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Date: 14 November 2023
Ref: 1835.610.027
Department Ref: EPML03821316

Kajal Chand
Environmental Officer (Minerals Assessment)
Minerals Business Centre
PO Box 7230, Cairns QLD 4870
Via email: ESCairns@des.qld.gov.au

Dear Kajal

Response to Information Request for Progressive Rehabilitation and Closure Plan for PGH Bricks and Pavers Pty Ltd, Environmental Authority EPML03821316

Groundwork Plus Pty Ltd has been requested by PGH Bricks and Pavers Pty Ltd ('PGH'), holder of Environmental Authority EPML03821316, to prepare the below response to the Department of Environment and Sciences information request letter dated 11 October 2022 relating to the Progressive Rehabilitation and Closure Plan (PRCP). An extension to the response period was issued on 7 February 2023 to extend the response period from 12 April 2023 to 15 November 2023.

A response to each item of the Departments information request is provided as **Attachment 1 – Response to Information Request**, which includes, where relevant a reference to the relevant section of the Revised PRCP which is included as **Attachment 2 – Revised PRCP**.

The following significant events have occurred since the original PRCP lodgement:

1. The Darra site has been rehabilitated, with an application to surrender Darra ML1100 being made. An application for Partial Surrender of EPML03821316 was lodged on 14 July 2023 and further information supplied on 26 October 2023 in response to an Information Request. The Partial Surrender relates to the total surrender of the ML for Darra (ML1100). It is anticipated that the Partial Surrender application will be approved in late 2023.
2. Significant works were undertaken in regard to the contaminated land remediation. In accordance with subsections 389(1) and (2) of the EP Act having regard to the guidance provided within the Queensland Auditor Handbook for Contaminated Land. Module 6: Contaminated land investigation documents, a Site Suitability Statement has been made with regards to the conclusions and recommendations of the Contaminated Land Investigation Document titled 'Site Investigation, Remediation and Validation Report, Overarching CLID, 99 Harcourt Rd, Darra Queensland dated September 2023 Rev A'. The site suitability statement confirms that Outcome 1 has been met and that the land is not contaminated land and is suitable for any use. The engaged Third Party Auditor has reviewed all relevant documents relating to contaminated land and remediation matters and has confirmed agreement with the findings of the CLID and has provided sign-off to finalise the removal of the site from the EMR.

3. As the PRCP was not in effect at the time the EA surrender was lodged, a full assessment against each PRCP milestone was not undertaken as the PRCP was not in effect, however for completeness an assessment against the relevant PRCP milestones has been undertaken, which confirms that should the PRCP have been in effect no outstanding items exist for the Darra rehabilitation.

We trust that the additional information satisfies the Departments information request. Enclosed is the updated PRCP report and response to information request items.

Should any further information be required, please do not hesitate to contact David Doolan at ddoolan@groundwork.com.au or via 0431 622 880.

