

Information Request Response Summary Document

Environmental Authority EPML00911413
Wet Season Release EA Amendment Application
Reference Number A-EA-AMD-100690117

Information request response due **30 September 2025**.

This document provides a directory to relevant sections of supporting reports where the items of the information request for A-EA-AMD-100690117 (dated 18 September 2024) have been addressed.

Item	Description	Information Request	Response/Relevant Supporting Report Section(s)
1	In relation to the relevant items requested in this information request, provide all receiving environment data available to date in a compiled Microsoft Excel sheet format (see attachment 2 for example template). The assessment of the data for derivation of water quality statistics, as sought throughout this information request and presented in the application material, must also be provided in a Microsoft Excel sheet format.		An Excel workbook containing all receiving environment data from 2014-2024 and assessment of data for derivation of site-specific contaminant limits was provided to DETSI via email on 24 July 2025. The dataset was amended to reintroduce trigger levels and provided with this Information Request (IR) Response on 31/10/2025. Additionally, a supporting spreadsheet for historical (2010-2025) water quality statistics presented in CCPL (2025) Section 5.6, Tables 5-10 is provided with this IR Response.
2	It is understood that cobalt is the limiting factor which dictates the proposed background receiving waters flow, dilutions and model outputs proposed and described in the application. The proposed cobalt water quality objectives specified in Table 9 of Capricorn Copper Pty Ltd (2024)¹ and further presented in Hydrobiology (2024)² have been derived using the species sensitivity distribution method (SSD). It is acknowledged that various desktop methods have been utilised in the application to derive water quality objectives, however, in the case of cobalt the SSD method was adopted. Any significant deviation, from the national water quality guideline values, in this instance the use of the SSD methodology, must include the information outlined adjacent,	Provide an updated assessment which includes: a) All ecotoxicological inputs to the SSD provided in a tabulated format as per the ANZG technical briefs (i.e., taxonomic group, species, life stage, exposure duration, test endpoint, water parameters, toxicant concentration, reference). b) The derivation method used, including the version of ssdtools and representative statistical curves selected for the weight- average, and justification for their inclusion. c) As per ANZG guidance, sufficient data are available in the literature for the derivation of an updated high reliability chronic guideline value	CCPL are no longer pursuing the derivation of cobalt SSD. Site-specific cobalt trigger levels and contaminant limits are proposed in response to IR item 3.

¹ Capricorn Copper Pty Ltd, Capricorn Copper Mine Supporting Information Report, EA Amendment Application for Water Releases (Conditions C2 & C3), July 2024

² Hydrobiology Pty Ltd, *Receiving Environment Environmental Risk Assessment, Environmental Authority Amendment*, July 2024

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	at a minimum, to justify any deviation from the current ANZG ³ default guideline value of 1.4 micrograms per litre (ug/L).	using EC10 (10% effect concentration) data. No higher endpoint or acute data should be used and modified to fit on the SSD. d) Where a site-specific toxicity guideline is derived, this must be compared to the historical water quality for event flows at the upstream monitoring location (i.e., GPU1) as per the guidance provided in item 6.	
3	The proposed site-specific water quality objectives of the receiving environment as specified in Table 9 of Capricorn Copper Pty Ltd (2024) reference wet and dry season values. These seasonal data sets presented in the application to support the water quality objectives are arbitrarily based on calendar months and do not specifically relate to the discharge regime proposed. This affords substantial variability due to the fluctuation of water flow throughout the receiving environment during the year. The variability associated with these seasonal datasets creates a high risk for inaccuracy in the development of appropriate water quality objectives and related release conditions. The seasonal datasets (i.e., wet and dry season) provided are required to be replaced by references to background flow rates relevant to the proposed release. The administering authority's position is that appropriately justified receiving environment limits would be applied in the environmental authority (EA), which is consistent with the current structure of EA EPML00911413 (the EA).	Provide updated application material which details and includes the following; where applicable: a) Provide and assess two separate sets of water quality objectives for the receiving environment which are derived based on measured background flows in Gunpowder Creek as event flow (≥ 2 m³/s) and low flow (< 2 m³/s). These datasets will replace the wet and dry season datasets values. b) Provide updated application material that replaces the proposed receiving environment water quality objectives identified in Table 9 of Capricorn Copper Pty Ltd (2024) with appropriate and justifiable trigger level and contaminant limit values. In development of trigger levels and contaminant limit values the following must be considered and implemented: i. The proposed event flow water quality objectives should be used for designing the release limits and used as the basis for the receiving environment contaminant limits during release periods with justification provided. ii. The low flow periods should be monitored with water quality objectives potentially treated as trigger levels for investigation, noting justification must be provided.	A 2014-2024 dataset (complete with low flow (< 2 cumecs) and event flow (> 2 cumecs) calculated SSGVs, assessment against receiving sites and proposed WQO discussion) were provided to DETSI on 14/2/2025. DETSI requested further information in regard to the dataset and supporting WQO discussion on 28/2/2025. CCPL provided a response email on 6/3/2025 and updated event flow dataset on 12/3/2025 (release event dates excluded). DETSI provided a draft Part 1 approach to short-term compliance assessment of the receiving environment on 28/4/2025 and draft Parts 1, 2 & 3 (described by DETSI as "proposed EA framework") on 13/06/2025. CCPL provided feedback on the draft approach on 15/7/2025, with revised contaminant limits provided via email on 24/7/2025 and dilution modelling on 1/8/2025. DETSI and CCPL technical leads attended a technical workshop on 18/9/2025. Outcomes of the workshop in relation to receiving environment water quality included request from DETSI to reintroduce long-term trigger levels based on 80th percentile of GPU1 data at flows > 2 m³/s or default guideline values (whichever is highest). The updated dataset will be provided with this IR Response on 31/10/2025. Application material has been updated to remove

