

Regional

NSW

Open Cut Summary Rehabilitation Cost Estimation

Note: Sections of this page	are automatically filled in from the registration page
Mine Name:	Fifield Alluvial Platinum Mine
Lease(s):	MCL 305
Authorisation Owner:	Rimfire Pacific Mining NL
Mine Operator:	Rimfire Pacific Mining NL
Term of RCE:	Snapshot of disturbance
Current Security:	\$35,000 Date of Last Security Deposit Review: 7/10/2022
Mine Contact:	David Hutton
Position:	Managing Director and Chief Executive Officer
Address:	St Kilda Road Towers Suite 142, Level 1, 1 Queens Road Melbourne Victoria 3004
Phone:	03 9620 5866 Email: rimfire@rimfire.co.au

Domain		Security Deposit
Domain 1: Infrastructure		\$22,763
Domain 2: Tailings & Rejects		\$2,750
Domain 3: Overburden & Waste		
Domain 4: Active Mine & Voids		
Domain 5: Management Activities		\$1,000
Subtotal (Domains and Sundry Items)		\$26,513
Contingency	10%	\$2,651
Post Closure Environmental Monitoring	10%	\$2,651
Project Management and Surveying	10%	\$2,651
Total Security Deposit for the Mining Project	(excl. of GST)	\$34,466

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

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

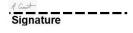
 $\hfill\square$ The proposed rehabilitation design is generally consistent with the development consent for the project.

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

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

Peter Crowhurst Company Respresentative's Name 27-3-24 Date

Exploration Manager Company Representative's Role / Responsibility



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Domain 1a: Infrastructure

Total Cost for Infrastructure Domain

\$22,763

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

 Nal Assumptions: Necord any relevant assumptions to this domain below:
 Key Rehabilitation Area Data for Domain
 Enter data below manually

 Total Landform Establishment:
 Total Crowth Media Development:
 Enter data below manually

 Total Crowth Media Development:
 Total Ecosystem Establishment:
 Enter data below manually

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes:
ermination of Services and		OF N)			Nate	Unit Rate		Information	For disconnection of all services, at building boundaries, physical cut at the
Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		allow	\$35,000		\$0	Only Telstras line - all power is by generator	point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places),
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Y		allow	\$5,850		\$0		consider multiple disconnection fees 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 nower lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of	Y		km	\$15,000		\$0	all power underground and only around buildings	Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		Item	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or enuivalent)
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		Item	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent) Large structures - includes significant
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on- site/locally	Y		Item	\$1,300,000		\$0		Large students - 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 <u>enuivalent</u> Simple structure to demolish
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scran 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. Crib huts, temporary offices and other
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Y	50	m2	\$40.00		\$2,000	calculate office space to remove	'non permanent' structures. Does not include transport to regional disposal facility or equivalent. Simple structure to demolish, assumes
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y		m2	\$61.00		\$0		no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent. Needs to be calculated per floor/level
	Demolish and remove light industrial buildings and disposal on-site/locally	Y		m2/floor	\$90.00		\$0		(Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically
	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		demolished 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		disposal facility or equivalent. 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 disnosal on-site/locally	Y	35	m2/floor	\$225.00		\$7,875	there is only 1 base floor level and it has a bare earth base - no concrete - sits on earth mound which will be leveled and reserved	Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	Y		allow	\$750,000		\$0		Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disnosal facility or equivalent Cost for just removal of the bucket
	Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	Y		allow	\$2,000,000		\$0		wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or
	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	Y		m	\$75.00		\$0		eruivalent Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Y		allow	\$92,500		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	Y		allow	\$77,500		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	Y		allow	\$62,500		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Y		allow	\$65,000		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent. Collapse structure and remove. Does
	Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Y		allow	\$460,000		\$0		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 Demolish and remove elevated conveyors, transfer	Y		m	\$185.00		\$0		Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent. Estimate for elevated conveyor up to
	Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally Demolish and remove overhead conveyors, transfer	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.
	stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally.	Y		m	\$850		\$0		Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to
	This may include small scale fixed material stacking infrastructure								regional disposal facility or equivalent.

Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of	Y		m	\$150.00	\$0		Due to no canopy or infrastructure attached.
Demolition of reclaim tunnel concrete (Assumes	Y		m	\$950.00	\$0		Assumes this area will be used for another land-use that requires the
complete removal and dumping in mine pit void) Demolition and removal of vent raise fans, electrical	Y		allow	\$25,000	\$0		structure to be dug up and re-buried somewhere else. Does not include filling and capping the shaft. Does not include transport to
substation and winch and disposal on-site/locally				\$20,000			regional disposal facility or equivalent. Assume tank is clean - contents removed. If tank is full allow extra 30%
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	Y		allow	\$10,000	\$0		for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent Assume tank is clean - contents
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	Y		allow	\$30,000	\$0		removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	Y		allow	\$45,000	\$0		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent
Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on- site/locally	Y		allow	\$100,000	\$0		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent Estimate only - may require a detailed
Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on-site/locally	Y		allow	\$100,000	\$0		assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or equivalent
Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	Y		allow	\$21,000	\$0		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-site/locally	Y		allow	\$30,000.00	\$0		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	Y		m	\$25.00	\$0		For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y		m	\$60.00	\$0		For example: 500 mm pipes - 1 m deep does not include transport to regional
Remove large underground pipe and disposal on- site/locally	Y		m	\$165.00	\$0		disposal facility or equivalent. For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Y		m	\$12.00	\$0		~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to
Remove surface pipelines (unsupported) and	Y		m	\$15	\$0		regional disposal facility or equivalent. -300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not
disposal on-site/locally Remove pump and pontoon from small lake or dam	Y						include transport to regional disposal facility or equivalent Includes equipment for retrieval - boats, etc. and labour. Does not include
including pipes and electrical supply or diesel tank/s	T		allow	\$20,000.00	\$0		transport to regional disposal facility or equivalent. Scalp bitumen and stabilised material.
Remove bitumen (car park and access roads) and dispose on-site/locally	Y		m2	\$10.00	\$0		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
Remove bitumen (airstrip) and dispose on- site/locally	Y		m2	\$20.00	\$0		for transnort 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	50	m2	\$36.00	\$1,800	concrete under main shed	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	Y		tonne	\$10.00	\$0		Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 50 mm	Y		tonne	\$13.00	\$0		Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 30 mm	Y		tonne	\$15.00	\$0		Does not include haulage of materials - assumes crushing plant is readily available.
Remove fence (cyclone/wire fence) and disposal on- site/locally	Y		m	\$20.00	\$0		Roll up fence and remove posts.
Removal of small plastic tanks	Y	1	each	\$1,000.00	\$1,000		Remove small poly tanks used for water storage, etc. Demolish and remove small lightweight
Demolish and remove galvanised/corrugated light weight tanks	Y		each	\$500.00	\$0		metal tanks. No costs included for managing liquids, etc. Cost includes demolition and removal o
Demolish and remove communication towers	Y		each	\$5,000.00	\$0		tower only; separate costs required for disconnection of services, demolition of footings. etc. Assume service disconnection at the
Removal of UG services (power within main gate areas, etc.)	Y		allow	\$50,000.00	\$0		mine boundary is at surface level. This cost covers all fees and charges Rate accounts for round trip haulage to
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 two Rate accounts for round trip haulage to
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 tyne Rate accounts for round trip haulage to
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y	5	tonne	\$12.50	\$63		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 tune Rate accounts for round trip haulage to
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	Y		tonne	\$32.00	\$0		Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	Y	10	tonne	\$36.00	\$360		relevant waste type 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	5	tonne	\$193.00		\$965		relevant waste type 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 Fee for waste disposal of industrial
	Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Y	10	tonne	\$174.00		\$1,740		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
		Tern	nination of Se	ervices and E	Demolition Wo	orks Subtotal	\$15,803		waste disposal on site
Rail Infrastructure	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Y		m	\$60.00		\$0		Remove all materials to allow area to b reshaped and rehabilitated - does not include transport to regional disposal
	Remove train loading facilities and disposal on- site/locally	Y		m2	\$185.00		\$0		facility or equivalent. Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
	Reshape rail spur and load out areas. Does not include growth media and revegetation	Y		ha	\$2,860		\$0		D10 Dozer and 16 H Grader (50% utilisation).
Contaminated Materials		1	1	F	ail Infrastruct	ure Subtotal	\$0		The preliminary investigation would
	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		Include at minimum a desktop assessment of the area and site history incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phas 1 assessment (EP Act Section 388 (2) (v)) or similar approved and recognise assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemicic 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 r
	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		Ind. Amware, Intellingtu, Scroodd/Wincow at minimum as bet walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phas 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 seaily accessible and a small area e.g. ~10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$106,000		\$0		The intrusive investigation would includ at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phas 2 intrusive investigation (EP Act Section 399 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contaminated meths / 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
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances Develop a Remediation Action Plan on sites with	Y		allow	\$35,000		\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	Use alternate rate cell				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) / roads and dump in a void on-site (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	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 cartace from regional areas Load, cart and disposal of Low Level contaminated	Y		m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
	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	Y		m3	Select from				prepared surface and stimulation of aerobic microbial activity within the soil through aeration and/or the addition of
	soils manual land farming (Select Volume from List)	Ť		m3	List				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	Y		Item	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast
	hvdrocarbons, etc.) contaminated soil treatment On-site remediation of hydrocarbon contaminated	Y		m3	\$165.00		\$0		tracked. Additional cost as the treatment process
	soils - using a mobile treatment unit								is fast tracked. Where an assessment/estimation has
	Remove and dispose of asbestos (<750 m2)	Y		m2	\$50.00		\$0		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
	Waste disposal to Council landfill - fees (asbestos)	Y		tonne	\$290		\$0		asbestos to be removed. Landfill fees to regional landfill.
									Assumes ASS is treatable via neutralisation and does not require
	Treatment of known Acid Sulfate Soils	Y		ha	\$2,580		\$0		capping and isolation. Assumes 1% by weight lime addition and treatment to
	Removal and disposal of plastic liner (i.e. dam,	Y		m2	\$1		\$0		100 mm depth only Provisional sum for cutting using ripping
	leach pad, sump etc.)							Select Haul Distance Here	tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from List				Costs for haulage to location for authorised disposal.
									Rate for trackable liquid levy of \$78.20
	Brine disposal to landfill - fees only	Y		tonne	\$288		\$0		per tonne and authorised disposal to
								Select Haul Distance Here	landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from List				Assumes transport in a 20,000 L tanke Add disposal costs to additional items
					List				where warranted.
				Contan	ninated Mater	ials Subtotal	\$0		
Vents, Shafts and Boreholes	Option 1 - Coal bore hole			denth (m)					Cost to grout and cap an open exploration borehole. Assume a 20 m of
	Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y		depth (m)	\$44.55		\$0		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
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary	Y		allow	\$43		\$0		manually backfilling the hole with drill cuttings. Does not include reshaping /
	Airblast (RAB) or aircore drill holes with cuttings								ripping the drill pad, amelioration /
	Option 2 - Mineral drill hole requiring grouting								seeding etc. Includes grouting and capping 100 - 20 m exploration boreholes to meet the
	Exploration boreholes – grout and cap open bore holes	Ŷ		allow	\$5,700		\$0		requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y		allow	\$6,960		\$0		Holes deeper than 100 m - includes cutting steel collar 6 m below surface,
	Boreholes - cap and seal open bore holes - surface-	Y		allow	\$17,890		\$0		grouting and capping. Surface-to-in-seam gas drainage
	to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical	Y		allow	\$16,000		\$0		boreholes. Vertical gas drainage boreholes.
	gas drainage Boreholes – grout (with concrete) cap and seal bore balas (i.e. where as align conviters)	Y		allow	\$35,000		\$0		Includes multi skin sleaves to prevent
	holes (i.e. where sealing aquifers) Boreholes – cap and seal service boreholes for UG	Y		allow	\$45,000		\$0		aquifer mixing. Includes large diameter boreholes used for supplying electricity (66kV),
	coal operations			anow	\$45,000		\$ 0		compressed air, water, solsenic etc. Bog out cuttings, remove fencing,
	Option 4 - Mineral diamond drill hole								remove rubbish, push sumps in, rehabilitate pads and tracks, cut and
	Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	Y		Item	\$2,070		\$0		plug collars. Includes labour and
1	including county and holds for minoral exploration								equipment, disposal of rubbish locally
	Option 5 - Mineral reverse circulation drill holes								equipment, disposal of rubbish locally on site
		Y		Item	\$1,340		\$0		on site
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exoloration Option 6 - Rehabilitation of drill hole collars								on site Sealing required, but not complete fillin with concrete/grout Cut collar, remove, cap, backfill capped
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Roads and Tracks	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral excloration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral	Y		each Vents, Shaf	\$415 s and Boreho	oles Subtotal	\$0 \$0	local tracks will romain	on site Sealing required, but not complete fillin with concrete/grout Cut collar, remove, cap, backfill capper collar and cover with nearby organic or
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Roads and Tracks	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral excloration 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 – minor earthworks and dree nig and trim	Y		each Vents, Shaf	\$415 s and Boreho	oles Subtotal	\$0 \$0	local tracks will remain	on site Sealing required, but not complete fillin with concrete/grout Cut collar, remove, cap, backfill capped collar and cover with nearby organic or orowth material Assumes ~6 m road width - 16H Grader D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
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Earthworks / Structural Works	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral excloration Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral excloration) 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 - minor earthworks and deep rip and seed (pasture grass) Unsealed roads / vehicle park-up areas - Minor unsealed roads / vehicle park-up areas - Minor unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (nature grass) Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (nature grass) Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (nature grass) Unsealed roads / hold roads / vehicle park-up areas with windrows and/or small earthe bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/areas) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list) Major bulk pushing to achieve grades nominated in the approval/permit - Select Push Length Minor reshaping and pushing Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures 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 Y Y Y Y Y Y Y Y		each Vents, Shaf ha	\$415 s and Borehc \$1,040.00 \$1,500 \$3,700 \$4,485 \$4,485 \$4,485 \$4,485 \$4,870 \$7,025 Select from List \$3,900 \$1,600 Select from List		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	Select Haul Distance Here Select Push Length Here	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% utilisation - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture tree/shrub seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture tree/shrub seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - nasture tree/shrub seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation. Combination of dozer and excavator work plus grader for ~4 hours each per ha. Combination of dozer and excavator material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.

