

- CL COLLECTOR NO HAM FTL.
DO LOGGING AT HAM AS
GRANDS FOR JUSTIFICATION.
- WSP METHODOLOGY - WARWICK FTL.
- LOTP2 - RESP. NOTING RIGHT
CHANGES TO ANALYSIS. TO EXPLORE
WARWICK / DEFOLDMENT. RESP.
- PROPORTIONALITY OF WARWICK.
 - OVERSILL. MINIMAL SWK.
WAS LEADERS FIRST TIME.
- DRINK - ALSO BUDGET
FROM. NOTING OF
IN BUDGET. ALL / LEADERS
PHOTO.
- OUTLINE 1.2 SPILLAGE CO. X.
- RESISTANCE V. COMPARISON.
SPILLAGE.
- SPILLAGE TO PROTECT
RELEVANT FLAW PATH.
- SIZE OF RINGS / COST OF
PUMPING AT.
- NOTIFICATION PROVISIONS →
FIRE CARBONK. WHO
NOTIFY? PRIOR NOTIFICATION
NOT REACHED (10 PM
(5-6 DAYS LATE)).
FOUR? HATLINE.
ALSO WITH WHFS. IMPACT.

THURSDAY, 3 NOVEMBER 2016.

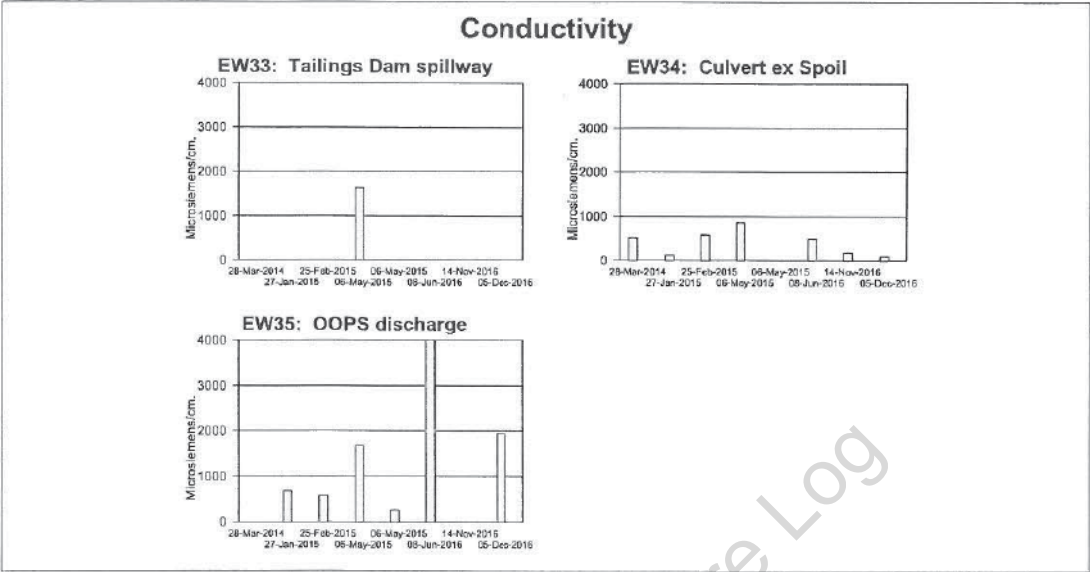
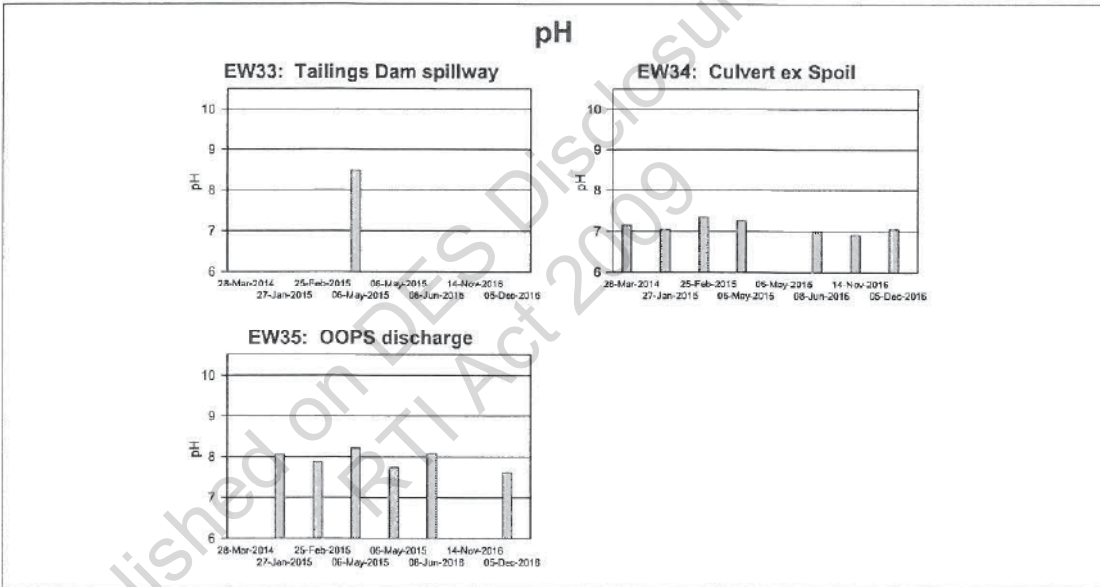
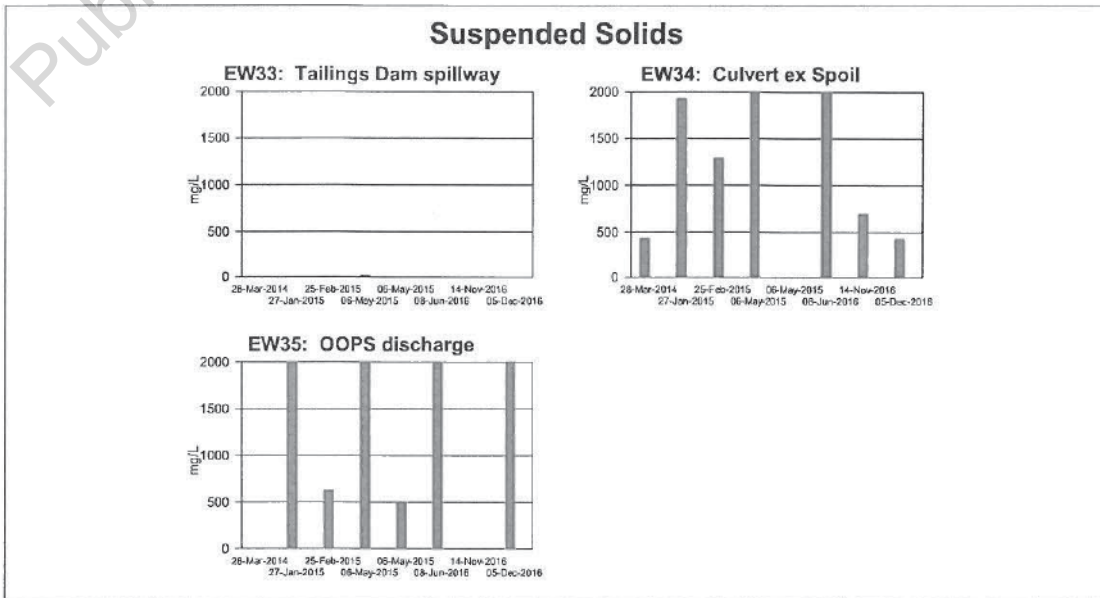
TRANA 16 MARCH, 4987 9382.

- PHASE SUMMARIO- APPROVED.

- ZODIAC - COMPOSING. OTHER.
- VOIDS/TAILINGS FACILITIES, FULL
- SUMMER GA. VOIDS STABILIZED.
- (WATER STORAGE?) ZODIAC ROOTS.
- WHAT ARE YOU PURSUING RE: ZODIAC.
- THINGS ON SITE TO REMAIN ON SITE.
- (GEOLOGICAL ASPECTS). GROUNDWATER IS
- UNKNOWABLE.
- TECHNICAL OWNER OF LAND.
- WATER STORAGE VOIDS NA.5 (MAYBE
- LOWER THAN 7.5-8). HISTORICAL
- DATA / UNDERMINING GEOLOGY.
- TOTAL SURFACE AREA.
- "BRANDS AREA" DON'T REQUIRE
- REPAIRS. - USED ONLY FOR GRAZING.
- SUMMERIZED ~ 370 HA. (1/2 TOTAL
- REMAINING FROM SURFACE AREA
- ~ 20 HA. TAILINGS STORAGE ~ 20-30
- O'BURGER → PRODUCE - WHERE
- GOING.
- GROUNDWATER ESTIMATE. COMPATIBILITY.
- W/ RETENTION OF VOIDS / INFRASTRUCTURE
- NO LOWER MINE ^{EXISTING} COAL - NOW
- ONLY GRAZING / ZODIAC ^{CARENS} (RECENT MINING).
- 'MINING OTHER' → AES.
- POOP TO OWNERS OFFICE.
- PA - PROBABLY NOT FOR DISC.
- TODAY. Q'S BEING ASKED.

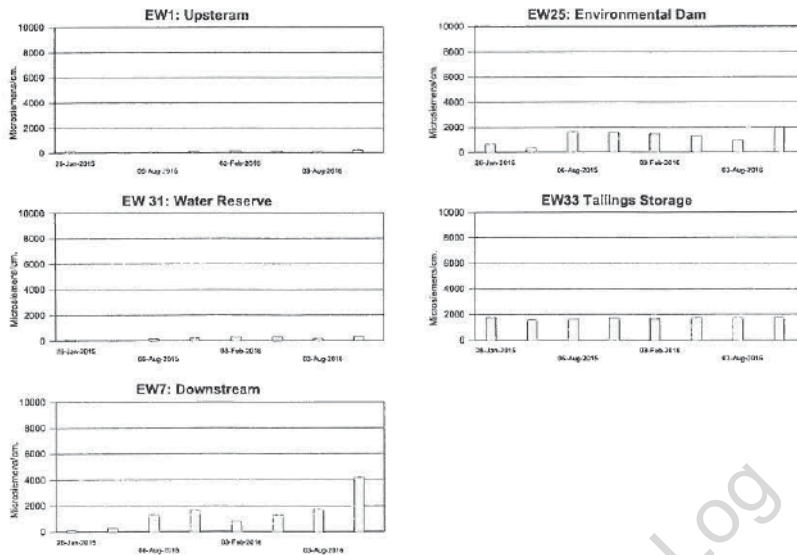
Ebenezer Rehabilitation Schedule

Disturbed Area		Rehabilitated							
Location	Ha	Prior 2012	2012-2016	2017	2018	2019	2020	2021	Balance
Product Handling Infrastructure	25.5		25.5						0.0
Tailings Pond	31.7		11.9	19.8					0.0
2nd ROM Stockpile	2.4			2.4					0.0
Pit and IB Nth Void	45.9				45.9				0.0
Pit and IB Eastern Dump	52.7	33.6	19.1						0.0
IB Sth Dump	26.8					26.8			0.0
Out of Pit Dump	41.6	41.6							0.0
	226.6	75.2	56.5	22.2	45.9	26.8	0.0	0.0	0.0

