

FWP0001451

ATTUNGA LIMESTONE MINE FORWARD PROGRAM

Tuesday 4 June 2024 to Thursday 3 June 2027





Summary

DETAIL	
Mine	Attunga Limestone Mine
Reference	FWP0001451
Forward program commencement date	Tuesday 4 June 2024
Forward program end date	Thursday 3 June 2027
Forward program revision (if applicable)	
Contact	Lizz Norvill
Mining leases	ML 1394 (1992)
Project location	GRAYMONT (NSW) PTY LTD
Date of submission	Friday 26 July 2024

Important

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



Three-year forecast – surface disturbance activities

Project description

High-grade limestone is mined and processed at Graymont's Attunga Limestone Mine to deliver products for essential services while supporting vital industrial processes and agricultural needs. Crushed limestone is processed through a kiln and hydrator to produce lime products suitable for many applications. In addition, crushed limestone is sold directly into construction and agricultural markets. The Attunga site has a limestone resource of over 3 million tonnes. Graymont intends to mine or process limestone at the Attunga site for the long term (+twenty years). As well as the resources at Attunga, there are significant resources at both Sulcor and Carey's to extend the site life further. References to mining operations at Sulcor and Carey's are included for context only and to understand how the two operations relate to each other.

Description of surface disturbance activities

Exploration activities

The geology at the Attunga site is well understood and no further exploration activities are planned for the next three years.

Construction activities

Nil construction activities planned in the next 3 years.

Mining schedule

Mining development method and sequencing and general mine features.

The mine void has been fully developed in plan and no further lateral development is proposed. Consequently, there is no further land clearing or overburden stripping proposed with mining activities. In August 2021, a multiple bench failure occurred on the southeastern side of the Jackson open pit. As a result, access to the open pit base was suspended while the slip was monitored for further movement. A geotechnical assessment of the failure was completed, and rehabilitation options were identified. The repair options' timing depends on the failure's stability, and the failure is now monitored by daily visual inspection and aerial photography. Before the wall failure, mining activities at the Attunga site focused on the quarry's southeastern portion. Since the wall failure, mining has focused on mining berms to the final width.

FWP0001451 | Tuesday 4 June 2024 to Thursday 3 June 2027



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

The main waste and overburden emplacement is to the northeast of the mine void. This emplacement will continue to be used for placement of any out of spec rock, oversized material and kiln wastes.

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

A processing plant area comprising a primary jaw crusher and screen, reclaim conveyors, hammer mill and screens, and storage bins for milled limestone. In addition, there are large workshops and store sheds, fuel & oils distribution tanks and sheds, and up to 6 transportable office and storage buildings.
One dispatch weighbridge and silos for quicklime and Ag lime storage & distribution.
Two vertical shaft kilns and associated milling and screening infrastructure, and storage silos.
A hydration plant including a hydration bath, ball mill, feed silo, hydration building (to house the hydration plant), material transfer equipment (bucket elevators, screw conveyors, pneumatic transfer), storage silos, bagging plant and feed silo, packaging equipment and weighbridge.
There are no tailings facilities

Waste disposal and materials handling operations.

The majority of waste rock from the operation comes from three sources: • Weathered or clay contaminated limestone from all three layers (Upper, Middle, and Lower). • Black shale and cherty limestones • Green Andesite dykes - a durable volcanic rock The largest proportion of waste is limestone, which is environmentally beneficial (used to improve soil). The other waste types are relatively benign, including the process waste and are encapsulated in the waste limestone. Water quality monitoring data, from the sediment traps below the overburden dump, show no adverse effects. Where possible, the waste rock will be used to backfill the Northern end of the open pit. This material will be used to reform the northern end of the open pit to a landform similar to the original surface. This will help block the view into the open pit from the north. Excess waste rock and process waste will be placed on the North-Eastern Overburden Dump. Material Production Schedule for the next three years is approximately 1,500m3 of waste limestone per year to be placed on the overburden emplacement areas. General wastes such as office refuse, putrescible wastes, waste hydrocarbons etc are disposed offsite to a licensed facility.

FWP0001451 | Tuesday 4 June 2024 to Thursday 3 June 2027



Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m³)	0	0	0
Rock/overburden	(m³)	0.5	0	0
Ore	(Mt)	0.09	0	0
Reject material ¹	(Mt)	0	0	0
Product	(Mt)	0.18	211,000	2,111,000

 $^{^{\}rm 1}\,{\rm This}$ includes coarse rejects, tailings and any other wastes resulting from beneficiation.



Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

Rehabilitation planning activities for 2023-26 include: Identify analogue sites that represent the proposed final land use of native vegetation (with specialist support as required) Ensure inspections are continued and any issues identified immediately remedied with the help of Soil Contractors

Stakeholder consultation

Consult with local revegetation organisations on recommended native species seed mix.

Rehabilitation studies, risk assessments and/or design work

Ecological studies to be undertaken of R1-R9 areas to assess progress towards closure criteria. Rehabilitation monitoring inspections of R1-R9 (ecosystem establishment phase) every six months by a specialist to allow early identification of any emerging threats to rehabilitation.



Rehabilitation research and trials

RRT	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE	STATUS
NUMBE	ER			OF COMPLETION	

FWP0001

451



Rehabilitation maintenance and corrective actions

Due to issues with hydromulch growth, we will be sourcing alternate suppliers for future rehab areas and Soil Conservation Services NSW has been approached to help with this issue. Mine Soils Pty Ltd also engaged for consulting on best practice moving forward in regards to soil health to promote plant growth. No rehabilitation performance issues or knowledge gaps were identified in the 23-24 Annual Rehabilitation Report.

Rehabilitation schedule

Infrastructure area internal identification IA3: Continuation of Landform Establishment IA3 East to be topsoiled and seeded Overburden Emplacement Area R1 – R10: Ecosystem and land use development to continue AMA2-433 berm: Ecosystem and land use development. Native trees to be planted by local primary school students in area R8 for National tree day. The plan is for this to be an annual event for the kids and site with more native planting of trees to occur in R9 even though already established.

Subsidence remediation for underground operations

Not relevant to Graymont Operations

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A Total surface disturbance footprint	(ha)	49.35	49.35	49.35
B Total active disturbance	(ha)	35.49	35.18	34.42
P Total new area of land proposed for active rehabilitation	(ha)	2.47	2.77	3.54

Rehabilitation key performance indicators (KPIs)

FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O Total new active disturbance area	(ha)			
P Total new area of land proposed for active rehabilitation during the reporting period	(ha)	2.47	0.31	0.76

Q Annual rehabilitation to disturbance ratio



Attachment 1 – Reporting Definitions

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



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.



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



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



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



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

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

FWP0001451 | Tuesday 4 June 2024 to Thursday 3 June 2027



Attachment 3 - Plans

Plan2A.pdf

Plan2B.pdf

Plan2C.pdf

Forward Program (LARGE MINE) v2.1

Complete the following fie	lds prior to calculating the Security Deposit.
Mine Name:	Graymont Attunga Limestone Mine
Lease(s):	ML1394
Title Holder:	Graymont (NSW) Pty Ltd
Term of RCE:	Snapshot-Plan1
Current Security:	\$4,394,000 Date of last Security Deposit review 1/06/20
Mine Contact:	Site Manager-Attunga
List key changes since previous	e.g. significant landform rehabilitation undertaken in domain xyz e.g. change in mine waste (tailings) capping rate



Open Cut Summary Rehabilitation Cost Estimation

Note: Sections of this see				
note. Sections of this page	e are automatically filled in from the registration page			
Mine Name:	Graymont Attunga Limestone Mine			
Lease(s):	ML1394			
Authorisation Owner:	Graymont (NSW) Pty Ltd			
Authorisation Owner.	Craymont (Now) i ty Eta			
Term of RCE:	Snapshot-Plan1			
Current Security:	\$4,394,000 Date of Last Se	curity Deposit F	Review:	1/06/2023
Mine Contact:	Site Manager-Attunga			
Domain 1: Infrastructur			Security D	Peposit \$2,457,130
Domain 2: Tailings & R				¢441.014
Domain 3: Overburden Domain 4: Active Mine				\$441,914 \$331,660
Domain 5: Managemer				\$144,560
Subtotal (Domains an	d Sundry Items)			\$3,375,264
Contingency Post Closure Environm	ontal Manitarina	10%		\$337,526
Project Management a		10% 10%		\$337,526 \$337,526
r rojout managoment al	ia carroying	1070		φοστ,σ20
Total Security Dec	oosit for the Mining Project (excl. of GST)		\$4,387,843
. Julian Josephinty De				. , ,
	-	curity deposits re	quired by the Depar	
Note: GST is not include	d in the above calculation or as part of rehabilitation se			rtment.
Note: GST is not include Alterations have been	-	parate sheet provid	ling details of change	rtment.
Note: GST is not include Alterations have been	d in the above calculation or as part of rehabilitation se	parate sheet provid	ling details of change	rtment.
Note: GST is not include Alterations have been The proposed rehabit	d in the above calculation or as part of rehabilitation se	parate sheet provid	ling details of change	rtment.
Note: GST is not include Alterations have been The proposed rehabing This mine security calcular It is a true and accurate re	d in the above calculation or as part of rehabilitation se in made to unit prices within this spreadsheet. (Attach a sep litation design is generally consistent with the development ion has been estimated using the best available information	parate sheet provid	ling details of change	rtment. s).
Note: GST is not include Alterations have been The proposed rehabing This mine security calcular It is a true and accurate re	d in the above calculation or as part of rehabilitation seen made to unit prices within this spreadsheet. (Attach a seplitation design is generally consistent with the development ion has been estimated using the best available information flection of the total rehabilitation liability held by this mine.	parate sheet provid	ing details of change oject.	rtment. s).
Note: GST is not include Alterations have been The proposed rehabit This mine security calcular It is a true and accurate re	d in the above calculation or as part of rehabilitation seen made to unit prices within this spreadsheet. (Attach a seplitation design is generally consistent with the development ion has been estimated using the best available information flection of the total rehabilitation liability held by this mine.	parate sheet provid	ling details of change oject. 25/07/20	rtment. s).
Note: GST is not include Alterations have been The proposed rehabit This mine security calcular it is a true and accurate re Damian Power Company Respress	d in the above calculation or as part of rehabilitation seen made to unit prices within this spreadsheet. (Attach a seplitation design is generally consistent with the development ion has been estimated using the best available information flection of the total rehabilitation liability held by this mine.	parate sheet provid	ling details of change oject. 25/07/20	rtment. s).

