

NSW Resources Regulator

FWP0001548

# GALONG LIMESTONE MINE FORWARD PROGRAM

Wednesday 1 January 2025 to Friday 31 December 2027





# Summary

DETAIL		
Mine	Galong Limestone Mine	
Reference	FWP0001548	
Forward program commencement date	Wednesday 1 January 2025	
Forward program end date	Friday 31 December 2027	
Forward program revision (if applicable)		
Contact	Raylene Slade	
Mining leases	ML 1496 (1992), ML 1745 (1992)	
Project location	Graymont (NSW) Pty Ltd	
Date of submission	Wednesday 26 February 2025	

# **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 Galong limestone mine operates within Mining Lease (ML) 1496 and ML 1745, which covers an area of 160Ha and 43.43Ha respectively. ML 1496 extends over Lots 102 in DP1083781, Lot 139 in DP753593 and Lot 2 in DP1175189, Parish of Bobarra whilst ML 1745 extends over Lot 102 in DP1083781 and Lot 2 in DP1175189. ML 1496 and ML 1745 are located approximately 20km southwest of Boorowa and 40km northwest of Yass. ML 1496 also incorporates approximately one kilometer of Crown Road reserve. The mine produces high-grade limestone products for essential services while supporting vital industrial processes and agricultural needs. Site activities include limestone mining, processing, crushing, screening and sales dispatch. Limestone is extracted from a conventional benched open pit using drill and blast and truck and shovel mining methods. The extracted limestone is then crushed, screened, and sized prior to dispatch. Products include Aglime, Plant feed and kiln feed.

# Description of surface disturbance activities

# **Exploration activities**

No major exploration or resource drilling activities are currently scheduled for the Galong mine site. All potential limestone resources within the Galong Mine Lease have been identified.

### **Construction activities**

There are planned construction activities to take place on the Galong site • Mobile Crusher concrete pads • -45mm limestone storage shed • Coal storage

### Mining schedule

Mining development method and sequencing and general mine features.

Over the next three years mining will continue to occur within the main pit, concentrating on the northeastern direction of the pit within ML1496. The method of operation of Galong Quarry is explained as follows: •Prior to overburden removal, vegetation is felled and pushed to the extremity of the Site. • Overburden is removed by ripping and/or blasting and transported to the overburden emplacement by haul trucks. The removal of overburden is an essential part of the mining operation as most of the deposit is overlain by Permo-Carboniferous shales and conglomerates. • Limestone is mined from the quarry faces by drilling and blasting. Secondary blasting is minimised by careful blasting design which is

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directed to maximising in-situ crushing during the actual blasting process. • Limestone is removed from the face with front end loaders or excavator and transported via 40t dump trucks to either the Mills for Aglime Production or to the Kiln Stockpile. • Any additional out of sized material is transported to the Stockpile for Roadbase • Lime kiln dust (LKD) generated at the Kiln is transported by dump truck to the waste stockpile area

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

The overburden emplacement continues to advance to the north and the construction and management is in accordance with the Rehabilitation Management Plan.

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

The quarrying of limestone at Galong requires the stockpiling of stone at the start and end points of the mining process. A small short-term stockpile is utilized at the mobile crusher located in the northwest corner of the mine footprint. There are three main production stockpile areas. O Aglime Stockpile that feeds the Mill Hopper located south of the Go Line O Kiln Stockpile located at the southern end of the mine footprint that feeds the Kiln O Aglime Stockpile, this is product from the Mills that are stockpiled in preparation for the Aglime season, it is located at the southern end of the mine footprint near the Solar Farm There are 5 GLS (ground limestone -45) stockpiles located near the aglime stockpile and on the western side of the mine footprint. There is also a 10tonne temporary Coal Stockpile located on the North Eastern side of the mine footprint within the overburden area.

# Waste disposal and materials handling operations.

Waste oil drums and waste oil, lubricants, degreasers, and general domestic waste are disposed offsite at appropriately licensed facilities. All general waste is disposed in large skip bins that are collected weekly by a licensed provider. There is a large skip bin onsite for all recyclable materials along with a process to manage all scrap metals. Wastewater from showers and sewage are treated through an onsite sewage management system. It is a 7800 liter Aerated Septic Tank system that operates under approval from Hilltops Council, under Section 68 of the Local Government Act, S68 Approval No. OSO2022/0051. Out of specification lime product is stored in the south-eastern corner of the overburden dump. Lime kiln dust is stored in discrete locations within the overburden dump.

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# **Key production milestones**

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil	(m³)	4,660	0	0
Rock/overburden	(m³)	331,000	341,000	140,000
Ore	(Mt)	0.39	0.4	0.4
Reject material <sup>1</sup>	(Mt)	0	0	0
Product	(Mt)	0.3	0.3	0.3

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

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# Three-year rehabilitation forecast

# Rehabilitation planning schedule

# Rehabilitation planning schedule

Rehabilitation planning activities for 2025-27 include: 1. Resolve inconsistencies between Rehabilitation Objectives and the Development Consent with the Resources Regulator. 2. Determine plant species mix options for rehabilitation of native ecosystem final land use areas, for areas identified for rehabilitation in the coming four years (with specialist support as required). 3. Develop a topsoil inventory to document stripped, stockpiled and re-spread resources and review the material balance to make plans to create or acquire additional soil material, if needed.

### Stakeholder consultation

Consult with local land services, agronomists or such organisations on recommended native species seed mix.

# Rehabilitation studies, risk assessments and/or design work

No rehabilitation studies planned.

# Rehabilitation research and trials

NUMBER

548

FWP0001

PROJECT/TRIAL NAME

OBJECTIVE OF TRIAL/PROJECT

METHODOLOGY

STATUS

**EXPECTED DATE** 

OF COMPLETION

# Rehabilitation maintenance and corrective actions

No rehabilitation performance issues or knowledge gaps were identified in the 2022-23 Annual Rehabilitation Report

# Rehabilitation schedule

2025: Landforming of batters on the south western side of the overburden dump (OEA\_F1 and OEA\_F2) will be completed. 2026: Landforming of new batters on the western side of the overburden dump (OEA\_F3) will commence. 2027: Landforming of batters on the western side of the overburden dump [OEA\_F3) will be completed.

# Completion of rehabilitation

No areas will be ready for rehabilitation completion within the next three years.

# Subsidence remediation for underground operations

No underground operations at Galong.

# Progressive mining and rehabilitation statistics

# Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
Α	Total surface disturbance footprint	(ha)	69.87	69.87	69.87
В	Total active disturbance	(ha)	67.38	66.57	66.57
P	Total new area of land proposed for active rehabilitation	(ha)	0	0.81	0.81

# Rehabilitation key performance indicators (KPIs)

F	ORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
_	otal new active listurbance area	(ha)	7.04		
p	otal new area of land broposed for active ehabilitation during the eporting period	(ha)		0.81	

Q Annual rehabilitation to disturbance ratio



# Attachment 1 – Reporting Definitions

REP	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.

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REPORTING CATEGORY	DEFINITION
0	The area of any new active disturbance that will be created during the next three years, as defined under definition A1 (definition A1 Table 5).
P	The sum of any new rehabilitation to be commenced in the next three years. These areas may be in the phases "Rehabilitation - Land Preparation" or the "Ecosystem & Land Use Establishment" (definitions C & D in Table 5).
Q	The rehabilitation to disturbance ratio (S / R) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the three years. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that period are the same.



# 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.

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WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species.
	This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the <i>Biodiversity Conservation Act 2016</i> and the <i>Fisheries Management Act 1994</i> (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the Mining Act 1992.
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 Mining Act 1992.
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	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are:
rehabilitation	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 <sup>2</sup> .
Waste	Has the same meaning as that term under the Protection of the Environment  Operations Act 1997.

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

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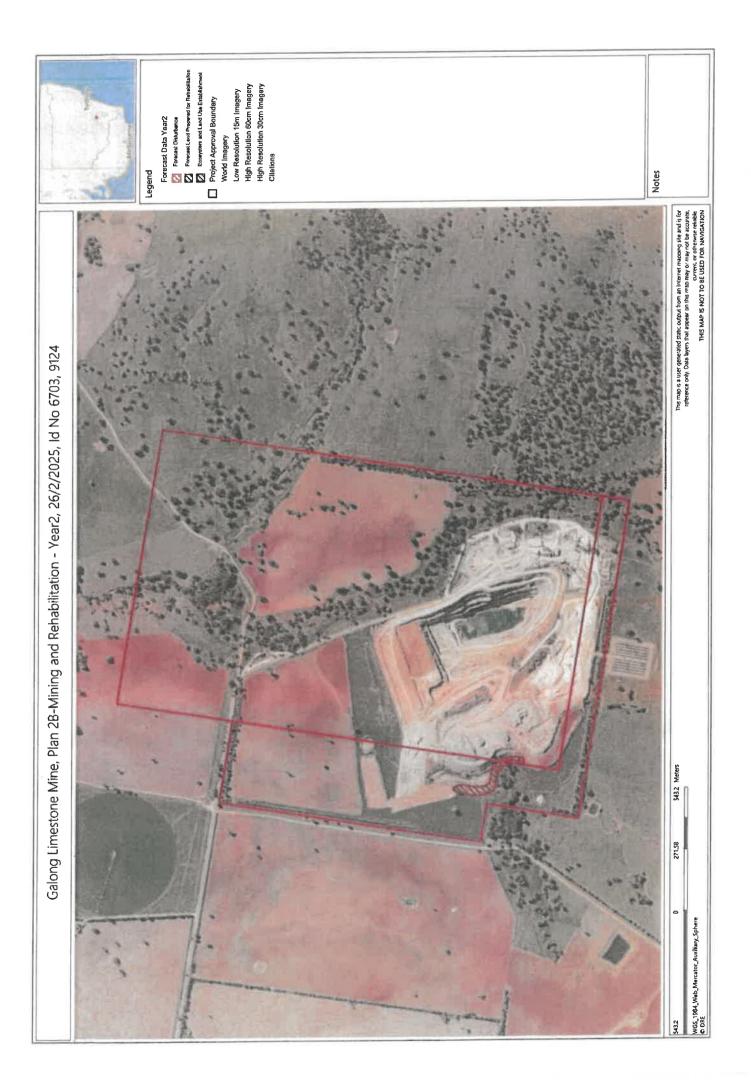
# Attachment 3 – Plans

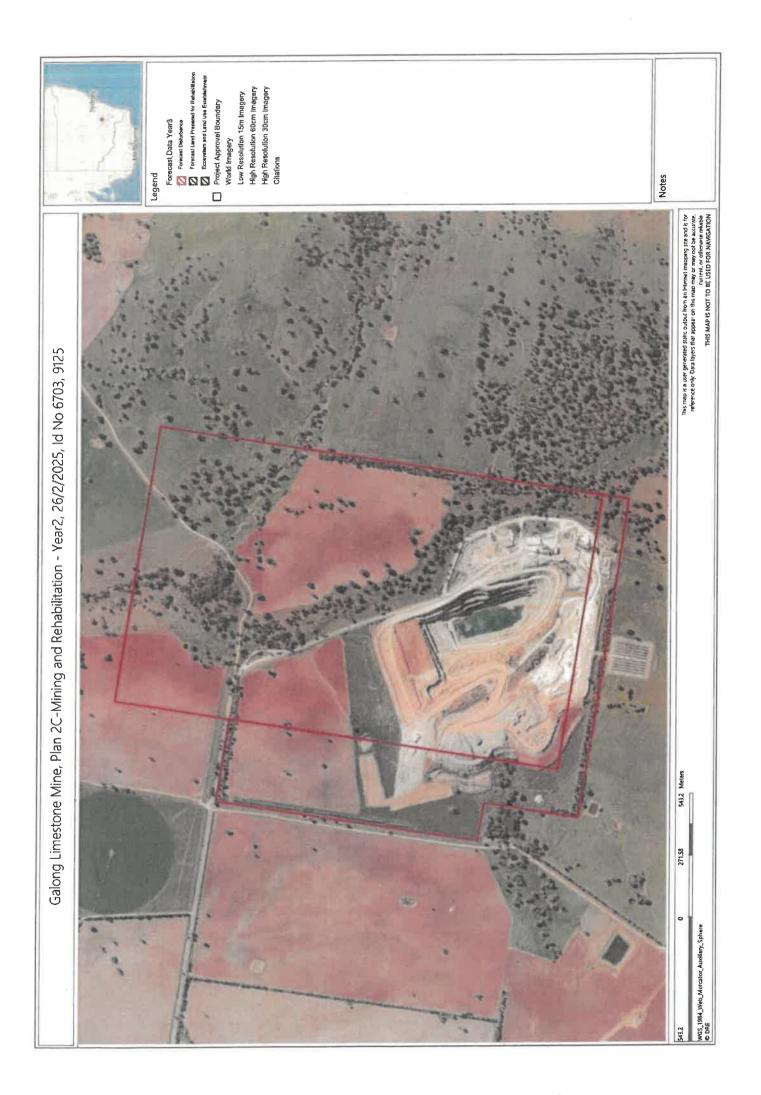
Plan2A-v2.pdf

Plan2B-v2.pdf

Plan2C-v2.pdf









Date February 2025 **Site Registration** Complete the following fields prior to calculating the Security Deposit. Galong Limestone Mine Mine Name: ML 1496 & ML1745 Lease(s): Graymont (NSW) Pty Ltd Title Holder: Graymont (NSW) Pty Ltd Mine Operator: Term of RCE: Date of last Security Deposit review \$6,170,000 **Current Security:** Wayne Trenning Mine Contact: Plant Manager Position: Lot 342 Eubindal Road Galong NSW Address: 02 6380 5102 Email: wavne.trenning@graymont.com Phone:

### **Site Description** The following site specific information is requested to provide background information in the context of calculating the Security **Summary of Mine Activities Environmental Sensitivities** Total annual production (tonnes): Surrounding land use (tick all that apply): 203.43 Mine lease area (ha): Cropping ☑ Pasture Area of extraction (ha): ▼ Forest 61.71 Area of disturbance (ha): Undisturbed habitat Rehabilitation in progress (ha): 1.42 ☐ Urban Environmental Issues affecting site (tick all that apply) Rehabilitation complete (ha): Achieved ecosystem sustainability Threatened flora Forward Program/MOP Utilised: Threatened fauna Reference no, version and date Cultural heritage items 1 Forward Program 2025 Forward Program/MOP Plan Utilised: Reference Plan no. version and date Mine subsidence Surface water pollution Plan(s) attached Ground water pollution ☐ Methane drainage/venting □ Spontaneous combustion Acid Mine Drainage ₩ithin drinking water catchment NOTE: Ensure rehabilitation cost estimation reflects all environmental issues affecting Other (describe below) the lease. Contingencies should be allocated where costs have not been incorporated elswhere in the estimation.



