

## Site Registration

Date

March 2024

Complete the following fields prior to calculating the security deposit.

Exploration Authorisation Number	ML86 and ML87		
Exploration Authorisation Holder Name	Broken Hill Cobalt Project Pty Ltd		
Expiry of Authorisation	5/11/2043 (ML86) / 5/11/2042 (ML87)		
Current Security	\$122,000	Date of last Security Deposit review	16/09/2021
RCE Contact	Heath Porteous		
Position	Manager Exploration - Cobalt Blue Holdings		
Address	Level 17, 100 Miller Street North Sydney NSW 2060		
Phone		Email	heath.porteous@cobaltblueholdings.com

## Site Description

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

### Summary of Exploration Activities

Authorisation area (ha):	Hectares	300
Exploration Activity (Assessable Prospecting Operations) Approval references for activities which have not been rehabilitated to the satisfaction* of the Department.	1	OUT16/38854
	2	OUT16/652
	3	OUT/171340
	4	OUT17/39916

\*Rehabilitation of prospecting operations is deemed 'satisfactory' when:

- a Form ESF2 – Rehabilitation Completion and/or Review of Rehabilitation Cost Estimate is submitted to the Department by the authority holder, and
- the Department has formally notified the authority holder that the rehabilitation is satisfactory.



### Exploration Summary Rehabilitation Cost Estimation

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

Exploration Authorisation Number: ML86 and ML87

Exploration Authorisation Holder Name: Broken Hill Cobalt Project Pty Ltd

Expiry of Authorisation: 5/11/2043 (ML86) / 5/11/2042 (ML87)

Current Security: \$122,000      Date of Last Security Deposit Review: 16/09/2021

RCE Contact: Heath Porteous

Position: Manager Exploration - Cobalt Blue Holdings

Address: Level 17, 100 Miller Street  
North Sydney NSW 2060

Phone: [Redacted]      Email: heath.porteous@cobaltblueholdings.com

Domain		Security Deposit
Total Cost for all Rehabilitation Activities		\$110,163
Subtotal (Domains and Sundry Items)		\$110,163.49
Contingency	10%	\$11,016.35
Post Closure Environmental Monitoring	5%	\$5,508.17
<b>Total Security Deposit for the Project (excl. of GST)</b>		<b>\$126,688.01</b>

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).

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

This 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 the authorisation holder/s for the exploration authorisation/s concerned.

Joe Kaderavek  
Authorisation Representative's Name

18/03/2024  
Date:

CEO  
Authorisation Representative's Role / Responsibility

Signature

**Exploration**

**Domain 1a: All Rehabilitation Activities**

**Total Cost for all Rehabilitation Activities**

**\$99,225**

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

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	N		allow	\$5,850				Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	N		km	\$15,000				Applies to power lines on stobie, concrete or similar poles.
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	N		m2	\$100.00				Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable
	Demolish and remove switchyard. Dispose of waste material on-site/locally	N		m2	\$75.00				Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	N		m2	\$40.00				Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y	100	m2	\$61.00		\$6,100		Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	N		m2/floor	\$90.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Remove medium underground pipe and disposal on-site/locally	N		m	\$60.00				For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
	Remove large underground pipe and disposal on-site/locally	N		m	\$165.00				For example: 1 m pipes - 2 m deep.
	Remove above ground pipe (supported) and disposal on-site/locally	N		m	\$12.00				~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
	Remove surface pipelines (unsupported) and disposal on-site/locally	N		m	\$15.00				~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
	Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	N		allow	\$20,000.00				Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
	Remove bitumen (airstrip) and dispose on-site/locally	Y	750	m2	\$20.00		\$15,000		Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	Y	100	m2	\$75.00		\$7,500		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 - 50 mm	N		tonne	\$13.00				Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 30 mm	N		tonne	\$15.00				Does not include haulage of materials - assumes crushing plant is readily available.
	Remove fence (cyclone/wire fence) and disposal on-site/locally	Y	1000	m	\$20.00		\$20,000		Roll up fence and remove posts.
	Removal of small plastic tanks	N		each	\$1,000.00				Remove small poly tanks used for water storage, etc.
	Demolish and remove galvanised/corrugated light weight tanks	N		each	\$500.00				Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
	Demolish and remove communication towers	N		each	\$5,000.00				Cost includes demolition and removal of tower only, separate costs required for disconnection of services, demolition of footings, etc.
	Removal of UG services (power within main gate areas, etc.)	N		allow	\$50,000.00				Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	N		tonne	\$7.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	N		tonne	\$9.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	N		tonne	\$12.50				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	N		tonne	\$32.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	N		tonne	\$36.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	N		allow	Use alternate rate cell				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill - fees (general waste)	N		tonne	\$193.00				Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
	Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	N		tonne	\$174.00				Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
	<b>Termination of Services and Demolition Works Subtotal</b>							<b>\$48,600</b>	