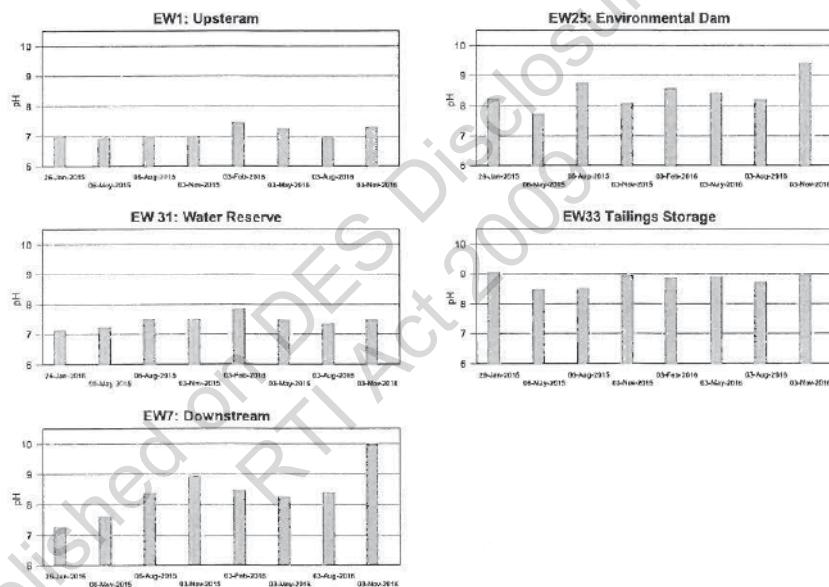


Runoff Monitoring Results - Ebenezer ML4712

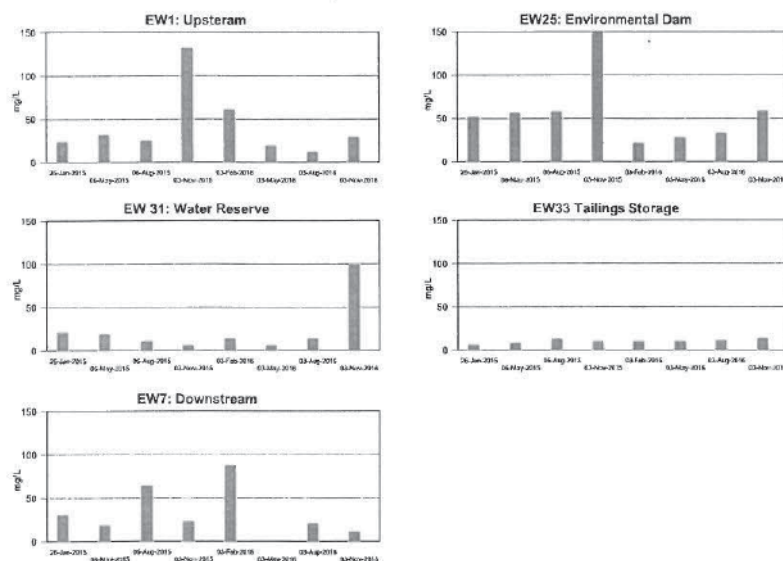
Conductivity



pH



Suspended Solids



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1. The rehabilitation liability calculator is copyright and the Licensee may only use the rehabilitation liability calculator subject to these terms and conditions of use. In using the rehabilitation liability calculator, the Licensee agrees to be bound by the terms and conditions of use.
2. The rehabilitation liability calculator is a general tool which identifies a range of work processes relating to rehabilitation. The rehabilitation liability calculator is made available to the Licensee to assist the Licensee in the calculation of a rehabilitation liability assessment. Rehabilitation liability assessments are used in the determination of rehabilitation bonds required to be lodged pursuant to the Environmental Protection Act 1984 (EPA). The rehabilitation liability calculator does not purport to contain all the information which a Licensee will require to calculate any rehabilitation liability.

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3. The Licensee grants to the Licensee a non-exclusive, non-transferable licence to:
 - 3.1 load a single copy of the rehabilitation liability calculator onto a hard disk or other storage device of any computer or a single tablet;
 - 3.2 display, print or reproduce that copy of the rehabilitation liability calculator; and
 - 3.3 allow for the Permitted Use.
- (b) distribute any Derivative Work to third parties; and
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4. Where the Licensee uses the rehabilitation liability calculator to produce any Derivative Work, the Licensee must ensure that all copies of that Derivative Work include the following notice:

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TERMS AND CONDITIONS OF USE

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5. Except as permitted by the terms and conditions of use or the Copyright Act 1969, the Licensee must not, and must not permit a third party to:
 - (a) decompile, disassemble, reverse engineer or otherwise attempt to derive the source code of the rehabilitation liability calculator;
 - (b) modify or make any adaptation or other derivative work from the rehabilitation liability calculator;
 - (c) use, copy, reproduce, publish, store in a retrieval system or transmit the calculator or any Derivative Work in any third party; or
 - (d) sell, rent, lease, license, sub-license, display, publish or communicate the rehabilitation liability calculator (or any Derivative Work) to any third party without the prior written consent of URS Australia Pty Ltd and Woorl Par Pty Ltd trading as GCS Environmental.

Accuracy of information

6. The Department may review the rates and formulae used in the rehabilitation liability calculator at any time without notice but is not under any obligation to do so.
7. The Licensee should rely on their own independent investigations, review and analysis in using the rehabilitation liability calculator.
8. The output of the rehabilitation liability calculator will depend on the accuracy of the information entered by the Licensee concerning the relevant work plan and rehabilitation plan and current and future site conditions.
9. The default third party rates included in the rehabilitation liability calculator are for general information only and are typical market third party contract rates as at 1 July 2012. As a result, the default third party rates may not be applicable to some mining or extractive operations. For the purposes of a rehabilitation liability assessment, the Department or its authorised personnel under the Environmental Protection Act 1984 may set different rates for specific sites. These rates may be higher for specific sites.

10. The Licensee must review default rates included in the rehabilitation liability calculator and ensure they are applicable to their site conditions. If not, they should specify an alternative rate and insert this rate into the rehabilitation liability calculator. Any alternative rate must be substantiated in a form acceptable to the Department and must be determined using current market third party contract rates.
11. Rehabilitation bonds are determined and may be reviewed by the Chief Executive under the relevant legislation. In undertaking these responsibilities the Chief Executive or the Department may refer to any rehabilitation liability assessment undertaken by the Licensee but is not bound to do so, and may have other matters in its account including those specified in EPA Guidelines from time to time.

Review of rehabilitation bonds

11. Rehabilitation bonds are determined and may be reviewed by the Chief Executive under the relevant legislation. In undertaking these responsibilities the Chief Executive or the Department may refer to any rehabilitation liability assessment undertaken by the Licensee but is not bound to do so, and may have other matters in its account including those specified in EPA Guidelines from time to time.

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TERMS AND CONDITIONS OF USE

Actual costs of rehabilitation

12. The actual costs of current and future rehabilitation required to be undertaken by a Licensee may be more or less than any calculation derived by use of the rehabilitation liability calculator or the amount of any rehabilitation bond determined by the Chief Executive or the Department. The Licensee must make their own independent investigations, review and analysis and obtain independent advice before basing any action on the basis of any calculation derived by use of the rehabilitation liability calculator.

Warranties, representations and liability

13. The Licensee does not warrant or represent that the rehabilitation liability calculator or the information it contains is free from errors or omissions or is suitable for a Licensee's intended use. To the maximum extent permitted by law, the Licensee:

- (1) excludes any representation or warranty (express or implied) as to the accuracy, reliability, completeness, quality, performance or fitness for any purpose of the rehabilitation liability calculator or any information it contains, or any calculation derived by use of the rehabilitation liability calculator; and
- (2) excludes any liability (whether arising from negligence or otherwise) for any claims, damages, losses, expenses, costs, including direct, indirect or consequential loss, legal costs and including loss of revenue, contracts, profit or opportunity which the Licensee (including its consultants, contractors, agents or assigns) may directly or indirectly suffer in connection with:

- (a) the Licensee's use of or access to (or inability to use or access) any part of the rehabilitation liability calculator, or any information contained in the rehabilitation liability calculator; or
- (b) the Licensee's reliance on any part of the rehabilitation liability calculator, any information contained in the calculator or any calculation derived by use of the rehabilitation liability calculator.

- (c) part of the rehabilitation liability calculator or any information contained in the rehabilitation liability calculator or any calculation derived from the rehabilitation liability calculator;

- (i) being inaccurate, incomplete or unfit for any particular purpose; or
- (ii) incapable of being processed on your equipment or systems; or

15. Any computer virus or other harmful code contained in or arising from access to or use of the rehabilitation liability calculator, or any damage to or interference with any data, software or hardware arising from access to or use of the rehabilitation liability calculator;

ACCEPTANCE

16. I accept the terms and conditions of use above.

State of Queensland, URS Australia Pty Limited and Woorl Par Pty Limited, 2013.

TERMS AND CONDITIONS OF USE

14. Where any law implies a condition or warranty into this Licence which may not lawfully be excluded then to the maximum extent permitted by law, liability of the Licensee for breach of the condition or warranty will be limited as to amount to:

- (a) replacement of the goods or supply of equivalent goods
- (b) payment of the costs of replacing the goods or of acquiring equivalent goods
- (c) supplying the services again; or
- (d) payment of the costs of having the services supplied again.

Definitions and Governing Law

15. These terms have the following meaning in these terms and conditions of use:

Chief Executive means the chief executive responsible for administering the Environmental Protection Act 1984.

Department means the State of Queensland through the Department of Environment and Heritage Protection including any successor agency or authority.

Derivative Work includes any assessment of rehabilitation liability undertaken by or on behalf of the Licensee using the rehabilitation liability calculator or other information produced derived by reference to or use of the rehabilitation liability calculator.

Rehabilitation liability calculator means the rehabilitation bond calculator developed by URS Australia Pty Ltd and Woorl Par Pty Ltd trading as GCS Environmental and licensed to the State of Queensland for use in calculating rehabilitation liability under the Environmental Protection Act 1984.

Licensee means any person who uses the rehabilitation liability calculator or on whose behalf the license is taken to use the rehabilitation liability calculator.

Licensees mean the State of Queensland (through the Department of Environment and Heritage), URS Australia Pty Ltd and Woorl Par Pty Ltd trading as GCS Environmental.

Permitted Use means the calculation of a rehabilitation liability assessment for the purposes of the determination of rehabilitation bonds required to be lodged pursuant to the Environmental Protection Act 1984 (EPA).

16. These terms and conditions and the copyright notice are governed by and are to be construed in accordance with the law of the State of Queensland.

ACCEPTANCE

17. I accept the terms and conditions of use above.

State of Queensland, URS Australia Pty Limited and Woorl Par Pty Limited, 2013.

Environmental Authority Registration

Complete the following fields prior to calculating the Rehabilitation Liability.

Environmental Authority Number:	EPML00594013		
Tenure Numbers:	ML4712		
Site Name (if applicable):	Ebenezer		
EA Holder:	Zedemar Holdings Pty Ltd		
Current Financial Assurance:			
Date of Last FA Review (DD/MM/YYYY):			
Site Contact:			
Position:			
Address:			
Phone:		Email:	

Activity Description

The following information is requested to provide a background description of activities subject to the calculation of this FA.