# **Open Cut Summary Rehabilitation Cost Estimation**

Note: Sections of this page Mine Name: Lease(s): Authorisation Owner: Mine Operator: Term of RCE: Current Security: Mine Contact:	Galong Limestone Mine  ML 1496 & ML1745  Graymont (NSW) Pty Ltd  Graymont (NSW) Pty Ltd  S6,170,000  Date of Last		
Lease(s): Authorisation Owner: Mine Operator: Term of RCE: Current Security:	ML 1496 & ML1745  Graymont (NSW) Pty Ltd  Graymont (NSW) Pty Ltd		
Authorisation Owner: Mine Operator: Term of RCE: Current Security:	Graymont (NSW) Pty Ltd  Graymont (NSW) Pty Ltd		
Mine Operator: Term of RCE: Current Security:	Graymont (NSW) Pty Ltd		
Term of RCE:			
Current Security:	\$6 170 000 Date of Last		
	\$6 170 000 Date of Last		
Mine Contact:	φο, 110,000	Security Depos	it Review: 10/11/2024
	Wayne Trenning		
Position:	Plant Manager		
Address:	Lot 342 Eubindal Road		
	Galong NSW		
	[name = 10]		ont com
Phone:	02 6380 5102 Email: wayne.tre	nning@graym	OHLCOM
	Domain		Security Deposit
Domain 1: Infrastructure			\$3,055,711
Domain 2: Tailings & Re	ejects		\$419,270
Domain 3: Overburden	& Waste		\$472,802
Domain 4: Active Mine 8	& Voids		\$515,726
Domain 5: Management	Activities	-	\$282,500
			A. 240 A.O.
Subtotal (Domains and	Sundry Items)	100/	\$4,746,010 \$474,601
Contingency	and all his reliable as	10%	\$474,601
Post Closure Environme		10%	\$474,601
Project Management an	d Surveying	10%	\$414,00T
Total Security Dep	posit for the Mining Project (excl. of GS	iT)	\$6,169,813
Note: GST is not include	d in the above calculation or as part of rehabilitation s	ecurity deposits	required by the Department.
	made to unit prices within this spreadsheet. (Attach a s		
	itation design is generally consistent with the developme		
	Summary Report and calculation pages are to be prin		
	on has been estimated using the best available information lection of the total rehabilitation liability held by this mine.	n at the time.	
Derick Korte  Company Resprese	ntative's Name		17/2/2025 Date
D. C.			
Company Represen	tative's Role / Responsibility		Signature

### Domain 1a: Infrastructure

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

\$3,055,711

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	1	allow	\$35,000		\$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.
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Y	1	allow	\$5,850		\$5,850	Bore pump	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 removel of substations	Y	2.3	km	\$15,000		\$34,500	Estimated at 4x distance sub station to office plus solar farm power	Applies to power lines on stobie, concrete or similar poles.
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y	27	m2	\$100.00		\$2,700	Area from serial survey	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	293	m2	\$75.00		\$21,975	Area from serial survey	Includes demolition and removal of all switchgear and Iransformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Y	765	m2	\$40.00		\$30,600	Area from serial survey. Main office, switch room, maint office, pump shed	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	699	m2	\$61.00		\$42,639	Area from serial survey, compressor shed, 3 water tanks	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	7087	m2/floor	\$00.00		\$637,830	(Truck wash and weighbridge18.3)x1+ (Bagging shd, coal mill building, coal shed, workshop, weighbridge 2)x2	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	Υ	7229	m2/floor	\$130,00		\$939,770	Hydrator building (444m2), main silo (240m2) x 10 floors, ag lime feed bin (13m2), kiin building (568m2 minus the kiin (124)m2), ag silo (94m2) x 4 floors	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, electrownning, flostation, sizing stations, rotary breakers, stc (include the area of each floor of the structure) and disposal on-site/locally	Y	2436	m2/floor	\$225.00		\$548,100	Ag mill building (536m2) x 2 floors , klin (124m2) x 11 floors	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 elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Υ	377	m	\$295.00		\$111,215	Area from aerial survey	Estimate for elevated conveyor up to -10 m off the ground. Does not include transport to regional disposal facility or equivalent.
	Remove and demotish conveyor from reclaim tunnel (Does not include excavation and demotition of rectaim tunnel roof)	Υ	20	m	\$150.00		\$3,000	kiln feed tunnel	Due to no canopy or infrastructure attached.
	Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	<sup>3</sup> Y	20	m	\$950.00		\$19,000	klin food tunnel	Assumes this area will be used for another land-use that requires the structure to be dug up and re-burled somewhere else.
	Remove surface pipelines (unsupported) and disposal on-site/locally	Y	2000	m	\$15		\$30,000		-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 lank/s	Y	1	allow	\$20 000 00		\$20,600		Includes equipment for retrieval - boats, etc. and labour, Does not include transport to regional disposal facility or equivalent.
	Remove concrete pade & footings (<300 mm thickness) and disposal on-site/focally	Y	5336	m2	\$36.00		\$192,096	Added extra for new weighbridge	Breaking up stab and disposal or for conversion to aggregate. Generally hautage 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 & foolings (>300 mm thickness) and disposal on-site/locally	Y	483.425	m2	\$75.02		\$36,257		Breaking up slab and disposal or for 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 / km for transport.
	Wasta disposal to Council landfill (general wasta) - haulage >15 km bul <25 km	Y	2000	tonne	\$9.00		\$18,000	Items in laydown yard	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposel to Council landfill - fees for relevant waste type.
		Term	ination of Se	rvices and D	emolition Wo sil Infrastruct		\$2,728,532 \$0		

Undertake a with large of executions of executions of executions of executions for execution of executions for execution of executions for execution of execution executions for execution executions for execution executions and force investigation contaminated on the execution	an intrusive site investigation on sites footprints to investigate e.g. ~15 he. This or current and historical locations where sturbance are clustered. If there are aster areas on site, multiple intrusive ones should be included.  Remediation Action Plan on sites with brints based on outcomes of intrusive on including strategies to address then exceedances  and the strategies to address the editerior of hydrocarbon contaminated mis but <100 m3) - manual land farming the product of	Y Y	1 1 200	Cluster  Cluster  allow  m3	\$15,000 \$35,000		\$15,000 \$106,000 \$25,000 \$17,800		The preliminary investigation would include at minimum a desktop assessment of the area and alte history assessment of the area and alte history includents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phass 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognises assessment method. A cluster may include:  - white infrastructure (i.e., fuel / chemics store, workshop, vehicle wash-down, sewage treatment etc.)  - Processing plants (i.e., ore and product storege, mine waste storage and disposal, rail load-out etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.)  - Remote pil-top facilities (i.e., vehicle if fuel, sewage treatment, secondary workshop, chemical storage etc.)  The intrusive investigation would includ at minimum a site walkrower and flekt sampling as per the National Environmental Protection (SIEPM) Phass 2 Intrusive investigation (EP Act Section 359 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc.  A cluster area where it is highly anlicipated that contamination has cocurred (i.e., underground larinks / pipes that are known to have leaked, chemical storage with earth field work is required involving intrusive investigation and testing intrusive investigation and stessing intrusive investigation on Sampling and Analysis Quality Plan.  Develop remediation plan for approval including designs and detailed costs.  Costs may increase it detailed designs required for construction.
with large & ecounts fo areas of dismutiple du investigation investigation investigation investigation investigation contamination on the contamination investigation investigation investigation contamination investigation investigation contamination of the cont	recolorints to investigate e.g. >15 he. This current and historical locations where sturbance are clustered. If there are sturbance are clustered. If there are stere areas on site, multiple intrusive one should be included.  Remediation Action Plan on sites with rinits based on outcomes of intrusive on including strategies to address tion exceedances  including strategies to address tion exceedances  mediation of hydrocarbon contaminated m3 but <100 m3) - manual land farming	Y	1 200	allow m3	\$35,000		\$25,000	Areas to investigate include glantieffice and eventuridate dump  Remediation plan is likely to focus on hydrocartes contamination.	at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phass 2 Intrusive investigation (EP Act Sociol 359 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is nor 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 cocurred (i.e., underground larks: f) 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 and contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampfing and Analysis Quality Plan. Includes SAQP, fieldwork, sampling an analysis.  Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
small footput investigatio contaminate on the state of th	rints based on outcomes of intrusive on including stategies to address tion exceedances to exceedances to exceedances and the stategies of the	Y	200	m3	\$49.00			focus on hydrocarbon contamination	including designs and detailed costs. Costs may increase if detailed designs required for construction.  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 soil
Roads and Tracks  Unseeled rearthworks (presture green state). From refered to the understand th	m3 but <100 m3) - manual land farming  roads / vehicle park-up areas - Minor , final trim and deep rip and seed  ass)			Contar			\$17,800	> 50m3 but <100m3	order of \$75 - \$120 Im3 depending on volume, additives, treatment durations and contamination levels, \$45 Im3 for spreading contaminated soils on a prepared surface and stimulation of serobic microbial activity within the soil
aarthworks, (pasture green) Remove st etc.) from n (head distant	s, final trim and deep rip and seed rass)	Y			ninated Mater				ATTENDED THE SECOND STREET, STATE SANSSTON OF
earthworks (pilotter grade) Removes to etc.) from in (heal distantion) Earthworks / Structural Works	s, final trim and deep rip and seed rass)	Y		A SUITE SURI	a and Damb				
Remove state.) From in (haul distant			3.2658	ha	\$3,700	Old Sublibal	\$12,083	(A11, and IA16	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	roadways and disposal on-site/locally noe < 1km)	Y	1000	m3	\$4.45		\$4,449	<⇒tkin	Assumes 1 excevator, 3 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
				P	oads and Tra	cks Subtotal	\$16,532		
	aping and pushing	Y	16.3	ha	\$2,900		\$63,570	STOCKBOOK BAT ID BATE TOTAL	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
Deep rip ha	ard stand / lay down areas	y authworks / 1	4.15 Structural Wo	ha	5560.00	ent) Subtotal	\$3,984 \$67,554	plant area - BE1,IA4,IA13	D10 deep ripping.
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)  Source, car distance <1	irt and spread growth media - haul	Y	1630	m3	\$3,26		\$5,308	<=1km	Underlaken with 623 scraper and 14 M grader.
Direct seed	ding / fertiliser (pasture grass species)	Y	16.3	ha	\$1,875		\$30,563		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (serial seeding).
Single appl	dication of fertiliser (pasture)	Y	16.3	ha	142E-00		\$6,846		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 med	dia amalioration with biosolids	Y	16.3	ha	31,015		\$16,545		Recent experience with agronomy projects.
	and erect warning signs	Y	8	allow	1250.00		\$2,000	Some signs already in place	Compliance with AS 1319-1994 - Safet signs for the occupational environment installed way 25 m.
Land	Preparation and Revegetation (Gro	wth Media D	evelopment a	nd Ecosyster	n Establishm	ent) Subtotal	\$61,261		
Water Management Clean wate	er dams to be retained after sioning – make safe and minor	Y	3	atlow	\$2,500		\$7,500		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.
Remove se enable it to (haul distar	ediments from the floor of the dam to be converted into clean water structure ince <1km)	Y	150	m3	\$3.58		\$533	<=fkm	Undertaken with excavator, trucks, 16 i grader and D10 Dozer
			1						
				W	tor Managen	nent Subtotal	\$8,033		
			Maint	Wanance of Re	habilitated A	nent Subtotal reas Subtotal ems Subtotal	\$8		

### Domain 2a: Tailings & Rejects

# Total Cost for Tailings & Rejects Domain

\$419,270

Additions Assumptions. Nector any recevant assumptions to ans 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:
Contaminated Materials	Onsite remediation of hydrocarbon conteminated soils (>500 m3) - manual land farming	Υ	4674	m3	\$75.00		\$350,550	> 500m3	order of \$75 - \$120 /md sepanding on volume, additives, treatment durations and contamination levels. \$45 /md sepanding on prepared surface and stimulation or prepared surface and stimulation aeroble microbial activity within the so through seration and/or the addition of minerals, antirents and moistures to service surfaces and service microbial activity and services are sufficiently as a services are sufficiently as a services and services are sufficiently as a service sufficient as a service sufficient and services are sufficiently as a service sufficient and servi
					ninated Mater		\$350,550		
	E	arthworks / 8	tructural Wo	ks (Landfon	n Establishm	int) Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Minor reshaping and pushing	Y	0.8	ha	\$3,900		\$3,120		D10 Dozer @ \$400 per hour end 16 H grader @ \$230 per hour (50% utilisation).
	E	rthworks / S	tructural Wo	ks (Landfor	m Establishme	int) Subtotal	\$3,120		
	Ideal Tailings Capping - reshaping, capping / seeling of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF)* Neutral Mine Drainage (NMD) Acid to 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	0.8	ha	\$12,000		\$65,600		This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemica and physical proporties. This rate assumes suitable carping material is available on site within 10 Mm, and an average cap thickness of approximate 0.5 m to 1 mand 0.15 m - 0.2 m grow modia (assume at least 1 m thick coversi). Water qualify from runoff, seepage etc. meels site-specific environment water quality values. If site headage longer than 10 km roun trip add the volume of the relevant material requiring haulage for this distance in 8.05 (apreading costs for Lailings cap material to make up landform, provide butriess or other works aside from tallings cap, use rat from 9.02 for relevant haulage and spreading in additional in additional to any long healings column la 6.05.
						ste Subtotal	\$65,600		
	Land Preparation and Revegetation (Grov	vth Media Do	velopment ar				\$0		
					ater Managem	MICHIGAN PROPERTY AND ADDRESS OF THE PARTY AND	\$0		
		1000	Mainte	mance of Re	habilitated Ar		\$0		
	Total Cost for 1	<b>Tailings</b>	& Reje	cts Do	nain	ms Subtotal	\$0	\$419,27	70

### Domain 3a: Overburden & Waste

### Total Cost for Overburden & Waste Domain

\$472,802

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:	

Roads and Tracks	Unsealed roads / vehicle park-up areas - Minor		30000	Conta	minated Mater	Inter Section at al	50		
Roads and Tracks						Hare Suprotes	40		
	earthworks, final trim and deep rip and seed (pasture trass)	Y	0.9	ha	\$3.760		\$3,330	track to new southern dump area	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
- a 2/2/1990 M (4)					Roads and Tra	cics Subtotal	\$3,330		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit - 50 m push length	Y	301150	m3	\$0.80		\$240,355	< 50m push	Assumes D11 dozer push @ 400 bcm/hr.
drainage channels and other soil or measures  Construction of spine drains / drop	Minor reshaping and pushing	Υ	22,2	ha	\$3,900		\$86,580	From survey	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	3	ha	\$5,000		\$4,800		Combination of dozer and excavator work plus grader for ~4 hours each pe ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for	Y	500	m2	\$37.06		\$13,500		Installation of on-site rock material (riprap) where managing water run-off froi disturbed land and/or upon entry to water courses - prevents erosion of guly hand (assumes competent material is locally available). If require to be sourced off site, assume an additional \$20/m2.
	F.	arthuorks / S	Inschural Worl	ks (Landfor	m Establishme	ent) Subtotal	\$345,235		
						ste Subtotal	\$0		
Land Preparation and	1							<=1km	I
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	22200	m3	\$3.36		\$72,288		Undertaken with 623 scraper and 14 l grader.
,	Direct seeding / fertiliser (pasture grass species)	Y	22.2	ha	\$1,875		\$41,625	Includes new area to be cleared	Includes treating, weighing, mixing wi fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	22.2	ha	\$420.00		\$9,324		Assumes 250 kg / ha. These rates har fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand et this is a suitable standard rate.
	Purchase and erect warning signs	Y	4	allow	\$250.00		\$1,000	Some signage on site already	Compliance with AS 1319-1994 - Safe signs for the occupational environment installed every 25 m.
	Land Preparation and Revegetation (Grow	with Madia De	velcoment en	d Ecosyste	m Establishme	ent) Subtotal	\$124,237		
	Perior rabilitation and transferences force.	THE PERSON NAMED IN				ent Subtotal	\$0		
	The state of the s								
			Mainte				\$0		
			Mainte		ehabilitated Ar Additional Ite	eas Subtotal	No.		

### Domain 4a: Active Mine & Voids

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

\$515,726

Additional Assumptions. Record any relevant assumptions to this tornion below.	T 20 5 1 100 21 4 5 1 5 5 1 1	
	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	7988	Lm	\$1.93		\$15,417		Blasting In a 6x9 pattern of bench heigh 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Y	109835	m3	\$0.95		\$104,343		Bulk Drilling say 8*9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive density of 0.9, diamete of 229 mm, explosives at 65.3 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	2000	m	\$90,00		\$180,000		D10 dozer, 16H Grader and revegetation with pasture grass.
					Open	Cut Subtotal	\$299,760		
Earthworks / Structural Works (Landform Establishment)	Minor reshaping and pushing	Υ	5.2	ha	\$3,000		\$20,280		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	5.2	ha	\$1,000		\$8,320		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	1000	m2	\$27/00		\$27,000		Installation of on-site rock material (rip- rap) where managing water run-off fron disturbed land and/or upon entry to water courses - prevents excelon of guily head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	E CONTRACTOR DE CONTRACTOR DE	arthworks / S	tructural Wor	ks (Landfon	m Establishme	int) Subtotal	\$55,600		
Land Preparation and Revegetation (Growth Media Development and Ecosystem	Source, cart and spread growth media - haul distance <1 km	Υ	5200	m3	83.26		\$16,932	<#1im	Undertaken with 623 scraper and 14 M grader.
Establishment)	Direct seeding / fertiliser (pasture grass species)	Y	5.2	ha	\$1,875		\$9,750		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (pasture)	Y	5.2	ha	\$420.00		\$2,184		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions
	D1						12,121		(lower fuel prices, reduced demand etc this is a suitable standard rate.
	Security fence around steep section of high well	Υ	2000	m	\$64.00		\$128,000		this is a suitable standard rate.  1800mm x 3 barb chain-link mesh
	Security fence around sleep section of high well  Purchase and erect warning signs	Y	2000	m	\$64.00				this is a suitable standard rate.  1800mm x 3 barb chain-link mesh security fence end gate standard 2.5mm mesh 6.32 mm post not concreted  Compliance with AS 1319-1994 - Safet signs for the occupational environment
	Purchase and erect warning signs	Y	4	allow	\$250,00	nt) Subtotal	\$128,000		this is a suitable standard rate.  1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mmesh & 32 mm post not concreted  Compliance with AS 1319-1994 - Safet
Water Management		Y	4	allow	\$250,00	int) Subtotal	\$128,000 \$1,000	In pit sump	this is a suitable standard rate.  1800mm x 3 barb chain-link mesh security fence and gate standard 2.5m mesh 8.32 mm post not concreted  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Provisional sum for earthworks and revegotation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - De Dozer (or matters and and-user - De Dozer (or matters).
Water Management	Purchase and erect warning signs  Land Preparation and Revegetation (Grow  Clean water dams to be retained after decommissioning – make safe and minor	Y Vth Media De	4 velopment ar	allow  ad Ecosystem  allow	\$250.00 n Establishms		\$128,000 \$1,000 \$157,806	In pit sump	this is a suitable standard rate.  1800mm x 3 barb chain-link mesh security lence and gate standard 2.5mm mesh & 32 mm post not concreted  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Provisional sum for earthworks and revegotation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ - \$200 per hour and pesture
Water Management	Purchase and erect warning signs  Land Preparation and Revegetation (Grow  Clean water dams to be retained after decommissioning – make safe and minor	Y Vth Media De	4 velopment ar	allow ad Ecosyster allow	\$290,00 n Establishms \$2,500	ent Subtotal	\$128,600 \$1,000 \$157,866 \$2,500 \$2,500	in pit sump	1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh 6.32 mm post not concreted Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Provisional sum for earthworks and revegetation required to rehabilitate dam batters ets cuitable for re-use by an atternate land-user - D6 Dozor (or similar) @ - \$200 per hour and pesture similar) @ - \$200 per hour and pesture
Water Management	Purchase and erect warning signs  Land Preparation and Revegetation (Grow  Clean water dams to be retained after decommissioning – make safe and minor	Y Vth Media De	4 velopment ar	allow ad Ecosyster allow	\$250.00 n Establishme \$2.500	ent Subtotal	\$128,000 \$1,000 \$157,866 \$2,500	In pit sump	this is a suitable standard rate.  1800mm x 3 barb chain-link mesh security lence and gate standard 2.5mm mesh & 32 mm post not concreted  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Provisional sum for earthworks and revegotation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ - \$200 per hour and pesture