Contaminated Materials									
	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	N		Cluster	\$15,000				The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle re-fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	N		L	\$0.35				Cost for recent sump clean-up from resource activity - requires specialists to treat.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	N		m3	\$800.00				Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	N		m4	\$660.00				Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	N		m3	\$220.00				Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	N		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	N		Item	\$150,000				Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	N		m3	\$165.00				Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	N		m2	\$50.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Treatment of known Acid Sulfate Soils	N		ha	\$2,580				Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	N		m2	\$1				Provisional sum for cutting using ripping tyres and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
<b>Contaminated Materials Subtotal</b>							<b>\$0</b>		
<b>Boreholes</b>	Option 1 - Coal bore hole Exploration boreholes - rehabilitate coal boreholes and drill pads as required	N		depth (m)	\$44.55				Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes - grout and cap open bore holes	N		allow	\$5,700				Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes - backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	N		allow	\$43				May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	N		Item	\$2,070				Bag out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site.
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	N		Item	\$1,340				Sealing required, but not complete filling with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	N		each	\$415				Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
<b>Boreholes Subtotal</b>							<b>\$0</b>		
<b>Roads and Tracks</b>	Unsealed roads / vehicle park-up areas - minor works including deep rip and trim	Y	0.4	ha	\$1,040.00		\$416		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	N		ha	\$1,500				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip and seed (pasture grass)	N		ha	\$3,700				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$4,485				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
<b>Roads and Tracks Subtotal</b>							<b>\$416</b>		
<b>Earthworks / Structural Works (Landform Establishment)</b>	Minor reshaping and pushing - this may include backfilling costeans, bulk samples, camp areas etc.	Y	0.3	ha	\$3,900		\$1,170		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Fill dams, voids etc. - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance <1 km)	Y	4000	m3	\$3.90		\$15,590	<=1km	Undertaken using a 623 scraper and D10 Dozer.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	3.9	ha	\$1,130.00		\$4,407		Undertaken using D10 dozer and 16M grader.
	Deep rip hard stand / lay down areas	Y	3.9	ha	\$960.00		\$3,744		D10 deep ripping.
<b>Earthworks / Structural Works (Landform Establishment) Subtotal</b>							<b>\$24,911</b>		
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)</b>	Source, cart and spread growth media - haul distance <1 km	Y	2000	m3	\$3.26		\$6,512	<=1km	Undertaken with 623 scraper and 14 M grader.