Summary of Activities

Total Annual Production (Operations only):	0	Period of FA:	5 Years
Lease / Tenement Area (ha):	357.79	Approved maximum disturbance area (if applicable):	
Disturbance Area During FA Period:		Year of Maximum Disturbance:	
Approval / Completion Criteria (as per the EA condition):			
Rehabilitated Final Land Use:	Grazing		

Assumptions and Rehabilitation Requirements

List or record any assumptions made when completing this tool:

Published on DES Disclosure Log
RTI Act 2009

Table of Values

Prepared by GSSE/SLR, 2013

#	Activity / Description	Unit	Rate	Information and Instructions	Justification and Assumptions for Rates
1	Roads, Tracks and Park-up areas				
x1.01	Remove bitumen (roads, parking areas) and dump in a void on-site	m ²	\$ 10.00	Enter the total area of any bitumen car parks (or similar).	Demolition cost.
x1.02	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (Select Haul Distance from list)	m ³	Select from List	Enter the total volume of any stabilised area (or similar).	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x1.03	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (haul distance < 1km)	m ³	\$ 3.90	Enter the total volume of any stabilised area (or similar).	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x1.04	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (haul distance >1 km but <2 km)	m ³	\$ 5.85	Enter the total volume of any stabilised area (or similar).	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x1.05	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (haul distance >2 km but <5 km)	m ³	\$ 6.75	Enter the total volume of any stabilised area (or similar).	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x1.06	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (haul distance >5 km)	m ³	\$ 8.00	Enter the total volume of any stabilised area (or similar).	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x1.07	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip	ha	\$ 900.00	Enter the total area of unsealed roads (or similar).	D11N dozer @ \$375 per hour, ~2.5 hrs per ha.
x1.08	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip (pasture grass)	ha	\$ 3,000	Enter the total area of unsealed roads (or similar).	\$900 / ha for minor push and ripping, \$860 / ha for amelioration with agricultural lime (or similar) and \$1240 / ha for native tree/shrub/grass seed.
x1.09	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	ha	\$ 3,855	Enter the total area of unsealed roads (or similar).	\$900 / ha for minor push and ripping, \$860 / ha for amelioration with agricultural lime (or similar) and \$2095 / ha for native tree/shrub/grass seed.
x1.10	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip	ha	\$ 1,500	Enter the total area of unsealed roads (or similar).	D11N dozer @ \$375 per hour ~4 hrs per ha. Minor push and trim 2 hrs per hectare. Deep rip @ ~5 m spacing 2 hrs per hectare.
x1.11	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	ha	\$ 3,600	Enter the total area of unsealed roads (or similar).	\$1500 / ha for minor push and ripping, \$860 / ha for amelioration with agricultural lime (or similar) and \$1240 / ha for pasture grass seed.
x1.12	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)	ha	\$ 4,455	Enter the total area of unsealed roads (or similar).	\$1500 / ha for minor push and ripping, \$860 / ha for amelioration with agricultural lime (or similar) and \$2095 / ha for native tree/shrub/grass seed.
2	Contaminated Materials				
x2.01	Undertake Phase 1 contamination assessment - assumes potential contamination is localised. If there are multiple work areas on site, additional studies should be included.	Item	\$ 15,000	Assessment required where it has been identified that there is significant potential of contaminated land.	Unit cost for a standard assessment.
x2.02	Removal and off-site treatment of hydrocarbon contaminated water from workshops, bunded areas and sumps.	L	\$ 0.35	This includes the removal of contaminated water from bunded areas and sump using a vacuum truck and disposing of the water to a licensed facility.	Assumes this requires a specialist to treat.
x2.03	Remove material (carbonaceous / metaliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	m ³	Select from List	Enter the total area of any process facility / stockpile area (or similar).	972 FEL \$200 per hour. Rear Dump Haulage at \$0.50 per tonne/km. With necessary trucks to achieve 150 cubic metres per hour.
x2.04	Remove material (carbonaceous / metaliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)	m ³	\$ 3.90	Enter the total area of any process facility / stockpile area (or similar).	972 FEL \$200 per hour. Rear Dump Haulage at \$0.50 per tonne/km. With necessary trucks to achieve 150 cubic metres per hour.

x2.05	Remove material (carbonaceous / metaliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)	m ³	\$ 5.85	Enter the total area of any process facility / stockpile area (or similar).	972 FEL \$200 per hour. Rear Dump Haulage at \$0.50 per tonne/km. With necessary trucks to achieve 150 cubic metres per hour.
x2.06	Remove material (carbonaceous / metaliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)	m ³	\$ 6.75	Enter the total area of any process facility / stockpile area (or similar).	972 FEL \$200 per hour. Rear Dump Haulage at \$0.50 per tonne/km. With necessary trucks to achieve 150 cubic metres per hour.
x2.07	Remove material (carbonaceous / metaliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >5 km)	m ³	\$ 8.00	Enter the total area of any process facility / stockpile area (or similar).	972 FEL \$200 per hour. Rear Dump Haulage at \$0.50 per tonne/km. With necessary trucks to achieve 150 cubic metres per hour.
x2.08	Load, cart and disposal of low level contaminated material (Hydrocarbons, Nitrates, Lead, Copper etc) off-site to a licensed landfill. Add \$50 / m ³ for cartage to regional landfill	m ³	\$ 200.00	Allows for disposal fee and cartage.	Assumes a suitable location for low level contaminant disposal is available regionally.
x2.09	Load, cart and dispose of high level contaminated material (PCB's, Dioxins, Mercury etc) off-site to a licensed local landfill. Add \$50 / m ³ for cartage to regional landfill	m ³	\$ 700	Allows for disposal fee and cartage.	Assumes a suitable location for high level contaminant disposal is available regionally.
x2.10	Onsite remediation of hydrocarbon contaminated soils (Select Volume from list) - manual land farming	m ³	Select from List	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.	-
x2.11	Onsite remediation of hydrocarbon contaminated soils (<50m ³) - manual land farming	m ³	\$ 55.00	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.	Assumes the use of appropriately available excavator / bobcat.
x2.12	Onsite remediation of hydrocarbon contaminated soils (>50m ³ but <100m ³) - manual land farming	m ³	\$ 44.00	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.	Allows for economies of scale.
x2.13	Onsite remediation of hydrocarbon contaminated soils (>100m ³ but <500m ³) - manual land farming	m ³	\$ 33.00	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.	Allows for economies of scale.
x2.14	Onsite remediation of hydrocarbon contaminated soils (>500m ³) - manual land farming	m ³	\$ 30.00	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.	Allows for economies of scale.
x2.15	Mobilisation of mobile treatment unit for hydrocarbon contaminated soil treatment	Item	\$ 100,000	Required if treatment of hydrocarbon contamination is required to be fast tracked	Required if treatment of hydrocarbon contamination is required to be fast tracked.
x2.16	Onsite remediation of hydrocarbon contaminated soils - using a mobile treatment unit	m ³	\$ 120.00	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.	Additional cost as the treatment process is fast tracked.
x2.17	Remove and dispose of asbestos (Select Volume from list)	m ³	Select from List	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.	-
x2.18	Remove and dispose of asbestos (<750 m ³)	m ³	\$ 50.00	Enter total area of asbestos to be removed.	Remove, contain, transport and dispose of asbestos materials This rate is for smaller volumes only (<750 m ³).
x2.19	Remove and dispose of asbestos (>750 m ³)	m ³	\$ 40.00	Enter total area of asbestos to be removed.	Remove, contain, transport and dispose of asbestos materials This rate is for large volumes only (>750 m ³).
x2.20	Removal and disposal of plastic liner (i.e dam, leach pad etc)	m ²	\$ 1.00	This rate includes cutting, removal and disposal of liner.	
3	Mining and Exploration Works				

x3.01	Active pit area – benches blasted and doze to approved grade (i.e as required under the project approval)	m ³	\$ 1.57	Enter total volume of material to be blasted and dozed.	Bulk drilling 8 x 9 pattern @ \$0.20 per cubic metre, explosives (can vary on contract and type) in a 0.225 m hole = \$0.70 per cubic metre. Stemming loss offsets initiation cost so total of \$0.90 per cubic metre. D11 Dozer @ \$375 per hour. Productivity ~550 cubic metres per hour
x3.02	Drill and blast faces to make safe	m ³	\$ 0.90	Enter total volume of material to be blasted .	Bulk drilling 8 x 9 pattern @ \$0.20 per cubic metre, explosives (can vary on contract and type) in a 0.225 m hole = \$0.70 per cubic metre. Stemming loss offsets initiation, cost so total of \$0.90 per cubic metre.
x3.03	Highwall treatment - trench and safety berm construction	m	\$ 90.00	Enter total length of highwall.	Construction of a trench and a 2 m safety berm.
x3.04	Security fence around steep section of high wall	m	\$ 55.00	Enter total length of highwall.	2.1 m cyclone wire (or similar) security fence.
x3.05	Purchase and erect warning signs	Item	\$ 250.00	Assume one sign every 100 m of highwall.	Compliance with AS 1319-1994 Safety signs for the occupational environment.
x3.06	Seal small adits (width <2m) – install 0.5 m concrete plug 3 m back from adit and backfill with appropriate material.	Item	\$ 25,000	This item includes backfilling the adit with suitable material.	Price can vary dependent on methodology, size and location, assume average cost of \$25k.
x3.07	Seal portals / adits (width >2 m) – backfill the adit for at least 50 m against a concrete bulk head with drainage slots. If concrete bulk head not required, reduce rate by 25%	Item	\$ 250,000	This rate includes constructing a concrete bulk head at least 50m into the adit and then backfilling with material.	Actual costs range between \$95k and \$450k dependent on location and methodology, assume an average cost of \$250k.
x3.08	Seal and rehabilitate ventilation fan shafts	Item	\$ 150,000	This includes sealing & rehabilitation of the ventilation fans to make safe. The number of ventilation fans for the whole mine is to be included.	Price can vary depending on methodology, size and location, assume an average cost of \$150k.
x3.09	Shaft filling – includes filling of shafts using stockpiled materials	m ³	\$ 30.00	This item includes a rate for the total volume of material that would be needed to backfill the shaft with suitable material.	Assumes material excavated from the shaft is stockpiled beside the hole.
x3.10	Maintenance and monitoring of sealed adits/portals and shafts (5 years)	Item	\$ 25,000	Where adits / portals require periodic assessment to ensure satisfactorily rehabilitated.	Accounts for ongoing inspections and maintenance requirements.
x3.11	Bore holes – cap and seal open bore holes ~0.05 - 0.2 m, backfill with cuttings	Item	\$ 300.00	This rate includes backfill of holes with removed material.	Manual activity carried out by operator.
x3.12	Bore holes – cap and seal open large diameter exploration and/or monitoring bore holes etc 0.2 - 0.4 m	Item	\$ 2,500	This rate includes engineering (i.e., grouting, capping, sealing etc) rather than just backfill.	Requiring some level of engineering and sign-off.
x3.13	Bore holes – cap, seal and rehabilitate open bore holes - pre-drainage, goaf drainage etc	Item	\$ 25,000	This rate includes excavating to 1.5 m to cut the pipe and cap and then backfill (or similar).	Requires excavating to 1.5 m to cut the pipe and cap, and then backfill.
x3.14	Bore holes – grout (with concrete) cap, seal and rehabilitate bore holes (i.e., where sealing aquifers)	Item	\$ 35,000	This rate includes installation of multi-skin sleeves to prevent aquifer mixing.	Includes multi skin sleeves to prevent aquifer mixing.
x3.15	Bore holes – cap, seal and rehabilitate service boreholes for UG operations (>0.4 m)	Item	\$ 45,000	This rate includes significant engineering such as installation of a concrete bulkhead followed by capping/sealing/grouting.	Requiring some level of engineering and sign-off.
x3.16	Install gate or grill over the adit (Where site might be used by bats)	Item	\$ 10,000	This rate includes installation of gate or grill.	Cost for standard installation.
4	Bulk Earthworks / Structural Works				
x4.01	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	m ³	Select from List	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.	-
x4.02	Major bulk pushing to achieve grades nominated in the approval/permit – <50m push length	m ³	\$ 0.67	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.	D11 Dozer @ \$375 per hour. Productivity ~550 cubic metres per hour.
x4.03	Major bulk pushing to achieve grades nominated in the approval/permit – 50m-100m push length	m ³	\$ 1.30	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.	D11 Dozer @ \$375 per hour. Productivity ~300 cubic metres per hour.

