amelioration with biosolids	ha	, , , , , , , , , , , , , , , , , , , ,	Recent experience with agronomy projects.
9.15	Security fence around steep section of high wall	m	\$ 64.00	1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh & 32 mm post not
0.16	Construct no climb stock force around rehabilitated around		¢ 22.00	concreted Standard rate for no-climb stock fencing.
9.16 9.17	Construct no-climb stock fence around rehabilitated areas Construct standard stock fence around rehabilitated areas	m m		Standard rate for no-climb stock fencing. Standard rate for standard stock fencing.
				Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25
9.18	Purchase and erect warning signs	allow	\$ 250.00	m.
9.19	Supply from external sources virgin excavated natural material (VENM) for growth media.	m ³	\$ 80.80	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.
9.20	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	m³	\$ 72.50	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.
9.21 9.22	Clearing and grubbing of trees and vegetation Topsoil stripping	ha m3		Clearing and grubbing of light vegetation growth e.g. regrowth Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final
9.23	Growth media supplementation with manure	ha	·	rehabilitation location required or respreading where necessary. Addition of manure to improve soil quality.
9.24a	Utilise biotic soil media - organic topsoil alternative	m2		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Managemer	* .			, , , , , , , , , , , , , , , , , , , ,
10.01	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	ML	\$ 3,600	Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
10.02	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	ML	\$ 1,500	Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
10.03a	Clean water dams to be retained after decommissioning – make safe and minor earthworks	allow	\$ 2,500	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.
10.03b	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	allow	\$ 10,500	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.
10.04-	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	m ³	Select from List	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
10.04a	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance <1km)	m ³	\$ 3.55	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.04b	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >1km but <2km)	m ³	\$ 4.45	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.04c	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >2km but <5km)	m ³	\$ 7.25	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.04d	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >5km)	m ³	\$ 9.50	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.05	Removal of evaporation fans and/or other water transfer and management infrastructure	allow	\$ 25,000	Provisional sum for removal of water management infrastructure.
10.06	Exploration sump decommissioning	m ³		Use of a tractor or bob cat with labour. This could be completed in a few hours. Assumes 3 m x 3 m x 1 m sump. Assumes backfill material available within 2 km round trip.
10.07	Water / mud disposal from sump	L		Disposal of non-contaminated sediments removed from sump.
				· · · · · · · · · · · · · · · · · · ·

