Government of South Australia
Department for Energy and Mining

Mr Steven Gandel
Alliance (Eyre) Pty Ltd
Suite 3, 51-55 City Road
SOUTHBANK VIC 3006

steveg@gandelmetals.com.au

Dear Mr Gandel,

MINING LEASE APPLICATION OVER EXPLORATION LICENCE (EL) 6188 - REQUEST FOR RESPONSE DOCUMENT

I am pleased to advise that your application is progressing, and the statutory public consultation stage has been completed.

In accordance with Section 56H of the *Mining Act 1971* (the Act), the Mining Lease application over part of exploration licence (EL) 6188 submitted by Alliance (Eyre) Pty Ltd underwent a period of statutory public consultation. The mining proposal (MP) submitted with your application was publicly advertised on 27 September 2023 with a closing date for public submissions of 26 October 2023. The MP was also circulated to relevant government departments and the pastoral lessee with an invitation for comment.

The Department for Energy and Mining (DEM) seeks further information from Alliance (Eyre) Pty Ltd on the matters raised by the SA Government. A consolidated list of matters raised and requested information is provided in **Attachment 2**.

In addition, one (1) public submission was received. In accordance with section 56HA(4)(a) of the Act, a copy of the public submission is provided as **Attachment 3** to this letter. Please see **Attachment 1** for guidance on how to address the public submission.

In accordance with section 36(2) and section 56H(4)(b) of the Act, DEM requests that Alliance (Eyre) Pty Ltd provides a formal written response document, addressing the matters raised by government and in the public submission, within **3 months** of the date of this letter. Please submit the formal written response document via email to dem.miningregrehab@sa.gov.au and cc sarah.pennington@sa.gov.au.

This response document will directly contribute to the assessment process and is required prior to the Department making final recommendations on whether to grant or refuse the lease application, and what terms and conditions are appropriate should a lease be granted.

The Department reserves the right to request further information as required during the assessment period.

If you require a longer time to review the responses, or have any enquiries please contact Sarah Pennington, Mining Assessment Officer on 08 8429 2453 / 0455 075 991 or email sarah.pennington@sa.gov.au.

Yours sincerely

Nathan Zeman
Team Leader, Mining Assessments
Delegate of the Minister for Energy and Mining

02 February 2024

cc: info@allianceresources.com.au
Charlie Johnston, charlie@kinesisprojets.com.au

Attachments:
1. Guidance on responding to Public Submissions
2. Matters raised by SA Government to be addressed in a Response Document
3. Copies of the public submission
a) Mr Angus McTaggart

Attachment 1 – Guidance on responding to Public Submission

During the statutory circulation period the Mining Proposal (MP) was available for public consultation. One public submission was received. Alliance (Eyre) Pty Ltd is to review the submission, identify the matters raised and provide a response addressing all of the matters raised. These matters represent points of clarification and/or additional information required to enable a comprehensive assessment of the proposal, prior to final consideration by the South Australian government. A template is provided below should you with to use it.

Submitter	Matters raised	Alliance (Eyre) Pty Ltd response
Angus McTaggart	*Identify issues raised:*	*Insert response:*

Attachment 2 - Matters raised by SA Government

During the statutory circulation period the Mining Proposal (MP) was circulated to a number of government departments that were deemed relevant based on the information provided. A list of the matters raised by SA Government departments (including comments from DEM) during the statutory consultation period is presented below. It also outlines information that must be provided to respond to matters raised.

#	MP section ref.	Description of matters raised	Further information required
1.	3.5.1 Geochemical Assessment (Pg. 102 of pdf document)	*Phase 2 Results* It has been identified that Forty-five (45) samples, with at least one sample of each lithology was selected.	Provide a map showing the location of where these 45 samples were taken.
2.	3.6.4 Local Hydrogeology (pg. 109 of pdf document) 7.8.1 Groundwater Context (pg. 477 of pdf document Appendix B – Geochemistry Appendix E – Surface Water and Groundwater	In a number of sections in the document, the saprolitic clay aquitard is mentioned as a confining layer, however there is no information on the rate of movement through this layer, and how dewatering is predicted to affect movement through the aquitard.	Provide clear information on the properties of the aquitard & the predicted movement through the aquitard due to dewatering.
3.	3.6.4 Local Hydrogeology (pg. 109 of pdf document)	The following statements appear to contradict each other*:* *'A shallow sedimentary aquifer consisting of Tertiary and Quaternary sedimentary units and deposited within paleodrainages …'* And,	Please provide data and further information to support the existence of a shallow Tertiary/Quaternary sedimentary aquifer in the study area. This should include, but not be limited to: • Drillhole or borehole logs indicating Tertiary/Quaternary sediments below the water table. • Exploration logs. • Palaeochannel mapping.

#	MP section ref.	Description of matters raised	Further information required
		'Groundwater drilling programs in the MLA have not encountered yields within the Tertiary and Quaternary sediments.' There does not appear to be any evidence provided in the MLP or in the supporting appendices to support the presence of a shallow Tertiary/Quaternary sedimentary aquifer. Further information/clarification is required. In addition, the depth of the water table with respect to the shallow sedimentary aquifer has not been clearly identified regionally, locally or within the study area.	Identify where the water table is in comparison to the shallow sedimentary aquifer (if one exists).
4.		Figure 3.6.1 *Local hydrostratigraphy* (pg. 110 of pdf document) It is unclear how the thickness of the Tertiary/Quaternary sediments and Saprolite clay layers have been determined in this figure. The cross section is not by drillholes with lithological data. The inferred groundwater level should also be included on the cross section.	Provide information/data on how the thickness and distribution of the Tertiary/Quaternary sediments and Saprolite clay layers have been determined. Provide an updated cross section to address the requirements outlined in section 5.2.1.2 of Terms of Reference (TOR) 006
5.		Section 7.8.1 *Groundwater Context* (pg. 477 of pdf document) states: *Stock water wells in the region are typically sourced from shallow sedimentary aquifers with salinities ranging from 440 to 27,300 mg/L Total Dissolved Solids (TDS). Water quality in the fractured rock aquifer is generally poor, with salinities ranging from 25,700 mg/L to 35,000 mg/L TDS.* *The hydrostratigraphic units within the MLA include (youngest to oldest) a shallow sedimentary aquifer, a saprolitic clay aquitard and an underlining confined fractured rock aquifer, which is the primary aquifer system underlying the MLA.*	Clarify if all stock wells are from the shallow sedimentary aquifer. Provide details of the *shallow sedimentary aquifer*, including a water table map.

#	MP section ref.	Description of matters raised	Further information required
6.	3.6.4 Local Hydrogeology (pg. 109 of pdf document) and 3.6.8 Fractured Rock Aquifer Properties (pg. 119 of pdf document)	In 3.6.4 *Local Hydrogeology*, a saprolitic clay *aquitard* (which separates the shallow sediments from the underlying fractured rock aquifer at) is described. However, in 3.6.8 *Fractured Rock Aquifer Properties*, T1 is referred to as *having large cavities (several cm) and porous weathered bands. Weathered schist in T7 is also likely to have a notable degree of secondary porosity.* These statements, in 3.6.4 and 3.6.8 appear to be contradictory, suggesting that the weathered schist is not an aquitard.	Clarify the interpretation of the saprolitic clay and ensure consistency throughout the document.
7.	3.6.4 Local Hydrogeology (pg. 109 of pdf document) and 3.6.12 Preliminary Impact Assessment/ Numerical Model (pg. 122 of pdf document)	The model calibrated hydraulic parameters appear to be inconsistent with the conceptual hydrogeology for several reasons, listed below. 1. The conceptual hydrogeology listed three hydrostratigraphic units, two aquifers and a saprolite aquitard in between. The model calibrated units in Table 3.6.7 *Calibrated parameters* (pg. 127 of pdf document) indicate very little contrast in hydraulic conductivity between the three hydrostratigraphic units and the numerical values suggest all the three units are aquitards. 2. The hydraulic conductivity from actual hydraulic tests ranges between **0.17 and 15** m/d, or up to two orders of magnitude higher than those calibrated by the model (in Table 3.6.7 *Calibrated parameters* (pg. 127 of pdf document)) for wells T1 to T8. Table 3.6.4 *Fractured rock aquifer properties* (pg. 119 of pdf document) refers to aquifer test analyses undertaken in 2010 for wells T1 to T8. Although hydraulic conductivity is not provided explicitly in Table 3.6.4, for a confined aquifer, the hydraulic conductivity is the ratio	Review the calibrated hydraulic parameters and provide further information and/or a reconciliation between the conceptual hydrogeology and numerical model.

#	MP section ref.	Description of matters raised	Further information required
		between the transmissivity and the saturated thickness and varies between 0.17 m/d (T2) to 15 m/d (T1) with the majority of the wells having hydraulic conductivities between 0.17 m/d and 3 m/d. Table 3.6.7 *Calibrated parameters* (pg. 127 of pdf document) indicates a model calibrated hydraulic conductivity range of **0.0068 to 0.2** m/d (5%-ile to 95%-ile) for the fractured rock aquifer with a geometric mean of 0.023 m/d. In Figure 5-6 *Calibrated hydraulic conductivity for the fractured rock aquifer (Layer 3)* (pg. 1457 of pdf document, in Appendix A - *Weednanna Gold Project Groundwater Flow Model Report* of the *Wilcherry Project Weednanna Gold Deposit Pre-Feasibility Study – Water Effects Assessment Report* (pg. 1391 of pdf document) in Appendix E) in the vicinity of wells T2 to T8, seems to indicate **0.001 to 0.05** m/d hydraulic conductivities. 3. Data in Table 3.6.4 *Fractured rock aquifer properties* (pg. 119 of pdf document) appears to be more consistent with an aquifer (as in the conceptual hydrogeology) than those in Table 3.6.7 *Calibrated parameters* (pg. 127 of pdf document) indicating an aquitard (numerical groundwater flow model). 4. In Table 3.6.8 *Storage parameters* (pg. 127 of pdf document), for the Tertiary and Quaternary sediments, the geometric mean of the specific yield (20%) appears to be disproportionately large for the low geometric mean hydraulic conductivity (0.076 m/d) listed in Table 3.6.7 *Calibration parameters*. 5. The model calibrated specific yield for the saprolite aquitard in Table 3.6.8 *Storage parameters* is five times	Provide justification for the combination of parameters or change them in the model.