### Domain 5a: Management Activities

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

\$282,500

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	N		ML	\$5,600				Rate can fluctuate depending on treatment type however this is a suit standard rate for current programs a mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	N		ML	\$5,500				Rate can fluctuate depending on treatment type however this is a suit standard rate for current programs a mining operations.
				Wi	ter Managen	ent Subtotal	\$0		Assumes material is suitable for
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	N		m T	\$2,500				revegetating and has a reasonable chance of stabilising.  Assumes maintenance has been ke
	Long term maintenance of water course diversion – Channel constructed through backfilled material	N		m	\$1,500				up and significant works are not required.  Assumes maintenance has been ke
	Long term maintenance of water course diversion Channel constructed through competent material	N		m	\$750.00				up and significant works are not required. Assumes competent material is loca
	Installation of rock armouring	N		m2	\$6.00				available - multiply costs by 2 for sourcing and transporting from offsi location.
					Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Υ	150	ha	\$156.60		\$22,500		Feral animal baiting programs if required and waste materials require to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y	150	ha	\$408.00		\$60,000		Undisturbed areas within the lease boundary that require land manager activities.
			Maint	enance of Re	habilitated A	eas Subtotal	\$82,500		Item for the redistribution of Aborigin
Heritage Items	The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				artefacts, preservation of European heritage items or a combination of activities.
					Heritage It	ems Subtotal	\$0		Provisional sum to be used to refine
Sundry ttems	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, prefirminary seel designs, etc. and only finalisation of detailed engineering deigns required	N		allow	\$100,000				conceptual closure plan into a detail closure plan with execution strategi for rehabilitation activities. Assumes outcomes of studies readi available including modelling, landfidesign, geochemistry, demolition, excets to finalise options by domain finalise designs for construction. Assume a simple site e.g. single op. cut, no legacy operations historic arrae, little social dependence, etc. Depending on site size, complexity, land use requirements and knowled tase investigations can range from ~575k to ~51 M. Stew with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher goochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Υ	1	allow	\$89,090		\$90,000		Provisional sum to be used to refine conceptual closure plan into a defource plan into a description of the execution straight for rehabilitation activities. Estimated coat for developing closuplan including studies - basic to sat fisks and decisions - includes risk assessment, options analysis, Clos Plan. Street with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	N		allow	\$15,000				Assumes sediment control is the ke concern for rehabilitation e.g. small mines, exploration operations. In crisk assessment, sampling and analyses on <5 samples, one study Closure Plan.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	N		allow	\$300,000				Includes costs for key Investigations and studies including designs e.g. goochemistry. Contamination Remediation Action Plan, subsident risk, cover/capping and final landfor six with a studies of the studies and studies an

	Development of an 'Unplanned' Project Closure Plan - Non Stale Significant Development with at least \$2\$ of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk end/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		altow	\$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 sexcution strategies for
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	N		allow	\$27,850				rehabilitation activities.  Based on experience for a REF after completion of a detailed dosure 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	1	yr.	\$75,000		\$75,000		Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, lanks, vessels, and pipe work etc	N		allow	\$0			Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical slottage locations, oil and grease traps, tanks, vessels, end pipe work etc
	Removal and disposal of radiation devices	N		each	\$31,630				Provisional sum for removal and disposal of monitoring devices on conveyors using a rediation source (i.e., Americium – 241, Plutonium – 258, Caesium – 137 etc). Source lestope type, quantity, strength, weight, source holder type, source holder type, source holder weight, pick-up location (among others) will directly affect pricing.
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	N		allow	Use attendate rate cell				Provisional sum.
Makillandan and Damak Wandan		-3156			Sundry Its	ms Subtotal	\$165,000		
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry - small fleet	N		(tem	\$12,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Y	1	Item	\$35,000		\$35,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site <150 km)	N		item	\$100,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	N		item	\$150,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	N		item	\$300,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	N		item	\$500,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
			Mo	bilisation and	Demobilisat	ion Subtotal	\$35,000		
Additional Items	Other 1 <insert></insert>	N			Thus in				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 3 <insert></insert>	N			left blank		1		This item includes < <to added="" be="" by<="" td=""></to>
	T-10 - 10-00								the operator>>
					Additional Ite	ms Subtotal	\$0		***************************************

\$0

### Domain 1b: Infrastructure

Management Precinct	Activity <sup>/</sup> 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		wolls	135,000		\$0		For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places), consider multiple disconnection fees.
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Y		allow	\$5,850		\$0		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	\$15,000		\$0		Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 lowers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pytons/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		ltem	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Υ		m2	840.00		\$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 (admln 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	\$19,00		\$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 demollshed.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y		m2/floor	\$136.00		\$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-sito/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, egglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-alterfocally	Y		m2/floor	8725.00		\$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 rectaimer (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-alteriocally	Υ		allow	\$2,000,000		\$0		Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	Y		m	\$75.00		\$0		Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Y		allow	\$92,580		\$0		Collapse structure and remove. Does not include transport to regional dispusal facility or equivalent.

Collapse, Cut and Remove 3000 T coat site and	Y	allow	\$77,500	\$0	Collapse structure and remove. Does not include transport to regional
disposal on-site/locally  Collapse, Cut and Remove 1250 T coal silo and					disposal facility or equivalent.  Collapse structure and remove, Does
disposal on-site/locally	Y	allow	\$62.500	\$0	not include transport to regional disposal facility or equivalent. Collapse structure and remove, Does
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Y	allow	\$65,000	\$0	not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Y	allow	\$460,000	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$155.00	\$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 & gentries (scrap only, does not include dismantling for reuse at another site) and disposal on-sito/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, Iransfer stations & gentries (scrap only, does not include dismaniling for reuse at another site) and disposal on-site/locally.  This may include small scale fixed material stacking	Υ	т	\$450	\$0	Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
infrastructure Remove and demolish conveyor from reclaim tunnel					Due to no canopy or infrastructure
(Does not include excavation and demolition of reclaim lunnel roof)	Y	m	\$150,00	\$0	attached.  Assumes this area will be used for
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	٧	m	\$050.00	\$0	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	Υ	allow	\$25,000	\$a	Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
Demolish and remove small tank dean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	Υ	allow	\$16,000	\$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 cleen - 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	Υ	altow	\$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-aite/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	Ÿ	allow	\$30.060.00	\$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 plpes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y	m	\$60.00	\$0	For example: 500 mm pipes - 1 m deep does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Y	m	\$165.00	\$0	For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Y	m	\$12.00	\$0	-300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
Remove surface pipelines (unsupported) and disposal on-site/locally	Υ	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	\$29,000,00	\$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	\$19.00	\$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.
Remove bitumen (airstrip) and dispose on- site/locally	Y	m2	\$20.65	\$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.

move concrete pads & footings (<300 mm kness) and disposal on-eite/locally  move concrete pads & footings (>300 mm kness) and disposal on-eite/locally  sh concrete to make road aggregate - 75 mm  sh concrete to make road aggregate - 50 mm  sh concrete to make road aggregate - 50 mm  sh concrete to make road aggregate - 30 mm  move fance (cyclone/wire fence) and disposal on- footally  moval of small plastic tanks  molish and remove galvanised/corrugated light ght tanks  molish and remove communication towers  moval of UG services (power within main gate as, etc.)  ste disposal to Council landfill (general waste) - lage >10 km but <15 km  ste disposal to Council landfill (general waste) - lage >25 km but <50 km  ste disposal to Council landfill (general waste) - lage >25 km but <50 km	Y Y Y Y Y Y Y Y Y Y Y Y Y		m2  tonne  tonne  tonne  m  each  each  allow  tonne	\$36.00 \$75.00 \$10.00 \$10.00 \$10.00 \$10.00 \$10.00 \$500.00 \$500.00 \$500.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		Breaking up slab and disposal or for conversion to aggregate. Generally hautage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use atternate rate option and add \$0.90 / km for transport.  Breaking up slab and disposal or for conversion to aggregate. Generally hautage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use atternate rate option and add \$0.90 / km for transport.  Does not include hautage of materials assumes crushing plant is readily available.  Does not include hautage of materials assumes crushing plant is readily available.  Roll up fence and remove posts.  Remove small poly tanks used for water storage, etc.  Demoitsh and remove small lightweight metal tanks. No costs included for managing liquids, etc.  Cost includes demoition and removal of tower orly, separate costs required for disconnection of services, demoition at the mine boundary is at surface level. This cost covers all fees and charges  Rate accounts for round trip hautage to Council landfill but excludes landfill fees. Input quantity seginant Waste disposal to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill fees for
kness) and disposal on-eite/locally sh concrete to make road aggregate - 75 mm sh concrete to make road aggregate - 50 mm sh concrete to make road aggregate - 30 mm move fence (cyclone/wire fence) and disposal on- flocally movel of small plastic tanks movish and remove galvanised/corrugated light ght tanks molish and remove communication towers movel of UG services (power within main gate as, etc.) ste disposal to Council landfill (general waste) - lage >10 km but <15 km ste disposal to Council landfill (general waste) - lage >15 km but <25 km ste disposal to Council landfill (general waste) - lage >25 km but <50 km	Y Y Y Y Y Y Y Y Y Y		tonne tonne tonne m each each allow	\$10,00 \$13.00 \$13.00 \$20.00 \$10.000.00 \$5,000.00 \$5,000.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		conversion to aggregate. Generally haulige rates with be 30.60 - 51.20 / 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.  Does not include haulage of materials - assumes crushing plant is readily available.  Does not include haulage of materials - assumes crushing plant is readily available.  Roll up fence and remove posts.  Remove small poly tanks used for water storage. etc.  Domoish and remove small lightweight metal tanks. No costs included for managing liguids, etc.  Cost includes demolition and removal of tower only, separate costs required for disconnection of services , demolition of footings, etc.  Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges.  Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quastly against Waste
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molish and remove communication towers  moval of UG services (power within main gate as, etc.)  ste disposal to Council landfill (general waste) - lage >10 km but <15 km  ste disposal to Council landfill (general waste) - lage >15 km but <25 km  ste disposal to Council landfill (general waste) - lage >25 km but <50 km	Y		allow	\$50,000.00 \$7.00		\$0		Cost includes demolition and removal of tower only, separate costs required for disconnection of services, demolition of footings, etc.  Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges  Rate accounts for round trip haulage to Council landfill but excludes landfill fees, Input quantity against Waste
as, etc.)  ste disposal to Council landfill (general waste) - lage >10 km but <15 km  ste disposal to Council landfill (general waste) - lage >15 km but <25 km  ste disposal to Council landfill (general waste) - lage >25 km but <50 km  ste disposal to Council landfill (industrial noblion / concrete / scrap metal) - haulage >10	Y		tonne	\$7.00				mine boundary is at surface level. This cost covers all fees and charges  Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste
lage >10 km but <15 km  ste disposal to Council landfill (general waste) - lage >15 km but <25 km  ste disposal to Council tandfill (general waste) - lage >25 km but <50 km  ste disposal to Council tandfill (industrial noblition / concrete / scrap metal) - haulage >10	Y					\$0		Council landfill but excludes landfill fees. Input quantity against Waste
lage >15 km but <25 km ste disposal to Council landfill (general waste) - lage >25 km but <50 km ste disposal to Council landfill (industrial noblition / concrete / scrap motal) - haulage >10			tonne	\$9.00				relevant waste type.
lage >25 km but <50 km ste disposal to Council landfill (industrial nobliton / concrete / scrap metal) - haulage >10	Y					\$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.
nolition / concrete / scrap metal) - haulage >10			tonne	\$12.50		\$0		Rale 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.
	Y		lonne	\$32.00		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill feas. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
ste disposal to Council landfill (industrial nolition / concrete / scrap metal) - haulage >15 but <25 km	Y		tonne	\$14.00		\$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.
ste disposal to Council landfill (industrial nolition / concrete / scrap metal) - haulage >25 but <50 km	Y		allow	Use atternate 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.
ate disposal to Council landfill - fees (general te)	Y		tonne	\$192.00		\$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.
ste disposal to Council landfill - fees (industrial notition / 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 approvel for building and demolition waste disposal on site.
	Term	nination of Se	ervices and D	emolition Wo	rks Subtotal	\$0		Remove all materials to allow area to be
move rall loop and spur, ballast etc. and disposal 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.
nove train loading facilities and disposal on- vlocally	Y		m2	STATION		\$0		Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
shape rail spur and load out areas. Does not	Y		ha	32,860		\$0		D10 Dozer and 16 H Grader (50% utilisation).
ado gromin misera dire revegendini			R	all Infrastruct	ure Subtotal	\$0		
derlake a preliminary site investigation (Phose 1). s accounts for current and historical locations	Y		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase assessment (PEP Ad Section 398 (2) (iv)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop), whiche wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rall load-out 4cc) Remote pit-top facilities (i.e., vehicle refus, sweeps creatment, secondary
mooning moonin	kition / concrete / scrap metal)  ove rall loop and spur, ballast etc. and disposal effocally  ove train loading facilities and disposal on- cally  ape rall spur and load out areas. Does not to growth media and revegetation	Terr  ver rall loop and spur, ballast etc. and disposal afocally  ver train loading facilities and disposal on- cally  sper rall spur and load out areas. Does not le growth media and revegetation  rtake a preliminary site investigation (Phase 1), accounts for current and historical locations areas of disturbance are clustered. If there will be supported to the present and historical locations areas of disturbance are clustered. If there will be studies	Itilion / concrete / scrap metal)  Termination of Server rall loop and spur, ballast etc. and disposal afocally  Y  we train loading facilities and disposal on- cally  aper rall spur and load out areas. Does not be growth media and revegetation  Y  rtake a preliminary site investigation (Phase 1), accounts for current and historical locations areas of disturbance are clustered. If there will be surfaced are clustered are clustered are clustered. If there will be surfaced are clustered are clustered are clustered are clustered. If there will be surfaced are clustered are cluste	Termination of Services and D  ver rall loop and spur, ballast etc. and disposal aflocally  m  Termination of Services and D  ver rall loop and spur, ballast etc. and disposal aflocally  m  m2  rate of the control of	Termination of Services and Demolition Wo  ver rall loop and spur, ballast etc. and disposal affocally  m  seals  ver train loading facilities and disposal on- cally  aper rall spur and load out areas. Does not the growth media and revergetation  Rail intrastruct  rake a preliminary site investigation (Phase 1), accounts for current and historical locations areas of disturbance are clustered. If there utility to the common state of the common	Termination of Services and Demolition Works Subtotal verall loop and spur, ballast etc. and disposal affocally  Termination of Services and Demolition Works Subtotal verall loop and spur, ballast etc. and disposal or affocally  Termination of Services and Demolition Works Subtotal verall spur and load out areas. Does not be growth media and revegetation  Rail Infrastructure Subtotal raises or accounts for current and historical locations areas of disturbance are dustered. If three utilities of disturbance are dustered. If three utilities areas on a site, multiple studies	Termination of Services and Demolition Works Subtotal  Termination	tonne  Termination of Services and Demolition Works Subtotal  Term

