

Our Ref: 111278.08L01.docx

5 September 2017

Rex Minerals Ltd
Level 19, 11 Waymouth Street
ADELAIDE SA 5000

ATTENTION: Greg Hall

Dear Greg,

HILLSIDE PROJECT - TSF CLOSURE DESIGN COMMENTARY

1 INTRODUCTION

This letter summarises ATC Williams' (ATCW) response to the Department of Premier and Cabinet (DPC) mining regulatory group concerns relating to the TSF closure design completed as part of the ATCW TSF feasibility design and the subsequent summary report dated August 2016 [Ref. 1].

The ATCW report was included as an appendix report to the Rex Minerals (Rex) submission to the DPC.

The DPC provided an Assessment Report early this year (2017) which outlined what would need to be included in a Program for Environment Protection and Rehabilitation (PEPR) submission to ensure compliance and consistency with the original Mine Lease (ML) and conditions. As part of this, the DPC included the following preliminary advice on the TSF appendix report specifically relating to the TSF closure design:

- The TSF closure design (including the cover) in this report is conceptual in nature and would not meet the requirements of 6th Schedule Lease Requirement #21.9, and Ministerial Determination MD005 for the content of a PEPR; and
- DSD notes that the TSF spillway design for post mine completion relies on significant surface water management infrastructure to be in place for the long term to ensure water can be directed to the open pit (as per 6th Schedule Lease Requirement #29.1).



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2 TSF CLOSURE DESIGN

2.1 Overview

As part of the feasibility design, a TSF capping design was undertaken that included two main components, namely:

- Completion of finite element analyses for a proposed cover over the deposited tailings mass; and
- Incorporation of the identified cover system and other regulatory and design requirements into an overall closure design of the TSF.

2.2 TSF Cover Assessment

The adopted cover profile was assessed using the computer software VADOSE/W developed by Geoslope International [Ref. 2].

VADOSE/W is a finite element analysis program that uses a numerical formulation to simulate water transport through saturated and unsaturated soils. Details of the methodology and adopted input parameters have been presented in [Ref. 1].

The results presented as part of the TSF feasibility design (i.e. Tables 17.3 and 17.4 in Ref 1) indicate that there is likely to be minor upward flux from tailings material through the cover of 1 mm/m²/year to 2 mm/m²/year. This is considered to be largely a gaseous phase flux due to residual evaporative losses (drying) of the tailings. Zero downward flux through the tailings and foundation clays is predicted, indicating that the proposed cover configuration presented in Figure 17.2 of [Ref. 1] is expected to be suitable as a low flux cover system.

The cover assessment was completed to the highest level of detail for the data available at that time. The reason that the cover design was stated to be “conceptual” is that it is based on predictive material parameters for the waste rock cover layers, and in addition the actual tailings properties are based on testing of proto-type samples. As no representative waste rock samples were available at the time of the TSF feasibility design, best estimates (conservative) of likely properties were made based on available literature and historical engineering experience (see Table 17.2 and Appendix D of [Ref. 1] for details).

Another reason that the design can be considered as “conceptual” is that the current Life of Mine (LoM) is estimated to be 14 years. It is not un-reasonable to expect that during this period regulatory requirements and design approaches will be refined and updated to take into account ongoing technological improvements, and good practice would require these new methods be included in final confirmation of the cover design.

Good practice would be to confirm the proposed construction material parameters through the completion of laboratory testing prior to commitment to a final cover design.

To validate the design, it is recommended that once mining and tailings deposition commences representative samples of the various cover materials (i.e. topsoil, weathered rockfill, rockfill, tailings material and selective foundation materials) be obtained and laboratory tested. This will allow actual construction materials to be tested to determine site specific material parameters and relationships. The cover assessment can then be re-run and refined

Based on our experience and testwork undertaken so far, we do not anticipate any major variation to the design. The design philosophy of the cover system is unlikely to be altered with future design refinements, however the various material thicknesses may vary in detail.

2.3 TSF Closure Geometry

The intent of the closure design is to mimic the proposed deposited tailings surface (i.e. concave surface sloping towards the proposed decant location). Allowance will be made for a suitably sized spillway and outlet channel (designed to cater of a PMP flood event) to direct run-off water from then tailings surface to ground level, and thence via the diversion drain to the open pit. The closure configuration on the TSF surface (165 ha) will be shaped to promote water drainage via the spillway, minimising water storage on the TSF surface for any extended period.

A diversion channel is required along the northern end of the TSF to cater for the Tharooka Creek catchment (1,570 ha) upstream of the TSF location into which TSF run-off will be directed at closure.

The spillway and channels will be suitably graded and rock erosion protected to minimise erosion over time.

The TSF and surrounding Waste Rock Facility (WRF) side slopes will be flattened as far as practicable again to reduce long-term erosion potential achieving a stable final long-term landform.

The proposed closure layout and sections are presented in Figures 17.1 and 17.2 respectively [Ref 1]. These figures have been attached to this letter for ease of reference.

2.4 Cover Trial

In addition to the requirement for a design refinement once mining commences, it is also recommended that REX complete an on-site trial of the proposed cover system.

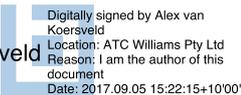
This can be completed by identifying a suitably sized area (of say 1 ha) into which several layers of tailings should be discharged (approximately 2 m thick in total), allowed to consolidate and desiccate for up to 1 year and then the trail cover layers should be placed. It is recommended that monitoring instrumentation be placed at key locations below and above the deposited tailings material to allow monitoring of water movement through the proposed cover system and through the foundation material. It is recommended that at least 4 years of monitoring data should be available when re-assessing the cover design. This will allow for additional refinement of the cover system at the time of closure.

3 CLOSURE

We trust the information presented in this letter provides sufficient additional information to avail the identified DPC concerns relating to the closure of the TSF.

Yours sincerely,

Alex van Koersveld



Digitally signed by Alex van Koersveld
Location: ATC Williams Pty Ltd
Reason: I am the author of this document
Date: 2017.09.05 15:22:15+10'00'

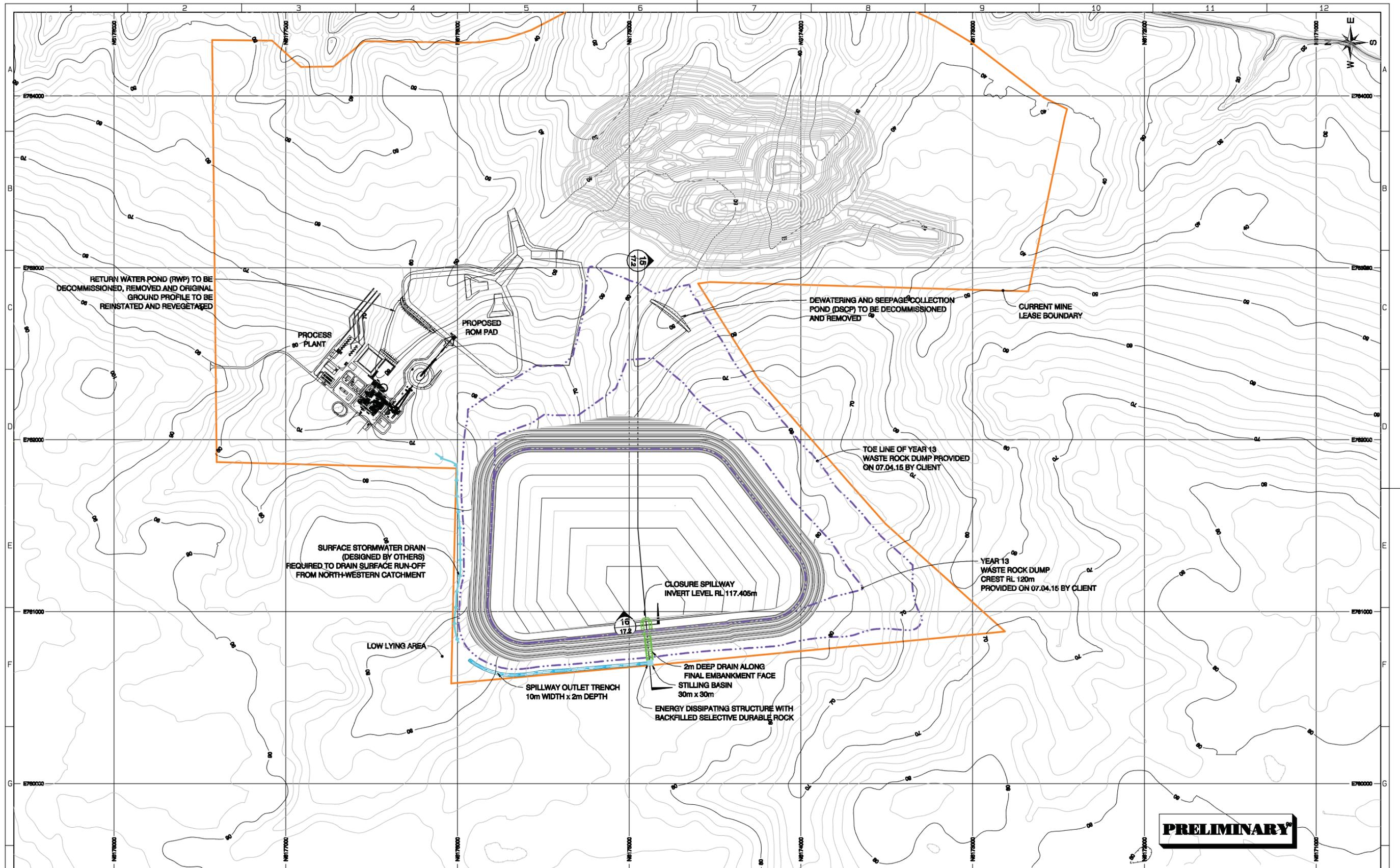
ALEX VAN KOERSVELD
Associate Engineer
ATC Williams Pty Ltd

Attachments: **Figure 17.1 - TSF Closure Layout**
 Figure 17.2 - TSF Closure Sections and Details

REFERENCES

1. ATC Williams Pty Ltd, "*Hillside Copper Project, Tailings Storage Facility Feasibility Level Design Report (Alternative 1 TSF - Copper Production Only)*", document reference 111278.07R01, dated August 2016.
2. GEO-SLOPE International Ltd, "*VADOSE/W 2012 for Seepage Analysis - Version 6*", Calgary, Canada.

ATTACHMENTS



PRELIMINARY

SCALE 1:20,000 @ A3		JOB No. 111278.07	
DATE 11.09.15		DESIGN AWK	
DRAWN DS		CHECKED	
APPROVED		DATE 11.09.15	
DRAWN DS		CHECKED	
APPROVED		DATE 11.09.15	
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APPROVED		DATE 11.09.15	



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**REX MINERALS
 HILLSIDE PROJECT**

**TAILINGS STORAGE FACILITY FEASIBILITY LEVEL DESIGN REPORT
 (ALTERNATIVE 1 TSF - COPPER PRODUCTION ONLY)
 TSF CLOSURE LAYOUT**

FIGURE 17.1

CLIENT No.
 GRID REF.

REV. No. A SHT SIZE A3
 SHEET 1 OF 1



Section 3.9 – Appendix D
SA Water Cabinet Approval
Mains Extension Ownership
(September 2017)

From: Lazzaro, Joe [<mailto:Joe.Lazzaro@sawater.com.au>]

Sent: Tuesday, 5 September 2017 4:17 PM

To: John Burgess <jburgess@rexminerals.com.au>

Subject: RE: SA Water infrastructure pipeline

Hi John,

In accordance with SA Water's cabinet approval, the proposed mains extension between Pt Wakefield and Pine Point (including infrastructure up to and including the proposed water meter in Sandy Church Road) will be built, owned and operated by SA Water. Therefore all approvals necessary to deliver the mains extension will be the responsibility of SA Water.

I trust this meets your requirements. Should you have any questions or queries, please don't hesitate to contact me.

Regards

JOE LAZZARO

Manager Business Solutions

SA Water

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South Australian Water Corporation disclaimer

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Section 3.9 – Appendix E
Rehabilitation Liability
Review (AECOM,
May 2017)

31 May 2017

Toni Thomas
Hillside Project Study Coordinator/Document Controller
Rex Minerals Ltd
tthomas@rexminerals.com.au

Dear Toni

Hillside Project- Rehabilitation Liability Review, Final

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by Rex Minerals Ltd (RXM) to provide an estimate of the rehabilitation liability for the Hillside Project using the Victorian State's Department of Economic Development, Jobs, Transport and Resources (DEDJTR) - Earth Resources Bond Calculation Tool¹.