	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y arthworks / S	tructural Wo	m2	\$27.00	ant) Subtotal	\$0 \$2,750		Installation of on-site rock material (ri rap) where managing water run-off frr disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If require to be source off site, assume an additional \$20/m2
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List	Subiotal	¢2,: 00	Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y Y		allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	0.5	ha	\$1,875		\$938		Includes treating, weighing, mixing wi fertiliser + spreading by tractor or beliconter (agrial seeding)
	Direct seeding / fertiliser (tree or native grass species)	Y	0.5	ha	\$4,135		\$2,068		Includes treating, weighing, mixing w 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 prepa surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fn \$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 prepa surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fi \$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 that areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard applicat rate of 2500kg/na. Product will last short term (less than 3 months) and vegetation is required to grow ASAP stability. This cost includes cover or out, additional sections required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		nu, additional seading required Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg This cost includes cover crop only, additional seeding required Assumes use on extreme slopes whit
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		stabilisation is required for up to 18 months. Application rate of ~4,000kg minimum. This cost includes cover crop only additional seeding require Assumes 250 kg / ha. These rates h
	Single application of fertiliser (pasture)	Y	0.5	ha	\$420.00		\$210		fluctuated over the last few years however in light of current condition: (lower fuel prices, reduced demand this is a suitable standard rate
	Single application of fertiliser (trees)	Y	0.5	ha	\$140.00		\$70		These rates have fluctuated over the last few years however in light of cu conditions (lower fuel prices, reduce demand etc) this is a suitable stand rate
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate. Recent experience with agronomy
	growth media amelioration with biosolids Construct no-climb stock fence around rehabilitated	Y		ha	\$1,015		\$0		projects. Standard rate for no-climb stock
	areas Construct standard stock fence around rehabilitated	Y Y		m m	\$22.00 \$13.00		\$0 \$0		fencing. Standard rate for standard stock
	areas Purchase and erect warning signs	Y		allow	\$250.00		\$0		fencing. Compliance with AS 1319-1994 - Sa signs for the occupational environm installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		installed every 25 m. D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truci (90c/km) from imported stockpile - i nominal rate of \$70/m3 for imported material D10 push into void at \$270/hr,
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		Excavator (\$220/hr) load Artic Truc (90c/km) from imported stockpile - nominal rate of \$60/m3 for imported material
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth Stripping or topsoil at an approxima depth of 0.2 m into stockpiles; load
	Topsoil stripping	Y		m3	\$4.86		\$0		haul to final rehabilitation location required or respreading where necessary Addition of manure to improve soil
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		quality. Material that can be applied as an
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		alternative to spreading topsoil prior hvdromulching.
Water Management	Land Preparation and Revegetation (Gro	wth Media De	evelopment ar	1d Ecosyster	n Establishm	ent) Subtotal	\$3,285		Provisional sum for earthworks and
-	Clean water dams to be retained after decommissioning – make safe and minor	Y		allow	\$2,500		\$0		revegetation required to rehabilitate dam batters etc suitable for re-use to an alternate land-user - D6 Dozer (c similar) @ ~\$200 per hour and past
	earthworks								Provisional sum for earthworks and
	earthworks Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0	Salaat Havi Distance Hare	revegetation required to rehabilitate dam batters etc suitable for re-use h an alternate land-user - D6 Dozer (o similar) + pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam. Provisional sum for removal of wate
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)			m3 allow	Select from	ent Subtotal	\$0 \$0 \$0 \$0	Select Haul Distance Here	revegetation required to rehabilitate dam batters etc suitable for re-use t an alternate land-user - D6 Dozer (c similar) + <u>nasture grass</u> . This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam. Provisional sum for removal of wate management infrastructure.
Maintenance of Rehabilitated Areas	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water	Y	1	m3 allow	Select from List \$25,000	ent Subtotal	\$0	Select Haul Distance Here	revegetation required to rehabilitate dam batters etc suitable for re-use i an atternate land-user - D6 Dozer (r similar) + pasture grass. This item includes the volume of contaminated sediment requiring removal using an excavator, truck dozer to clean out the dam. Provisional sum for removal of wat management infrastructure. Rehabilitation maintenance might include re-seeding, watering, fertilis minor re-shaping, erosion control, inspections/auxilfs - does not includ
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water transfer and management infrastructure Maintenance of areas that have been shaped and	Y	1	m3 allow Wa	Select from List \$25,000 ater Managem	ent Subtotal	\$0 \$0	Select Haul Distance Here	revegetation required to rehabilitate dam batters ets cuitable for re-use ja an alternate land-user - D6 Dozer (o similar) + pasture grass. This item includes the volume of contaminated sediment requiring removal using an excavator, truck et dozer to clean out the dam. Provisional sum for removal of wate management infrastructure. Rehabilitation maintenance might include re-seeding, varieng, fertilis minor re-sharing, erosino contilis, import ensing, erosino contilis, import ensity works. Areas requiring minor repair - rills. Areas requiring minor repair - repair.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water transfer and management infrastructure Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y Y Y	1	m3 allow Wa	Select from List \$25,000 ter Managerr \$925	ent Subtotal	\$0 \$0 \$925	Select Haul Distance Here	revegetation required to rehabilitate dam batters etc suitable for re-use an alternate land-user - D6 Dozer (similari + pasture orass. This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam. Provisional sum for removal of wat management infrastructure. Rehabilitation maintenance might incid re-saeding, watering, fertilis mionr re-shaping, erosion control, inspections/audits - does not includ maior renair works. Areas requiring mior repair - rills, Areas requiring moderate repair - sionflicant growth media replacement.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water transfer and management infrastructure Maintenance of areas that have been shaped and seeded and revegetation has been 'successful' Existing rehabilitation repair - minor	Y Y Y Y	1	m3 allow Wa ha ha	Select from List \$25,000 ter Managerr \$925 \$1,200	ent Subtotal	\$0 \$0 \$925 \$0	Select Haul Distance Here	revegetation required to rehabilitate dam batters etc suitable for re-use an alternate land-user - D6 Dozer (similar) + nasture orass. This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam. Provisional sum for removal of wat management infrastructure. Rehabilitation maintenance might include re-seeding, watering, fertilis mionr cr-shaping, erosion control, inspections/audits - does not includ maior renar works. Areas requiring mofor repair - rills, aufiles, growth media replacement, some level of additional surface wa management
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list) Removal of evaporation fans and/or other water transfer and management infrastructure maintenance of areas that have been shaped and seeded and revegetation has been "successful" Existing rehabilitation repair - minor Existing rehabilitation repair - moderate	Y Y Y Y Y	1	m3 allow Wa ha ha ha	Select from List \$25,000 tter Managem \$925 \$1,200 \$1,700	ent Subtotal	\$0 \$0 \$925 \$0 \$0 \$0	Select Haul Distance Here	revegetation required to rehabilitate dam batters et esuitable for re-use t an alternate land-user - D6 Dozer (c similar) + nasture ortass. This item includes the volume of contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam. Provisional sum for removal of wate management infrastructure. Rehabilitation maintenance might include re-seeding, watering, fertilis minor re-shaping, erosion control, inspections/audits - does not includ maior renair, works. Areas requiring minor repair - rills, Areas requiring morerate repair - nil significant growth media replacement.