x4.04	Major bulk pushing to achieve grades nominated in the approval/permit – 100m-150m push length)	m ³	\$ 1.50	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.	D11 Dozer @ \$375 per hour. Productivity ~250 cubic metres per hour.
x4.05	Major bulk pushing to achieve grades nominated in the approval/permit – >150m push length)	m ³	\$ 1.90	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.	D11 Dozer @ \$375 per hour. Productivity ~200 cubic metres per hour.
x4.06	General reshaping and pushing/trimming to achieve final landform design	ha	\$ 3,900	This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.	Calculated as 2 x minor earthworks (\$1,500 / ha) + final trim, rock rake & deep rip (\$900 / ha).
x4.07	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	ha	\$ 1,600	This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.	Combination of dozer and excavator work. Small dozer (D6 or similar) @ \$180 per hour plus small excavator @ \$180 per hour for ~4.5 hours each per hectare.
x4.08	Construction of water course entry points - required for large catchments	Item	\$ 100,000	Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).	Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
x4.09	Shot-creting cuttings and steep slopes	m ²	\$ 185.00	Enter area of steep slopes of weathered rock, roadway cuttings, etc that arent required to be cut back and stabilised.	This rate is used to rehabilitation steep slopes of weathered rock, roadway cuttings, etc that arent required to be cut back and stabilised.
5	Rehabilitation				
x5.01	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	ha	\$ 136,000	This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.	Indicative work may include reshaping and/or dewatering prior to capping (~\$3.9k / ha), drainage layer / capillary break (~\$28k / ha), placing / spreading and compacting low permeability material (~\$14k / ha), drainage layer / capillary break (~\$28k / ha), engineering design specifications / inspections (~\$62k / ha) - does not include topsoil and revegetation.
x5.01a	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Item	Insert cost of materials	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).	-
x5.02	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	ha	\$ 108,000	This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.	Indicative work may include reshaping and/or dewatering prior to capping (~\$3.9k / ha), drainage layer / capillary break (~\$28k / ha), placing / spreading and compacting low permeability material (~\$14k / ha), engineering design specifications / inspections (~\$62k / ha) - does not include topsoil and revegetation.
x5.02a	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Item	Insert cost of materials	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).	-
x5.03	Tailings dam - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	m ³	Select from List	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.	-

x5.04	Tailings dam - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance <1 km)	m ³	\$	5.40	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.	Assumes tailings dam is stable enough to be capped. 972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @\$200 per hour, productivity 300 tph or ~240 cubic metres per hour +\$2.00 due to difficulty in capping tailings dam. Does not include topsoil or vegetation.
x5.05	Tailings dam - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >1 km but <2 km)	m ³	\$	6.10	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.	Assumes tailings dam is stable enough to be capped. 972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @\$200 per hour, productivity 250 tph or ~200 cubic metres per hour +\$2.00 due to difficulty in capping tailings dam. Does not include topsoil or vegetation.
x5.06	Tailings Dam - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >2 km but <5 km)	m ³	\$	7.15	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.	Assumes tailings dam is stable enough to be capped. 972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @\$200 per hour, productivity 200 tph or ~160 cubic metres per hour +\$2.00 due to difficulty in capping tailings dam. Does not include topsoil or vegetation.
x5.07	Tailings Dam - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >5 km)	m ³	\$	8.85	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.	Assumes tailings dam is stable enough to be capped. 972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @\$200 per hour, productivity 150 tph or ~120 cubic metres per hour \$2.00 due to difficulty in capping tailings dam. Does not include topsoil or vegetation.
x5.08	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)	m ³	Select from List		This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.	-
x5.09	Fill dams, voids etc - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance <1 km)	m ³	\$	3.90	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x5.10	Fill dams, voids etc - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >1 km but <2 km)	m ³	\$	5.85	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour
x5.11	Fill dams, voids etc - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >2 km but <5 km)	m ³	\$	6.75	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour
x5.12	Fill dams, voids etc - Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance >5 km)	m ³	\$	8.00	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.	972 FEL \$200 per hour, rear dump haulage at \$0.50 per tonne/km, with necessary trucks to achieve 150 cubic metres per hour.
x5.13	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	ha	\$	960.00	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.	D11N dozer @ \$350 per hour, push / trim 1 hour per hectare, deep rip @ 5 m spacing 1 hr per hectare

x5.14	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	ha	\$ 960.00	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.	D11N dozer @ \$350 per hour, deep rip @ 5 m spacing 1 hr per hectare
x5.15	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	m ³	Select from List	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.	-
x5.16	Source, cart and spread topsoil (@ 0.2 m) haul distance <1 km	m ³	\$ 3.40	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.	972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @ \$200 per hour, productivity 300 tph or ~240 cubic metres per hour.
x5.17	Source, cart and spread topsoil (@ 0.2 m) haul distance >1 km but <2 km	m ³	\$ 4.10	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.	972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @ \$200 per hour, productivity 250 tph or ~200 cubic metres per hour.
x5.18	Source, cart and spread topsoil (@ 0.2 m) haul distance >2 km but <5 km	m ³	\$ 5.15	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.	972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @ \$200 per hour, productivity 200 tph or ~160 cubic metres per hour.
x5.19	Source, cart and spread topsoil (@ 0.2 m) haul distance >5 km	m ³	\$ 6.85	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.	972 FEL \$200 per hour, 3 x 8 Wheel trucks @ \$140 per hour, GPS D6 Dozer @ \$200 per hour, productivity 150 tph or ~120 cubic metres per hour.
x5.20	Direct seeding / fertiliser (pasture grass species)	ha	\$ 1,240	This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.	Source and spread fertiliser and seed.
x5.21	Direct seeding / fertiliser (native tree/shrub/grass species)	ha	\$ 2,095	This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.	Source and spread fertiliser and seed.
x5.22	Planting mature trees (>15 cm)	Item	\$ 20.00	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	4 m centres.
x5.23	Planting tube stock (<15 cm)	Item	\$ 10.00	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	4 m centres.
x5.24	Hydro-seeding with mulch and bitumen tack	m ²	\$ 1.80	Areas that require additional stabilisation.	Utilising locally sourced mulch material.
x5.25	Single application of fertiliser (pasture)	ha	\$ 420.00	If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.	These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) the existing costs should continue to be the standard rates.
x5.26	Single application of fertiliser (trees)	ha	\$ 140.00	If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.	These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) the existing costs should continue to be the standard rates.

x5.27	Amelioration - lime (or similar)	ha	\$	860.00	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.	For ameliorants such as agricultural lime which is ~\$345 / t and assumes ~2.5 t / ha.
x5.28	Amelioration - gypsum	ha	\$	250.00	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.	For ameliorants such as gypsum which is ~\$100 / t and assumes ~2.5 t / ha.
x5.29	Amelioration - recycled gypsum	ha	\$	125.00	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.	For ameliorants such as gypsum which is ~\$50 / t and assumes ~2.5 t / ha
x5.30	Topdressing amelioration with biosolids	ha	\$	1,015	Enter area required for treatment with biosolids.	Sourced locally.
x5.31	Construct no-climb stock fence around rehabilitated areas	m	\$	9.50	Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.	1.2 m high, 0.05 x 0.1 m (or similar) mesh .
x5.32	Construct standard stock fence around rehabilitated areas	m	\$	4.00	This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.	Standard 3 wire stock fence.
x5.33	Supply from external sources virgin excavated natural material (VENM) for filling voids and/or capping etc	m ³	\$	72.50	Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.	Allow 16 size grader and water cart to mix and spread imported material @ 150m ³ /hr. Allowed nominal rate of \$60/m ³ for imported fill material.
x5.34	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc	m ³	\$	80.80	Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.	Assume to import material and mix with trucked material on site. Assume local material can be free dug out of existing stockpile or bench easy digging. Assume no compaction and moisture conditioning of capping material. Allow load and haul with 65t excavator and 40t ADT fleet @ 250m ³ /hr. Allow 16 size grader and water cart to mix and spread imported material @ 150m ³ /hr. Allowed nominal rate of \$60/m ³ for imported fill material.
6	Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)					
x6.01	Maintenance of established rehabilitated areas	ha	\$	2,000	Enter total area of rehabilitation requiring ongoing maintenance.	Includes general maintenance - weed management, re-seeding, amelioration, minor rehabilitation repair.
x6.02	Minor earthworks and ripping or Maintenance of mine subsidence areas	ha	\$	1,500	Enter total area requiring minor earthworks. Enter only total area experiencing surface expression of subsidence effects (i.e. cracking, sink holes).	D11N dozer @ \$375 per hour. 4 hrs per hectare.
x6.03	Create cut-through to re-establish natural water courses/drainage channels following subsidence	Item	\$	3,000	Enter total number of cut-throughs of the surface expression of chain pillars to re-establish natural drainage pathways.	Based on works completed in the Hunter Valley.
x6.04	Existing rehabilitation repair - minor	ha	\$	1,200	Enter total area requiring minor repairs.	Areas requiring minor repair - rills, minor topsoil replacement.
x6.05	Existing rehabilitation repair - moderate	ha	\$	1,700	Enter total area requiring moderate repairs.	Areas requiring moderate repair - rills, significant topsoil replacement.
x6.06	Existing rehabilitation repair - major	ha	\$	2,500	Enter total area requiring major repairs.	Areas requiring major repair - rills, gullies, topsoil replacement, some level of additional surface water management.
x6.07	Existing rehabilitation repair - total failure of landform	ha	\$	40,000	Enter total area requiring total landform re-construction.	Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
x6.08	Pest management on buffer lands, non-disturbed, and rehabilitated areas	ha	\$	150.00	This item covers the costs associated with the management of pests on the site.	Baiting feral animals.
7	Water Management					

x7.01	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	ML	\$	3,600	Enter total volume of water to be treated.	Assumes volumes are in excess of 1,000 ML.
x7.02	On-site treatment of contaminated water due to low pH (includes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit)	ML	\$	1,500	Enter total volume of water to be treated.	Assumes volumes are in excess of 1,000 ML.
x7.03	Clean water dams / sediment control structures to be retained after closure – make safe and minor earthworks	Item	\$	2,500	Enter number of minor water management structures (i.e. small sediment dams) to remain after closure	Long Reach Excavator \$330 per hour. Productivity 80 cubic metres per hour. Average dam cleanout estimated at 500 m ³ (20 x 25 x 1 = 500).
x7.04	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	m ³	Select from List		This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.	-
x7.05	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance <1km)	m ³	\$	5.10	This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.	Long Reach Excavator \$330 per hour. Productivity 80 cubic metres per hour equals \$4.10 per m ³ loading plus \$1.00 / t / km haulage.
x7.06	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >1km but <2km)	m ³	\$	6.10	This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.	Long Reach Excavator \$330 per hour. Productivity 80 cubic metres per hour equals \$4.10 per m ³ loading plus \$2.00 / t / km haulage.
x7.07	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >2km but <5km)	m ³	\$	8.60	This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.	Long Reach Excavator \$330 per hour. Productivity 80 cubic metres per hour equals \$4.10 per m ³ loading plus \$3.50 / t / km haulage.
x7.08	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >5km)	m ³	\$	10.10	This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.	Long Reach Excavator \$330 per hour. Productivity 80 cubic metres per hour equals \$4.10 per m ³ loading plus \$5.00 / t / km haulage.
x7.09	Water pumping/transfer between pits	ML	\$	115.00	Enter the volume of water that is required to be pumped/transferred on site.	D10 size motorised pontoon pump: Fuel - \$1.00 / L @ 1500L / day + Maintenance and support = \$600 / day + Equipment rental = \$300 / day = ~\$2400 / day. Water moved – 250 L / s = 20 ML / day.
8	Creek Diversions					
x8.01	Repairs and/or stabilisation of new or compromised water course diversion	m	\$	2,500	This item includes the length (m) requiring stabilisation of recently constructed diversions that have not been completely stabilised. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion.	Assumes material is suitable for revegetating and has a reasonable chance of stabilising.
x8.02	Long term maintenance of water course diversion – Channel constructed through backfilled material	m	\$	1,500	This item includes the length (m) requiring ongoing maintenance of diversions constructed through unconsolidated overburden. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion.	Assumes maintenance has been kept up and significant works are not required.
x8.03	Long term maintenance of water course diversion – Channel constructed through competent material	m	\$	750.00	This item includes the length (m) requiring ongoing maintenance of diversions constructed through competent ground. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion.	Assumes maintenance has been kept up and significant works are not required.
x8.04	Installation of rock armouring	ha	\$	60,000	Enter area of diversions requiring rock armouring to ensure long term stability.	Assumes competent material is locally available.