#	MP section ref.	Description of matters raised	Further information required
		larger than that for the fractured rock aquifer, also contradicting the conceptual hydrogeology.	
8.	3.6.5 Groundwater Levels and Yields (pg. 110 of pdf document)	In Table 3.6.1 *Groundwater well levels and yields* (pg. 110 of pdf document) and throughout the document the Unit Number of the wells used has not been provided, it is recommended that the unit numbers are provided to assist with identifying the wells in SA Geodata. Table 3.6.1, does not list the depth of the water intake/or screened zone.	Provide an amended version of Table 3.6.1 which includes the Unit numbers for the water wells used throughout the MP and identify the water intake or screened zones.
9.		Section 3.6.7 *Baseline Groundwater Hydrogeochemistry* (pg. 115 of pdf document) provides data within two tables which divides the wells into two groups, Table 3.6.2 *Stock water well quality data* (pg. 116 of pdf document) and Table 3.6.3 *Fractured rock aquifer water wells quality data* (pg. 117 of pdf document). Table 3.6.1 *Groundwater well levels and yields* (pg. 110 of pdf document), does not identify which well is stock water well or a fractured rock aquifer water well. It would be beneficial to list, for each well, what group they belong; best in Table 3.6.1.	In addition to providing the Unit Number for the wells, ensure the amended version of Table 3.6.1 identifies which well is identified as a stock water well and which is identified as a fractured rock aquifer water well.
10.	3.6.7 Baseline Groundwater Hydrogeochemistry (pg. 115 of pdf document)	Baseline groundwater quality information refers to 2 monitoring rounds 10 years apart, in 2010 and July 2020. The characterisation of baseline groundwater quality should be based on at least eight to ten sampling events within (approximately) 2 years. The principles in the Queensland Government document *Using Monitoring Data to Assess Groundwater Quality and Potential Environmental Impacts 2021* are considered applicable.	Provide details of a sampling program for the collection of sufficient data relating to baseline groundwater quality to inform the development of compliance related groundwater quality assessment criteria.
11.		In section 3.6.4 *Local Hydrogeology* (pg. 109 of pdf document) states that three hydrostratigraphic units were clearly identified, two aquifers and an aquitard in between:	Provide justification or evidence to support the assumption that groundwater elevations from all hydrostratigraphic units can be used to create a single map.

#	MP section ref.	Description of matters raised	Further information required
		The hydrostratigraphy has been defined by the drilling and logging of a number of wells in and around the MLA and hydrogeological data obtained from WaterConnect. The hydrostratigraphic units can be summarised as the following (youngest to oldest): • *A shallow sedimentary aquifer consisting of Tertiary and Quaternary sedimentary units and deposited within paleodrainages* • *A saprolitic clay aquitard which separates the shallow sediments from the underlying fractured rock aquifer at the MLA* • *A confined fractured rock aquifer hosted within basement rocks consisting of Archaean gneiss, Palaeoproterozoic Miltalie Gneiss (Sleaford Complex) and an overlying metamorphic Palaeoprotoerozic sequence known as the Hutchinson Group.* The text in section 3.6.7 (pg. 115 of pdf document), however, explains that Figure 3.6.3 *Inferred groundwater elevation contour plan* (pg. 114 of pdf document), is based on <u>all</u> groundwater elevations from all hydrostratigraphic units: *The map assumes all groundwater level readings are attributable to a single hydrostratigraphic unit.* It follows that Figure 3.6.3 was constructed based on an assumption (a single hydrostratigraphic unit) that contradicts what was presented in Figure 3.6.4 (three hydrostratigraphic units). Groundwater elevations (from both the shallow sedimentary and the fractured rock aquifers) were considered as one dataset and contoured without justification. If groundwater elevations from those different hydrostratigraphic units were to differ, considerable error may have been introduced to Figure 3.6.3. While such error is unlikely to change the groundwater flow direction in DEM's experience, the magnitude	This can be typically obtained from comparing groundwater heads (or groundwater elevations) from closely spaced pairs of wells with one in the Tertiary/Quaternary and the other in the fractured rock hydrostratigraphic unit.

#	MP section ref.	Description of matters raised	Further information required
		of the hydraulic gradient in the fractured rock aquifer may be incorrect. Are there pairs of wells in the shallow and the fractured rock aquifers close to each other? Is there any separation of the two aquifers vertically? These are important questions for the understanding of the hydrogeology, especially near a catchment divide, where groundwater heads (elevations) often differ between different hydrostratigraphic units.	
12.	3.6.8 Fractured Rock Aquifer Properties (pg. 119 of pdf document)	Table 3.6.4 *Fractured rock aquifer properties* (pg. 119 of pdf document) lists four wells out of eight wells with significant leakage but no further information or explanation on where the leakage is coming from has been provided.	Provide further information to explain where the leakage comes from and how this has been considered.
13.		Information provided in the below paragraph (located towards to bottom of pg. 119 of pdf document) needs further clarification as it has several errors, unrealistic values, and missing units. *Specific yield (Sy) ranges from around 5x10^{-6} to 10^{-4}, and specific storage (Ss) ranges of 3 to 7 x 10^{-6}. This is supported by the analyses of the pumping test data from the Menninnie Dam well, where storativity (S) is estimated to be in the order of 4x10^{-3}. Assuming an aquifer thickness of 50 to 100 m this equates to a storativity of roughly 5 x 10^{-5}.* **Storativity [dimensionless] = specific storage [1/m] × thickness [m]** 1. The specific yield of *3 to 7 x 10^{-6}* is unrealistically low and needs a quality check. The value above reflects very little, if any, fracturing and the range quoted is likely represent impervious rocks. 2. Storativity in the text is 4x10^{-3}, but in Table 3.6.4 *storativity* column it is 4x10^{-4}. In the same table, *Description of Aquifer* column it is (as S) 0.0035 to	Provide an updated discussion on specific yield and specific storage with realistic values and correct units. Refer to Table 6.3.8 of Appendix E Water Baseline Report, as this lists more realistic values and also the correct units.

#	MP section ref.	Description of matters raised	Further information required
		0.0040. It is important to present consistency in hydraulic parameters. 3. References to specific storage values without units are meaningless. Specific storage has the dimension of Length^{-1} and the most common unit is 1/m for specific storage.	
14.	3.6.9 Groundwater Recharge and Discharge Mechanisms (pg. 120 of pdf document)	In Sections 3.6.3 *Regional Hydrogeology* (pg. 108 od pdf document), 3.6.4 *Local Hydrogeology* (pg. 109 of pdf document) and 3.6.5 *Groundwater Levels and Yields* (pg. 110 of pdf document) the fractured rock has been referred to as a confined aquifer. In Section 3.6.9, using the chloride mass balance method, the salinity of this confined aquifer is used to estimate recharge to groundwater (in Table 3.6.5 *Calculated recharge* for wells T1 to T7). The chloride mass balance method may provide a rapid and approximate estimate for groundwater recharge for unconfined aquifers, but it should not have been used for confined aquifers. Confined aquifers are seldom recharged from direct rainfall recharge.	Provide an amended version of Table 3.6.5 to remove confined aquifer wells and provide amended text accordingly.
15.		It is stated in the 1st paragraph of 3.6.9 *Groundwater Recharge and Discharge Mechanisms* (pg. 120 of pdf document): *It is likely only higher intensity/duration rainfall events that result in surface ponding or ephemeral flow will result in significant recharge, with rainfall from lesser events evaporating prior to or soon after infiltration.* In the text that followed and in Table 3.6.7 *Calibrated parameters* (pg. 127 of pdf document), however, recharge was shown as a percentage of annual average rainfall which appears to contradict the statement above in italics about episodic rainfall recharge.	Consider the inclusion of episodic recharge in the groundwater modelling or provide justification and evidence why it hasn't been considered in the groundwater modelling.

#	MP section ref.	Description of matters raised	Further information required
		Recharge (the largest input in Table 3.6.9 *Calibrated mass balance* (pg. 129 of pdf document)) is important, especially for mine inflow. There appears to be a disconnect between the conceptual hydrogeology (episodic recharge concept) and the model implementation (regular small recharge).	
16.	3.6.12 Preliminary Impact Assessment/ Numerical Model (pg. 122 of pdf document)	The brown curve within Figure 3.6.4 *Mine water demand* (pg. 123 of pdf document) does not seem to be correct as it does not appear to be the cumulative measure of the blue water demand curve. Accurate estimates of water demand are important for impact assessment therefore this figure needs to be revised in the response document. For example, water demand significantly increases after 1 year according to the blue curve. It would be reasonable to expect an increase in the steepness of the cumulative (brown) curve at the same time, after 1 year. The brown curve, however, appears to steepen only at 2 years. There are similar '*offsets*' between the slope changes of the blue and brown curves, indicating an error in at least one of those.	Provide a revised version of Figure 3.6.4 and revise the water demand and cumulative curves so that they correspond. Ensure the correct water demand is used throughout the document and its appendices. Ensure and demonstrate that the mine water demand used in the numerical groundwater model is correct.
17.		*Boundary Conditions* (pg. 125 of pdf document), states: • *Lake Gilles simulated as a groundwater sink using MODFLOW River package.* Using the RIVER package does not necessarily model cells as groundwater sinks. The RIVER package allows interaction between surface and groundwater either way, the resulting flow direction will depend on the relative position of the surface – and groundwater heads. It would be beneficial to provide the model water budget for the model RIVER cells.	Provide the model water budget for the model RIVER cells.
18.		The text following Table 3.6.8 *Storage parameters* (pg. 127 of pdf document) states:	Identify if these are steady-state contours and if not, show the time the potentiometric contours relate to.