Yours faithfully

Groundwork Plus Pty Ltd



David Doolan
Associate

Enclosed

- Attachment 1 – Response to Information Request
- Attachment 2 – Revised PRCP

Attachment 1

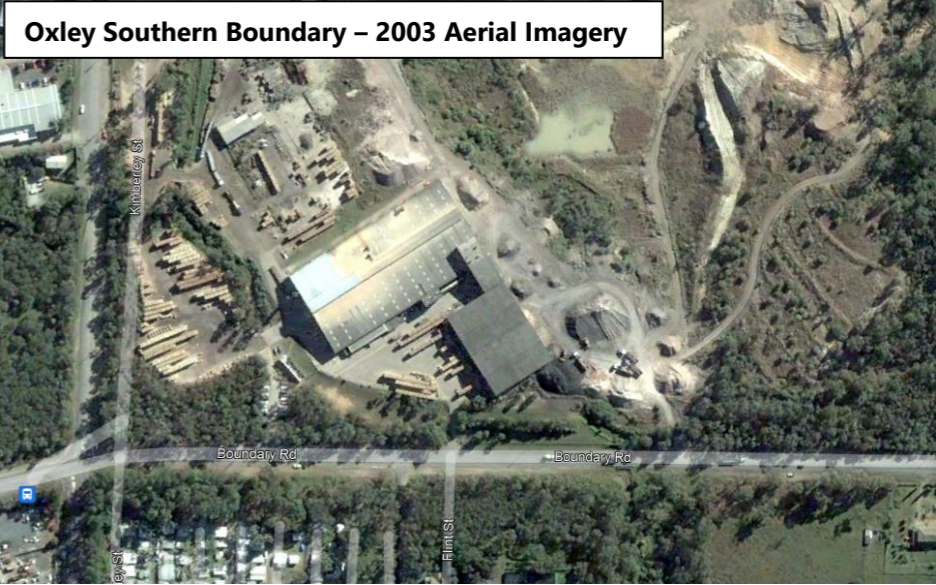

Response to Information Request

Item	Relevant section (proposed PRCP and/or PRCP Guideline)	Matter	Information Request	Relevant PRCP Section and / or Response
Rehabilitation Planning Part				
1	Project description and duration	Throughout Table 2 of the Rehabilitation Planning part the proposed duration of relevant activities for Redbank Plains is up to 375 years. Limited information is provided to support the extended life of mine timeframes that have been nominated. Limited information is also provided to demonstrate that rehabilitation will occur progressively throughout the life of the mine and each rehabilitation milestone will be completed as soon as practicable after the land becomes available for rehabilitation.	Consider revising the expected duration of activities and/or provide further information to demonstrate how the likely duration of activity timeframes has been calculated and that these timeframes are reasonable. Provide further information to demonstrate that rehabilitation areas have been planned to facilitate rehabilitation of the land progressively and that each rehabilitation milestone will be completed as soon as practicable after the land becomes available for rehabilitation.	<p>The proposed duration of activities, as included in Table 2 of the Rehabilitation Planning part of the PRCP was informed by a resource investigation prepared by Groundwork Plus on 30 June 2022 (ref: 1835_200_004).</p> <p>It is acknowledged that these timeframes are extensive, and there is uncertainty regarding realistic rehabilitation milestones given the timeframes. Additional estimates of the remaining resource were undertaken by Groundwork Plus in the preparation of this response, which confirmed that there is sufficient resource available to sustain each of the sites for the period prescribed in Table 2 of the PRCP.</p> <p>In saying this, PGH have advised that currently, they intend to align the mining activities with the Oxley brick plant remaining operational life, currently estimated at 2046. The Oxley brick plant is the primary stockpiling, blending, and manufacturing facility. Should this change, a revision to the PRCP would be required.</p> <p>Section 2.2.3 Proposed Duration of Operation, including Table 2 Estimated Remaining Life of Mine have been updated to reflect the 2046 end of mining activities. The PRCP Schedule has also been updated to reflect this change, and it is anticipated that all rehabilitation activities at all sites will be completed by 2053.</p>
2	Spatial	<p>The spatial information submitted on 29 August 2022 as part of the application did not pass validation from the spatial submission team due to a mandatory field or value being missing.</p> <p>Various information requirements have been identified throughout this information request which may necessitate an update to the spatial submission to reflect any relevant changes.</p>	<p>Provide the department with a valid spatial information submission including the information requirements highlighted in the PRCP Guideline.</p> <p>Ensure spatial information submitted reflect all updates and changes required by this information request.</p>	Amended spatial information was validated by the Department on 30 October 2023. The spatial information incorporates the updates and changes required by this information request. A request was made to the Department confirming acceptance of the spatial information, which was confirmed in writing on 31 October 2023.
3	Community Consultation plan 4.3	The community engagement strategy proposed states that consultation will occur as required in relation to the proposed rehabilitation for the sites. This does not give clear actions for how the consultation will be achieved. Additionally, Section 4.3.5 states that the methods and content of information to be released will vary according to each stakeholder's information needs.	Provide an updated PRCP Planning Part that includes further information regarding the proposed community consultation required by section 3.5 of the PRCP Guideline.	<p>Section 4.3.4 Community Engagement Strategy and Section 4.3.5 Communication Methods and Information to be Released have been revised to include additional detail on how stakeholder consultation will take place in accordance with section 3.5 of the PRCP Guideline.</p> <p>At a minimum, each stakeholder group will receive an annual update by way of a letter (mailed or via a letter box drop). The letter will include information regarding any amendments to a PMLU or to the PRCP schedule, as well as updates on progressive rehabilitation and the contact details of a nominated PGH representative to enable stakeholders to provide feedback.</p> <p>As included in Section 4.3.5 Communication Methods and Information to be Released, PGH are committed to facilitating effective communication with stakeholders. Given the variable nature of stakeholder groups, and the evolving</p>

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				nature of mining activities and rehabilitation, flexibility in engagement activities is critical. As such, additional engagement methods may be employed by PGH to ensure meaningful engagement can be implemented throughout the life of mine and rehabilitation activities.
4	6.3 Flooding	<p>The application material provides broadscale flood mapping which outlines the only area mapped with a (low) risk of flooding is likely to occur to the southern boundary of the Oxley site.</p> <p>Section 6.3 states that flood modelling is not relevant to the PRCP due to there being no residual voids to remain within the final landform.</p> <p>Information demonstrating the relationship shared by the final landform and nearby waterways in high rainfall events is unknown.</p>	Please provide further information regarding how the final landform will be rehabilitated to a condition that will remain stable under high rainfall events.	<p>As noted in the PRCP (Section 6.3 Flooding, Page 130) only the southern most extents of the Oxley site are subject to "very low likelihood (0.05% Annual Chance)" of flooding.</p> <p>Due to the 0.05% chance of the mapped flood occurring in a small portion of the Oxley site in any year, confined to an existing low lying drainage area, equivalent to a one in every 2,000-year chance, it is deemed to be extremely unlikely that a 0.1% AEP flood will impact the site. As is included in the Department's <i>Information sheet: Voids in floodplains</i> (DES 2020)¹, the flood plain definition is based on a 0.1% Annual Exceedance Probability (AEP) flood event under the Australian Rainfall and Runoff Guideline (2019)². In addition, DES (2020) advise that floodplain modelling is only relevant to the extent that voids are to be located within a flood plain. The PMLUs nominated for the Oxley site are Industrial and Native Ecosystem, which will result in the land being backfilled to the pre-mining levels with no voids remaining in these areas.</p> <p>To provide further historical insight into this area, a comparison of aerial imagery from 2003 and 2023 has been included below. Aerial imagery indicates that the area has remained at the pre-mining level for the duration of the site operations, as has the existing waterway corridor and drainage path. As such, this area will not require any rehabilitation as it has remained at its pre-mining level, with no plans to alter this area between the present time and mine closure.</p>