³ Australian and New Zealand Guidelines for Fresh and Marine Water Quality

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		iii. If appropriate, no flow periods should be reviewed separately to determine if separate water quality objectives are required and need to be derived for this period (or included with low flow).	proposed amendments from Section 4.2 of the Supporting Information Report (CCPL 2024) which are now provided in a track-changed draft EA as Appendix A. Appendix A includes interim and long-term contaminant limits and long-term trigger levels applicable to no/low and event flow periods. Discussion on the derivation of contaminant limits and trigger levels, including a summary of DETSI's proposed EA framework, is provided in updated Section 5 of CCPL (2025). Specific limits and trigger levels are provided in Table 3 and Table 4 of CCPL (2025). No flow periods were assessed separately and it was determined that separate water quality objectives would be of little value. It is proposed that no flow is included with low flow for assessment purposes.
4	Table 9 of Capricorn Copper Pty Ltd (2024) proposes the inclusion of highly disturbed (HD) and moderately disturbed (MD) zones to meet proposed water quality objectives within the receiving environment. As per Figure 2-1 of the attachment within Hydrobiology (2024), it is understood that monitoring locations GPA2 to GPD1 are classified as HD and all outer upstream and downstream monitoring locations are classified as MD. Classification of the HD zones require further justification and must be supported by an appropriate detailed risk assessment which is independent of the risk assessment provided for the modelled data for the proposed release. The risk assessment must clearly demonstrate that the current conditions are consistent with a HD or MD classification for each monitoring site and each parameter.	Revision is required for the HD zone extent, including providing a clear justification of the inclusion of each sampling site based on historical data compared to the proposed water quality objectives and historical background data at relevant flow (i.e., >2 m³/s). In addition to this, provide revised application material which addresses the following: a) The boxplots provided in Hydrobiology (2024) indicate very high variability at most monitoring locations, however, it has been advised outliers were excluded from the dataset. Given this, the high variability must be investigated and addressed in the risk assessment. b) The inclusion of GPD1 (or other sites below the confluence with Greenstone Creek) in the HD zone is unlikely to be supported based on the existing dataset provided. Any extension of the HD zone past the Greenstone Creek confluence to GPD1 requires further justification. c) Detailed historical data summaries (number of datapoints, 20th, 50th, 80th, 95th percentiles)	DETSI's draft EA framework (Parts 1-3), developed after the provision of this IR, no longer relies on classification of the moderately and highly disturbed zones. Datasets and derived WQOs provided to DETSI between 14/2/2025 and 12/3/2025 accounted for the classification of HD and MD zones. Datasets and derived contaminant limits provided to DETSI on 24/7/2025, in consideration of DETSI's proposed EA framework, are not influenced by disturbance classifications and therefore amendments to Hydrobiology's report (Hydrobiology 2024) are no longer required in response to this IR item. Hydrobiology (2024) will not be relied on to support amendments to the EA proposed in this application and has been removed as an Appendix to CCPL (2025). Historical data summaries (2020-2025) have been provided in Section 5.6 of CCPL (2025). The historical data has been presented in box plots per sample site, over time and in tables (number of datapoints, 20th, 50th, 80th, 95th percentiles). As per DETSI's proposed EA framework, GPA2 derived

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		must be provided in tables. While the boxplots provided in Hydrobiology (2024) are displaying similar data, some of the values cannot be read. For example, the 95th percentiles cannot be distinguished in many of the boxplots provided. This is critical to the assessment of a potential exceedance. Tables with actual values are required to define the applicable background levels and compare with the proposed water quality objectives. d) Hydrobiology (2024) identified that sulfate, cobalt and copper are the main drivers of the HD classification downstream from the discharge. As such, only these three toxicants should have less stringent water quality objectives based on the HD classification, and only if this is justified for each background flow category (>2 m³/s and <2 m³/s). It is advised under no circumstances should higher water quality objectives be adopted for other toxicants or for periods where exceedances have not been observed in the past. e) The high variability observed for cobalt in the dry season at GPA2, as per Figure 3-20 of Hydrobiology (2024), requires further investigation and discussion in relation to setting water quality objectives for the remainder of Gunpowder Creek. The potential influence of uncontrolled seepage during low/no flow does not justify setting less stringent water quality objectives for sampling sites downstream from the discharge, especially for water quality objectives related to assessing the potential impact of the discharge occurring during flows >2 m³/s.	site-specific contaminant limits have been applied to assessment of GPD1 site data during >2 m³/s flows in the interim period only. Long-term site-specific trigger levels and contaminant limits have been derived from GPU1 during >2 m³/s flows. Refer to updated CCPL (2025) Sections 5.4 and 5.5.
5	It is understood that within Table 9 of Capricorn Copper Pty Ltd (2024) a lower level of protection (90% species protection level) was applied for several toxicants in the proposed receiving environment water quality objectives. Unless the historical receiving environment dataset demonstrates that	Revise the proposed water quality objectives in the HD zone for all metals that have not historically exceeded ANZG (2018) guideline values adopted (including arsenic, lead, zinc). In particular, the relevant level of species protection applied regardless of the disturbance	As per response to IR item 4, DETSI's draft EA framework (Parts 1-3), developed after the provision of this IR, no longer relies on classification of the moderately and highly disturbed zones.