#	MP section ref.	Description of matters raised	Further information required
		The calibrated potentiometric contours for the fractured rock aquifer for pre-mining conditions is shown in Figure 3.6.7. It is unclear if these are steady-state contours. If not, show the time the potentiometric contours relate to.	
19.		In *Modelling Results and Preliminary Impact Assessment* (pg. 129 of pdf document) states that two scenarios were modelled. Scenario 1 is described as: *Groundwater drawdown impacts in response to mine related WAAs and post mine recovery of groundwater levels.* The extractions from each well and the depth of mining (drain cells) should be described more comprehensively to place Figures 3.6.8 *End of mining (operation year 6) groundwater drawdown* (pg. 130 of pdf document), 3.6.9 *End of operations (operation year 9) groundwater drawdown* (pg. 131 of pdf document) and 3.6.10 *100 years post mining groundwater drawdown* (pg. 132 of pdf document) in context.	Provide the extractions from each well and the depth of mining (drain cells).
20.		In the *Conclusions* (pg. 133 of pdf document) it has been concluded: *During and following operations, the mine pits are expected to form evaporative sinks that will create a large cone of depression and capture groundwater flow occurring beneath the MLA. Given that the project will include a tailings storage facility that may be a source of minor leakage to underlying groundwater, the presence of such a groundwater sink will eliminate the threat of any potentially contaminated groundwater (if that were to occur) from interacting with Lake Gilles.* The pit lake will be subject to evapoconcentration and increased salinity. Salinity in the lake may also show stratification and, as a result, high salinity water from the pit lake bottom may discharge to groundwater even if the hydraulic gradient is inward to the pit.	Investigate and provide discussion on alternatives to leaving pit lakes at mine closure. Provide further information on these investigations, including any justifications to demonstrate how a decision on the chosen option for mine closure was reached.

#	MP section ref.	Description of matters raised	Further information required
		Alternatives to leaving pit lakes should be considered by the proponent. For further information, refer to Project-3.3-Final-Report_27.10.21_approved.pdf (crctime.com.au).	
21.	3.6.12 Preliminary Impact Assessment/ Numerical Model (pg. 122 of pdf document) and 7.8.2 Groundwater Modelling (pg. 479 of pdf document	In the *Conclusions* (pg. 133 of pdf document) it has been concluded: *The drawdown impact from water supply well abstraction and mine dewatering is likely to be contained mostly with the MLA over the life of the mine thereafter.* Figures 3.6.8 *End of mining (operation year 6) groundwater drawdown* (pg. 130 of pdf document), 3.6.9 *End of operations (operation year 9) groundwater drawdown* (pg. 131 of pdf document), 3.6.10 *100 years post mining groundwater drawdown* (pg. 132 of pdf document) and 7.8.1 *Life of mine water demand and supply assumptions* (pg. 478 of pdf document) indicate drawdown impacts well outside the lease application area contradicting the statement above.	Review this conclusion and provided further information as required to address the drawdown impacts identified in Figures 3.6.8, 3.6.9, 3.6.10 and 7.8.1.
22.	3.9 Fauna (pg. 187 of pdf document)	In Table 3.9.2 *Likelihood of occurrence assessment of EPBC listed threatened bird species* (pg. 190 of pdf document) it has identified the Western Grasswren as likely to occur on site, however, in 3.2.3 *Relevance to current proposed ML* (pg. 1547 of pdf document) within Appendix F, states that: *'Western Grasswren has been previously observed at three sites within the broader EL, one of which falls within the current ML.'* Figure 3-1 *Previous Western Grasswren sites within wider* EL (pg. 1549 of pdf document) within Appendix F, has a superimposed site map of the proposed ML and it show that the Western Grasswren was found at 'Site 1'.	Confirm that western grasswren is "known" to occur at the site.

#	MP section ref.	Description of matters raised	Further information required
23.		Table 3.9.1 *Fauna survey method and effort at each site (2008)* (pg. 188 of pdf document) states that mammal and reptile trapping, and mammal and reptile tracking occurred. This Fauna survey was undertaken approximately 15 years ago. It is unclear if mammal and reptile trapping and tracking occurred during the surveys undertake by Jacobs in 2019 and 2022. If the only pitfall trapping was conducted 15 years ago, additional pitfall trapping will be required within the current MLA area, which incorporates sand dune/spinifex areas, to provide accurate baseline data.	Provide further information regarding mammal trapping, in particular what pitfall trapping has occurred and the results of any additional surveys. Include a map identifying where the pitfalls trapping occurred. Provide details of a what further native fauna monitoring and surveys are proposed to be undertaken in order to establish suitable baseline data.
24.	4.2 Resources, Products and Markets (pg. 267 of pdf document)	The mining proposal supporting the application identifies the ore reserves and mineral resources as Gold and Iron Ore. This is inconsistent with Form 10 submitted with the application, which has identified the minerals to be sought as Gold, Iron Ore, Silver and Copper.	Please confirm the resources proposed to be mined. Noting that if, at a later day, other resources could possibly be produced and sold from this site, an additional application process to add the additional minerals would be required.
25.	4.4.1 Types of proposed mining operations to be carried out. (Pg. 277 of pdf document)	The MP states that the extent of the underground workings' costings was estimated based on a 2021 economic optimisation study. Due to the substantial increase in economic pressures, the 2021 cost estimations may be out of date.	Review and provide further information and/or confirmation of the costings.
26.	4.4.2 Open Pits – Pit Backfilling (Pg. 280 of pdf document)	The MP states that the feasibility of backfilling the West Pit with waste rock from the East Pit operations is being assessed.	Provide further information on the status and (if known) outcome of the backfill feasibility study.
27.	4.4.3 Underground workings (pg. 280 of pdf document	Figure 4.4.5 *East Pit underground working – long section view looking west* (pg. 281 of pdf document) and Figure 4.4.7 *Plan view of geotechnically assessed boreholes* (pg. 283 of pdf document) These figures do not correspond to each other. Figure 4.4.5 depicts the underground workings commence from the northern	Review these figures and amend accordingly.

#	MP section ref.	Description of matters raised	Further information required
		extent of the bottom of the open pit, however, Figure 4.4.7 depicts the underground workings commence at the opposite end of the pit. While these plans are conceptual in the MP, the need to be consistent.	
28.	4.4.9 Sequence of Mining and Rehabilitation Operations (Pg. 295 of pdf document)	*Open Pit Mine Sequence* (pg. 295 of pdf document)*:* While a description of 'pit sequence' has been provided, a map outlining this sequence is required and has not been provided. It is unclear if this description is specific to a pit or if it describes both pits, meaning that both pits will be operated at the same time.	Please provide a map(s) which identifies the sequence of mining and rehabilitation in both open pits.
29.		Table 4.4.6 *Rehabilitation schedule for open pits, underground workings, associated infrastructure* (pg. 301 of pdf document) has identified that the abandonment bund will be constructed in year 7 towards the end of mining. It has also been identified that this abandonment bund will be used to prevent people from entering the pit following closure. To ensure the achievement of the public safety outcome, it is recommended that the abandonment bund be constructed during the construction of the open pit/mining operations, rather than at the end of mining operations.	Review the abandonment bund construction timeframe and provide an updated table outlining the timeline for the construction of the abandonment bund.
30.		While Peter O'Bryan and Associates Technical Memorandum (22054B), 05 September 2022 in Appendix J *Mine Design and Engineering* (pg. 1954 of pdf document), states that the abandonment bund has been designed in accordance with the Western Australian Department of Mines, Industry Regulation and Safety Guidelines for pit abandonment, it does not provide details on what the abandonment bund will be constructed with.	Provide details to describe what material will be used and how the abandonment bund will be constructed. Provide further information to demonstrate the bund design and construction methods will be in accordance with the Western Australian Department of Mines, Industry Regulation and Safety Guidelines for pit abandonment,

#	MP section ref.	Description of matters raised	Further information required
31.		*Rehabilitation Strategies and Timing* (pg. 299 of pdf document): It is suggested that post mine closure a saline pit lake will likely form, which will become progressively more saline overtime due to evaporation. However, it appears there is the possibility of exposed PAF material in the walls of the pit remaining exposed. This material may then cause the pit lake to become acidic over time and release minerals and metals into the water, essentially turning the pit lake into a wastewater pond. Further investigations should be undertaken into alternative options for the rehabilitation of the mine pit lake, with the view to finding potential beneficial end uses for these lakes and the creation of a more sustainable ecosystem and better long term environmental outcomes. Acidic pit lakes can pose an environmental risk to birds, particularly in arid areas where they will be drawn to the water source. The acidity can strip the oils from the feathers of the birds, causing death from drowning or exposure. Consideration should be given to how the pit walls can be rehabilitated to prevent the final pit lake from becoming acidic.	Review and provide an assessment of impacts of the final form of the pit lake to consider the possibility of exposing PAF material and the potential impact to the quality of the pit lake water and ecological receptors which may interact with the pit lake.
32.	4.5.4 Processing Plant (pg. 311 of pdf document)	Cyanide leaching in multiple leach tanks, and the use of other chemicals (e.g., sodium hydroxide and hydrochloric acid) is proposed to occur in the processing plant. It is not clear how the processing plant is to be bunded or lined to ensure any chemical spillage or tank leakage is captured and contained.	Provide further information and details regarding the lining (HDPE or concrete) and bunding of the processing plant to ensure that any chemical spillage or tank leakage is captured.
33.	4.5.12 Process Water Management (pg. 323 of pdf document)	The Process Water Pond will accept brine from the RO Plant and tailings return water. It is a wastewater pond and as such should consider the appropriate EPA construction guidance.	Provide confirmation that the Process Water Pond will be designed and constructed in accordance with the EPAs Wastewater Lagoon Construction Guidelines, SA EPA, 2019.