Domain 1a: Infrastructure

Total Cost for Infrastructure Domain

\$2,457,130

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	momaton	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.)	Υ	1	allow	\$5,850		\$5,850		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Υ	0.5	km	\$15,000		\$7,500		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	100	m2	\$100.00		\$10,000		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 small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y	1331	m2	\$61.00		\$81,191	Buiding areas based o nmine survey	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	3502	m2/floor	\$90.00		\$315,180		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y	1284	m2/floor	\$130.00		\$166,920		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	Y	2280	m2/floor	\$225.00		\$513,000		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	120	m2/floor	\$225.00		\$27,000		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 onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	Y	29	m	\$185.00		\$5,365		Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Y	267	m	\$295.00		\$78,765		Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
	Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	Y	25	m	\$950.00		\$23,750		Assumes this area will be used for another land-use that requires the structure to be dug up and re-buried somewhere else.
	Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	Υ	3	allow	\$10,000		\$30,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
	Remove small underground pipe and disposal on- site/locally	Y	250	m	\$25.00		\$6,250		For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
	Remove above ground pipe (supported) and disposal on-site/locally	Y	600	m	\$12.00		\$7,200		~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
	Remove bitumen (car park and access roads) and dispose on-site/locally	Υ	700	m2	\$10.00		\$7,000		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 concrete pads & footings (<300 mm thickness) and disposal on-site/locally	Υ	1331	m2	\$36.00		\$47,916		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.

									,
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	Υ	3087	m2	\$75.00		\$231,525		Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / kn depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport
	Crush concrete to make road aggregate - 75 mm	Υ	4000	tonne	\$10.00		\$40,000		Does not include haulage of materials assumes crushing plant is readily available.
	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Y	1000	tonne	\$7.00		\$7,000	Dispose of miscell items (grave yard) to Tamworth waste disposal	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.
	•	Ter	mination of S				\$1,646,412 \$0		
Contaminated Materials	1				tali infrastruc	ture Subtotal	Ψ0		
	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Y	1	Cluster	\$15,000		\$15,000	Preliminary site investigation completed but futher PSI needed after building are removed	The preliminary investigation would include at minimum a desktop assessment of the area and site histo incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phasassesment (EP Act Section 389 (2 (iv)) or similar approved and recognish assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemistore, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	1	Cluster	\$106,000		\$106,000		The intrusive investigation would inclu at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Pha 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 an should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area > 15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling an analysis.
	Removal and disposal of contaminated water from	Υ	5000	L	\$0.35		\$1,750	2 small sumps near office	Cost for recent sump clean-up from resource activity - requires specialists
	tanks, bunded areas and sumps		 					> 500m3	treat. Overali rate for bio-remediation in the order of \$75 - \$120 /m3 depending or
	Onsite remediation of hydrocarbon contaminated soils (>500 m3) - manual land farming	Υ	500	m3	\$75.00		\$37,500	light vehicle car park	order of \$75 - \$120 /m3 depending of volume, additives, treatment duration and contamination levels. \$45 /m3 fo spreading contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the sign through aeration and/or the addition.
	Remove and dispose of asbestos (<750 m2)	Υ	150	m2	\$50.00		\$7,500	contingency, all know asbestoes removed already	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
			<u> </u>	Contan	ninated Mate	rials Subtotal	\$167,750		
Vents, Shafts and Boreholes	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes - backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Υ	10	allow	\$43		\$425	Contingency, most exploration holes are in the open pit area and already filled	May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with dril cuttings. Does not include reshaping ripping the drill pad, amelioration / seeding etc.
Roads and Tracks	l			vents, Shaf	is and Boreh	oles Subtotal	\$425		
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ	3.637073	ha	\$7,025	and Continue	\$25,550 \$25,550		D10 Dozer @ \$400 per hour and 16 igrader @ \$230 per hour (50% utilisation) - native tree/shrub seed
Earthworks / Structural Works	1			R	oads and Tra	acks Subtotal	φ 2 0,000	All lade	200
(Landform Establishment)	Minor reshaping and pushing	Y	11.3668	ha	\$3,900		\$44,331	All infrastructure and benefication areas except roads and IA3 east	D10 Dozer @ \$400 per hour and 16 I grader @ \$230 per hour (50% utilisation).
	Structural works, banks, waterways - contour banks,		1	h -	\$1,600		\$1,600		Combination of dozer and excavator work plus grader for ~4 hours each p
	drainage channels and other soil conservation measures	Y	1	ha	\$1,000		ψ1,000		ha.
	drainage channels and other soil conservation	Y	1 11.3668	na ha	\$1,130.00		\$12,844		ha.
	drainage channels and other soil conservation measures Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction) Deep rip hard stand / lay down areas	Y	11.3668	ha ha	\$1,130.00 \$960.00	nent) Subtotal		Benefication areas	ha. Undertaken using D10 dozer and 16M

Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	15003.873	m3	\$3.26		\$48,856	All infrastructure and benefication areas including roads	Undertaken with 623 scraper and 14 M grader.
	Direct seeding / fertiliser (tree or native grass species)	Υ	15.481	ha	\$4,135		\$64,014		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Single application of fertiliser (trees)	Y	15.481	ha	\$140.00		\$2,167		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.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y	5200	m3	\$80.80		\$420,160		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.
	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosyster	n Establishm	ent) Subtotal	\$535,197		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ	2	allow	\$2,500		\$5,000	two sediment traps near plant/office area	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 sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance <1km)	Y	100	m3	\$3.55		\$355	<=1km	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
				Wa	ater Managen	nent Subtotal	\$5,355		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	15.6	ha	\$925		\$14,430		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
			Maint	enance of Re	habilitated Ar	reas Subtotal	\$14,430		
					Additional Ite	ems Subtotal	\$0		
	Total Cost for Infrastructure Domain								30

Domain 2a: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

\$0

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
				Conta	aminated Mater	ials Subtotal	\$0		
		Earthworks / S	tructural Wor	ks (Landfo	rm Establishme	ent) Subtotal	\$0		
		ent) Subtotal	\$0						
					Mine Wa	ste Subtotal	\$0		
	Land Preparation and Revegetation	Growth Media De	velopment an	d Ecosyst	em Establishme	ent) Subtotal	\$0		
				1	Vater Managem	ent Subtotal	\$0		
			Mainte	nance of R	ehabilitated Ar	eas Subtotal	\$0		
				, and the second	Additional Ite	ms Subtotal	\$0		
	Total Cost fo	r Tailings	& Reject	cts Do	main			\$0	