	Total Cost fo	r Infras	tructure) Domai	in			\$22,76	3
				1	Additional Ite	ms Subtotal	\$0		
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">></to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">></to>

Total Cost for Tailings & Rejects Domain

\$2,750

Domain 2a: Tailings & Rejects

Additional Assumptions: Record any relevant assumptions to this domain below

								ation Area Data for Domain otal Landform Establishment:	Enter data below manual
							Tota	I Growth Media Development:	
							10	tal Ecosystem Establishment:	
		Applieckie (V			Defeult Linit	Alternetive		Basis for Costs Estimation	
cinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	and Additional Relevant Information	Description / Notes:
erials	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 h incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) 1 assessment (EP Act Section 386 (ivi) or similar approved and recog assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / ch store, workshop, vehicle wash-dor sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste stora and disposal, rail load-out etc.) - Remote pil-top facilities (i.e., vehicle second plants (i.e., econd not plants and tecond and disposal, rail load-out 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		firel sewane treatment, sevendray at minimum a site walkover and fit sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) 2 intrusive investigation (EP Act S 398 (2) (N)) o similar approved an recognised assessment method. Note: An intrusive investigation is required for all contaminated areas 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 leak chemical stores with earthen bund around ineffective oil/water separa ctc.) and further field work is require involving intrusive investigation. Assumes site is easily accessible small area e.g. ~10-15 har requires investigation and tequires investigation and tequire (test based on Samplin
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	¥		Cluster	\$106,000		\$0		The intrusive investigation would in at minimum a site walkover and fit sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) J intrusive investigation (EP Act S 339 (2) (w)) or similar approved a recognised assessment method. Note: An intrusive investigation is required for all contaminated areas 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 leak chemical stores with earthen bund around ineffective oil/water separa etc.) and further field work is requi involving intrusive investigation. Assume site has a history of contamination and/or a large area ha requires investigation and testin Develop remediation plan for appr
	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 apprincipation plan for apprincipation generation and detailed cost costs may increase if detailed detreguired for construction.
	contamination exceedances Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	Use alternate rate cell				Assumes complex site; detailed d 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 fro resource activity - requires specia
	Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	treat. This item includes scraping and removal of the volume of carbona material using dozer, grader etc. 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. Load, cart and disposal of Restricted classified	Y		m3	\$800.00		\$0		Includes load, haul and dump fee licensed facility.
	Load, cart and oisposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas Load, cart and disposal of Low Level contaminated	Y		m4	\$660.00		\$0		Includes load, haul and dump fee licensed facility.
	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 fee licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y		m3	Select from List			Select Volume Here	Spreading of contaminated soils of prepared surface and stimulation aerobic microbial activity within th through aeration and/or the additi minerals, nutrients and moisture to promote the aerobic degradation organic chemicals - time frame of 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 hydrocar contamination is required to be fa tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y		m3	\$165.00		\$0		Additional cost as the treatment p is fast tracked.
	Remove and dispose of asbestos (<750 m2)	Y		m2	\$50.00		\$0		Where an assessment/estimation been made to confirm the volume

	Remove and dispose of asbestos (>750 m2)	Y		m2	\$40.00		\$0		Where an assessment/estimation been made to confirm the volume asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	Y		tonne	\$290		\$0		Landfill fees to regional landfill.
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor	Y	1		inated Mater \$1,040.00	ials Subtotal	\$0 \$0		Assumes ~6 m road width - 16H
	works including deep rip and trim Unsealed roads / access tracks / vehicle park-up	Ť		ha	\$1,040.00		\$0		Grader. D10 Dozer @ \$400 per hour and 1
	areas with windrows and/or small earthen bunds -	Y		ha	\$1,500		\$0		Igrader @ \$250 per nour (50%
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor	v		h.,	AD 700		**		utilisation) - no seed D10 Dozer @ \$400 per hour and
	earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and grader @ \$230 per hour (50%
	seed (native tree/shrub/grass) Unsealed roads / haul roads / vehicle park-up areas						••		utilisation) - native tree/shrub see
	with windrows and/or small earthen bunds - Minor	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and grader @ \$230 per hour (50%
	earthworks, final trim and deep rip, ameliorate and seed (pasture grass) Unsealed roads / haul roads / vehicle park-up areas								utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and
	earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	T		па	\$7,025		φU		grader @ \$230 per hour (50% utilisation) - native tree/shrub see
								Select Haul Distance Here	This item includes the scraping a
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally	Y		m3	Select from				removal of the volume of stabilise material from the road, laydown
	(Select Haul Distance from list)	T		1113	List				surface using an excavator, doze grader to enable the establishme
									rehabilitation.
the second se	E	arthworks / S	structural Wo	rks (Landforn	n Establishme	ent) Subtotal	\$0		
rthworks / Structural Works Landform Establishment)	Major bulk pushing to achieve grades nominated in				Select from			Select Push Length Here	Major bulk pushing to achieve gra
	the approval/permit - Select Push Length	Y		m3	List				nominated in the approval/permit
									D10 Dozer @ \$400 per hour and
	Minor reshaping and pushing	Y	0.5	ha	\$3,900		\$1,950		grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart							Select Haul Distance Here	This item includes the volume of
	and spread to cap or backfill, cap thickness	у		m3	Select from				material requiring backfill using a excavator and scraper to fill the v
	determined by approval / permit (Select Haul Distance from List)	,			List				and enable the establishment of
	Trim, rock rake & deep rip (includes levelling /								rehabilitation. Undertaken using D10 dozer and
	landscaping and rip in 1 direction) Structural works, banks, waterways - contour banks,	Y		ha	\$1,130.00		\$0		grader. Combination of dozer and excava
	drainage channels and other soil conservation	Y	0.5	ha	\$1,600		\$800		work plus grader for ~4 hours ea
	measures								ha. Installation of on-site rock materi
									rap) where managing water run-o disturbed land and/or upon entry
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for	Y		m2	\$27.00		\$0		water courses - prevents erosion
	large catchments								gully head (assumes competent material is locally available). If re
									to be sourced off site, assume an additional \$20/m2
Mine Waste	E	arthworks / S	structural Wor	rks (Landforn	n Establishme	ent) Subtotal	\$2,750		This includes sourcing, carting,
wille waste									spreading, moisture conditioning compaction of a suitable volume
									material with the appropriate che
									and physical properties. This rate assumes suitable capping mater
									available on site within 10 km, and
	Ideal Tailings Capping - reshaping, capping /								average cap thickness of approx 0.5 m to 1 mand 0.15 m - 0.2 m
	sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid								media (assume at least 1 m thicl
	Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate	Y		ha	\$82,000		\$0		required for carbonaceous mater covers). Water quality from runo
	propensity for spontaneous combustion) and good			na	<i>402,000</i>		ψŪ		seepage etc. meets site-specific environment water quality values
	physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no								If site haulage longer than 10 km
	artificial strengthening required)								trip add the volume of the relevant
	arunciar suengulering required)								
	arunciar suengulening requireu)								material requiring haulage for thi distance in 8.05 (spreading costs
	arunciai su engulening requireu)								material requiring haulage for thi distance in 8.05 (spreading costs
	armoar suergunening requireu)								material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in If additional material to make up landform, provide buttress or oth
	armicar suergunening requireu)								material requiring haulage for this distance in 8.05 (spreading costs tailings cap material included in r If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage ar
	Additional materials required for reshaping, capping								material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage an <u>conception</u> in additional cost to import
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from	Y		allow	Use alternate rate cell		\$0		material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in 1 If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage an <u>reconditional cost to import</u> materials (i.e., shale / day, comp drainage materials etc.) and / or
	Additional materials required for reshaping, capping	Y		allow	Use alternate rate cell		\$0		material requiring haulage for thit distance in 8.05 (spreading costs tailings cap material included in II If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage an include additional to and to any for materials (i.e., shale / day, comp drainage materials etc.) and / or additional requirements (i.e., geo
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional materials required for reshaping, capping	Y		allow	rate cell		\$0		material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in in If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage an findude additional cost to import materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., geo composite lining etc.) include additional cost to import
	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			\$0		material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in I If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage at reconducing in diffusional cost to import materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., ged composite linine etc.) include additional cost to import materials (i.e., shale / clay, comp drainage materials etc.) and / or
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from				rate cell Use alternate				material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in If additional material to make up include additional cost to make include additional cost to import materials (i.e., shale/ clay, comp drainage materials etc.) and / or additional requirements (i.e., gec romposite limition etc.) Include additional cost to import materials (i.e., shale/ clay, comp drainage materials etc.) and / or additional requirements (i.e., gec
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific				rate cell Use alternate				material requiring haulage for thi distance in 8.05 (spreading costs tailings cap material included in If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage at reconditional cost to import materials (i.e., shale / clay, comp dialinage materials etc.) and / or additional requirements (i.e., gec composite lining etc.) materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., gec composite lining etc.) This term includes additional requirements (i.e., gec promosale lining etc.) This term includes sourcing, cart
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific				rate cell Use alternate				material requiring haulage for this distance in 8.05 (spreading costs tailings cap material included in if additional material to make up from 9.02 for voide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage at <u>include additional costs to import</u> materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., get composite lining etc.) Include additional costs to import materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., get composite lining etc.) Inis (item includes sourcing, cart spreading, moisture conditioning compaction of a suitable volume
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific				rate cell Use alternate				material requiring haulage for thi distance in 8.05 (spreading cost tailings cap material included in If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage a <u>inconditional includies</u> to <u>any der</u> materials (i.e., shale / clay, comp materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., gec <u>composite linitor efc.)</u> Include additional ecols to import materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., gec <u>composite linitor efc.)</u> Inst tem includes sourcing, cart spreading, moisture conditioning compaction of a suitable volume material to cap / cover facilities the tailings or rejects base is at
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific				rate cell Use alternate				material requiring haulage for thi distance in 8.05 (spreading costi tallings cap material included in If additional material to make up landform, provide buttress or oth works aside from tailings cap, us from 9.02 for relevant haulage a <u>rescontional productional cost</u> to import materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., get <u>composite limito etc.)</u> Include additional cost to import materials (i.e., shale / clay, comp drainage materials etc.) and / or additional requirements (i.e., get <u>Chast to additional requirements (i.e., get Chast to additional requirements (i.e., get Chast to additional requirements (i.e., get <u>Chast to additional requirements (i.e., get</u> <u>Chast to additional requirements (i.e., get)</u> <u>Chast to additional require</u></u>
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	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from	Y	allow	Use alternate		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or
	runoff, seepage etc. meeting site-specific environment water quality values.		anow	rate cell		40		additional requirements (i.e., geofabric /
	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 hypiscial properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		\$0		composite lining etc.) This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. add 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 tip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material to make up landform, provide buttress or other works aside from tailings cap, use rate
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	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on leagor siles from chemical reactivity over lengthy exposure prior to rehabilitation	¥	ha	\$843,000		\$0		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 side haulage longer than 10 km round thip 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
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	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Y	m3	Select from List	Subtrate	\$0	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and				Mine wa	aste Subtotal	φU	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).
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y	m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y	m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y	m2	\$0.80		\$0		gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y	m2	\$1.80		\$0		stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only,
	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 section required Assumes 250 kg / ha. These rates have
	Single application of fertiliser (pasture)	Y	ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	that can be irrigated by water cart Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months Hydromulch - high performance flexible growth medium grade	Y	m2 m2	\$1.80 \$2.50		\$0 \$0		rate of 2500kg/ha. Product short term (less than 3 mon vegetation is required to gra stability. This cost includes Assumes use on steep area stabilisation is required for months. Application rate of This cost includes cover oro additional sections required Assumes use on sterem sit stabilisation is required for u months. Application rate of minimum. This cost include cron only. application rate of Muchated over the last few however in light of current c (lower fuel prices, reduced)