#	MP section ref.	Description of matters raised	Further information required
34.	4.6 Wastes (pg. 327 of pdf document)	*Site Geology and Expected Mine Waste* (pg. 328 of pdf document)*:* It states: *"For the mine designs and schedules, it has been assumed that all of the oxidised waste material will be NAF and that all of the transitional/ fresh rock material will be PAF."* This assumption is incorrect as the outcome of the static testing program shows that some of the sub-units within some of the lithological units in the 'oxidised' geologic material are PAF.	Review the mine designs and schedules to consider that the 'oxidised' waste material may produce PAF. Include suitable control and management strategies for the handling and disposal of any potential PAF material.
35.	4.6.3 Tailings Storage Facilities (TSF) (pg. 352 of pdf document)	*Geochemical Characteristics* (pg. 357 of pdf document): The results of the test work indicated the tailings solids are classified as potentially acid forming (PAF) The implications of PAF tailings solids on HCN (Hydrogen cyanide) gas emissions and WAD cyanide formation has not been considered.	Provide an environmental impact assessment for cyanide and include a proposed outcome, appropriate management strategies and draft measurement criteria as necessary. Ensure the impact assessment addresses the implications of PAF tailing solids on HCN gas emissions and WAD cyanide formation. Refer to Cyanide Management for guidance.
36.	4.7.7 Erosion, Sediment and Silt Control (pg. 408 of pdf document)	In section 7.7.3 *Surface Water Control and Management Strategies* (pg. 473 of pdf document), it states: *'all surface water infrastructure will be designed to capture and retain all surface water flows from leaving the MLA.*' In section 4.7.7 *Erosion, Sediment and Silt Control* (pg. 408 of pdf document) however it states that up catchment surface flow will be directed away from mine infrastructure and TSF, WRF and pits. It has not been identified what happens with this diverted water, ie. where will it be directed to? diverted back to the environment or captured? A map/plan must be provided which depicts the diversion mechanisms within the MLA area or up catchment. Refer to section 2.7.7 of TOR 006 which sets out requirements for plans relating to site stormwater management.	Provide further information to describe the overall plan for water flows (surface and stormwater) in and around the mine infrastructure during mine-life and post mine-completion. This plan should include up catchment management of flows and any diversion mechanisms within and outside the MLA area. If flows are to be captured, describe how this will occur over the short term and long-term post mine-closure if water is to be permanently captured.

#	MP section ref.	Description of matters raised	Further information required
37.	7.3.2 Native Vegetation Environmental Impact Assessment	Table 7.3.1 *Environmental impact assessment – native vegetation* (pg. 447 of pdf document) and Table 7.8.1 *Environmental impact assessment -groundwater* (pg 487 of pdf document*)* does not appear to address a potential impact from the proposed TSF (source), by mounding of groundwater and via groundwater seepage (pathways), to vegetation (receptor). Such an impact may cause a rise in the local water table, and if sufficient, to raise the water table to within the root zone which will impact native vegetation. The TSF (and various rock damps) operations do not appear to be part of the numerical groundwater model so that any interaction between the potential TSF impacts and dewatering of the pits and groundwater extraction wells are not addressed together.	Provide an additional impact assessment for possible impacts from TSF seepage on native vegetation. Provide justification why the TSF is not part of the numerical model.
38.	7.5 Weeds and Plant Pathogens (pg. 459 of pdf document)	In Section 3.9.2 *Fauna* (pg. 189 of pdf document) has identified Pests animals (Feral Fauna pg. 200 of pdf document) on the proposed site, however, an impact assessment, proposed outcome, Measurement criteria and control and management strategies for pest animals has not been provided.	Update this impact assessment to include potential impacts associated with pest animals.
39.		A control and management strategy states: *Vehicles entering the mining lease area will be inspected for presence of introduced soil or weed seeds/vegetation and if present, will be washed down and the runoff water captured.* However, no information has been provided in the document related to a wash down bay nor how this runoff will be captured and managed.	Provide further information on the wheel wash and the management of any runoff from the wheel wash.
40.	7.8.3 Groundwater, Environmental Impact Assessment	Table 7.8.1 *Environmental impact assessment – groundwater, for WIL25, uncertainties and assumptions (related to S-P-R relationship)* (pg. 487 of pdf document) states*:*	Provide a water table map and justification/evidence for the statement.

#	MP section ref.	Description of matters raised	Further information required
	(pg. 486 of pdf document)	*Hydraulic connection is poor between fractured rock aquifer and overlying tertiary aquifers that suggest a low potential for GDEs within the MLA* It is unclear what evidence has been provided to demonstrate this statement. There is no map presented for the water table. It is unclear in the MLA if there is a *Tertiary and Quaternary Aquifer*, *Unconsolidated Sedimentary Aquifer*, *palaeochannel* aquifer or hydrostratigraphic unit above the saprolite aquitard. For these reasons, the statement above is more of an assumption than based on evidence.	
41.	7.8.4 Groundwater, Control and Management Strategies (pg. 489 of pdf document)	The draft measurement criteria and draft leading indicator criteria presented in Table 7.8.2 *Control measures, environmental outcomes and draft measurement criteria – ground water* (pg. 491 of pdf document) of the MLP do not meet the requirements of section 4.2.3 of Terms of Reference (TOR) 006 or Minerals Regulatory Guidelines MG2a. The monitoring program needs to be specific about what is being monitoring, where it is being monitoring and how frequently it will be monitored. For example, a map of monitoring well locations needs to be provided and a rationale for how these were selected. Monitoring locations should take into account the infrastructure that has the potential to impact groundwater resources (e.g., TSF and WRD) as well as considering the operational and post operational flow gradients and velocities. It is expected that a dedicated groundwater monitoring well network will be required, rather than relying on data obtained from operational production wells and exploration holes.	Update the proposed leading indicator and measurement criteria to include a site-specific monitoring program. Refer to MG2A for detailed requirements.
42.	7.10 Waste (pg. 499 of pdf document)	An environmental impact assessment for cyanide has not been included.	Proved an environmental impact assessment, control and management strategies and measurement criteria for the use of

#	MP section ref.	Description of matters raised	Further information required
			cyanide on the receiving environment (during operations and post mine-completion). Refer to Cyanide Management for guidance.
43.	7.12.3 Air Quality, Control and Management Strategies	In the *Wilchery Gold & Iron Project Dust Assessment* (Appendix G (pg. 1884 of pdf document)) Chapter 6.1 *Dust Emissions Estimates* (pg. 1894 of pdf document) it states: *"Dust emission controls were included for the following activities:* • *Drilling for blasting – hooding with cyclone 65% reduction* • *Crushing and screening – water sprays 50% reduction* • *Haul road and mine access road transports – water sprays (Level 2 watering (>2L/hr/m2)) 75% reduction.* *The emission controls as assumed in the emissions estimation achieves a Project overall dust emissions reduction of 60%. The largest source of dust and improvement from dust controls is for wheel generated dust from haul truck activities. The emissions controls as listed should be included in the dust management plan".* While Section 7.12.1 *Air Quality Context* (pg. 517 of pdf document) mentions the dust emission controls outlined above, it's not clear from the information in Section 7.12.3 *Control and Management Strategies* (pg. 524 of pdf document) and Table 7.12.3 *Control measures, environmental outcomes and draft measurement criteria – air quality* (pg. 525 of pdf document) whether these listed control measures will be implemented. There's no specific reference to hooding with cyclone as a control for drilling or water sprays for crushing and screening, just a general statement "Installation/implementation of dust emission controls" relating to dust generation from mining activities.	Confirm whether the dust control measures listed in the *Wilcherry Gold & Iron Project Dust Assessment* will be implemented and included in the dust management plan. Review and amend the draft control measures and measurement criteria accordingly.

#	MP section ref.	Description of matters raised	Further information required
44.		General vehicle movements on unsealed roads lists "*installation/implementation of dust emissions controls including dust suppression on mine site roads*" however, product road train travel on unsealed roads doesn't include a similar control measure relating to dust suppression of roads.	Review and provide details of any further dust control measures which may be necessary for product road train travel on unsealed roads – particularly where this transport is occurring in the vicinity of residential receptors.
Appendix B Geochemistry (page 746 of pdf document)			
45.	Appendix B – Geochemistry, Phase 2 Geochemical Assessment, 4.1 Next Steps (pg. 803 of pdf document)	Report recommends *'If the volumes of each of sub-unit within a lithological unit can be calculated, this would allow a preliminary materials balance (NAF v PAF) to be produced allowing for a preliminary estimate of whether there is sufficient NAF to manage the volume of PAF.'*	Provide an estimation of the quantity of each lithological unit and their sub-units in addition to an estimation of the number of samples required for the static testing program.
46.	Appendix B – Geochemistry, Phase 2 Geochemical Assessment Section 4.1 Next Steps	Report also recommends '*Following these immediate steps, further geochemical analysis, at a minimum, the phase 1 suite of tests should be completed on a larger number of samples of the principle lithologies and sub-units.* *Particularly those areas of the Project where there is considerable geological complexity. As mentioned previously, there is insufficient data in the current dataset to delineate areas of PAF and NAF with sufficient confidence.'*	Provide further information to address the following: 1. Carefully define all the lithologies and sub-units for the entire project area that are proposed to be disturbed or exposed, considering all the geological complexities. 2. Estimate the quantity of each lithological unit and their sub-units to aid in quantifying the appropriate number of samples required for the static testing program. 3. The sampling must be spatially representative, both vertically and horizontally. 4. Provide a map showing sampling locations. 5. The kinetic test program must be informed by the outcome of the static testing program.
Appendix E Surface Water and Groundwater (page 1251 of pdf document)			
Wilcherry Project Weednanna Gold Deposit Pre-Feasibility Study - **Water Baseline Report** (page 1252 of pdf document)			

#	MP section ref.	Description of matters raised	Further information required
47.	Water-baseline report, 1.3 Historical resources (pg. 1270 of pdf document)	This section states that this report utilises the information derived from previous studies, in conjunction with new information. These previous studies/reports have not been provided. This information is necessary, particularly the well logs and aquifer test data/analysis which forms the basis of the hydrogeological conceptualisation.	Provide copies of the previous studies/reports, particularly the reports which include well logs and aquifer test data/analysis.
48.	Water-baseline report, 2.5.1 Mining Lease Area (pg. 1276 of pdf document)	Figure 8 *Regional geological map* (pg. 1279 of pdf document) is considered a regional surficial geological map. Further information and mapping are required on the structural geological mapping for the Archaean - Early Mesoproterozoic strata. This information is available through SARIG. The inclusion of this data would help the hydrogeological conceptualisation of the site.	Include a map and discussion of the regional structural geological mapping available through SARIG (Archaean - Early Mesoproterozoic). This data should be used to inform the hydrogeological conceptualisation of the study area.
49.	Water Baseline Report, 3.1.1 Hydrostratigraphy, Overview (pg. 1280 of pdf document)	In 3.1.1 *Overview* (pg. 1280 of pdf document) it states: *"groundwater drilling programs undertaken in areas surrounding the proposed MLA have not encountered yields within the Tertiary and Quaternary sediments, with wells having been completed in underlying fractured rocks."* It is not clear from 3.1.2 *Mining Lease* (pg. 1281 of pdf document) where the water table is; and if yields were not observed because the Tertiary and Quaternary sediments were unsaturated; or they are saturated but of low hydraulic conductivity. As described in TOR 006, local and regional potentiometric surface/groundwater elevation map(s) for each aquifer within the application area are required. These have not been provided, either within the MLA document or the appendix. Refer to comment 11 in this table.	Provide a clear explanation for the statement. Provide a water table map. Provide a hydrogeological cross section along the inferred flow, from just west of the divide to Lake Gilles. The cross section should include the position of drillholes, the inferred position of hydrostratigraphic units, the water table and the groundwater head in the fractured rock aquifer.