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$441,914

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:
Roads and Tracks	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	Y	2.2	Contar	ninated Mater \$1,500	rials Subtotal	\$0 \$3,300	minor tracks to dump faces, vegetation cost included in	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim			F	Roads and Tra	cks Subtotal	\$3,300	land prep	utilisation) - no seed
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – 50 m push length	Υ	42240	m3	\$0.80	ono Guztona	\$33,713	< 50m push	Assumes D11 dozer push @ 400 bcm/hr.
	Minor reshaping and pushing	Y	10.7	ha	\$3,900		\$41,730	surface area of eastern and inpit dump	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Υ	10.7	ha	\$1,130.00		\$12,091		Undertaken using D10 dozer and 16N grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y	2	ha	\$1,600		\$3,200		Combination of dozer and excavator work plus grader for ~4 hours each pala.
	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 (rigrap) where managing water run-off fre 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.
Mine Waste		Earthworks / S	Structural Wo	rks (Landfor	m Establishm	ent) Subtotal	\$117,734		
	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly) hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	0.55	ha	\$82,000		\$45,100	Kiln and hydrator rejects	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximatel to 5.5 m to 1 mand 0.15 m - 0.2 m growtl media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km roun trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use relevant haulage and spreading in additional to any long haulage volume in 8.05.
		<u> </u>			Mine W:	aste Subtotal	\$45,100		
Land Preparation and		Ī		Ī	I IIII I	asic oubtotal	V 10,100	> 5km	
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance >5 km	Y	21400	m3	\$7.91		\$169,274		Undertaken with D10 dozer, excavato and trucks.
	Direct seeding / fertiliser (tree or native grass species)	Y	10.7	ha	\$4,135		\$44,245		Includes treating, weighing, mixing wi fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y	20000	m2	\$1.90		\$38,000		Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges frc \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Single application of fertiliser (pasture)	Υ	10.7	ha	\$420.00		\$4,494		Assumes 250 kg / ha. These rates ha fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand e this is a suitable standard rate.
	Land Preparation and Revegetation (Gro	owth Media De	evelopment a	nd Ecosyste	m Establishm	ent) Subtotal	\$256,013		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ	1	allow	\$2,500		\$2,500		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pastur grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure	Υ	100	m3	\$3.55		\$355	< =1km	Undertaken with excavator, trucks, 16

	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Υ	10.23	ha	\$925		\$9,463		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	2	ha	\$1,200		\$2,400		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Y	1.5	ha	\$1,700		\$2,550		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Y	1	ha	\$2,500		\$2,500		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
			Maint	enance of Re	habilitated Ar	eas Subtotal	\$16,913		
					Additional Ite	ems Subtotal	\$0		
	Total Cost for Ov	verburd	len & W	aste Do	main			\$441,91	4

Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$331,660

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:
	Active pit area – benches blasted and doze to acceptable grade	Y	7000	Lm	\$1.93		\$13,510	Most of the active pit will fill with water. Only limited blasting on upper benches	Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
Į.	Drill & blast faces to make safe	Υ	20000	m3	\$0.95		\$19,000	Localised areas to stabilse	Bulk Drilling say 8'9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive density of 0.9, diameter of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
ŀ	High wall treatment – (trench and safety berm)	Υ	970	m	\$90.00		\$87,300	safety berm along eastern wall. Other walls have berms	D10 dozer, 16H Grader and revegetation with pasture grass.
					Open	Cut Subtotal	\$119,810		
Earthworks / Structural Works (Landform Establishment)	Minor reshaping and pushing	Υ	1	ha	\$3,900		\$3,900	Scalps stockpile and area below water tank	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
s	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance <1 km)	Y	500	m3	\$3.90		\$1,949	< =1km	Undertaken using a 623 scraper and D10 Dozer.
<u> </u>	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Υ	1	ha	\$1,130.00		\$1,130		Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y	1	ha	\$1,600		\$1,600		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
S	Construction of spine drains / drop structures and/or stabilising water course entry points - required for arge catchments	٧	500	m2	\$27.00		\$13,500		Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	E	arthworks / S	Structural Wo	rks (Landfori	m Establishm	ent) Subtotal	\$22,079		
	Source, cart and spread growth media - haul distance <1 km	Υ	4720	m3	\$3.26		\$15,369	<=1km Allowance for bulk fill on top three benches on eastern side	Undertaken with 623 scraper and 14 M grader.
	Direct seeding / fertiliser (tree or native grass species)	Υ	2.36	ha	\$4,135		\$9,759		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
:	Single application of fertiliser (pasture)	Υ	2.36	ha	\$420.00		\$991		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.
\$	Spoil amelioration (adding lime / gypsum etc.)	Υ		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate.
9	growth media amelioration with biosolids	Υ	2.36	ha	\$1,015		\$2,395		Recent experience with agronomy projects.
\$	Security fence around steep section of high wall	Υ	2143	m	\$64.00		\$137,152		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh & 32 mm post not concreted
F	Purchase and erect warning signs	Υ	85	allow	\$250.00		\$21,250		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosyste	m Establishm	ent) Subtotal	\$186,917		<u> </u>
c	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ	1	allow	\$2,500		\$2,500		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and pasture grass.
, <u>-</u>	Remove sediments from the floor of the dam to enable it to be converted into clean water structure	Υ	100	m3	\$3.55		\$355	< =1km	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
6	(haul distance <1km)								
6				W	ater Managen	nent Subtotal	\$2,855		
6			Mainte		ater Managen habilitated Ar		\$0		
6			Maint			eas Subtotal			

Domain 5a: Management Activities

Total Cost for Management Activities

\$144,560

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	N		ML	\$3,600				Rate can fluctuate depending on treatment type however this is a suitabl standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	N		ML	\$1,500				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
A 15' '	_			W	ater Managen	nent Subtotal	\$0		
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	N		m	\$2,500				Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	N		m	\$1,500				Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	N		m	\$750.00				Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	N		m2	\$6.00				Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
	_				Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	N		ha	\$150.00				Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y	48.9	ha	\$400.00		\$19,560		Undisturbed areas within the lease boundary that require land manageme activities.
	-		Maint	tenance of Re	habilitated Ar	eas Subtotal	\$19,560		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				Item for the redistribution of Aborigina artefacts, preservation of European heritage items or a combination of activities.
					Heritage Ite	ems Subtotal	\$0		
Sundry Items	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	N		allow	\$100,000				Provisional sum to be used to refine the conceptual closure plan into a detailect 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 an 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, fin land use requirements and knowledge base investigations can range from ~575k to >\$1 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥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 Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no	Y	1	allow	\$90,000		\$90,000		Provisional sum to be used to refine the conceptual closure plan into a detain closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfisks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate. Assumes sediment control is the key
	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				concern for rehabilitation e.g. small mines, exploration operations. Includ risk assessment, sampling and analys on <5 samples, one study and Closur Plan.

		_		_					<u>-</u>
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	N		allow	\$300,000				Includes costs for key investigations and studies including designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range to \$3 M. Sites with more than 1 pit to add
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		allow	\$125,000				Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry. Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	N		allow	\$27,950				Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Effects or Environmental Statement.
	Site security during closure	N		yr.	\$75,000				Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	N		allow	\$0			Select type of HAZMAT Clean- up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Removal and disposal of radiation devices	N		each	\$31,630				Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc). Source Isotope type, quantity, strength, weight, source holder weight, pick-up location (among others) will directly affect pricing.
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	N		allow	Use alternate rate cell				Provisional sum.
Mahilianian and Damahiliania			I	I	Sundry Ite	ems Subtotal	\$90,000		
Mobilisation and Demobilisatio	Mobilisation & Demobilisation for small mine or quarry - small fleet	N		Item	\$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.
				item	\$300,000				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							
		N		item	\$500,000	siam Cultura	\$35,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Additional Items	km but <1000 km) Mobilisation & Demobilisation (Distance to site >1000 km)	N	M		d Demobilisa	tion Subtotal	\$35,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required. This item includes < <to added="" be="" by<="" td=""></to>
Additional Items	km but <1000 km) Mobilisation & Demobilisation (Distance to site >1000 km) Other 1 <insert></insert>	N N	M		d Demobilisa This is	tion Subtotal	\$35,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Additional Items	km but <1000 km) Mobilisation & Demobilisation (Distance to site >1000 km)	N	M		d Demobilisa	tion Subtotal	\$35,000		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required. This item includes < <to added="" be="" by="" operator="" the="">></to>

Total Cost for Management Activities	\$144,560

Domain 1b: Infrastructure

Total Cost for Infrastructure 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:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Υ		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.)	Υ		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 included disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material onsite/locally	Υ		Item	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Y		m2	\$40.00		\$0		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Υ		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	Υ		m2/floor	\$90.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y		m2/floor	\$130.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	Υ		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.

				1	7
Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	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	Υ	m	\$75.00	\$0	Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Υ	allow	\$92,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	Υ	allow	\$77,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	Y	allow	\$62,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Υ	allow	\$65,000	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Υ	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	Υ	m	\$185.00	\$0	Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$295.00	\$0	Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally. This may include small scale fixed material stacking infrastructure	Υ	m	\$850	\$0	Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	Υ	m	\$150.00	\$0	Due to no canopy or infrastructure attached.
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	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. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	Υ	allow	\$30,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	Υ	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	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	Υ	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	Υ	allow	\$30,000.00	\$0	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	Υ	m	\$25.00	\$0	For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y	m	\$60.00	\$0	For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Υ	m	\$165.00	\$0	For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Υ	m	\$12.00	\$0	-300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.