The rehabilitation liability estimates generated herein are based on progressive construction of the tailings storage facility (TSF) and rock storage facilities (RSF) as per RXM files provided to AECOM via Dropbox and as per summary email from John Burgess dated 4 August 2016.

A current site layout plan is included as **Attachment A**.

2.0 Background

RXM's Hillside Project is an open cut copper-gold mine with an underground extension located near Ardrossan, South Australia - approximately 80 km NW of Adelaide.

The mine and rehabilitation plan that forms the basis of the rehabilitation liability estimate reported herein is based on MLA (2013) and subsequent updates provided by Rex as part of the Feasibility Study documentation.

3.0 Aims and Scope

The aim of the work provided herein is to provide a progressive rehabilitation liability estimate of the Hillside Project using the Victorian DEDJTR Calculation Tool.

In populating the Bond Calculation Tool estimates of the volume of material that needed to be placed and moved to achieve the rehabilitation plan is based on plans and data supplied by RXM in both .dxf and calculated format. This data reflects the reconfigured mine plan and Extended Feasibility Study (EFS), August 2016. .

The key components associated with the EFS that are assumed herein are the following:

- no underground mining;
- 6Mtpa ore processing;
- partial backfill of the pit;
- inclusion of 132kV powerline within the Yorke Highway Road Easement;
- no road underpass beneath St Vincent's Hwy;
- EOM to be year 14;
- No top soil applied to slopes greater than 15 degrees slope angle;
- TSF Spillway 20m wide x 3.5km long (Description of Mining Operations, page 122 prepared by RXM).

¹ <http://www.energyandresources.vic.gov.au/earth-resources/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/establishment-and-management-of-rehabilitation-bonds-for-the-mining-and-extractives-industries/bond-calculator>

In summary, the objective of the works undertaken and reported here is as follows:

- provide a progressive rehabilitation liability review for the Hillside Project using the Victorian DEDJTR Bond Calculation Tool to enable the development of a 2017 liability assessment;
- provide a rehabilitation liability estimate for all domains that reflects the current mine configuration to include no underground mining, a reduced ore throughput and no port processing facilities;
- provide an estimate of rehabilitation liability at years 2, 8 and End of Mine (EOM) Life;
- list any additional risks and opportunities identified during the generation of rehabilitation liability;
- provide recommendations for measures to reduce rehabilitation liability over the project timeline (where possible).

The scope of works for the project included:

- data review and gap analysis;
- use of 12d modelling to verify areas of disturbance and material volumes provided by RXM;
- liability assessment for mine site closure and rehabilitation at years 2, 8 and EOM for a progressive rehabilitation scenario; and;
- reporting of the updated liability assessment.

4.0 Methodology

The approach to estimating the rehabilitation liability for an unplanned closure at years 2, 8 and EOM is based on use of the Victorian DEDJTR Bond Calculation Tool (the bond calculator).

In order to reflect mine plan assumed for the rehabilitation liability, a total of eight domains have been adopted:

- Domain 1 - Run of Mine (ROM) and Roads
- Domain 2 - Infrastructure
- Domain 3 - Tailings Storage Facility (a = Yr 2, b = Yr 8, c = EOM)
- Domain 4 - Rock Storage Facility (RSF) West (a = Yr 2, b = Yr 8, c = EOM)
- Domain 5 - RSF South (a = Yr 2, b = Yr 8, c = EOM)
- Domain 6 - RSF North (a = Yr 2, b = Yr 8, c = EOM)
- Domain 7 - Pit V4 (a = Yr 2, b = Yr 8, c = EOM)
- Domain 8 - Other

It is noted that Domains 1, 2 and 8 can be considered static in regards to a progressive rehabilitation, with there being no change disturbed area footprint throughout the mine life.

The general philosophy was to identify and focus on the domains and activities that had the largest material impact on the rehabilitation. In this instance the earthworks associated with rehabilitation of the TSF and RSFs.

The methodology applied for input to the rehabilitation liability review is detailed below:

- Use of current Surface Clearing and Rehabilitation Availability Schedule and mine plan to identify all land disturbance and progressive rehabilitation;
- Review *Rex Minerals Hillside Copper Miner Description of Mining Operations Delta Impact Assessment* and *Amec Foster Wheeler (2015) Mine Site - Process Plan General Arrangement – Plan Drawn 20.02.15* to identify structures, plant, concrete and buildings that will require action to remediate and rehabilitate the site for closure;

- Identification of key tasks to decommission the mine, TSF, backfill, stabilise landform and rehabilitate to the condition proposed in the rehabilitation plan;
- Use 12D modelling to estimate final slope areas (in 3D), tailings cover, subsoil and topsoil volumes for rehabilitation of the domains. This was conducted for situations where progressive remediation (i.e. topsoil and revegetation) has been conducted throughout the course of mining;
- Calculate the volume of earthmoving and materials required for closure/rehabilitation – in particular TSF capping and RSF rehabilitation;
- Determine progressive rehabilitation liability of the closure cost based on the mine plan, schedule and rehabilitation plan available at the time of writing; and
- Preparation of this summary report with risks and opportunities recommended for further consideration.

5.0 Information Supplied

In addition to previously cited documents, key information used was the following:

- Appendix G of the TSF Feasibility Report, prepared by ATC Williams;
- DTM Contours- 1m and 5m intervals- dxf format;
- Pit topographic contours- dxf format;
- Process Plant- Plant layout summary- Roads
- Stockpiles- year 2, year 8 and year 13 dxf format
- Surface Clearance and Rehabilitation Plan Schedule prepared by RXM, dated 03 August 2016;
- Rehabilitation contours- dxf format;
- TSF design- stage 1- stage 5- dxf format
- *Amec Foster Wheeler (2015) Mine Site - Process Plan General Arrangement – Plan Drawn 20.02.15.* pdf format and dxf (no labels);
- Powerline route- dxf format
- Rex Minerals Hillside Copper Mine Extended Feasibility Study Project- Delta Impact Assessment *Description of Mining Operations*

6.0 Rehabilitation Liability Assessment

In the majority of instances AECOM has adopted the Victorian standard unit cost rates as published in the bond calculator (data 1 November 2010) to estimate the Hillside liability estimate. .

7.0 Assumptions

The following provides a list of key aspects to the rehabilitation that was assumed in the liability assessment :

- Progressive slope battering shall occur regularly as the mine life proceeds as per the .dxf files provided to complete this bond review, therefore the earthworks upon mine completion shall be limited to minor earthworks such as shaping and levelling of minor excavations and batters, final trim, rock raking and deep ripping only;
- Subsidence of RSF and/or tailings does not contribute materially to closure volumes and engineering estimates for closure;
- There will be no low grade ore stockpiled material and/or ROM material remaining at closure and therefore no such material that will need to be managed as part of rehabilitation;
- Oxide stockpiles shall be capped with 1.0m of rockfill and 0.3m topsoil, it has been assumed that the 1.0m rock fill layer shall be Non Acid Forming (NAF) material sourced directly from the pit waste transfer and there is no requirement for selective sourcing placed over the oxide material;

- The Decant and Seepage Collection Pond (DSCP) will be cleaned and retained for handover to future land owner;
- All waste, other than concrete, will be removed from site (Description of Mining Operations, page 166 prepared by RXM)
- All materials required for TSF capping will be accessed within RSF as per design. It is assumed the two different types of material (coarse rock fill 0.6m and finer weathered rock fill 0.4m) will be segregated and assessed for suitability into identifiable stockpiles prior to closure;
- There is no unacceptable risk of geotechnical failure with the designed final landforms ;
- Oxide and ore stockpiles are considered within RSF West and as such no specific management is required with respect to hazardous material (ie NAF)
- Subsoil and Topsoil stockpiles are generated throughout the project life as the mine footprint increases, with the volume based on assumptions provided in Surface Clearance and Rehabilitation Scheduled prepared by RXM.
- The following soil and revegetation strategies are adopted and achieved:

Name	Subsoil depth (m)	Topsoil depth (m)	Landuse
ROM	0.4	0.3	Agriculture
Roads / Other	0.3	0	Agriculture
Plant	0	0.3	Agriculture
TSF top	(1.0m rockfill and weathered rockfill cover)	0.2	Native
RSF West (+ DCP) slopes:			
0° - ≤ 10°	0.4	0.3	Agriculture
10° - ≤ 15°	0	0.2	Agriculture
15° - ≤ 20°	0	0	Native
RSF North slopes:			
0° - ≤ 10°	0.4	0.3	Agriculture
10° - ≤ 15°	0	0.2	Native
15° - ≤ 20°	0	0	Native
RSF South slopes:			
0° - ≤ 10°	0.4	0.3	Agriculture
10° - ≤ 15°	0	0.2	Native
15° - ≤ 20°	0	0	Native
Pit perimeter	0.4	0.3	Agriculture

- Revegetation to native species shall include direct seeding plus planting of supplementary tube stock at a density of one tree per 5m²

- Pit backfill will not be rehabilitated (email John Burgess August 2016)
- Soil amelioration (application of gypsum/lime etc) only applied to pasture
- The revegetation methodology adopted herein to achieve native vegetation offsets has been tested and shall result in a standard of revegetation acceptable to the regulator;
- Pasture was considered as the 'base case' for non-native re-vegetation areas and the standard Victorian rates were applied. The estimate of establishing pasture grass is comparable to the estimate for establishing a crop species. The purpose of establishing pasture grass, as per the Victorian rates, is for long-term erosion and sediment control. The difference with establishing a crop species is the process of harvesting the crop. Harvesting the crop and generating an income is outside of the scope of the bond calculator, however, the crop must be harvested in a manner which maintains the long-term erosion and sediment control (non-fallow techniques) or a summer crop planted. The Victorian rate also includes undertaking soil sampling ahead of the rehabilitation program and a single application of fertiliser during the initial seeding program which would also be required for establishing a crop; and
- Costs associated with stormwater management have been considered in relation to stormwater drainage from the TSF only.

7.1 Domain 1 –ROM and Roads

7.1.1 Assumptions

- Low grade and ROM material will be depleted at EOM life, and volumes as shown on .dxf files at years 2 and 8;
- All roads, apart from sundry access roads to RSF for farm machinery/fire breaks, are to be returned to pasture and therefore require deep ripping and soil amelioration;
- No shaping or structural water management required to roadways;
- Waste rock used to construct elevated ROM (43m height) shall remain in place and be contoured and capped with surrounding landform;
- ROM waste rock construction material to be backfilled in pit;
- No change to spillage volumes (process and other contaminates to hardstand and roadways) from previous assessment.

7.1.2 Rehabilitation Liability Estimate

Table 1 Domain 1 Rehabilitation Liability by Management Precinct

Domain 1 – Precinct Liability	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Access and Haul Roads (Earthworks)	\$188,265	\$188,265	\$188,265
Landscaping, earthworks and minor revegetation (Entire Domain)	\$2,076,445	\$2,076,445	\$2,076,445
TOTAL	\$2,264,710	\$2,264,710	\$2,264,710

7.1.3 Risks and Uncertainties

- RXM has advised AECOM that an initial Acid Based Accounting assessment indicates minimal volumes of the waste rock samples are Potentially Acid Forming (PAF) (ATCW, 2014). However should PAF material be identified then rehabilitation liability value may increase as a result of specific material handling and rehabilitation requirements for PAF material. It is assumed that as per the State Government’s proposed mining lease conditions, PAF will be appropriately managed within the RSF’s and shall be reported accordingly within compliance reporting.

7.1.4 Opportunities

- Nil observed

7.2 Domain 2 – Infrastructure Areas

7.2.1 Assumptions

- No underground fuel tanks- all are self-bunded;
- Contaminated material volumes were applied based on the estimates made by URS in 2014, it is assumed this has not changed;
- All contaminated materials can be disposed of in TSF and/or RSF, and there is no requirement to deposit material off site at a licenced landfill;
- No mobile equipment remaining which would require removal;
- Salvage costs have not been included in the assessment;
- No Iron Ore related processes. Process – crushing, grinding and flotation only;
- Assume concentrate storage shed capacity 1,500t;
- Concrete pads removed to 1m depth and disposed of in Pit for purposes of calculation (tram distance to pit used);
- No change to spillage volumes (process and other contaminants to hardstand and roadways) from previous assessment;

Victorian bond calculator rates from the demolition or relocation of fixed process infrastructure (ie crushers, screening plants, pug mills etc) is \$160 each. This is an unrealistic rate and considered an oversight in the Victorian calculator, there for the equivalent unit rate was applied from the NSW bond calculator. The revised rate is \$12,773.29 per unit. Whilst the amendment does not have a material impact on the bond calculated as part of the review, it is a significant change to the Infrastructure domain.