#	MP section ref.	Description of matters raised	Further information required
50.		In 3.1.1 *Overview* (pg. 1281 of pdf document), it states: *"Specific yield (Sy) ranges from around 5x10^{-6} to 10^{-4}, and specific storage (Ss) ranges of 3 to 7 x 10^{-6}. This is supported by the analyses of the pumping test data from the Menninnie Dam well, where storativity (S) is estimated to be in the order of 4x10^{-3}. Assuming an aquifer thickness of 50 to 100 m this equates to a storativity of roughly 5 x 10^{-5}."* Refer to comment 13 in this table	Refer to comment 13 in the table and provide an updated discussion an details on specific yield and specific storage using realistic values and correct units.
51.		Table 1 *Summary of fractured rock aquifer properties (SKM, 2010a)* (pg. 1280 of pdf document) lists four wells out of eight with significant leakage. Refer to comment 12 in this table.	Refer to comment 12 in this table.
52.	Water Baseline Report, 3.1.2 Mining Lease (pg. 1281 of pdf document)	Section 3.1.2 *Mining Lease* (pg. 1281 of pdf document) contains excerpts from the previous SKM reports. These reports containing the associated data, figures and maps were not provided and therefore do not support the descriptions. It is, therefore, very difficult to validate the hydrogeological conceptual model presented in the MLP. It also states, '*a specific yield (Sy) range of 5x10^{-6} to 10^{-4} for the fractured rock aquifer'* which seems excessively low. SKM (2010b) reports higher specific yields (10^{-2} to 10^{-1}). Refer to comment 13 in this table.	Provide the previous reports by SKM (2010a, 2010b, 2011a) to support the description. Provide evidence to support the existence of paleochannels within the study area. Provide evidence of saturated Tertiary/Quaternary sediments to support this unit as one of the three hydrostratigraphic units in the study area. Provide a map and/or cross section to show 'The primary regional aquifer system comprises a confined fractured rock aquifer, characterised by low storage values and transmissive zones corresponding with major structural corridors.
53.		Figure 9 *Regional geological interpretation and water well and drillhole locations (SKM, 2010a)* (pg. 1282 of pdf document) requires further details in the legend. The proposed mine pits, waste rock dumps and TSF need to be clearly identified on this figure.	Provide an updated version of Figure 9 with a legend and overlay/indicate the location of the proposed mining pits, waste rock dumps and TSF. Refer to section 5 of TOR006 for specific mapping requirements.

#	MP section ref.	Description of matters raised	Further information required
54.	Water Baseline Report, 3.2.3 Groundwater flow and hydraulic gradients (pg. 1283 of pdf document)	It is noted that Figure 10 *Inferred Groundwater Elevation Contour Plan* (pg. 1285 of pdf document) and Figure 3.6.3 *Inferred Groundwater Elevation Contour Plan* (pg. 114 of pdf document) are exactly the same. The text explains that this figure is based on all groundwater elevations. This means that groundwater elevations were used from both the shallow sedimentary and the fractured rock aquifers. If groundwater elevations from these different hydrostratigraphic units differ, considerable errors may have been introduced to the Figure and the inferred hydraulic gradient to Lake Gilles may be misleading. The following information/clarification is required: • Whether there are pairs of wells in the shallow and the fractured rock aquifers close to each other • Whether there is any separation of the two aquifers vertically These are important questions for the understanding of the hydrogeology, especially near a catchment divide, where groundwater heads (elevations) often differ considerably for different hydrostratigraphic units. It is recommended that the map clearly shows the topography over the groundwater contours, as it is currently difficult to see.	Provide further information and evidence to justify the approach or consider separating the two aquifers.
55.	Water Baseline Report, 3.2.4 Depth to water (pg. 1284 of pdf document)	Provide the data used to develop Figure 11 *Interpreted Depth to Water Table* (pg. 1286 of pdf document) map. It is unclear if this is the water table depth or the depth to groundwater in the confined fractured rock aquifer.	Provide the depth to groundwater data used to create Figure 11. Identify if this is the water table depth or the depth to groundwater in the confined fractured rock aquifer.
56.	Water Baseline Report, 3.5	Further information is required in this section. It has not addressed ephemeral surface water resources.	Provide further information to address ephemeral surface water resources and the groundwater and surface water interactions.

#	MP section ref.	Description of matters raised	Further information required
	Groundwater and surface water interactions (pg. 1292 of pdf document)	In an arid climate, episodic rain and surface flow is known to recharge groundwater. Refer to the wells described and identified in 3.6.7 *Baseline Groundwater Hydrogeochemistry* (pg. 115 of pdf document) and 3.6.13 *Environmental Values of the Water Resources* (pg. 134 of pdf document).	
57.	Water Baseline Report, 5 Conceptual site model (pg. 1301 of pdf document)	Figure 18 *Conceptual hydrogeological and hydrological model of the Project area (adapted from SKM, 2010a)* (pg. 1302 of pdf document) shows the position of the conceptual water table but does not indicate the groundwater elevation/head in the fractured rock aquifer. Based on the information provide in 3.1.1 *Topography* (pg. 58 of pdf document) of the MLP, Tertiary and Quaternary sediments appear to exist below the MLA. This should be shown in this diagram. In addition, provide a cross-section along the inferred groundwater flow with hydrostratigraphy and groundwater elevations marked, from west of the groundwater divide to Lake Gilles and slightly beyond, with a more appropriate vertical exaggeration (refer comment 65 in this table). Above the marker “6”, groundwater flow in the fractured rock, both up and down are indicated, this is unlikely, and it should only show one direction.	Review and provide an amended version of Figure 18. Provide the cross-section along the inferred groundwater flow. Refer to comment 49 in this table.
58.	Water Baseline Report, 6.4 Pre-mining water balance (pg. 1303 of pdf document)	It is not clear how *evapotranspiration* in Table 11 *Pre-mining catchment water balance* (pg. 1304 of pdf document), (~ 147 GL/yr) from the entire catchment can be significantly smaller than *Evaporation from Lake Gilles* (585 GL/yr) in Appendix C *Catchment Water Balance* (pg. 1389 of pdf document). Further details/clarification is required to explain the differences of evapotranspiration for the catchment and Lake Gilles. In addition, in 3.6.3 *Regional Hydrogeology* (pg. 108 of pdf document), Lake Gilles is described as *a narrow, approximately*	Review the water balance and provide further information and/or amend accordingly. Provide further information regarding the calculation of evaporation if the ephemeral nature of the lake was incorporated. Provide further information regarding the calculation of evaporation if the saline nature of the lake was incorporated.

#	MP section ref.	Description of matters raised	Further information required
		70 km long, terminal salt lake which acts as the main surface and groundwater discharge feature for this catchment. In the Executive Summary of the Wilcherry Project Weednanna Gold Deposit Pre-Feasibility Study – Water-baseline report (pg. 1253 of pdf document) and section 2.3.2 *Hydrology* it describes Lake Giles as one of the *ephemeral salt lakes.* The water balance for the catchment indicates *evapotranspiration* as the largest component. The problem is that when calculating *Evaporation from Lake Gilles* in Appendix C of the Water Baseline Report, no allowance appears to have been made for the lake being ephemeral and saline. Therefore, the lake evaporation appears to have been calculated as if it was a permanent freshwater lake. If so, it is likely to be incorrect. Evaporation would be very low if a solid salt crust was present and significantly lower (than freshwater) for saline water present. The estimation of accurate evaporation rates is important because even a small change in evaporation may have a large influence on the water balance.	
59.	Water Baseline Report, 7 Environmental values (pg. 1305 of pdf document)	The *Environment Protection (Water Quality) Policy 2015* Schedule 1 *Environmental values of waters* should also be consulted in this section. Clause 3 of Schedule 1 of this policy lists underground waters with a background TDS level of 3 000 mg/L or more, but less than 13 000 mg/L with a value for primary industries livestock drinking water.	Provide an updated discussion on the environmental values which takes into account the requirements set out in the Environment Protection (Water Quality) Policy 2015 Schedule 1.
60.	Water Baseline Report, 7.2.3.4 Water quality guidelines (pg. 1311 of pdf document)	Table 14 *Comparison of groundwater beneficial uses based on ANZECC guidelines* (pg. 1311 of pdf document) provides the mean TDS for the 'stock water wells' as 9310 mg/L. It would be more appropriate to provide a range of values, say 5%-ile to 95%-ile to reflect the variations. Mean or average is a measure	Review the data in the different sections of the mining proposal and provide updated consistent data accordingly or explain the range for TDS and explain the difference between the tables.

#	MP section ref.	Description of matters raised	Further information required
		of the normal distribution and groundwater quality data are seldom normally distributed. Section 3.6.7 *Baseline Groundwater Hydrogeochemistry* (pg. 115 of pdf document) and Table 3.6.2 *Stock water well quality data* (pg. 116 of pdf document) provide ranges for TDS, including significantly lower values than the mean presented in Table 14.	
Wilcherry Project Weednanna Gold Project Deposit Pre-Feasibility Study **Water Effects Assessment Report** (page 1391 of pdf document)			
61.	Water Effects Assessment Report 2.2 Regulator assessment requirements (pg. 1405 of pdf document)	Table 2-1 *Summary requirements of mining approvals relating to groundwater (DSD, 2020)* (pg. 1405 of pdf document) requires further information to meet the requirements from TOR006 and MG2a. The following aspects require additional detail: • (1) Seasonal fluctuations: there is no data presented from which to assess seasonal groundwater level and quality fluctuations. If no data is currently available to assess this, this should be acknowledged, and commentary made as to how this may impact the assessment. • (2) Cross Sections(s): The cross section in the baseline report does not meet the requirements of TOR006. The cross section should include the drillholes which have been used to inform the identification of the HSUs and the interpreted groundwater elevation, including the wells from which the groundwater elevations have been taken. • (3) The proponent is required to assess the environmental value of each aquifer according to the Environment Protection (Water Quality) Policy 2015. Table 2-1 indicated this has been done in the baseline report, however, this does not appear to be the case. Although environmental values have been discussed, the assessment needs to align with the Environment	Provide the following: • Provide data on seasonal fluctuations. If no data exists, a discussion on how this may, or may not impact the assessment should be provided. Should a lease be approved, additional baseline sampling (level and quality) will be required to support a PEPR submission. • Provide an updated hydrogeological cross section as per the data requirements stated in TOR006 clause 5 item 5.2.1.2. Specifically, include the location of representative drill log sites from which geological information was obtained (regional and tenement scale); and location of representative monitoring bores from which baseline groundwater information was obtained. • Provide a description of the environmental value of each aquifer consistent with the determination of environmental values presented in the Environment Protection (Water Quality) Policy 2015, or any subsequent updates.