¹ DES, (2020). *Information sheet: Voids in floodplains* Accessed 19 July 2022 via https://environment.des.qld.gov.au/_data/assets/pdf_file/0024/95442/rs-is-modelling-flood-plain.pdf

² Geoscience Australia, (2019). *Australian Rainfall and Runoff: A Guide to Flood Estimation*. Accessed 26 October 2023 via <http://book.arr.org.au/s3-website-ap-southeast-2.amazonaws.com/>

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				<div data-bbox="1902 352 2775 898"> <p>Oxley Southern Boundary – 2003 Aerial Imagery</p>  </div> <div data-bbox="1902 930 2775 1329"> <p>Oxley Southern Boundary – 2023 Aerial Imagery</p>  </div> <p data-bbox="1902 1360 2775 1459">The balance of the site will be backfilled to pre-mining levels and land use to become zoned for industrial land with a landscape buffer as shown in the Oxley Final Site Design (1835.DRG.098R2).</p> <p data-bbox="1902 1497 2775 1659">The Rehabilitation Milestones include provisions relating to erosion and sediment control through landform development which addresses the requirement for the landform to be rehabilitated to a condition that will remain stable under high rainfall events (RM5 and RM6) (Section 8.3 PRCP Schedule, Page 164).</p> <p data-bbox="1902 1696 2775 1822">Pursuant to RM6 of the rehabilitation milestones, final batter slopes in Industrial PMLUs are intended to achieve a maximum of 20 - 26° with a factor of safety of not less than 1.5. Though it is likely in order to sustain a landuse of industrial, that a flat level site will most likely be established.</p>

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				<p>Rehabilitation Milestones (RM5) nominates maximum slopes of 26° with 70% groundcover (vegetation and mulch) in Natural Ecosystem PMLUs for erosion and sediment control in line with the IECA (Australasia) Revegetation Factsheet (IECA (Australasia) 2010, P5).</p> <p>Engineering details will be provided at the time of rehabilitation to demonstrate that the batters achieve long term stability including during high rainfall events.</p>
5	6.4 Soils	<p>Information provided demonstrates that, generally, soils are infertile with moderate to strong acidity (4.8-5.7). Additionally, sections 3.1.8.2, 3.2.8.2, 3.3.8.2, 3.4.8.2 and 3.5.8.2 state there is an absence of acid sulfate soils. Evidence or supporting information to demonstrate the cause for low pH and the implications this poses for rehabilitation has not been provided.</p> <p>Poorly draining duplex soil profiles have been described throughout Dinmore and Greenwood Village sites which also exhibit subsoil mottling. Mottling is evidence of low permeability of subsoils and intermittent waterlogging. It is unclear how a PMLU of native ecosystem will be sustained in areas of the sites experiencing periods of waterlogging.</p> <p>Section 3.6.2 identifies the presence of lead and hydrocarbon impacted soils within the northern and north-eastern portion (including clay pit area) of the Darra site. Progressive remediation has involved excavation and removal of hydrocarbon and lead impacted soil. The level and extent to which these soils were contaminated are not provided. Also, the volume of impacted soil remaining onsite has not been quantified, or evidence that the all impacted soil exceeding acceptance criteria has been removed from in-situ and offsite.</p> <p>Section 3.6.2 states hydrocarbon impacted soil is being land farmed onsite. No information has been provided on how this practice is being undertaken, monitoring of any surface water or leachate quality, or quantitative analytical data demonstrating the performance of land farming on remediating hydrocarbon soil.</p>	<ol style="list-style-type: none"> 1. Please provide further information which details the following: <ul style="list-style-type: none"> - Evidence or supporting information which explains the cause and implications of low soil pH; - if subsoils are to be utilised in rehabilitation activities; - physical and geochemical analysis of subsoils to be utilised; and - description and/ or supporting evidence for how waterlogged soils will support PMLU of native ecosystem 2. Please provide results from any past land contamination investigation which highlights the following: <ul style="list-style-type: none"> - Depth and spatial extent of potential heavy metal and hydrocarbon presence throughout the soil profiles; - Volume of material excavated or yet to be excavated (e.g. is lead impacted soil retained within the Clay Pit) - Volume of soil removed from the site and volume still remaining onsite; - Soil profile analytical data confirming hydrocarbons and lead concentrations are below trigger levels at depth. - Quantitative (analytical) evidence that all impacted soil materials and impacted infrastructure have been remediated and/or removed offsite and - A map detailing all areas from which impacted material has been extracted from 3. Please provide a detailed report on the land farming activity including: <ul style="list-style-type: none"> - trial design and location - volume of soil being treated - trial layout including perimeter bunding, fencing, basal drainage, drainage and surface water collection pipework, etc as mechanisms to exclude contact and avoid offsite environmental harm and impacts. - characteristics of the soil and quantitative analysis to demonstrate performance of the landfarm in terms of treating hydrocarbon impacted soil 	<p>The soil testing undertaken and provided with the application was of topsoil collected from undisturbed areas, that has not been subject to any activities from mining. The soil pH is relative to the geological properties of the material, and is not as a result of mining influence, or Acid Sulfate Soils (ASS), given the land is situated well above any landform that would contain ASS materials and in geological units that are not pre-disposed to ASS.</p> <p>It is acknowledged that soil treatments will likely be required to improve any topsoil that is salvaged from the site for use in rehabilitation. For the purpose of this PRCP. RM4 has been provided within the PRCP schedule to ensure that testing is undertaken of any stockpiled topsoil material prior to its use. It is assumed that importation of materials will be required to support site rehabilitation for all assigned PMLUs. As has been the case at Darra ML1100 and the recently surrendered Strathpine ML (refer to Section 7.3). Any residual soils to be used in rehabilitation will be treated with ameliorants to improve soil condition requiring organics and lime to improve nutrients and alkalinity respectively. The primary materials for use in rehabilitation however will be imported topsoil and subsoil materials. All material imported to site will be validated at point of origin as being suitable for importation in regard to soil productivity and contaminants.</p> <p>Subsoils will not be utilised for rehabilitation as either a primary growth media. Typically, all subsoils removed are used / blended for use in brick manufacturing, meaning little subsoil is remaining on site for rehabilitation. It is the case with resource of this nature, that little material is retained as the majority can be used in brick manufacturing. Any subsoil that is retained, will be used to backfill voids, and not be used as a surficial layer for vegetation establishment.</p> <p>As soil will be imported to create the final landform, the historical characteristics of the in-situ soil in relation to drainage, and the mottling present, is not relevant to site rehabilitation. Soils will be placed through backfilling campaigns overseen by a geotechnical engineer to support the relevant PMLU. There will be no mottled soils used as a growth media in the rehabilitated landform.</p> <p>With regard to matters relating to Item 2 and Item 3, In accordance with subsections 389(1) and (2) of the EP Act having regard to the guidance provided within the Queensland Auditor Handbook for Contaminated Land. Module 6: Contaminated land investigation documents, a Site Suitability Statement has been made with regards to the conclusions and recommendations of the</p>