7.2.2 Rehabilitation Liability Estimate

Table 2 Domain 2 - Rehabilitation Liability Estimate by Management Precinct

Domain 2 – Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Process Plant, Mill & Crusher	\$1,164,294	\$1,164,294	\$1,164,294
Main Work shop and stores area	\$1,255,995	\$1,255,995	\$1,255,995
Removal and disposal of contaminated materials	\$391,875	\$391,875	\$391,875
Admin Offices	\$125,890	\$125,890	\$125,890
Sewage / Water Treatment Plant	\$13,250	\$13,250	\$13,250
Access and Haul Roads	\$14,784	\$14,784	\$14,784
Landscaping, Minor Earthworks and Revegetation	\$222,564	\$222,564	\$222,564
Water Dams	\$12,470	\$12,470	\$12,470
Other	\$5,000	\$5,000	\$5,000

Domain 2 – Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
TOTAL	\$3,206,122	\$3,206,122	\$3,206,122

7.2.3 Risks and Uncertainties

- The majority of information utilised to calculate the decommissioning and closure cost of infrastructure was estimated from the .pdf drawing *Amec Foster Wheeler (2015) Mine Site - Process Plan General Arrangement – Plan Drawn 20.02.15.* The low resolution PDF did not include detailed labels or areas therefore a significant number of assumptions were made regarding the identity and purpose of infrastructure listed on that plan. Based on the information supplied a salvage volume was not able to be calculated.
- A list of buildings was obtained from *Rex Minerals Hillside Copper Miner Description of Mining Operations Delta Assessment*

7.2.4 Opportunities

- The estimated value of salvage may offer considerable reduction in the liability for this domain.

7.3 Domain 3 – Tailings Storage Facility (a, b & c)

7.3.1 Assumptions

- 2D files supplied to calculate surface area of TSF at years 2&8. Fill volume estimates assumed a 1m wall height above tailings beach and flat tailings surface;
- Capping design for the TSF is made up of the following layers:
 - Coarse rock-fill cover 0.6m
 - Finer weathered rock-fill cover 0.4m
 - Topsoil 0.2m
- TSF cap design provided is approved/endorsed by regulators without amendments;
- Topsoil haul distance of 2-5km based on conservative distance calculations from the farthest stockpile to any point within the TSF;
- No engineering treatment required of capping system (i.e. compaction, capillary breaks etc);
- Tailings beach area considered as area of disturbance in this domain;
- Tailings are Non-Acid Forming;
- Suitable and sufficient coarse and fine weathered rock fill available in the western RSF for capping the TSF as per engineering requirements and volumed supplied by RXM. This material is stockpiled by type and does not require any further screening or segregation prior to use;
- TSF is to be contoured in a concave slope average 3°;
- All TSF liquor can be evaporated and will not require treatment or discharge prior to mine closure;
- No additional material required to increase the TSF profile from final operating profile to the TSF design cap profile of average 3° concave slope;
- Upon closure and adequate drying, the TSF surface will be trafficable and would not require fill to stabilise the surface;
- No treatment of TSF seepage required except flow to pit via Decant and Seepage Collection Pond (DSCP);
- Rockfill and weathered rock fill used to cap the tailings shall be sourced from western RSF;

- No delay has been factored into the TSF rehabilitation due to decant treatment/disposal and/or drying of tailings material;
- TSF integrated landform with clay liner barrier and underdrainage.

7.3.2 Rehabilitation Liability Estimate

Table 3 Domain 3 - Rehabilitation Liability Estimate by Management Precinct

Domain 3 – Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Tailings/slimes storage	\$2,555,102	\$2,652,282	\$4,883,549
Water Dams (DSCP)	\$40,000	\$40,000	\$40,000
Landscaping, Minor Earthworks and Revegetation	\$793,388	\$821,869	\$1,284,590
TOTAL	\$3,388,490	\$3,514,151	\$6,208,139

7.3.3 Risks and Uncertainties

A number of risks and uncertainties have been identified that could impact on the final rehabilitation liability estimate:

- Due to the large surface area of the proposed TSF, the rehabilitation liability estimate is sensitive to the final unit rates used for materials handling and placement, and the final capping design. Therefore, any variability of either will materially change the total estimate.
- It has been assumed by RXM that no post closure treatment of TSF seepage water and/or supernatant will be required, based on the fact that the tails will not be acid generating. However, other processes may mean the water will not meet discharge criteria by the regulator. If water treatment required this is likely to be a material addition to the final rehabilitation/closure cost;
- RXM have assumed that the DSCP will remain for handover to the future land manager. However, if not accepted the decommissioning and rehabilitation of the DSCP may have a material impact on the rehabilitation liability estimate for this domain; and
- The closure cost associated with TSF discharge and decant infrastructure has not been considered herein.

7.3.4 Opportunities

There are a number of options that could potentially reduce the rehabilitation liability estimate for this Domain:

- The size/scale of the TSF capping project mean that the unit rates assumed, which are based on the generic Bond Calculator rates, are overly conservative.
- The cost of topsoil application could be reduced by appropriate scheduling to ensure haul distances remain between 1-2km. It should be noted that unit rates reduce from \$3.60/m³ for a haul distance of 2-5km to \$2.25/m³ for 1-2km.
- Access to suitable capping materials from within the RSFs is a critical component of the TSF rehabilitation cost. Consideration should be given to prior screening, assessment and storage proximity of suitable materials during the operational phase of the mine’s life;
- The TSF water balance upon closure is a critical component of the TSF closure and should be considered prior to executing the closure strategy; and
- The cost of surface water management from the TSF post closure could be reduced if a more detailed approach was taken to predicting stormwater flow rates and velocities from the TSF post closure. This information would enable a more considered strategy and stormwater design to be developed and budgeted for.

7.4 Domain 4 – RSF West (a, b & c)

7.4.1 Assumptions

- Oxide stockpile volumes will be as shown on .dxf files for years 2, 8 and EOM life;
- The crest was assumed to be the boundary of the RSF top surface thus determining that the top surfaces of all RSFs shall be flat;
- Progressive slope battering shall occur regularly as the mine life proceeds as per the .dxf files provided to complete this rehabilitation liability review, therefore the earthworks upon mine completion shall be limited to minor earthworks such as shaping and levelling of minor excavations and batters, final trim, rock raking and deep ripping only;
- Subsoil and topsoil haul distance of 2-5km;
- All slopes have been assumed to balance with no material move (input/extraction) required;
- Oxide stockpiles shall be capped with 1.0m of rockfill and 0.3m topsoil, it has been assumed that the 1.0m rock fill layer shall be Non Acid Forming (NAF) material sourced directly from the pit waste transfer and there is no requirement for selective sourcing placed over the oxide material.
- Minimal waste has been assessed as being non-acid forming;
- All structural water management will be constructed during the operational phase to comply with post closure water modelling;

7.4.2 Rehabilitation Liability Estimate

Table 4 Domain 4 - Rehabilitation Liability Estimate by Management Precinct

Domain 4 - Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Minor shaping and landscaping	\$0	\$2,414,756	\$173,729
Landscaping, Minor Earthworks and Revegetation	\$0	\$1,881,283	\$206,074
Totals	\$0	\$4,296,039	\$379,803

7.4.3 Risks and Uncertainties

- Surface water management of RSF West could have a material impact on the rehabilitation estimate for this domain however no water management data was supplied to enable the inclusion of surface water management and control into this rehabilitation liability review; and
- The current rehabilitation estimate considers only minor reshaping of the RSF embankments is required. Should it be determined that all or some of the RSF rehabilitation requires major reshaping and bulk pushing of material, this could have significant impact on the final rehabilitation liability estimate.

7.4.4 Opportunities

- Infrastructure associated with post closure stormwater management will have been constructed during the operational phase of the mine’s life. As far as AECOM is aware, a detailed post closure stormwater balance has not been conducted for RXM’s Hillside project. In an attempt to reduce closure risk it is recommended that this be undertaken as upgrade of the stormwater plan associated with the operational phase to the pre and post closure phases of the mine’s life may have a material impact on the site’s closure cost.

7.5 Domain 5 – RSF South (a, b & c)

7.5.1 Assumptions

- Oxide stockpile volumes will be as shown on .dxf files for years 2, 8 and EOM life;

- The crest was assumed to be the boundary of the RSF top surface thus determining that the top surfaces of all RSFs shall be flat;
- Progressive slope battering shall occur regularly as the mine life proceeds as per the .dxf files provided to complete this bond review, therefore the earthworks upon mine completion shall be limited to minor earthworks such as shaping and levelling of minor excavations and batters, final trim, rock raking and deep ripping only;
- Subsoil and topsoil haul distance of 2-5km;
- All slopes have been assumed to balance with no material move (input/extraction) required;
- Oxide stockpiles shall be capped with 1.0m of rockfill and 0.3m topsoil, it has been assumed that the 1.0m rock fill layer shall be Non Acid Forming (NAF) material sourced directly from the pit waste transfer and there is no requirement for selective sourcing placed over the oxide material.
- Minimal waste has been assessed as being non-acid forming;
- All structural water management will be constructed during the operational phase to comply with post closure water modelling;

7.5.2 Rehabilitation Liability Estimate

Table 5 Domain 5 - Rehabilitation Liability Estimate by Management Precinct

Domain 5 - Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Minor shaping and landscaping	\$860,828	\$1,957,817	\$732,159
Landscaping, Minor Earthworks and Revegetation	\$940,321	\$2,276,454	\$762,104
Totals	\$1,801,149	\$4,234,271	\$1,494,263

7.5.3 Risks and Uncertainties

- Surface water management of RSF South could have a material impact on the rehabilitation estimate for this domain however no water management data was supplied to enable the inclusion of surface water management and control into this rehabilitation liability review; and
- The current rehabilitation estimate considers only minor reshaping of the RSF embankments is required. Should it be determined that all or some of the RSF rehabilitation requires major reshaping and bulk pushing of material, this could have significant impact on the final rehabilitation liability estimate.

7.5.4 Opportunities

- Infrastructure associated with post closure stormwater management will have been constructed during the operational phase of the mine’s life. As far as AECOM is aware, a detailed post closure stormwater balance has not been conducted for RXM’s Hillside project. In an attempt to reduce closure risk it is recommended that this be undertaken as upgrade of the stormwater plan associated with the operational phase to the pre and post closure phases of the mine’s life may have a material impact on the site’s closure cost.

7.6 Domain 6 – RSF North (a, b & c)

7.6.1 Assumptions

- Oxide stockpile volumes will be as shown on .dxf files for years 2, 8 and EOM life;
- The crest was assumed to be the boundary of the RSF top surface thus determining that the top surfaces of all RSFs shall be flat;

- Progressive slope battering shall occur regularly as the mine life proceeds as per the .dxf files provided to complete this bond review, therefore the earthworks upon mine completion shall be limited to minor earthworks such as shaping and levelling of minor excavations and batters, final trim, rock raking and deep ripping only;
- Subsoil and topsoil haul distance of 2-5km;
- All slopes have been assumed to balance with no material move (input/extraction) required;
- Oxide stockpiles shall be capped with 1.0m of rockfill and 0.3m topsoil, it has been assumed that the 1.0m rock fill layer shall be Non Acid Forming (NAF) material sourced directly from the pit waste transfer and there is no requirement for selective sourcing placed over the oxide material.
- Rehabilitation of area beneath topsoil and subsoil stockpiles is considered in Domain 6: RSF North and assumes the land we be rehabilitated back to pasture;
- Minimal waste has been assessed as being non-acid forming;
- All structural water management will be constructed during the operational phase to comply with post closure water modelling;

7.6.2 Rehabilitation Liability Estimate

The estimate is sensitive to material handling rates, progressive rehabilitation assumptions and type of reshaping considered (minor reshaping versus major earthworks).

Table 6 Domain 6 - Rehabilitation Liability Estimate by Management Precinct

Domain 6 - Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Minor shaping and landscaping	\$604,954	\$1,853,661	\$1,192,030
Landscaping, Minor Earthworks and Revegetation	\$788,277	\$1,861,135	\$1,726,580
Totals	\$1,393,231	\$3,714,796	\$2,918,610

7.6.3 Risks and Uncertainties

- Surface water management of RSF could have a material impact on the rehabilitation estimate for this domain however no water management data was supplied to enable the inclusion of surface water management and control into this rehabilitation liability review; and
- The current rehabilitation estimate considers only minor reshaping of the RSF embankments is required. Should it be determined that all or some of the RSF rehabilitation requires major reshaping and bulk pushing of material, this could have significant impact on the final rehabilitation liability estimate.

