Ausrocks Pty Ltd

ABN 64 056 939 014

Unit 3/50 Northlink Pl, Virginia QLD 4014
PO Box 359, Virginia BC QLD 4014
(07) 3161 4108
www.ausrocks.com.au

30 April 2024
Attn: Glen McMahon
Department of Environment, Science and Innovation
Minerals Business Centre
PO Box 7230
Cairns QLD 4870

via email: ESCairns@des.qld.gov.au

Dear Glen,

EPML00382513 ENVIRONMENTAL AUTHORITY AMENDMENT APPLICATION – NOT PROPERLY MADE NOTICE PURSUANT TO SECTION 227AAB OF THE *ENVIRONMENTAL PROTECTION ACT 1994*

On 7 February 2023, and on behalf of Terrequip Miles Pty Ltd (Terrequip), Ausrocks Resource Consultants (ARC) prepared and submitted an amendment application to the environmental authority (EA) EPML00382513 for the Miles Bentonite site. On 29 February 2023, the administering authority[1] issued the attached Notice for a '*Not properly made amendment application*'.

To rectify reasons for the amendment application not being properly made, the following items are enclosed with this letter:

(a) Updated addendum to the '*Site Water Management and Monitoring Plan*' (SWMMP) to include mining leases ML5895, ML5905 and ML5906;
(b) Assessment of potential for releases to the Great Barrier Reef catchment waters in accordance with the requirements of section 41AA of the *Environmental Protection Regulation 2019*; and
(c) Evaluation of proposed water storage post-mining land use (PMLU).

[1] Department of Environment, Science and Innovation is the administering authority under the *Environmental Protection Act 1994*.

If you have any queries, please do not hesitate to contact me on my mobile (0404778394) or by email (carl.morandy@ausrocks.com.au). We hope the information provided is sufficient for the administering authority to progress their assessment of the amendment application.

Sincerely
Ausrocks Resource Consultants

Carl Morandy
Managing Director

Enc/s:

Attachment 1. Notice – Not properly made amendment application
Attachment 2. Site Water Management and Monitoring Plan
Attachment 3. Great Barrier Reef catchment waters assessment
Attachment 4. Water Storage PMLU evaluation

Attachment 1

Notice – Not properly made amendment application

Notice

Environmental Protection Act 1994

Not properly made amendment application

This notice is issued by the administering authority[1] pursuant to section 227AAB of the Environmental Protection Act 1994 *to advise that an amendment application is not properly made.*

To: Terrequip Miles Pty Ltd
Suite 10A, 19 Lang Parade
MILTON QLD 4046

Attention: Jacob Fuller, Carl Morandy
Email transmission only: jfuller@terrequip.com, carl.morandy@ausrocks.com.au

Your reference: A-EA-AMD-100601215 | EPML00382513
Our reference: C-EA-100601271 | 101/0006323

Notice about an amendment application that is not properly made

1. **Amendment application details**

The amendment application for an environmental authority, made by Terrequip Miles Pty Ltd was received by the administering authority on 15/02/2024.

The application reference number is: A-EA-AMD-100601215.

Land description: Mining lease (ML) 5898, ML5900, ML5901, ML5902, ML5905, ML5906, ML5907, ML5909 and ML50058.

2. **Amendment application not properly made**

The administering authority is satisfied that the amendment application is not properly made.

3. **Reasons for amendment application not being properly made**

a. The application proposes additional disturbance areas and sediment dams. A site water management plan has been provided; however, this plan does not provide for sediment control and potential releases at ML5898, ML5905 and ML5906.

b. The Woleebee leases (ML5900 and ML 5901) are in the Great Barrier Catchment area, however the application does not include the necessary information to address section 41AA of the *Environmental Protection Regulation 2019* (EP Regulation) regarding the potential for the

[1] The Department of Environment, Science and Innovation is the administering authority under the *Environmental Protection Act 1994*.

release of contaminants into the Great Barrier Reef catchment waters.

c. The applicant proposes to change the post mine land use (PMLU) for the ROM pad located on ML5907 and ML5909 from marginal grazing to water storage but has not provided information on how the land subject to the application will be rehabilitated or identify that the PMLU is fit for purpose.

4. **Human rights**

A human rights assessment was carried out in relation to this decision and it was determined that the decision is compatible with human rights.

5. **Actions**

To make the amendment application properly made, you must take the following action:

a. Provide a detailed water management plan for ML5898, ML5905 and ML5906 that includes any 'temporary' sediment controls to mitigate against releases to the environment, an assessment of potential releases to the environment and proposed monitoring points (if required).

b. Provide an assessment of the potential for releases to the Great Barrier Reef catchment waters from the Woleebee leases that satisfies the requirements of section 41AA of the EP Regulation. The guideline for reef discharge standards can be found at Reef discharge standards for industrial activities (des.qld.gov.au).

c. Provide an evaluation of the proposed water storage PMLU that includes details on how the land will be rehabilitated, proposed use of the stored water and water quality analysis of site surface waters that identifies the water is suitable for the proposed use.

6. **Written notice required**

You must give written notice to the administering authority that the action has been taken by 30/04/2024. Written notice must be submitted to the administering authority at the address shown below:

PO Box 7230
CAIRNS QLD 4870

Or

Email: ESCairns@des.qld.gov.au

If the written notice is not given by the date above, the amendment application for the environmental authority will lapse under section 227AAC of the *Environmental Protection Act 1994*.

7. **Review and appeal rights**

You may apply to the administering authority for a review of this decision within 10 business days after receiving this notice. You may also appeal against this internal review decision to the Land Court. Information about your review and appeal rights is attached to this notice. Note that you may have other legal rights and obligations.

Should you have any questions about the notice, please contact Glen McMahon on telephone (07) 4222 5404.

T.Gibbs	29 February 2024
Signature	Date

Teale Gibbs
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Minerals Business Centre
PO Box 7230, Cairns QLD 4870
Phone: (07) 4222 5352
Email: ESCairns@des.qld.gov.au

Attachments

Information sheet: Internal review and appeals (ESR/2015/1742)

Attachment 2

Addendum to Site Water Management and Monitoring Plan

Ausrocks Pty Ltd

ABN 64 056 939 014

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PO Box 359, Virginia BC QLD 4014
(07) 3161 4108
www.ausrocks.com.au

30 April 2024

Ref: [AUQ00238F / EA EPML00382513)

Jacob Fuller
Terrequip Miles Pty Ltd

via email: Jfuller@terrequip.com

Dear Jacob

RE: ADDENDUM TO SITE WATER MANAGEMENT & MONITORING PLAN - EROSION & SEDIMENT CONTROLS FOR LEASES ML5898, ML5900, ML5901, ML5905 & ML5906 – TERREQUIP MILES PTY LTD

Ausrocks Pty Ltd (Ausrocks) have been engaged by Terrequip Miles Pty Ltd (Terrequip) to provide conceptual Erosion & Sediment Controls at the Miles Bentonite Operation for the purpose of informing an EA amendment to EPML00382513. Ausrocks are familiar with the site having previously completed the Estimated Rehabilitation Costs for the operation and have also prepared a Progressive Rehabilitation and Closure Plan which is due to be submitted in September 2024. The EA amendment is being carried out to allow a change in long-term development direction for the site whilst enabling compliance where the EA is currently either ambiguous or does not allow specific developments on the site, and to allow for different Post Mining Land Uses which the landowner has identified as advantageous to their post-mining plans for the land.

This letter outlines the Erosion & Sediment Controls required for the currently undisturbed mining leases held by the site which hold Bentonite resources namely: ML5898, ML5900, ML5901, ML5905 & ML5906. Three of the leases are sited immediately south of ML5902 which houses the operation's processing facility (denoted as "Western Leases"), whilst the other two (denoted as "Woleebee Leases") are sited approximately 38km by road to the West. Available topographical and resource information has been used to plan pit boundaries and access roads for the leases, with consideration given to other requisite mining features such as material stockpiling and exclusion bunding. Basins have been planned in strategic locations as required where bunding and drainage can redirect stormflows from planned disturbance, and design calculations carried out according to condition

C5-1 and Schedule C - Table 4 of the EA which requires sediment dams are designed to a 1:10 ARI 24-hour event.

Western Leases (ML5898, ML5905, ML5906)

According to the Bureau of Meteorology's Design Rainfall Data System, the Western Leases have a designed rainfall of 124mm in a 24 hour 1:10 ARI event as per the figure below.