Item	Activity Description	Unit	Un	it Prices	Justification and Assumptions for Proposed Rates
Creek Diversions					
11.01 11.02	Repairs and/or stabilisation of new or compromised water course diversion Long term maintenance of water course diversion – Channel constructed through	m	\$		Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
	backfilled material Long term maintenance of water course diversion – Channel constructed through	m			Assumes maintenance has been kept up and significant works are not required.
11.03	competent material	m	\$		Assumes maintenance has been kept up and significant works are not required. Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting
11.04	Installation of rock armouring	m ²	\$		from offsite location.
Maintenance of Reh	habilitated Areas Maintenance of areas that have been shaped and seeded and revegetation has been		l	005	Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion
12.01	'successful' Pest management on buffer lands, non-disturbed, and rehabilitated areas	ha ha	\$	925	control, inspections/audits - does not include major repair works. Feral animal baiting programs if required and waste materials required to be removed.
12.02	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and	ha	\$		Undisturbed areas within the lease boundary that require land management activities.
	sediment control works) Minor stabilisation works and maintenance of mine subsidence areas - ripping etc.	ha	\$		Undertaken using Dozer. Costs subject to the extent of subsidence impacts
12.04b	Crack filling to repair subsidence impacts	m	\$	1,450	Undertake more substantial works to backfill cracks and/or sink holes (e.g., filling with mulch prior to grouting, grouting, etc.) Costs subject to the extent of subsidence impacts. Include >5 km haul of fill.
12.05a	Water course restoration to repair subsidence impacts	allow	Use alter cell	e rnate rate	Undertake more substantial works to remediate water courses (e.g., channel bed repairs, rock bar repairs, swamp stabilisation etc.)
12.05b	Create cut-through to re-establish natural water courses/drainage channels following subsidence	allow	\$	3,000	Includes all earthworks and revegetation required to re-establish the natural drainage profile of the subsided area.
12.06 12.07	Existing rehabilitation repair - minor Existing rehabilitation repair - moderate	ha ha	\$		Areas requiring minor repair - rills, minor growth media replacement. Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - moderate	ha	\$		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional
	Existing rehabilitation repair - total failure of landform	ha	\$,	surface water management. Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
Heritage Items			Lilea		
13.01	The restoration and care and maintenance of items that have heritage significance	allow	Use alter cell	e rnate rate	Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
	Development of an 'Unplanned' Project Closure Plan - for either State Significant or Non	allow		ect from	Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with
1-7.0 1=	State Significant Developments	ailOW	List		execution strategies for rehabilitation activities.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with <u>closure planning well progressed</u> 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	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.
14.01b	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 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	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.
14.010	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	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.
14.01d	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	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 ≥2 of the following aspects resulting in <u>significant issues</u> <u>requiring remediation</u> : previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	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.
14.01f	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	allow	\$		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.
14.02	Site security during closure	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.
14.03-	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	allow			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
14.03a	Small HAZMAT Clean-up - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	allow	\$		Provisional sum to perform the site clean-up on a small site (e.g. one mine infrastructure area and ≤2 pit top or laydown/storage areas) ensuring the demolition program is not interrupted due to potential contamination of waste streams.
14.03b	Medium HAZMAT Clean-up - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	allow	\$		Very labour intensive and previous experience in similar mine sites suggest this is a better more realistic rate to use for medium size contam clean-ups (e.g. two mine infrastructure areas and >2
14.03c	Large HAZMAT Clean-up - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	allow	\$		but ≤5 pit top or laydown/storage and plant areas). Very labour intensive and previous experience in similar mine sites suggest this is a better more realistic rate to use for larger size contam clean-ups.
14.04	Removal and disposal of radiation devices	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.
14.05	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	allow	Use alter		Provisional sum.
Third Party Project	Management and Contingencies				
15.00	Mobilisation & Demobilisation for exploration programs	Item	\$	·	Assumes an exploration program of 10 or fewer holes and local contractors within 250 km are available to undertake rehabilitation of disturbance generated by dedicated exploration companies. Apply once per exploration pad.
15.00a	Mobilisation & Demobilisation for small mine or quarry - small fleet	Item	\$	12.000	May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
15.00b	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Item	\$	35,000	May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
15.01	Mobilisation & Demobilisation (Distance to site <150 km)	item	\$	100,000	May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.02	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	item		·	required. May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
	,			·	required. May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.03	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	item		300,000	required. May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.04	Mobilisation & Demobilisation (Distance to site >1000 km)	item	\$	500,000	required.
15.05	Contingency	Total		10%	A contingent amount to account for "unkown unknowns" and areas were data / details of rehabilitation methods are uncertain.
15.06	Post Closure Environmental Monitoring	Total		10%	Includes all monitoring post closure execution works and compilation of all monitoring and maintenance data into a final rehabilitation report and submission for regalatory sign-off.
15.07	Project Management and Surveying	Total		10%	Includes all costs for project management of the closure execution works and post closure
10.01	Trojout Management and Odrveying	ı Uldi		10 /0	management requirements until land and/or tenure relinquishment.

Date	Revision Number
2/05/2022	2022-1
5/05/2023	2023-1

Revision description

- 1. Underground report summary tab, resolved issue of addition of values from multiple domains (tabs) for Domain 4: Subsidence and Management
- 2. Underground, Site Security Closure Row 434 resolved issue of value not recording as total cost for this line
- 1. Resolved issue of "Description/Notes" field for "Exploration" referring to superseded text rather than looking up updated text in cost schedule. Issue was restricted to "Roads and Tracks" and "Earthworks/ Structural Works (Landform Establishment)" management precincts.