#	MP section ref.	Description of matters raised	Further information required
		Protection (Water Quality) Policy 2015 as per the requirements of TOR006.	
62.	Water Effects Assessment Report 3.3 Environmental values (receptors) (pg. 1408 of pdf document)	Figure 3-1 *Identified potential water environmental values* (pg. 1409 of pdf document) has identified potential terrestrial GDEs. These terrestrial GDE's have not been carried forward to the exposure assessment, based on an analysis of the depth and salinity of *groundwater in the fractured rock aquifer within the Study Area.* The analysis should have focussed on the uppermost unconfined aquifer or water table referred to as Quaternary/Tertiary aquifer in Table 3.1 *Identified potential water-related environmental values* (pg. 1408 of pdf document).	Provide an updated description on identified groundwater-related environmental values to terrestrial vegetation with consideration of the water table aquifer and carry forward the GDEs to the exposure assessment as necessary.
63.	Water Effects Assessment Report 4.3.2.1 Groundwater quantity (pg. 1420 of pdf document)	Section 4.3.2.1 *Groundwater quantity* (pg. 1420 of pdf document) implies the Tertiary/ Quaternary sediments (model layer 1) and the Saprolite (model layer 2) are predicted to be likely/mostly dry, while the modelling reports implies, they are dry in regional areas (refer to 5.4.2.1 *Model Predictions and Uncertainty* (pg. 1462 of pdf document)). Further to this, the hydrogeological conceptualisation suggests stock wells likely draw water from 'lenses of fresher groundwater perched above the saline regional fractured rock aquifer'. This statement appears to support saturation in the Tertiary/Quaternary sediments in some locations, as does the Project area conceptual hydrogeological model.	Provide additional data to support either the presence or absence of saturated Tertiary/Quaternary sediments and their role in supporting stock water supplies. The conceptual hydrogeological model and numerical model should also be consistent, or an explanation provided as to why they differ.
64.		The following information has not been provided: - final water level of the pit lake and length of time to achieve this water level. - water level fluctuations and likely water quality over the period of time it takes for the pit lake to develop and achieve a steady state.	Provide the following information to support the assessment: • the estimated final pit lake water level and details of the method used to estimate this. • predictive hydrographs to demonstrate the groundwater system is in or is approaching equilibrium.

#	MP section ref.	Description of matters raised	Further information required
		Note that this required information was also not provided in the description of the site at completion (MLP Section 4.9.1 *Description of Site at Completion* (pg. 417 of pdf document)). Evidence to demonstrate that the 100-year model outputs represent or are approaching a new dynamic equilibrium is required. This is currently hard to gauge without any predictive hydrographs or model water balances for the predictive scenarios.	• volume of water lost to evaporation throughout the closure simulation. This should be provided in the model water balance for the predictive scenarios. Refer to MG2a for further guidance on the information required.
65.		Based on the Lake Gilles water balance (Figure 4-7 *Predicted water balance for Lake Gilles* (pg. 1424 of pdf document)), the modelling appears to have been run for 200 years, yet the closure results are presented for year 100. A rationale should be provided as to why results are presented for two different time periods.	Provide the 200-year model outputs or provide a rationale for selecting the 100-year model outputs to represent the closure scenario.
66.		Under *Operation Year 6*, it states: *Note, these wells likely draw water from lenses of fresher groundwater perched above the saline regional fractured rock aquifer and are likely disconnected from the fractured basement HSU. Therefore, the predicted modelling results eliminate any threat to stock water wells should a connection with the underlying aquifers exist.* No evidence has been provided to support this statement. In the absence of a water table map, this is an assumption.	Provide further information to support this statement and provide a water table map.
67.		Please refer to comment 58 of this table regarding the evaporation rates. Based on comment 58 it is uncertain if the information provided in Figure 4-7 *Predicted water balance for Lake Gilles* (pg. 1424 of pdf document) is accurate.	Review comment 58 of this table and the calculated water balance for the catchment and Lake Gilles and provide amended information accordingly.
68.	Water Effects Assessment Report,	Under *100 years post operation commencement*, it states:	Provide a discussion on alternative options considered for final landforms at mine closure.

#	MP section ref.	Description of matters raised	Further information required
	4.3.2.1 Groundwater quantity (pg. 1420 of pdf document) and 4.3.2.4 Aquifer disruption (pg. 1426 of pdf document)	*The presence of such a groundwater feature will eliminate the threat of potentially contaminated groundwater from site (should this occur) interacting with Lake Gilles.* Please refer to comment 20 of this table. The pit lake will be subject to evapoconcentration and increased salinity. Salinity in the lake may also show stratification and, as a result, high salinity water from the pit lake bottom may discharge to groundwater even if the hydraulic gradient is inward to the pit. Leaving salt lakes in an already salinized landscape will accelerate salinisation. Alternatives to leaving pit lakes should be considered by the proponent. For further information, refer to Project-3.3-Final-Report_27.10.21_approved.pdf (crctime.com.au).	Investigate and provide discussion on more sustainable alternatives to the proposed mine closure pit lake strategy. Provide further information to justify the chosen option for the final post closure pit strategy.
69.	Water Effects Assessment Report 4.3.2.2 Groundwater quality (pg. 1424 of pdf document)	As it is likely that the water quality is poor in the TSF and there is the potential for PAF material in the WRD, it is considered necessary to use particle tracking in the numerical groundwater flow model to demonstrate that particles beneath the TSF and WRD do in fact report to the pit during the closure simulation.	Review and use particle tracking in the model at the outer edges of the TSF and WRD. Provide the results of the particle tracking to demonstrate that any potential seepage from these facilities will report to the pits.
70.	Water Effects Assessment Report, Appendix A, Weednanna Gold Project Groundwater Flow Model Report (pg. 1438 of pdf document)	There are no model water balances provided for the predictive scenarios.	Provide water balances for the predictive scenarios.
71.	Water Effects Assessment Report, Appendix A, 2 Project Description	Refer to comment **Error! Reference source not found.**6 in this table, regarding the inconsistency between the water demand and cumulative curves in Fig. 2-1 *Mine Water demand* (pg. 1441 of pdf document).	Review comment 16 and provide revised water demand and cumulative curves. Provide further information to demonstrate that the mine water demand used in the numerical groundwater model is correct.

#	MP section ref.	Description of matters raised	Further information required
	(pg. 1440 of pdf document)		
72.	Water Effects Assessment Report, Appendix A, 4 Conceptual Hydrogeological Model (pg. 1444 of pdf document)	Please refer to comments 16, 49 and 57 in this table, regarding the conceptual hydrogeology in Figure 4-1 *Conceptual hydrogeological and hydrological model of the Project area (adapted from SKM, 2010a)* (pg. 1445 of pdf document).	Review comments 16, 49 and 57 in this table and provide an amended Figure 4-1 *Conceptual hydrogeological and hydrological model of the Project area*.
73.	Water Effects Assessment Report, Appendix A, 5 Groundwater Flow Model (pg. 1446 of pdf document)	Further information is required to clearly identify which layer relates to which boundary condition in Figure 5-1 *Model domain, grid and boundary condition* (pg. 1448 of pdf document)	Review Figure 5-1 and provide information to identify the boundary conditions for all layers.
74.	Water Effects Assessment Report, Appendix A, 5.2.3 Model Layering and Elevations (pg. 1448 of pdf document)	Figure 5-2 *Model cross-section with a vertical exaggeration factor of* 20 (pg. 1448 of pdf document) is a single cross section which describes/presents the model layering. However, additional information needs to be presented to illustrate the model layering such as isopachs of the model layers. The supporting data used to develop this model has not been provided. The thickness of model layer 3 (fractured rock aquifer) needs to be provided.	Provide isopachs for each model layer in the numerical groundwater flow model to better illustrate the model setup. Also provide a rationale and supporting data used to develop the model layers. Provide the model thickness or base elevation of layer 3 (fractured rock aquifer).
75.	Water Effects Assessment Report, Appendix A, 5.2.4.4 Rainfall Recharge	This section states: *The recharge-to-rainfall ratio has been estimated through model calibration and constrained to vary spatially between 0.01% and 1% of rainfall based on the chloride mass balance analysis reported in CDM Smith (2022).*	Provide an updated Table 3.6.5 *Calculated recharge* (pg. 120 of pdf document) with confined aquifer wells removed and provide amended text accordingly. Explain the inconsistency between episodic recharge conceptually and its model implantation.