Figure 1 - IFD Design Rainfall Depth (mm) - Western Leases

Location

Label: Western Leases
Latitude: -26.4341 [Nearest grid cell: 26.4375 (S)]
Longitude: 150.0533 [Nearest grid cell: 150.0625 (E)]

IFD Design Rainfall Depth (mm)

Issued: 18 April 2024

Rainfall depth for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

Table | Chart

Unit: mm

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
24 hour	65.3	74.0	103	124	145	174	197
30 hour	69.2	78.5	109	132	155	185	210
36 hour	72.4	82.4	115	139	163	195	221
48 hour	77.8	88.7	125	151	177	212	240
72 hour	85.4	97.8	138	168	198	236	267
96 hour	90.5	104	147	179	210	251	284
120 hour	94.2	108	153	185	217	260	294
144 hour	96.9	111	157	189	221	264	299
168 hour	98.8	113	159	190	221	265	300

Note:
The 50% AEP IFD **does not** correspond to the 2 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 1.44 ARI.
* The 20% AEP IFD **does not** correspond to the 5 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 4.48 ARI.

The development of the pits within the Western Leases is to be carried out in a progressive manner, that is to continually backfill as soon as possible once a section of the pit becomes available for rehabilitation, i.e. the resource is mined out. The development of the pits in this manner is intended to ensure that the site has as minimal disturbance as is practical, but resultingly the pit itself will move continuously. The pits are designed to also act as a sediment basin for the disturbance area, with scraped topsoil to be placed as perimeter bunding to ensure water falling on the disturbance flows towards the pit base. A conceptual design has been developed to demonstrate this which can be seen in **Attachment 1**. The Western Leases also have the advantage of a short distance to the existing site disturbances particularly on ML5902, and may from time to time utilise the large "drying pad" areas for temporary overburden stockpiling.

Water captured within any pit shall either be directed to an in-pit sump or evaporated away to allow the site to continue extraction within that pit. Evaporation ponds may also be set up to accelerate this process, but only within the boundary of the pit itself. As such, all water captured within a pit will not be allowed to move away

from the pit itself. Additionally, the nature of the Bentonite clay resource itself will prevent the movement of pit water away from the pit via seepage to surface waters or groundwater.

The EA requires that Voids have a Design Wet Period Storage of >1:100. An assessment of available data through QLD Government's Long Paddock SILO website (1889 – present) shows that the site has an approximate 1 in 100 year maximum rainfall of 777.8mm during the four month wet season period starting November 1st. A calculation has been made to show the requirement for any pit on these leases in **Attachment 2**, showing that for each hectare of pit disturbance, the pit is required to hold a minimum of 9,334m3 or 9.334ML of stormwater. Given that the area is all pit, this figure estimates that the required depth for each pit that needs to be available for stormwater capture prior to a storm event is approximately 93.3cm, which includes a 20% settling zone buffer. Given that each pit will average a depth of ~8-16m, this will allow for the site to sufficiently deal with all water within the areas of significant disturbance on the Western Leases, therefore it is not anticipated that the site will have need to release to environmental waters.

Woleebee Leases (ML5900, ML5901)

The pits of the Woleebee Leases are also designed to be mined as per the conceptual design in **Attachment 1**, similar to the Western Leases and have an almost identical >1 in 100 year 24-hour design rainfall (196mm) to the Western Leases. However, due to the distance to the main processing plant on ML5902, there is a need to have additional area available for local topsoil stockpiling. Site layout plans for the Woleebee Leases as seen in the figure below (**Figure 2, Figure 3 & Attachment 3**) show the areas outside of the pit boundaries designated for this purpose. Due to the potential for sediment from these stockpiles to mobilise with rainfall, sediment basins have been designed to be located immediately downstream. All long-term topsoil stockpiles will be seeded prior to the wet season to encourage a non-erosive cover to reduce the sediment load in the basins, as well as conserve the topsoil for rehabilitation of the site.

Figure 2 - Site Layout Plan - Woleebee 1

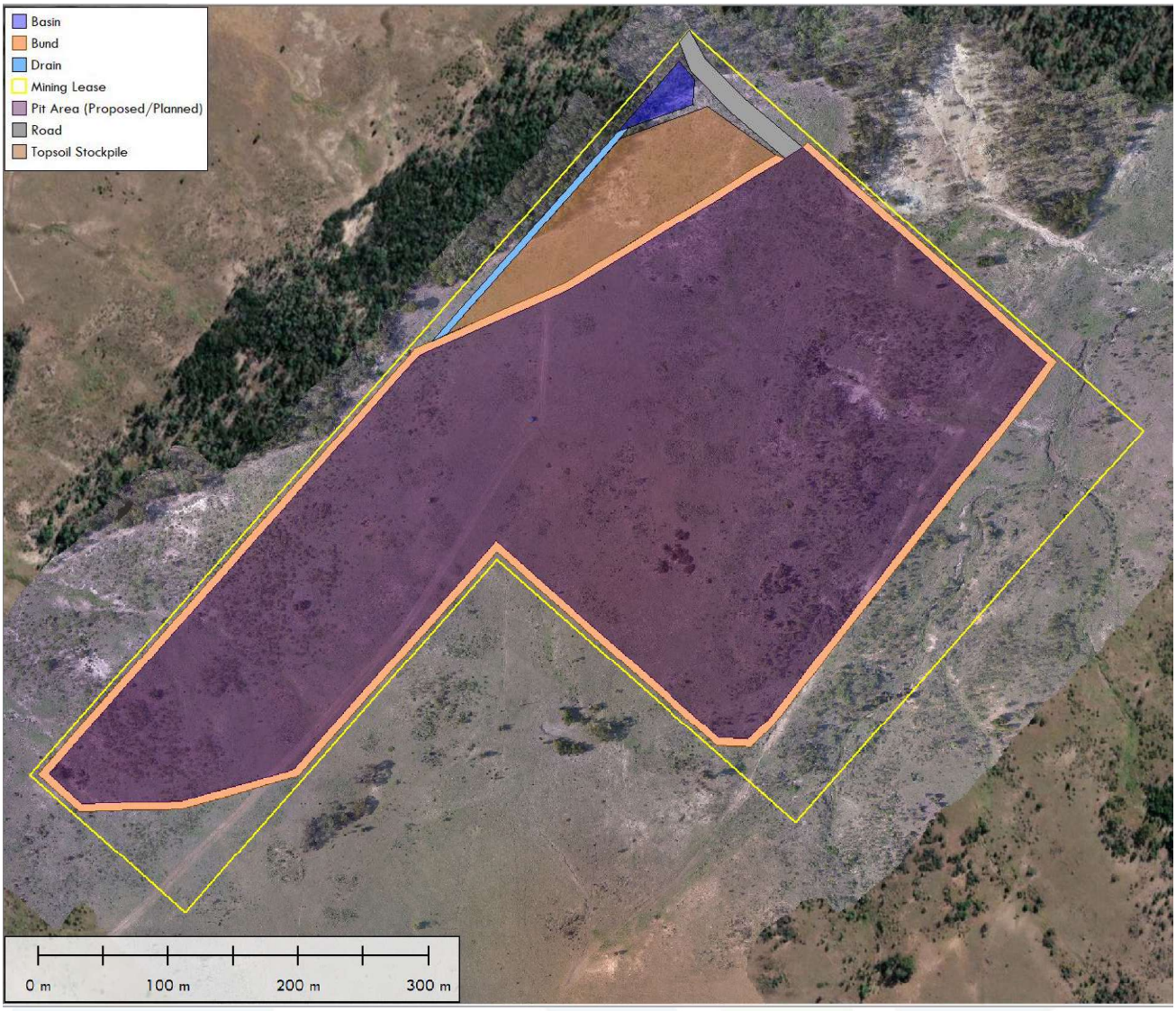


Figure 3 - Site Layout Plan - Woleebee 2

Catchment areas for the two stockpiling areas, including catch drains and the sediment basins themselves have been calculated as 17,740m2 for ML5900 and 6,490m2 for ML5901. Calculations for these basins can be seen in **Attachment 2**, with ML5900 requiring a basin volume of 2,012m3 and ML5901 a volume of 736m3, for the 1 in 10 yr 24-hour design rainfall event. The following basin parameters in **Table 1** are intended to allow the site to deal with a design rainfall event in these catchments, with **Figure 4** showing the IFD Design Rainfall Depth for the site.