9	Termination of Services and Demolition Works					
x9.01	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Item	\$	35,000	For disconnection of all services, at building boundaries, physical cut at the distribution centre.	For disconnection of all services, at building boundaries, physical cut at the distribution centre.
x9.02	Disconnect and terminate services at remote areas (pump stations, remote workshops, sewage treatment plant etc)	Item	\$	5,500	Used for infrastructure remote from primary connection.	Used for infrastructure remote from primary connection.
x9.03	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	km	\$	15,000	This rate is for low (<1kV) to medium voltage (>72 kV) powerlines.	Applies to low (<1kV) and up to 72 kV power lines.
x9.04	Removal of powerlines including disconnection, rolling up the wires and removing the poles) - does not include the removal of substations	km	\$	1,000,000	This rate is for high voltage (>72 kV) powerlines that are typically owned by the supply authority. Assumes 3 towers / km.	Applies to high voltage (>72 kV) powerlines assuming 3 towers / km.
x9.05	Demolish and/or remove substations in an enclosed building	Item	\$	20,000	Apply this rate for the total number of substations within the domain.	Simple structure to demolish, assumes single story building.
x9.06	Demolish and remove switchyard - does not include decontamination, removal of oil etc	m ²	\$	55.00	Includes all switchgear and transformers etc.	Includes all switchgear and transformers etc.
x9.07	Demolish and remove small buildings (camps, administration buildings, accommodation, bath house etc)	m ²	\$	77.00	Assumes no greater than 2 stories high.	Assumes no greater than 2 stories high.
x9.08	Demolish and remove light industrial buildings (light vehicle workshop, warehouse/store, transfer station etc)	m ² /floor	\$	115.00	Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).	Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
x9.09	Demolish and remove industrial buildings (workshops, tyre change and servicing area etc - not CHPP)	m ² /floor	\$	176.00	Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).	Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
x9.10	Demolish and remove processing equipment (i.e, washery, crushers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers etc) - include the area of each floor of the structure	m ² /floor	\$	265.00	Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).	Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
x9.11	Remove stacker or reclaim (i.e., radial, luffing etc) - does not include remove rails, ballast and conveyor etc	Item	\$	1,000,000	Apply this rate for the removal of each radial and/or luffing (or similar) stacker or reclaim.	Just removal of the stacker or reclaim unit - does not include terminate services, remove rails and ballast etc.
x9.12	Demolish and remove bucket wheel stacker/reclaimer or wing stacker - does not include remove rails, ballast and conveyor etc	Item	\$	2,500,000	Apply this rate for the removal of each bucket wheel stacker reclaim.	Just removal of the bucket wheel stacker/reclaim unit - does not include terminate services, remove rails and ballast etc.
x9.13	Remove rails and ballast for stacker and/or reclaim - does not include the conveyor system	m	\$	75.00	Apply this rate for removing the rails and ballast/footings when rail mounted stacker reclaimers are present.	Includes both rails, does not include the conveyor system.
x9.14	Collapse, cut and remove ~5000 t coal silo	Item	\$	100,000	Enter the number of large coal silos to be removed.	Demolition expert estimate to collapse structure and remove.
x9.15	Collapse, cut and remove ~3000 t coal silo	Item	\$	85,000	Enter the number of medium coal silos to be removed.	Demolition expert estimate to collapse structure and remove.
x9.16	Collapse, cut and remove ~1250 t coal silo	Item	\$	65,000	Enter the number of small coal silos to be removed.	Demolition expert estimate to collapse structure and remove.
x9.17	Demolish and remove on-ground conveyors and gantries (scrap only – does not include dismantling for reuse at another site)	m	\$	285.00	Enter the length of conveyors that are on the ground.	Estimate for on-ground conveyor.
x9.18	Demolish and remove overhead conveyors and gantries (scrap only – does not include dismantling for reuse at another site)	m	\$	370.00	Enter the length of conveyors that are elevated >5 m off the ground.	Estimate for overhead conveyor.
x9.19	Demolish and remove wire rope Doppmayr overhead conveyors (scrap only – does not include dismantling for reuse at another site)	m	\$	565.00	If conveyors are wire rope rather than rigid structures.	Assumes every 150m is a support tower - included in cost.
x9.20	Demolish reclaim tunnel, cut rio and expose reclaim conveyor, then collapse into the reclaim tunnel void (Does not include excavation to expose reclaim tunnel, removal of conveyor or backfilling void)	m ²	\$	80.00	Apply this rate to the area of the roof of the reclaim tunnel to be "punched in" to expose the conveyor for removal - does not include excavation of material to expose the structure.	Does not include conveyor removal or backfill.
x9.21	Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	m	\$	150.00	This rate applies to conveyors in reclaim tunnels that do not have canopies or protection from the elements .	Due to no canopy or infrastructure attached.
x9.22	Demolition of reclaim tunnel concrete (Assumes complete removal of concrete structure and local disposal)	m	\$	950.00	If a reclaim tunnel is to be completely removed.	Assumes this area will be used for another land-use that requires the structure to be dug up and re-buried somewhere else.

x9.23	Dismantle on-ground conveyors for reuse/resale	m	\$	750.00	If the intention is to re-use the conveyor in another location, the cost is ~2.5x the demolition cost.	Approximately 2.5 times the cost of demolition - Baal Bone experience.
x9.24	Dismantle overhead conveyors for reuse/resale	m	\$	1,000	If the intention is to re-use the conveyor in another location, the cost is ~2.5x the demolition cost.	Approximately 2.5 times the cost of demolition.
x9.25	Demolition and removal of vent fans, electrical substation and winch	Item	\$	25,000	This includes the removal of the fan and all surface infrastructure associated with a ventilation shaft.	Recent experience southern NSW - does not include filling and capping the shaft.
x9.26	Demolish and remove above ground small tank clean (Thickener etc 3 - 9 m diameter)	Item	\$	10,000	This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose.
x9.27	Demolish and remove above ground medium tank clean (Thickener etc 10 - 15 m diameter)	Item	\$	30,000	This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose.
x9.28	Demolish and remove above ground large tank clean (Thickener etc 15 - 30 m diameter)	Item	\$	45,000	This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose.
x9.29	Demolish and remove above ground extra large tank clean (Thickener etc >20 m diameter)	Item	\$	85,000	This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose.
x9.30	Demolish and remove above ground very extra large tank clean (Thickener etc >50 m diameter)	Item	\$	100,000	This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.	Requires a detailed assessment from demolition expert due to specialised equipment required for removal.
x9.31	Removal of small underground tank (<5000 L) - including pipes, bunds etc.	Item	\$	21,000	Apply this rate only for small underground tanks.	Assume tank is clean - contents removed. If tank is full allow extra 50% for pumping, excavator and 2 men to dig out and dispose.
x9.32	Removal of large underground tank (>5000 L) - including pipes, bunds etc	Item	\$	30,000	Apply this rate only for large underground tanks.	Assume tank is clean - contents removed. If tank is full allow extra 50% for pumping, excavator and 2 men to dig out and dispose.
x9.33	Remove small underground pipe - ~300 mm pipes	m	\$	25.00	Apply this rate for small underground pipes that will be removed.	300 mm pipes - 0.5 m deep.
x9.34	Remove medium underground pipe - ~500 mm pipes	m	\$	60.00	Apply this rate for medium underground pipes that will be removed.	500 mm pipes - 1 m deep.
x9.35	Remove large underground pipe - 1 m pipes	m	\$	165.00	Apply this rate for large underground pipes that will be removed.	1 m pipes - 2 m deep.
x9.36	Remove above ground pipe - supported	m	\$	12.00	Apply this rate for all above ground pipes that will be removed.	300mm pipes.
x9.37	Remove rail, road, water course overpass	Item	\$	350,000	Provisional sum for significant civil structure.	Indicative cost for removal of an overpass structure.
x9.38	Remove bitumen (aprons, sealed areas) for dumping in a void on-site	m ²	\$	10.00	Apply this rate to all bitumen sealed areas within the domain.	Demolition expert estimate however economies of scale could reduce this number.
x9.39	Remove bitumen (airstrip) for dumping in a void on-site	m ²	\$	20.00	Apply this rate for airstrips.	Assumes increased thickness for airstrip.
x9.40	Remove concrete pads & footings (<0.3 m thickness) and dumping in void	m ²	\$	15.00	Enter the total area of the buildings where concrete footings are estimated to be <0.3 m thick.	Busting up slab and loading into void or crushing area for conversion to road aggregate.
x9.41	Remove concrete pads & footings (>0.3 m thickness) and dumping in void	m ²	\$	65.00	Enter the total area the workshops and buildings where concrete footings are estimated to be >0.3 m thick.	Busting up slab and loading into void or crushing area for conversion to road aggregate.
x9.42	Crush concrete to make road aggregate - 75 mm	tonne	\$	17.00	Apply this rate if the option to produce aggregate is required for waste concrete.	Does not include haulage of materials - assumes crushing plant is readily available.
x9.43	Crush concrete to make road aggregate - 50 mm	tonne	\$	20.00	Apply this rate if the option to produce aggregate is required for waste concrete.	Does not include haulage of materials - assumes crushing plant is readily available.
x9.44	Crush concrete to make road aggregate - 30 mm	tonne	\$	22.00	Apply this rate if the option to produce aggregate is required for waste concrete.	Does not include haulage of materials - assumes crushing plant is readily available.
x9.45	Remove fence (cyclone/wire fence)	m	\$	20.00	Apply this rate for the removal of security fencing (or similar) that will be removed.	-
10	Rail Infrastructure					

x10.01	Remove rail loop and spur, ballast etc	m	\$ 55.00	This item includes the pulling up and removal of railway line and sleepers from site (cost per metre).	Demolition expert experience.
x10.02	Collapse, cut and remove rail loading bins	Item	\$ 65,000	Enter the number of rail loading bins/hoppers present on site.	Demolition expert estimate to collapse structure and remove.
x10.03	Remove train loading facilities	m ²	\$ 265.00	Apply this rate to area of infrastructure (not including bins/hoppers) used for rail loading.	Demolition expert experience.
x10.04	Reshape rail spur and load out areas	ha	\$ 2,500	Enter the total area of the rail spur that is required to be reshaped.	Assumes loop is elevated and requires moderate re-contouring.
11	Large Demolition Equipment				
x11.01	Mobilisation & Demobilisation (for large demolition specific equipment only) (Select Distance to Site from list)	Item	Select from List	This is to cover the cost of the contractor bringing large demolition specific equipment to the site.	Large demolition machinery only - de/mobilisation costs for all other earthworks equipment is already include in other activity rates.
x11.02	Mobilisation & Demobilisation (for large demolition specific equipment only) (Distance to site <150km)	Item	\$ 200,000	This is to cover the cost of the contractor bringing large demolition specific equipment to the site.	Large demolition machinery only - de/mobilisation costs for all other earthworks equipment is already include in other activity rates.
x11.03	Mobilisation & Demobilisation (for large demolition specific equipment only) (Distance to site >150km but <500km)	Item	\$ 300,000	This is to cover the cost of the contractor bringing large demolition specific equipment to the site.	Large demolition machinery only - de/mobilisation costs for all other earthworks equipment is already include in other activity rates.
x11.04	Mobilisation & Demobilisation (for large demolition specific equipment only) (Distance to site >500km but <1000km)	Item	\$ 500,000	This is to cover the cost of the contractor bringing large demolition specific equipment to the site.	Large demolition machinery only - de/mobilisation costs for all other earthworks equipment is already include in other activity rates.
x11.05	Mobilisation & Demobilisation (for large demolition specific equipment only) (Distance to site >1000km)	Item	\$ 750,000	This is to cover the cost of the contractor bringing large demolition specific equipment to the site.	Large demolition machinery only - de/mobilisation costs for all other earthworks equipment is already include in other activity rates.