	-			-	Additional Ite	ems Subtotal	\$0		
	Other 3 <insert></insert>	N			left blank				the operator>>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" i<br="">the operator>></to>
Additional Items	Other 1 <insert></insert>	N			This is				the operator>>
			Mainte	enance of Re	habilitated Ar	eas Subtotal	\$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
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		significant growth media replacem Areas requiring major repair - rills, gullies, growth media replacement some level of additional surface wa
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		minor growth media replacement. Areas requiring moderate repair -
	seeded and revegetation has been 'successful' Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		inspections/audits - does not inclu maior repair works Areas requiring minor repair - rills,
laintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and	Y		ha	ater Managem \$925	ient Subtotal	\$0		Rehabilitation maintenance might include re-seeding, watering, fertili minor re-shaping, erosion control,
				14/	tor Manager	ont Subtotal	\$0		dozer to clean out the dam.
	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	similar) + pasture grass. This item includes the volume of contaminated sediment requiring removal using an excavator, truck
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		pross Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use an alternate land-user - D6 Dozer (
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		revegetation required to rehabilitat dam batters etc suitable for re-use an alternate land-user - D6 Dozer similar) @ ~\$200 per hour and pas
	Land Preparation and Revegetation (Grov	wth Media De	evelopment ar	nd Ecosyster	n Establishm	ent) Subtotal	\$0		Provisional sum for earthworks an
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		quality. Material that can be applied as an alternative to spreading topsoil prin hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		required or respreading where necessary. Addition of manure to improve soil
	Topsoil stripping	Y		m3	\$4.86		\$0		vegetation growth e.g. regrowth Stripping or topsoil at an approxim depth of 0.2 m into stockpiles; load haul to final rehabilitation location
	from large excavation for filing voids and/or capping etc. Clearing and grubbing of trees and vegetation	Y		m3 ha	\$72.50 \$4,730.00		\$0 		(90c/km) from imported stockpile nominal rate of \$60/m3 for imported material. Clearing and grubbing of light
	natural material (VENM) for growth media. Supply from external sources a combination of virgin excavated natural material (VENM) and spoil								nominal rate of \$70/m3 for importe material D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Tru
	Supply from external sources virgin excavated	Y		m3	\$80.80		\$0		installed every 25 m. D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Tru (90c/km) from imported stockpile
	areas Purchase and erect warning signs	Y		allow	\$250.00		\$0		fencing. Compliance with AS 1319-1994 - signs for the occupational environ
	areas Construct standard stock fence around rehabilitated	Y		m	\$13.00		\$0		fencing. Standard rate for standard stock
	Construct no-climb stock fence around rehabilitated	Y		m	\$22.00		\$0		standard rate for no-climb stock
	growth media amelioration with biosolids	Y		ha	\$1.015		\$0		application rate. Recent experience with agronomy
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		demand etc) this is a suitable stan rate Assumes 2.5 t / ha as an average
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over th last few years however in light of cu conditions (lower fuel prices, reduc