#	MP section ref.	Description of matters raised	Further information required
	(pg. 1450 of pdf document)	Please refer to comment 14 in this table, regarding the incorrect use of confined wells for the chloride mass balance method and comment 15 in this table, for the conceptually episodic recharge expressed as a percentage of rainfall.	
76.		It is stated that '*The process of rainfall recharge to the water table is simulated using the MODFLOW Recharge package'*. The fractured rock aquifer is conceptualised as a confined aquifer (i.e. not the watertable) (CDM Smith 2022 – Baseline Report Section 3). It is not clear whether the recharge has been applied to the watertable only (layer 1) or to all three model layers. In addition, the model has been used to generate a spatial grid of recharge. It has not been identified if the predicted recharge zones have been validated in any way to physical controls such as soil type, outcropping basement, presence of quaternary sediments and topography.	Provide further information to clarify how recharge has been applied to the model, specifically the confined fractured rock aquifer. Provide discussion if this process is consistent with the hydrogeological conceptualisation. Include an assessment of the predicted spatial distribution of recharge and if this correlates with the physical setting.
77.	Water Effects Assessment Report, Appendix A, 5.2.4.6 Mine Pit and Underground Mine Dewatering (pg. 1451 of pdf document)	Table 5-1 *Mine elevations (AGS, 2022)* (pg. 1451 of pdf document) has stated the mine elevations used in the model as: • East Pit: 180mAHD • West Pit: 210mAHD These elevations vary from those presented in Section 4.4.2 *Open Pit* (pg. 277 of pdf document) of the MLP which show: • East Pit: 185 – 160 mAHD (Figure 4.4.2 *East Pit cross-section A-A* (pg. 278 of pdf document) and Figure 4.4.3 *East Pit cross-section B-B* (pg. 278 of pdf document)) • West Pit: 200 mAHD (Figure 4.4.4 *West Pit cross-section C-C* (pg. 279 of pdf document)) It is noted there are additional discrepancies within Section 4.4.2 *Open Pit* (pg. 277 of pdf document) of the MLP which need to be addressed.	Review the pit depth/elevations and provide discussion on the discrepancies of open pit elevations, including whether the impacts have been adequately assessed using the appropriate pit elevations.

#	MP section ref.	Description of matters raised	Further information required
78.	Water Effects Assessment Report, Appendix A, 5.2.4.7 Groundwater Abstractions (pg. 1451 of pdf document)	This document does not identify if the threshold approach described allows for/includes well losses. If it doesn't, the approach may be optimistic as real drawdowns will be larger than those computed by the model. If it does, please provide further information, details and calculations.	Provide further information on whether well losses are included (or not), and a discussion on the implications for modelled drawdown. Provide further details and calculations where well losses have been included/allowed for in the threshold approach described.
79.	Water Effects Assessment Report, Appendix A 5.3.2 Calibration Targets (pg. 1452 of pdf document)	This section states: *A total of 150 observation wells have been used as calibration targets, providing a good spatial coverage for the model domain (Figure 5-4 Observation well location*). Figure 5-4 *Observations well locations* (pg. 1453 of pdf document) appear to show approximately 30 wells, however, as quoted above, 150 observation wells were used.	Provide a map which shows all 150 observation wells and/or provide an amended statement accordingly.
80.	Water Effects Assessment Report, Appendix A, 5.3.3 Calibration Approach (pg. 1454 of pdf document)	This section states: *A highly parameterised modelling approach has been completed, where 10,254 pilot points have been used to calibrate hydraulic conductivity (including vertical anisotropy) and recharge-to-rainfall ratio. The use of pilot points is a calibration technique (Doherty et al., 2010) where parameters are estimated at discrete pilot point locations and then interpolated to all remaining model cells. This approach takes into account the spatial heterogeneity of calibration parameters while reducing modelling bias by allowing the observation data to provide insights into the spatial distribution of parameters (instead of the modeller predefining the parameter zones).* While DEM acknowledges this method is acceptable, the application of this approach to the model appears to be inconsistent with the conceptual hydrogeology.	Review and re- calibrate the hydraulic parameters and provide a reconciliation between the conceptual and numerical model.

#	MP section ref.	Description of matters raised	Further information required
		It appears that this approach has resulted in a groundwater model that appears to contradict the conceptual hydrogeology on several important aspects, including hydrostratigraphic units, hydraulic conductivities and groundwater recharge. For example, this modelling approach resulted in modelled hydraulic conductivities that appear to be about two orders of magnitude lower than those derived from actual field tests.	
81.	Water Effects Assessment Report, Appendix A, 5.3.5.1 Calibrated Parameters (pg. 1455 of pdf document)	The data obtained from the aquifer testing and the interpretated structural geology is not considered in any detail in the model set-up, nor is it used to validate the model outputs. Available data should be used to validate the estimated hydraulic conductivity zones in Figure 5-6 *Calibrated hydraulic conductivity for the fractured rock aquifer (Layer 3)* (pg. 1457 of pdf document) and in Appendix A *Calibrated Parameters* (pg. 1470 of pdf document) (Layers 1 and 2).	Review and validate the Layer 1, Layer 2 and Layer 3 hydraulic conductivity zones using the aquifer test data and the interpreted structural geology. Provide further information to address the following: • How do the hydraulic conductivities from the aquifer testing match the predicted hydraulic conductivity zones? • Are the hydraulic zones broadly supported by airlift yield data (i.e. high yields aligning with higher predicted k). • Are changes in the hydraulic conductivity zones support by the structural geology (i.e. changes in formations, faults etc). • How do the 'more transmissive zones corresponding with major structural corridors' described in the baseline report align with the predicted k zones?
82.	Water Effects Assessment Report, Appendix A, 5.3.5.2 Calibrated Potentiometric Surface (pg. 1456 of pdf document)	Calibrated hydraulic conductivity for the fractured rock aquifer (Layer 3) in Figure 5-6 *Calibrated hydraulic conductivity for the fractured rock aquiver (Layer 3)* (pg. 1458 of pdf document) in the vicinity of T2 to T8, although difficult to assess, seems to indicate around 0.001 to 0.005 m/d, 0.005 to 0.01 m/d and 0.01 to 0.05 m/d hydraulic conductivity. Please refer to comment 7 in this table. Table 3.6.4 *Fracture rock aquifer properties* (pg. 119 of pdf document) indicates that for T2 to T8, the hydraulic conductivity ranges between 0.17 and 3 m/d from actual tests, or about two orders of magnitude higher	Review the calibrated hydraulic parameters and provide a reconciliation between the conceptual and numerical model.

#	MP section ref.	Description of matters raised	Further information required
		than those from model calibration in Figure 5-6. For T1, Figure 5-6 indicates 0.1 to 0.564 m/d while Table 3.6.4 indicates 15 m/d hydraulic conductivity. It appears that the calibrated model and the conceptual hydrogeology are inconsistent.	
83.	Water Effects Assessment Report, Appendix A, 5.3.6 Sensitivity Analysis (pg. 1459 of pdf document)	This section states: *'The horizontal hydraulic conductivity of the fractured rock aquifer shows the highest sensitivity, which is expected given its control on the groundwater flow field.'* Please refer to comments 7 and 82 in this table. The statement above further emphasizes the need for consistency between conceptual hydrogeology and the numerical groundwater model and using/honouring hydraulic conductivities that reflect actual test results.	Review the calibrated hydraulic parameters and provide a reconciliation between the conceptual and numerical model.
84.	Water Effects Assessment Report, Appendix A, 5.4.2.1 Model Predictions and Uncertainty (pg. 1462 of pdf document)	Figure 5-12 *Predicted water balance for Lake Gilles* (pg. 1466 of pdf document) needs further explanation: An explanation is required on what is the area and its size for which the water balance is presented. Caption says *Predicted water balance for Lake Gilles* but text above refers to *a regional water balance has been completed to predict the local water balance around the lake area (Figure 5-12).* Provide references to where the values come from. Provide explanation why the storage component does not seem to change for the first nine years. Background inflow and ET are so dominant that it is unlikely changes can be seen on the scale provided.	Review and provide the information as requested.

#	MP section ref.	Description of matters raised	Further information required
85.		The conceptual model shows the Tertiary and Quaternary sediments to be saturated westwards between the pit and Lake Gilles, yet the model suggests: '*The Tertiary and Quaternary sediments and saprolite clay layers are predicted to be dry in the regional areas surrounding the Project, hence their results are not shown herein*'. If model layers 1 and 2 are dry and no specific water level data exists for these layers, what confidence can be assigned to the Layer 1 and Layer 2 calibrated hydraulic conductivities shown in Appendix A?	Provide information and a discussion on the groundwater modelling report to address this point.
86.		The reporting of the closure simulation modelling is currently lacking detail. Further information is required to address: • The method for accounting for ongoing evaporative losses in the numerical groundwater flow model is unclear. • The volumes of water lost to evaporation from the pit lakes has not been provided. • The final water level in the pits and time taken to achieve this level is also not provided. As outlined in TOR006 and MG2a, the proponent is required to provide evidence of: • the final water level of the pit lake and length of time to achieve this water level. • water level fluctuations and likely water quality over the period of time it takes for the pit lake to develop and achieve a steady state. • potential changes to groundwater.	Confirm that ongoing evaporative losses have been simulated in the model throughout the closure period and provide the estimated annual losses. Provide the details of the model setup used to estimate the evaporative losses. Provide an estimation of the final water level in the pits and time taken to achieve this level is also not provided. Provide an update to the modelling and Water Effects Assessment Report to address the requirements of TOR006 and MG2a.

#	MP section ref.	Description of matters raised	Further information required
87.		Figures 5-9 *Predicted groundwater drawdown (fractured rock aquifer) – end of morning (Operation Year 6)* (pg. 1464 of pdf document), 5-10 *Predicted groundwater drawdown (fractured rock aquifer) – end of operations (Operation Year 9)* (pg. 1465 of pdf document) and 5-11 *Predicted groundwater drawdown (fractured rock aquifer) – 100 years post operation commencement* (pg. 1466 of pdf document) illustrate the drawdown around the pits at various time periods. Figures of the predicted groundwater elevation contours at these time periods should also be provided to assess changes to the groundwater flow field. This is particularly important for the closure simulation. In addition, particle tracking should be used to demonstrate that potential seepage from the TSF and WRD will report to the pits.	Provide the predicted groundwater elevation contours at the end of mining operations and 100 year and/or 200 years post mine completion.
88.	Water Effects Assessment Report, Appendix A, 5.4.3 Scenario 2 – Groundwater Abstraction Capacity Assessment (pg. 1466 of pdf document)	Identify if the threshold approach described allowed for or included well losses. Please refer to comment 78 in this table.	Clarify if well losses are considered or not.
89.	Water Effects Assessment Report Appendix A, Figure 5-13 Predicted water supply from the wellfield abstraction and mine dewatering	There are no observations from exploration drilling or dedicated water wells in or near the proposed mine pits to validate the predicted pit inflows. The pit inflows could therefore be somewhat higher or lower than what is predicted.	Using the numerical groundwater flow model, estimate the possible pit inflow range (i.e. upper and lower bounds). Based on this assessment, consider if contingency measures are required to account for either an excess or deficit of water (TOR006 – clause 2.4.8).

