



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Attachment A: Feedback and comments on EPBC 2024/10006 – Valhalla Gas Exploration & Appraisal Program (Phase I and II), WA – draft Preliminary Documentation and associated documentation – Version 1 (V1)

Summary of feedback

- A. The department considers further information is required to respond to the Request for Information (RFI) provided to Bennett Resources (the proponent) on 15 July 2025. This includes gaps on impact pathways and a comprehensive conceptualisation of the local water resources (surface water and groundwater) and water-dependent ecosystems (including groundwater dependent ecosystems (GDEs)).
- B. The department notes the proposed action is exploration and appraisal only.
- C. The department considers further investigation is required to support the impact assessment and that relevant data to support this investigation is available from publicly available sources, which will not require extensive further work, references have been provided to support this.
- D. The information provided in the response to the RFI states that the Valhalla Project is an unconventional gas project, therefore, the IESC guidelines are not applicable to this project. The department notes that since 15 December 2023, the EPBC Water Trigger was amended to include consideration of likely significant impacts on water resources in relation to **all** types of unconventional gas, for example, shale and tight gas related developments.

The department further acknowledges the IESC documentation and the Significant impact guidelines 1.3 have not been updated to remove ‘coal seam gas’ and include ‘unconventional gas’, and this has been noted with the proponent on previous occasions.

The department notes an email received on 9 September 2025 from the proponent which states that they did in fact review the guidelines, and apply them where they were able, and could be, applied to an unconventional gas project.

- E. The department considers impact pathways involving contamination and spills have not been adequately considered or justified, and further work should be completed on the characterisation and conceptualisation of GDEs within the proposed action development envelope.
- F. The department notes the assessment provided indicates that the likelihood of impacts to the currently identified receptors from groundwater extraction is low; however, the proponent has not adequately considered the range of additional potential impact pathways, nor provided a thorough assessment of the potential occurrence of GDEs and other receptors near the project to confirm this.
- G. The department considers the uncertainty analysis provided is fit-for-purpose, however, it needs to be applied to any additional GDEs identified as a result of point F.
- H. The department notes concerns raised around the assessment of impact regarding freeboard height and potential overtopping and contaminant spill.

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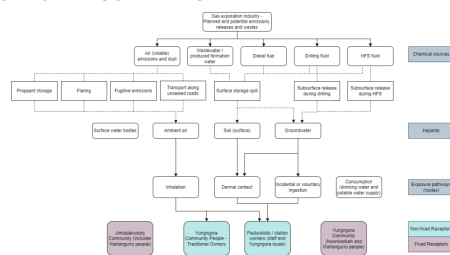
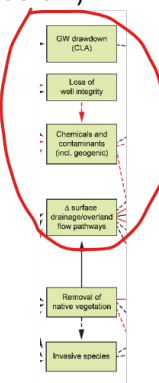
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Table #	PD Item	Reference	Department Comments	
1.	Preliminary Documentation (General Content & Style)	All PD and Appendices	<p>Comments: Adequate</p> <p>The department considers the submission is consistent with the general content and style guide requested in the RFI.</p> <p>The department recommends ensuring consistency across all the documents, and clear indexing of where in the document relevant matters or issues are covered.</p>	Noted
Water resources that relate to unconventional gas development and large coal mining development				
2.	Application of IESC Guidelines	PD Section 5.3 Attachment 3	<p>Comments: Partially adequate</p> <p>As per email received and noted in summary points above.</p> <p>The department reaffirms that information received must be consistent with IESC guidelines, as seeking a Request for Advice from the IESC is a requirement as part of the assessment process.</p> <p>The department further notes that the advice provided by the IESC in response to the</p>	<p>(1) Revise response as per Question 17 a) of the previous RFI.</p> <p>PD Attachment 3 has been updated to reflect the acknowledgement of the IESC Guidelines and now references the Valhalla IESC Guidelines Cross-Reference Table.</p>