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$0

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

								otal Landform Establishment:	
								I Growth Media Development: tal Ecosystem Establishment:	
							10	tal Ecosystem Establishment:	
		Augulashia (M			Defendettelt	A 14		Basis for Costs Estimation	
Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Y		ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1 weight lime addition and treatmen
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		100 mm depth only. Provisional sum for cutting using r types and on-site disposal of the li
	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 \$7 per tonne and authorised disposal landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L t Add disposal costs to additional it where warranted.
				Contar	ninated Mater	ials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas - minor works including deep rip and trim	Y		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H 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		Grader. D10 Dozer @ \$400 per hour and 1 grader @ \$230 per hour (50% utilisation) - no seed D10 Dozer @ \$400 per hour and 1
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass) Unsealed roads / vehicle park-up areas – Minor	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and grader @ \$230 per hour (50% utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and
	earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) Unsealed roads / haul roads / vehicle park-up areas	Y		ha	\$4,485		\$0		grader @ \$230 per hour (50% utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and
	with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass) Unsealed roads / haul roads / vehicle park-up areas	Y		ha	\$4,870		\$0		grader @ \$230 per hour (50% utilisation) - pasture grass seed
	with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/orass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and grader @ \$230 per hour (50% utilisation) - native tree/shrub see
	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 an removal of the volume of stabilise material from the road, laydown o surface using an excavator, dozer grader to enable the establishmen
				8	loads and Tra	cks Subtotal	\$0		rehabilitation.
arthworks / Structural Works	Major bulk pushing to achieve grades nominated in	Y		m3	Select from			Select Push Length Here	Major bulk pushing to achieve gra
(Landform Establishment)	the approval/permit – Select Push Length Minor reshaping and pushing	Y		ha	List \$3,900		\$0		nominated in the approval/permit D10 Dozer @ \$400 per hour and 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)	Y		m3	Select from List			Select Haul Distance Here	utilisation). This item includes the volume of material requiring backfill using an excavator and scraper to fill the vo and enable the establishment of
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		rehabilitation. This rate is used to rehabilitate ste slopes of weathered rock, roadway cuttings, etc that cannot be cut ba
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		and stabilised. Undertaken using D10 dozer and 1 grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y		ha	\$1,600		\$0		Combination of dozer and excaval work plus grader for ~4 hours each
	measures Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		ha Installation of on-site rock materia rap) where managing water run-of disturbed land and/or upon entry water courses - prevents erosion o gully head (assumes competent material is locally available). If ree to be sourced off site, assume an
	F	arthworks / S	Structural Wo	rks (Landfori	n Establishm	ent) Subtotal	\$0		additional \$20/m2
Mine Waste	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saine Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)			ha	\$82,000		\$0		I rins includes sourcing, caring, spreading, moisture conditioning a compaction of a suitable volume material with the appropriate chem and physical properties. This rate assumes suitable capping material available on site within 10 km, and average cap thickness of approxim (0.5 m to 1 material to 1.2 m g media (assume at least 1 m thick, required for carbonaceous material covers). Water quality from nunoff seepage etc. metes site-specific environment water quality values. If site haulage longer than 10 km r tip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs 1 tailings cap material included in ra I additional material to make up landform, provide buttress or othe works aside from tallage can.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values. Additional metricils could for rechapting capping.	Y		allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, compe drainage materials etc.) and / or additional requirements (i.e., geof composite lining etc.) Include additional cost to import
	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		materials (i.e., shale / clay, comport drainage materials etc.) and / or additional requirements (i.e., geof

	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	¥	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 tip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material to make up landform, provide buttress or other works aside from tailings cap, use rate
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				from 9.02 for relevant baulane and 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		composite lining etc.) Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.)
	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$313,000		\$0		composite lining etc.) This Item Includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (eg. 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 side haulage longer than 10 km round tip add the volume of the relevant material requiring haulage for this distance in 8.05 (preading costs for tailings cap material included in rate). If additional material to make up Iandform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and
	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		from 9.02 for relevant haulane and 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 / comoosite lining etc.) This option is typically driven by time
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Y	ha	\$843,000		\$0		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 thip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material include 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
	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		haulane volume in 8.05 Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lipina etc.) Include additional cost to import
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Y	m3	Select from List			Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
				Mine Wa	aste Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y	m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y Y	allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.

	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass	Y		ha	\$4,135		\$0		helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	species) Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		helicopter (aerial seeding). Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on nat areas with a
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop robut additional exaction required Assumes use on steep areas where
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required Assumes use on extreme slopes where
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only additional seeding required Assumes 250 kg / ha. These rates have
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate. These rates have fluctuated over the
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000		\$0		Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m. D7 to spread material at \$205/hr,
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D/ to spread material at \$200m, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material D10 push into void at \$270/hr,
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth Stripping or topsoil at an approximate
	Topsoil stripping	Y		m3	\$4.86		\$0		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 (Grov	wth Media De	velopment a	nd Ecosyster	n Establishm	ent) Subtotal	\$0		Provisional sum for earthworks and
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		prass. 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 Wa	Select from List	nent Subtotal	\$0	Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
Maintenance of Rehabilitated									Rehabilitation maintenance might include re-seeding, watering, fertilising,
Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0		Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
Additional Items	Other 1 <insert></insert>		Mainte	enance of Re	habilitated Ar	reas Subtotal	\$0		This item includes << to be added by
	-	N			This is				the operator>> 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			left blank Additional Ite	amo Cubició	\$0		the operator>>
	Total Cost for O	verhurd	en & W			ana subtotal	4 0	\$0	
Total Cost for Overburden & Waste Domain								φU	