						,
Remove surface pipelines (unsupported) and disposal on-site/locally	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	\$20,000.00		\$0	Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	Y	m2	\$10.00		\$0	Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$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		\$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 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 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	\$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 alternate rate option and add \$0.90 / km for transport.
Crush concrete to make road aggregate - 75 mm	Υ	tonne	\$10.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 50 mm	Υ	tonne	\$13.00		\$0	Does not include haulage of materials - assumes crushing plant is readily
Crush concrete to make road aggregate - 30 mm	Υ	tonne	\$15.00		\$0	available. Does not include haulage of materials - assumes crushing plant is readily
Remove fence (cyclone/wire fence) and disposal on-	Υ	m	\$20.00		\$0	available. Roll up fence and remove posts.
site/locally Removal of small plastic tanks	Y	each	\$1,000.00		\$0	Remove small poly tanks used for water
Demolish and remove galvanised/corrugated light	Υ	each	\$500.00		\$0	storage, etc. Demolish and remove small lightweight metal tanks. No costs included for
weight tanks			*******		**	managing liquids, etc. Cost includes demolition and removal of
Demolish and remove communication towers	Y	each	\$5,000.00		\$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	\$50,000.00		\$0	Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Y	tonne	\$7.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y	tonne	\$9.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y	tonne	\$12.50		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	Υ	tonne	\$32.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	Y	tonne	\$36.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	Y	allow	Use alternate rate cell		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill - fees (general waste)	Y	tonne	\$193.00		\$0	Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Y	tonne	\$174.00		\$0	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
	Ter	mination of Services and D	Demolition Wo	orks Subtotal	\$0	

Contaminated Materials Undertal This acc where a are mult may be t	ove train loading facilities and disposal on-	Y	m m2 ha R	\$60.00 \$185.00 \$2,860 ail Infrastruct	ture Subtotal	\$0 \$0 \$0 \$0		Remove all materials to allow area to be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent. Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent. D10 Dozer and 16 H Grader (50% utilisation). The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and
Contaminated Materials Undertal This acc where a are mult may be to	page rail 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	Y	ha R	\$2,860 ail Infrastruct	ture Subtotal	\$0 \$0		including gantries and control structures. Does not include transport to regional disposal facility or equivalent. D10 Dozer and 16 H Grader (50% utilisation). The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and
Contaminated Materials Undertal This acc where a are mult may be to	ritake a preliminary site investigation (Phase 1). accounts for current and historical locations a reas of disturbance are clustered. If there utiliple cluster areas on site, multiple studies		R	ail Infrastruct	ture Subtotal	\$0		Utilisation). The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and
Contaminated Materials Undertal This acc where a are mult may be I	rtake a preliminary site investigation (Phase 1). accounts for current and historical locations a areas of disturbance are clustered. If there utiliple cluster areas on site, multiple studies	Y			ure Subtotal			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) (i) 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
Underta This acc where a are mult may be I	accounts for current and historical locations e areas of disturbance are clustered. If there sultiple cluster areas on site, multiple studies	Y	Cluster	\$15,000		\$0		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) (i) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and
								product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle re- fuel, sewage treatment, secondary workshop, chemical storage etc.)
with sma account areas of multiple	rtake an intrusive site investigation on sites mall footprints to investigate e.g. £15 ha. This ints for current and historical locations where of disturbance are clustered. If there are led cluster areas on site, multiple intrusive tigations should be included.	Υ	Cluster	\$44,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 Intrusive investigation (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g. ~10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
with larg account areas of multiple	rtake an intrusive site investigation on sites arge footprints to investigate e.g15 ha. This ints for current and historical locations where of disturbance are clustered. If there are ple cluster areas on site, multiple intrusive igations should be included.	Y	Cluster	\$106,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAOP, fieldwork, sampling and analysis.
small for investiga contamin	op a Remediation Action Plan on sites with footprints based on outcomes of intrusive tigation including strategies to address mination 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.
large for investigation	op a Remediation Action Plan on sites with footprints based on outcomes of intrusive ligation including strategies to address mination exceedances	Υ	allow	Use alternate rate cell		\$0		Assumes complex site; detailed design drawings required for cover.
	oval and disposal of contaminated water from , bunded areas and sumps	Y	L	\$0.35		\$0	Select Haul Distance Here	Cost for recent sump clean-up from resource activity - requires specialists to treat.

								_
	Remove material (carbonaceous / metailiterous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Y	m3	Select from List				Inis item includes scraping and remova of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment or 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, 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	Υ	m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Y	m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility.
							Select Volume Here	Spreading of contaminated soils on a
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Υ	m3	Select from List				prepared surface and stimulation of aerobic microbial activity within the soil through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of 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 proces 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	\$290		\$0		Landfill fees to regional landfill.
	Treatment of known Acid Sulfate Soils	Y	ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Υ	m2	\$1		\$0		Provisional sum for cutting using rippin tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y	tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Υ	tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y	tonne	Select from List		40	Select Haul Distance Here	Assumes transport in a 20,000 L tanker Add disposal costs to additional items
Vents, Shafts and Boreholes		Υ			rials Subtotal	\$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanker Add disposal costs to additional items
Vents, Shafts and Boreholes		Y		List	rials Subtotal	\$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Add disposal costs to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed.
Vents, Shafts and Boreholes	Haul Distance from list) Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes		Contan	List ninated Mater	ials Subtotal	·	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary	Y	Contan	List ninated Mater \$44.55	ials Subtotal	\$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, and/or manually backfilling the hole with drill cuttings. Does not include reshaping ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines.
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y	depth (m)	List minated Mater \$44.55 \$43	ials Subtotal	\$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open comploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed. May include cutting of casing, May include cutting of casing, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / right pad a melioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel	Y	depth (m) allow	\$44.55	ials Subtotal	\$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, cutting steel collar 6 m below surface,
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical	Y	depth (m) allow allow	List ninated Mater \$44.55 \$43 \$5,700	ials Subtotal	\$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore	Y Y Y Y Y	depth (m) allow allow allow	\$44.55 \$43 \$5,700 \$6,960 \$17,890	ials Subtotal	\$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cuttings of casing, May include cuttings and caping. Does not include rewith drill cuttings. Does not include reshaping / pipping the drill pad, amelioration / secting etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Includes multi skin sleaves to prevent
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage	Y Y Y Y Y Y	depth (m) allow allow allow allow allow	\$44.55 \$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000	ials Subtotal	\$0 \$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / specifically ground to the proper of the properties of the pro
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e., where sealing aquifers) Boreholes – cap and seal sealing apuriers)	Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow	\$44.55 \$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000	ials Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed. May include cutting of casing, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / rightly the properties of the proper
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e. goal drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes or vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad	Y Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow allow allow	\$44.55 \$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000	ials Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m: 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sileaves to prevent anculer multi skin sileaves to prevent anculer multi skin sleaves to prevent anculer multing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove rubbis, push sumpin, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbis locally
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill hole sand pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral	Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow ltem ltem	\$44.55 \$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed. Masy include cutting of casing, and/or manually backfilling the hole with drill cuttings. Does not include reshabilitation / seeding etc. Include grouting and capping 100 - 2(m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting stee Collar 6 m below surface, grouting and capping. Surface-oin-seam gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes multi skin sleaves to prevent aquifer mixing. Encludes multi skin sleaves to prevent aquifer mixing. Bog growth and the special composes to the composes of the comp
	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes open bore boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vert	Y Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow ltem ltem each Vents, Shafe	\$44.55 \$44.55 \$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to ground and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rig and seed. Masy lanculade cutting of casing, Masy lanculade cutting of casing, Mary lanculade cutting of casing, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting stee Collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes arge diameter boreholes use for supplying electricity (66kV). Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill cappe collar and cover with nearby organic or growth material
Vents, Shafts and Boreholes Roads and Tracks	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – prout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e. goal drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas = minor works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow ltem ltem	\$44.55 \$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / pipping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 2 in exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Includes large dianage boreholes. Includes large dianage boreholes. Includes large dianage boreholes. Includes large dianeter boreholes use for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and equipment, disposal of rubbish locally on sale Sealing required, but not complete fillir with concrete/grout Assumes -6 m road width - 16H Grade Assumes -6 m road width - 16H Grade D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%)
	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goal drainage etc.) Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / vehicle park-up	Y Y Y Y Y Y Y Y Y Y Y	depth (m) allow allow allow allow allow allow ltem ltem vents, Shaf	\$44.55 \$43 \$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$1,340 \$1,340 \$1,040.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed. May include cutting of casing, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Vertical gas drainage boreholes use for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove hubbish, push sumps in, rehabilitate pads and tacks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on seling required, but not complete fillir with concrete/grout Cut collar, remove, cap, backfill cappecollar and cover with nearby organic or growth material Assumes -6 m road width - 16H Grade D10 Dozer @ \$400 per hour and 16 H

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

	Total Cost fo	r Infras	tructur	P Doma	in			\$0	
					Additional Ite	ems Subtotal	\$0		
			Maint	enance of Re	habilitated Ar		\$0		
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re construction of landform.
	Existing rehabilitation repair - major	Υ	_	ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface wate management.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills significant growth media replacemen
	Existing rehabilitation repair - minor	Υ		ha	\$1,200		\$0		Areas requiring minor repair - rills, m growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Υ		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilisi minor re-shaping, erosion control, inspections/audits - does not include major repair works.
				W	ater Managen	nent Subtotal	\$0		
	Removal of evaporation fans and/or other water transfer and management infrastructure	Υ		allow	\$25,000		\$0		Provisional sum for removal of water management infrastructure.
	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 List			Select Haul Distance Here	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	Select Haul Distance Here	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use to alternate land-user - D6 Dozer (or similar) + pasture grass. This item includes the volume of
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 t alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and past grass.
	Land Preparation and Revegetation (Gro	wth Media D	evelopment a	nd Ecosyster	m Establishm	ent) Subtotal	\$0		inyaramalaming.
	Utilise biotic soil media - organic topsoil alternative	Υ		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior hydromulching.
	Growth media supplementation with manure	Υ		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approxima depth of 0.2 m into stockpiles; load haul to final rehabilitation location required or respreading where necessary.
	Clearing and grubbing of trees and vegetation	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.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$60/m3 for imported material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Υ		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$70/m3 for imported material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - S signs for the occupational environm installed every 25 m.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Construct no-climb stock fence around rehabilitated areas	Υ		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	growth media amelioration with biosolids	Υ		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate.