				1			er re
Undertake an intrusive site investigation on sites with small footprints to investigate e.g. ±15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site welsower and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (vii) 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 cillwater separators etc.) and further field work is required involving intrusive investigation. Assumes alte is easily accessible and a small area e.g., –10-15 ha required investigation and testing (lest pits, boresheles, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Undertake an intrusive site investigation on sites with large toolprints to Investigate e.g. >15 ha. This accounts for current and historical focations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	Cluster	\$104,000		\$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 infrusive investigation (EP Act Section 399 (2) (vi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc.  A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have teaked, 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 he requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	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	Υ	allow	Use alternate		\$0		Assumes complex site; detailed design drawings required for cover.
Removal and disposal of contaminated water from tanks, bunded areas and sumps	γ	L	\$4.55		\$0		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 (teach pads) / stockpille area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Y	m3	Select from List	-		Seject 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,
Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill.  Assumes cartage to a licensed landfill.	Υ	m3	\$800.00		\$0		Includes load, hauf 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	\$469,00		\$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 fro. List			Select Volume Here	Spreading of contaminated solls on a prepared surface and stimulation of serobic microbial entityly with the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the serobic 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	Y	Item	\$150,000		\$0		Required if Ireatment 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		\$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	\$299		\$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	31		\$0		Provisional sum for cutting using rip tynes and on-site disposal of the line
	Long haulage hime/sall for disposal (Select Haul Distance from list)	Y		tonne	Select from Lint			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78 per tonne and authorised disposal to landfill. Assumes transport in a 20,000 L tan
	Long haulage water (clian or contaminated) (Select Hauf Distance from first).	Υ		tonne	Dated Mater	nia Quistotal	\$0	Select Haul Distance Here	Add disposal costs to additional item
Vents, Shafts and Boreholes				Contam	inated Mater	ans Subtota	411		Cost to grout and cap an open exploration borehole. Assume a 20
	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y		depth (m)	344.95		\$0		20 m drill pad requires rehabilitation push cover of nearby growth media, and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes - backfill open Rolery Airblast (RAB) or aircore drill holes with cuttings	Υ		allow	\$43		\$0		May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with dri 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 - 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	\$8,560		\$0		Holes deeper than 100 m - includes cutting steel collar 6 m below surfact grouting and capping.
	Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage	Υ		wolls	\$57,990		\$0		Surface-to-in-seam gas drainage boreholes.
	Boreholes – cap and seal open bore holes - vertical gas drainage	Υ		allow	\$10,000		\$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 prever a quifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	Υ		allow	\$45,000		\$0		includes large diameter boreholes u 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	Υ		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 local on site
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and ped including sealing drill holes for mineral exploration	Y		Item	31,540		\$0		Sealing required, but not complete fi with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral	Y		each	\$415		\$0		Cut collar, remove, cap, backfill cap collar and cover with nearby organic growth meterial
	exploration)	It-II		Vents, Shaft	and Boreho	les Subtotal	\$0		IA
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,840,00		\$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	85,500		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rlp and seed	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation - pasture grass seed
	(pesture grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final frim and deep rtp, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,465		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsaaled roads / heur roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed [pasture grass]	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unseated roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds — Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y						Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or or
				m3	Salect from				surface using an excavator, dozer ar
				m3		cks Subtotel	\$0		surface using an excavator, dozer a grader to enable the establishment rehabilitation.
arthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/pormit – Select Push Length	Y		m3	List	cks Subtotal	\$0	Select Push Length Here	surface using an excavator, dozer a grader to enable the establishment rehabilitation.  Major bulk pushing to achieve grad nominated in the approval/permit
	Major bulk pushing to achieve grades nominated in the approval/pormit – Select Push Length  Minor reshaping and pushing	Y		m3	List pads and Tra Select from	cks Subtotal	\$0	Select Push Length Here	surface using an excavator, dozer a grader to enable the establishment rehabilitation.  Major bulk pushing to achieve grad nominated in the approval/permit
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation			m3	List pads and Tro Select from List	cks Subtotel		Select Push Length Here	surface using an excavator, dozer a grader to enable the establishment rehabilisation.  Major bulk pushing to achieve grade nominated in the approval/permit.  D10 Dozer @ \$400 per hour and 18 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavatio
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks,	Υ		m3 m3	Select from List	cks Subtotal	\$0	Select Push Length Here Select Haul Distance Here	surface using an excavator, dozer a grader to enable the establishment or enable the establishment or enablishment or enablish
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul	Y		m3 m3 ha	Select from \$1,900 \$1,800	cks Subtotel	\$0	-	surface using an excavator, dozer a grader to enable the establishment rehabilitation.  Major bulk pushing to schieve gradinominated in the approval/permit.  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavato work plus grader for ~4 hours sech he.  This item includes the volume of material requiring backfill using an excavator and scraper to fill the volcand enable the establishment of rehabilitation.  This rate is used to rehabilitate ates stopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilises.
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  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 /	Y		m3 m3 ha ha	List Select from List \$2,500 \$1,800 Select from List	cks Subtotel	\$0 \$0	-	surface using an excavator, dozer a grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit.  D10 Dozer @ \$400 per hour and 18 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavato work plus grader for ~4 hours each, he.  This trate includes the volume of material requiring backfill using an excavator and scraper to fill the voic and enable the establishment of rehabilitation.  This rate is used to rehabilitate stee stopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to app or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes	Y Y		m3  ha  ha  m3	List Select from List  \$1,900  \$1,800  Select from List  \$195.00	cks Subtotal	\$0 \$0	-	surface using an excavator, dozer a grader to enable the establishment rehabilitation.  Major bulk pushing to achieve gradinominated in the approvel/permit.  D10 Dozer © \$400 per hour and 16 grader © \$230 per hour (50% utilitiestion).  Combination of dozer and excavato work plus grader for ~4 hours each he.  This item includes the volume of material requiring backfill using an excavator and scraper to fill the volume of rehabilitation.  This rate is used to rehabilitate stee slopes of weathered rock, roadway cuttings, sto that cannot be cut back and stabilised.
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  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)	Y Y Y Y		m3 ha ha m3	List Select from List  \$2,900 \$1,800 Shoct from List \$105.00	cks Subtotal	\$0 \$0 \$0 \$0 \$0 \$0	-	surface using an excavator, dozer a grader to enable the establishment rehabilitation.  Major bulk pushing to schieve gradinominated in the approval/permit.  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilitisation).  Combination of dozer and excavato work plus grader for ~4 hours each he.  This train includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  This rate is used to rehabilitate stee stopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilisate.  D10 deep ripping.  Installation of on-site rock material rap) where managing water run-off disturbed land and/or upon endisturbed land and/or upon endisturbed land and/or upon editisturbed land supon excavators prevents erosion of guith head exames compression of guith head exames compression of guith head exames compression.
	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  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 stopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Deep rip hard stand / lay down areas  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y Y Y Y Y Y	tructural Wor	m3 ha ha ha m3 m2 ha ha	List Select from List \$2,900 \$1,800 \$1,800 \$1,800 \$1,120.00 \$1,120.00 \$27,00		\$0 \$0 \$0 \$0 \$0	Sejact Haul Distance Here	surface using an excavator, dozer all grader to enable the establishment of rehabilitation. The abilitation of the approval/permit by the
Earthworks / Structural Works (Landform Establishment)  Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	the approval/pormit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  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 stopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Deep rip hard stand / lay down areas  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y Y Y Y Y Y	tructural Wor	m3 ha ha ha m3 m2 ha ha	List Select from List \$2,900 \$1,800 \$1,800 \$1,800 \$1,120.00 \$1,120.00 \$27,00		\$0 \$0 \$0 \$0 \$0 \$0	-	surface using an excavator, dozer are grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve gradenominated in the approval/permit  D10 Dozer @ \$400 per hour and 18 grader @ \$230 per hour (60% utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each is he.  This item includes the volume of material requiring backfill using an excavator and acraper to fill the volume of material requiring backfill using an excavator and acraper to fill the volume of material requiring backfill using an excavator and scraper to fill the volume of material requiring backfill using an excavator and scraper to fill the volume of material surface is used to rehabilitation.  This rate is used to rehabilitate ates stopes of weathered rock, roadway curtings, etc that cannot be cut back and stabilisation.  Undertaken using D10 dozer and 16 grader.  D10 deep ripping.  Installation of on-site rock material (rap) where managing water run-off disturbed land and/or upon entry to water courses - prevents erosin of disturbed land and/or upon entry to water courses - prevents erosin of gully head (assumes competent material is locally available). If requi

2									Transaction of the second
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.00		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from 50.15 - \$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 \$50.15 - \$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	\$4.60		\$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/hs. 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	\$1.00		\$0		Assumes use on sleep 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	\$2.56		\$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. Those 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 fartiliser (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 1 / ha as an average application rate.
	growth media amelloration with biosolids	Y		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 fencing.
	areas Construct standard stock fence around rehabilitated	Y		m	\$13.00		\$0		Standard rate for standard stock
	areas								fencing. Compliance with AS 1319-1994 - Safety
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80,00		\$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) foad 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	14.730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.00		\$0		Stripping or topsail 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 atternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to
	Land Preparation and Revegetation (Gro		velonment a			ent) Subtotal			hydromulching.
Water Management	Card Leakerston and Leakerston (Cloy	ar media Di		- Lousy sulf	C-SECHBRISH	Juditudi			Provisional sum for earthworks and
	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2.500		\$0		revegetation required to rehabilitate dam batters of 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	110.500		\$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			Select Hauf Distance Hore	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.  Provisional sum for removal of water
	Removal of evaporation fans and/or other water transfer and management infrastructure	Y		allow	\$25,000		\$0 \$0		management infrastructure.
Maintenance of Rehabilitated				W	ater Managem	ent subtotal	90		Rehabilitation maintenance might
Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$125		\$0		include re-seeding, watering, fertillsing, minor re-shaping, erosion control, inspections/audits - does not include major repair works.  Areas requiring minor repair - rills,
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		minor growth media replacement.
	Existing rehabilitation repair - moderate	Y		ha	\$1.700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
							I I		Areas requiring major repair - rills, guilies, growth media replacement,

Existing rehabilitation r landform	epair - total failure of	Y	ha	\$40,000		\$0	Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
			Maintenance of Re	habilitated Are	s Subtotal	\$0	
				Additional Iter	s Subtotal	\$0	
	Total Cost fo		\$0				

# Domain 2b: Tailings & Rejects

### **Total Cost for Tailings & Rejects 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	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple duster areas on site, multiple studies may be required.	Y		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop seaseasment 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) (vi)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, worfshop, vehicle wash-down, sowage treatment etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out stc.)  - Remote pit-loy facilities (i.e., vehicle ne fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. 515 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on sits, multiple intrusive investigations should be included.	٧		Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site watkover and field sampling as por the Netional 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 areas 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 off-water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessable and a small area e.g., —10-15 ha required investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Pfan. Includes SACP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >16 hs. 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		Clustor	\$100,500		* \$0		The intrusive investigation would include at minimum a site walkover and field sampling as por the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 Intrusive investigation (EP Act Section 399 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considerally in the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tarris/ pipes that are known to have lesked, chemical stores with earther bunds, around ineffective olilwater separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 he requires investigation and teeting (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	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.
	spillage or otherwise) from footprint of the process facility (leach parts) / stocknile area (ROM product) /	Y		m3	Select from List			Select Haul Distance Here	removal of the volume of carbonaceous reaterial using dozer, grader etc. to
	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	γ		m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.

					v				i
	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 Ust)	у		m3	Select from List			Select Valume Here	Spreading of contaminated soils on a prepared surface and stimulation of acrotic microbial activity within the soil through aeration and/or the addition of minerals, nutrients and molature to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
	Mobifisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Υ		Item	\$180,030		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated solls - using a mobile treatment unit	Υ		m3	\$195.00		\$D		Additional cost as the treatment proces is fast tracked.
	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.
	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	\$250		\$0		Landfill fees to regional landfill.
				Contan	ninated Mater	ials Subtotal	50		Assumes ~6 m road width - 16H
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / access tracks / vehicle park-up	Y		ha	\$1,040.00		\$0		Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor	Y		ha	\$1:500		\$0		utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H
	earthworks, final trim and deep rip and seed (pasture grass) Unsealed roads / vehicle park-up areas – Minor	Y		ha	\$3,700		\$0		grader @ \$230 per hour (50% utilisation) - persture grass seed D10 Dozer @ \$400 per hour and 16 H
	earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Unsealed roads / haul roads / vehicle park-up areas	Y		ha	34,495		\$0		grader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 h
	Onsealed reads 7 heat reduct 7 women particip areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	84.879		\$0		grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unseeled roads / hauf 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	\$7,835		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, eggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Υ		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 oil surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
	E	erthworks / 8	tructural Wo	rks (Landforr	n Establishm	ent) Subtotal	\$0	Calant Duch I comb Name	Major bulk pushing to achieve grades
arthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from Unit			Select Push Length Here	nominated in the approval/permit
	Minor reshaping and pushing	Υ		ha	\$3,500		\$0	P	D10 Dozer @ \$400 per hour and 16 li grader @ \$230 per hour (50% utilisation).
	Fill dems, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	у		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	γ		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16N grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each p ha.
	measures  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 (if rap) where managing water run-off for disturbed land and/or upon entry to water courses – prevents erosion of gully head (assumes competent material is locally available). If require to be sourced off site, assume an additional \$20/m2.
	E	arthworks / S	tructural Wo	rks (Landfort	n Establishme	nt) Subtotal	20		
Mine Waste	Ideal Tailings Capping - reshaping, capping / seeling of trafficable tailings facility with little chemical reactivity (no lo low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low low moderate propensity for sportlaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	٧		ha	\$62,000		\$0		This includes sourcing, carting, spreading, molature conditioning and compaction of a suitable volume material with the appropriate chemical projection of a suitable volume material with the appropriate chemical projectives. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximate 0,5 m to 1 mand 0.15 m - 0.2 m grow medic (assumes at least 1 m thick coveraguired for carbonaceous material covers). Water quality from runoff, seepage atc. meets alle-specific environment water quality values. If site haulage longer than 10 km roun trip add the volume of the relevant material requiring haulage for this distance in 8.05 (apreading costs for trailings cap material include in rate), if additional material required in rate, and form, provide buttress or other works aside from tallings cap use ratificing 10 cap more or relevant haulage of the control of the provide buttress or other works aside from tallings cap use ratifications in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from	Y		allow	Use affernats		\$0		Include additional cost to import materials (i.e., shale / clay, competen drainage materials etc.) and / or additional requirements (i.e., geofabric
	runoff, seepage etc. meeting site-specific environment water quality values.								composite lining etc.). Include additional cost to import

Efficient Tallings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential) Acid Forming (PAF) / Neutral Mine Drainage (NND) sardor 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	1546,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compection of a suitable volume of material to cap? ower facilities where the tallings or rejects base is at a strength that enables economically efficient construction methods in the subtraction of the s
Additional materials required for reshaping, capping I 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 allernate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tallings Capping - reshaping, capping / saeing of trafficable tallings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainege (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for sponlaneous combustion) and moderate physical properties (not significantly tydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$213,000	\$0	This item Includes sourcing, carting, spreading, molisture conditioning and compaction of a sulfable volume of material to cap of over facilities of high geochemical risk, and of or low shear attength that prohibits economically efficient construction methods. This rate assumes sulfable capping materials are available on site within 10 km, and an average cap thickness of approximately 27 m + growth media up to 0.2 m depith. This may require additional materials (i.a., capillary breaks, geofabric, etc.), specific material types (e.g., add neutralising / consuming materials, competent rock etc.), and associated activities (ii.a., load / hauf / place/ crush / screen / borrow etc.). Coasts for haulage of speciallaed 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 in 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 headage 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	ties atternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Difficult 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 logacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Y	ha	\$843,000	\$0	This opilion is typically driven by time constraints and/or when tailings properties significently restrict adequate desiccation, resulting in a tailings 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 a USS (spreading costs for tailings cap material Included in rate). If additional material Ico make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for nelevant haulage and spreading in additional to any long heutige volume in 8.05.