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	concentrations of these toxicants consistently exceeded the ANZG (2018) default guideline values to justify such a change, a lower protection level should not be adopted. If a change is required, a detailed risk assessment for each toxicant must be provided.	classification must be 95%, not 90%.	Datasets and derived WQOs provided to DETSI between 14/2/2025 and 12/3/2025 only considered 90% species protection levels within the HD zone for parameters that historically exceeded the 95% species protection levels. Datasets and derived contaminant limits provided to DETSI on 24/7/2025, in consideration of DETSI's proposed EA framework, were not influenced by disturbance classifications and therefore no 90% species protection levels were proposed. This was maintained within the post-workshop dataset with reintroduction of long-term trigger levels. CCPL (2025) Section 5 has been updated to reflect the calculation of new contaminant limits and trigger levels.
6	As stated above, Table 9 of Capricorn Copper Pty Ltd (2024) identifies the proposed water quality objectives which are based on Hydrobiology (2024). These water quality objectives have been derived using novel desktop methods such as the Biotic Ligand Model (BLM). The use of unvalidated and non-precautionary methods for the derivation of water quality objectives, that are not consistent with the national guidelines, require significant validation and investigation prior to implementation into an application. Given the use of BLMs for a discharge is unvalidated and untested and therefore considered a high risk, this approach is not supported. It is critical to provide a risk assessment that places any modified/proposed water quality objectives back into the local site context to demonstrate that the water quality objectives are sufficiently precautionary considering local background levels. The values proposed by Hydrobiology (2024) are largely exceeding background concentrations measured to date. Based on the available information and historical water quality datasets provided in the application and available on departmental records, revision of cobalt, copper, sulfate and electrical conductivity (EC) water quality objectives is required to ensure these parameters will not allow for a worsening of the water quality. The following critical points are identified: <i>Copper</i>	Provide updated application material which revises the cobalt (as per item 2), copper, sulfate and EC water quality objectives. This revision is required to ensure modified/proposed water quality objectives do not allow for a worsening of the water quality compared with historical levels to date. In particular, the derived values must be placed in the context of the historical dataset to propose locally relevant and conservative water quality objectives: a) The proposed water quality objective, which are more lenient than default guideline values, cannot be set at concentrations that largely exceed the 95th percentile of background/upstream concentrations measured to date. Any extreme/outlier values must be removed. b) Figures to be provided must be informative and should be accompanied by summary statistics (including the number of datapoints and 50th, 80th and 95th percentiles for each site) and provided in tabulated format for the department to be able to assess the application and confirm the risk level. c) Proposed water quality objectives should be	CCPL are no longer pursuing the derivation of copper BLM derived WQO and an alternative precautionary approach has been applied. Datasets and derived WQOs provided to DETSI between 14/2/2025 and 12/3/2025 were developed without the application of BLM method and in line with directives provided in IR points a, c, d, e and f. Datasets and derived contaminant limits provided to DETSI on 24/7/2025 were developed in consideration of DETSI's proposed EA framework which does not apply trigger levels. CCPL considered DETSI's proposed EA framework to supersede directives provided in IR item 6. In the 18/9/2025 workshop, DETSI requested reintroduction of trigger levels for the longer term period only. CCPL have prepared an updated dataset to present all site-specific contaminant limit and trigger level calculations to be submitted with this IR Response on 31/10/2025.