#	MP section ref.	Description of matters raised	Further information required
	(pg. 1467 of pdf document)		
Appendix J – Mine Design and Engineering (page 2050 of pdf document)			
90.	Appendix J - BHM Memorandum (page 2050 of pdf) Section 2: Cyanides in Process Liquors at Weednanna	Document states *'With the recycling of process liquors, this might allow WAD cyanide levels to range between 50 and 100mg/l even whilst free cyanide levels are low. This may mean that AEP may have to remove or oxidise some of the cyanide species to remain within license conditions.'* This has not been considered in an environmental impact assessment.	Include an environmental impact assessment for the use of cyanide on the receiving environment. Where applicable include an appropriate environmental outcome, management strategies and measurement criteria.
Editorial and other matters			
91.	Editorial note	All reference to National Radioactive Waste Management Facility to be removed in any future documents as it is no longer relevant following the High Court decision.	For noting
92.	Editorial – *Landscape South Australia Act 2019*	Throughout this document and its Appendix, there is reference to the Natural Resources Management Act. This act has been superseded by the *Landscape South Australia Act 2019*. Additionally, the South Australian Arid Lands Natural Resources Management Region/Board is now the South Australian Arid Lands Landscapes Region/Board.	For noting
	For noting - 3.5.2 Mineralogical Assessment of Asbestiform Minerals, (Pg 105 of pdf document)	*Potential Risk Profile of Asbestiform Materials in the Application Area* The risk profile of asbestiform materials report states: "*Where pit depths are less than 40 m, the risk to workers with respect to potential exposure to chrysotile fibres is low. As pit depth increases, the potential of intersection of the chrysotile increases and therefore proactive management of*	In accordance with the *Work Health and Safety Act 2012* and *Work Health and Safety Regulations 2012*, should a lease be granted a Fibrous Minerals Management Plan will be required.

#	MP section ref.	Description of matters raised	Further information required
		potential chrysotile fibres in mine material will be required where the pit depth exceeds 40 m." The presence of asbestiform minerals means should a lease be granted a fibrous minerals management plan will be required as per the Work Health and Safety Act and Regulations.	
93.	Editorial - 3.6.1 Prescribed water Resources Area (pg. 108 of pdf document)	The MP refers to *"**2020** – Water Baseline Report (CDM, 2020), prepared by CDM Smith for Alliance…* and *"The **2020** Water Baseline Report and 2022 Water Effects Assessment Report are provided in Appendix E."* The Water Baseline Report is dated 2021, not 2020.	For noting
94.	For noting - 3.6.7 Baseline Groundwater Hydrogeochemistry (pg. 115 of pdf document)	Limited hydrochemistry data is currently available to support the assessment of seasonal variability. The current data set includes two sampling events over a 10-year period. 1.6 *Groundwater* in TOR 006 requires (but not limited to): • *a detailed baseline description of the groundwater characteristics and flow dynamics for aquifers within the application area which includes:* ○ *baseline groundwater hydrochemistry and mineralogy, including any seasonal fluctuations and spatial variability for each aquifer;* Further guidance is available in Mineral Regulatory Guidelines MG2a *Preparation of a mining application for metallic and industrial minerals.*	Should a lease be granted, additional baseline sampling (level and quality) will be required to support a PEPR submission. Refer to comment 61 in this table.
95.	For noting - 3.7.6 Water Protection Areas (pg. 154 of pdf document)	The SA Arid Lands Landscape Board has a Water Affecting Activities control policy for managing activities that may impact water resources in the region.	For any activities involving impacts to surface water resources, Alliance needs to be aware of their responsibilities and the permitting process through the SAAL Landscapes Board.

#	MP section ref.	Description of matters raised	Further information required
		This section does not list the Water Affecting Activities Control Policy as a requirement under the *Landscape South Australia Act 2019*.	
96.	For noting - 3.8 Vegetation, Weeds and Plant Pathogens (pg. 157 of pdf document)	While Buffel grass was not noted on the site, it has been recorded around some of the main roads/tracks in the area. Vehicle hygiene and surveys will be essential to prevent introduction or establishment.	For noting.
97.	For noting - 3.8 Vegetation, Weeds and Plant Pathogens (pg. 157 of pdf document) and 7.3. Native Vegetation: Context (pg. 445 of pdf document)	Table 3.8.2 *Likelihood of occurrence assessment for EPBC listed threatened species* (pg. 160 of pdf document) has listed Nodding rufous hood (*Pterostylis mirablisis*) as present on site. In section 7.3.1 *Context* it is stated: *Only one individual Nodding Rufoushood was observed in atypical habitat for the species, which will not be impacted by the project, therefore impacts to the species are not considered likely.* The Nodding rufous hood was observed in a survey undertaken in 2018 but not observed in a survey undertaken in 2020. It has been identified to occur primarily among rocks on hilly slopes in *Melaleuca uncinata* (Broombush) scrub but will also occur in *Callitris* and eucalypt woodland on brown stony loams and rocky mallee heathland. While Nodding rufous hood was not observed in the 2020 survey, there is a likelihood that it could be present at its last location and elsewhere within the application area. It is therefore recommended that should a lease be granted; an annual vegetation monitoring program be implemented to ensure the identification and protection of this EPBC listed species. The vegetation monitoring program is to be undertaken between October to January, the estimated time of emergence of this species.	For noting. Should a lease be granted it is expected that this matter will be addressed in the PEPR.

#	MP section ref.	Description of matters raised	Further information required
98.	For noting	Details of the well audit should be provided to DEW for inclusion in the state database.	Contact DEW for further information
99.	For noting - 4.4.9 Sequence of Mining and Rehabilitation Operations	*Rehabilitation Strategies and Timing* (pg. 299 of pdf document) It states that '*it is intended that the mine operations area fencing will remain (subject to agreement with the landholder) with gate/s installed to allow the Station Manager to manage livestock movements*.' Retaining the fencing or any other mining infrastructure will result in a residual liability post mining. Should a lease be granted, payment into the Mining rehabilitation fund may be required at tenement surrender to manage ongoing liabilities.	For noting
100.	For noting - 4.7.6 Site Security - Fire Emergency Response Facilities (pg. 408 of pdf document)	A review of DEW records identifies the Nonning Bushfire of 25/12/2022 was located approximately 7.8 km north-west of the proposed mine. This was a substantial fire, burning an area of approximately 1255 Ha. DEM recommends a bushfire management Plan be developed due to the remote location.	For noting – should a lease be granted a bushfire management plan, incorporating evacuation procedures should be prepared.
101.	For noting - 7.7 Surface Water (pg. 467 of pdf document)	*Surface Water Quantity* (pg. 468 of pdf document) states: *'Some change in flood depths and velocities is likely where infrastructure (such as the WRF, the mine access road or wellfield pipelines) intersects ephemeral drainages may alter the quantity of water reporting to surface water environmental values (EVs) such as terrestrial vegetation or stock dams outside of the MLA.'* A Water Affecting Activity permit will likely be needed for works that intersect any ephemeral drainage lines and for the proposed culverts for stormwater drainage.	Contact the SA Arid Lands Landscape Board for further information.

#	MP section ref.	Description of matters raised	Further information required
102.	For noting - 7.8.4 Groundwater, Control and Management Strategies (pg. 489 of pdf document)	Within both the text and in Table 7.8.2 *Control measures, environmental outcomes and draft measurement criteria – ground water* (pg. 491 of pdf document) reference is made to licence conditions. The Wilcherry – Weednanna project is not located in a prescribed wells or prescribed water resources area and a water licence is therefore not required. Water resources will be managed via Water Affecting Activity permits and the Mining Act (i.e., compliance with approved leading indicator and measurement criteria). Note that well permits are still required for all water wells and that all water wells require drilling and installation by an appropriately qualified driller and construction according to *Minimum Construction Requirements for Water Bores in Australia (MCR).*	For noting - Department for Environment and Water license conditions should not be used or referred to in groundwater control and management strategies and measurement criteria.
103.	For noting - 7.12.1 Air Quality, Context (pg. 517 of pdf document)	Throughout this section and in Table 7.12.1 *Mine operations estimated dust emissions* (pg. 521 of pdf document) it has referred to a total suspended particulates of PM25, this should be PM2.5. For example, on pg. 519 of pdf document, under Figure 7.12.1, it states: *"Emissions were estimated as total suspended particulates (TSP), PM_{10}[23] and PM_{25}[24] for each year of operations".* Similarly, the foot note at the bottom of pg. 519 of pdf document states: *"Dust particles size fraction with aero dynamical equivalent diameter up to 25 micron".*	For noting.
104.	For noting - *Environmental Protection and Biodiversity*	Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Matters of National Environmental Significance (MNES)	DEM notes the recent correspondence with the Commonwealth Department of Climate Change, Energy, the Environment and Water regarding the intent to make a referral under the EPBC Act.

#	MP section ref.	Description of matters raised	Further information required
	Conservation Act 1999	1. Western Grasswren (*Amytornis textilis myall*) EPBC (Vu) – several records in area. Although 'atypical', vegetation type 5 can be considered a preferred habitat. 2. Malleefowl EPBC (Vu) – area likely to provide habitat but not the sandy mallee that is preferred. 3. Southern Whiteface EPBC(Vu) – only recently listed (after documents prepared). Likely to be a significant population in area. Also State listed Avifauna likely to use habitats: 1. Gilbert's Whistler – R 2. Restless Flycatcher -R 3. Copperback Quailthrush (split from Chestnut QT) – R 4. Pink Cockatoo (western ssp) – R 5. White-browed Treecreeper – R 6. Little Eagle – V The orchid (*Pterostylis mirabilis*) Nodding Rufous Hood, EPBC (Vu) identified in earlier 2019 survey, but not most recent survey 2022. While not observed at last survey it is likely to be present. The Report indicates that the orchid plant community located within the area will not to be impacted. Note: previous Wilcherry Hill Project, IronClad Mining EPBC Referral 2010-5478 on the same EL and the old production tenement (ML 6390) was determined to be a controlled action, Malleefowl and Slender-billed Thornbill (latter, no longer EPBC listed).	