Open Cut Mine Operations:

Domain 1: Infrastructure

Overall Operation Total: **\$864,392.90**
Domain Total: **\$13,066.00**

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

ROM Hardstand

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Roads, Tracks and Park-up Areas	Remove bitumen (roads, parking areas) and dump in a void on-site	Y		m2	\$10.00		\$0.00		Enter the total area of any bitumen car parks (or similar).
	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance	Enter the total volume of any stabilised area (or similar).
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip	Y		ha	\$900.00		\$0.00		Enter the total area of unsealed roads (or similar).
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip (pasture grass)	Y		ha	\$3,000		\$0.00		Enter the total area of unsealed roads (or similar).
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$3,855		\$0.00		Enter the total area of unsealed roads (or similar).
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip	Y		ha	\$1,500		\$0.00		Enter the total area of unsealed roads (or similar).
	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	\$3,600		\$0.00		Enter the total area of unsealed roads (or similar).
	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	\$4,455		\$0.00		Enter the total area of unsealed roads (or similar).
Subtotal							\$0.00		
Contaminated Materials	Undertake Phase 1 contamination assessment - assumes potential contamination is localised. If there are multiple work areas on site, additional studies should be included.	Y		Item	\$15,000		\$0.00		Assessment required where it has been identified that there is significant potential of contaminated land.
	Removal and off-site treatment of hydrocarbon contaminated water from workshops, bunded areas and sumps.	Y		L	\$0.35		\$0.00		This includes the removal of contaminated water from bunded areas and sump using a vacuum truck and disposing of the water to a licensed facility.
	Remove material (carbonaceous / metaliferous 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	Enter the total area of any process facility / stockpile area (or similar).
	Load, cart and disposal of low level contaminated material (Hydrocarbons, Nitrates, Lead, Copper etc) off-site to a licensed landfill. Add \$50 / m3 for cartage to regional landfill	Y		m3	\$200.00		\$0.00		Allows for disposal fee and cartage.
	Load, cart and dispose of high level contaminated material (PCB's, Dioxins, Mercury etc) off-site to a licensed local landfill. Add \$50 / m3 for cartage to regional landfill	Y		m3	\$700.00		\$0.00		Allows for disposal fee and cartage.

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:
	Onsite remediation of hydrocarbon contaminated soils (Select Volume from list) - manual land farming	Y		m3	Select from List			Select Volume	Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.
	Mobilisation of mobile treatment unit for hydrocarbon contaminated soil treatment	Y		Item	\$100,000		\$0.00		Required if treatment of hydrocarbon contamination is required to be fast tracked
	Onsite remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y		m3	\$120.00		\$0.00		Where an assessment has been made to confirm that bioremediation is possible the total volume of material can be included for onsite land farming.
	Remove and dispose of asbestos (Select Volume from list)	Y		m3	Select from List			Select Volume	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Removal and disposal of plastic liner (i.e dam, leach pad etc)	Y		m2	\$1.00		\$0.00		This rate includes cutting, removal and disposal of liner.
Subtotal							\$0.00		
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y	0	m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y	0	ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600.00		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
	Subtotal						\$0.00		
Rehabilitation	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Direct seeding / fertiliser (pasture grass species)	Y	2.4	ha	\$1,240		\$2,976.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.

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:
	Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Hydro-seeding with mulch and bitumen tack	Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
	Construct standard stock fence around rehabilitated areas	Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
	Supply from external sources virgin excavated natural material (VENM) for filling voids and/or capping etc	Y		m3	\$72.50		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc	Y		m3	\$80.80		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
Subtotal							\$2,976.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Maintenance of established rehabilitated areas	Y		ha	\$2,000		\$0.00		Enter total area of rehabilitation requiring ongoing maintenance.
	Minor earthworks and ripping or Maintenance of mine subsidence areas	Y		ha	\$1,500		\$0.00		Enter total area requiring minor earthworks. Enter only total area experiencing surface expression of subsidence effects (i.e. cracking, sink holes).
	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y		ha	\$150.00		\$0.00		This item covers the costs associated with the management of pests on the site.
Subtotal							\$0.00		
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		\$0.00		Enter total volume of water to be treated.
	On-site treatment of contaminated water due to low pH (includes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit)	Y		ML	\$1,500		\$0.00		Enter total volume of water to be treated.
	Clean water dams / sediment control structures to be retained after closure – make safe and minor earthworks	Y		Item	\$2,500		\$0.00		Enter number of minor water management structures (i.e. small sediment dams) to remain after closure
	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	This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.
	Water pumping/transfer between pits	Y		ML	\$115.00		\$0.00		Enter the volume of water that is required to be pumped/transferred on site.
Subtotal							\$0.00		
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		Item	\$35,000		\$0.00		For disconnection of all services, at building boundaries, physical cut at the distribution centre.
	Disconnect and terminate services at remote areas (pump stations, remote workshops, sewage treatment plant etc)	Y		Item	\$5,500		\$0.00		Used for infrastructure remote from primary connection.

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:
	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		\$0.00		This rate is for low (<1kV) to medium voltage (>72 kV) powerlines.
	Removal of powerlines including disconnection, rolling up the wires and removing the poles) - does not include the removal of substations	Y		km	\$1,000,000		\$0.00		This rate is for high voltage (>72 kV) powerlines that are typically owned by the supply authority. Assumes 3 towers / km.
	Demolish and/or remove substations in an enclosed building	Y		Item	\$20,000		\$0.00		Apply this rate for the total number of substations within the domain.
	Demolish and remove switchyard - does not include decontamination, removal of oil etc	Y		m2	\$55.00		\$0.00		Includes all switchgear and transformers etc.
	Demolish and remove small buildings (camps, administration buildings, accommodation, bath house etc)	Y		m2	\$77.00		\$0.00		Assumes no greater than 2 stories high.
	Demolish and remove light industrial buildings (light vehicle workshop, warehouse/store, transfer station etc)	Y		m2/floor	\$115.00		\$0.00		Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
	Demolish and remove industrial buildings (workshops, tyre change and servicing area etc - not CHPP)	Y		m2/floor	\$176.00		\$0.00		Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
	Demolish and remove processing equipment (i.e. washery, crushers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers etc) - include the area of each floor of the structure	Y		m2/floor	\$265.00		\$0.00		Must be calculated per floor/level (Assume 1 floor/level = 3-4 m).
	Remove stacker or reclaim (i.e., radial, luffing etc) does not include remove rails, ballast and conveyor etc	Y		Item	\$1,000,000		\$0.00		Apply this rate for the removal of each radial and/or luffing (or similar) stacker or reclaim.
	Demolish and remove bucket wheel stacker/reclaimer or wing stacker - does not include remove rails, ballast and conveyor etc	Y		Item	\$2,500,000		\$0.00		Apply this rate for the removal of each bucket wheel stacker reclaimer.
	Remove rails and ballast for stacker and/or reclaim - does not include the conveyor system	Y		m	\$75.00		\$0.00		Apply this rate for removing the rails and ballast/footings when rail mounted stacker reclaimers are present.
	Collapse, cut and remove ~5000 t coal silo	Y		Item	\$100,000		\$0.00		Enter the number of large coal silos to be removed.
	Collapse, cut and remove ~3000 t coal silo	Y		Item	\$85,000		\$0.00		Enter the number of medium coal silos to be removed.
	Collapse, cut and remove ~1250 t coal silo	Y		Item	\$65,000		\$0.00		Enter the number of small coal silos to be removed.
	Demolish and remove on-ground conveyors and gantries (scrap only - does not include dismantling for reuse at another site)	Y		m	\$285.00		\$0.00		Enter the length of conveyors that are on the ground.
	Demolish and remove overhead conveyors and gantries (scrap only - does not include dismantling for reuse at another site)	Y		m	\$370.00		\$0.00		Enter the length of conveyors that are elevated >5 m off the ground.
	Demolish and remove wire rope Dopplmayr overhead conveyors (scrap only - does not include dismantling for reuse at another site)	Y		m	\$565.00		\$0.00		If conveyors are wire rope rather than rigid structures.
	Demolish reclaim tunnel, cut rio and expose reclaim conveyor, then collapse into the reclaim tunnel void (Does not include excavation to expose reclaim tunnel, removal of conveyor or backfilling void)	Y		m2	\$80.00		\$0.00		Apply this rate to the area of the roof of the reclaim tunnel to be "punched in" to expose the conveyor for removal - does not include excavation of material to expose the structure.
	Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	Y		m	\$150.00		\$0.00		This rate applies to conveyors in reclaim tunnels that do not have canopies or protection from the elements.
	Demolition of reclaim tunnel concrete (Assumes complete removal of concrete structure and local disposal)	Y		m	\$950.00		\$0.00		If a reclaim tunnel is to be completely removed.
	Dismantle on-ground conveyors for reuse/resale	Y		m	\$750.00		\$0.00		If the intention is to re-use the conveyor in another location, the cost is ~2.5x the demolition cost.
	Dismantle overhead conveyors for reuse/resale	Y		m	\$1,000		\$0.00		If the intention is to re-use the conveyor in another location, the cost is ~2.5x the demolition cost.
	Demolish and remove above ground small tank clean (Thickener etc 3 - 9 m diameter)	Y		Item	\$10,000		\$0.00		This includes removing all thickener or flocc tanks etc. from the site including an associated pipework and pumps, etc.