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepege etc. meeting site-specific environment water quality values.	Υ		wolls	Use alternate rate call		\$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.). —appring process material available within
	cancing/rowers, removal of contamination etc.	Υ		m3	Service March	safe Subtotal	\$0	Select Haul Distance Here	50 km mund trip e.g. weste./
Land Preparation and						THE GLICIOIS		Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	у		m3	Sides from				Virgin Excavated Natural Material (VENM) may need to be externally sourced. Includes treating, weighing, mixing with
	Direct seeding / fertiliser (pasture grass species)	Y		ha	STATS		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,125		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepare
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	Facad		\$0		surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fro \$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	\$0.45		\$0		Process to be used on flat well prepare 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	\$0.89		\$0		Assumes use on flat areas with a gradient of less than 4:1, and when impallion 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 to 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 sleep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/hr This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Υ		m2	\$7.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Y		ha	\$470.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (tower fuel prices, reduced demand etchis is a suitable standard rate.
	Single application of fertiliser (trees)	Υ		he	\$140.00		\$0		These rates have fluctuated over the last few years however in light of curre conditions (lower fuel prices, reduced demand etc) this is a suitable standard 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	\$1,215		\$0		Recent experience with agronomy
	Construct no-climb stock fence around rehabilitated		_						projects. Standard rate for no-climb stock
	areas	Y		m	\$22,00		\$0		fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$17.00		\$0		Standard rate for standard stock fencing.  Compliance with AS 1319-1994 - Saf
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		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	\$10.50		\$0		Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - all nominal rate of \$70/m3 for imported finaterial.
	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 - all nominal rate of \$60/m3 for imported fi material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$6,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Υ		m3	56.00		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load at 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 blotic soil media - organic topsoil alternative	Υ		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
PR	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosyster	n Establishme	ent) Subtotal	\$0		
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 - 06 Dozer (or similar) @ ~\$200 per hour and pastui grass.
	Large clean water dams (i.e. ≥ 2 ha) to be relained after mine closure – make safe and minor earthworks	Y Si		allow	\$10.500		\$0	Salaci Manii Pistance U	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
	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		50	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	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	ha	8025	\$0	Rehabilitation maintonance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/eutilis - does not include major repair works.
	Existing rehabilitation repair - minor	Υ	ha	51,200	\$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	\$2,900	\$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.
			Maintenance of Re	habilitated Areas S	ubtotal \$0	
				Additional Items S	ubtotal \$0	
	Total Cost for	Tailings &	Rejects Do	nain		\$0

\$0

# Domain 3b: Overburden & Waste

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:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Υ		ha	\$2,500		\$0		Assumes ASS is treatable via nautralisation and does not require capping and isolation. Assumes 1% weight lime addition and treatment in 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Υ		m2	(8)		\$0		Provisional sum for cutting using rig tynes and on-site disposal of the lin
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Υ		tonne	Select from:			Select Haul Distance Here	Costs for haulage to location for authorised disposal.  Rate for trackable liquid levy of \$78
	Brine disposal to landfill - fees only	Y		tonne	1218		\$0		per tonne and authorised disposal ti landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	List		\$0	Select Haul Distance Here	Add disposal costs to additional item
	Unanted and Laborita and un auge minor				ninated Mater	als Subtotal			Assumes ~6 m road width - 16H
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor works including deep rip and trim Unsealed roads / access tracks / vehicle park-up	Y		ha	\$1,040.00		\$0		Grader. D10 Dozer @ \$400 per hour and 16
	areas with windrows end/or small earthen bunds - minor earthworks and deep rip and trim	Y		ha	\$1.500		\$0		grader @ \$230 per hour (50% utilisation) - no seed D10 Dozer @ \$400 per hour and 16
	Unsealed roads / vehicle park-up areas Minor earthworks, final trim and deep rip and seed (pisture grass)	Y		ha	\$3,700		\$0		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	34,463		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, amellorate and seed (pasture grass)	Y		ha	\$4,670		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native trea/shrub/grass)	Υ		ha	\$7,025		\$0		D10 Dozer @ \$490 per hour and 11 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from coedways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from			Select Hauf Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or surface using an excavator, dozer a grader to enable the establishment rehabilitation.
				F	loads and Tra	cks Subtotal	\$0		
rthworks / Structural Works Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from			Select Push Longth Here	Major bulk pushing to achieve grad- nominated in the approval/permit
	Minor reshaping and pushing	Υ		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Hauf Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the voi and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Υ		m2	STAND		\$0		This rate is used to rehabilitate ster slopes of weathered rock, roadway cuttings, etc that cannot be cut bac and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 1 grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,450		\$0		Combination of dozer and excavate work plus grader for ~4 hours each ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material rap) where managing water run-off disturbed land and/or upon entry to water courses - prevents erosion or gully head (assumes competern material its locally available). If requipe to be sourced off site, assume an additional \$20/m2.

Mine Waste

Ideal Tailings Capping - reshaping, copping / sealing of trafficable tailings facility with little chemical reactivity (no to low rish 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	\$0		This includes sourcing, carling, 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 dc. medis selected in the control of th
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	Clee alternate	\$0		Include additional cost to import materials (i.e., shele / 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	Van alternate rate call	\$0		Include additional cost to import materials (i.e., shele / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tallings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (FAF) / Noutral 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 aculpriment choice somewhat, no artificial strangthening required)	Y	ha	\$146,500	\$0	•	This item Includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / Lover 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 11 m lo 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capilitys breaks, geofabricin, etc.) - use alternate rate cells below, specific material types (e.g., acid neutralising / consuming materials, competent rook 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. It site haulage longer than 10 km round trip add the volume of the relevant material requiring healings for this distance in 8.05 (spreading costs for haulage of specialised/additional material included in rate). If additional material included in rate of the vortex exide from 10.2 for relevant haulage and spreading in additional to make up hardform, provide butters or other works exide 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	\$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		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tailings Cepping - reshaping, capping / sealing of trafficable tailings facility with modernate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) snd/or moderale to high propensity for spontaneous combustion) and modorate physical properties (not significantly hydrophilic, shear strength innits squipment choice somewhat, no artificial strengthoning required)	Y	ha	\$313 000	\$0		This item includes sourcing, carting, spreading, motsture conditioning and compaction of a suitable volume of material to cap? cover facilities of high goochemical risk, and for 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 dopth. This may require additional materials (i.a., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising? Lonsuming materials, competent rock etc.), and associated activities (ii.a., load? hau! I 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 taillings cap material included in rate), if additional material to make up landform, provide buttess or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use atternate rate call		\$0		Include additional cost to import materials (i.e., shale / day, 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	tion Wherease cate self		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tallings 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	5843,000		\$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 week 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 also haulage longer than 10 km round inp 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 butterss or other works aside from tailings cap, use rate from 9.02 (or relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / seeling of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / day, 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	alfow	Use alternate rate cell		\$0		Include additional cost to Import materials (i.e., shale / day, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.). Capping-cover material available within
	capping/covers, removal of contamination, etc.	Y	m3	The same of		\$0	Salect Haul Distance Here	50 km round trip e.g. waste /
Land Preparation and					sate Subtotal	90	Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y	m3	Select from List				Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y	allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Planting tube stock (<15 cm)  Direct seeding / fertiliser (pasture gress species)	Y	ellow	\$1,675		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass	Y	ha	\$4,138		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	species)  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	\$5.43		\$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 fial areas that can be irrigated by water cart	Υ	m2	\$0.65		\$0		Assumes use on flet 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 leat whort 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 sleep areas to stabilise up to 12 months	Y	m2	\$1,60		\$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	12 50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/hs 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	\$145.00		\$0		These rates have fluctuated over the last few years however in light of curren conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average
	Spoil amelioration (adding time / gypsum etc.)	Y	ha	\$1,000		\$0		application rate.
	growth media amelioration with biosolids	Υ	ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated	Υ	m	822.90		\$0		Standard rate for no-climb stock fencing.
	areas		m	\$13.00		\$0		Standard rate for standard stock
	Construct standard stock fence around rehabilitated			The second second				fencing.
		Y	allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.

	Total Cost for O	verburg	ien & W:					\$0	
			Mainter			ems Subtotal	\$0	+	
	Existing rehabilitation repair - total failure of landform	Υ		ha	\$40,000	reas Subtotal	\$0 \$0		Areas that require extensive rehabilitation repair - re-design and re construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0	5	Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - moderate	Y		he	\$1,700		\$0		Areas requiring moderate repair - rills significant growth media replacement
	Existing rehabilitation repair - minor	Υ		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	3925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising minor re-shaping, erosion control, inspections/audits - does not include major repair works.
				W	ter Managem	nent Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from			Select Hauf Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		wolle	\$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.
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 pastur grass.
N. J. M	Land Preparation and Revegetation (Grov	vth Media De	velopment and	f Ecosysten	Establishme	ent) Subtotal	\$0		Descriptional core for continued a god
	Utilise blotic soil media - organic topsoll alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Topsoil stripping	Y		m3	\$4.26		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load an haul to final rehabilitation location required or respreading where necessary.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730,00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for fiting 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 - all nominal rate of \$60/m3 for imported f material.

# Domain 4b: 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

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	21.01		\$0		Blasting In a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Y		m3	30.06		\$0	98	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 65.5 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	\$10.00		\$0		D10 dozer, 16H Grader and revegetation with pasture grass.
					Open	Cut Subtotal	\$0	Select Push Langth Here	
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Sefect Push Length	٧		m3	Select from List			Server age carrier	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	٧		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.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Υ		ha	\$1,800		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	measures  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- rep) where maneging water run-off from disturbed land and/or upon entry to water courses - prevents erosion of guily head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
		arthworks / S	tructural Wo	rks (Landforr	n Establishm	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from . List			Select Hauf Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		4 m centres. 4 m centres.
	Planting tube stock (<15 cm)  Direct seeding / fertiliser (pasture grass species)	Y		allow	\$1,675		\$0 \$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4.13E		\$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	\$1.60		\$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	\$0.86		\$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 lest short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes over 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 sleep 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	LR.	\$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)	٧		ha	140105		\$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,

	Total Cost for Active Mine & Voids Domain							
				Additional Its	ems Subtotal	50	\$0	
		-	Maintenance of Re			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.
	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.
	Existing rehabilitation repair - minor	Y	ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	ha	\$925		\$D		Rehabilitation maintenance might include re-seeding, watering, fertilisin minor re-shaping, erosion control, inspections/audits - does not include major repair works.
			W	ater Managen	ent Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Υ	m3	Select from			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Υ	allow	\$10,000		\$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.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y	allow	\$2,500	oubline.	\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - 66 Dozer (o similar) @ -\$200 per hour and pastur grass.
	Land Preparation and Revegetation (Grow	th Madia Day	valonment and Froevator	n Establishm	ent) Subtotal	\$0		hydromulching.
	Utilise biotic soil media - organic topsoil alternative	Υ	m2	\$3.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to
	Growth media supplementation with manure	Υ	ha	\$747,50		\$0	-	necessary.  Addition of manure to improve soil quality.
	Topsail stripping	Y	m3	\$4.85		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load ar haut to final rehabilitation location required or respreading where
	Clearing and grubbing of trees and vegetation	Y	ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	٧	m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allo nominal rate of \$60/m3 for imported fil material.
	Purchase and erect warning signs	Y	allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safe signs for the occupational environment installed every 25 m.
	Security fence around steep section of high wall	Υ	m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5m mesh & 32 mm post not concreted
	growth media amelioration with biosolids	Υ	ha	\$1,015		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Υ	ha	\$1,000:00		\$0		Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	Y	ha	\$140.00		\$0		last few years however in light of curre conditions (lower fuel prices, reduced demand etc) this is a suitable standar rate.

# **Domain 5b: Management Activities**

# **Total Cost for Management Activities**

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 Estabilishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	Υ		ML	55.000		\$0		Rate can fluctuate depending on treatment type however this is a suit standard rate for current programs a 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 suit standard rate for current programs a mining operations.
				W	ater Managem	ent Subtotal	50		Assumes material is suitable for
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	Y		m	\$2,500		\$0		revegetating and has a reasonable chance of stabilising.  Assumes maintenance has been ke
	Long term maintenance of water course diversion — Channel constructed through backfilled material	Y		m	\$1,500		\$0		up and significant works are not required.  Assumes maintenance has been ke
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		up and significant works are not required.  Assumes competent material is loc
	Installation of rock armouring	Y		m2	\$6.00		\$0		avaitable - multiply costs by 2 for sourcing and transporting from offs location.
					Creek Diversi	ons Subtotal	\$0		
Intenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Υ		ha	\$150.0E		\$0		Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Υ		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land manage activities.
	CONTROL HORS		Maint	enance of Re	hab Itated Ar	eas Subtotal	\$0		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	Υ		allow	Use alternate rate call		\$0		Item for the redistribution of Abong artefacts, preservation of European heritage items or a combination of activities.
					Haritaca Ita	ms Subtotal	\$0		Jaconioes.
Sundry Items					Canalizada ser	HIN GODOGE			Provisional sum to be used to refir conceptual closure plan into a dela
	Development of an 'Unplanned' Project Closure Plan  - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lates, prefirminary seal designs, etc. and only finalisation of detailed engineering deigns required	٧		allow	\$100,000		\$0		Assumes outcomes of studies rea available including modelling, land design, geochemistry, demolition, Costs to finalise options by domain finalise designs for construction. Assume a simple site e.g. eingle octi, no legacy operations historic arras, little social dependence, atc. Depending on ainst size, complexity land use requirements and knowlesse investigations can range fron ~375k to >31 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 2.2 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	Υ		allow	\$80,050		\$0		Provisional sum to be used to refir conceptual closure plan into a dota dosure plan with execution strates for rehabilitation activities. Estimated cost for developing clos plan including studies - basic to s risks and decisions - includes risk assessment, options analysis, Clo 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 sepects: 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 k concern for rehabilitation e.g. sma mines, exploration operations. In risk assessment, sampling and analyses on <5 samples, one stud Closure Plan.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only pretiminary to conceptual closure planning in place	٧		allow	\$380.000		\$0		Includes costs for key investigation and studies including designs e.g. geochemistry. Contamination Remediation Action Plans, subsider risk, cover/capping and final landful services and studies with surface water, etc. Provisum to be used to refine the conce clearure plan into a detailed closure with execution strategies for rehabilitation scitivities. Assume at least 15 types of studie required ranging from geotechnica ecology and social, development o closure plan including address of obligations. Assume at lemple site single open cut, no legacy operation historic in the area, tittle social dependence, etc. Depending on site size, complexity land use requirements and knowle base investigations can range to > Sites with more than 1 pit to add \$50,000 to rate.

	Development of an 'Unplanned' Project Closure Plan - Non-State Significant Development with at least 22 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Y		allow	\$125,000		\$0		Includes costs for key investigations and studies including economic treatments and designs e.g., geochemistry, Contamination Remediation Action Plan, aubsidence risk, coverlepping and final landform, site wide surface water, etc. Provisional sum to be useed 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	\$27,850		\$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 Effects or Environmental Effects or
	Site security during closure	Y		ут.	\$75,000		SD		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	Υ		allow	\$0		\$0	Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	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, quantity, strength, weight, source holder type, source holder type, source holder type, source holder weight, jok-by 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.
					Sundry Its	ms Subtotal	\$0		
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y		Item	\$12,000		\$0		May include specialist demolition equipment and/or suilable plant to
					OTTO SEC				execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Y		Item	\$25,000		\$0		execute bulk earthworks as required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
:-		Y		Item item			\$0 \$0		May include specialist demolition equipment and/or suitable plant to
	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150				\$25,000				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
-	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150 km)  Mobilisation & Demobilisation (Distance to site >150	Y		item	\$35,000		\$0		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 required.  May include specialist demolition equipment and/or suitable plant to
	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150 km)  Mobilisation & Demobilisation (Distance to site >150 km but <500 km)  Mobilisation & Demobilisation (Distance to site >500 km)	Y		item item item	\$150,000 \$100,000 \$150,000 \$300,000		\$0 \$0 \$0 \$0		May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to
-	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150 km)  Mobilisation & Demobilisation (Distance to site >150 km bul <500 km)  Mobilisation & Demobilisation (Distance to site >500 km bul <1000 km)  Mobilisation & Demobilisation (Distance to site >500 km bul <1000 km)	Y	Mo	item item item	\$15,000 \$100,000 \$150,000	ion Subtotal	\$0 \$0 \$0 \$0		May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.
Additional items	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150 km)  Mobilisation & Demobilisation (Distance to site >150 km bul <500 km)  Mobilisation & Demobilisation (Distance to site >500 km bul <1000 km)  Mobilisation & Demobilisation (Distance to site >500 km bul <1000 km)	Y	Mo	item item item	\$150,000 \$100,000 \$150,000 \$300,000	Jon Subtotal	\$0 \$0 \$0 \$0		May include specialist demolilion equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolilion 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 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 required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.  This item Includes <<10 be added by the operator>
Additional Items	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150 km)  Mobilisation & Demobilisation (Distance to site >150 km but <500 km)  Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)  Mobilisation & Demobilisation (Distance to site >1000 km)	Y Y Y	Mo	item item item	\$35,000 £100,900 £150,000 \$300,500	ion Subtotal	\$0 \$0 \$0 \$0		May include specialist demolilion equipment analor suitable plant to execute bulk earthworks as required. May include specialist demolilion equipment analor suitable plant to execute bulk earthworks as required. May include specialist demolilion equipment analor suitable plant to execute bulk earthworks as required. May include specialist demolilion equipment analor suitable plant to execute bulk earthworks as required. May include specialist demolilion equipment analor suitable plant to execute bulk earthworks as required. May include specialist demolilion equipment analor suitable plant to execute bulk earthworks as required.  This item Includes < <to added="" be="" by="" operator="" the=""> This item Includes &lt;<to added="" be="" by="" operator="" the=""> This item Includes &lt;<to added="" be="" by<="" td=""></to></to></to>
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Additional items	quarry - medium to large fleet  Mobilisation & Demobilisation (Distance to site <150 km)  Mobilisation & Demobilisation (Distance to site >150 km bul <500 km)  Mobilisation & Demobilisation (Distance to site >500 km bul <1000 km)  Mobilisation & Demobilisation (Distance to site >1000 km)  Other 1 <insert></insert>	Y Y Y N N	Mo	item item item item	\$150,000 \$150,000 \$300,000 \$300,000 Demobiliset This is		\$0 \$0 \$0 \$0		May include specialist demolilion equipment and/or suitable plant to execute bulk carthworks as required.  May include specialist demolilion 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 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 required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.  This item Includes < <to added="" be="" by="" operator="" the="">  This item Includes &lt;<to added="" be="" by="" operator="" the=""></to></to>

# Domain 1c: Infrastructure

# **Total Cost for Infrastructure 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.
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas atc 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	55.250		\$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.
	Romoval 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	٧		km	\$105,000		\$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		Hem	\$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/pytons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material onsite/locally	Y		Item	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demoish (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	\$15.00		\$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/lanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y		m2	\$81.00		\$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	γ		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	٧		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 (radiat 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/rectaim 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. Collapse structure and remove. Does
	Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	Y		ellow	\$77,500		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.