Planting mature trees (>15 cm)	N		allow	\$15.00				4 m centres.
Planting tube stock (<15 cm)	N		allow	\$6.60				4 m centres.
Direct seeding / fertiliser (pasture grass species)	N		ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
Direct seeding / fertiliser (tree or native grass species)	N		ha	\$4,135				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
Single application of fertiliser (trees)	N		ha	\$140.00				These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
Construct no-climb stock fence around rehabilitated areas	N		m	\$22.00				Standard rate for no-climb stock fencing.
Construct standard stock fence around rehabilitated areas	N		m	\$13.00				Standard rate for standard stock fencing.
Purchase and erect warning signs	N		allow	\$250.00				Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal</b>							<b>\$6,512</b>	
<b>Water Management</b>								
Exploration sump decommissioning	N		m3	\$57.00				Use of a tractor or bob cat with labour. This could be completed in a few hours. Assumes 3 m x 3 m x 1 m sump. Assumes backfill material available within 2 km round trip.
Water / mud disposal from sump	N		L	\$0.30				Disposal of non-contaminated sediments removed from sump.
Clean water dams to be retained after decommissioning - make safe and minor earthworks	N		allow	\$2,500.00				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure - make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
<b>Water Management Subtotal</b>							<b>\$0</b>	
<b>Maintenance of Rehabilitated Areas</b>								
Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	4.2	ha	\$925.00		\$3,885		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
Existing rehabilitation repair - minor	Y	1	ha	\$1,200		\$1,200		Areas requiring minor repair - rills, minor growth media replacement.
Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
<b>Maintenance of Rehabilitated Areas Subtotal</b>							<b>\$5,085</b>	
<b>Maintenance of Other Land</b>								
Pest management on buffer lands, non-disturbed, and rehabilitated areas	N		ha	\$150.00				Feral animal baiting programs if required and waste materials required to be removed.
Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	N		ha	\$400.00				Undisturbed areas within the lease boundary that require land management activities.
<b>Maintenance of Other Land Subtotal</b>							<b>\$0</b>	
<b>Heritage Items</b>								
The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
<b>Heritage Items Subtotal</b>							<b>\$0</b>	
<b>Sundry Items</b>								
Site security during closure	Y	0.068	yr.	\$75,000		\$5,100	Pro-rata period based on estimated time to complete rehabilitation works.	Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	N		allow	Use alternate rate cell				Provisional sum.
<b>Sundry Items Subtotal</b>							<b>\$5,100</b>	
<b>Third Party Project Management</b>								
Mobilisation & Demobilisation for exploration programs	Y	1	Item	\$7,000		\$7,000		Assumes an exploration program of 10 or fewer holes and local contractors within 250 km are available to undertake rehabilitation of disturbance generated by dedicated exploration companies. Apply once per exploration pad.
<b>Third Party Project Management Subtotal</b>							<b>\$7,000</b>	
<b>Additional Items</b>								
Re-establish habitat for Barrier Range Dragon using stockpiled rock material.	Y	8	hr	This is	\$200.00	\$1,600	Combination of dozer and excavator work. Small dozer (D6 or similar) at ~\$200 per hour - allow 1 day @ 8 hours per day.	Re-establishment of habitat for Barrier Range Dragon using stockpiled rock material.
Other 2 <insert>	N			deliberately				This item includes <<to be added by the operator>>
Other 3 <insert>	N			left blank				This item includes <<to be added by the operator>>
<b>Additional Items Subtotal</b>							<b>\$1,600</b>	
<b>Total Cost for all Rehabilitation Activities</b>							<b>\$99,225</b>	

**Exploration**

**Domain 1b: All Rehabilitation Activities**

**Total Cost for all Rehabilitation Activities**

**\$10,939**

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

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

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Y		allow	\$5,850		\$0		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	\$15,000		\$0		Applies to power lines on stobie, concrete or similar poles.
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Y		m2	\$40.00		\$0		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Y		m2	\$61.00		\$0		Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	Y		m2/floor	\$90.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Remove medium underground pipe and disposal on-site/locally	Y		m	\$60.00		\$0		For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
	Remove large underground pipe and disposal on-site/locally	Y		m	\$165.00		\$0		For example: 1 m pipes - 2 m deep.
	Remove above ground pipe (supported) and disposal on-site/locally	Y		m	\$12.00		\$0		~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
	Remove surface pipelines (unsupported) and disposal on-site/locally	Y		m	\$15.00		\$0		~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
	Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	Y		allow	\$20,000.00		\$0		Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
	Remove bitumen (airstrip) and dispose on-site/locally	Y		m2	\$20.00		\$0		Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	Y		m2	\$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 - 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		each	\$1,000.00		\$0		Remove small poly tanks used for water storage, etc.
	Demolish and remove galvanised/corrugated light weight tanks	Y		each	\$500.00		\$0		Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
	Demolish and remove communication towers	Y		each	\$5,000.00		\$0		Cost includes demolition and removal of tower only; separate costs required for disconnection of services, demolition of footings, etc.
	Removal of UG services (power within main gate areas, etc.)	Y		allow	\$50,000.00		\$0		Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Y		tonne	\$7.00		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y		tonne	\$9.00		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y		tonne	\$12.50		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	Y		tonne	\$32.00		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	Y		tonne	\$36.00		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	Y		allow	Use alternate rate cell		\$0		Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill - fees (general waste)	Y		tonne	\$193.00		\$0		Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Y		tonne	\$174.00		\$0		Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.	
<b>Termination of Services and Demolition Works Subtotal</b>							<b>\$0</b>		
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Y		Cluster	\$15,000		\$0		The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include: - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle re-fuel, sewage treatment, secondary workshop, chemical storage etc.)
	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.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Y		m3	\$800.00		\$0		Includes load, haul and dump fees to a licensed facility.