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			<ul style="list-style-type: none"> - success criteria and anticipated timeframe of the landfarming activity and timetable of activities - decommissioning of the landfarming activity on completion and - how the treated soils, surface water and drainage will be managed during landfarming and as part of decommissioning 	<p>Contaminated Land Investigation Document titled 'Site Investigation, Remediation and Validation Report, Overarching CLID, 99 Harcourt Rd, Darra Queensland dated September 2023 Rev A'. The site suitability statement confirms that Outcome 1 has been met and that the land is not contaminated land and is suitable for any use. The CLID details in length each matter raised by the Department. The site has been remediated with no additional works required to address any contamination present. The engaged Third Party Auditor has reviewed all relevant documents relating to contaminated land and remediation matters and has confirmed agreement with the findings of the CLID and has provide sign-off to finalise the removal of the site from the EMR. Their assessment report is provided as confirmation of the works undertaken to support remediation of Darra and contaminated soil.</p>																								
6	<p>Topsoil requirements</p>	<p>Section 6.4.1.3 does not provide adequate information about the topsoil requirements to complete rehabilitation activities throughout each site to achieve a stable condition and the proposed PMLUs.</p> <p>Section 6.4.1.1 states "The volume of topsoils and quality are irrelevant to sites which will have an Industrial PMLU,". This statement assumes the soil surface of the mine sites will support a vegetation cover devoid of topsoil characteristics. This assumes the site soil surface will be quickly covered by industrial activities (e.g. hardstand, roads, buildings etc). There is no evidence supporting either when the surface will effectively be covered, and/or if the soil materials are capable of supporting a vegetation cover until industrial activities occur and the area of land exposed to environmental conditions. Exposed land will be prone to erosion (water and wind) if left bare, potentially creating a dust issue or run-off/sediment transport issue.</p> <p>Table 44 demonstrates that available topsoil is present at Dinmore, Greenwood Village and Redbank Plain only.</p> <p>Various topsoil depths have been proposed for rehabilitation which varies from 75mm (page 13) to 150mm (Table 52 RM6; pg 161). It is unclear what the proposed target topsoil depth is throughout each of the various sites.</p>	<p>Please provide the following information:</p> <ul style="list-style-type: none"> - the volume of topsoil required for rehabilitation activities; - the volume present throughout the sites; and - the amount required to be sourced and imported to each of the sites. <p>Provide information confirming:</p> <ul style="list-style-type: none"> - the soil surface will not remain bare at time of relinquishment - if an industrial cover will not be in place soon after relinquishment then a vegetation cover will have been established to minimise potential wind and water erosion - in the absence of topsoil use, the soil characteristics and suitability for establishing and maintaining a vegetation (grass) cover has been confirmed by a suitably qualified person <p>Please provide information on potential sources of topsoil and protocols to ensure poor quality or contaminated soil is brought onsite.</p> <p>Please provide and justify the proposed topsoil depths to be utilised in rehabilitation activities for each of the various sites.</p>	<p>Rehabilitation activities include the respreading of topsoil at a depth of 150mm over all areas disturbed by mining activities. A conceptual long-term quarry design has been used to estimate the maximum required topsoil for each site. These volumes are summarised in Table 44 - Available Topsoil and Maximum Topsoil Requirements of the PRCP and has been extracted below for convenience.</p> <table border="1" data-bbox="1902 1045 2769 1350"> <thead> <tr> <th>Site</th> <th>Volume of Topsoil Required (m³)</th> <th>Topsoil Stockpile (m³)</th> <th>Volume of Topsoil to be Imported (m³)</th> </tr> </thead> <tbody> <tr> <td>Darra</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Dinmore</td> <td>58,500</td> <td>40,000</td> <td>18,500</td> </tr> <tr> <td>Greenwood Village</td> <td>37,500</td> <td>43,000</td> <td>0</td> </tr> <tr> <td>Oxley</td> <td>2,250</td> <td>0</td> <td>2,250</td> </tr> <tr> <td>Redbank Plains</td> <td>144,000</td> <td>182,000</td> <td>0</td> </tr> </tbody> </table> <p>It is important to note that the long-term pit design plays a pivotal role in defining the volume of backfill and topsoil and is currently at a conceptual stage.</p> <p>Since the final extraction limit has not been finalised or approved, the designs remain open to future modifications. These pits represent an optimal and idealised extraction within the confines of the mining lease. However, modifying the extraction boundaries, revising long-term pit layouts, and recalibrating the necessary backfill and topsoil volumes will be crucial as mining activities progress. This will ensure alignment with PGH's extraction approach, adherence to all extraction and vegetation constraints, and adaptability to market changes. Should revisions be needed, the PRCP will be updated accordingly.</p> <p>All topsoil imported onto the site is to be certified as clean earth prior to importation, through analysis or being subject to random grab samples as a minimum. Imported topsoil is to be sourced from the following locations:</p>	Site	Volume of Topsoil Required (m ³)	Topsoil Stockpile (m ³)	Volume of Topsoil to be Imported (m ³)	Darra	0	0	0	Dinmore	58,500	40,000	18,500	Greenwood Village	37,500	43,000	0	Oxley	2,250	0	2,250	Redbank Plains	144,000	182,000	0
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				<ul style="list-style-type: none"> Licensed quarry. Land that has not been disturbed. Land which has been disturbed but is not listed on the Environmental Management Register. <p>The exact source of imported topsoil is not known at this time.</p> <p>Section 6.4.1.2 Available Quantities, Section 6.4.1.3 Backfill and Topsoil Requirements and Section 6.4.1.4 Topsoil/Subsoil Management of the PRCP have been revised to include the requested detail regarding topsoil volumes, sources and management.</p> <p>With regard to soil surface requirements in Industrial PMLU areas, it is confirmed that all areas disturbed by mining activities will be respread with topsoil to a depth of a minimum of 150mm and subject to assisted natural regeneration to achieve a minimum 70% ground cover (combined plant and mulch) in line with the recommendations of the IECA (Australasia) Revegetation Factsheet. Further detail on revegetation methods is included as Section 6.7.2 Revegetation Methods of the PRCP.</p> <p>The 150 mm topsoil depth aligns with the requirements of the Estimated Rehabilitation Costs guidelines, in relation to the respective Table of Values (TOVs). Furthermore, 150mm is sufficient for planting native vegetation as it is approximately twice the depth of a standard 70 mm tall tubestock. The soil substrate needs to be sufficiently deeper than the root ball of the tubestock being planted, to allow the plant to grow roots sturdy enough to establish in the existing soil. This 150 mm topsoil depth is considered sufficient and appropriate for establishing the PMLUs nominated.</p>																								
7	6.4.2 Backfill materials	The application states that the volume of backfill materials required to achieve a stable condition is unknown.	Please provide an estimate of the volume of fill materials required to complete rehabilitation activities and achieve a PMLU of Industrial, Residential or Native Ecosystem.	<p>A conceptual long-term quarry design has been used to estimate the maximum required backfill for each site. These volumes are summarised in Table 45 - Available Overburden and Maximum Backfill Requirements of the PRCP, and has been extracted below for convenience.</p> <table border="1"> <thead> <tr> <th>Site</th> <th>Volume of Backfill Required (m³)</th> <th>Overburden Stockpile (m³)</th> <th>Volume of Backfill to be Imported (m³)</th> </tr> </thead> <tbody> <tr> <td>Darra</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Dinmore</td> <td>1,300,000</td> <td>281,000</td> <td>1,019,000</td> </tr> <tr> <td>Greenwood Village</td> <td>1,000,000</td> <td>0</td> <td>1,000,000</td> </tr> <tr> <td>Oxley</td> <td>50,000</td> <td>0</td> <td>50,000</td> </tr> <tr> <td>Redbank Plains</td> <td>2,600,000</td> <td>0</td> <td>2,600,000</td> </tr> </tbody> </table> <p>As noted in the previous item, the long-term pit design plays a pivotal role in defining the volume of backfill and topsoil and is currently at a conceptual stage</p>	Site	Volume of Backfill Required (m ³)	Overburden Stockpile (m ³)	Volume of Backfill to be Imported (m ³)	Darra	0	0	0	Dinmore	1,300,000	281,000	1,019,000	Greenwood Village	1,000,000	0	1,000,000	Oxley	50,000	0	50,000	Redbank Plains	2,600,000	0	2,600,000
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				<p>only. These pits represent an optimal and idealised extraction within the confines of the mining lease and is the likely maximum amount of backfill required.</p> <p>Additional detail on the backfill requirements are included in the following sections of the PRCP:</p> <ul style="list-style-type: none"> • Section 6.4.1.2 Available Quantities • Section 6.4.1.3 Backfill and Topsoil Requirements • Section 6.4.2 Backfill Materials
8	Vegetation communities and ecological information	<p>This section also provides species lists for Native ecosystems PMLU however the information is not provided to demonstrate how the species mix:</p> <ul style="list-style-type: none"> - Reflects the species composition similar to the pre-mining composition (as required by the Environmental Authority), or - Reflects regional ecosystems found in the surrounding environment. <p>It is also noted that this section does not include details of any site investigation or flora surveys which have been completed to ground-truth the species present.</p> <p>A groundcover percentage of both 60% and 70% is stated throughout the PRCP. It is unclear which of these will be utilised.</p> <p>Section 6.7.2.1 states that the primary method of revegetation will be via natural regeneration with supplementary seeding and or planting carried out when required.</p> <p>It is stated throughout section 6.7.2.2 that alternate methods of achieving groundcover may be utilised such as hydro-mulch. It is unclear how this alternate method of groundcover will align with achieving a PMLU of native ecosystem.</p>	<p>Please provide clarification on the proposed groundcover percentage (60% or 70%) for native ecosystem PMLU and justification for why this percentage has been adopted.</p> <p>Please provide information which justifies how alternate methods of groundcover facilitates a similar species composition for native ecosystem PMLUs.</p>	<p>The proposed groundcover percentage for native ecosystem PMLU at completion of rehabilitation is anticipated to be 70% or more and may comprise plant and mulch. This percentage has been adopted in line the IECA (Australasia) Revegetation Factsheet, which states: "at least 70% ground cover (combined plant and mulch) is considered necessary to provide a satisfactory level of erosion control" (IECA (Australasia) 2010, P5).</p> <p>Table 53 - Rehabilitation Milestones and Table 55 - Monitoring and Maintenance Program have been updated to reflect the 70% groundcover density to ensure consistency throughout the PRCP.</p> <p>Section 6.7.2.2 Alternative Methods has been removed from the Rehabilitation Planning part of the PRCP, and is no longer proposed.</p>
9	Post mine land use 5.	<p>The Darra site is currently approved with a PMLU of residential. PMLU's of industrial and state road have been proposed throughout this PRCP as substantially similar. It is noted that the state road PMLU is a result of an acquisition for a State road, on this basis no further justification for this PMLU is required. However, with respect to the industrial PMLU it is noted that section 6.1.1. states that various sections of disturbed land for an industrial PMLU may be left disturbed if there is planned operational works where the rehabilitation will be made redundant. It is unclear how the landform will demonstrate safe, stable and non-polluting and if this</p>	<p>Please provide further information which demonstrates that the land rehabilitated to an industrial use will achieve stable condition and not be left in a disturbed state or in a manner that is inconsistent with the residential land use outcome.</p>	<p>On 24 May 2023 Council issued a decision notice, comprising a Development Permit for Reconfiguring a lot (1 into 11 lots) and New Roads, and a Preliminary Approval – Variation Request (Council ref: A006004288) (refer Section 5.3.3.3 Local and State Planning Considerations, page 115).</p> <p>The Preliminary Approval - Variation Request includes the following activities: <i>Medium Impact Industry, High Impact Industry, Low impact Industry, Parking Station, Research and Technology Industry, Renewable Energy Facility, Service Industry, Food and Drink Outlet, Emergency Services, Caretakers Accommodation, Car Wash, Service Station, Telecommunications Facility, Utility Installation, Warehouse, Park and Shop.</i></p>