Collapse, Cut and Remove 1250 T coal sllo and disposal on-site/locally	Y	allow	\$62,550	\$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	٧	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 dismandling for reuse at another site) and disposal on-site/locally	Y	m	\$185.00	\$0	Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Υ	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 & gantriae (scrap only, does not include diamantling for reuse at another site) and disposal on-site/locally. This may include small scale fixed material stacking infrastructure.	Y	m	\$050	\$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	Υ	m	\$100.00	\$0	Due to no canopy or infrastructure attached.
reclaim tunnel roof)  Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	Υ	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	Υ	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	Υ	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, Dose not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener stc 10 - 15 m diameter) and disposal on- site/locally	Y	allow	\$30,000	\$0	Assume tank is clean - contents removed. If lank 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 diaposal 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 (Thicknear etc >30 m diameter) and disposal on- siteflocally	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	\$39,000,00	\$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	540.00	\$0	For example: 500 mm pipes - 1 m deep does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Y	m	\$165.00	\$0	For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Y	m	513,00	\$0	~300 mm plpes and assumes plpes 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	Υ	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	wolfe	\$210,000.01	\$0	Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
Remove biltumen (car park and access roads) and dispose on-site/focally	Y	m2	\$10.00	SO	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.
Remove bitumen (airstrip) and dispose on- site/locally	Y	m2	\$20.00	\$D	Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 f 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	Y	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 fleel, 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-sitefocally	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 fleet, loaders etc. For off-site disposal use alternale 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	\$12.00		\$0	Does not include houlage 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		т	\$39,00		\$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	\$600.00		\$0	Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc. Cost includes demolition and removal of
	Demolish and remove communication towers	Y		each	55,000.00		\$0	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	550,006.30		\$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	17.00		\$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. Rate accounts for round trip haulage to
	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y		tonne	\$5.00		\$0	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	Υ		tonne	\$12.60		\$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	832.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantify 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	٧		allow	Use atternate rate cell		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantily against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfili - fees (general waste)	Υ		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.
Rail Infrastructure		Term	nination of S	ervices and D	emolition Wo	rks Subtotal	\$0	Remove all materials to allow area to be
radi ikii qeli usadi e	Remove rait loop and spur, ballast etc. and disposal on-site/fucally	Y		m	\$80.00		\$0	reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent.
	Remove train loading facilities and disposal on- site/locally	Y		m2	2187.00		\$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	\$2,060		\$0	D10 Dozer and 16 H Grader (50% utilisation).
ntaminated Materials				R	all infrastruct	ure Subtotal	\$0	
	Underlake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple custer 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 history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (ivi)) or similar approved and recognised assessment method. A cluster may include: — Amine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) — Processing plants (i.e., ore and product storage, mine water storage and disposal, rail load-out etc.) — Remote pil-top facilities (i.e., which rfuel, sewage treatment, secondary workshop, hemical storage etc.)
			W - 5					

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 no clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	Cluster	\$44,000	\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 Intrusive investigation (EP Act Section 389 (2) (W)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, alte history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., undorground lanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/waler 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 pils, boreholes, etc.) based on Sampling and Analysis.
Undertake an intrusive site investigation on sites with large footprints to investigate a.g. >15 hs. 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	\$100,000	\$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 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considenting 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 teaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has e history of contamination and/or a large area >15 ha requires investigation and testing (lest pits, borcholes, etc.) based on Sampling and Analysis Quality Plan. Includes SACP, fieldwork, sampling and analysis.
Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y	allow	\$35,000	\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y	allow	Dae 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	1800061	\$0		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		Sejact 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.
Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Y	m3	\$890.00	\$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	\$860.00	\$0		Includes load, haul and dump fees to a licensed facility.
Load, cart and disposel 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, hauf and dump fees to a licensed facility.
Onsite remediation of hydrocarbon confaminated solls manual land farming (Select Volume from List)	Y	m3	Select from Stat		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, nutriest 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)	Υ	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	\$D		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	\$0		Landfill fees to regional landfill.
Treatment of known Acid Sulfate Scils	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	fierest from			Select Hauf Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Y		tonne	\$25.0		\$0		Rate for trackable liquid levy of \$78.2 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Υ		tonne	Enlect from List			Select Haul Distance Here	Add disposal costs to additional iten
				Contan	ninated Mater	ials Subtotal	\$0		Cost to grout and cap an open
ents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes - rehabilitate coal boreholes and drill pads as required	Y		depth (m)	844.55		\$0		exploration borehole. Assume a 20 growth media, 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	54)		\$0		May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with dri 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	\$5.768		\$0		Includes grouting and capping 100 - m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goef drainage etc.)	Y		allow	\$4,000		\$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 drainaga	Y		allow	117,800		\$0		Surface-to-in-seam gas drainage boreholes.
	Boreholes - cap and seal open bore holes - vertical	Y		allow	\$14,000		\$0		Vertical gas drainage boreholes.
	gas drainage  Boreholes – grout (with concrete) cap and seal bore	Y		allow	\$35,000		\$0		Includes multi skin sleaves to preven
	holes (i.e. where sealing aquifers)			allow			•••		a cuifer mixing. Includes large diameter boreholes u
	Boreholes – cap and seal service boreholes for UG coal operations	Y		allow	\$45,000		\$0		for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing,
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad Including sealing drill holes for mineral exploration	Y		ltem	\$2,670		\$0		Bog out cuttings, remove rencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locall 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		İtəm	:31;340		\$0		Sealing required, but not complete fil 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 cap; collar and cover with nearby organic growth material
-17-511	exploration)			Vents, Shaft	ts and Boreh	oles Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,540,00		\$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	\$5,500		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - no seed
	Immor earnworks and deep rip and dain Unsealed roads / vehicle park-up areas — Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,798		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - posture grass seed
	Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed inative tree/shrub/grass	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unseeled roads / heur 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	\$4,876		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Hauf Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or o surface using an excavator, dozer as grader to enable the establishment of
				F	loads and Tre	icks Subtotal	50	Select Push Length Here	
arthworks / Structural Works (Landform Establishment)	Mejor bulk pushing to achieve grades nominated in the approvat/permit – Select Push Length	Y		m3	Seinct from Lint			Select Little Liste	Major bulk pushing to achieve grade nominated in the approval/permit D10 Dozer @ \$400 per hour and 16
	Minor reshaping and pushing	Y		ha	\$3,900		\$D		grader @ \$230 per hour (50% utilisation).
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Υ		ha	\$1,800		\$0		Combination of dozer and excavator work plus grader for ~4 hours each ha.  This item includes the volume of
	Fili 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			Salect Haul Distance Here	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 steel slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rtp (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16 grader.
	Deep rip hard stand / lay down areas	Y		ha	\$960.00		\$0		D10 deep ripping.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material ( rap) where maneging water run-off disturbed land end/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If requi
	L	arthworks / 6	Structural Wo	rks (Landford	n Establishm	ent) Subtotal	\$0		
		WUIRS / S	- Dozumen Tro	m3	Select from		No.	Select Haul Distance Here	If topsoil is not available on-site, the Virgin Excavated Natural Material (VENM) may need to be externally
	Source, cart and spread growth media (Select Haul	Y		Ins	A. Carlot			1	
Revegetation (Growth Media	Source, cart and spread growth media (Select Haul Distance from List)								sourced.
Revegetation (Growth Media Revelopment and Ecosystem	Source, cart and spread growth media (Select Haul Distance from List) Planting mature trees (>15 cm)	Y		allow	\$15.00 \$4.80		\$0 \$0		4 m centres. 4 m centres.
Revegetation (Growth Media levelopment and Ecosystem	Source, cart and spread growth media (Select Haul Distance from List)				\$15.00				4 m centres.

	Total Cost fo	r Infras	tructur	e Doma	in			\$0	
					habilitated An Additional Ite		\$0		
	Existing rehabilitation repair - total failure of landform	Y	88-1-1	ha	\$40,000	nan Bribbak-1	\$0 \$0		rehabilitation repair - re-design and re- construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2.50		\$0		gullies, growth media replacement, some level of additional surface water management.  Areas that require extensive
	Existing rehabilitation repair - moderate	Υ		ha	\$1,700		\$0		significant growth media replacement.  Areas requiring major repair - nils,
	Existing rehabilitation repair - minor	Y		he	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.  Areas requiring moderate repair - rills,
laintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	5028		\$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	transfer and management infrastructure			Wa	ter Managem	ent Subtotal	\$0		Rehabilitation maintenance might
	(Select Haul Distance from list)  Removal of evaporation fans and/or other water	Y		allow	\$25,000		\$0		dozer to clean out the dam.  Provisional sum for removal of water management infrastructure.
	earthworks  Remove sediments from the floor of the dam to enable it to be converted into clean water structure	Y		m3	Salect from			Select Haul Distance Here	an alternate land-user - D6 Dozer (or similar) + pasture grass.  This item includes the volume of contaminated sediment requiring removal using an excavator, truck and
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor	Y		allow	\$10,500		\$0		grass.  Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by
Water Management	Cleen 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 allemate land-user - D6 Dozer (or similar) @ -\$200 per hour and pasture
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	d Ecosysten	Establishme	int) Subtotal	\$0		hydromulching.
	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
	Growth media supplementation with manure	Y		ha	974750		\$0		required or respreading where necessary.  Addition of manure to Improve soil quality.
	Clearing and grubbing of trees and vegetation  Topsoil stripping	Y		ha m3	\$4,730.00		\$0 \$0		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
	from large excavation for filing voids and/or capping etc.								nominal rate of \$60/m3 for imported fill material. Clearing and grubbing of light
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil	Y		m3	172.50		\$0		material.  D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - altov
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.00		\$0		installed every 25 m. 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
	areas Purchase and erect warning signs	Y		allow	\$200.00		\$0		Compilance with AS 1319-1994 - Safety signs for the occupational environment
	areas Construct standard stock fence around rehabilitated	Y		m	\$13.00		\$0		fencing.  Standard rate for standard stock fencing.
	Construct no-climb stock fence around rehabilitated	Y		m	\$22.00		\$0		Standard rate for no-climb stock
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		application rate.  Recent experience with agronomy
	Single application of fertiliser (trees)  Spoll amelioration (adding lime / gypsum etc.)	Y		ha ha	\$140.00		\$0 \$0		last few years however in light of current conditions (lower fixel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years nowever in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the
	Hydromulch - high performance flexible growth medium grade	Υ		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.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	25,80		\$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 - 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 fast short term (less than 3 months) and or vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	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 50.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.00		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from 50,15 - \$0.50 depending on size and input variables. Native seed +\$1.00

# Domain 2c: Tailings & Rejects

# Total Cost for Tailings & Rejects Domain

Key Rehabilitation Area Data for Domain	Enter date 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	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple duster areas on site, multiple studies may be required.	γ		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and sile history, incidente, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 339 (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.)  - Remole pit-log facilities (i.e., véhicle refuel, 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 localisms 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 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 (2) (ivi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contemination has occurred (I.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/waler separators ot; and further field work is required investigation and testing (test pits, boreholds, etc.), based on Sampling and Analysis Quality Plan. Includes SAQP, flischwork, 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.	٧		Cluster	\$106,000		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 Intrusive investigation (EP Act Section 399 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc.  A cluster area where it is highly anticipated that contamination has occurred (f.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators act; and further field work is required involving intrusive investigation. Assume eithe have highly and testing (test pits, boreholes, etc.) based on Sampling and Analysis Cuality Plan. Includes SACP, fieldwork, sampling and analysis.
	Develop a Romediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	٧		allow	\$39,000		\$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 ellermete rate sell		\$0		Assumes complex site; detailed design drawings required for cover.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Υ		L	46.05		\$0	Select Haul Distance Here	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	Selectifum Ust			Compact Light Districtor 19016	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.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Υ		m3	\$800.00		\$0		Includes load, hauf 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, hauf and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	у		m3	Seince from			Sciect Volume Here	presuming or commitments seek on a propered 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
	Mobilisation of coment stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Y		Hem	\$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	550.00		\$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	\$250		\$0		Landfill fees to regional landfill.
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor				insted Mater	ials Subtotal	\$0		Assumes ~6 m road width ~ 16H
House and Hazara	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		\$0		Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim Unsealed roads / vohicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		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	\$605		\$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 15 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)	Υ		m3	Select from List			Select Hauf Distance Here	ms are recovers the scroping 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 leshabilisation
		arthworks / 8	tructural Wo	rks (Landform	n Establishma	ent) Subtotal	\$0	Extent Don't Leastly Mary	
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		hs	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	у		m3	Select from List			Select Hauf 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.
	Trim, rock rake & deep rip (includes levelling /	Υ		ha	\$1,130,00		\$0		Undertaken using D10 dozer and 16M grader,
	[andscaping and rip in 1 direction] Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,000		\$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 fand and/or upon entry to water courses - prevents erosion of guilty head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
		arthworks / 3	tructural Wo	rks (Landforn	n Establishme	ent) Subtotal	\$0		
Mine Wasto	Ideal Tailings Capping - reshaping, capping / sealing of trafficeble tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (MMD) / Saime Mine Drainage (SMD) and for low to moderate proposity for spontaneous combustion) and good physical properties, not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y		ha	\$62,600		\$0		This includes sourcing, carting, spreading, moisture conditioning and compection of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on sile within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth model (assume at least 1 m thick cover required for carbonaceous material covers). Water qualify from runoff, seepage etc. meets eite-specific environment water qualify values. If site haudage longer than 10 km round trip add the volume of the relevant material requiring haudage for this distance in 10.05 (spreading costs for tallings cap material included in rate) if additional material to make up landform, provide buttress or other works saide from tallings cap, use rate from 9.02 for relevant haudage and spreading in additional to any long haudage volume in 8.05.
									Include additional cost to Import

	Additional materials required for reshaping, capping / sealing of structure to facilitate wetur quality from runoff, seepage etc. meeting silvestre quality environment water quality values.	Υ	allow	One atternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Efficient Tailings Capping - rechaping, capping / sealing of trafficable fallings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Noutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate polysical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strongthening required)	Y	ha	\$148,500		\$0		This item Includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to eap? over facilities where the failings 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, or construints) and a capillary breaks, geofabric, or construints of the
	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	Une alternate rate call		\$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	Vac 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 tining etc.).
	Advorse 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) / Saine Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophiic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	hà	\$313,000		\$D		This item includes sourcing, carting, spreading, moleture conditioning and compaction of a suitable volume of material to cap / cover facilities of high good-menical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g., ed.), specific material types (e.g., ed.) consuming materials, competent rock etc.), and associated activities (i.e., load / haud / place / crush / screen / borrow etc.). Costs for haultage of specialised materials must be added separately if required. It side haulage longer than 10 km round lrip add the volume of the relevant material requiring haulage for this distance in 3.05 (spreading costs for tailings cap material included in rate). If additional material roundies butters or other works aside from tailings cap, use rate from 3.02 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	Des allegness rate call		\$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	Dae alternati rate call		\$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 afternate 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	One 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 liking etc.).
	capping/covers, removal of contamination, etc.	Y	m3	Link	ata Cubbata	\$0	Select Haul Distance Here	50 km round trip e.g. waste /
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	у	m3	Select from	este Subtotal		Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,075		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
			+					Includes treating, weighing, mixing with