Domain 2b: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

\$0

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

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

	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y		L	\$0.35		\$0		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) /	Υ		m3	Select from List			Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Y		m3	\$800.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	Y		m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Y		m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	у		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Υ		Item	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y		m3	\$165.00		\$0		Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	Y		m2	\$50.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Remove and dispose of asbestos (>750 m2)	Y		m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Υ		tonne	\$290		\$0		Landfill fees to regional landfill.
				Contan	ninated Mater	ials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Υ		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Grader.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Υ		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Υ		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally	Y						Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised
	(Select Haul Distance from list)	,		m3	Select from List				material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
	(Select Haul Distance from list)		Structural Wo			ent) Subtotal	\$0		surface using an excavator, dozer and grader to enable the establishment of
Earthworks / Structural Works (Landform Establishment)	(Select Haul Distance from list)		Structural Wo		List	ent) Subtotal	\$0	Select Push Length Here	surface using an excavator, dozer and grader to enable the establishment of
Earthworks / Structural Works (Landform Establishment)	(Select Haul Distance from list) Rajor bulk pushing to achieve grades nominated in	Earthworks / S	Structural Wo	rks (Landforn	List m Establishm Select from	ent) Subtotal	\$0 \$0	Ţ.	surface using an excavator, dozer and grader to enable the establishment of rehabilitation. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
Earthworks / Structural Works (Landform Establishment)	(Select Haul Distance from list) Rajor bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Earthworks / S	Structural Wo	rks (Landforn	List n Establishm Select from List	ent) Subtotal		Select Haul Distance Here	surface using an excavator, dozer and grader to enable the establishment of rehabilitation. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
Earthworks / Structural Works (Landform Establishment)	(Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined	Y Y	Structural Wo	r ks (Landforr m3 ha	Select from List \$3,900 Select from	ent) Subtotal		Select Haul Distance Here	surface using an excavator, dozer and grader to enable the establishment of rehabilitation. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the volid and enable the establishment of
Earthworks / Structural Works (Landform Establishment)	(Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing 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) Trim, rock rake & deep rip (includes levelling /	Y Y	Structural Wo	m3 ha m3	List n Establishm Select from List \$3,900 Select from List	ent) Subtotal	\$0	Select Haul Distance Here	surface using an excavator, dozer and grader to enable the establishment of rehabilitation. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M
Earthworks / Structural Works (Landform Establishment)	(Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing 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) Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction) Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y Y Y Y	Structural Wo	m3 ha m3	List n Establishm Select from List \$3,900 Select from List \$1,130.00	ent) Subtotal	\$0	Select Haul Distance Here	surface using an excavator, dozer and grader to enable the establishment of rehabilitation. Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M grader. Combination of dozer and excavator work plus grader for -4 hours each per

Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	*	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials competent rock etc.) , and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
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 / 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.).

Ī			ı — —						7
	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantity hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y		ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical insk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately > 2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g., acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y		allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ		allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping - reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Υ		ha	\$843,000		\$0		This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y		allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Long nausage son / weamerea rock / seament e.g.	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.). Capping/cover material available witnin
	capping/covers_removal of contamination_etc.	Y		m3	List	aste Subtotal	\$0	Select Haul Distance Here	50 km round trip e.g. waste /
Land Preparation and								Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	У		m3	Select from List				Virgin Excavated Natural Material (VENM) may need to be externally sourced. Includes treating, weighing, mixing with
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	Direct seeding / fertiliser (tree or native grass species)	Υ		ha	\$4,135		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10

	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of -4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Υ		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate. Assumes 2.5 t / ha as an average
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		application rate.
	growth media amelioration with biosolids	Υ		ha	\$1,015		\$0		Recent experience with agronomy projects. Standard rate for no-climb stock
	Construct no-climb stock fence around rehabilitated areas	Υ		m	\$22.00		\$0		fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Υ		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Υ		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Υ		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosyster	n Establishm	ent) Subtotal	\$0		1
water management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Υ		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				Wa	ater Managen	ent Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Υ		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	Υ		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
			Maint	enance of Re	habilitated Ar		\$0 \$0		
	Total Cost for 1	Tailings	& Reie			,s Subtotal	Ψ	\$0	
	10(a) 603(10)	amings	a neje	ota DUI	Hall			ψυ	

Domain 3b: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$0

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Y		ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Υ		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Υ		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
	Long naulage water (clean or contaminated) (Select Haul Distance from list)	Υ		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor				ninated Mater	ials Subtotal	\$0		
Rodus and Tracks	works including deep rip and trim	Υ		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Grader
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Υ		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Υ		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-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 other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
Earthworks / Structural Works				R	oads and Tra	cks Subtotal	\$0	Calant Bunk I awath Han	ı
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
		'							
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Minor reshaping and pushing 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		ha m3	\$3,900 Select from List		\$0	Select Haul Distance Here	grader @ \$230 per hour (50%
	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				Select from		\$0	Select Haul Distance Here	grader @ \$230 per hour (50% utilisation). This item 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 steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	grader @ \$230 per hour (50% utilisation). This item 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 steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back
	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	Select from List		\$0	Select Haul Distance Here	grader @ \$230 per hour (50% utilisation). This item 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 steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised. Undertaken using D10 dozer and 16M
	Fill dams, volds etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List) Shotcrete application on cuttings and steep slopes Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction) Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y		m3 m2	\$185.00 \$1,130.00		\$0 \$0	Select Haul Distance Here	grader @ \$230 per hour (50% utilisation). This item 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 steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised. Undertaken using D10 dozer and 16M grader. Combination of dozer and excavator work plus grader for -4 hours each per

Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.), and / or additional requirements (i.e., geofabric / composite lining etc.).

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

	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Υ		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Υ		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Υ		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	Υ		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate. Assumes 2.5 t / ha as an average
	Spoil amelioration (adding lime / 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 areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Υ		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Gro	wth Media De	evelopment a	nd Ecosyster	n Establishm	ent) Subtotal	\$0		Description of the continued of the
	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ -\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Υ		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - 06 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				Wa	ter Managem	nent Subtotal	\$0		
	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Υ		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Υ		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	Υ		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
			Maint	enance of Re	habilitated Ar		\$0 \$0		
						enis Subtotal	φυ	***	
	Total Cost for Ov	/orhurd	12n X. 14	2610 112	ımaın			\$0	

Domain 4b: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$0

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

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

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

Domain 5b: Management Activities

Total Cost for Management Activities

\$0

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

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

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

Domain 1c: Infrastructure

Total Cost for Infrastructure Domain

\$0

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

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total 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)	Υ		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.)	Υ		allow	\$5,850		\$0		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	\$15,000		\$0		Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass- manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		ltem	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material onsite/locally	Υ		Item	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Υ		m2	\$40.00		\$0		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y		m2	\$61.00		\$0		Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	Y		m2/floor	\$90.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y		m2/floor	\$130.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	Υ		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.

Division of Resources and Geoscience Rehabilitation Cost Estimation Tool - Open_Cut (3)

				1	7
Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	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	Υ	m	\$75.00	\$0	Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Υ	allow	\$92,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	Υ	allow	\$77,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	Y	allow	\$62,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Υ	allow	\$65,000	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Υ	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	Υ	m	\$185.00	\$0	Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$295.00	\$0	Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally. This may include small scale fixed material stacking infrastructure	Υ	m	\$850	\$0	Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	Υ	m	\$150.00	\$0	Due to no canopy or infrastructure attached.
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	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. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	Υ	allow	\$30,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	Υ	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	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	Υ	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	Υ	allow	\$30,000.00	\$0	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	Υ	m	\$25.00	\$0	For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y	m	\$60.00	\$0	For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Υ	m	\$165.00	\$0	For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Υ	m	\$12.00	\$0	-300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.