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		outcome is consistent with what would be expected from rehabilitation to a residential land use outcome.		<p>The outcome of the preliminary approval is the zoning of the land as General Industry A and General Industry B, meaning that future industrial development applications will be 'code assessable', and will benefit from a streamlined assessment process.</p> <p>The current PMLU of Residential is not consistent with the land use intent designated by the relevant provisions of the Planning Scheme including the Darra-Oxley District Neighbourhood Plan. The issue of the Preliminary Approval – Variation Request for Industrial zoning, further reinforces the unsuitability of a Residential PMLU.</p> <p>Extensive inspection and validation activities have been undertaken to confirm the Darra site as being safe, stable and non-polluting, which are outlined in Section 3.6.2 Completed Rehabilitation Darra of the PRCP.</p> <p>Considering the above, achieving a stable condition that is consistent with the residential land use outcome is not relevant to the Darra site. Section 6.1.1 Industrial PMLU demonstrates how the Darra site will achieve a safe, stable and non-polluting landform that is consistent with an Industrial PMLU.</p>
10	Hydrogeological assessment 6.2	A hydrogeological assessment has not been included to assess the impacts to environmental values. Section 6.2 states that all in-filled voids throughout the landform are to be backfilled with suitable material. The underlying hydrology presents a shallow/perched water table over the duration of the year. It is unclear how the in-filled voids and final landform will interact with a shallow/perched water table and if there is potential for the landform to be a groundwater source/ sink.	Please provide a hydrogeological assessment/ study which considers the interaction between in-filled voids and the perched water table, with description of whether the landform behaves as a source or sink.	<p>In response to Item 10, additional groundwater assessment of the Dinmore, Greenwood Village, Oxley and Redbank Plains Sites was undertaken by Groundwork Plus, and comprised a review of the following:</p> <ul style="list-style-type: none"> • Bore reports of DNRM registered Groundwater Bores in the immediate vicinity of each site. • Regional Geology and Site Geology • Historical drilling records (where available), and • Current groundwater inflow rates if any conditions into the three pits at Dinmore. <p>The additional assessment confirmed that none of the sites are anticipated to result in interactions between infilled voids and groundwater. The sections of the PRCP relating to Baseline Groundwater Levels and Properties (Sections 3.2.7, 3.3.7, 3.4.7 and 3.5.7) and Section 6.2 Hydrogeology have been updated to include the additional groundwater assessment.</p> <p>The Darra site has not been considered in this additional assessment given that the site has completed all rehabilitation activities. An assessment against the relevant PRCP milestones has been provided as Section 9 Darra Assessment of the PRCP.</p>
11	Risk assessment	Risks associated with the underground mine shaft have not been assessed throughout the risk assessment.	Please provide a risk assessment which includes the risks associated with the underground mine shaft.	<p>The risks associated with underground mine shafts and tunnels have been explained below and have been included in the risk assessment component of the PRCP (refer Table 60 – Assessment of Residual Risk).</p> <p>Mine shafts and tunnels were identified at Redbank Plains and were assessed by Moreton Geotechnical Services Pty Ltd in 2016 (refer Attachment 3 - Desktop</p>