Hydro-seeding with straw mulching and bitumen tack with native seed  Hydro-seeding with straw mulching and bitumen tack with pasture seed  Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bended fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Supply from eating stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and eract warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids ancier capping for capand grubbing of trees and vegetation  Clear yader dams and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utilias biotics soil media - organic topsoil alternative  Land Pruparation and Revegetation (Grow  Water Management  Clean water dams to be retained after mise closure – make safe and minor earthworks  Land Pruparation and Revegetation (Grow  Water management  Clean water dams (i.e. ≥ 2 ha) to be retained after mise closure – make safe and minor earthworks  Remove sediments from the floor of the dam to earthworks  Remove sediments from the floor at water structure (Select Haul Distance from field)	Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y		m2 m2 m2 m2 ma ha	\$1.00 \$0.43 \$0.43 \$1.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		Process to be used on flat well prepared surfaces under irrigation e.g. sawage treatment irrigation e.g. sawage treatment irrigation e.g. sawage treatment irrigation e.g. sawage treatment irrigation e.g. sawage to \$0.50.50 depending on size and input variables. Native seed \$41.00  Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation e.g. sewage treatment irrigation e.g. sewage treatment irrigation e.g. sewage same surfaces under irrigation e.g. sewage gradient of less than 4:1, and where irrigation from sulter cart may be possible. Industry standard application rate of 2500kg/ha. Product will lest short term (less than 3 months) and vogetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on cleep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/m This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/m This cost includes cover crop only, additional seeding required.  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.  Assumes 2.5 t / ha as an average application rate.  Assumes 2.5 t / ha as an average application rate.  Assumes 2.5 t / ha as an average application rate for excluded demand etc) this is a suitable standard rate.  Or proposed the control of the c
Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for sleep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single ap	Y Y Y Y Y Y Y Y Y Y Y Y		m2 m2 ma ha ha ha m m allow m3	\$1.00 \$1.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		surfaces under irrigation e.g. sewage treatment irrigation amas. Ranges fron \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will lest short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4500kg/ha This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in kght of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  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.  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.  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.  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.  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.
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 (pasture)  Spoil amelioration (adding lime / gypsum etc.)  growth media amelioration with blosolids  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and srect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids ancior capping etc.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utiliase biotic soil media - organic topsoil alternative  Land Preparation and Revegetation (Grow Water Management  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 Haul Distance from list)	Y  Y  Y  Y  Y  Y  Y  Y  Y  Y		m2  ha ha ha ha m m m allow m3	\$1,80 \$2,50 \$420,00 \$1,000,00 \$1,016 \$22,00 \$13,00 \$200,00 \$72,50		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		gradient of less than 4:1, and where imigation from water cart may be possible. Industry standard application rate of 2500(ph.a. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on exterp areas where stabilisation is required for up to 12 months. Application rate of ~3500(g/hs This cost Includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4000(g/hs minimum. This cost includes cover crop only, additional seeding required.  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.  These rates have fluctuated over the last few years however in light of curred conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Recent experience with agronomy projects.  Standard rate for ne-climb stock fenching.  Compliance with AS 1319-1994 - Safe significance with AS 1319-1994
Areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (pasture)  Single application of fertiliser (pasture)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with blosolids  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  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  Utiliae biotic soil media - organic topsoil alternative  Land Preparation and Revegetation (Grow Water Management  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 Haul Distance from list)	Y Y Y Y Y Y Y Y Y Y Y		m2 ha ha ha m m allow m3	\$2.50 \$420.00 \$140.00 \$1,000.00 \$1,016 \$22.00 \$200.00 \$200.00 \$200.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		stabilisation is required for up to 12 months. Application rate of ~3500kg/hs This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/h minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fixel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fixel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average application rate.  Assumes 2.5 t / ha as an average application rate.  Assumes 2.5 t / ha as an average application rate.  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Excavator (\$220hr) load Artic Trucks (90c/km) from imported stockplie - allonominal rate of \$70m3 for imported fill material.
Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with blosolids  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utiliae biotic soil media - organic topsoil alternative  Land Preparation and Revergetation (Grow Water Management)  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 Haul Distance from list)	Y Y Y Y Y Y Y Y Y Y		ha ha ha m m allow m3	\$420.00 \$140.00 \$1,000.00 \$1,016 \$22.00 \$13.00 \$200.00 \$72.50		\$0 \$0 \$0 \$0 \$0 \$0 \$0		stabilisation is required for up to 18 months. Application rate of "4,000kg/m minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fucutated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  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.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an everage application rate.  Recent experience with agronomy projects.  Standard rate for ne-climb stock fencing.  Standard rate for standard slock fancing.  To be great material at \$205/hr, Excavator (\$220/hr) load Artic Trucks, good of the control of the comminal rate of \$70/m3 for imported fill material.  D10 push into void at \$270/hr,
Single application of fertiliser (trees)  Spoil amelioration (adding time / gypsum etc.) growth media amelioration with blosolids  Construct no-climb stock fence around rehabilitated arees  Construct standard stock fence around rehabilitated arees  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large 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  Land Preparation and Revegetation (Grow Water Management  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 Haul Distance from list)	Y Y Y Y Y Y Y Y Y		ha ha m m allow m3	\$740.00 \$1,000.00 \$1,015 \$22.00 \$13.00 \$200.00 \$72.50		\$0 \$0 \$0 \$0 \$0 \$0		fluctuated over the last few years however in light of current conditions (lower fixel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of curren conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an everage application rate.  Recent experience with agronomy projects.  Standard rate for no-climb stock fencing.  Standard rate for standard stock fencing.  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Dr to spread material at \$205/hr, Excavator (\$220/hr) lood Artic Trucks.  Scoling from the properties of the properties of the nominal rate of \$70/m5 for imported fill material.
Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with blosolids Construct ano-climb stock fence around rehabilitated areas Construct standard stock fence around rehabilitated areas Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large 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 afternative  Land Preparation and Revegetation (Grow Water Management  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 certhworks  Remove sediments from the floor of the dam to enable it to be converted into clean water structure (select Haul Distance from list)	Y Y Y Y Y Y Y Y		ha ha m m allow m3	\$1,000,00 \$1,016 \$22,00 \$13,00 \$260,06 \$80,80		\$0 \$0 \$0 \$0 \$0		last few years however in light of currer conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average application rate.  Assumes 2.5 t / ha as an average application rate.  Recent experience with agronomy projects.  Standard rate for no-climb stock fencing.  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Dr to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockplie - allonominal rate of \$70/m3 for imported fill material.  D10 push into void at \$270/hr,
growth media amedioration with blosolids  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large 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 afternative  Land Preparation and Revegetation (Growth media)  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 Haul Distance from list)	Y Y Y Y Y Y Y		m allow m3	\$1,016 \$22.00 \$13.00 \$200.00 \$200.00 \$72.50		\$0 \$0 \$0 \$0		application rate.  Recont experience with agronomy projects.  Standard rate for ne-climb stock fencing.  Standard rate for standard stock fencing.  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  Dr to present material at \$205ftr, Excavator (\$220ftr) load Artic Trucks (\$02/an) from Imported etockpie - allo mominal rate of \$70fm 8 for imported fill material.  D10 push into void at \$270/ftr,
growth media ametioration with blosolids  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utiliae biotic soil media - organic topsoil afternative  Land Preparation and Revegetation (Growthead after decommissioning − make safe and minor earthworks  Large clean water dams (t.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 Haul Distance from list)	Y Y Y Y Y Y		m allow m3	\$22.00 \$13.00 \$200.00 \$30.00 \$72.50		\$0 \$0 \$0		Recent experience with agronomy projects. Standard rate for ne-climb stock fencing. Standard rate for standard stock fencing. Standard rate for standard stock fencing. Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m. D7 to spread material at \$205/hr, Excavator (\$220/hr) load /Artic Trucks (800/km) from imported stockpile - allonominal rate of \$70/m3 for imported fill material. D10 push into void at \$270/hr,
Construct no-climb stock fence around rehabilitated areas Construct standard stock fence around rehabilitated areas Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utiliae biotic soil media - organic topsoil afternative  Land Preparation and Revegetation (Grow  Water Management  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 certhworks  Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y Y Y Y Y Y		m allow m3	\$22.00 \$13.00 \$200.00 \$30.00 \$72.50		\$0 \$0 \$0		Standard rate for no-climb stock fencing.  Standard rate for standard stock fencing.  Compliance with AS 1319-1894 - Safet signs for the occupational environment installed every 25 m.  D7 to spread material at \$205/hr, Excavator (\$220/hr) food Artic Trucks (902/km) from imported stockpile - allor nominal rate of \$70/m3 for imported fill material.  D10 push into void at \$270/hr,
Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utiliae biotic soil media - organic topsoil alternative  Land Preparation and Revergetation (Grow Water Management  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 Haul Distance from list)	Y Y Y Y Y		m allow m3	\$12.90 \$200.00 \$80.80 \$72.50		\$0 \$0		Standard rate for standard stock fencing.  Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (800/km) from Imported stockpile - allor nominal rate of \$70/m3 for imported fill material.  D10 push into void at \$270/hr,
Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large 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  Land Preparation and Reversation (Grow Water Management  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 Haul Distance from list)	Y Y Y Y		m3	\$200.06 \$80.00 \$72.50		\$0		Compliance with AS 1319-1994 - Safet signs for the occupational environment installed every 25 m.  D7 to apread material at \$205/hr, boad Artic Trucks (90c/km) from Imported stockpile - allonominal 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.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utilise biotic soil media - organic topsoil atternative  Land Preparation and Revergetation (Grow Water Management  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 certiworks  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	\$72.50		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (\$00/km) from Imported stockpile - allor nominal rate of \$70/m3 for imported fill material. D10 push into void at \$270/hr,
virgin excavation faural material (VENM) and spoil from large 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  Land Preparation and Revegetation (Grow  Water Management  Clean water dams to be retained after decommissioning − make safe and minor earthworks  Large clean water dams (i.e. ≥ 2 he) 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 Haul Distance from list)	Y							
Topsoil stripping  Growth media supplementation with manure  Utiliae biotic soil media - organic topsoil alternative  Land Preparation and Revegetation (Grow  Water Management  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 Haul Distance from list)	γ		ha	\$4,730,00		\$0		Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allor nominal rate of \$60/m3 for imported fill material.
Growth media supplementation with manure  Utiliae biotic soil media - organic topsoil alternative  Land Preparation and Revegetation (Grow  Water Management  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 Haul Distance from list)						\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
Utilise biotic soil media - organic topsoil alternetive  Land Preparation and Reversation (Grow  Water Management  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 Haul Distance from list)			m3	54.81		\$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.
Land Preparation and Revegetation (Grov Water Management  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 Haul Distance from list)	Y		ha	\$747.50		\$0		Addition of manure to improve soli quality.
Land Preparation and Revegetation (Grov Water Management  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 Haul Distance from list)	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to
Water Management  Clean water dams to be retained after decommissioning — make safe and minor surthworks  Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure — make safe and minor carthworks  Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)								hydromulching.
after mine closure – make safe and minor oarthworks  Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y Y	Development a	allow	\$2,500	anty Substituti	\$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.
enable it to be converted into clean water structure (Select Haul Distance from list)	Y		allow	\$10(500)		\$0		Provisional sum for earthworks and revegetation required to rehabilitate batters etc suitable for re-use by an alternate land-user - D6 Dozer (or slmiler) + pasture grass.
Maintenance of Rehabilitated	Y		m3	Select from List	ni Cubinini	1 50	Seinct Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
		T	- VV	ater Managem	- nt Subtotal			Rehabilitation maintenance might
Areas  Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$625		\$0		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	\$2.590		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water
Existing rehabilitation repair - total failure of landform		_	_					management.
	٧		ha	\$40,000		\$0		management.  Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
Total Continue	٧	Maint		habilitated Ar		\$0		Areas that require extensive rehabilitation repair - re-design and re-
Total Cost for 1			tenance of Re	habilitated Ar Additional Its		\$0	\$0	Areas that require extensive rehabilitation repair - re-design and re-

# Domain 3c: Overburden & Waste

# Total Cost for Overburden & Waste 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	and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Υ		ha	\$2,880		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Υ		m2	25		\$0		Provisional sum for cutting using rig tynes and on-site disposal of the lin
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from			Select Haul Distance Here	Costs for haulage to local on to authorised disposal. Rate for trackable liquid levy of \$78
	Brine disposal to landfill - fees only	Y		tonne	\$2981		\$0		per tonne and authorised disposal t landfill.
	Long haulage water (clean or contaminated) (Select Haut Distance from first)	Y		tonne	Balest from			Seject Hauf Distance Here	Assumes transport in a 20,000 L ta Add disposal costs to additional its
	TERRESPONDENCE AND ADDRESS OF THE PERSON AND			Conta	minated Mater	ials Subtotal	50		
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor works including deep rip and trim	Y		ha	37,640.00		\$0		Assumes ~6 m road width - 16H Grader. D10 Dozer @ \$400 per hour and 16
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	31,600		\$0		grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas - Minor earl/works, final trim and deep rip and seed (pasture grass)	Υ		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unseafor mads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/_rass)	Y		ha	\$4,400		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	84,879		\$D		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds — Minor earthworks, final trim and deep rtp, ameliorete and seed (native tree/shnub/grass)	Y		ha	\$7,625		\$0		D10 Dozer @ \$400 per hour and 1s grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locelly (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or surface using an excavator, dozer a grader to enable the establishment rehabilitation.
IT FUATURED				ı	Roads and Tra	cks Subtotal	\$0		
rthworks / Structural Works Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit — Select Push Length	Y		m3	Select from			Solect Push Length Here	Major bulk pushing to achieve grad nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$7,900		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from			Seject Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the voi and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Υ		m2	\$185.00		\$0		This rate is used to rehabilitate stee slopes of weathered rock, roadway cuttings, etc that cannot be cut bac and stabilised.
	Trim, rock rake & deep rip (includes levelling /	Y		ha	\$1,130.06		\$0		Undertaken using D10 dozer and 1st grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,400		\$0		Combination of dozer and excavato work plus grader for ~4 hours each ha.
C	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material rap) where managing water run-off disturbed land and/or upon entry to water courses - prevents erosion o gully head (assumes competent material is locally available). If req to be sourced off site, assume an additional \$20/m2.

Mine Waste

Ideal Tailings Capping - reshaping, capping / seeling of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Sahra Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical propries (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,005	\$0	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 capting material is available on site within 10 km, and an average cap hickness 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 retues. If site haulage longer than 10 km round trip add the volume of the retevant material requiring haulage for this distance in 8.05 (spreading costs for tallings cap material included in rate). If additional materials to make up landform, provide buttress or other works aside from tailings cap provide buttress or other works aside from tailings cap p. ser 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., shate / 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	wolle	Use atternate rate call	\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite (Ining etc.).
Efficient Talkings Capping - reshaping, capping / sealing of trafficable talkings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhall, no artificial strengthening required)	٧	ha	\$148,500	\$0		This item includes sourcing, carling, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tellings or rejects base is at strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on sile within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in in layers + growth media up to 0.2 m depth. This may require additional materials (such as capitallary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. scid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., foad / hard / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added soparately if required. If sich hand a place is the specialism of the properties of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate), if additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ	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 I sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate sell	\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Teilings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Salime 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, certing, spreading, moleture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth modia 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 atc.). Costs for hauloge of specialised materials must be added separately if required. If side haulige longer than 10 km round ling add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for taillings cap material included in rate), if additional material to make up landform, provide butters 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.