Open Cut Operations Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$0

								tation Area Data for Domain	
								Total Landform Establishment: al Growth Media Development:	
								otal Ecosystem Establishment:	
		Applicable (Y			Default Unit	Alternative		Basis for Costs Estimation	
Management Precinct	Activity / Description	or N)	Quantity	Unit	Rate	Unit Rate	Total Cost	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 25 m with D11 push of 50-75 m. Bulk Drilling say 8*9 pattern, assur
									a stem height of 6 m, charge lengt
	Drill & blast faces to make safe	Y		m3	\$0.95		\$0		19 m, explosive density of 0.9, dia of 229 mm, explosives at 665.3 kg
									with a powder factor of 0.37 with a
	High wall treatment – (trench and safety berm)	Y		m	\$90.00		\$0		approximate bench height of 25 m D10 dozer, 16H Grader and
					Open	Cut Subtotal	\$0		revegetation with pasture grass.
rthworks / Structural Works Landform Establishment)								Select Push Length Here	
· · · · · · · · · · · · · · · · · · ·	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List				Major bulk pushing to achieve gra nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and grader @ \$230 per hour (50%
							•	Select Haul Distance Here	utilisation). This item includes the volume of
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness	Y		m3	Select from			Select had Distance here	material requiring backfill using a excavator and scraper to fill the v
	determined by approval / permit (Select Haul Distance from List)	T		1113	List				and enable the establishment of
									rehabilitation. This rate is used to rehabilitate ste
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		slopes of weathered rock, roadwa cuttings, etc that cannot be cut ba
	Trim, rock rake & deep rip (includes levelling /								and stabilised. Undertaken using D10 dozer and
	landscaping and rip in 1 direction) Structural works, banks, waterways - contour banks,	Y		ha	\$1,130.00		\$0		grader. Combination of dozer and excava
	drainage channels and other soil conservation	Y		ha	\$1,600		\$0		work plus grader for ~4 hours eac
	measures								ha. Installation of on-site rock materia
	Construction of spine drains / drop structures and/or								rap) where managing water run-o disturbed land and/or upon entry
	stabilising water course entry points - required for	Y		m2	\$27.00		\$0		water courses - prevents erosion gully head (assumes competent
	large catchments								material is locally available). If re- to be sourced off site, assume an
	ļ			1	Establishes	N 0 1 1 1 1	\$0		additional \$20/m2
Land Preparation and		artnworks / 5		rks (Landforn	n Establishme	ent) Subtotal	\$0	Select Haul Distance Here	If topsoil is not available on-site,
evegetation (Growth Media evelopment and Ecosystem	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 externall
Establishment)	Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		sourced. 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, mixin fertiliser + spreading by tractor or
		-			* .,				helicopter (aerial seeding). Includes treating, weighing, mixin
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
									Process to be used on flat well process
	Hydro-seeding with straw mulching and bitumen	Y		m2	\$1.90		\$0		surfaces under irrigation e.g. sew treatment irrigation areas. Range
	tack with native seed								\$0.15 - \$0.50 depending on size a input variables. Native seed +\$1.0
									Process to be used on flat well process to be used on flat wel
	Hydro-seeding with straw mulching and bitumen	Y		m2	\$0.43		\$0		surfaces under irrigation e.g. sew treatment irrigation areas. Range
	tack with pasture seed			1112	¥0.45		<u></u>		\$0.15 - \$0.50 depending on size a
									input variables. Pasture seed +\$0 Assumes use on flat areas with a
									gradient of less than 4:1, and whe irrigation from water cart may be
	Hydromulch - base grade or standard for flat areas	~			* ****		<u></u>		possible. Industry standard appli
	that can be irrigated by water cart	Y		m2	\$0.80		\$0		rate of 2500kg/ha. Product will la short term (less than 3 months) a
									vegetation is required to grow AS stability. This cost includes cover
									Assumes use on steep areas whe
	Hydromulch - bonded fibre matrix grade for steep	Y		m2	\$1.80		\$0		stabilisation is required for up to 1 months. Application rate of ~3500
	areas to stabilise up to 12 months	-							This cost includes cover crop only
									additional seeding required Assumes use on extreme slopes stabilisation is required for up to
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		months. Application rate of ~4,00
									minimum. This cost includes cov crop only, additional seeding reau Assumes 250 kg / ha. These rate
									fluctuated over the last few years
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		however in light of current condition (lower fuel prices, reduced deman
									this is a suitable standard rate. These rates have fluctuated over
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		last few years however in light of conditions (lower fuel prices, redu
	engle application of retuiser (trees)	'		110	\$140.00		ψU		demand etc) this is a suitable star
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		rate. Assumes 2.5 t / ha as an average
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0	1	application rate. Recent experience with agronomy
									projects. 1800mm x 3 barb chain-link mest
	Security fence around steep section of high wall	Y		m	\$64.00		\$0		security fence and gate standard
									mesh & 32 mm post not concrete Compliance with AS 1319-1994 -
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		signs for the occupational environ
									installed every 25 m. D7 to spread material at \$205/hr,
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		Excavator (\$220/hr) load Artic Tru (90c/km) from imported stockpile
	matara material (verviv) for growth mould.								nominal rate of \$70/m3 for import

	Total Cost for A							\$0	
		~	I	I	Additional Ite	ems Subtotal	\$0		the operator>>
	Other 3 <insert></insert>	N			left blank				the operator>> This item includes < <to added="" be="" i<="" td=""></to>
	Other 2 <insert></insert>	N			deliberately				the operator>> This item includes < <to added<="" be="" td=""></to>
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added<="" be="" td=""></to>
	1		Mainte	enance of Re	habilitated Ar	eas Subtotal	\$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
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement some level of additional surface wa
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - significant growth media replacem
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		maior repair works. Areas requiring minor repair - rills, minor growth media replacement.
aintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		include re-seeding, watering, fertili minor re-shaping, erosion control, inspections/audits - does not inclue
				W	ater Managem	ent Subtotal	\$0		Rehabilitation maintenance might
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List				contaminated sediment requiring removal using an excavator, truck a dozer to clean out the dam.
	earthworks							Select Haul Distance Here	an alternate land-user - D6 Dozer (similar) + pasture grass. This item includes the volume of
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use
	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		revegetation required to rehabilitate dam batters etc suitable for re-use an alternate land-user - D6 Dozer (similar) @ ~\$200 per hour and pas grass.
Water Management	Land Preparation and Revegetation (Grou	vtn media De	evelopment ar	ia Ecosyster	n Establishme	ent) Subtotal	φU		Provisional sum for earthworks an
	Utilise biotic soil media - organic topsoil alternative Land Preparation and Revegetation (Grov	Y		m2	\$2.50	N 0 1 1 1 1	\$0 \$0		alternative to spreading topsoil pric hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		quality. Material that can be applied as an
									required or respreading where necessary Addition of manure to improve soil
	Topsoil stripping	Y		m3	\$4.86		\$0		vegetation growth e.g. regrowth Stripping or topsoil at an approxim depth of 0.2 m into stockpiles; load haul to final rehabilitation location
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truc (90c/km) from imported stockpile - nominal rate of \$60/m3 for importe material.

Domain 5a: Management Activities

Total Cost for Management Activities

Key Rehabilitation Area Data for Domain Total Landform Establishment: Total Growth Media Development: Total Ecosystem Establishment: \$1,000

Enter data below manually

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	Y		ML	\$3,600		\$0	momation	Rate can fluctuate depending on treatment type however this is a suita standard rate for current programs al mining operations. Rate can fluctuate depending on
	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 suita standard rate for current programs at mining operations.
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	Y		m	s2,500	nent Subtotal	\$0 \$0		Assumes material is suitable for revegetating and has a reasonable
	Long term maintenance of water course diversion – Channel constructed through backfilled material	Y		m	\$1,500		\$0		chance of stabilising. Assumes maintenance has been kep 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 kep up and significant works are not required.
	Installation of rock armouring	Y		m2	\$6.00		\$0		Assumes competent material is loca available - multiply costs by 2 for sourcing and transporting from offsit location.
			1		Creek Diversi	ions Subtotal	\$0		
intenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed,	Y		ha	\$150.00		\$0		Feral animal baiting programs if required and waste materials requi
71010	and rehabilitated areas Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment	Y		ha	\$400.00		\$0		to be removed. Undisturbed areas within the lease boundary that require land manager
	control works)		Maint	enance of Re	habilitated Ar	reas Subtotal	\$0		activities.
Heritage Items	The restoration and care and maintenance of items	[Use alternate				Item for the redistribution of Aborigi artefacts, preservation of European
	that have heritage significance	Y		allow	rate cell		\$0		heritage items or a combination of activities.
Sundry Items	_	r	1	1	Heritage Ite	ems Subtotal	\$0		Provisional sum to be used to refine
	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 /pl tlakes, prefiminary seal designs, etc. and only finalisation of detailed engineering deigns required	Y		allow	\$100,000		\$0		conceptual closure plan into a detail closure plan with execution strategi for rehabilitation activities. Assumes outcomes of studies read available including modelling, landf design, geochemistry, demolition, e Costs to finalise options by domain finalise designs for construction. Assume a simple site e.g. single op cut, no legacy operations historic in area, little social dependence, etc. Depending on site size, complexity, land use requirements and knowled base investigations can range from ~\$75k to >\$1 M.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ±2 of the following aspects requiring closure planning, but no significant issues realised at this time; previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void			allow	\$90,000		\$0		Sites with anoth, bad usit of the conceptual closure plan into a detai closure plan with execution strategi for rehabilitation activities. Estimated cost for developing closu plan including studies - basic to sat risks and decisions - includes risk assessment, options analysis, Clos Plan. Sites with more than 1 pit to add 550.000 he retered.
	Development of an Umplanned 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	Y		allow	\$15,000		\$0		Assumes sediment control is the ke concern for rehabilitation e.g. small mines, exploration operations. Incl risk assessment, sampling and analyses on <5 samples, one study Closure Plan.
	whid 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 investigation and studies including designs e.g. geochemistry, Contamination Remediation Action Plan, subsiden risk, cover/capping and final landfo site wide surface water, etc. Provis sum to be used to refine the concep closure plan into a detailed closure with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical ecology and social, development of closure plan including address of obligations. Assume a simple site single open cut, no legacy operation historic in the area, little social dependence, etc. Depending on site size, complexity, land use requirements and knowled base investigations can range to 3 Sites with more than 1 pit to add
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void			allow	\$125,000		\$0		fifchage tosts for key investigation and studies including economic treatments and designs e.g. geochemistry. Contamination Remediation Action Plan, subsiden risk, cover/capping and final landfo site wide surface water, etc. Provis sum to be used to refine the concep closure plan into a detailed closure with execution strategies for inpublikation sativities.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	Y		allow	\$27,950		\$0		In the second se