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				<p>Mining Study for Mining Lease 4583). No other tunnels or shafts have been identified.</p> <p>Underground mine shafts and tunnels pose a risk of subsidence and sinkhole activity. To treat these risks, the tunnels and shafts identified at Redbank Plains have undergone rehabilitation in accordance with the recommendations provided by Moreton Geotechnical Services Pty Ltd. Rehabilitation comprised filling and capping mine shafts with concrete, and filling of other larger holes / subsidence areas and reprofiling the ground surface to achieve level profiles to the extent practicable. Photos demonstrating the rehabilitation are included in Section 3.6.4 of the PRCP.</p> <p>Ongoing treatment of mine shafts and tunnels include maintenance of level profiles of ground surface above mine shafts and tunnels and installation of erosion and sediment controls and stabilisation with a groundcover (≥70 % cover).</p> <p>Given the completed rehabilitation, and ongoing control measures, the residual risk of subsidence and sinkholes as a result of mine shafts and tunnels is rated as 'Low'.</p>
12	9 Maintenance and Monitoring	<p>Further information relating to section 3.8 of the PRCP Guideline is required. For example, information regarding proposed monitoring to determine whether intervention is required and demonstrate success of rehabilitation.</p> <p>The monitoring and maintenance section should document a monitoring program to gather data relevant to each milestone and milestone criteria in a manner that will demonstrate a stable condition has been achieved and the land is suitable for surrender. Noting that the information request items below may result in changes to the schedule and criteria, the monitoring and maintenance section may need to be revised accordingly.</p>	Please provide an updated Rehabilitation Planning Part that includes further information regarding monitoring and maintenance in accordance with section 3.8 of the PRCP Guideline and considers any relevant updates to the PRCP schedule resulting from this information request.	<p>The monitoring and maintenance program included as Section 10 of the PRCP has been updated in response to Item 12 and with reference to Section 3.8 of the guideline to:</p> <ul style="list-style-type: none"> Describe the proposed monitoring to determine whether intervention is required and demonstrate success of rehabilitation. Document a monitoring program to gather data which can be used to demonstrate a stable condition has been achieved. <p>Section 10.2 Monitoring Methodologies has been inserted to provide further detail on monitoring methods and reports / records.</p> <p>Further detail on the proposed contingency measures is included as Section 10.3 Contingency Measures.</p> <p>Subsequent sections have been renumbered as a result of the above changes.</p>
PRCP Schedule				
13	Milestone Criteria Generally	<p>Milestone criteria require refinement to make them more specific and include measurable parameters against which the achievement of milestones can be assessed. Some examples where revision is required include, but are not limited to:</p> <ul style="list-style-type: none"> RM4 – “erosion and sediment systems installed” progressive rehabilitation towards achieving the nominated PMLU 	<p>Provide a revised PRCP schedule that provides rehabilitation milestone criteria that</p> <ul style="list-style-type: none"> Follow the SMART principles. Assigns rehabilitation milestones to rehabilitation areas that are appropriate for the type of disturbance, rehabilitation method and nominated PMLU and show progressive rehabilitation towards achieving the nominated PMLU 	<p>The rehabilitation milestone criteria has been revised as recommended.</p> <p>With regard to the inclusion of a rehabilitation milestone that demonstrates the long term sustainability of PMLUs, the existing milestones RM11 Achievement of post-mining land use to stable condition (Native Ecosystem) and RM12 Achievement of post-mining land use to stable condition (Industrial) have been revised. Both rehabilitation milestones now include provisions for a suitably qualified person to request a site investigation report (including a site suitability statement) to be prepared and submitted by an AQP to the</p>