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:
	Demolish and remove above ground medium tank clean (Thickener etc 10 - 15 m diameter)	Y		Item	\$30,000		\$0.00		This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.
	Demolish and remove above ground large tank clean (Thickener etc 15 - 30 m diameter)	Y		Item	\$45,000		\$0.00		This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.
	Demolish and remove above ground extra large tank clean (Thickener etc >20 m diameter)	Y		Item	\$85,000		\$0.00		This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.
	Demolish and remove above ground very extra large tank clean (Thickener etc >50 m diameter)	Y		Item	\$100,000		\$0.00		This includes removing all thickener or flocc tanks etc from the site including an associated pipework and pumps, etc.
	Removal of small underground tank (<5000 L) - including pipes, bunds etc.	Y		Item	\$21,000		\$0.00		Apply this rate only for small underground tanks.
	Removal of large underground tank (>5000 L) - including pipes, bunds etc	Y		Item	\$30,000		\$0.00		Apply this rate only for large underground tanks.
	Remove small underground pipe - ~300 mm pipes	Y		m	\$25.00		\$0.00		Apply this rate for small underground pipes that will be removed.
	Remove medium underground pipe - ~500 mm pipes	Y		m	\$60.00		\$0.00		Apply this rate for medium underground pipes that will be removed.
	Remove large underground pipe - 1 m pipes	Y		m	\$165.00		\$0.00		Apply this rate for large underground pipes that will be removed.
	Remove above ground pipe - supported	Y		m	\$12.00		\$0.00		Apply this rate for all above ground pipes that will be removed.
	Remove rail, road, water course overpass	Y		Item	\$350,000		\$0.00		Provisional sum for significant civil structure.
	Remove bitumen (aprons, sealed areas) for dumping in a void on-site	Y		m2	\$10.00		\$0.00		Apply this rate to all bitumen sealed areas within the domain.
	Remove bitumen (airstrip) for dumping in a void on-site	Y		m2	\$20.00		\$0.00		Apply this rate for airstrips.
	Remove concrete pads & footings (<0.3 m thickness) and dumping in void	Y		m2	\$15.00		\$0.00		Enter the total area of the buildings where concrete footings are estimated to be <0.3 m thick.
	Remove concrete pads & footings (>0.3 m thickness) and dumping in void	Y		m2	\$65.00		\$0.00		Enter the total area the workshops and buildings where concrete footings are estimated to be >0.3 m thick.
	Crush concrete to make road aggregate - 75 mm	Y		tonne	\$17.00		\$0.00		Apply this rate if the option to produce aggregate is required for waste concrete.
	Crush concrete to make road aggregate - 50 mm	Y		tonne	\$20.00		\$0.00		Apply this rate if the option to produce aggregate is required for waste concrete.
	Crush concrete to make road aggregate - 30 mm	Y		tonne	\$22.00		\$0.00		Apply this rate if the option to produce aggregate is required for waste concrete.
	Remove fence (cyclone/wire fence)	Y		m	\$20.00		\$0.00		Apply this rate for the removal of security fencing (or similar) that will be removed.
Subtotal							\$0.00		
Rail Infrastructure									
	Remove rail loop and spur, ballast etc	Y		m	\$55.00		\$0.00		This item includes the pulling up and removal of railway line and sleepers from site (cost per metre).
	Collapse, cut and remove rail loading bins	Y		Item	\$65,000		\$0.00		Enter the number of rail loading bins/hoppers present on site.
	Remove train loading facilities	Y		m2	\$265.00		\$0.00		Apply this rate to area of infrastructure (not including bins/hoppers) used for rail loading.
	Reshape rail spur and load out areas	Y		ha	\$2,500		\$0.00		Enter the total area of the rail spur that is required to be reshaped.
Subtotal							\$0.00		
Additional Items									
	Spread punch	Y	2.4	ha	This is	\$4,200.00	\$10,080.00	Quote	This item includes <<to be added by the operator>>
	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>>
Subtotal							\$10,080.00		
Total Rehabilitation Costs for Domain							\$13,056.00		

Open Cut Mine Operations:

Domain 2: Tailings Storage Facilities (1)

Complete a separate sheet for each tailings storage facility on the site.

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

Tailings Storage (Key Information):

Materials Stored
Volume Stored (m3)
Maximum Embankment Height (m)
Maximum Embankment Length (m)
Year Dam / storage Commissioned
Storage area (ha)
Catchment Area of Tailings Storage Facility (ha)
Briefly describe embankment construction. (earthen, clay core, etc)

Overall Operation Total: \$864,392.90
Domain Total: \$64,260.00

Legend:

 Alternate rate has been used
 Input from site optional (if information available)
 Input mandatory (where applicable)
 Default Rate where an alternative is not provided

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:
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Tailings dam - 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	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.
	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.

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:
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Hydro-seeding with mulch and bitumen tack	Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
	Construct standard stock fence around rehabilitated areas	Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
	Supply from external sources virgin excavated natural material (VENM) for filling voids and/or capping etc	Y		m3	\$72.50		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc	Y		m3	\$80.80		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
Subtotal							\$0.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Maintenance of established rehabilitated areas	Y		ha	\$2,000		\$0.00		Enter total area of rehabilitation requiring ongoing maintenance.
Subtotal							\$0.00		
Additional Items	Fencing	Y	2.1		This is deliberately left blank	\$30,600.00	\$64,260.00	Quote	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>>
Subtotal							\$64,260.00		
Total Rehabilitation Costs for Domain							\$64,260.00		

Open Cut Mine Operations:

Domain 2: Tailings Storage Facilities (2)

Complete a separate sheet for each tailings storage facility on the site.

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

Tailings Storage (Key Information):

Materials Stored
Volume Stored (m3)
Maximum Embankment Height (m)
Maximum Embankment Length (m)
Year Dam / storage Commissioned
Storage area (ha)
Catchment Area of Tailings Storage Facility (ha)
Briefly describe embankment construction. (earthen, clay core, etc)

Overall Operation Total:
Domain Total:

\$864,392.90
\$0.00

Legend:

 Alternate rate has been used
 Input from site optional (if information available)
 Input mandatory (where applicable)
 Default Rate where an alternative is not provided

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:
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Tailings dam - 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	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.
	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.

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:
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Hydro-seeding with mulch and bitumen tack	Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
	Construct standard stock fence around rehabilitated areas	Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
	Supply from external sources virgin excavated natural material (VENM) for filling voids and/or capping etc	Y		m3	\$72.50		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc	Y		m3	\$80.80		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
Subtotal							\$0.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Maintenance of established rehabilitated areas	Y		ha	\$2,000		\$0.00		Enter total area of rehabilitation requiring ongoing maintenance.
Subtotal							\$0.00		
Additional Items	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 2: Tailings Storage Facilities (3)

Complete a separate sheet for each tailings storage facility on the site.

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

Tailings Storage (Key Information):

Materials Stored
Volume Stored (m3)
Maximum Embankment Height (m)
Maximum Embankment Length (m)
Year Dam / storage Commissioned
Storage area (ha)
Catchment Area of Tailings Storage Facility (ha)
Briefly describe embankment construction. (earthen, clay core, etc)

Overall Operation Total:
Domain Total:

\$864,392.90
\$0.00

Legend:

 Alternate rate has been used
 Input from site optional (if information available)
 Input mandatory (where applicable)
 Default Rate where an alternative is not provided

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:
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Tailings dam - 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	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.
	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.

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:
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Hydro-seeding with mulch and bitumen tack	Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
	Construct standard stock fence around rehabilitated areas	Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
	Supply from external sources virgin excavated natural material (VENM) for filling voids and/or capping etc	Y		m3	\$72.50		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc	Y		m3	\$80.80		\$0.00		Enter volume of material to be imported onto site suitable for use in filling voids and / or capping.
Subtotal							\$0.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Maintenance of established rehabilitated areas	Y		ha	\$2,000		\$0.00		Enter total area of rehabilitation requiring ongoing maintenance.
Subtotal							\$0.00		
Additional Items	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 3: Overburden & Waste Dumps (1)

Overall Operation Total: **\$864,392.90**
Domain Total: **\$591,480.00**

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

Iron Bark South

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

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:
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit – 50m-100m push length	Y	300000	m3	\$1.30		\$390,000.00	> 50m - 100m < push	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y	20	ha	\$3,900		\$78,000.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$468,000.00		
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.

Source, cart and spread topsoil (@ 0.2 m) haul distance <1 km	Y	21000	m3	\$3.40	\$3.40	\$71,400.00	<=1km	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
Direct seeding / fertiliser (pasture grass species)	Y	42	ha	\$1,240		\$52,080.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seeding, fertiliser tablet, weed mat and guard - small tubestock.
Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seeding, fertiliser tablet, weed mat and guard - small tubestock.
Hydro-seeding with mulch and bitumen tack	Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
Construct no-climb stock fence around rehabilitated areas	Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
Construct standard stock fence around rehabilitated areas	Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
Subtotal						\$123,480.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Existing rehabilitation repair - minor	Y	ha	\$1,200		\$0.00		Enter total area requiring minor repairs.
	Existing rehabilitation repair - moderate	Y	ha	\$1,700		\$0.00		Enter total area requiring moderate repairs.
	Existing rehabilitation repair - major	Y	ha	\$2,500		\$0.00		Enter total area requiring major repairs.
	Existing rehabilitation repair - total failure of landform	Y	ha	\$40,000		\$0.00		Enter total area requiring total landform re-construction.
Subtotal						\$0.00		
Additional Items	Other 1 <insert>	N		This is deliberately				This item includes <<to be added by the operator>>
	Other 2 <insert>	N		left blank				This item includes <<to be added by the operator>>
	Other 3 <insert>	N						This item includes <<to be added by the operator>>
Subtotal						\$0.00		
Total Rehabilitation Costs for Domain						\$591,480.00		

Open Cut Mine Operations:

Domain 3: Overburden & Waste Dumps (2)

Overall Operation Total: **\$864,392.90**
Domain Total: **\$0.00**

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

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

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:
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y		m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y		ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$0.00		
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.

Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)		Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
Direct seeding / fertiliser (pasture grass species)		Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
Direct seeding / fertiliser (native tree/shrub/grass species)		Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
Planting mature trees (>15 cm)		Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
Planting tube stock (<15 cm)		Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
Hydro-seeding with mulch and bitumen tack		Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
Single application of fertiliser (pasture)		Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
Single application of fertiliser (trees)		Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
Amelioration - lime (or similar)		Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Amelioration - gypsum		Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Amelioration - recycled gypsum		Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Topdressing amelioration with biosolids		Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
Construct no-climb stock fence around rehabilitated areas		Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
Construct standard stock fence around rehabilitated areas		Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
Subtotal							\$0.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0.00		Enter total area requiring minor repairs.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0.00		Enter total area requiring moderate repairs.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0.00		Enter total area requiring major repairs.
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0.00		Enter total area requiring total landform re-construction.
Subtotal							\$0.00		
Additional Items	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 3: Overburden & Waste Dumps (3)

Overall Operation Total: **\$864,392.90**
Domain Total: **\$0.00**

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

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

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:
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y		m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y		ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$0.00		
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.

Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)		Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
Direct seeding / fertiliser (pasture grass species)		Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
Direct seeding / fertiliser (native tree/shrub/grass species)		Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
Planting mature trees (>15 cm)		Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
Planting tube stock (<15 cm)		Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
Hydro-seeding with mulch and bitumen tack		Y		m2	\$1.80		\$0.00		Areas that require additional stabilisation.
Single application of fertiliser (pasture)		Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
Single application of fertiliser (trees)		Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
Amelioration - lime (or similar)		Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Amelioration - gypsum		Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Amelioration - recycled gypsum		Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
Topdressing amelioration with biosolids		Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
Construct no-climb stock fence around rehabilitated areas		Y		m	\$9.50		\$0.00		Where steep faces will remain a 6' chain mesh fence needs to be constructed around the perimeter of the void to restrict access to the site.
Construct standard stock fence around rehabilitated areas		Y		m	\$4.00		\$0.00		This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
Subtotal							\$0.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0.00		Enter total area requiring minor repairs.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0.00		Enter total area requiring moderate repairs.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0.00		Enter total area requiring major repairs.
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0.00		Enter total area requiring total landform re-construction.
Subtotal							\$0.00		
Additional Items	Other 1 <insert>	N			This is deliberately				This item includes <<to be added by the operator>>
	Other 2 <insert>	N			left blank				This item includes <<to be added by the operator>>
	Other 3 <insert>	N							This item includes <<to be added by the operator>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 4: Water Management

Overall Operation Total: **\$864,392.90**
Domain Total: **\$0.00**

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

Legend:

- Alternate rate has been used
- Input from site optional (if information available)
- Input mandatory (where applicable)
- Default Rate where an alternative is not provided

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		\$0.00		Enter total volume of water to be treated.
	On-site treatment of contaminated water due to low pH (includes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit)	Y		ML	\$1,500		\$0.00		Enter total volume of water to be treated.
	Clean water dams / sediment control structures to be retained after closure – make safe and minor earthworks	Y		Item	\$2,500		\$0.00		Enter number of minor water management structures (i.e. small sediment dams) to remain after closure
	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	This includes removal of 500 mm of contaminated sediment and placement in the TSF to enable either backfilling of the structure or conversion to clean water dam.
	Water pumping/transfer between pits	Y		ML	\$115.00		\$0.00		Enter the volume of water that is required to be pumped/transferred on site.
Subtotal							\$0.00		
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y		m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y		ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$0.00		
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	Y		m	\$2,500		\$0.00		This item includes the length (m) requiring stabilisation of recently constructed diversions that have not been completely stabilised. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	Y		m	\$1,500		\$0.00		This item includes the length (m) requiring ongoing maintenance of diversions constructed through unconsolidated overburden. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion.