Image: state in the s		Site security during closure	Y		yr.	\$75,000		\$0		measures required during closure. This includes nightly patrols and first response in the event of an out of hours
Image: Chance type of HAZMAT Clean-up required. Cleaning and decommunity plant and equipment. chemical at orage locations, oil and grease traps, tanks, vessels, and pipe work etc Y Allow SD Allow SD Cleaning and decommunity plant in the selection of the s										
chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc oil and grease traps, tan pipe work etc Removal and disposal of radiation devices Y each S31,630 S0 Provisionit sum of disposal of monitoring di conveyors using at Patient Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities Y each S31,630 S0 Provisionit sum of disposal of monitoring di conveyors using at Patient Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities Y allow Use alternate rate call S0 Provisional sum. Mobilisation and Demobilisation quarry - small feet Y allow Use alternate rate call S0 Provisional sum. Mobilisation & Demobilisation first barbitistion (Distance to site <150 km but <500 km)			v		allow	e0.		\$0		Type of HAZMAT Clean-up required - cleaning and decontaminating plant an
Removal and disposal of radiation devices Y each \$31,830 \$50 disposal dispo			Ţ		anow	ŞU		φU		oil and grease traps, tanks, vessels, an
public lands for rehabilitation/remediation activities Y allow rate cell SU Provisional sum. Mobilisation and Demobilisation quarry - small fleet Y Item \$12,000 \$0 \$0 equipment and/or suitabilitation superialist de equipment and/or suitabilisation for small mine or quarry - medium to large fleet Y Item \$12,000 \$0 \$0 equipment and/or suitabilitation superialist de equipment and/or suitabilisation (Distance to site <150)		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 thers) will directlu affect incino.
Mobilisation and Demobilisation Mobilisation for small mine or quary - small fleet Y Item \$12,000 \$0 May include specialist de equipment and/or suitable execute buik earthworks. Mobilisation and Demobilisation for small mine or quary - medium to large fleet Y Item \$32,000 \$0 \$0 equipment and/or suitable execute buik earthworks. Mobilisation & Demobilisation (Distance to site <150 km) Y Item \$30,000 \$0 \$0 equipment and/or suitable execute buik earthworks. Mobilisation & Demobilisation (Distance to site <150 km) Y item \$100,000 \$0 equipment and/or suitable execute buik earthworks. Mobilisation & Demobilisation (Distance to site >150 km but <500 km)			Y		allow			\$0		Provisional sum.
Mobilisation & Demobilisation for smail mine or quarry - medilet Y Item \$12,000 \$0 equipment and/or suitability (marry - medilet) Mobilisation & Demobilisation for smail mine or quarry - medilum to large fleet Y Item \$35,000 \$0 \$00 equipment and/or suitability (marry - medilum to large fleet) Mobilisation & Demobilisation (Distance to site <150 km) Y item \$100,000 \$00 \$00 equipment and/or suitability execute builk earthworks. Mobilisation & Demobilisation (Distance to site >150 km) Y item \$150,000 \$0 \$00 equipment and/or suitability execute builk earthworks. Mobilisation & Demobilisation (Distance to site >150 km but <500 km) Y item \$150,000 \$00 FALSE May include specialist de equipment and/or suitability execute builk earthworks. Mobilisation & Demobilisation (Distance to site >150 km but <1000 km) Y item \$150,000 \$00 FALSE May include specialist de equipment and/or suitability execute builk earthworks. Mobilisation & Demobilisation (Distance to site) Y item \$50,000 \$00 FALSE May include specialist de equipment and/or suitability execute builk earthworks. Mobilisation & Demobilisation (Distance to site) Y item <th></th> <th></th> <th>-</th> <th></th> <th></th> <th>Sundry Ite</th> <th>ems Subtotal</th> <th>\$0</th> <th></th> <th></th>			-			Sundry Ite	ems Subtotal	\$0		
Mobilisation & Demobilisation for small mine or quary - medium to large fleet Y Item \$35,000 \$0 May include specialist of equipment and/or suitabi arecule buik earthworks. Mobilisation & Demobilisation (Distance to site <150 km) Y item \$100,000 \$0 \$0 equipment and/or suitabi arecule buik earthworks. Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	Mobilisation and Demobilisation		Y		Item	\$12,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Mobilisation & Demobilisation (Distance to site <150 y) Y item \$100,000 \$0 \$0 equipment and/or suitabilisation (and/or suitabilisation (bistance to site >150 y) Mobilisation & Demobilisation (Distance to site >150 km but <500 km)			Y		Item	\$35,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Mobilisation & Demobilisation (Distance to site >100 km but <500 km) Y item \$150,000 \$0 May include specialist de equipment and/or suitabilization (suitabilization (suitabilizatio			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 >500 km but <1000 km) Y item \$300,000 \$0 \$00 Magintudes specialistic equipment and/or suitable execute bulk earthworks Mobilisation & Demobilisation (Distance to site >1000 km) Y Item \$500,000 \$0 FALSE Magintudes specialistic equipment and/or suitable execute bulk earthworks Mobilisation & Demobilisation (Distance to site >1000 km) Y Item \$500,000 \$0 \$0 Magintudes specialistic execute bulk earthworks Mobilisation & Demobilisation (Distance to site >1000 km) Y 1 This is \$1,000.00 \$1,000 insert additional information the operator>>			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 >1000 km) Y item \$500,000 \$0 \$00 Magnitude specialistic execute bulk earthworks			Y		item	\$300,000		\$0	FALSE	May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Mobilisation and Demobilisation Subtotal \$0 Additional Items General Expenses Y 1 This is \$1,000.00 \$1,000 Insert additional information This item includes < <to i="" operator="" the="">></to>			Y		item	\$500,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
General Expenses Y 1 This is \$1,000.00 \$1,000 here the operator>				Mo	bilisation an	d Demobilisat	ion Subtotal	\$0		
This item includes < <to< td=""><td>Additional Items</td><td>General Expenses</td><td>Y</td><td>1</td><td></td><td>This is</td><td>\$1,000.00</td><td>\$1,000</td><td></td><td></td></to<>	Additional Items	General Expenses	Y	1		This is	\$1,000.00	\$1,000		
N deliberately the operator>>			N			deliberately			nore	This item includes << to be added by
		Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by<="" td=""></to>
Additional Items Subtotal \$1,000						Additional Ite	ems Subtotal	\$1,000		

Assumptions and rehabilitation requirements

List or record any assumptions made when completing this tool:

The mine has been on care and maintenance since 2009, there are no active or proposed disturbance or rehabilitation planned for the next three years- in line with the Forward work program

Roads and tracks to remain after mine closure as per landholder (Rimfire) consent, therefore associated cost not been included