7.6.4 Opportunities

- Infrastructure associated with post closure stormwater management will have been constructed during the operational phase of the mine’s life. As far as AECOM is aware, a detailed post closure stormwater balance has not been conducted for RXM’s Hillside project. In an attempt to reduce closure risk it is recommended that this be undertaken as upgrade of the stormwater plan associated with the operational phase to the pre and post closure phases of the mine’s life may have a material impact on the site’s closure cost.

7.7 Domain 7 – Pit V4

7.7.1 Assumptions

- Pit (V4) does not require any backfill or geotechnical assessment or stabilisation prior to fencing and bunding from public access;
- No geotechnical stabilisation required to decommission pit;

- Earthen safety bund (3m high x 2m wide) constructed of waste rock located 5m set back from pit crest, the actual location will be determined by geotechnical engineer upon closure of pit;
- Pit perimeter (6,304.3m) remains constant at all time intervals assessed as per .dxf files supplied “Pit Stage 5”
- Security fence located beyond safety bund;
- 56 Mm³ material backfill into pit situated beneath waste rock stockpile;
- Construction of an access/egress ramp has previously been considered as a mining cost; and
- Upon closure the pit, with or without underground extension, will be allowed to fill with groundwater to natural groundwater level.

7.7.2 Rehabilitation Liability Estimate

Table 7 Domain 7 - Rehabilitation Liability Estimate by Management Precinct

Domain t - Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Active Mining Pit	\$677,712	\$677,712	\$677,712
Landscaping, minor earthworks and revegetation	\$75,365	\$75,365	\$75,365
TOTAL	\$753,077	\$753,077	\$753,077

7.7.3 Risks and Uncertainties

- A nominal 5m setback of the safety berm and fence from the pit crest and is expected to be secure in-line with the geotechnical analyses performed by Mine Technics and documented in *131010RXM Hillside BFS Open Cut Mine Geotechnical Report – Final.pdf*.
- A future geotechnical assessment may give rise to the need for additional engineering and or earthworks of pit embankments during and/or post closure of the mining operation. This assessment may also alter the location of the safety berm and security fence around the pit. In each instance the outcome is likely to have a material impact on the closure estimate of this domain.

7.7.4 Opportunities

- Nil identified

7.8 Domain 8 – Other

The Victorian bond calculator specifies this domain be used for ancillary services or other infrastructure and/or services which may be applicable to the entire operation, or may not specifically relate to any other domain.

7.8.1 Assumptions

- It has been assumed that a nominal 40 groundwater monitoring wells located at the Hillside site require decommissioning post closure of the mine;
- Saline water borefield – assume 3 bores at unknown depth;
- Assume Borefield area of 0.3ha;
- Decommissioning 130kV in Yorke Highway easement and bore field power lines have been included in this domain;
- No exploration drill holes require rehabilitation at the end of mine life;
- Decommissioning of three saline borefield wells have been considered;

- Upper limit estimate used to decommission saline bore field wells and well head
- Assume buried saline borefield piping infrastructure will remain in place at closure;
- A nominal area of 250ha has been assumed to require pest and weed management post rehabilitation.

7.8.2 Rehabilitation Liability Estimate

Table 8 Domain 8 - Rehabilitation Liability Estimate by Management Precinct

Domain 8 - Activity	Rehabilitation Liability Estimate		
	Year 2	Year 8	EOM
Removal of Power lines	\$175,200	\$175,200	\$175,200
Monitoring Wells- grout and seal	\$50,000	\$50,000	\$50,000
Decommission Saline borefield wells	\$30,000	\$30,000	\$30,000
Pest and Weed Management	\$125,000	\$125,000	\$125,000
TOTAL	\$380,200	\$380,200	\$380,200

7.8.3 Risks and Uncertainties

- All raw data used to input this domain contains some uncertainty and broad assumptions have been made as listed above, therefore there is a risk that each of the estimates listed in domain 8 are likely to change as more accurate information becomes available. This is not expected to materially affect the rehabilitation liability estimates as Domain 8 comprises ~1% of the total rehabilitation liability estimate.

7.8.4 Opportunities

- Any further investigation into volume or unit rates associated with this domain shall provide for a more accurate liability estimate associated with these closure items.

8.0 Rehabilitation Liability Estimate

The Bond Calculator summary spreadsheets are included as **Attachment B**.

The Table 9-1 below summarises the rehabilitation liability estimate by Domain assuming progressive rehabilitation is executed throughout the life of the mine as per the rehabilitation schedule, plus management and contingency costs.

A percentage of the overall rehabilitation liability estimate (based on EOM) for each domain is also included.

Table 9 Rehabilitation Liability Estimate – With Progressive Rehabilitation

Domain Name	Rehabilitation Liability Estimate (\$M)			% of Overall Rehabilitation on Liability Estimate-
	Year 2	Year 8	EOM	
1 – ROM & Roads	\$2,264,710	\$2,264,710	\$2,264,710	9.9
2 – Infrastructure	\$3,206,122	\$3,206,122	\$3,206,122	14.0
3 – Tailings Storage Facility	\$3,388,490	\$3,514,151	\$6,208,139	27.1

Domain Name	Rehabilitation Liability Estimate (\$M)			% of Overall Rehabilitation Liability Estimate-
	Year 2	Year 8	EOM	
4 – RSF West	\$0	\$4,296,039	\$379,803	1.7
5 – RSF South	\$1,801,149	\$4,234,271	\$1,494,263	6.5
6 – RSF North	\$1,393,231	\$3,714,796	\$2,918,610	12.8
7 – Pit V4	\$753,077	\$753,077	\$753,077	3.3
8 - Other	\$380,200	\$380,200	\$380,200	1.7
Sub-total of Domains	\$13,186,979	\$22,363,366	\$17,604,924	
Management & Contingencies	\$3,956,094	\$6,709,010	\$5,281,477	23.1
TOTAL	\$17,143,073	\$29,072,376	\$22,886,401	100

As shown in Table 9-1 the highest estimated Rehabilitation Liability is \$29,073,400 for the Year 8 scenario. The rehabilitation liability estimate is higher at Year 8 as the total area which has not been rehabilitated is greatest at this point. Progressive rehabilitation increases from this time until the EOM.

It is considered that this rehabilitation liability review is significantly less than what would be required if the estimate assumed that no progressive rehabilitation occurred during the life of the operations.

9.0 Material Balance

The material balance for rehabilitation is a key aspect to achieving closure, and will change over the life of the project as topsoil and subsoil will be progressively excavated and stockpiled prior to and during mining at Hillside.

The progressive change in Stockpile volumes is based ON assumptions outlined in:

- Generation of available topsoil and subsoil volumes are as per RXM Surface Clearance and Rehabilitation Plan Schedule- and
- Use - design as follows:
 - Flat ground and slopes $\leq 10^\circ$ shall have 0.4m subsoil plus 0.3m topsoil (Pasture);
 - Slopes $> 10^\circ$ and $< 15^\circ$ shall have:
 - RSF south & RSF north: 0.2m topsoil (native vegetation);
 - RSF west: 0m subsoil and 0.2m topsoil (Pasture)²;
 - Slopes $\geq 15^\circ$ has 0m subsoil and 0m topsoil (native vegetation); and
 - TSF has 0m subsoil and 0.2m topsoil (native vegetation).

The volumes of topsoil and subsoil required for rehabilitation have been calculated assuming a bulking factor of 1.7 m³/t (as adopted by RXM in Surface Clearance and Rehabilitation Plan Schedule).

² Pasture was considered as the 'base case' for non-native re-vegetation areas and the standard Victorian rates were applied

Table 10 outlines the difference between that needed for progressive rehabilitation with the stockpile volume generated (i.e. available).

Table 10 Volume of Stockpiles

	YEAR 2	YEAR 8	EOM
Total Available Volume- Subsoil (Mt) - Stockpile	4.33	6.65	6.65
Volume-Subsoil (Mt) Required	0.64	2.72	1.670
Subsoil- Surplus (Mt)	3.69	3.93	4.98
Total Available Volume- Topsoil (Mt) - Stockpile	2.68	3.48	2.85
Volume-Topsoil (Mt) Required	0.55	2.34	2.00
Topsoil Surplus (Mt)	2.13	1.14	0.85

10.0 Conclusions

Key conclusions from AECOM's review of the rehabilitation liability estimates are as follows:

- Unit rates for materials handling are the most sensitive parameter due to the scale of the TSF and RSFs;
- TSF capping design in relation to material volumes and type has a material influence on estimates and contributes the most to the rehabilitation liability assessment;
- Progressive rehabilitation significantly reduces the rehabilitation assessment.

11.0 Recommendations

Several Domains currently have a number of risks and opportunities that could impact materially on the rehabilitation liability estimate. It is recommended that the following key uncertainties be considered in more detail by RXM as the project progresses and as part of their ongoing mine planning:

- Materials handling unit rates - Given the scale of the task to cap the TSF at closure, it is possible that the generic Bond Calculator unit rates could be reduced. Further analysis of rates based on RXM operational rates, and quotes from other mining contractors could be used to justify rate reduction.
- The planting of tube stock to supplement direct seeding of native vegetation makes a significant contribution to the rehabilitation liability assessment of RSF domains and the planting density has material impact on closure estimates. If however supplementary tree planting was only undertaken in biodiversity offset areas the cost component for this activity would reduce considerably;
- Rex advised that groundwater modelling indicates the open pit will remain as a sink in-perpetuity thus seepage will not be required pre-treatment post-closure;
- Rex advised that a Stormwater Management Plan (and the basis for assumptions herein) has been prepared as part of the Program for Environment Protection and Rehabilitation (PERP), which will adequately consider stormwater management post closure;
- Assessment and segregation of suitable material required to cap the TSF upon closure should be completed early in the mine's life to ensure additional costs are not incurred upon closure.

- Consideration into the success measures required for native vegetation establishment should be investigated so as to ensure the proposed revegetation strategy will adequately meet the regulator's requirements.
- A review of compliance against regulatory commitments should be undertaken to ensure that assumptions made herein are consistent with what has been previously documented in licencing and approval documentation.

12.0 Limitations

AECOM has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Rex Minerals Ltd. Except as required by law, no third party may use or rely on, this Report unless otherwise agreed by AECOM in writing. Where such agreement is provided, AECOM will provide a letter of reliance to the agreed third party in the form required by AECOM.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

It is prepared in accordance with the scope of work and for the purpose outlined in the contract dated 1 August 2016. Where this Report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the Report. AECOM assumes no liability for any inaccuracies in or omissions to that information.

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Any estimates of potential costs which have been provided are presented as estimates only as at the date of the Report. Any cost estimates that have been provided may therefore vary from actual costs at the time of expenditure.

13.0 Closing

We trust this bond review meets RXM's requirements and assists in the ongoing planning for mining at Hillside, SA. Please do not hesitate to contact the undersigned should you require any additional information or explanation. We look forward to continuing to assist you in your project development.