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	a) The proposed copper concentration of 0.05 mg/L for both the HD and MD sites corresponds to the 80th percentile of the predicted no effect concentration (PNEC) values produced by the m-BAT model based on data collected during the wet season only. The value of 0.05 mg/L was rounded up from 0.04724 mg/L, which represents a ~ 6% increase for the toxicant which is not appropriate. b) The concentration of 0.05 mg/L is more than double the maximum concentration (0.021 mg/L) recorded in Gunpowder Creek in the dataset used for the biotic ligand models (BLM) exercise. The 80th percentile of historical copper concentrations presented for flows >2 m³/s was also <0.02 mg/L at all monitoring sites (Figure 3-11, Hydrobiology (2024) and <0.025 mg/L in the dry season (Figure 3-20, Hydrobiology (2024)). The 95th percentiles are also well below 0.05 mg/L in Gunpowder Creek. As such, the historical records are suggesting a proposed copper concentration of 0.05 mg/L would allow for a worsening of the receiving water quality. c) Following the BLM assessment undertaken, Hydrobiology (2024) state <i>“it is recommended that monitoring prior to the release will occur within the receiving environment to understand prevailing moderating factors (pH, DOC and Ca) concentrations for which releases are to be adjusted”</i>. Despite this recommendation, the application does not provide any indication that the release will be modified based on pH, Dissolved Organic Carbon (DOC) and Calcium (Ca) in the receiving environment. Based on the above, the copper concentration of 0.05 mg/L proposed as a water quality objective in the receiving environment is required to be modified following a precautionary approach. <i>Sulfate and EC</i>	compared against historical downstream data (statistics as per above) to check their relevance noting that some infrequent exceedance potentially related to release does not mean they are not suitable. d) Clear comparisons of the historical dataset with the proposed water quality objectives to demonstrate the relevance and conservativity of water quality objectives selected. e) Provide an updated assessment which adopts a contaminant limit based on an EC water quality objective for the catchment (e.g., base flow) rather than deriving one for sulfate. It is also advised sulfate should continue to be measured for interpretation purpose and a relevant water quality objective provided to support the interpretation. f) It is recommended to revise the copper water quality objective and adopt the 95th percentile of historical concentrations at GPU1 as an event-based water quality objective for assessing release conditions.	Given that the application of BLM method and derivation of a sulphate WQO using an international model are no longer relied on in the development of proposed contaminant limits, amendments to Hydrobiology’s report (Hydrobiology 2024) are no longer required in response to this IR item. Hydrobiology (2024) will not be relied on to support amendments to the EA proposed in this application and has been removed as an appendix to CCPL (2025). New flow (<2 m³/s and >2 m³/s) and site-specific contaminant limits, trigger levels and published Gulf EC guideline values have been proposed for the receiving environment in the amended supporting document (CCPL 2025), Sections 5.4 and 5.5, Tables 3 and 4, and justified in Sections 5.6.1-5.6.7. Summary statistics (number of datapoints, minimum, 20th, 80th and 90th percentiles and maximum) have been provided within the dataset provided to DETSI on 24/7/2025 and retained with this IR Response and supporting dataset. All interim receiving environment contaminant limits are based on 95th percentiles of site data or default guideline values for the protection of aquatic ecosystems. All long-term receiving environment contaminant limits and trigger levels are based on 80th and 95th percentiles of GPU1 data (respectively) or default guideline values for the protection of aquatic ecosystems. The historical dataset has been compared with proposed Gulf EC and site-specific dissolved aluminium, cobalt, copper and zinc contaminant limits and trigger levels in CCPL (2025) Section 5.6.

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	a) Hydrobiology (2024) highlights the approach to rely on sulfate concentrations to derive objectives for both sulfate and EC. It is acknowledged sulfate is typically strongly associated with site impacts and it is strongly correlated with EC, however, the department does not support placing the emphasis on sulfate to derive triggers and water quality objectives for both EC and sulfate. b) As there is not a current recognised sulfate guideline value applicable to the catchment at the site, the application has used an international method to derive the water quality objectives. The administering authority has concerns with this method as it allows for calculating less stringent values based on hardness and chloride concentrations. The results must be placed into context of historical observations in order to assess the potential risk to the receiving environment. c) Hydrobiology (2024) suggests to default sulfate to 500mg/L during >2 m³/s due to lower hardness during higher flows, which was taken into account for the calculation of release dilutions (the proposed maximum 10,000mg/L of sulfate diluted at 1:25 is approximately 400mg/L). This is not reflected in the proposed water quality objectives for the receiving environment as this refers to the wet and dry season estimates, both including lower creek flows. d) Given the proposed EC values are derived directly from the sulfate concentrations, the same concerns described above apply for the proposed EC water quality objectives.		
7	The draft ANZG (2023) ⁴ guideline values for copper are presented for various DOC concentrations relevant to Gunpowder Creek. The application does not include any investigation of the correlation between measured dissolved	Provide an investigation of the correlation between measured dissolved copper and DOC concentrations to determine if a water quality objective based on a DOC-corrected guideline value is suitable.	An investigation on the application of a DOC-adjusted guideline value for copper, using the average DOC concentrations of HD sites, determined that there was no benefit to applying this method.

⁴ Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Toxicant default guideline values for aquatic ecosystems protection, Dissolved copper in freshwater, Technical Brief, September 2023.