Example protection from used basis or dain in relatively proposed protection from used basis or dain in relatively proposed protection from used basis or dain in relatively proposed protection from used basis or dain in relatively proposed protection from used basis or dain in relatively proposed protection from used basis or dain in relatively proposed or discretization from the relative proposed or discretization from th		
Moments promoted profession and paster of date. Y Interest to provide an extraction paging and design and de	Y	-300 mm pipes and assumes pipes ar used for water transfer between pits (c similar) and remotely located. Does no include transport to regional disposal facility or equivalent.
Description for the configuration of access model and expose on site for configuration of access model and expose on site for configuration of access model and expose on site for configuration of access model and expose on site for configuration of access model and expose on site for configuration of access model and expose on site for configuration of access model and expose on site for configuration of access model and expose of configuration of access model access mo	r dam tank/s Y allo	Includes equipment for retrieval - boat etc. and labour. Does not include transport to regional disposal facility of equivalent.
Semon concrete pads & footings (-000 mm officience) and dispose on-site footings (-000 mm offici	and Y m2	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 / k for transport.
Permove concrete pads & footings (~200 mm thickness) and disposal or electrically and electric	Y m2	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 / k for transport.
Remove concrete paids & toolings (-300 mm trackcreas) and disposal considerability. Y	Y m2	Breaking up slab and disposal or for conversion to aggregate. Generally / kaulage rates will be \$0.60 - \$1.20 / kt depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transpor
Crush concrete to make road aggregate - 25 mm Y tonne \$10.00 \$0 asset concrete to make road aggregate - 50 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 50 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete to make road aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete ton aggregate - 30 mm Y tonne \$15.00 \$0 asset concrete ton aggregate - 30 mm Aggregate - 30	Y m2	Breaking up slab and disposal or for conversion to aggregate. Generally / kaulage rates will be \$0.60 - \$1.20 / kt depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transpor
Crush concrete to make road aggregate - 50 mm Y tonne \$13,00 \$0 Decided Council make road aggregate - 50 mm Y tonne \$15,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000,00 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,000 \$0 Decided Council make road aggregate - 30 mm Y tonne \$15,0	nm Y tonr	Does not include haulage of materials assumes crushing plant is readily available.
Count	nm Y tonr	Does not include haulage of materials assumes crushing plant is readily available.
Remove fence (cyclone/wire fence) and disposal on authorized face and disposal on state locally in an authorized face and state locally in a state locally in a state local face and state local face	nm Y tonr	Does not include haulage of materials assumes crushing plant is readily available.
Removal of small plastic tranks Y each \$1,000.00 \$0 Removal of small plastic tranks Y each \$500.00 \$0 Demolish and remove galvan/sect/corrugated light Y each \$500.00 \$0 Demolish and remove communication towers Y each \$5,000.00 \$0 Commolish and remove communication towers Y each \$5,000.00 \$0 Assample of the common communication towers Y allow \$50,000.00 \$0 Assample of the common communication towers Y allow \$50,000.00 \$0 Assample of the common communication towers Y tonne \$7,00 \$0 Common common communication towers Y tonne \$7,00 \$0 Common c	sal on- Y m	Roll up fence and remove posts.
Demolish and remove galvanised/corrugated light weight tanks Demolish and remove communication towers V each \$5,000.00 \$0 Demolish and remove communication towers V each \$5,000.00 \$0 Removal of US services (power within main gate areas, etc.) Removal of US services (power within main gate areas, etc.) Waste disposal to Council landfill (general waste) - y tonne \$7,00 \$0 Waste disposal to Council landfill (general waste) - y tonne \$9,00 \$0 Waste disposal to Council landfill (general waste) - y tonne \$9,00 \$0 Waste disposal to Council landfill (general waste) - y tonne \$9,00 \$0 Waste disposal to Council landfill (general waste) - y tonne \$9,00 \$0 Waste disposal to Council landfill (general waste) - y tonne \$12,50 \$0 Waste disposal to Council landfill (general waste) - y tonne \$12,50 \$0 Waste disposal to Council landfill (general waste) - y tonne \$12,50 \$0 Waste disposal to Council landfill (industrial demolillor) / concrete / scrap metal) - haulage >10 Waste disposal to Council landfill (industrial demolillor) / concrete / scrap metal) - haulage >15 Waste disposal to Council landfill (industrial demolillor) / concrete / scrap metal) - haulage >15 Waste disposal to Council landfill (industrial demolillor) / concrete / scrap metal) - haulage >15 Waste disposal to Council landfill (industrial demolillor) / concrete / scrap metal) - haulage >25 Y allow Waste disposal to Council landfill industrial demolillor / concrete / scrap metal) - haulage >25 Y allow Waste disposal to Council landfill industrial demolillor / concrete / scrap metal) - haulage >25 Y allow Waste disposal to Council landfill industrial demolillor / concrete / scrap metal) - haulage >25 Y allow Waste disposal to Council landfill industrial demolillor / concrete / scrap metal) - haulage >25 Y allow industrial demolillor / concrete / scrap metal) - haulage >25 Y allow industrial demolillor / concrete / scrap metal) - haulage >25 Y allow industrial demolillor / concrete / scrap metal) - haulage >25 Y allow industrial demol	Y eac	Remove small poly tanks used for wat
weight tanks Demolish and remove communication towers Y each \$5,000.00 \$0 CC CC CC Removal of US services (power within main gate areas, etc.) Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km Waste disposal to Council landfill (general waste) - haulage >10 km but <25 km but <26 km but <15 km Waste disposal to Council landfill (general waste) - y tonne \$12,50 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	ight	storage, etc. Demolish and remove small lightweigh
Demoish and remove communication towers Y each \$5,000.00 \$0 tower within main gate areas, etc.) Removal of UG services (power within main gate areas, etc.) Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km Waste disposal to Council landfill (general waste) - y tonne \$9,00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	Y eac	metal tanks. No costs included for managing liquids, etc.
Again areas, etc.) Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km Waste disposal to Council landfill (general waste) - y tonne \$7.00 \$0 Rat Co. Again but <25 km Waste disposal to Council landfill (general waste) - y tonne \$9.00 \$0 \$0 Rat Co. Co. Waste disposal to Council landfill (general waste) - y tonne \$12.50 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	Y eac	Cost includes demolition and removal tower only; separate costs required for disconnection of services, demolition of footings, etc.
Waste disposal to Council landfill (general waste) - Y tonne \$7.00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	ate Y allo	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 >15 km but <25 km Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 y land waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <25 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <20 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <30 km Waste disposal to Council landfill - fees (general waste) Waste disposal to Council landfill - fees (general waste) Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal) - haulage >25 km but <30 km Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal) - haulage >25 km but <30 km Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal) - haulage >25 km but <30 km Waste disposal to Council landfill - fees (industrial waste)	ste) - Y tonr	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 Y tonne \$32.00 \$0 \$0 Rat Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 Y tonne Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 Y allow Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 Y allow Waste disposal to Council landfill - fees (general waste) Waste disposal to Council landfill - fees (general waste) Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal) - haulage >25 Y tonne \$193.00 \$0 \$0 Energy Council landfill - fees (general waste) Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal) - haulage >25 Y allow Waste disposal to Council landfill - fees (industrial waste) Waste disposal to Council landfill - fees (industrial waste) Waste disposal to Council landfill - fees (industrial waste)	ste) - Y tonr	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 Y tonne \$32.00 \$0 tee disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 Y tonne \$36.00 \$0 The properties of the pr	ste) - Y tonr	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 Y tonne \$36.00 \$0 tee disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 Y allow Use alternate rate cell \$0 Use alternate rate cell \$0 Fee to la landfill - fees (general waste) Waste disposal to Council landfill - fees (general waste) Waste disposal to Council landfill - fees (industrial rate demolities) Waste disposal to Council landfill - fees (industrial rate demolities) Waste disposal to Council landfill - fees (industrial rate demolities) Waste disposal to Council landfill - fees (industrial rate demolities)	>10 Y tonr	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 Y allow Use alternate rate cell \$0 Concerded (scrap metal) - haulage > 25 Y allow Use alternate rate cell \$0 Concerded (scrap metal) - haulage > 25 Y Use alternate rate cell \$0 Fee to keep to keep scrap metal) - haulage > 25 Y Waste disposal to Council landfill - fees (general waste) Fee demoly demol	>15 Y tonr	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill - fees (general y tonne \$193.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal to Council landfill - fees (industrial y tonne \$171.00 \$0 sep app for disposal tonne \$171.00 \$0 sep app for disposal tonne \$171.00 \$0 sep	>25 Y allo	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.
den was Waste disposal to Council landfill - fees (industrial v toppe \$174.00 sp rate	ral Y tonn	Fee for waste disposal of general was 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.
demolition / concrete / scrap metal) I unite \$174.00 Imal this app	itrial Y tonn	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transporates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Termination of Services and Demolition Works Subtotal \$0	Termination of Services	