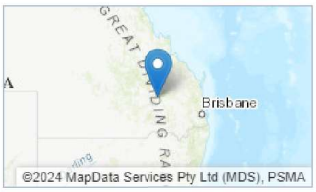
Table 1 - Basin Parameters - Woleebee Leases

Basin Location	Calculated Minimum Total Basin Volume (m3)	Designed Basin Area (m2)	Required Average Depth (m)	Expected Average Depth (m)	Expected Average Depth Meets Requirement? (Y/N)	Construction Type
ML5900	2,012	1,187	1.695	>2	Y	Walled and excavated
ML5901	736	610	1.207	>1.5	Y	Walled and excavated

Figure 4 - IFD Design Rainfall Depth (mm) - Woleebee Leases

Location

Label: Woleebee Leases
Latitude: -26.34 [Nearest grid cell: 26.3375 (S)]
Longitude: 149.7777 [Nearest grid cell: 149.7875 (E)]



IFD Design Rainfall Depth (mm)

Issued: 18 April 2024

Rainfall depth for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

Table | Chart

Unit: mm

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
24 hour	66.2	75.1	105	126	148	176	198
30 hour	70.1	79.7	111	134	157	187	210
36 hour	73.4	83.5	117	141	165	196	219
48 hour	78.8	89.9	126	152	178	210	235
72 hour	86.3	98.8	139	168	196	231	258
96 hour	91.4	105	148	177	207	244	271
120 hour	94.9	109	153	183	213	251	279
144 hour	97.5	112	157	187	217	254	283
168 hour	99.3	114	159	189	217	255	283

Note:
The 50% AEP IFD **does not** correspond to the 2 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 1.44 ARI.
* The 20% AEP IFD **does not** correspond to the 5 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 4.48 ARI.

The basins will only deal with fine sediment arising from the adjacent topsoil stockpiles and site roadway, all stormwater within the pit areas will be stored in and evaporated from within the pits. Additionally, the nature of the Bentonite clay resource itself will prevent the movement of pit water away from the pit via seepage to groundwater.

The EA requires that Voids have a Design Wet Period Storage of >1:100. An assessment of available data through QLD Government's Long Paddock SILO website (1889 – present) shows that the site has an

approximate 1 in 100 year maximum rainfall of 777.8mm during the four month wet season period starting November 1st. The same calculation made for the Western Leases to show the requirement for any pit is therefore also valid for the pits in the Woleebee Leases (**Attachment 2)**, which show that for each hectare of pit disturbance, the pit is required to hold a minimum of 9,334m3 or 9.334ML of stormwater. Given that the area is all pit, this figure estimates that the required depth for each pit that needs to be available for stormwater capture prior to a storm event is approximately 93.3cm, which includes a 20% settling zone buffer. Given that each pit will average a depth of ~8-16m, this will allow for the site to sufficiently deal with all water within the areas of significant disturbance on the Western Leases, therefore it is not anticipated that the site will have need to release to environmental waters.

We have enclosed attachments including concept pit plans and Erosion & Sediment Control Plans for each of the areas noted in the Information Request in support of the application. If you have any queries, please do not hesitate to contact me on my mobile (0404 778 394) or by email (carl.morandy@ausrocks.com.au).

Sincerely
Ausrocks Resource Consultants

Carl Morandy
Managing Director

Enc/s:

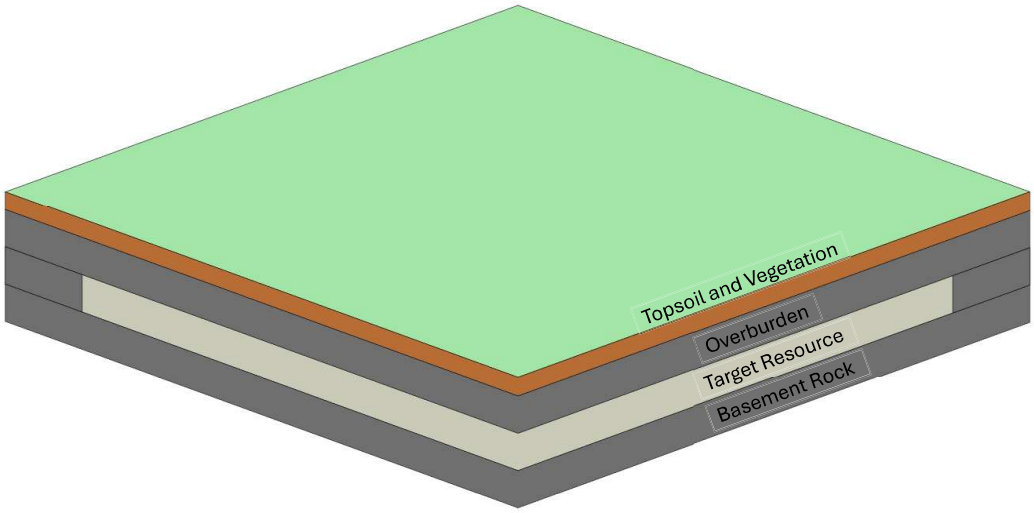
Attachment 1. Conceptual Progressive Pit Design
Attachment 2. Basin Calculations
Attachment 3. Site Layout Plans