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	copper and DOC concentrations at the site. As such, it is unknown whether a water quality objective based on DOC concentrations is appropriate. With respect to the information provided to date, the high variability of DOC is limiting the administering authority's ability to support a DOC adjusted guideline value for copper for the site.		
8	It is understood there are two different terminologies used in the application being '<i>contaminant limits</i>' and '<i>water quality objectives</i>'. For reference, the proposed contaminant limits refer to the discharge limits proposed in Table 4 of Capricorn Copper Pty Ltd (2024), and water quality objectives refer to the receiving environment objectives in Table 9 of the Capricorn Copper Pty Ltd (2024). The proposed removal of condition C2-3 of the EA is not supported due to the significantly high risk of environmental harm associated with the proposed amendments.	Provide updated application material which rectify the issue regarding the removal of condition C2-3 of the EA.	CCPL did not proposed to delete condition C2-3 of the EA. CCPL proposed to amend condition C2-3 with the use of a 3-point rolling average, as per Section 4.2.2 of the original supporting information document. This amendment is no longer proposed, and is addressed further in IR item 14 response. The updated application material uses different terminologies again, based on feedback and direction from DETSI in the 18/9/2025 workshop. '<i>Contaminant release limits</i>' and '<i>release limits</i>' refer to the discharge limits proposed in CCPL (2025) Section 6.1 Table 5 and CCPL (2025) Appendix A, Schedule C – Table 2. This terminology is unchanged from the current EA. '<i>Interim contaminant limits</i>' and '<i>receiving waters interim contaminant limits</i>' refer to receiving environment water quality compliance limits applicable for a 3-year period, proposed in CCPL (2025) Section 5.4 Table 3 and CCPL (2025) Appendix A, Schedule C – Table 4. These limits are based on 95th percentiles of site data or default guideline values, whichever is higher. '<i>Contaminant limits</i>', '<i>receiving waters contaminant limits</i>' and '<i>long-term contaminant limits</i>' refer to receiving environment water quality compliance limits which supersede interim contaminant limits after a 3-year period, proposed in CCPL (2025) Section 5.5 Table 4 and CCPL (2025) Appendix A, Schedule C – Table 5. These limits are based on 95th percentiles of GPU1 data or default guideline values, whichever is higher. '<i>Trigger levels</i>', '<i>receiving waters trigger levels</i>' and

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			<i>'long-term trigger levels'</i> refer to receiving environment water quality compliance limits which supersede interim contaminant limits after a 3-year period, proposed in CCPL (2025) Section 5.5 Table 4 and CCPL (2025) Appendix A, Schedule C – Table 5. These levels are based on 80 th percentiles of GPU1 data or default guideline values, whichever is higher.
9	Hydrobiology (2023)⁵ nominates the environmental values of the receiving environment (i.e., Gunpowder Creek, Greenstone Creek and Magazine Creek) as highly and moderately disturbed aquatic ecosystems, stock watering, secondary recreation, visual appreciation, industrial and cultural and spiritual values. It is understood the most conservative environmental value of Gunpowder Creek is the aquatic ecosystem values which likely influence the proposed water quality objectives and contaminant limits within the application. Given the receiving environment contains several environmental values, the application must also investigate all identified environmental values to demonstrate these values have been considered in the application and are also aimed to be protected.	Provide a risk assessment against all identified environmental values listed within the receiving environment. This must include a description of what exactly these environmental values are and where they are located in relation to the facilities, as well as a risk assessment against relevant national water quality guideline values applicable to them.	Hydrobiology's risk assessment report will not be relied on to support amendments to the EA proposed in this application. A risk assessment against all identified environmental values is now provided in updated Section 6.3.3 and Section 8.3 of CCPL (2025).
10	Hydrobiology (2023) nominates the receiving environment as 'highly disturbed waters' within Gunpowder Creek and Greenstone Creek (adjacent to the site), and 'moderately disturbed waters' within Gunpowder Creek (downstream of the site). In accordance with section 15 of the EPP (Water) ⁶ the management intent of 'highly disturbed waters' is to ensure the measures for the indicators for all environmental values are progressively improved to achieve the water quality objectives for the water. Based on the available information and historical water quality datasets provided in the application and available on departmental records, several proposed water quality objectives would allow for a worsening of the receiving environment water quality which does not meet the management intent of those waters.	Provide updated application material which details how the proposed water quality objectives of the receiving environment align with the relevant management intent in section 15 of the EPP (Water).	DETSI's draft EA framework (Parts 1-3), developed after the provision of this IR, includes application of interim and long-term contaminant limits that do not rely on highly-disturbed default guideline values. CCPL have undertaken multiple seepage interception improvement works and it is anticipated that water quality at adjacent sites (HD zone) will improve over the coming years in response to the works. Recalculation of site-specific contaminant limits and trigger levels at the end of the interim period and into the future will reflect improving water quality conditions and in doing so this approach is aligned with the management intent of HD waters in the EPP (water).
11	If any of the receiving environment water quality objectives related to the release period are modified, the previously	Provide updated application material with revised proposed release limits to ensure consistency with any/all revised	Schedule C – Table 2 of CCPL (2025) Appendix A has been updated to include revised release limits based

⁵ Hydrobiology Pty Ltd, *Capricorn Copper Mine, 2023 Post-wet REMP Report*, September 2023