Yours faithfully

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Attachment A

Site Layout Plan

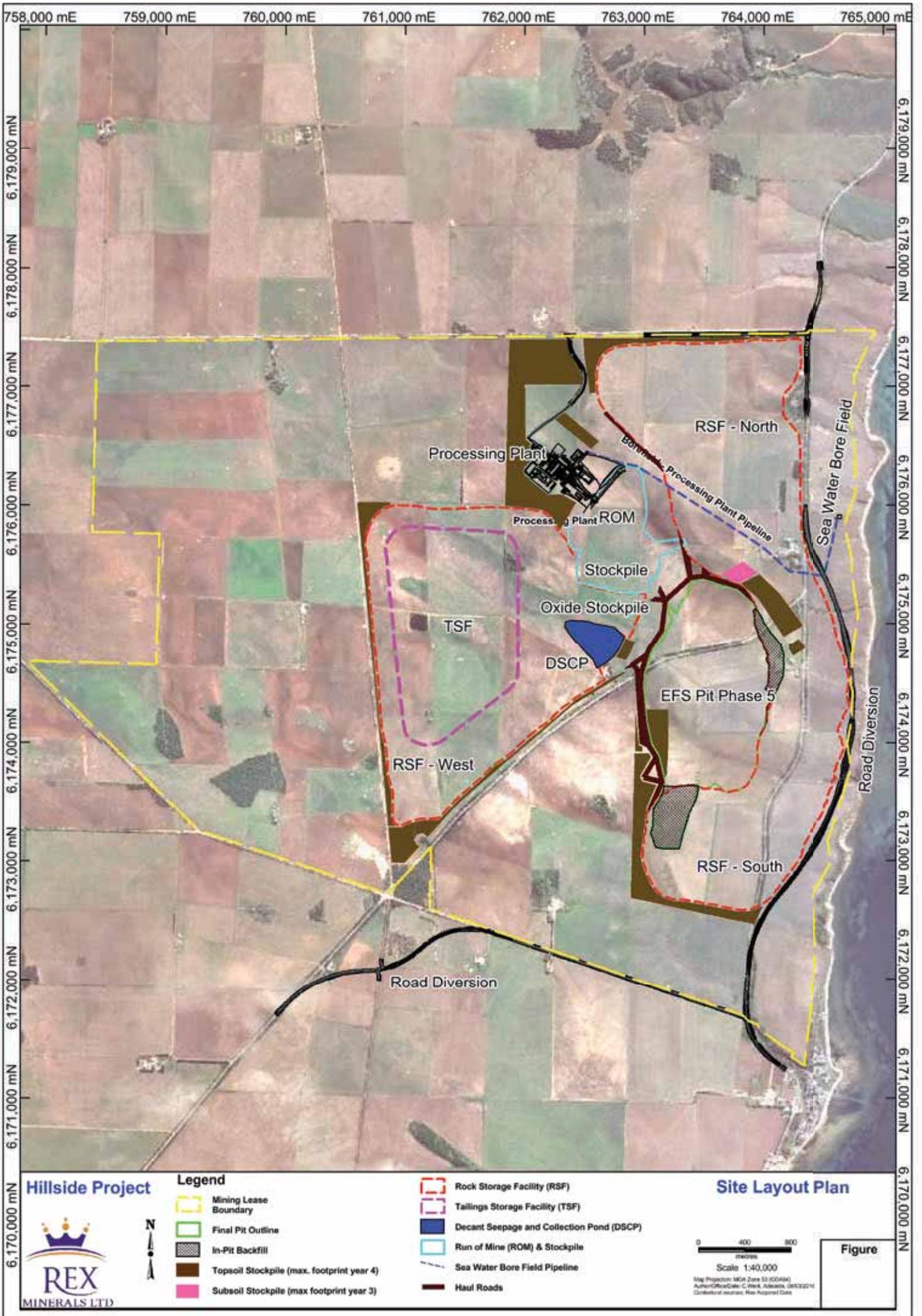
Attachment B

Excel Spreadsheets of Victorian Bond Calculator



Attachment A

Site Layout Plan





Attachment **B**

Excel Spreadsheets of
Victorian Bond
Calculator

Open Cut & Underground Mine Operations:

Domain 1:ROM and Roads EOM

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$2,264,710.24**

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

ROM and Roads included in this tab.
 Assume all ROM material is removed prior to rehabilitation.
 Assume ROM is empty at Yrs 2 & 8.
 Oxide and ore stockpiles now included in RSF West.
 Subsoil applied to ROM included in Topsoil rate calculation

Legend:

	Item fixed no entry required
	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	Additional Info.	Description / Notes:
Process Plant, Mill or Crusher	Disconnect and terminate services	n		item	\$5,000.00				This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the administration area.
	Demolish and remove small buildings / tanks	n		m ²	\$70.00				Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops .
	Demolish and remove industrial buildings such as workshops and large sheds	n		m ²	\$160.00				Enter the total area of workshop facilities in the admin area.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	n		m ²	\$12.00				Enter the total area of any bitumen car parks (or similar).
	Remove Concrete pads & footings (< 300mm thickness).	n		m ²	\$10.00				Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick. The broken up concrete will be buried in the pit .
	Remove Concrete pads, footings and foundations (> 300mm thickness)	n		m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick. The broken up concrete will be buried in the pit .
	Remove unwanted material (spillage or otherwise) from footprint of the Plant, Mill & Product stockpiles.	N		m ³	Select from List			Select Haul Distance	Enter the total volume (ie. area x depth of material) to be scalped off for disposal.
Precinct Rehabilitation Liability							\$0.00		
Main Work Shop and Stores Area (Heavy Industrial Area).	Disconnect and terminate services	N		item	\$5,000.00				This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the area.
	Demolish and remove small buildings / tanks	N		m ²	\$70.00				Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops .
	Demolish and remove industrial buildings such as workshops and large sheds	N		m ²	\$160.00				Enter the total area of workshop facilities in the admin area.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	N		m ²	\$12.00				Enter the total area of any bitumen car parks (or similar).
	Remove Concrete pads & footings (< 300mm thickness).	N		m ²	\$10.00				Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick.
	Remove Concrete pads, footings and foundations (> 300mm thickness)	N		m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick.
	Demolish / relocate FIXED process infrastructure (ie. crushers, screening plants, pug mills and wet mix plants)	N		@	\$160.00				This includes the cost to dismantle the crusher and relocate from the site.
	Remove all mobile plant and equipment from the site	N		item	\$2,000.00				This item includes removing all mobile plant and equipment from the site.
	Removal of rubbish from the site to a licensed landfill facility (ie. General waste, sample bags, bore casing off cuts, etc)	N		@	\$650.00				This rate includes the hire/lease and service charges for a 10m ³ skip bin for a period of 5 weeks as well as removal of the bin to the nearest licensed landfill area.
	Demolish and remove ground level conveyors, transfer stations & gantries (scrapping only - does not include dismantling for re-use at another site)	N		m	\$100.00				Enter the sum of the total length of overland conveyor and gantries.
	Demolish and remove overhead conveyors, transfer stations & gantries (scrapping only - does not include dismantling for re-use at another site)	N		m	\$250.00				Enter the sum of the total length of overhead conveyor and gantries.
Demolish thickener tanks or flocc tanks (variable rate for small, medium and large structures).	N		@	Select from List			Select Size	This includes removing all thickener or flocc tanks 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	Additional Info.	Description / Notes:
	Remove Concrete pads & footings (< 300mm thickness).	N		m ²	\$10.00				Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick.
	Remove Concrete pads, footings and foundations (> 300mm thickness)	N		m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick.
Precinct Rehabilitation Liability							\$0.00		
Removal and disposal of contaminated materials (for further information see <i>Classification of Wastes</i> . Pub 448.3, May 2007. Environment Protection Authority, Victoria)	Has a Contaminated Site Assessment been undertaken for the site? If not this item applies	N		item	\$3,500.00		\$0.00		Assessment required where it has been identified that there is significant potential of contaminated land.
	Removal and disposal of oil contaminated water from bunded areas and sumps.	n		Lt	\$0.25				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. Need to add \$2.50 /km for out of metro areas.
	Load, cart and dispose of low-level contaminated soil off site to a licensed landfill. Assumes cartage to a local landfill. Add \$50/m3 for cartage to regional landfill.	n		m ³	\$390.00				Allows for disposal fee of \$100 per tonne and cartage of \$30/tonne (assume local landfill).
	Load, cart and dispose of contaminated soil (ie. chemical spillage in / around storage sheds) off site to a licensed landfill	n		m ³	\$675.00				Allows for disposal fee of \$200 per tonne and cartage of \$50/tonne.
	Onsite remediation of hydrocarbon contaminated soils	n		m ³	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.
	Removal of underground fuel storage tank (UST) up to 5,000L capacity (include all site facilities and is to include pipes, bunds, etc)	n		@	\$21,000.00				Includes removal and disposal of tank; taking of validation samples and analysis; removal and off site landfill disposal of all back fill sand only. Assumes 30 tonnes of low level and 30 tonnes of high level contaminated back fill with rates to cart and dispose of \$130 and \$230 respectively
	Removal of underground fuel storage tank (UST) above 5,000L and below 15,000L capacity (include all site facilities and is to include pipes, bunds, etc)	n		@	\$48,000.00				Includes removal and disposal of tank; taking of validation samples and analysis; removal and off site landfill disposal of all back fill sand only. Assumes 100 tonnes of low level and 100 tonnes of high level contaminated back fill with rates to cart and dispose of \$130 and \$230 respectively
Precinct Rehabilitation Liability							\$0.00		
Administration Offices	Disconnect and terminate services	n		item	\$5,000.00				This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the administration area.
	Demolish and remove small buildings / tanks	n		m ²	\$70.00				Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It <u>does not include workshops</u> .
	Demolish and remove industrial buildings such as workshops and large sheds	n		m ²	\$160.00				Enter the total area of workshop facilities in the admin area.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	n		m ²	\$12.00				Enter the total area of any bitumen car parks (or similar).
	Remove Concrete pads & footings (< 300mm thickness).	n		m ²	\$10.00				Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick.
	Remove Concrete pads, footings and foundations (> 300mm thickness)	n		m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick.
Precinct Rehabilitation Liability							\$0.00		
Sewerage / Water Treatment Plant	Disconnect and terminate services	n		item	\$5,000.00				This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the administration area.
	Demolish and remove small buildings / tanks	n		m ²	\$70.00				Enter the total area of small buildings and tanks.
	Load, cart and dispose of contaminated soil (ie. Hydrocarbon, chemical spillage in / around storage sheds or fuel storage areas). The materials is to be taken off site to a licensed landfill or disposal facility.	n		m ³	\$675.00				Allows for disposal fee of \$200 per tonne and cartage of \$50/tonne.
Precinct Rehabilitation Liability							\$0.00		
Access & Haul Roads	Remove unwanted material from roadways (e.g. spillage)	Y	3360	m ³	\$4.40		\$14,784.00	haul distance > 2km -5km	Enter the total volume (ie. area x depth of material) to be scalped off for burial in the pit.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	Y	10652.6	m ²	\$12.00		\$127,831.20	Bitumen sealed access to plant (assumed depth 0.2m)	Enter the total area of any bitumen car parks (or similar).
	Reshape deep rip and ameliorate sealed and unsealed roads	Y	18.26	Ha	\$2,500.00		\$45,650.00	Roads	Enter the total area of the road footprint requiring reshaping and deep ripping.
Precinct Rehabilitation Liability							\$188,265.20		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	Y	83.56	Ha	\$1,300.00		\$108,628.00	ROM (83.56)	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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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.
	Rip hardstand areas	N		Ha	\$500.00				Includes any areas of compacted ground such as around and beneath plant and buildings
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	101.82	Ha	\$650.00		\$66,183.00	Roads (18), ROM (83.56)	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	639,667.65	m ³	\$2.75		\$1,759,086.04	haul distance > 2km -5km Topsoil Roads (54,779.85), Topsoil ROM (250,666.2) & Subsoil ROM (334,221.6)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	101.82	Ha	\$500.00		\$50,910.00	Roads (18), ROM (83.56)	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	n		Ha	\$3,500.00				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.
	Direct seeding (pasture grass species), with single application of fertiliser	Y	101.82	Ha	\$900.00		\$91,638.00	Roads (18.26) & ROM (83.56)	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.
Planting tubestock (< 15cm)	n		@	\$5.00				This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$2,076,445.04		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		dam	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	St Vincent Hwy Underpass backfill/revegetate						\$0.00	Assume to leave in place as per pers. Comm. JN	This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$2,264,710.24

Open Cut & Underground Mine Operations:

Domain 2: Infrastructure Areas EOM

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$3,206,121.84**

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

Assume rehabilitation to pasture; assume concrete pads and footings are >300mm thick;

Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Process Plant, Mill or Crusher	Disconnect and terminate services	Y	1	item	\$5,000.00		\$5,000.00	Rex unit price \$31,600	This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the administration area.
	Demolish and remove small buildings / tanks	n		m ²	\$70.00			All small buildings and storage appear to be sea containers (Mine Site General Arrangement AFW 20.02.15)	Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops.
	Demolish and remove industrial buildings such as workshops and large sheds	n		m ²	\$160.00			plant buildings calculated in main workshop/admin category	Enter the total area of workshop facilities in the admin area.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	y	22278.7	m ²	\$12.00		\$267,344.40	Bitumen sealed access within plant (assumed depth 0.2m)	Enter the total area of any bitumen car parks (or similar).
	Remove Concrete pads & footings (< 300mm thickness).	y	9575	m ²	\$10.00		\$95,750.00	Calculations made from AFW Mine Site General Arrangement 20.02.15	Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick. The broken up concrete will be buried in the pit.
	Remove Concrete pads, footings and foundations (> 300mm thickness)	y	25000	m ²	\$30.00		\$750,000.00	Concrete removed to 1m depth. Calculations made from AFW Mine Site General Arrangement 20.02.15	Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick. The broken up concrete will be buried in the pit.
	Remove unwanted material (spillage or otherwise) from footprint of the Plant, Mill & Product stockpiles.	Y	8400	m ³	\$5.50		\$46,200.00	haul distance > 2km -5km Nominal estimation	Enter the total volume (ie. area x depth of material) to be scalped off for disposal.
Precinct Rehabilitation Liability							\$1,164,294.40		
Main Work Shop and Stores Area (Heavy Industrial Area).	Disconnect and terminate services	Y	1	item	\$5,000.00		\$5,000.00		This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the area.
	Demolish and remove small buildings / tanks	n		m ²	\$70.00			All small buildings and storage appear to be sea containers (Mine Site General Arrangement AFW 20.02.15)	Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops.
	Demolish and remove industrial buildings such as workshops and large sheds	y	1875	m ²	\$160.00		\$300,000.00	Plant stores, plant maintenance workshop & reagent storage	Enter the total area of workshop facilities in the admin area.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	n		m ²	\$12.00			Calculated under process plant sub section	Enter the total area of any bitumen car parks (or similar).
	Remove Concrete pads & footings (< 300mm thickness).	n		m ²	\$10.00				Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick.
	Remove Concrete pads, footings and foundations (> 300mm thickness)	n		m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick.
	Demolish / relocate FIXED process infrastructure (ie. crushers, screening plants, pug mills and wet mix plants)	Y	47	@	\$160.00	\$12,773.29	\$600,344.63	AFW Mine Site General Arrangement 20.02.15 Alternative rate taken from NSW bond calculator	This includes the cost to dismantle the crusher and relocate from the site.
	Remove all mobile plant and equipment from the site	n		item	\$2,000.00				This item includes removing all mobile plant and equipment from the site.
	Removal of rubbish from the site to a licensed landfill facility (ie. General waste, sample bags, bore casing off cuts, etc)	Y	1	@	\$650.00		\$650.00		This rate includes the hire/lease and service charges for a 10m ³ skip bin for a period of 5 weeks as well as removal of the bin to the nearest licensed landfill area.
Demolish and remove ground level conveyors, transfer stations & gantries (scrapping only - does not include dismantling for re-use at another site)	n		m	\$100.00				Enter the sum of the total length of overland conveyor and gantries.	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:	
	Demolish and remove overhead conveyors, transfer stations & gantries (scrapping only - does not include dismantling for re-use at another site)	Y	420	m	\$250.00		\$105,000.00	Primary crusher discharge: 16mlift @275m Scats recycle: 3mlift @ 145m	Enter the sum of the total length of overhead conveyor and gantries.	
	Demolish thickener tanks or flocc tanks (variable rate for small, medium and large structures).	Y	1	@	\$35,000.00		\$35,000.00	Medium >10- 30m diameter	This includes removing all thickener or flocc tanks from the site including an associated pipework and pumps, etc.	
	Demolish thickener tanks or flocc tanks (variable rate for small, medium and large structures).	Y	21	@	\$10,000.00		\$210,000.00	Small <=10m diameter	This includes removing all thickener or flocc tanks from the site including an associated pipework and pumps, etc.	
	Remove Concrete pads, footings and foundations (> 300mm thickness)	n	21	m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick.	
Precinct Rehabilitation Liability							\$1,255,994.63			
Removal and disposal of contaminated materials (for further information see <i>Classification of Wastes</i> . Pub 448.3, May 2007. Environment Protection Authority, Victoria)	Has a Contaminated Site Assessment been undertaken for the site? If not this item applies	N		item	\$3,500.00		\$0.00		Assessment required where it has been identified that there is significant potential of contaminated land.	
	Removal and disposal of oil contaminated water from bunded areas and sumps.	N		Lt	\$0.25				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. Need to add \$2.50 /km for out of metro areas.	
	Load, cart and dispose of low-level contaminated soil off site to a licensed landfill. Assumes cartage to a local landfill. Add \$50/m3 for cartage to regional landfill.	Y	71250	m ³	\$390.00	\$5.50	\$391,875.00	Hardstand/laydown areas. Assume disposal on site, rate as per above for spillage.	Allows for disposal fee of \$100 per tonne and cartage of \$30/tonne (assume local landfill).	
	Load, cart and dispose of contaminated soil (ie. chemical spillage in / around storage sheds) off site to a licensed landfill	n		m ³	\$675.00				Allows for disposal fee of \$200 per tonne and cartage of \$50/tonne.	
	Onsite remediation of hydrocarbon contaminated soils	n		m ³	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.	
	Removal of underground fuel storage tank (UST) up to 5,000L capacity (include all site facilities and is to include pipes, bunds, etc)	n		@	\$21,000.00				Includes removal and disposal of tank; taking of validation samples and analysis; removal and off site landfill disposal of all back fill sand only. Assumes 30 tonnes of low level and 30 tonnes of high level contaminated back fill with rates to cart and dispose of \$130 and \$230 respectively	
	Removal of underground fuel storage tank (UST) above 5,000L and below 15,000L capacity (include all site facilities and is to include pipes, bunds, etc)	n		@	\$48,000.00				Includes removal and disposal of tank; taking of validation samples and analysis; removal and off site landfill disposal of all back fill sand only. Assumes 100 tonnes of low level and 100 tonnes of high level contaminated back fill with rates to cart and dispose of \$130 and \$230 respectively	
Precinct Rehabilitation Liability							\$391,875.00			
Administration Offices	Disconnect and terminate services	Y	1	item	\$5,000.00		\$5,000.00	Rex unit rate \$6,335.86	This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the administration area.	
	Demolish and remove small buildings / tanks	Y	1727	m ²	\$70.00		\$120,890.00	Plant control room, gatehouse, changeroom, crib, medical/mine rescue, administration, laboratory	Enter the total area of small buildings and offices in the admin area. It should not include demountables which can be removed from site. It does not include workshops.	
	Demolish and remove industrial buildings such as workshops and large sheds	n		m ²	\$160.00				Enter the total area of workshop facilities in the admin area.	
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	n		m ²	\$12.00			Calculated under process plant sub section	Enter the total area of any bitumen car parks (or similar).	
	Remove Concrete pads & footings (< 300mm thickness).	n		m ²	\$10.00				Enter the total area the workshops and buildings where concrete footings are estimated to be <300mm thick.	
	Remove Concrete pads, footings and foundations (> 300mm thickness)	n		m ²	\$30.00				Enter the total area the workshops and buildings where concrete footings are estimated to be >300mm thick.	
Precinct Rehabilitation Liability							\$125,890.00			
Sewerage / Water Treatment Plant	Disconnect and terminate services	Y	1	item	\$5,000.00		\$5,000.00	Rex unit rate \$3,161.61	This item includes disconnecting and terminating all services such as power, water and sewer. It is a "one off" cost for the administration area.	
	Demolish and remove small buildings / tanks	n		m ²	\$70.00				Enter the total area of small buildings and tanks.	
	Load, cart and dispose of contaminated soil (ie. Hydrocarbon, chemical spillage in / around storage sheds or fuel storage areas). The materials is to be taken off site to a licensed landfill or disposal facility.	Y	1500	m ³	\$675.00	\$5.50	\$8,250.00	Contaminated materials may be disposed of in TSF or RSF - haul distance at 2-5km as per above rates for spillage	Allows for disposal fee of \$200 per tonne and cartage of \$50/tonne.	
Precinct Rehabilitation Liability							\$13,250.00			

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Access & Haul Roads	Remove unwanted material from roadways (e.g. spillage)	Y	3360	m ³	\$4.40		\$14,784.00	haul distance > 2km -5km Dispose of in TSF or RSF	Enter the total volume (ie. area x depth of material) to be scalped off for burial in the pit.
	Remove Bitumen sealed areas (car park, etc). Includes disposal of waste bitumen material off site at an appropriate landfill facility.	n		m ²	\$12.00			Calculated under process plant sub section	Enter the total area of any bitumen car parks (or similar).
	Reshape deep rip and ameliorate sealed and unsealed roads	n		Ha	\$2,500.00	\$3,400.00			Enter the total area of the road footprint requiring reshaping and deep ripping.
Precinct Rehabilitation Liability							\$14,784.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	Y	19.19	Ha	\$1,300.00		\$24,947.00		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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Rip hardstand areas	n	0	Ha	\$500.00				Includes any areas of compacted ground such as around and beneath plant and buildings
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	19.19	Ha	\$650.00		\$12,473.50		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	57,556	m ³	\$2.75		\$158,277.90	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	y	19.19	Ha	\$500.00		\$9,595.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	n	0	Ha	\$3,500.00				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.
	Direct seeding (pasture grass species), with single application of fertiliser	Y	19.19	Ha	\$900.00		\$17,271.00		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.
	Planting tubestock (< 15cm)	n		@	\$5.00				This includes the seedling, fertiliser tablet, weed mat and guard - small tube stock.
Precinct Rehabilitation Liability							\$222,564.40		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	N	1	dam	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	Y	9236.6	m3	\$1.35		\$12,469.41	Return Water Pond: does not include liner removal	Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$12,469.41		
Other	Remove liner from return water pond	y	1	@		\$5,000.00	\$5,000.00		This item includes <<to be added by the operator>>
		y		@			\$0.00		This item includes <<to be added by the operator>>
		n		@			\$0.00		
		y					\$0.00		
	Cap exploration holes	n					\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$5,000.00		

Total Rehabilitation Liability for the "Domain"

\$3,206,121.84

Open Cut & Underground Mine Operations:

Domain 3a: Tailings Storage Facilities Yr2

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$3,388,490.12**

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

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

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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)

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Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Tailings/Slimes Storage	Source local material, cart and spread suitable material to cap the tailings storage (cap thickness determined by approval/licence)	Y	881069.6	m ³	\$2.90		\$2,555,101.84	haul distance > 1km -2km 0.6m Rockfill + 0.4m weathered rock fill	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.
	(Only if specifically required): Apply engineered treatment as required (i.e. additional compaction, capillary breaks, etc) - design in accordance with the approval/permit commitments. Generic rate assumes cap thickness of approximately 1-1.5m.	n		Ha	\$25,000.00				This includes the area that requires engineering treatment that is required to satisfy conditions of the approval/permit. This may include compaction or addition of multiple layers and / or capillary breaks.
	Reshaping (earthworks only) of the walls & surrounds of the tailings storage	n		Ha	\$2,000.00				This includes the area that requires stabilisation and reshaping works around the walls of the storage (i.e. removal of rills and pipes that may present long term stability issues).
	Leach pits/ponds & evaporation ponds - drain and remove contaminated sediments to appropriately constructed TSF.	n		m ³	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.
Precinct Rehabilitation Liability							\$2,555,101.84		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	Y	20	@	\$2,000.00		\$40,000.00	ESTIMATE based on DSCP = 100ML (20 x 5ML capacity)	This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$40,000.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	y	88	Ha	\$1,300.00		\$114,400.00		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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	y	7	Ha	\$2,000.00		\$14,000.00	Spillway rehabilitation 3.5km x 20m width	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.
	Reshape deep rip and ameliorate sealed and unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	88	Ha	\$650.00		\$57,200.00		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	176,214	m ³	\$2.75		\$484,588.28	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	88	Ha	\$500.00		\$44,000.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:	
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	n		Ha	\$3,500.00				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.	
	Direct seeding (pasture grass species), with single application of fertiliser	Y	88	Ha	\$900.00		\$79,200.00		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.	
	Planting tubestock (< 15cm)	n		@	\$5.00				This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$793,388.28			
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>	
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>	
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>	
Precinct Rehabilitation Liability							\$0.00			

Total Rehabilitation Liability for the "Domain"

\$3,388,490.12

Open Cut & Underground Mine Operations:

Domain 3b: Tailings Storage Facilities Yr8

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$3,514,151.29**

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

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

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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)

Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Tailings/Slimes Storage	Source local material, cart and spread suitable material to cap the tailings storage (cap thickness determined by approval/licence)	Y	914580.1	m ³	\$2.90		\$2,652,282.29	haul distance > 1km -2km 0.6m Rockfill + 0.4m weathered rock fill	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.
	(Only if specifically required): Apply engineered treatment as required (i.e. additional compaction, capillary breaks, etc) - design in accordance with the approval/permit commitments. Generic rate assumes cap thickness of approximately 1-1.5m.	n		Ha	\$25,000.00				This includes the area that requires engineering treatment that is required to satisfy conditions of the approval/permit. This may include compaction or addition of multiple layers and / or capillary breaks.
	Reshaping (earthworks only) of the walls & surrounds of the tailings storage	n		Ha	\$2,000.00				This includes the area that requires stabilisation and reshaping works around the walls of the storage (i.e. removal of rills and pipes that may present long term stability issues).
	Leach pits/ponds & evaporation ponds - drain and remove contaminated sediments to appropriately constructed TSF.	n		m ³	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.
Precinct Rehabilitation Liability							\$2,652,282.29		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	Y	20	@	\$2,000.00		\$40,000.00	ESTIMATE based on DSCP = 100ML (20 x 5ML capacity)	This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$40,000.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	y	91	Ha	\$1,300.00		\$118,300.00		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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	Y	7	Ha	\$2,000.00		\$14,000.00	Spillway rehabilitation 3.5km x 20m width	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.
	Reshape deep rip and ameliorate sealed and unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	91	Ha	\$650.00		\$59,150.00		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	182916	m ³	\$2.75		\$503,019.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	91	Ha	\$500.00		\$45,500.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:	
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	n		Ha	\$3,500.00				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.	
	Direct seeding (pasture grass species), with single application of fertiliser	Y	91	Ha	\$900.00		\$81,900.00		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.	
	Planting tubestock (< 15cm)	n		@	\$5.00				This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$821,869.00			
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>	
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>	
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>	
Precinct Rehabilitation Liability							\$0.00			

Total Rehabilitation Liability for the "Domain"

\$3,514,151.29

Open Cut & Underground Mine Operations:

Domain 3c: Tailings Storage Facilities EOM

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$6,208,139.06**

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

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

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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)

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Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Tailings/Slimes Storage	Source local material, cart and spread suitable material to cap the tailings storage (cap thickness determined by approval/licence)	Y	1683982	m ³	\$2.90		\$4,883,548.96	haul distance > 1km -2km 0.6m Rockfill + 0.4m weathered rock fill	This includes sourcing, carting and spreading of a suitable volume material to cap the tailings storage. The material must have appropriate chemical & physical properties.
	(Only if specifically required): Apply engineered treatment as required (i.e. additional compaction, capillary breaks, etc) - design in accordance with the approval/permit commitments. Generic rate assumes cap thickness of approximately 1-1.5m.	n			Ha	\$25,000.00			This includes the area that requires engineering treatment that is required to satisfy conditions of the approval/permit. This may include compaction or addition of multiple layers and / or capillary breaks.
	Reshaping (earthworks only) of the walls & surrounds of the tailings storage	n			Ha	\$2,000.00			This includes the area that requires stabilisation and reshaping works around the walls of the storage (i.e. removal of rills and pipes that may present long term stability issues).
	Leach pits/ponds & evaporation ponds - drain and remove contaminated sediments to appropriately constructed TSF.	n			m ³	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.
Precinct Rehabilitation Liability							\$4,883,548.96		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	Y	20	@	\$2,000.00		\$40,000.00	ESTIMATE based on DSCP = 100ML (20 x 5ML capacity)	This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n			m3	\$1.35			Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$40,000.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	n	168		Ha	\$1,300.00			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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	Y	7		Ha	\$2,000.00	\$14,000.00	Spillway rehabilitation 3.5km x 20m width	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.
	Reshape deep rip and ameliorate sealed and unsealed roads	n			Ha	\$2,500.00			Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	168		Ha	\$650.00	\$109,200.00		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n			m	\$8.00			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.
	Source, cart, spread and lightly rip topsoil	Y	336796.4		m ³	\$2.75	\$926,190.10	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	168		Ha	\$500.00	\$84,000.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:	
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	n		Ha	\$3,500.00				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.	
	Direct seeding (pasture grass species), with single application of fertiliser	Y	168	Ha	\$900.00		\$151,200.00		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.	
	Planting tubestock (< 15cm)	n		@	\$5.00				This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$1,284,590.10			
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>	
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>	
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>	
Precinct Rehabilitation Liability							\$0.00			

Total Rehabilitation Liability for the "Domain"

\$6,208,139.06

Open Cut & Underground Mine Operations:

Domain 4a: RSF_West (+DCP) Yr2

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$0.00**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Pasture (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Legend:

	Item fixed no entry required
	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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	0	Ha	\$1,300.00		\$0.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	y	0	m ³	\$3.50		\$0.00	haul distance > 2km -5km subsoil 10<15 deg batters 0.4m	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	N		Ha	\$1,300.00				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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	0	Ha	\$650.00		\$0.00		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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 .
	Source, cart, spread and lightly rip topsoil	Y	0	m ³	\$2.75		\$0.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	0	Ha	\$500.00		\$0.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	n		Ha	\$3,500.00				This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	Y		Ha	\$900.00		\$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.
Planting tubestock (< 15cm)	n		@	\$5.00				This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$0.00		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$0.00

Open Cut & Underground Mine Operations:

Domain 4b: RSF_West (+DCP) Yr8

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$4,296,039.08**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Pasture (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

INCLUDES OXIDE AND ORE STOCKPILES

Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	192.58	Ha	\$1,300.00		\$250,354.00	0<10 deg (154.6) + 10<15 deg (37.98)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	y	618400.7	m ³	\$3.50		\$2,164,402.38	haul distance > 2km -5km Subsoil on 0<10 deg slopes and 10<15 deg slopes	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$2,414,756.38		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	n		Ha	\$1,300.00				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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	192.58	Ha	\$650.00		\$125,177.00		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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 .
	Source, cart, spread and lightly rip topsoil	Y	539757.7	m ³	\$2.75		\$1,484,333.70	haul distance > 2km -5km 0<10deg (463,800.51) + 10<15 deg (75,957.20)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	y	192.58	Ha	\$500.00		\$96,290.00	Pasture only	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	0.16	Ha	\$3,500.00		\$560.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	y	192.58	Ha	\$900.00		\$173,322.00		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.
	Planting tubestock (< 15cm)	Y	320	@	\$5.00		\$1,600.00	Assume 1 tree/5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
Precinct Rehabilitation Liability							\$1,881,282.70		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$4,296,039.08

Open Cut & Underground Mine Operations:

Domain 4c: RSF_West EOM

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$379,802.73**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Pasture (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	18.35	Ha	\$1,300.00		\$23,855.00	0<10deg (10.71) + 10<15deg (7.65)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	y	42,821.20	m ³	\$3.50		\$149,874.20	haul distance > 2km -5km Subsoil 0<10 deg and 10<15 deg slopes	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$173,729.20		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	#N/A	n		m ³	#N/A				This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	n		Ha	\$1,300.00				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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed/unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	18.35	Ha	\$650.00		\$11,927.50		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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 .
	Source, cart, spread and lightly rip topsoil	Y	47413.1	m ³	\$2.75		\$130,386.03	haul distance > 2km -5km 0<10 deg (32115.9) + 10<15 deg (15297.2)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	y	18.35	Ha	\$500.00		\$9,175.00	pasture only	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	2.82	Ha	\$3,500.00		\$9,870.00	15<20 deg	This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	y	18.35	Ha	\$900.00		\$16,515.00	0<10 deg + 10<15 deg	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.
Planting tubestock (< 15cm)	Y	5,640	@	\$5.00		\$28,200.00	1 tree/5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$206,073.53		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$379,802.73

Open Cut & Underground Mine Operations:

Domain 5a: RSF South Yr2

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$1,801,149.23**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Native Vegetation (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Legend:

 Item fixed no entry required
 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	72.91	Ha	\$1,300.00		\$94,783.00	0<10 deg (54.72) + 10<15 deg (18.19)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	Y	218,870.08	m ³	\$3.50		\$766,045.28	haul distance > 2km -5km Subsoil 0<10 deg ONLY	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$860,828.28		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	n		Ha	\$1,300.00				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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	72.91	Ha	\$650.00		\$47,391.50		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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 .
	Source, cart, spread and lightly rip topsoil	Y	200527.8	m ³	\$2.75		\$551,451.45	haul distance > 2km -5km 0<10 deg (164,152.56) + 10<15 deg (36375.24)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	54.72	Ha	\$500.00		\$27,360.00	Pasture only	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	y	19.62	Ha	\$3,500.00		\$68,670.00	10<15 deg (19.19ha) + 15<20 deg (0)	This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	y	54.72	Ha	\$900.00		\$49,248.00	0<10deg	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.
Planting tubestock (< 15cm)	y	39,240	@	\$5.00		\$196,200.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$940,320.95		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain" \$1,801,149.23

Open Cut & Underground Mine Operations:

Domain 5b: RSF South Yr8

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$4,234,271.25**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Native Vegetation (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Legend:

 Item fixed no entry required
 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	y	161.77	Ha	\$1,300.00		\$210,301.00	0<10 deg (124.82) + 10<15 deg (36.95)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	y	499290.4	m ³	\$3.50		\$1,747,516.47	haul distance > 2km -5km Subsoil 0<10 deg slopes ONLY	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$1,957,817.47		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	n		Ha	\$1,300.00				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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	y	161.77	Ha	\$650.00		\$105,150.50		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	448361.9	m ³	\$2.75		\$1,232,995.28	haul distance > 2km -5km 0<10 deg (374,467.82) + 10<15 deg (73894.10)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	124.82	Ha	\$500.00		\$62,410.00	Pasture only	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	56.56	Ha	\$3,500.00		\$197,960.00	10<15 deg (36.95) + 15<20 deg (19.62)	This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	Y	124.82	Ha	\$900.00		\$112,338.00		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.
Planting tubestock (< 15cm)	Y	113120	@	\$5.00		\$565,600.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$2,276,453.78		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$4,234,271.25

Open Cut & Underground Mine Operations:

Domain 5c: RSF_South EOM

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$1,494,263.27**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Native Vegetation (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	58.89	Ha	\$1,300.00		\$76,557.00	0<10 deg (171.65) = 10<15 deg (49.01)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	Y	187314.8	m ³	\$3.50		\$655,601.80	haul distance > 2km -5km Subsoil 0<10 deg ONLY	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$732,158.80		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	n		Ha	\$1,300.00				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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	58.89	Ha	\$650.00		\$38,278.50		This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	164603.3	m ³	\$2.75		\$452,658.97	haul distance > 2km -5km 0<10 deg (140486.1) + 10<15 deg (24117.16)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	46.83	Ha	\$500.00		\$23,415.00	Pasture only	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	15.23	Ha	\$3,500.00		\$53,305.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	Y	46.83	Ha	\$900.00		\$42,147.00		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.
Planting tubestock (< 15cm)	y	30,460	@	\$5.00		\$152,300.00	1 tree/5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$762,104.47		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$1,494,263.27

Open Cut & Underground Mine Operations:

Domain 6a: RSF_North Yr2

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$1,393,231.21**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Native Vegetation (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Footprint of topsoil and subsoil stockpiles calculated in this domain

Legend:

 Item fixed no entry required
 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	41.64	Ha	\$1,300.00		\$54,132.00	0<10 deg (39.34) + 10<15 deg (2.29)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	Y	157377.8	m ³	\$3.50		\$550,822.44	haul distance > 2km -5km Subsoil 0<10 deg ONLY	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$604,954.44		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	y	100.9	Ha	\$1,300.00		\$131,170.00	Area beneath topsoil and subsoil stockpiles	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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	142.53	Ha	\$650.00		\$92,644.50	100.9 (stockpiles) + 41.63 (RSF_North)	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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 .
	Source, cart, spread and lightly rip topsoil	Y	122622.3	m ³	\$2.75		\$337,211.27	haul distance > 2km -5km 0<10 deg (118,033.38) + 10<15 deg (4588.90)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	140.24	Ha	\$500.00		\$70,120.00	pasture only 39.34 (RSF North) + 100.9 (stockpile footprint)	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	2.29	Ha	\$3,500.00		\$8,015.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	Y	140.24	Ha	\$900.00		\$126,216.00	pasture only 39.34 (RSF North) + 100.9 (stockpile footprint)	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.
	Planting tubestock (< 15cm)	Y	4580	@	\$5.00		\$22,900.00	1 tree/5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.
Precinct Rehabilitation Liability							\$788,276.77		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$1,393,231.21

Open Cut & Underground Mine Operations:

Domain 6b: RSF North Yr8

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$3,714,795.78**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Native Vegetation (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)

Footprint of topsoil and subsoil stockpiles calculated in this domain

Legend:

	Item fixed no entry required
	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	Additional Info.	Description / Notes:	
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	133.41	Ha	\$1,300.00		\$173,433.00	0<10 deg (120.02) + 10<15 deg (13.39)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.	
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	y	480065.1	m ³	\$3.50		\$1,680,227.78	haul distance > 2km -5km Subsoil 0<10 deg ONLY	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.	
Precinct Rehabilitation Liability							\$1,853,660.78			
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.	
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	Select from List			Select Haul Distance	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.	
Precinct Rehabilitation Liability							\$0.00			
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	Y	94.2	Ha	\$1,300.00		\$122,460.00	Area beneath subsoil and topsoil stockpiles	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.	
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .	
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.	
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	230.88	Ha	\$650.00		\$150,072.00	RSF_North (136.68) + stockpile footprint (94.2)	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.	
	Construct a standard stock fence around the site	n		m	\$8.00				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.	
	Source, cart, spread and lightly rip topsoil	Y	386830.9	m ³	\$2.75		\$1,063,785.00	haul distance > 2km -5km 0<10 deg (360048.81) + 10<15 deg (26782.10)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.	
	Soil amelioration (adding gypsum, lime, etc)	Y	214.22	Ha	\$500.00		\$107,110.00	RSF_North pasture (120.02) + stockpile footprint (94.2)	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).	
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	y	16.66	Ha	\$3,500.00		\$58,310.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.	
	Direct seeding (pasture grass species), with single application of fertiliser	y	214.22	Ha	\$900.00		\$192,798.00	RSF_North pasture (120.02) + stockpile footprint (94.2)	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.	
	Planting tubestock (< 15cm)	Y	33320	@	\$5.00		\$166,600.00	1 tree/5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$1,861,135.00			

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$3,714,795.78

Open Cut & Underground Mine Operations:

Domain 6c: RSF_North EOM

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$2,918,610.09**

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

0 <10 degree slope = Pasture (0.4m subsoil + 0.3m topsoil)
 10<15 degree slope = Native Vegetation (0m subsoil + 0.2m topsoil)
 15<20 degree slope = Native Vegetation (0m subsoil + 0m topsoil)
 Footprint of topsoil and subsoil stockpiles calculated in this domain

Legend:

- Item fixed no entry required
- 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	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	114.63	Ha	\$1,300.00		\$149,019.00	0<10 deg (91.49) = 10<15 deg (23.14)	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	Y	365968.7	m ³	\$2.85		\$1,043,010.74	haul distance > 1km -2km Subsoil 0<10 deg ONLY	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$1,192,029.74		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	n		m ³	\$1.40			> 50-100m	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	n		m ³	\$3.50			haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$0.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	Y	75.4	Ha	\$1,300.00		\$98,020.00	Footprint beneath topsoil and subsoil stockpiles	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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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 .
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	206.8	Ha	\$650.00		\$134,420.00	Stockpile footprint (75.4) + RSF_North (268.08)	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	320759.7	m ³	\$2.25		\$721,709.35	haul distance > 1km -2km 0<10 deg (274476.51) + 10<15 deg (46283.20)	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	166.89	Ha	\$500.00		\$83,445.00	Stockpile footprint (75.4) + RSF_North pasture (91.49)	This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	39.91	Ha	\$3,500.00		\$139,685.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), 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.
	Direct seeding (pasture grass species), with single application of fertiliser	y	166.89	Ha	\$900.00		\$150,201.00	Stockpile footprint (75.4) + RSF_North pasture (91.49)	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.
Planting tubestock (< 15cm)	Y	79820	@	\$5.00		\$399,100.00		This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$1,726,580.35		

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$2,918,610.09

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	Y	3.2	Ha	\$1,300.00		\$4,160.00	Pit bund to be vegetated with native species: 5m wide x 6304.3m = 31,521.5m2	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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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.
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	3.2	Ha	\$650.00		\$2,080.00	Pit bund to be vegetated with native species	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	Y	9600	m ³	\$2.75		\$26,400.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	n		Ha	\$500.00				This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	3.2	Ha	\$3,500.00		\$11,200.00	Pit bund to be vegetated with native species	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.
	Direct seeding (pasture grass species), with single application of fertiliser	n		Ha	\$900.00				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.
Planting tubestock (< 15cm)	Y	6305	@	\$5.00		\$31,525.00	Pit bund to be vegetated with native species: 1 plant per 5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$75,365.00		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$753,077.25

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	Y	3.2	Ha	\$1,300.00		\$4,160.00	Pit bund to be vegetated with native species: 5m wide x 6304.3m = 31,521.5m2	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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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.
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	3.2	Ha	\$650.00		\$2,080.00	Pit bund to be vegetated with native species	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	y	9600	m ³	\$2.75		\$26,400.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	n		Ha	\$500.00				This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	Y	3.2	Ha	\$3,500.00		\$11,200.00	Pit bund to be vegetated with native species	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.
	Direct seeding (pasture grass species), with single application of fertiliser	n		Ha	\$900.00				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.
Planting tubestock (< 15cm)	Y	6305	@	\$5.00		\$31,525.00	Pit bund to be vegetated with native species: 1 plant per 5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$75,365.00		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$753,077.25

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or levelling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	y	3.2	Ha	\$1,300.00		\$4,160.00	Pit bund to be vegetated with native species: 5m wide x 6304.3m = 31,521.5m2	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.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	n		Ha	\$2,000.00				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.
	Reshape, deep rip and ameliorate sealed unsealed roads	n		Ha	\$2,500.00				Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	y	3.2	Ha	\$650.00		\$2,080.00	Pit bund to be vegetated with native species	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	n		m	\$8.00				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.
	Source, cart, spread and lightly rip topsoil	y	9600	m ³	\$2.75		\$26,400.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	n		Ha	\$500.00				This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses), with single application of fertiliser	y	3.2	Ha	\$3,500.00		\$11,200.00	Pit bund to be vegetated with native species	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.
	Direct seeding (pasture grass species), with single application of fertiliser	n		Ha	\$900.00				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.
Planting tubestock (< 15cm)	y	6305	@	\$5.00		\$31,525.00	Pit bund to be vegetated with native species: 1 plant per 5m2	This includes the seedling, fertiliser tablet, weed mat and guard - small tubestock.	
Precinct Rehabilitation Liability							\$75,365.00		
Water Dams	Clean small surface water management dams (include all structures) to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure. (< 5 ML)	n		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill dams and reinstate to natural surface. (Push only)	n		m3	\$1.35				Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Other 1 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$0.00		

Total Rehabilitation Liability for the "Domain"

\$753,077.25

Open Cut & Underground Mine Operations:

Domain 18: Other Management Issues

Overall Operation Total: **\$22,886,401.80**
 Domain Total: **\$380,200.00**

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

Legend:

	Item fixed no entry required
	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	Additional Info.	Description / Notes:
Other Management Issues	Removal of powerlines (this includes disconnection, rolling up the wires and removing the poles). It does not include the removal of substations.	Y	14.6	km	\$12,000.00		\$175,200.00	130kV powerline length 13,276.2km plus 1.3km saline borefield powerlines	This rate includes the dismantling and removal of powerlines and poles from the site. It does not include the removal of substations.
	Drill Holes - Cap and seal any open bore holes, backfill with cuttings.	n		@	\$250.00				This item includes backfilling the hole with the cuttings then capping all exploration holes.
	Drill Holes - Grout (with concrete) cap and seal bore holes (ie. where sealing aquifers).	y	40	@	\$1,250.00		\$50,000.00	Nominal number of groundwater monitoring wells	This item includes grouting and capping all exploration holes.
	Pest and Weed Management	Y	250	Ha	\$500.00		\$125,000.00	Nominal area	This item covers the costs associated with the management of pests and weeds on the site. It includes spraying in in autumn and spring.
	Hydro-seeding with straw mulching and bitumen tack.	n		m ²	\$0.95				This item has been included to capture the cost of any hydro seeding that may be required on the site.
	Installation of sediment fence	n		m2	\$8.50				This item covers the costs associated with the installation of a sediment fence
	Decomission saline borefield wells	y	3	ea		\$10,000.00	\$30,000.00	Upper limit estimate for licenced driller used to decomission bore and well head.	Cost associated with the complete decomissioning for the saline borefield wells
		y					\$0.00		Costs associated with decomissioning of pumping infrastructure. Buried piping infrastructure to remain in place.
	Other 7 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 8 <insert>						\$0.00		This item includes <<to be added by the operator>>
Other 9 <insert>						\$0.00		This item includes <<to be added by the operator>>	
Other 10 <insert>						\$0.00		This item includes <<to be added by the operator>>	
Precinct Rehabilitation Liability							\$380,200.00		

Total Rehabilitation Liability for the "Domain" \$380,200.00

Open Cut & Underground Mine Operations:

Third Party Project Management & Contingencies - Yr 2

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

Legend:

	Item fixed no entry required
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

Sub Total of all Domain Areas **\$13,186,979.89**

Item	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Sundry Items	Mobilisation & Demobilisation (third party contractor rates apply).	Y	1	%	5%		\$659,348.99	Distance > 50km -100km	This is to cover the cost of the "third party" contractor bringing equipment to the site to undertake the rehabilitation works. It needs to reflect the true costs of getting the equipment to and from the site.
	Post closure environmental monitoring requirements	Y	5%	%	This has deliberately been left blank		\$659,348.99		This item is to cover any monitoring and measurement requirements that may be needed following the closure of the project.
	Project Management & Surveying (this includes preparing any documentation and well as engineering and design changes that may be needed during closure).	Y	10%	%			\$1,318,697.99		This is to cover any Project Management or Surveying costs that may be required during the closure of the mine. It also covers the preparation of tender documents and any cost for engineering and re-design that may be required during the closure of the mine.
	Contingency	Y	10%	%			\$1,318,697.99		
Precinct Rehabilitation Liability							\$3,956,093.97		

Total Rehabilitation Liability for "Management & Contingencies" \$3,956,093.97

Open Cut & Underground Mine Operations:

Third Party Project Management & Contingencies - Yr 8

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

Legend:

	Item fixed no entry required
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

Sub Total of all Domain Areas **\$22,363,366.73**

Item	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Sundry Items	Mobilisation & Demobilisation (third party contractor rates apply).	Y	1	%	5%		\$1,118,168.34	Distance > 50km -100km	This is to cover the cost of the "third party" contractor bringing equipment to the site to undertake the rehabilitation works. It needs to reflect the true costs of getting the equipment to and from the site.
	Post closure environmental monitoring requirements	Y	5%	%	This has deliberately been left blank		\$1,118,168.34		This item is to cover any monitoring and measurement requirements that may be needed following the closure of the project.
	Project Management & Surveying (this includes preparing any documentation and well as engineering and design changes that may be needed during closure).	Y	10%	%			\$2,236,336.67		This is to cover any Project Management or Surveying costs that may be required during the closure of the mine. It also covers the preparation of tender documents and any cost for engineering and re-design that may be required during the closure of the mine.
	Contingency	Y	10%	%			\$2,236,336.67		
Precinct Rehabilitation Liability							\$6,709,010.02		

Total Rehabilitation Liability for "Management & Contingencies" \$6,709,010.02

Open Cut & Underground Mine Operations:

Third Party Project Management & Contingencies - Yr EOM

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

Legend:

	Item fixed no entry required
	Input from site optional (if information available)
	Input mandatory (where applicable)
	Default Rate where an alternative is not provided

Sub Total of all Domain Areas **\$17,604,924.46**

Item	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Sundry Items	Mobilisation & Demobilisation (third party contractor rates apply).	Y	1	%	5%		\$880,246.22	Distance > 50km -100km	This is to cover the cost of the "third party" contractor bringing equipment to the site to undertake the rehabilitation works. It needs to reflect the true costs of getting the equipment to and from the site.
	Post closure environmental monitoring requirements	Y	5%	%	This has deliberately been left blank		\$880,246.22		This item is to cover any monitoring and measurement requirements that may be needed following the closure of the project.
	Project Management & Surveying (this includes preparing any documentation and well as engineering and design changes that may be needed during closure).	Y	10%	%			\$1,760,492.45		This is to cover any Project Management or Surveying costs that may be required during the closure of the mine. It also covers the preparation of tender documents and any cost for engineering and re-design that may be required during the closure of the mine.
	Contingency	Y	10%	%			\$1,760,492.45		
Precinct Rehabilitation Liability							\$5,281,477.34		

Total Rehabilitation Liability for "Management & Contingencies" \$5,281,477.34