Attachment 1

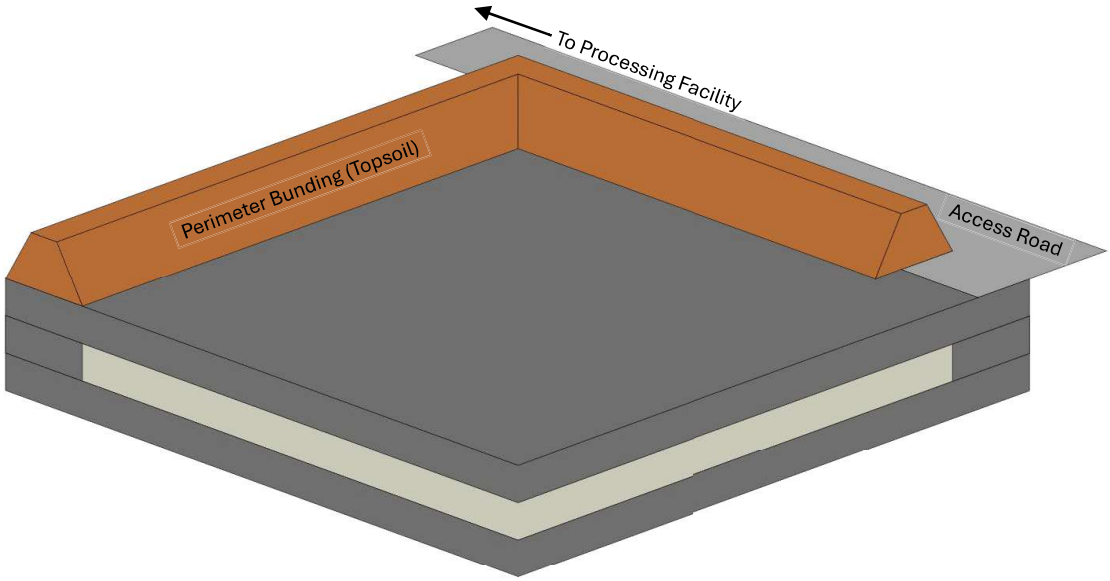
Conceptual Progressive Pit Design

3D Cross-sectional Conceptual Progressive Pit Design

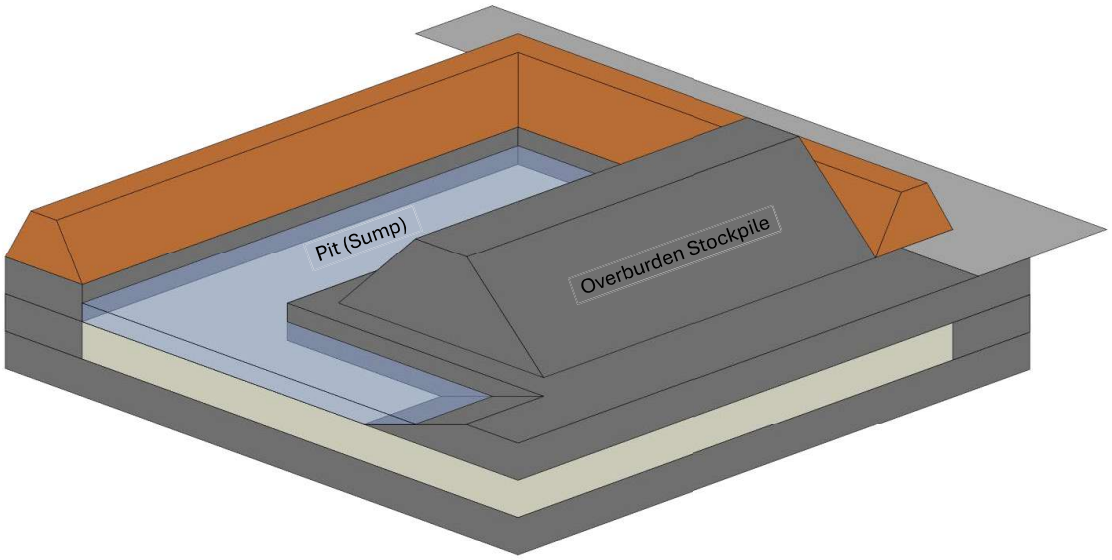
Original Ground



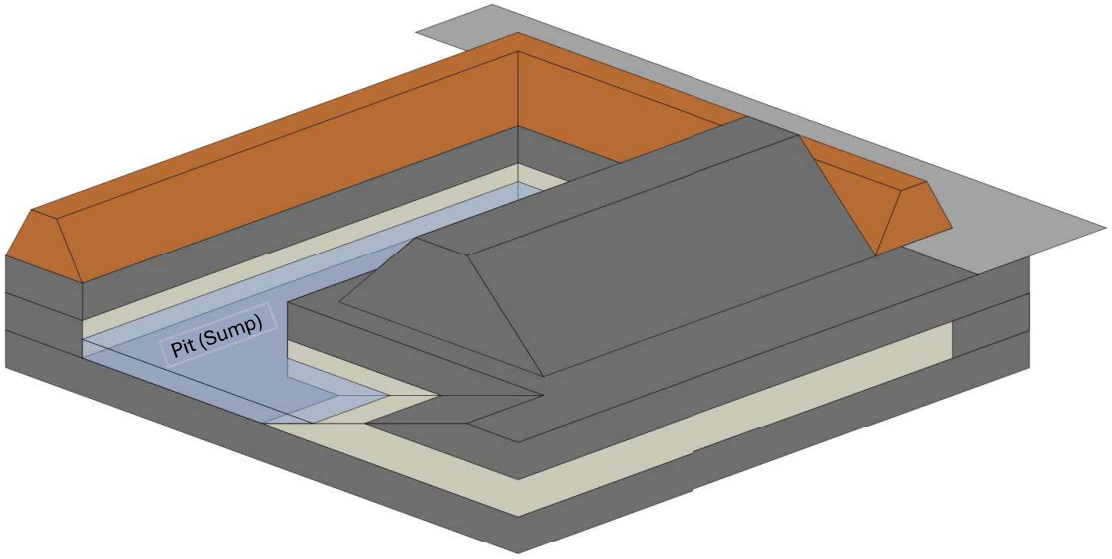
Phase 1 – Access Road Construction, Topsoil Stripping, Perimeter Bunding



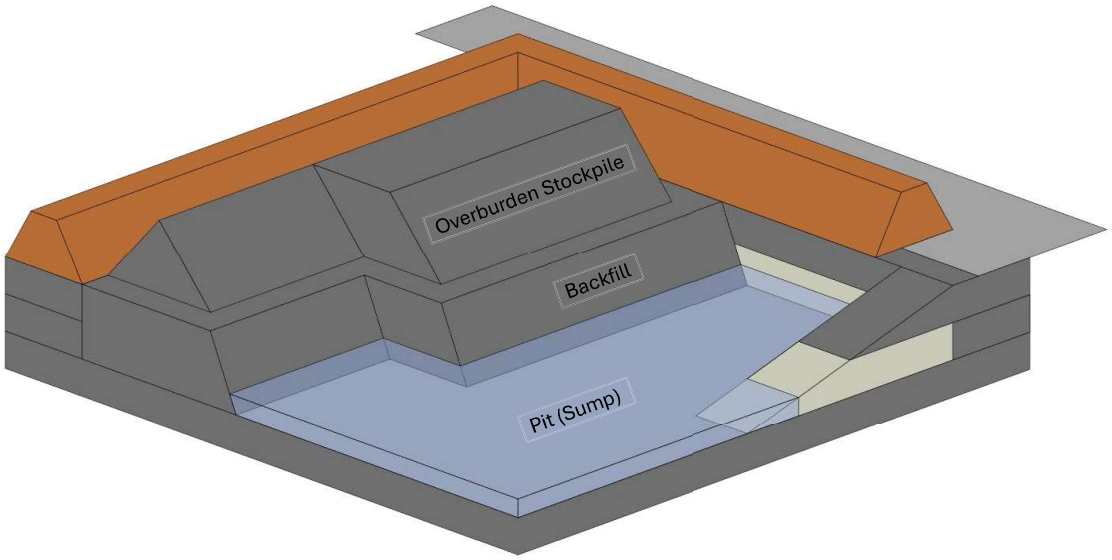
Phase 2 – Excavate Overburden



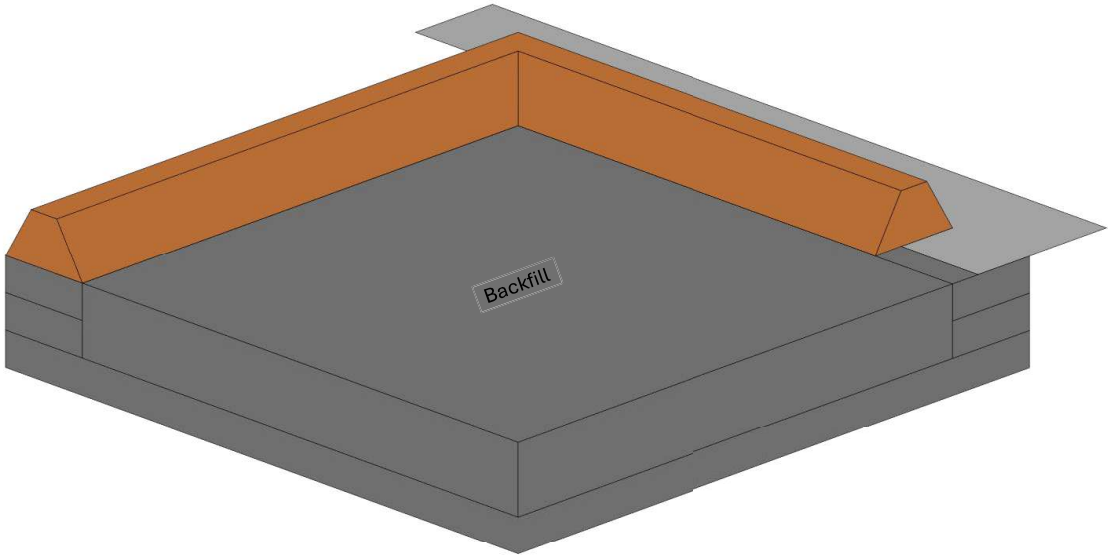
Phase 3 – Mine Target Resource (first zone)



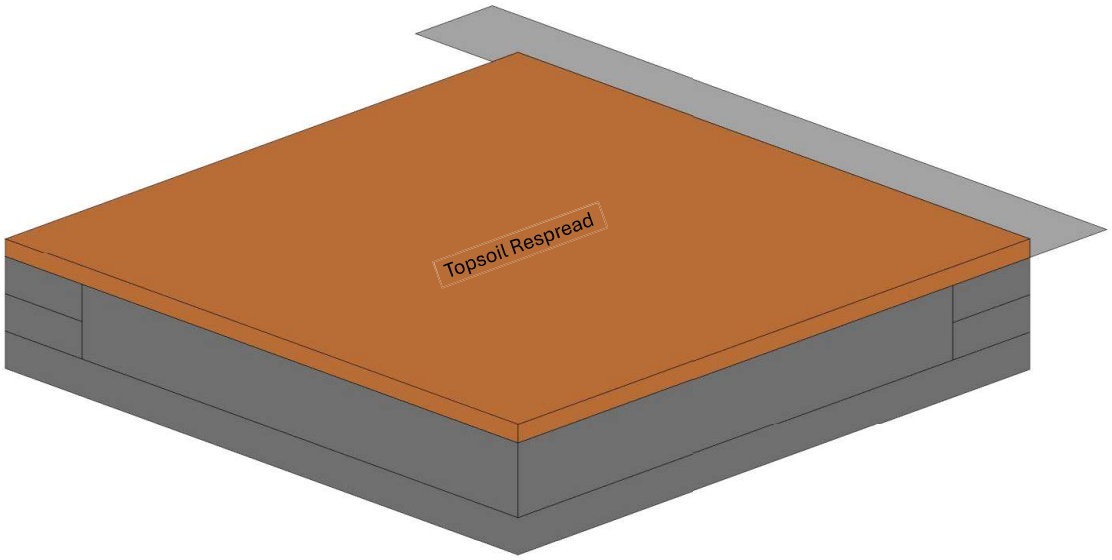
Phase 4 – Progressive Mining and Backfilling