	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Y					Remove all materials to allow area to be reshaped and rehabilitated - does not
·			m	\$60.00		\$0	include transport to regional disposal facility or equivalent.
	Remove train loading facilities and disposal on- ite/locally	Y	m2	\$185.00		\$0	Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
	Reshape rail spur and load out areas. Does not not not growth media and revegetation	Υ	ha	\$2,860		\$0	D10 Dozer and 16 H Grader (50% utilisation).
T w a	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Υ	Cluster	\$15,000	ure Subtotal	\$0 \$0	The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle refuel, sewage treatment, secondary workshop, chemical storage etc.)
w a a m	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for current and historical locations where reas of disturbance are clustered. If there are nultiple cluster areas on site, multiple intrusive nvestigations should be included.	Y	Cluster	\$44,000		\$ 0	The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g. –10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
w a a m	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 nultiple cluster areas on site, multiple intrusive nvestigations should be included.	Y	Cluster	\$106,000		\$0	The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area > 15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
s ir c	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive nvestigation 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 arge footprints based on outcomes of intrusive nvestigation including strategies to address	Y	allow	Use alternate rate cell		\$0	Assumes complex site; detailed design drawings required for cover.
ir	contamination exceedances						Cost for recent sump clean-up from

	spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Y		m3	Select from List				of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Y		m3	\$800.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	Υ		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	Υ		m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Υ		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic 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 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		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Υ		tonne	\$290		\$0		Landfill fees to regional landfill.
	Treatment of known Acid Sulfate Soils	Υ		ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Υ		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from			Select Haul Distance Here	landfill. Assumes transport in a 20,000 L tanker. Add disposal costs to additional items
	Fladi Distance from list)	l	J.	Contan	inated Mater	ials Subtotal	\$0		where warranted.
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Υ		depth (m)	\$44.55		\$0		Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation -
l .									push cover of nearby growth media, rip and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Υ		allow	\$43		\$0		
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary	Y		allow	\$43 \$5,700		\$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration /
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)								and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grooting and capping.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel	Y		allow	\$5,700		\$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface,
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-	Y		allow	\$5,700 \$6,960		\$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore	Y Y Y		allow allow	\$5,700 \$6,960 \$17,890		\$0 \$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surfaceto-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage	Y Y Y Y		allow allow allow allow	\$5,700 \$6,960 \$17,890 \$16,000		\$0 \$0 \$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG	Y Y Y Y Y Y		allow allow allow allow allow	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000		\$0 \$0 \$0 \$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV),
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	Y Y Y Y Y Y Y		allow allow allow allow allow allow	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral	Y Y Y Y Y Y Y		allow allow allow allow allow allow ltem	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site
Back and V-viv	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars (mineral exploration)	Y Y Y Y Y Y Y Y		allow allow allow allow allow ltem ltem	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$1,340 \$41,340 \$415 \$3 and Boreho	oles Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surfaceto-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y Y Y Y Y Y Y Y		allow allow allow allow allow ltem ltem	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$1,340 \$415	oles Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / vehicle park-up areas – minor minor earther obunds – minor earthe	Y Y Y Y Y Y Y Y		allow allow allow allow allow ltem ltem vents, Shafe	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$1,340 \$41,340 \$415 \$3 and Boreho	oles Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent agulfer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material Assumes –6 m road width - 16H Grader. D1D Dazer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
Roads and Tracks	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.) Boreholes – cap and seal open bore holes - surfaceto-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage Boreholes – cap and seal service boreholes for UG coal operations Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration) Unsealed roads / vehicle park-up areas = minor works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	Y Y Y Y Y Y Y Y Y Y		allow allow allow allow allow ltem tem vents, Shafe	\$5,700 \$6,960 \$17,890 \$16,000 \$35,000 \$45,000 \$41,340 \$415 \$ and Boreho \$1,040,000	oles Subtotal	\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$		and seed. May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc. Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines. Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping. Surface-to-in-seam gas drainage boreholes. Vertical gas drainage boreholes. Includes multi skin sleaves to prevent aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc. Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site Sealing required, but not complete filling with concrete/grout. Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material Assumes -6 m road width - 16H Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%

with windre earthworks seed (pasts Unsealed r with windre earthworks seed (native earthworks seed (native earthworks feed), from r (Select Hai	roads / haul roads / vehicle park-up areas rows and/or small earthen bunds – Minor ss, final trim and deep rip, ameliorate and sture grass) roads / haul roads / vehicle park-up areas rows and/or small earthen bunds – Minor ss, final trim and deep rip, ameliorate and vive tree/shrub/grass)	Υ							D10 Dozer @ \$400 per hour and 16 H
with windre earthworks seed (native Remove steed, from (Select Har	rows and/or small earthen bunds – Minor cs, final trim and deep rip, ameliorate and			ha	\$4,870		\$0		grader @ \$230 per hour (50% utilisation) - pasture grass seed
etc.) from r (Select Hai		Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	stabilised material (blue metal, aggregate roadways and disposal on-site/locally aul 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 othe surface using an excavator, dozer and grader to enable the establishment of
				R	oads and Tra	cks Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment) Major bulk the approv	k pushing to achieve grades nominated in val/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	haping and pushing	Υ		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	works, banks, waterways - contour banks, channels and other soil conservation	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
spread to o	voids etc Source local material, cart and cap or backfill, cap thickness determined ral / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	rake & deep rip (includes levelling / ng and rip in 1 direction)	Υ		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	hard stand / lay down areas	Υ		ha	\$960.00		\$0		D10 deep ripping.
	ion of spine drains / drop structures and/or water course entry points - required for hments	Y		m2	\$27.00		\$0		Installation of on-site rock material (rip- rap) where managing water run-off fror disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	E	arthworks / S	Structural Wo	rks (Landfori	m Establishm	ent) Subtotal	\$0		
Development and Ecosystem Establishment) Distance fr		Υ		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	mature trees (>15 cm)	Υ		allow	\$15.00		\$0		4 m centres.
Planting tu	ube stock (<15 cm)	Υ		allow	\$6.60		\$0		4 m centres.
	eding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	eding / fertiliser (pasture grass species) eding / fertiliser (tree or native grass	Y		ha ha	\$1,875 \$4,135		\$0 \$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
Direct seed species) Hydro-seet									Iertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepare surfaces under irrigation e.g. sewage
Direct sees species) Hydro-seet tack with n	eding / fertiliser (tree or native grass	Y		ha	\$4,135		\$0		Iertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing wit Iertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fro 50.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepar surfaces under irrigation e.g. sewage
Direct sees species) Hydro-seet tack with n Hydro-seet tack with p	eding / fertiliser (tree or native grass eding with straw mulching and bitumen native seed	Y		ha m2	\$4,135 \$1.90		\$0		Irertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing wit fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepar 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 Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fro \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$1.00 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 set of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP fr
Direct sees species) Hydro-seet tack with n Hydro-seet tack with p Hydromulc that can be	eding / fertiliser (tree or native grass eding with straw mulching and bitumen native seed eding with straw mulching and bitumen pasture seed ch - base grade or standard for flat areas	Y		ha m2	\$4,135 \$1.90 \$0.43		\$0 \$0 \$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing wil fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepar surfaces under irrigation e.g., sewage treatment irrigation e.g., sewage treatment irrigation e.g. sewage surfaces to be used on flat well prepar surfaces to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges frc \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$1.00 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 are of \$250 kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP f stability. This cost includes cover crogonly, additional seeding required.
Direct sees species) Hydro-seet tack with n Hydro-seet tack with p Hydromulc that can be	eding / fertiliser (tree or native grass eding with straw mulching and bitumen native seed eding with straw mulching and bitumen pasture seed ch - base grade or standard for flat areas be irrigated by water cart ch - bonded fibre matrix grade for steep tabilise up to 12 months	Y		m2	\$4,135 \$1.90 \$0.43		\$0 \$0 \$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing wit fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepar surfaces under irrigation e.g., sewage treatment irrigation e.g., sewage treatment irrigation e.g. sewage treatment irrigation seas. Ranges fro \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepar surfaces under irrigation e.g., sewage treatment irrigation areas. Ranges fro \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 morth) 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 - \$500kg/h This cost includes cover crop only, additional seeding required. Assumes use on extreme slopes when stabilisation is required for up to 18 months. Application rate of -4,000kg/h months.
Direct sees species) Hydro-seet tack with n Hydro-seet tack with p Hydromulc that can be Hydromulc areas to st:	eding / fertiliser (tree or native grass eding with straw mulching and bitumen native seed eding with straw mulching and bitumen pasture seed ch - base grade or standard for flat areas be irrigated by water cart ch - bonded fibre matrix grade for steep tabilise up to 12 months	Y Y		ha m2 m2 m2	\$4,135 \$1.90 \$0.43 \$0.80		\$0 \$0 \$0 \$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing wit fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepar surfaces under irrigation e.g., sewage treatment irrigation e.g., sewage treatment irrigation e.g. sewage treatment irrigation areas. Ranges fro \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fro \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP frostability. This cost includes cover crop only, additional seeding required. Assumes use on extreme slopes where stabilisation is required for up to 12 months. Application rate of -3500kg/h 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 -4000kg/minimum. This cost includes cover crop only, additional seeding required. Assumes 250 kg / ha. These rates hav fluctuated over the last few years however in light of current conditions
Direct sees species) Hydro-seet tack with n Hydro-seet tack with p Hydromulc that can be Hydromulc areas to strength of the seed of th	eding / fertiliser (tree or native grass eding with straw mulching and bitumen native seed eding with straw mulching and bitumen pasture seed ch - base grade or standard for flat areas be irrigated by water cart ch - bonded fibre matrix grade for steep stabilise up to 12 months ch - high performance flexible growth grade	Y Y Y		m2 m2 m2	\$4,135 \$1.90 \$0.43 \$0.80 \$1.80		\$0 \$0 \$0 \$0 \$0		helicopter (aerial seeding). Includes treating, weighing, mixing wilt fertiliser + spreading by tractor or helicopter (aerial seeding). Process to be used on flat well prepare surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fror 90.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Process to be used on flat well prepare surfaces under irrigation areas. Ranges fror \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00 Assumes use on flat areas with a gradient of less than 4.1, and where irrigation from water cart may be possible. Industry standard application steed of \$0.00 flat well application areas. Ranges fror 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 \$500kg/ha. Troduct over crop only, additional seeding required. Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of \$400kg/hmirimum. 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.)