Add and control for centure of control control for centure of ce										1
Make the property of the pro	1	/ sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific	Y		allow			\$0		additional requirements (i.e., geofabric /
Part		/ sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific	Y		allow			\$0		materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
March   Control   Contro		Difficult Tailings Capping-reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophitic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity	٧		ha	\$642,000		\$0		the operating process of the constraints and/or when failings properties significantly restrict adequate selected in restrict adequate 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
Additional and inclinate records for excluding Section (c) (c) Continued and another control of the control o		/ sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific	Y		allow			\$0		include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric /
Manual Properties and Support Common Number Common Numbe		/ sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y		allow	PRIN DATE		\$0		materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
March   Marc		Long haulage soil / weathered rock / sediment e.g.	Υ		m3	List			Select Hauf Distance Here	50 km round trio e.g. waste /
Procedure of the Process of the Control of the Co		ACCOMMENDATION OF THE PROPERTY				Mine Wa	este Subtotal	50		
Assume that the control of the contr	Revegetation (Growth Media Development and Ecosystem		Y		m3				Select Hauf Distance Here	Virgin Excavated Natural Material (VENM) may need to be externally
Diversion of first first pointing grass symbols   Y   In   1875   50   Security (First Property of the Control of First Property of Transport of First Property of Transport of First Property of Transport of Transpo		Planting mature trees (>15 cm)			allow					
Notes training growth parts allowed by Confedence from the control growth and control gro		Planting tube stock (<15 cm)	Y		allow					Includes treating, weighing, mixing with
Direct seeded of fulfactor of the our name games (but before the regulating by placetor of bedieved and seeding fulfactor of bedieved and seed		Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		helicopter (aerial seeding).
The searching with store matching and bitmen and was with number and ask with number and ask with number and ask with number and ask with pediate ask and ask			Y		ha	14,125		\$0		fertiliser + spreading by tractor or
surface code: register in extraction of the control of the code of			٧		m2	\$1.00		\$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
register of less time 4.7, and where invalidation for fills are set introduction for fills are set introduction of the set interest. A process of the set in the set			٧		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
tablisation is regular to the process of the proces			٧		m2	\$0 84		\$0		gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop
Hydromulch - high performance flexible growth medium grade  The performance flexible growth medium grade  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Y  Ina  Set 80  Single application of fertiliser (pasture)  Ina  Set 80  Ina  Ina  Ina  Set 80  Ina  Ina  Ina  Ina  Ina  Ina  Ina  In			Υ		m2	\$1.60		\$0		stabllisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only,
Single application of fertiliser (pasture)  Y ha \$400.00  \$0  These rate have fluctuated over the last few years however in light of curved conditions (lower fluely prices, reduced demand this is a suitable standard rate.  These rate have fluctuated over the last few years however in light of curved conditions (lower fluely prices, reduced demand only link is a suitable standard rate.  Spoil amelioration (adding lime / gypsum etc.)  Y ha \$44,00  Spoil amelioration (adding lime / gypsum etc.)  Y ha \$44,00  Spoil amelioration (adding lime / gypsum etc.)  Gonstruct nor-dimb stock fence around rehabilitated Y m \$41,00  Gonstruct standard stock fence around rehabilitated Y m \$13,00  Sundard rate for nor-dimb stock fence around rehabilitated Y m \$13,00  Sundard rate for nor-dimb stock fence around rehabilitated Y m \$13,00  Sundard rate for standard stock fence around rehabilitated Y m \$13,00  Sundard rate for standard stock fence around rehabilitated Y m \$13,00  Sundard rate for standard stock fence around rehabilitated Y m \$13,00  Sundard rate for standard stock fence around rehabilitated Y m \$13,00  Sundard rate for standard stock fence around rehabilitated Y m \$13,00  Sundard rate for standard stock fence around rehabilitated Y m \$13,00  Supply from external sources virgin excavated natural material (VENM) for growth model.  Supply from external sources virgin excavated natural material (VENM) for growth model.  Y m3 \$13,00  Supply from external sources or combination of virgin excavated information of virgin excavated information around related to the combination of virgin excavated information around rehabilitated or promise around rehabilitated information.  Clearing and grubbling of trees and wegelation  Y m3 \$13,00  Supply from external sources a combination of virgin excavated information around rehabilitation footilon regulated information around rehabilitation footilon regulated or representation for imported material.  Clearing and grubbling of trees and wegelation  Y m3 \$1,00  Supply from external source		and the second s	Y		m2	\$2.50		\$0		months. Application rate of ~4,000kg/ha
Isaf (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur conditions) [least (ew years however in light of cur can light of curs (ew years however in light of cur can light of curs (ew) [least (ew years however in light of curs (ew) [least (ew years however in light of curs (ew) [least (ew) [le	25	Single application of fertiliser (pasture)	Y		ha	\$420,00		\$0		however in light of current conditions (lower fuel prices, reduced demand etc)
Spoil amelioration (addring time / grypsum etc.)  growth media a melioration with biosolids  Y ha  So  Recent experience with agronomy srigects.  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Y allow  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and apoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and wegelation  Y m3  Supply from external sources a combination of virgin excavated natural material (VENM) and apoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and wegelation  Y m3  Supply from external sources a combination of virgin excavated natural material (VENM) and apoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and wegelation  Y ha  Supply from external sources a combination of virgin excavated natural material (VENM) and apoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and wegelation  Y ha  Supply from external sources and grubbing of ight virgination involve against and grubbing of		Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		
growth media amelioration with biosolids  Y  ha  \$0  Recent experience with agronomy projects.  Construct no-climb stock (ence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Y  allow  \$0  Standard rate for standard stock fencing.  Compliance with AS 1319-1994 - Sa signs for the occupational environments installed every 25 m.  D7 to spread material at \$205th, Eccavator (\$220thr) load Artic Truck (900/km) from imported stockpile - a nominal rate of \$70m3 for imported atterial.  Supply from external sources a combination of virgin excavated natural material (VENM) and apoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation or vegetation growth e.g. regrowth  Addition of manure to improve soil		Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000		\$0		
Construct no-climb stock fence around rehabilitated areas Construct standard stock fence around rehabilitated areas Purchase and erect warning signs Y allow Supply from external sources virgin excavated Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y m3 Supply from external sources are combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y m3 Supply from external sources are combination of virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y m3 Supply from external sources are combination of virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y m3 Supply from external sources are combination of virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y m3 Supply from external sources are combination of virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of light vegetation growth exceptance are capproximately and the filing from the protection growth exceptance are capproximately exceptance are capped and the filing from the filing filing from the filing filing from the filing filing filing from the filing filing from the filing filing filing filing from the filing filing filing filing from the filing fil			Y		ha	31,015		\$0		Recent experience with agronomy
Construct standard stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Y allow \$50  Compliance with AS 1319-1994 - Sa signs for the occupational environment installed every 25 m.  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and wegetation  Y m3 \$50  Clearing and grubbing of trees and wegetation  Y m3 \$50  Clearing and grubbing of trees and vegetation  Y m3 \$50  Clearing and grubbing of trees and vegetation of virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y m3 \$50  Clearing and grubbing of trees and vegetation of virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation of virgin excavation for filing voids and/or capping etc.  Ability of the control of the province of the provin		Construct no-climb stock fence around rehabilitated	_		m	\$22.00		\$0		Standard rate for no-climb stock
Purchase and erect warning signs  Y  allow  \$0  Compliance with AS 1319-1994 - Sa signs for the occupational environments installed every 25 m.  D7 to spread material at \$205/hr, Excavator (\$200/hr) load Artic Truck  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of filing virgin excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y  m3  \$0  Clearing and grubbing of light vegetation of vegetation growth exp. regrowth and terial.  Stripping or topsoil at an approximate depth of 0.2 m into stockpiles - and an approximate depth of 0.2 m into stockpiles - and an approximate depth of 0.2 m into stockpiles - and an approximate depth of 0.2 m into stockpiles - and an approximate depth of 0.2 m into stockpiles - and an approximate depth of 0.2 m into stockpiles - load a laut to final rehabilitation location required or respreading where necessary.  Addition of manure to improve soil				-						Standard rate for standard stock
Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbling of trees and vegetation  Topsoil stripping  Y  m3  \$0  installed every 25 m.  D7 to spread material at \$205 hr. Excavator (\$220hr) load Artic Truck (90c/km) from interior at seven of material.  Polypath into void at \$270hr. Excavator (\$220hr) load Artic Truck (90c/km) from interior at seven of material.  Clearing and grubbling of filing voids and/or capping etc.  Clearing and grubbling of trees and vegetation  Y  m3  \$0  Clearing and grubbling of light vegetation growth as approximate depth of 0.2 m into stockpile-a napproximate depth of 0.2 m into stockpiles, load of half to final rehabilitation location required or responsation location required or responsation location recovers of responsation proximate or responsation proximate or improve soil		areas								fencing.  Compliance with AS 1319-1994 - Safety signs for the occupational environment -
Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Y  m3  10  10  10  10  10  10  10  10  10  1		Supply from external sources virgin excavated								installed every 25 m. 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
Clearing and grubbing of trees and vegetation Y ha 30 vegetation growth e.g., regrowth  Stripting or types of a mapproximate depth of 0.2 m into stockpiles; load of heal to final rehabilitation location required or respresseding where necessary.  Addition of manure to improve soil		virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping	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 \$50/m3 for imported fill material.
Stripping or topsoil at an approximat depth of 0.2 m into stockpiles; load at Manual Calling in Cal		Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		
Addition of manure to improve soil										Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where
The state of the s		Growth media supplementation with manure	Y		ha	\$747.50		\$0		

	Utilise biotic soil media - organic topsoil alternative	Y	m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
	Land Preparation and Revegetation (Grov	wth Media De	velopment and Ecosysts	m Establishmen	it) Subtotal	\$0		
Water Management	Clean water dams to be retained after decommissioning — make safe and minor earthworks	Υ	allow	\$2,900		\$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 pastur grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine dosure – make safe and minor earthworks	Υ	allow	\$19,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-usa 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	Salect from			Select Hauf Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				later Manageme	nt Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	ha	>50254		\$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	\$1,300		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Υ	ha	51,750		\$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.
			ha	\$48,000		\$0		Areas that require extensive rehabilitation repair - re-design and re
	Existing rehabilitation repair - total failure of landform	Y	na	TANKS OF THE PARTY				construction of landform.
		Y	Maintenance of R	ehabilitated Area		\$0		construction of landform.
			Maintenance of R	ehabilitated Area Additional item		\$0 \$0		construction of landform.

\$n

# Domain 4c: Active Mine & Voids

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

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	\$1,03		\$0		Blasting in a 8x9 pattern of bench heigh 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Y		m3	30.36		\$0		Bulk Drilling say 8*9 pattern, assuming a stern height of 6 m, charge length of 19 m, explosive density of 0.9, diarmeter of 229 mm, explosives at 865.3 kg/hole with a powder factor of 0.97 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	Υ		m	350.00		\$0		D10 dozer, 16H Grader and revegetation with pasture grass.
					Open	Cut Subtotal	\$0	O. L. o Burth Laureth University	
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	¥		m3	Select from			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from			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	\$165.00		\$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 /	Y		ha	\$1,130.00		\$0	- X	Undertaken using D10 dozer and 16M grader.
	landscaping and rip in 1 direction) Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per
8	measures  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27,00		\$0		ha.  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 gulfy head dessumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	E	arthworks / S	Itructural Wo	rks (Landfon	ns Entablishm	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 Lint			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y		ellow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm)	Υ	_	allow	\$6.00		\$0	-	4 m centres.  Includes treating, weighing, mixing with
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,873		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	84,135		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Υ		m2	\$1,00		\$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	\$0.00		\$0		Assumes use on flat ereas 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	\$1.00		\$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/haminimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Y		ha	\$428,00		\$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.

			\$0					
	Total Cost for A				tems Subtotal	\$0		
		\$0						
	Existing rehabilitation repair - total failure of landform	Y	ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and r construction of landform.
	Existing rehabilitation repair - major	Y	ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface wate management.
	Existing rehabilitation repair - moderate	Υ	ha	\$1,700		\$0		Areas requiring moderate repair - ril significant growth media replaceme
	Existing rehabilitation repair - minor	Y	ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
aintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	ha	\$825		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilis minor re-shaping, erosion control, inspections/audits - does not include major repair works.
				Water Manage	ment Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y	m3	Select from			Solect Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y	allow	\$10,500		\$0		Provisional sum for eerthworks and revegetation required to rehabilitate dam batters etc suitable for re-use be an alternate land-user - D6 Dozer (c similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y	allow	\$2(500)		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters atc suitable for re-use to an alternate land-user - D6 Dozer (c slmilar) @ -\$200 per hour and past grass.
	Land Preparation and Revegetation (Grow	oth Marila Da	relopment and Eccess	tem Establishe	nent) Subtetal	\$0		inguomatoring.
	Utilise biotic soil media - organic topsoil alternative	Y	m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior hydromulching.
	Growth media supplementation with manure	Y	ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Topsoil stripping	Y	m3	\$4.64		\$0		Stripping or topsoll at an approxima depth of 0.2 m into stockpiles; load haul to final rehabilitation location required or respreading where necessary.
	Clearing and grubbing of trees and vegetation	Υ	ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ	m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavetor (\$220/hr) load Artic Truck (90c/km) from imported stockpile - i nominal rate of \$80/m3 for imported material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y	m3	:580.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$70/m3 for imported material.
	Purchase and erect warning signs	Υ	allow	:\$250(R0)		\$0		Compliance with AS 1319-1994 - Sa signs for the occupational environm installed every 25 m.
	Security fence around steep section of high wall	٧	m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.1 mesh & 32 mm post not concreted
	growth media amelioration with biosolids	Y	ha	\$1,018		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Y	ha	\$9,000,00		\$0		Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	Y	ha	\$140.00		\$0		last few years however in light of cu conditions (lower fuel prices, reduce demand etc) this is a suitable stand rate.

# Domain 5c: Management Activities

# **Total Cost for Management Activities**

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

Management Precinct	Activity   Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description ! Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	Y		ML	\$1,400		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	Y		ML	\$1,500		\$0		Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
				Wa	ter Managem	ent Subtotal	\$0	STEEL STEEL STEEL	
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	Υ		m	\$2,500		\$0		Assumes material is suitable for revegetating and has a reasonable chance of stabilising.  Assumes maintenance has been kept
	Long term maintenance of water course diversion – Channel constructed through backfilled material	Y		m	\$1:0011		\$0		up and significant works are not required.  Assumes maintenance has been kept
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750,00		\$0		up and significant works are not required.  Assumes competent material is locally
	Installation of rock armouring	Υ		m2	\$4.00		so		available - multiply costs by 2 for sourcing and transporting from offsite location.
					Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y		ha	\$150.00		\$0		Feral animal bailing programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land management activities.
			Maint	nance of Rel	nabilitated Ar	eas Subtotal	\$0		lism for the redistribution of Aboriginal
Heritage Items	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate cata sell		\$0		artefacts, preservation of European heritage items or a combination of activities.
				-	Heritage III	ems Subtotal	\$0		
Sundry Items									
Carlos y Nellio	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelde e.g. groundwater /subsidence / pit takes, preliminary seal designs, etc. and only finalisation of detailed engineering deligns required	٧		wolfs	snie die		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.  Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range from ~575k to >51 MS.  Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects requiring closure planning, but no significant issues realised at this time previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final vold	Υ		allow	\$90,000		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan into a detailed closure plan with exacution 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. Stee 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	Υ		etlow	\$300,000		\$0		Includes costs for key Investigations and studies including designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual course plan into a detailed closure plan rectivities. Assume at least 15 types of studies required ranging from geolechnical to ecology and social, development of a closure plan including address of coligations. 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 >33 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								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,
	issues requiring remediation; previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, taillings / rejects, final void	٧		allow	\$125,080		\$0		nsk, cover/capping and linal landform, sile wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategles for rehabilitation activities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	Y		allow	\$27,850		\$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		ут.	\$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 -							Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and
	cleaning and deconlaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	Y		allow	10				equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	Y		each	:\$31,839		\$0		Provisional sum for removal and disposal of monitoring devices on conveyors using a redisition source (i.e., Americium – 241, Pultonium – 238, Caesium – 137 etc). Source feotope type, quantity, strength, weight, source holder type, source holder type, source holder type, dick-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.
					Sundry It	ms Subtotal	\$0		
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y		Item	\$12,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Y		ltem	\$35,668		\$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)	Υ		item	\$380,000		\$0		May include specialist demofition equipment and/or suitable plant to execute bulk earthworks as required.
				item	8500,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	Y		item					execute bulk earlinois as required.
	Mobilisation & Demobilisation (Distance to site >1000 km)	Y	Mo	billsation and	Demobilies	ion Subtotal	\$0		
Additional Items	Mobilisation & Demobilisation (Distance to site >1000 km)  Other 1 <insert></insert>	Y	Mo		Demobilies This is	ion Subtotal	\$0	W	This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
Additional Items	>1000 km)		Mo			ion Subtotal	\$0		This item includes < <to added="" be="" by="" operator="" the="">&gt; This item includes &lt;<to added="" be="" by="" operator="" the="">&gt;</to></to>
Additional Items	>1000 km) Other 1 <insert></insert>	N	Mo	bilisation and	This is:		\$0		This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>

Assumptions and rehabilitation requirements
List or record any assumptions made when completing this tool:



# Justification for Change of Rates in the Rehabilitation Cost Estimation Tool

Justification						
Adopted Rates						
DRG unit/rate						
Activity						
Domain						

ilised in the Rehabilitation Cost Estimation Ites identified in the above table have been	Date	Signature
In completing the Rehabilitation Cost Estimation, we are seeking an adjustment to the rates currently utilised in the Rehabilitation Cost Estimation Tool. A justification for the rate change by a third party has been included and I confirm that only the rates identified in the above table have been altered in the Rehabilitation Cost Estimation Tool.	Authrorisation Representatives Name	Authorisation Representatives Role / Responsibility