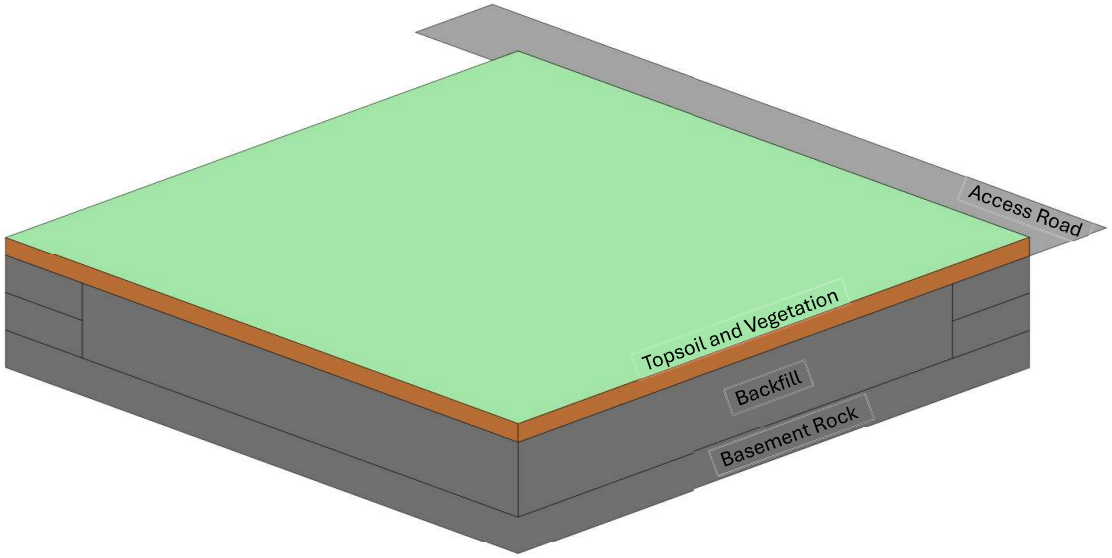
Phase 5 – Finalise Backfilling



Phase 6 – Ameliorate and Respread Topsoil, Seed



Phase 7 – Rehabilitation Management and Relinquishment



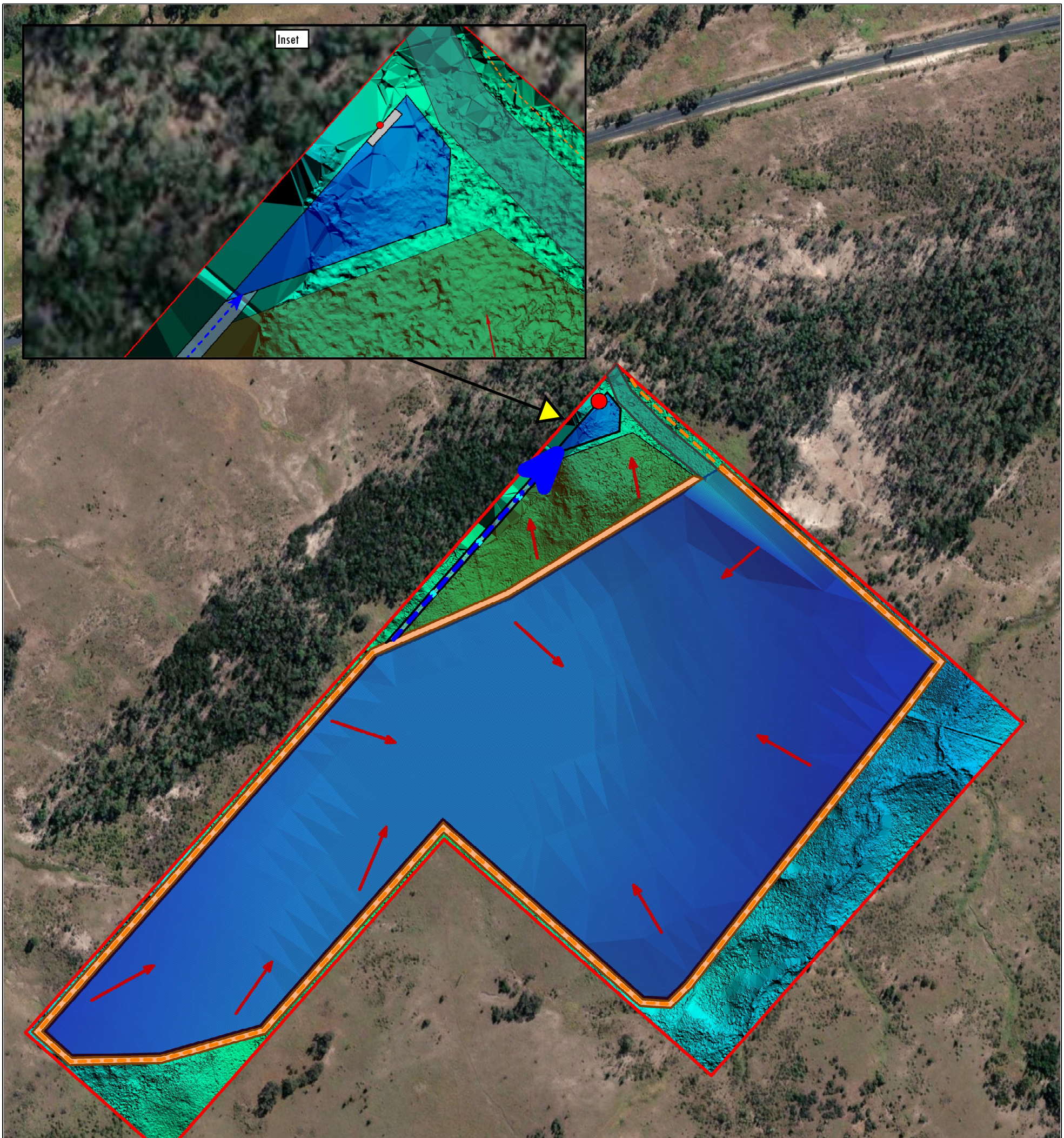
Attachment 2

Basin Calculations

Terrequip Miles Bentonite - Proposed Sediment Basin Calculations									
Catchment Area			A Woleebee 1	B Woleebee 2	C Pit Depth Calc				
Disturbed Area (m^2)			17,740	6,490	10,000				
	Item	Units		Comments					
Variables	Rainfall Depth	mm	126	1 in 10yr 24hr rain event (as per EA) - Woleebee Leases					
	Rainfall Depth	mm	124	1 in 10yr 24hr rain event (as per EA) - Western Leases					
	Rainfall Depth	mm	777.8	1 in 100yr wet season total (as per EA)					
	Run-off Coefficient Cv	%	75%	Area 1 - Mix of compacted roads and loose stockpiles. Based on estimate of compaction & impervious surfaces. IECA 2008, Table B7					
	Run-off Coefficient Cv	%	100%	Area 2 - Pits where all water is assumed contained					
Formulas	Vs = A * Cv * R/1000								
	Where Vs = Settling Volume (m3), A = Catchment Area (m2), Cv = Volumetric Runoff Co-efficient, R = Rainfall depth (mm)								
A Woleebee 1	Required Volume for Settling (Vs)	m^3	**1,676**						
	Minimum Sediment Storage Volume	m^3	335	based on 20% of settling zone volume					
	Minimum Total Basin Volume	m^3	2,012						
B Woleebee 2	Required Volume for Settling (Vs)	m^3	**613**						
	Minimum Sediment Storage Volume	m^3	123	based on 20% of settling zone volume					
	Minimum Total Basin Volume	m^3	736						
C Pit Depth Calc	Required Volume for Settling (Vs)	m^3	**7,778**						
	Minimum Sediment Storage Volume	m^3	1,556	based on 20% of settling zone volume					
	Minimum Total Basin Volume	m^3	9,334						
Total	Total Required Basin Volume	m^3	12,081						