⁶ Environmental Protection (Water and Wetland Biodiversity) Policy 2019

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	proposed release limits must be revised. This is required to ensure they are consistent and are unlikely to cause in exceedance in the water quality objectives considering allowances under the EA release condition.	water quality objectives.	on new results from the water treatment plant over the 2024/25 wet season. Dilution modelling with updated release limits and receiving waters contaminant limits was then used to determine new dilution ratios (see updated CCPL (2025) Section 6).
12	Amongst others, the following amendments to condition C3-1 are proposed: a) One sample taken within <u>six</u> hours of the release event commencing; and b) For EC and pH at Creek Monitoring Stations GPD1 and GPD2 (Real-time Monitoring Stations), every five (5) minutes, continuously, when water is present. It is understood the reduction of sample collection frequency from two hours to six hours for the first day of the release is due to logistical constraints with sampling. Furthermore, it is stated the revised receiving environment monitoring frequency is to “reflect standard monitoring frequencies of site-specific resource EAs” and also advises that a single surface water sampling event can take in excess of four hours to complete. For information, monitoring frequencies for receiving environment water sampling in resource EAs are determined based on several site-specific factors associated with a resource activity and therefore standard monitoring frequencies do not exist. It is acknowledged that the proposed addition of automated continuous monitoring of pH and EC at GPD1 and GPD2 may compensate for the reduced sampling frequency, however further justification is required to support this determination. Further, there is no upstream reference proposed for comparison and the first point monitored (GPD1) is located many kilometres downstream from the discharge.	Provide evidence to support the proposed amendment to the monitoring frequency including consideration of how known factors, such as controlled release commencement, have been incorporated into such considerations. Provide details of actions taken by Capricorn Copper Pty Ltd currently to meet the monitoring frequency currently stated in the EA (i.e. <i>one sample taken within two hours of the release event commencing.</i>) Provide evidence to demonstrate that one sample within six hours of the release event commencing appropriately captures impacts from the release. In order to avoid limiting the utility of the data collected during the monitoring of the release, provide updated application material which includes provision of continuous monitoring at a reference location for interpretation purposes.	There appears to be a misunderstanding between the concepts of “collection frequency” and “sampling event duration”. The purpose of requesting an extension to the sampling event duration from two to six hours is based on sampling logistics, that is field officers cannot travel to and sample from all EA sites within 2 hours. A single sampling event usually takes in excess of 4 hours. The collection frequency on the first day of release will remain the same: one sample from each site. Changing this condition will not affect the timing of sample collection currently being undertaken at site, it will only change the opportunity to be in compliance. The addition of automated continuous monitoring was not provided as compensation for reduced sampling frequency and therefore no justification is required. This item was discussed in the 18/9/2025 technical workshop, with DETSI supportive of the wording amendment provided in CCPL (2025) Appendix A.
13	The proposed maximum release rates as per Table 4 of Capricorn Copper Pty Ltd (2024) is inconsistent with the approach within the Department of Environment, Science and Innovation (DESI) model mining conditions guideline ⁷ for the release of contaminated water during flow events. Revision of	Provide an updated proposed release regime that details and justifies the following: a) Amend release limits as per the DESI model mining conditions guideline. In particular, provide	CCPL have successfully implemented a variable flow rate release over the 2024/25 wet season, tied to continuous flow monitoring at GPA2 and verified by real-time flow monitoring at the government station. CCPL intend to continue with the variable flow system.

⁷ Queensland Government, Guideline – Mining, Model mining conditions, ESR/2016/1936, Version 6.03, 19 February 2024

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	the release regime in accordance with the DESI model mining conditions guideline (see Table F4) is preferred by the administering authority to ensure determinations in relation to potential environmental harm are identifiable and compliance with the EA can be appropriately monitored. It is acknowledged that minimum dilution rates proposed are consistent with achieving the proposed water quality objectives and may be potentially suitable, however, the EA will not refer to minimum dilution rates, which may lead to misinterpretation. The proposed release regime must be able to provide practical adjustments on site, however, the current limits proposed in Table 4 of the Capricorn Copper Pty Ltd (2024) are up to interpretation on a continuous flow scale >2m³/s which will not be acceptable.	an updated release regime which sets minimum stream flow triggers and maximum release rates for the different release quality regimes that are proposed that will not exceed the minimum dilution at the relevant stream flow trigger. To note, only one water quality type would be permitted to be released at any one time under the EA.	Incorporation of all possible minimum stream flow triggers and maximum release rates as per the model mining conditions guidelines would result in an enormous, complex table. Instead, to address DETSI's concerns regarding misinterpretation of dilution rates, CCPL have included in Appendix A of CCPL (2025) a definition of the dilution factor to condition C2-5 and to Schedule C – Table 2 footnotes, mirroring wording effectively applied and implemented in the 2024/25 EEO.
14	A 3-point moving average method for monitoring the release is proposed in the application. It is understood this approach only applies to the release water and is proposed to facilitate a reduction in the frequency of start/stops associated with sampling analysis timing. The proposed method is not a precautionary approach for release monitoring and insufficient justification is provided to support the position this method is appropriate. It is noted, monitoring of EC and pH will continue to be applied, with EC having the ability to provide a satisfactory substitute trigger for sulfate instead of the 3-point moving average method proposed.	Provide updated application material which excludes the method of a 3-point moving average for monitoring releases and must also include monitoring of EC.	CCPL are no longer seeking application of a 3-point average. This has been removed from CCPL (2024) Section 4.2 and Appendix A.
15	Capricorn Copper Pty Ltd (2024) indicates that a weather event during March 2023 resulted in significant inflows to the mine affected water system (contaminated water) and inundation of the Esperanza underground mine and workshop / warehouse areas. It is further detailed that the maximum operating level of the Esperanza Pit (EPit) and Mill Creek Dam (MCD) was exceeded and an additional 500 megalitres of contaminated water was collected in the underground workings which consequently requires dewatering. While it is acknowledged that the weather event during March 2023 produced a significant volume of rainfall, details of the mitigation and management measures in place to prevent generation and accumulation of excess contaminated water	Provide details of the source of where contaminated water was generated and the controls that were in place during the weather event in March 2023 to minimise this generation and ultimate capture in the EPit and MCD. Provide details of the effectiveness of the controls identified in response to item 14 during the weather event in March 2023 and mitigation measures implemented to improve the effectiveness of these controls in future events. Any response must consider, at a minimum, contaminated water inputs due to seepage collection, contaminated surface water runoff and mine de-watering.	The majority of contaminated water resulted from direct rainfall (onto roads, ETSF, waste dumps, workshop and Mill Creek Dam) which was captured on the site and directed to the EPit where it mixed with pre-existing contaminated water. Additionally, approximately 500ML of rainfall entered the Esperanza Underground Mine and became contaminated by the mine workings. Additional controls that have been installed include the conversion of the Processing Plant to a Water Treatment Plant which enables treatment and release of high quality water during the wet season with