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		<ul style="list-style-type: none"> - Includes final rehabilitation milestone that demonstrates the PMLU will be sustainable in the long term - RM6 – “source, cart and spread growth media (topsoil and overburden)” - RM7 – “weeds controlled to reduce competition” - RM8 – “monitoring to determine whether vegetation is self-sustaining” and “monitoring to determine that species composition is adequate” - RM9 – “monitoring to determine whether landform is geotechnically safe and stable” - RM10 – “Erosion equivalent to, or less than, natural rates for the locality as measured by an SQP” and “Species composition consistent with PRCP” - RM11 – “Stormwater management assessment to confirm site is non-polluting” 	<ul style="list-style-type: none"> - Includes final rehabilitation milestone that demonstrates the PMLU will be sustainable in the long term 	administering authority in accordance with the provisions of Chapter 7, Part 8 of the EP Act.
14	RA1 and RA2	RA1 (Darra site) includes two different proposed PMLUs of Industrial and state road. In accordance with Step 2 of section 4.1 of the PRCP Guideline, RAs may only contain one PMLU. The area identified for the state road may be better identified as third party infrastructure in accordance with the PRCP guideline.	Please provide an updated PRCP Schedule that proposes a single PMLU for each RA at the Darra Site.	RA2 (State Road) has been removed from the PRCP schedule, as well as the Final Site Design Map (1835.DRG.095.R6) and Reference Map (1835.DRG.119R2) for the Darra site. The spatial files validated by the Department on 30 October 2023 reflect these updated drawings.
15	RA8	The designated PMLU for RA8 is native ecosystem, however most of the Rehabilitation milestones (RM11 and RM9 in particular) indicate the rehabilitation to an Industrial PMLU.	Please provide an updated PRCP Schedule which addresses the inconsistency identified.	<p>The PRCP schedule has been revised to correct this inconsistency. Due to the inclusion of an additional RM as RM4, the ID numbering remains the unchanged, however the milestones have been corrected. The following amendments were made:</p> <ul style="list-style-type: none"> • RM 5 Landform development and reshaping/reprofiling (Industrial) is replaced by RM 5 Landform development and reshaping/reprofiling (Native Ecosystem) • RM 9 Achievement of surface requirements (Industrial) is replaced by RM 9 Achievement of surface requirements (Native Ecosystem) • RM 11 Achievement of post-mining land use to stable condition (Industrial) is replaced by RM 11 Achievement of post-mining land use to stable condition (Native Ecosystem)
16	RA10	RA10 has a nominated PMLU of native ecosystem, yet rehabilitation milestones (RM5 and RM9) to rehabilitate an industrial landform have been selected.	Provide an updated PRCP Schedule which addresses the inconsistency identified.	<p>The PRCP schedule has been revised to correct this inconsistency. The following amendments were made:</p> <ul style="list-style-type: none"> • RM 5 Landform development and reshaping/reprofiling (Industrial) is replaced by RM 5 Landform development and reshaping/reprofiling (Native Ecosystem) • RM 9 Achievement of surface requirements (Industrial) is replaced by RM 9 Achievement of surface requirements (Native Ecosystem)