Attachment 3

Site Layout Plans



AUSROCKS RESOURCE CONSULTANTS

0 m 100 m 200 m

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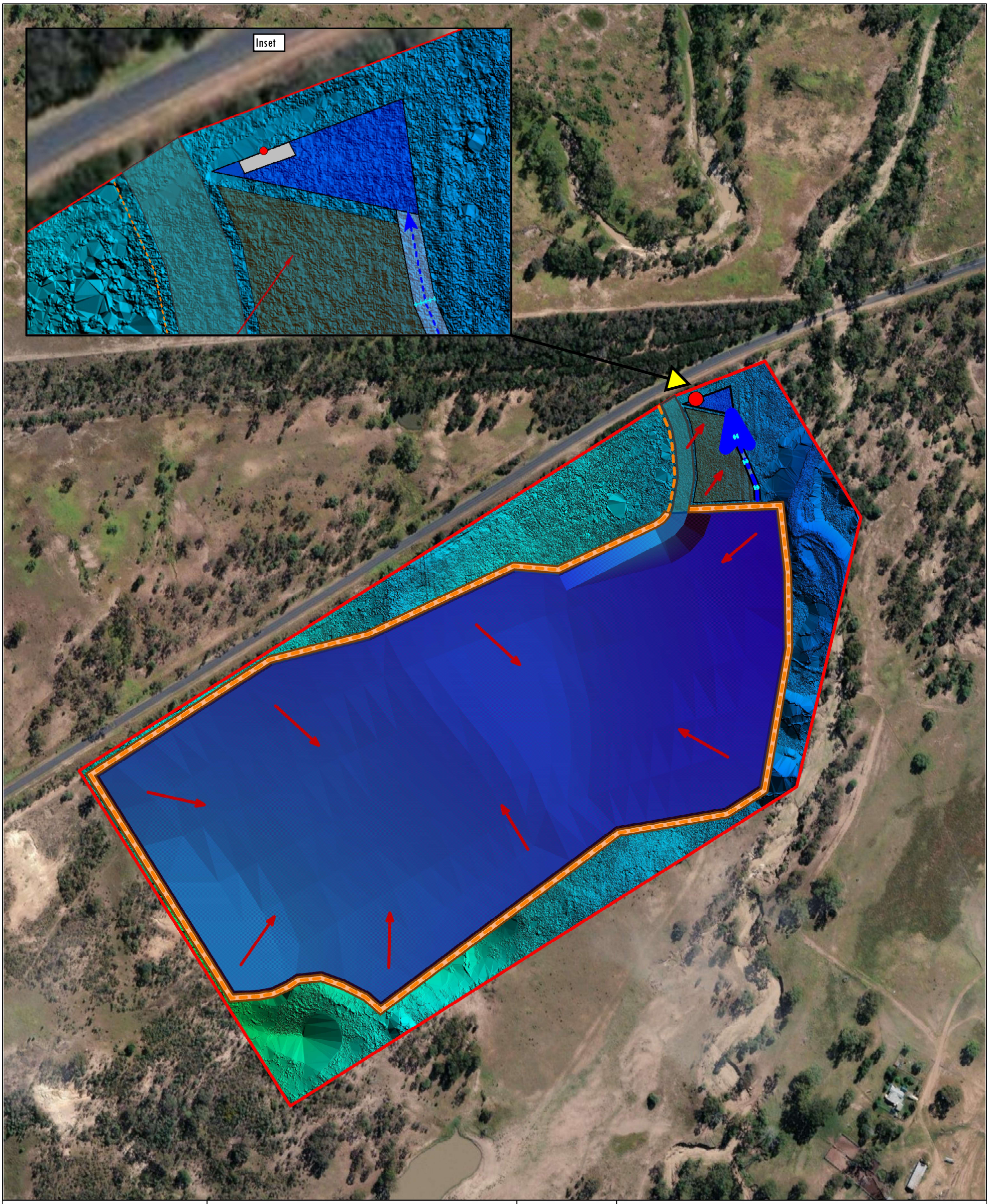
N

LEGEND

- Basin
- Bund
- Drain
- Mining Lease Boundary
- Pit Area
- Road
- Spillway
- Topsoil Stockpile
- Check Dam
- Dirty Water Flow
- Diversion Bund
- Drains
- Discharge Point

Title	Terrequip Miles ESCP - ML5900	Project No.	00238F
		Drawing No.	ESCP_ML5901_01
Scale	1:3,500 (A3)	Datum	GDA2020
Date	30/04/2024		
Drawn	CM	Checked	NV
Status	Version 1		



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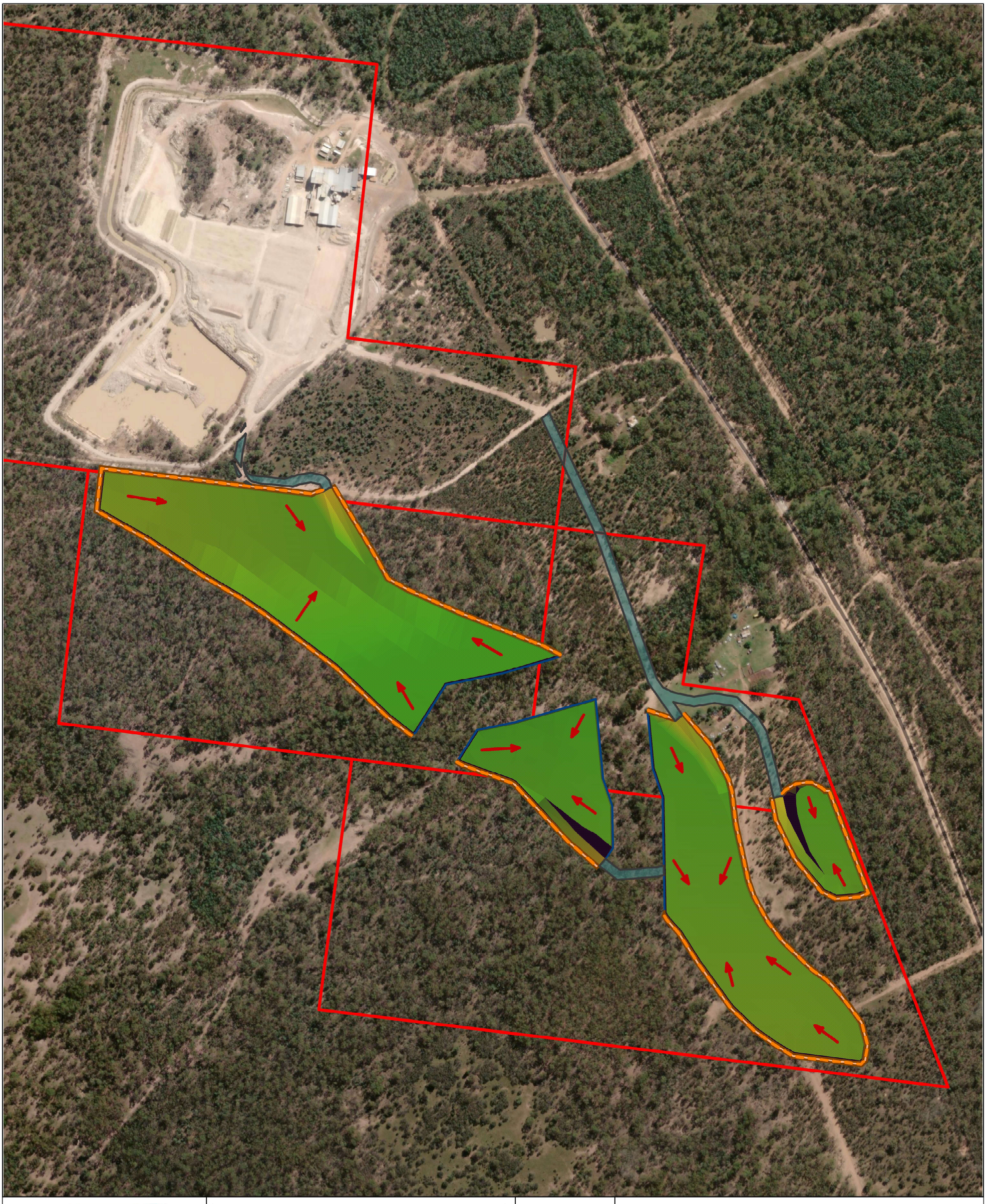
N

LEGEND

- Basin
- Bund
- Drain
- Mining Lease Boundary
- Pit Area
- Road
- Spillway
- Topsoil Stockpile
- Check Dam
- Dirty Water Flow
- Diversion Bund
- Drains
- Discharge Point

Title	Terrequip Miles ESCP - ML5901			Project No.	00238F
				Drawing No.	ESCP_ML5900_01
Scale	1:3,500 (A3)	Datum	GDA2020	Date	30/04/2024
Drawn	CM	Checked	NV	Status	Version 1



AUSROCKS RESOURCE CONSULTANTS

50 m 200 m 350 m

N

Ausrocks Pty Ltd

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QLD 4014

(07) 3161 4108
www.ausrocks.com.au
64 056 939 014

LEGEND

- Bund
- Road
- Mining Lease Boundary
- Dirty Water Flow
- Pit Area
- Diversion Bund

Title	Terrequip Miles ESCP - ML5898, 5905 & 5906	Project No.	00238F
		Drawing No.	ESCP_West ML_01
Scale	1:6,000 (A3)	Datum	GDA2020
Date	30/04/2024		
Drawn	CM	Checked	NV
Status	Version 1		

Attachment 3

Great Barrier Reef catchment waters assessment

Great Barrier Reef catchment waters assessment

The mining leases that comprise the Miles Bentonite mine, and as described under environmental authority (EA) EPML00382513, can be grouped into three (3) locations:

- **Gurulmundi leases** – ML5898, ML5902, ML5905, ML5906
- **Ausben leases** – ML50058, ML5907, ML5909
- **Woleebee leases** – ML5900, ML5901

The Gurulmundi and Ausben leases are located within the Balonne-Condamine Basin (no. 422) of the Murray Darling catchment. The Woleebee leases are location within the Fitzroy Basin (no. 130) of the North East Coast catchment and the Fitzroy Region which is part of the broader Great Barrier Reef (GBR) catchment boundary (**Figure 3-A**).