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:
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0.00		This item includes the length (m) requiring ongoing maintenance of diversions constructed through competent ground. This will include earthworks repairs and stabilisation following flow events. It assumes a suitably qualified engineer has designed and signed off on construction of the diversion.
	Installation of rock armouring	Y		ha	\$60,000.00		\$0.00		Enter area of diversions requiring rock armouring to ensure long term stability.
Subtotal							\$0.00		
Rehabilitation (For other rehabilitation no previously covered)	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240.00		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095.00		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015.00		\$0.00		Enter area required for treatment with biosolids.
Subtotal							\$0.00		
Additional Items	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 5: Pits (1)

Overall Operation Total: **\$864,392.90**
Domain Total: **\$82,850.00**

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

PIT: Earthwork Details (optional)

Face	Activity	Height	Length	Quantity (e.g m ³)

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

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:
Mining and Exploration Works	Active pit area – benches blasted and doze to approved grade (i.e as required under the project approval)	Y		m3	\$1.57		\$0.00		Enter total volume of material to be blasted and dozed.
	Drill and blast faces to make safe	Y		m3	\$0.90		\$0.00		Enter total volume of material to be blasted .
	Highwall treatment - trench and safety berm construction	Y		m	\$90.00		\$0.00		Enter total length of highwall.
	Security fence around steep section of high wall	Y		m	\$55.00		\$0.00		Enter total length of highwall.
	Purchase and erect warning signs	Y		Item	\$250.00		\$0.00		Assume one sign every 100 m of highwall.
Subtotal							\$0.00		
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y		m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y		ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$0.00		
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.

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:
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
Subtotal							\$0.00		
Additional Items	Fencing	Y	4.2	klm	This is deliberately left blank	\$14,250.00	\$59,850.00	Quote	This item includes <<to be added by the operator>>
	Topsoil bunds and seed	Y	2.3	klm		\$10,000.00	\$23,000.00	Quote	This item includes <<to be added by the operator>>
	Other 3 <insert>	N							This item includes <<to be added by the operator>>
Subtotal							\$82,850.00		
Total Rehabilitation Costs for Domain							\$82,850.00		

Open Cut Mine Operations:

Domain 5: Pits (2)

Overall Operation Total: **\$864,392.90**
Domain Total: **\$0.00**

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

PIT: Earthwork Details (optional)

Face	Activity	Height	Length	Quantity (e.g m ³)

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

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:
Mining and Exploration Works	Active pit area – benches blasted and doze to approved grade (i.e as required under the project approval)	Y		m3	\$1.57		\$0.00		Enter total volume of material to be blasted and dozed.
	Drill and blast faces to make safe	Y		m3	\$0.90		\$0.00		Enter total volume of material to be blasted .
	Highwall treatment - trench and safety berm construction	Y		m	\$90.00		\$0.00		Enter total length of highwall.
	Security fence around steep section of high wall	Y		m	\$55.00		\$0.00		Enter total length of highwall.
	Purchase and erect warning signs	Y		Item	\$250.00		\$0.00		Assume one sign every 100 m of highwall.
Subtotal							\$0.00		
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y		m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y		ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$0.00		
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.

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:
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
Subtotal							\$0.00		
Additional Items	Other 1 <insert>	N			This is				This item includes <<to be added by the operator>>
	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 5: Pits (3)

Overall Operation Total: **\$864,392.90**
Domain Total: **\$0.00**

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

PIT: Earthwork Details (optional)

Face	Activity	Height	Length	Quantity (e.g m ³)

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

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:
Mining and Exploration Works	Active pit area – benches blasted and doze to approved grade (i.e as required under the project approval)	Y		m3	\$1.57		\$0.00		Enter total volume of material to be blasted and dozed.
	Drill and blast faces to make safe	Y		m3	\$0.90		\$0.00		Enter total volume of material to be blasted .
	Highwall treatment - trench and safety berm construction	Y		m	\$90.00		\$0.00		Enter total length of highwall.
	Security fence around steep section of high wall	Y		m	\$55.00		\$0.00		Enter total length of highwall.
	Purchase and erect warning signs	Y		Item	\$250.00		\$0.00		Assume one sign every 100 m of highwall.
Subtotal							\$0.00		
Bulk Earthworks / Structural Works	Major bulk pushing to achieve grades nominated in the approval/permit (Select Push Length from list)	Y		m3	Select from List			Select Push Length	This item includes the volume of material requiring major reshaping using a dozer to make safe an area and enable the establishment of rehabilitation.
	General reshaping and pushing/trimming to achieve final landform design	Y		ha	\$3,900		\$0.00		This rate can be applied to general disturbance areas that are located on graded landforms that may require some level of re-contouring for stability purposes.
	Structural works and/or water management (i.e., construction of contour banks, drop structures, run-off channels etc)	Y		ha	\$1,600		\$0.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required soil conservation earthworks. This rate is based on an average per hectare cost to install all required soil conservation earthworks.
	Construction of water course entry points - required for large catchments	Y		Item	\$100,000		\$0.00		Construct rock drains (or similar) where run-off channels enter water courses - prevents erosion of gully head (assumes competent material is locally available).
Subtotal							\$0.00		
Rehabilitation	Reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$136,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.
	Materials for reshaping, capping / sealing of high risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	Reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		ha	\$108,000		\$0.00		This includes sourcing, carting and spreading of a suitable volume material to cap hostile material. The material must have appropriate chemical & physical properties.

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:
	Materials for reshaping, capping / sealing of low risk material presenting environmental difficulties (ARD / AMD / PAF, carbonaceous, saline material etc)	Y		Item	Insert cost of materials		\$0.00		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc) and / or additional requirements (i.e., geofabric / composite lining etc).
	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	This includes sourcing, carting and spreading of a suitable volume material to cap the dam, void etc. The material must have appropriate chemical & physical properties.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Deep rip hard stand / lay down areas (includes ripping in 2 directions)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0.00		If additional fertilising is required - assumes a rate of ~2 - 2.5 t / ha.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015		\$0.00		Enter area required for treatment with biosolids.
Subtotal							\$0.00		
Additional Items	Other 1 <insert>	N			This is				This item includes <<to be added by the operator>>
	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Open Cut Mine Operations:

Domain 6: Other Management Issues

Overall Operation Total: **\$864,392.90**
Domain Total: **\$0.00**

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

Legend:

	Alternate rate has been used
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Roads, Tracks and Park-up Areas	Remove bitumen (roads, parking areas) and dump in a void on-site	Y		m2	\$10.00		\$0.00		Enter the total area of any bitumen car parks (or similar).
	Remove stabilised material (blue metal, aggregate etc) from roadways and dump in a void on-site (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Enter the total volume of any stabilised area (or similar).
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip	Y		ha	\$900.00		\$0.00		Enter the total area of unsealed roads (or similar).
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip (pasture grass)	Y		ha	\$3,000		\$0.00		Enter the total area of unsealed roads (or similar).
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$3,855		\$0.00		Enter the total area of unsealed roads (or similar).
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip	Y		ha	\$1,500		\$0.00		Enter the total area of unsealed roads (or similar).
	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	\$3,600		\$0.00		Enter the total area of unsealed roads (or similar).
	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	\$4,455		\$0.00		Enter the total area of unsealed roads (or similar).
Subtotal							\$0.00		
Mining and Exploration Works	Bore holes – cap and seal open bore holes ~0.05 - 0.2 m, backfill with cuttings	Y		Item	\$300.00		\$0.00		This rate includes backfill of holes with removed material.
	Bore holes – cap and seal open large diameter exploration and/or monitoring bore holes etc 0.2 - 0.4 m	Y		Item	\$2,500		\$0.00		This rate includes engineering (i.e., grouting, capping, sealing etc) rather than just backfill.
	Bore holes – cap, seal and rehabilitate open bore holes - pre-drainage, goaf drainage etc	Y		Item	\$25,000		\$0.00		This rate includes excavating to 1.5 m to cut the pipe and cap and then backfill (or similar).
	Bore holes – grout (with concrete) cap, seal and rehabilitate bore holes (i.e., where sealing aquifers)	Y		Item	\$35,000		\$0.00		This rate includes installation of multi-skin sleeves to prevent aquifer mixing.
	Bore holes – cap, seal and rehabilitate service boreholes for UG operations (>0.4 m)	Y		Item	\$45,000		\$0.00		This rate includes significant engineering such as installation of a concrete bulkhead followed by capping/sealing/grouting.
	Install gate or grill over the adit (Where site might be used by bats)	Y		Item	\$10,000		\$0.00		This rate includes installation of gate or grill.
Subtotal							\$0.00		
Rehabilitation (For other rehabilitation no previously covered)	Source, cart and spread topsoil (@ 0.2 m) (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance	Includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.

	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$960.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,240.00		\$0.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Direct seeding / fertiliser (native tree/shrub/grass species)	Y		ha	\$2,095.00		\$0.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understorey), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program. This item includes a single application of fertiliser during the initial seeding program.
	Planting mature trees (>15 cm)	Y		Item	\$20.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Planting tube stock (<15 cm)	Y		Item	\$10.00		\$0.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
	Amelioration - lime (or similar)	Y		ha	\$860.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - gypsum	Y		ha	\$250.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Amelioration - recycled gypsum	Y		ha	\$125.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils.
	Topdressing amelioration with biosolids	Y		ha	\$1,015.00		\$0.00		Enter area required for treatment with biosolids.
Subtotal							\$0.00		
Maintenance of Subsidence Impacted and/or Rehabilitated Areas (costs to cover 5 years of ongoing maintenance work)	Create cut-through to re-establish natural water courses/drainage channels following subsidence	Y		Item	\$3,000		\$0.00		Enter total number of cut-throughs of the surface expression of chain pillars to re-establish natural drainage pathways.
Subtotal							\$0.00		
Large Demolition Equipment	Mobilisation & Demobilisation (for large demolition specific equipment only) (Select Distance to Site from list)	Y		Item	Select from List			Select Distance	This is to cover the cost of the contractor bringing large demolition specific equipment to the site.
Subtotal							\$0.00		
Additional Items	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>>
Subtotal							\$0.00		
Total Rehabilitation Costs for Domain							\$0.00		

Summary Report of Financial Assurance Estimator

Environmental Authority Number:

Tenure Numbers:

Site Name (if applicable):

EA Holder:

Current Financial Assurance Amount:

Date of Last Financial Assurance Review:

Site Contact:

Position:

Address:

Phone: Email:

Domain	Rehabilitation Liability
Domain 1: Infrastructure	\$13,056.00
Domain 2: Tailings Storage Facilities (1)	\$64,260.00
Domain 2: Tailings Storage Facilities (2)	\$0.00
Domain 2: Tailings Storage Facilities (3)	\$0.00
Domain 3: Overburden & Waste Dumps (1)	\$591,480.00
Domain 3: Overburden & Waste Dumps (2)	\$0.00
Domain 3: Overburden & Waste Dumps (3)	\$0.00
Domain 4: Water Management	\$0.00
Domain 5: Pits (1)	\$82,850.00
Domain 5: Pits (2)	\$0.00
Domain 5: Pits (3)	\$0.00
Domain 6: Other Management Issues	\$0.00
Subtotal	\$751,646.00

Contingencies	Rehabilitation Liability
Project Management (10%)	\$75,164.60
Environmental Maintenance and Monitoring (5%)	\$37,582.30
Subtotal	\$112,746.90

Total Rehabilitation Liability for the Operation (excl. GST)	\$864,392.90
Total GST	\$86,439.29

Recommended Bond (incl. GST)	\$950,000.00
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This is an accurate assessment of the rehabilitation liability for the site.

Assessment Completed By _____ Title _____ Date: _____

Site Manager _____ Title _____ Date: _____