			<p>request for advice by the department is published on their website.</p> <p>Tasks for action:</p> <ul style="list-style-type: none">• (1) Revise response as per Question 17 a) of the previous RFI.	
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<p>3.</p>	<p>Significant Impact Pathways</p>	<p>PD Section 5.3.1.1 Section 5.3.2 Section 5.3.2.2</p>	<p>Comments: Not adequate</p> <p>The department notes the proponent’s updated documentation and response to the RFI demonstrate their view that drawdown is the only significant impact pathway, and the only identified surface water feature, or system with the potential to comprise a GDE, is Mount Hardman creek located ~1 km away.</p> <p>The one-layer analytical model has been used for the modelling of drawdown, however, the department considers this model does not provide a robust method to assess potential contaminant flow paths and potential impact pathways to groundwater resources. The department notes the assessment of processes continues to rely on a non-exhaustive review of regional assessments (i.e., the department was able to find and access more relevant regional information available online) rather than site specific data, and existing uncertainty has not been addressed (i.e. connectivity between geological layers and aquifers and potential impact pathways). This limits the ability to perform impact pathway assessments.</p> <p>The department considers the proponent needs to demonstrate adequate consideration of other potential impact pathways such as the potential contamination of soil from spills (e.g. WA Inquiry 2018, Shanafield et al. 2019).</p>	<p>(2) Demonstrate that all impact pathways have been adequately considered (see Question 22 i) of the previous RFI).</p> <p>As detailed in the original referral, the state ERD and the PD, four exposure pathways are present for water resources. These include:</p> <ul style="list-style-type: none"> • Groundwater drawdown (Section 5.3.1.1 of the PD) • Potential contamination of aquifers through unplanned fracture heights (non-credible risk due to existing geological conditions) (Section 5.3.2.1 of the PD) • Potential contamination of surficial formations due to lost circulation or well integrity issues, including casing failures (event is risk is no different to conventional drilling activities) (Section 5.3.2.2 of the PD) • Potential risk to site activities and infrastructure due to extreme rainfall events. (event is no different to conventional drilling activities) (Section 5.3.2.4 of the PD) <p>Further to this BNR has included in the PD Sections:</p> <ul style="list-style-type: none"> • Potential Contamination of Land and Soils from unplanned Surface Spills (Section 5.3.2.5 of the PD), and • Potential Contamination of Surficial Aquifers from an accidental release at the surface of drilling fluids, HFS chemicals, liquid
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			<p>The department notes that pathways for contamination have not been modelled. A recent study (Shanafield et al. 2019) quantified the probability of various activities in the onshore unconventional gas industry that have the potential to cause impacts to water resources. The study found that for shale unconventional gas activities, surface water and groundwater contamination from surface spills are the most probable impacts (Shanafield et al 2019, Table 3, p. 556). The department notes a robust method should be used to consider these impacts pathways.</p> <p>The department considers that further assessment of other impact pathways, i.e. contamination, is able to be undertaken using semi-quantitative methods based primarily on desktop conceptualisation and informed by some data and analysis.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (2) Demonstrate that all impact pathways have been adequately considered (see Question 22 i) of the previous RFI). • (3) Conduct further desktop conceptualisation to support the conclusion of no impact or provide further justification as to why this will not be provided, given the available 	<p>hydrocarbons, or produced formation water (Section 5.3.2.3)</p> <p>These exposure pathways were detailed in BNR's Human Health Risk</p>  <p>(source Appendix N of the ERD Rev 3) – Human Health Risk Assessment</p> <p>and evaluated against exposure pathways identified by the IESC for a similar unconventional gas project (see below)</p>  <p>(Source [IESC, 2024].</p> <p>BNR then tailored the PD to assess the direct and indirect impacts arising from the Proposed Action as defined in the EPBC Act as stated in Section 5.3.2 of the</p>
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			<p>public information to support this assessment.</p>	<p>PD. However, given that BNR expected DCCEEW to take an interest in risks outside of direct and indirect impacts (associated with unlikely events), these were also detailed in the assessment (Links to section of the PD are included in the above bullet points).</p> <p>Given there is no contamination risk associated with groundwater drawdown, BNR believes that the model provided is considered sufficient to inform drawdown risk.</p> <p><i>(3) Conduct further desktop conceptualisation to support the conclusion of no impact or provide further justification as to why this will not be provided, given the available public information to support this assessment.</i></p> <p>As detailed above, an assessment of all impacts and risks was provided in the PD. Section 4.2.3 and onwards has been updated to include additional information to support this assessment (previously provided in the State ERD attached to the PD).</p> <p>A mixture of models desktop conceptualization were completed to understand groundwater drawdown, fracture analysis, rainfall scenario analysis and geotechnical analysis has been used to inform these assessments. These are appropriately referenced throughout the PD. And include (but are not limited to):</p> <ul style="list-style-type: none"> • INTERA Groundwater modelling report (Appendix L of the ERD) • INTERA Groundwater modelling response (Att3 of the PD)