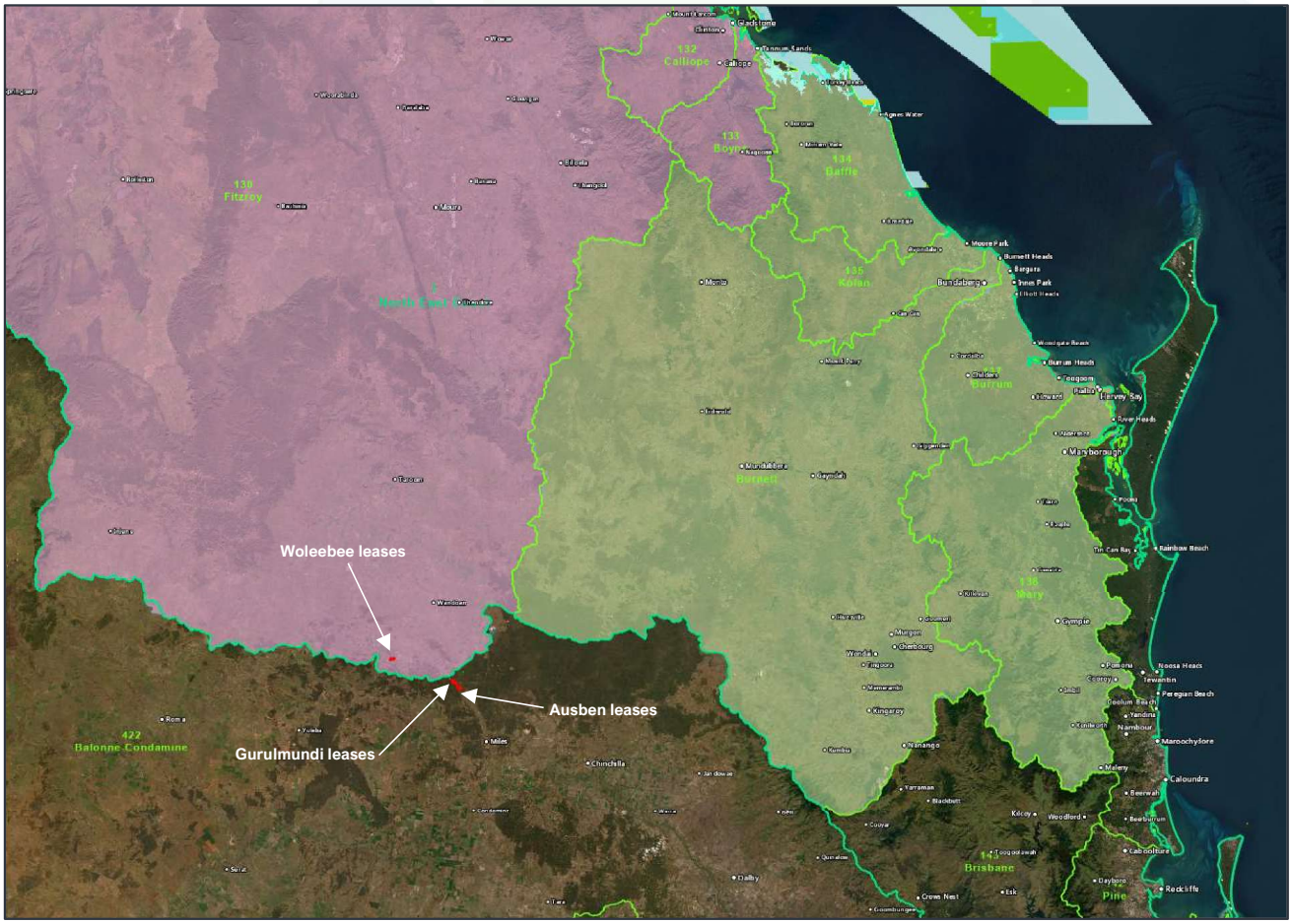

Figure 3-A: Drainage basins and catchment boundaries
Reprinted from Queensland Globe (March 2024)

The Woleebee leases are therefore in an area subject to GBR catchment waters mapping which requires consideration in relation to Section 41AA of the *Environmental Protection Regulation 2019* (EP Regulation) and

associated discharge standards. The '*Reef discharge standards for industrial activities guideline*' states triggers for assessment under section 41AA does not include diffuse sources of contaminated stormwater that contains sediment only, which allows for an exclusion for stormwater proposed to be managed through erosion and sediment control measures.

Stormwater is managed under the mine's '*Site Water Management and Monitoring Plan*' (SWMMP) in accordance with EA conditions described under Schedule C – Water. Adherence to EA conditions and implementation of the SWMMP will ensure there is no release of untreated stormwater runoff that has been in contact with any contaminants on site, particularly around workshop and/or fuel storage areas (not located on ML5900 or ML5901). The Woleebee leases are therefore exempt from consideration of Section 41AA, and reef discharge standards have not been considered further.

Attachment 4

Water Storage PMLU evaluation

Water storage PMLU evaluation

Proposed use of stored water

Upon cessation of mining activities, it is proposed that the pit and run-of-mine (ROM) areas within ML50058, ML5907 and ML5909, and sediment dams and stormwater controls remain as water storage post-mining land use (PMLU) – refer to **Figure 4-A** and **Figure 4-B**. The decision to rehabilitate pit and ROM disturbance areas within these leases to water storage is to satisfy the requirements of the landowner agreement for the Landowner Details Landowner Details The retention and conversion of these areas to water storage is consistent with the EA final land use of 'marginal grazing' and will support continued agricultural use of the land (i.e. agricultural water storage). The landowners have expressed an interest in potentially using a centre pivot irrigation setup which would require a high-volume water supply rate, which would ideally be supplied by the proposed water storage on site. Additionally, the retention of sediment basins and are considered useful for watering livestock.

The proposed PMLU of water storage for pit and ROM areas in the Ausben leases was considered most suited to the PMLU of low intensity grazing for the surrounding mine areas. Water availability for grazing (and other agricultural land use by the landowner) is limited therefore the conversion of these areas to water storage will provide a source of drinking water for livestock. Public access to pit areas will be restricted by existing infrastructure (i.e. fencing). The Landowner Details landowner agreement is considered a written agreement to transfer responsibility of the pits for use as water storage. Due to the mining method used to extract bentonite, the pit areas are described as shallow therefore, a PMLU that is safe to and accessible by humans and wildlife can be achieved without additional fencing and/or locked gates. The landowner will determine how they manage access to water within pit areas for watering livestock.

How the land will be rehabilitated

To satisfy the requirements of the landowner agreement for the Landowner Details pits, ROM and sediment basins in the Ausben leases will be converted into clean water storages. Rehabilitation of these areas may include, but are not limited to, the following:

- removal of any mobile infrastructure, equipment or waste (where required);
- landform development and re-shaping/re-profiling;
- re-grade batters of water storages to 1V:1.5H, then topsoil and seed to spillway level.
- apply conservative gradients (1V:2H) to batter slopes along the railway corridor by placing additional backfill
- dewatering and clean out of sediment or excess residual bentonite material (where required, note floor of basin will still be bentonite lined to hold water);

- geotechnical stability assessed as safe and stable by an AQP; and
- certification that retained structures conform with design documents and are functioning as designed with no signs of active erosion by AQP.

Water quality analysis and suitability for proposed use

Historical water quality information supplied by Sibelco Australia Limited for the period of 2014 to 2020 for sediment dams on both ML5902 and ML5909 and water monitoring points (WMP) in L Tree Creek described by Schedule (C1-3) of the EA. The table below (**Table 4-A**) summarises the historical water quality of the site. Water quality information for the water monitoring points was recorded approximately once a year from 2014 to 2016 as a result of rainfall and discharge events.

Table 4-A: Miles Bentonite Mine water quality summary

Location	Average pH	Average total dissolved solids (mg/L)
WMP-A	5.74	2,185
WMP-B	7.83	3,386
WMP-C	6.51	749
ML5092 SD1	7.59	10,113
ML5902 SD2	7.49	11,527
ML5902 Pit	8.03	10,707

Reprinted from 'Sibelco Miles Bentonite Mine Site Water Management and Monitoring Plan' Engeny 2021.