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	and the effectiveness of these measures has not been provided. Given the proposed amendments relate to the ongoing release of unrestricted volumes of significant quantities of treated contaminated water, an understanding of how the generation and management of this water is required to confirm these measures are appropriate.		volumes of up to 20ML/day. Six high-volume evaporators were installed and now have a throughput of 18ML/d as of July 2025 (all now on electrical systems). Furthermore, the diversion levee to prevent clean water from entering the Esperanza Underground Mine has been repaired and completed to 1:1000 design.
16	Capricorn Copper Pty Ltd (2024) outlines improvements undertaken and planned to be undertaken on site to improve water management. With the exception of the cessation of raw water uptake from Lake Waggaboonya, the current use of high capacity evaporators and other planned improvements appear to focus on the ultimate disposal of contaminated water. Given the amendments propose the ongoing release of unrestricted volumes of significant quantities of treated contaminated water, an understanding of how higher tier aspects of the waste and resource management hierarchy⁸ and management hierarchy for surface or groundwater⁹ has been considered is required.	Further to item 15 above, provide an assessment and clear details, including timeframes, for implementation of all current and planned water management measures with consideration of the waste and resource management hierarchy and management hierarchy for surface or groundwater.	The conversion of Processing Plant to the Water Treatment Plant was completed in November 2024 and utilised during the 2024-2025 wet season, treating 15ML/day. Additional changes have been completed to increase the capacity to 20-25ML/day for the 2025/26 wet season. The high-volume evaporators have been serviced, connected to mains power and were recommissioned during July 2025. They will continue to be maintained throughout the wet season. The seepage collection systems at Sump 6 below the Old Mammoth TSF and North Rock below the North Waste Rock Dump have been extensively improved and will be connected to mains power and automatic pumping systems during August 2025.
17	In relation to waste, Capricorn Copper Pty Ltd (2024) states that there are no emissions or releases, no potential impacts, and no applicable management practices. The amendment application proposes the ongoing release of an unrestricted volume of treated contaminated water, which is defined as waste, and therefore information including a description of the proposed management practices for wastewater generated is required. This information should also include reference and consideration of the waste and resource management hierarchy.	In conjunction with item 16 above, provide details of applicable management practices to be implemented to avoid the generation of contaminated water at the site.	The clean water diversion systems to prevent clean water flowing through the Esperanza Waste Dump are installed and maintained each wet season. This includes the locations at the Upper Esperanza Diversion Dam, Magazine Creek, Plunge Pools and Lab Sump. This clean water is collected and diverted to Gunpowder Creek to prevent the generation of additional contaminated water.
18	Capricorn Copper Pty Ltd (2024) proposes the removal of	Provide further information to support the proposal to	This proposed amendment has been removed from

⁸ Section 9 of the *Waste Reduction and Recycling Act 2011*

⁹ Section 14 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019

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	surface water observation monitoring points REHAB01 and REHAB02. It is stated these sites will form part of the progressive rehabilitation and closure plan (PRCP) application for the site. As a PRCP schedule for the site is currently under assessment and therefore not approved, further justification is required to justify the removal of these monitoring locations.	remove monitoring points REHAB01 and REHAB02.	the application material and can be dealt with following approval of a PRCP schedule. See CCPL (2025) Appendix A.
19	Section 4.2.6 of Capricorn Copper Pty Ltd (2024) proposes that GPU1 and GPA4 station monitoring will not be regulated in the EA, with GPA2 and W1 station monitoring applied. Given the release location is W1 with GPA2 within close proximity upstream of the release point and considering potential impacts to be managed from the proposed release, further justification is required to support this exclusion.	With consideration to manage any potential impacts associated with the proposed release, provide further information to support the exclusion and proposed un-regulation of GPU1 and GPA4 station monitoring.	GPD1 and GPD2 were nominated for regulation under the EA based on the assignment of a mixing zone where WQOs did not apply. DETSI's draft EA framework (Parts 1-3), developed after the provision of this IR, no longer accounts for a mixing zone. CCPL now propose the following sites for inclusion in the EA: GPA4 (adjacent site), GPD1 and GPD2 (downstream site). This change is captured in amendments to condition C3-1 in CCPL (2025) Appendix A. CCPL intend to continue operation of real-time monitoring stations at GPU1 and GPA2 (which will be used for contingency monitoring and internal management of releases) but do not propose to regulate these stations under the EA. It is stated in IR item 12 description that “<i>automated continuous monitoring of pH and EC at GPD1 and GPD2 may compensate for the reduced sampling frequency</i>” however this is not the case. The offer to include any continuous monitoring requirements in the EA stemmed from difficulty in accessing and manually sampling downstream sites during high flows. CCPL have now committed to obtaining high-flow access across Greenstone Creek to reliably sample at GPD2 during >2 m³/s Gunpowder Creek flows, as well as regulation of GPA4, GPD1 and GPD2 real-time stations.
20	In relation to land, Capricorn Copper Pty Ltd (2024) states that there are no emissions or releases, no potential impacts, and no applicable management practices. The application does not describe in detail the release system infrastructure proposed and/or the need for additional infrastructure to support and facilitate the proposed release.	Provide further information to confirm the current site facilitates (size, location) are appropriate to accommodate and facilitate the proposed release strategy. For example, all current infrastructure at site will be utilised with no need for an expansion, re-location or addition of supporting infrastructure.	All infrastructure required to release treated wastewater in accordance with the amendment is already in place. There is no need for an expansion, re-location or addition of supporting infrastructure, other than addition of a permanent water treatment plant (WTP). The new WTP will be constructed on existing disturbed