	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	Y		m4	\$660.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Y		m3	\$220.00		\$0		Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Y		Item	\$150,000		\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y		m3	\$165.00		\$0		Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	Y		m2	\$50.00		\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Treatment of known Acid Sulfate Soils	Y		ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		Provisional sum for cutting using ripping tyres and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
<b>Contaminated Materials Subtotal</b>							<b>\$0</b>		
<b>Boreholes</b>	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Y		depth (m)	\$44.55		\$0		Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	Y		allow	\$5,700		\$0		Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Y		allow	\$43		\$0		May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	Y		Item	\$2,070		\$0		Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site.
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	Y		Item	\$1,340		\$0		Sealing required, but not complete filling with concrete/grout.
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	Y	18	each	\$415		\$7,470		Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material.
<b>Boreholes Subtotal</b>							<b>\$7,470</b>		
<b>Roads and Tracks</b>	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y	1	ha	\$1,040.00		\$1,040		Assumes ~6 m road width - 16H Grader.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
<b>Roads and Tracks Subtotal</b>							<b>\$1,040</b>		
<b>Earthworks / Structural Works (Landform Establishment)</b>	Minor reshaping and pushing - this may include backfilling costeans, bulk samples, camp areas etc.	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Y		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Fill dams, voids etc. - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y	0.89	ha	\$1,130.00		\$1,006		Undertaken using D10 dozer and 16M grader.
	Deep rip hard stand / lay down areas	Y		ha	\$960.00		\$0		D10 deep ripping.
<b>Earthworks / Structural Works (Landform Establishment) Subtotal</b>							<b>\$1,006</b>		
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)</b>	Source, cart and spread growth media - haul distance >1 km but <2 km	Y		m3	\$4.32		\$0	> 1km but <= 2km	Undertaken with scraper and D10 dozer.
	Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm)	Y		allow	\$6.60		\$0		4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10

	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.	
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Y		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.	
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.	
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.	
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate.	
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy 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.	
<b>Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal</b>							<b>\$0</b>			
<b>Water Management</b>	Exploration sump decommissioning	Y		m3	\$57.00		\$0		Use of a tractor or bob cat with labour. This could be completed in a few hours. Assumes 3 m x 3 m x 1 m sump. Assumes backfill material available within 2 km round trip.	
	Water / mud disposal from sump	Y		L	\$0.30		\$0		Disposal of non-contaminated sediments removed from sump.	
	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500.00		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.	
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.	
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.	
<b>Water Management Subtotal</b>							<b>\$0</b>			
<b>Maintenance of Rehabilitated Areas</b>	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	0.89	ha	\$925.00		\$823	Actual disturbance of boreholes	Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.	
	Existing rehabilitation repair - minor	Y	0.5	ha	\$1,200		\$600		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.	
<b>Maintenance of Rehabilitated Areas Subtotal</b>							<b>\$1,423</b>			
<b>Maintenance of Other Land</b>	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y		ha	\$150.00		\$0		Feral animal baiting programs if required and waste materials required to be removed.	
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land management activities.	
<b>Maintenance of Other Land Subtotal</b>							<b>\$0</b>			
<b>Heritage Items</b>	The restoration and care and maintenance of items that have heritage significance	Y		allow	Use alternate rate cell		\$0		Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.	
<b>Heritage Items Subtotal</b>							<b>\$0</b>			
<b>Sundry Items</b>	Site security during closure	Y		yr.	\$75,000		\$0		Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.	
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	Y		allow	Use alternate rate cell		\$0		Provisional sum.	
<b>Sundry Items Subtotal</b>							<b>\$0</b>			
<b>Third Party Project Management</b>	Mobilisation & Demobilisation for exploration programs	Y		Item	\$7,000		\$0		Assumes an exploration program of 10 or fewer holes and local contractors within 250 km are available to undertake rehabilitation of disturbance generated by dedicated exploration companies. Apply once per exploration pad.	
<b>Third Party Project Management Subtotal</b>							<b>\$0</b>			
<b>Additional Items</b>	Other 1 <insert>	N			This is deliberately left blank				This item includes <<to be added by the operator>>	
	Other 2 <insert>	N							This item includes <<to be added by the operator>>	
	Other 3 <insert>	N							This item includes <<to be added by the operator>>	
<b>Additional Items Subtotal</b>							<b>\$0</b>			
<b>Total Cost for all Rehabilitation Activities</b>							<b>\$10,939</b>			