In accordance with the EA and SWMMP, water released into receiving waterways from stormwater, sediment dams, and process water must comply with Condition (C1-3) of the EA. L Tree Creek is a tributary to Dogwood Creek (approximately 20km downstream) which is part of the Maranoa and Balonne Rivers Basin which is a prescribed basin under the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*. Environmental values of the receiving waters of Dogwood Creek and all its tributaries include:

- aquatic ecosystems;
- irrigation;
- farm or property use;
- stock watering;
- human consumption of aquatic foods;
- primary recreation;
- visual appreciation;
- drinking water;

- industrial use; and
- cultural and spiritual values.

The receiving waterway contaminant release limits for L Tree Creek are as follows:

- pH 6.0 to 8.0
- total dissolved solids (TDS) <4,000mg/L
- sulphate <1,000mg/L
- calcium <1,000mg/L
- magnesium <600mg/L

Historical water quality data indicates water sampled at water monitoring points (WMP-A, B, C) are within waterway contaminant release limits for L Tree Creek for both pH and TDS. Rehabilitation and conversion of pits, ROM and sediment basins will include the removal of water and clean out of residual sediment and/or bentonite material, where required. This will result in an improved water quality for water that is collected and stored in these structures.

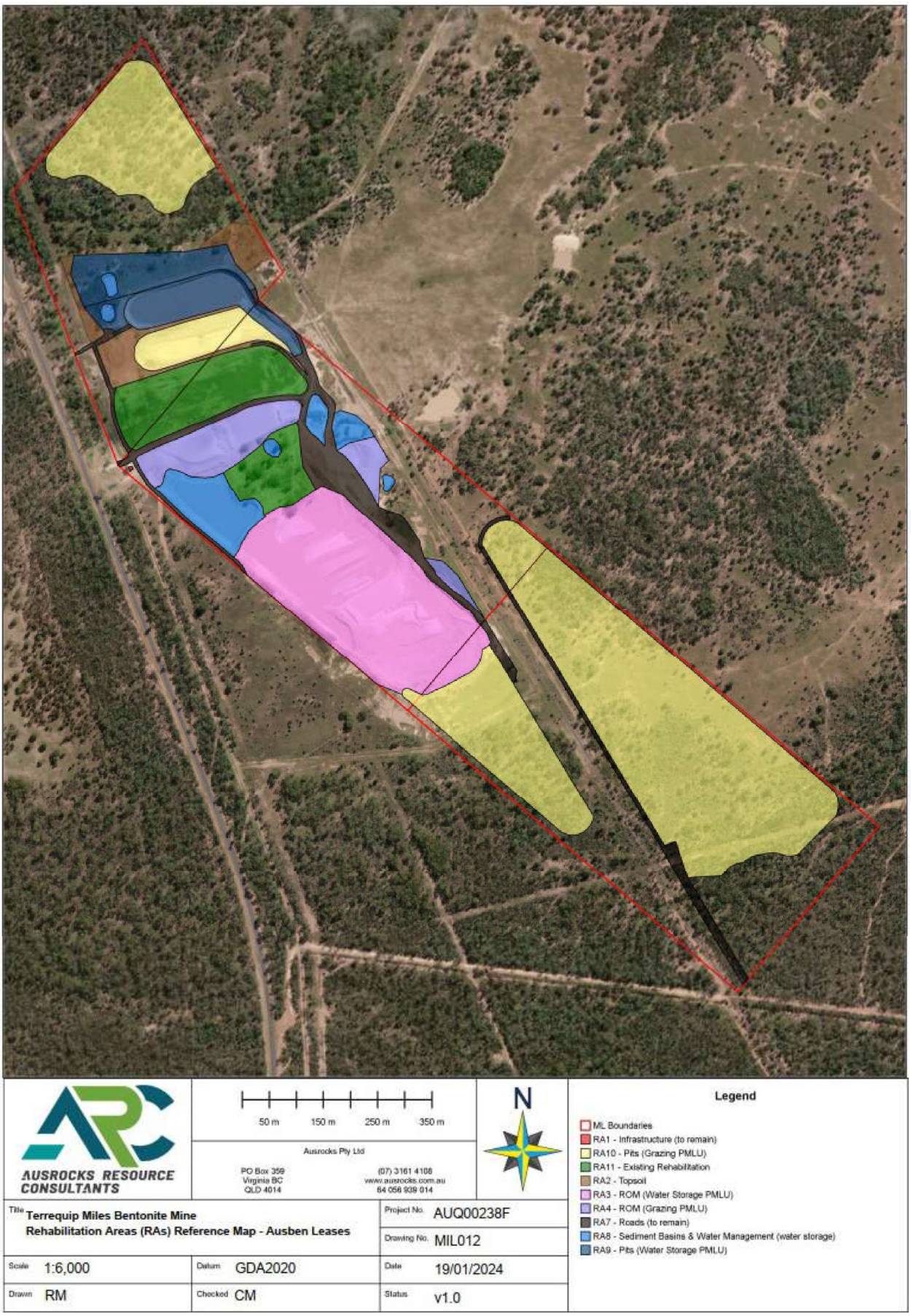

Figure 4-A: Rehabilitation areas

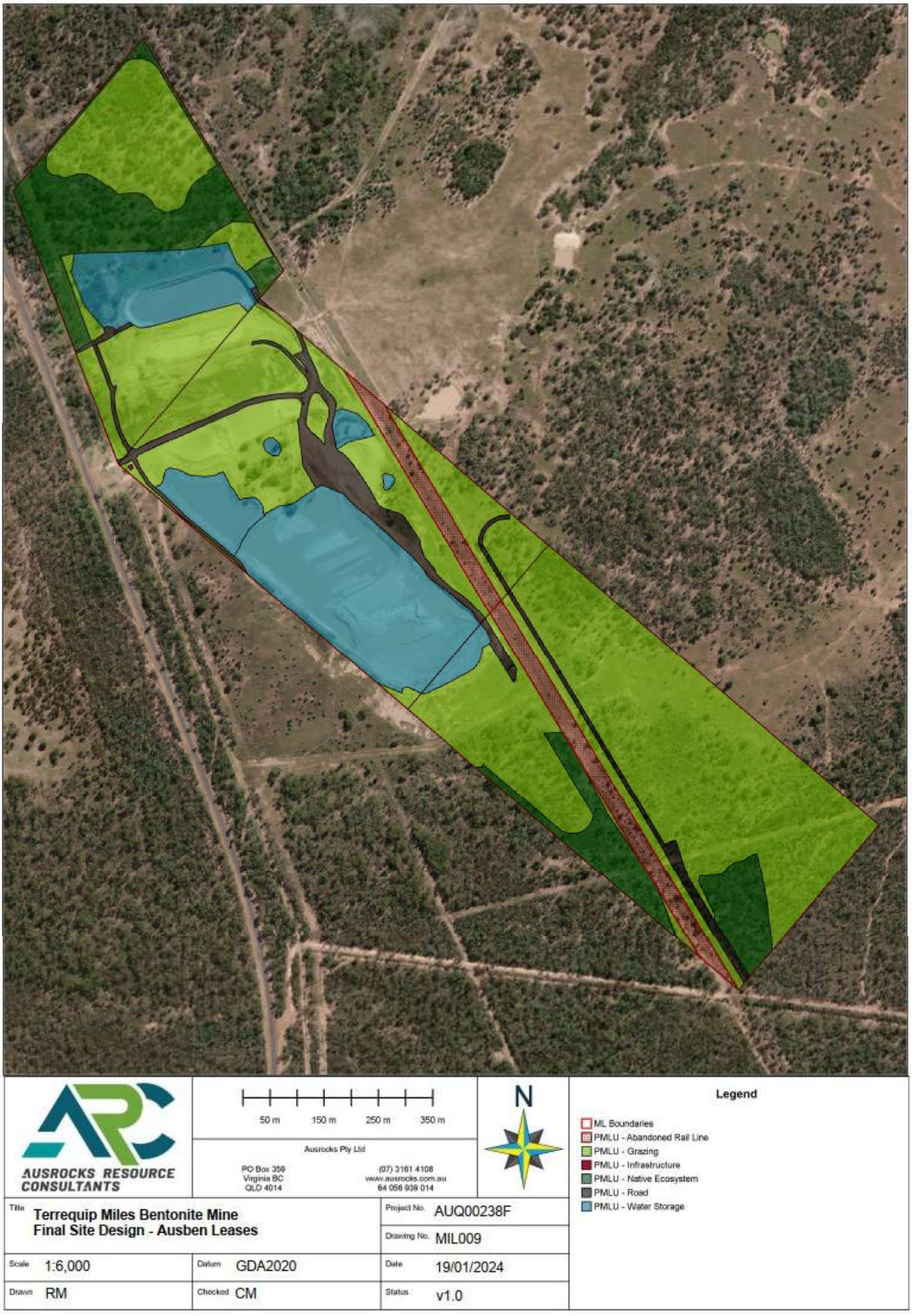

Figure 4-B: Proposed final site design post-mining land use