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			land and no new land disturbances will be required. The new WTP will be constructed onsite to aid water reuse and recycling, and is not subject to approval of the amendment. This information is provided in updated Sections 7.2.5, 7.2.6 and 8.5 of CCPL (2025).
21	It is acknowledged the application relates to the ongoing release of an unrestricted volume of treated contaminated water, however Table 1 of Capricorn Copper Pty Ltd (2024) states "... land rehabilitation is not relevant to the proposed amendment". As requested in item 20 , limited detail is provided regarding the infrastructure required to support the release and as such a determination cannot be made in relation to potential rehabilitation. The PRCP Schedule for the site is not yet in effect and is subject to assessment. As such rehabilitation requirements are required to be addressed.	Provide updated application material which details and addresses the rehabilitation requirements for the land, including associated supporting infrastructure, subject of this application.	As established in the response to IR item 20, the environmental values of land will not be impacted by this amendment. Section 6 of the guideline <i>Application requirements for activities with impacts to land</i> states that the final step for applications for activities that will have an impact to land is to detail the proposed rehabilitation measures to be used. Given that no impacts to land are posed by the amendment, and no rehabilitation outcomes will be changed as a result of the amendment, detailed rehabilitation requirements were not provided with the application. All existing and proposed (e.g. new WTP) release infrastructure are utilised onsite under the existing EA and are not subject to the amendment. Regardless, a description of the rehabilitation methods that will be applied to release infrastructure areas has been provided in updated Section 8.5 of CCPL (2025).
22	Capricorn Copper Pty Ltd (2024) references a Stakeholder Engagement Plan which amongst other things, outlines an overview of the engagement Capricorn Copper Pty Ltd has undertaken to date and the current engagement context and issues. This plan was not provided with the application material.	Provide the Stakeholder Engagement Register Plan which details the specific stakeholder engagements undertaken regarding contaminated water inventory and management measures which includes this application/proposal. Provide a Stakeholder Engagement Plan to describe how ongoing engagement will occur, particularly in relation to release events and monitoring results.	CCM's Stakeholder Engagement Strategy will be provided with this IR Response on 31/10/2025. Stakeholder engagements in which contaminated water inventory and management measures were discussed have been listed in Section 10, Table 21 of CCPL (2025).
23	The application material references several reports not provided with the application.	Provide the following reports as attachments upon submission: a) NRA (2021) Capricorn Copper Mine Receiving Environment Monitoring Program Design Report, R01, prepared by NRA Environmental consultants for Capricorn Copper Pty Ltd, 3 February 2021.	The amended application material (CCPL 2025) does not contain references listed in IR item 23. Supporting appendices to the amended application will be provided with this IR response.

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		b) ATC Williams (2023). Memorandum: Discharge travel distance (Reference 122073.06-M01). Provided to 29 Metals 17 May 2023. c) NRA (2022). Capricorn Copper Mine REMP Annual Report 2021-2022. Prepared by NRA Environmental Consultants for Capricorn Copper Pty Ltd. d) NRA. (2021). Capricorn Copper Mine REMP Annual Report 2020–2021. Prepared by NRA Environmental Consultants for Capricorn Copper Pty Ltd. e) Capricorn Copper Pty Ltd. (2023). Capricorn Copper Mine Annual Groundwater Report July 2021- December 2022. f) Table 9 of Capricorn Copper Pty Ltd (2024) footnote c: NRA derived site-specific guideline value, based on 80th percentile of reference site data (NRA 2021).	
24	When preparing a response to this information request, where applicable, existing reports must be revised and supported with additional tracked changed documents. Further, a summary document that references this information request and indicates where relevant sections of supporting reports address each of the items requested must be provided.		This IR Response is comprised of: • Excel workbook of receiving environment data 2014-2024 and contaminant limit/trigger level calculations. • Excel workbook of 2020-2025 receiving environment <2 m³/s data, summary statistics and graphs. • Revised Supporting Information Document (pdf) • Revised Supporting Information Document (Word with track changes) • Draft amended EA document ((Word with track changes) • This IR summary document.