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				<ul style="list-style-type: none"> • RM 11 Achievement of post-mining land use to stable condition (Industrial) is replaced by RM 11 Achievement of post-mining land use to stable condition (Native Ecosystem)
17	RM4	RM4 states that erosion and sediment control systems will be installed however information relating to these erosion controls has not been included throughout the PRCP.	Provide an updated PRC plan which addresses the inconsistency identified.	<p>The PRCP has been revised to include proposed erosion and sediment control measures where relevant. Specifically, Section 6.1.1 Industrial PMLU, Section 6.1.2 Native Ecosystem PMLU and Section 6.6 Water Management have been updated.</p> <p>A minimum 70% ground cover will be implemented as the primary erosion and sediment control measure in line with the IECA (Australasia) Revegetation Factsheet, which states: "at least 70% ground cover (combined plant and mulch) is considered necessary to provide a satisfactory level of erosion control" (IECA (Australasia) 2010, P5).</p> <p>Because of the lengthy timeframes experienced to obtain a development approval, and the limited time that the approval is valid before lapsing, a proponent would typically not commence works to obtain the planning approvals for a PMLU until the mine is nearing the end of life. As a consequence of these planning limitations, landform design plans including specific erosion and sediment control measures are not able to be prepared at the time of this PRCP.</p> <p>Additional stormwater, erosion and sediment controls will be implemented as appropriate pursuant to conditions of approval in effect at the time of surrender, and may include rock checks, sediment traps and diversion bunds.</p>
18	RM6	RM6 states that topsoil volumes have been calculated to be sufficient for respread to a depth of 150mm, however varying topsoil depths have been provided throughout the Rehabilitation Planning Part.	Provide an updated PRC plan which addresses the inconsistency identified.	Topsoil will be respread to a depth of 150mm in all areas disturbed by mining activities. This has been clarified in the PRCP to remove any uncertainty.
19	RM11	The milestone criteria for RM7 references that certain disturbed areas will remain post surrender however measurable milestone criteria which demonstrates these landforms are safe, stable and non-polluting have not been supplied.	Provide an updated PRCP Schedule that sets rehabilitation milestones which demonstrates a safe, stable and non-polluting landform.	<p>The nominated milestone criteria for RM12 is for a Development Permit – Operational Works (or equivalent) to be in effect and acted upon. This milestone criteria has been clarified in the PRCP Schedule.</p> <p>It is accepted by the Department that, where land is to remain disturbed at the cessation of mining and is required to facilitate civil works, the regulation of rehabilitation of this land can be transitioned to the jurisdiction of Council under Operational Works – Development Permits which are in effect.</p> <p>RM11 can be measured through the provision of Development Permit(s) and inspection records and photographs confirming commencement.</p>

Attachment 2

Revised PRCP

(refer [Link](#))