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

Domain 2c: Tailings & Rejects

Total Cost for Tailings & Rejects Domain

\$0

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

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

									Cost for recent sump clean-up from
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y		L	\$0.35		\$0		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 volid on-site (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	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	Υ		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	Υ		m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility. Spreading or contaminated soils on a
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	у		m3	Select from List			Select Volume Here	prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Y		Item	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y		m3	\$165.00		\$0		Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	Y		m2	\$50.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Remove and dispose of asbestos (>750 m2)	Y		m2	\$40.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Υ		tonne	\$290		\$0		Landfill fees to regional landfill.
Roads and Tracks	Unaceled reads / ushiels park up areas _ miner			Contar	minated Mater	rials Subtotal	\$0		
Rodus and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Grader.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Υ		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Υ		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Υ		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Υ		m3	Select from List			Select Haul Distance Here	rms tem includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of
		arthworks / S	Structural Wo						rehabilitation
		an anno nao n		rks (Landfori	m Establishm	ent) Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from	ent) Subtotal	\$0	Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Major bulk pushing to achieve grades nominated in				Select from	ent) Subtotal	\$0	Select Push Length Here	
	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List	ent) Subtotal		Select Push Length Here Select Haul Distance Here	nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing 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) Trim, rock rake & deep rip (includes levelling /	Y		m3 ha	Select from List \$3,900 Select from	ent) Subtotal			nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M
	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing 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 Y		m3 ha m3	Select from List \$3,900 Select from List	ent) Subtotal	\$0		nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length Minor reshaping and pushing 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) Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction) Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y Y Y		m3 ha m3	Select from List \$3,900 Select from List \$1,130.00	ent) Subtotal	\$0		nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. Undertaken using D10 dozer and 16M grader. Combination of dozer and excavator work plus grader for ~4 hours each per

Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	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 / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Υ	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g., acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NIM) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y		ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical insk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, cappin / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.			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, cappin / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.			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, cappin / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.			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, cappin / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Long naulage soir weathered rock / sediment e.g.			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.). Capping/cover material available witnin
	capping/covers, removal of contamination, etc.	Y	l .	m3	List Mine W	ste Subtotal	\$0	Select Haul Distance Here	50 km round trip e.g. waste /
Land Preparati Revegetation (Gro Development and I Establishm	vth Media cosystem Source, cart and spread growth media (Select Hau Distance from List)	у		m3	Select from List	oto oubtota.	•	Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Υ		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from
					\$0.45		\$0		\$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	\$0.43		\$0		\$0.15 - \$0.50 depending on size and
		Y							\$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop
	that can be irrigated by water cart Hydromulch - bonded fibre matrix grade for steep	, Y		m2	\$0.80		\$0		\$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required. Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only,

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

Domain 3c: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$0

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Υ		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.)	Υ		m2	\$1		\$0		Provisional sum for cutting using rippir tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.2 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Υ		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tank Add disposal costs to additional iten
			7	Contar	minated Mater	rials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Υ		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Gra
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Υ		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 i 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 li grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or ot surface using an excavator, dozer an grader to enable the establishment of rehabilitation.
			1	F	Roads and Tra	acks Subtotal	\$0		_
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grade: nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Υ		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	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)	Υ		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16l grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Υ		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each pha.
	1								Installation of on-site rock material (i rap) where managing water run-off f disturbed land and/or upon entry to
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Υ		m2	\$27.00		\$0		water courses - prevents erosion of gully head (assumes competent material is locally available). If requir to be sourced off site, assume an additional \$20/m2.

Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Y	ha	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	*	ha	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials competent rock etc.) , and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
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 / 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.).

_								<u>.</u>
	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) Addirent moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		\$0		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up Inanoform, 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 / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Υ	ha	\$843,000		\$0		Inis option is typically driven by time constraints and/or when taillings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform cortile in addition to this care.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Long haulage soil / weathered rock / sediment e.g.	Y	allow m3	Use alternate rate cell		\$0	Select Haul Distance Here	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.). Capping/cover material available within
	capping/covers, removal of contamination, etc.	<u> </u>	1113	List Mine Wa	aste Subtotal	\$0	Select Hauf Distance Here	50 km round trip e.g. waste /
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)		Y	m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y	allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Υ	m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Υ	m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
			m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y	1112					vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.

	Total Cost for O	verburd	len & W	aste Do				\$0	
			Maint	enance of Re	habilitated Ai	reas Subtotal ems Subtotal	\$0 \$0		
	Existing rehabilitation repair - total failure of landform	Υ		ha	\$40,000	0.1	\$0		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - moderate	Υ		ha	\$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, min growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Υ		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilisir minor re-shaping, erosion control, inspections/audits - does not include major repair works.
Malatanana at B. L. 1994				W	ater Managen	nent Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck an dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by alternate land-user - D6 Dozer (or similar) + pasture grass.
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 alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pastur grass.
	Land Preparation and Revegetation (Gro	wth Media D	evelopment a	nd Ecosyste	n Establishm	ent) Subtotal	\$0		ī
	Growth media supplementation with manure Utilise biotic soil media - organic topsoil alternative	Y		m2	\$747.50 \$2.50		\$0 \$0		quality. Material that can be applied as an alternative to spreading topsoil prior hydromulching.
									required or respreading where necessary. Addition of manure to improve soil
	Topsoil stripping	Y		m3	\$4,730.00		\$0		vegetation growth e.g. regrowth Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load a haul to final rehabilitation location
	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	\$72.50 \$4,730.00		\$0 		(90c/km) from imported stockpile - all nominal rate of \$60/m3 for imported i material. Clearing and grubbing of light
	Supply from external sources virgin excavated natural material (VENM) for growth media. Supply from external sources a combination of	Y		m3	\$80.80		\$0		(90c/km) from imported stockpile - a nominal rate of \$70/m3 for imported material. D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truck:
	Purchase and erect warning signs	Υ		allow	\$250.00		\$0		signs for the occupational environme installed every 25 m. D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks
	areas	Y		m	\$13.00		\$0		fencing. Compliance with AS 1319-1994 - Sa
	areas Construct standard stock fence around rehabilitated	Y		m	\$22.00		\$0		fencing. Standard rate for standard stock
	growth media amelioration with biosolids Construct no-climb stock fence around rehabilitated	Y		ha	\$1,015		\$0		projects. Standard rate for no-climb stock
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000		\$0		application rate. Recent experience with agronomy
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of our conditions (lower fuel prices, reduce demand etc) this is a suitable standarate. Assumes 2.5 t / ha as an average
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates his fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand this is a suitable standard rate.
	Hydromulch - high performance flexible growth medium grade	Υ		m2	\$2.50		\$0		Assumes use on extreme slopes who stabilisation is required for up to 18 months. Application rate of ~4,000kg minimum. This cost includes cover only, additional seeding required.

Domain 4c: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$0

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	Υ		Lm	\$1.93		\$0		Blasting in a 8x9 pattern of bench heigh 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Υ		m3	\$0.95		\$0		Bulk Drilling say 8*9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive density of 0.9, diamete of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	Υ		m	\$90.00		\$0		D10 dozer, 16H Grader and revegetation with pasture grass.
					Open	Cut Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Υ		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	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)	Υ		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Υ		ha	\$1,600		\$0		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 large catchments	Υ		m2	\$27.00		\$0		Installation of on-site rock material (rig- rap) where managing water run-off fro 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.
	I	arthworks / S	Structural Wo	rks (Landfor	m Establishm	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Υ		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y		allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing wit fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Υ		ha	\$4,135		\$0		Includes treating, weighing, mixing wit fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepart 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	Υ		m2	\$0.43		\$0		Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fro \$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
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		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.

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

Domain 5c: Management Activities

Total Cost for Management Activities

\$0

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

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

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

Total Cost for Management Activities	\$0

ssumptions and rehabilitation requirements						
t or record	any assumptions ma	de when compl	eting this tool:			