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				<ul style="list-style-type: none">• Geotechnical Risk Analysis (Appendix B of the ERD)• Rockwater 2016 Hydrogeological Assessment (appendix I of the ERD)• Canning Basin Technical Discussion (Appendix T of the ERD)• Rainfall analysis (Section 5.3.2 of the PD) <p>The model that was used to inform groundwater resource depletion (groundwater drawdown) was considered suitable (and reviewed multiple times through the state assessment process). It was completed using conservative assumptions (such as assumed connectivity with surface water features and no recharge) thus, BNR does not believe further information is required to support the assessments.</p>
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<p>4.</p>	<p>Faults and Fractures</p>	<p>PD Section 5.3.2.1</p>	<p>Comments: Not adequate</p> <p>The department considers faults and fractures which act as preferential flow paths between deeper and surficial aquifers or surface water have been identified from regional studies (e.g. Taylor et al. (2021)). There is insufficient information to demonstrate whether faults in the area have the potential to act as preferential groundwater pathways.</p> <p>Murray & Power (2021) can provide further guidance regarding this issue.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (4) Demonstrate that preferential flow paths between deeper and surficial aquifers have been considered (see Question 22 h) of the previous RFI). 	<p>(4) Demonstrate that preferential flow paths between deeper and surficial aquifers have been considered (see Question 22 h) of the previous RFI).</p> <p>Appendix B to the State ERD named - <i>Geotechnical Risk Analysis</i> was completed to inform the assessments of both groundwater drawdown impacts and surface contamination risks that may only occur through an unplanned event occurring. Reference to this was included in the pack of information attached to the PD. This information provides a section that is dedicated to the <u>identification of hydrologically active faults or fracture zones</u> (Section 3 of Attachment B to the ERD). Further to this, it includes a historical analysis interpreting real data in the project area (Section 3.1 of Attachment B to the ERD). The culmination of this assessment indicated that all faults are closed and no geo-mechanical hazard for upward propagation could occur as the activation energy required to dilate faults or fractures in tension is higher than overburden (meaning fracture growth would rotate to horizontal before opening such faults in tension).</p> <p>Additionally, the role of faults and fractures in creating preferential flow paths between deeper aquifers and surficial waters was considered in Section 2 of INTERA, 2024 (ERD Appendix L). A reference to Harrington et al. (2011) indicates that, on a regional scale, fault zones in the system are providing preferential pathways for discharge from the deeper Grant/Poole system into the surface waters. INTERA, 2024 (ERD Appendix L) also indicates that the heads in the deeper Grant/Poole</p>
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				<p>system are higher than those in the overlying Liveringa (Taylor et al., 2021), which in turn indicates an upward vertical gradient between the two systems. Taylor et al. (2021) does not indicate any evidence for preferential flow paths within the Liveringa target aquifer. In addition, a review of Stewart et al. (2020) indicates few mapped faults in the Liveringa within the Development Envelope for the project; therefore, there is insufficient information to identify or quantify any preferential flow paths within the Liveringa.</p>
5.	Groundwater Dependent Ecosystems	<p>PD Section 5.3.1.1</p> <p>Attachment 3</p> <p>Attachment 8</p>	<p>Comments: Seeking additional desktop assessment</p> <p>The department considers further information on GDEs (as was requested in Question 19 of the previous RFI) is required to support the assessment of no impacts to GDE’s.</p> <p>The department notes that the methodologies outlined in Doody et al., (2019) may assist the proponent in performing fit-for-purpose GDE assessments for the proposed action. The WA Government have produced region-specific mapping for potential aquatic GDEs in the Fitzroy water planning area, which is more recent than the resources used in preparing the preliminary documentation (BoM GDE Atlas 2021).</p> <p>The department notes these resources indicate there are additional potential GDE</p>	<p>(5) Provide further desktop assessment of GDEs within the proposed action development envelope (see Question 19 of the previous RFI).</p> <p>Supplementary information was provided in Section 5.4.3.5 of the State ERD – GDE’s. Although this information should have been included in the PD directly, it was referenced in the attachments (refer - SECTION 5.4.3.5 of the ERD) now in Section 4.2.5.1 of the PD.</p> <p>BNR has assessed and identified all exposure pathways to GDE’s arising from the proposal impacts and risks to groundwater. These pathways were detailed again in response to question 3 (please refer to above).</p> <p>The only pathway for a direct impact that is reasonably foreseeable is groundwater drawdown as:</p> <ol style="list-style-type: none"> 1. other exposure pathways either will not interact with GDE’s, or

			<p>sites located throughout the proposed action area which have not been considered. Of most relevance is a potential aquatic GDE located within close proximity (<250 m) to the proposed Muspelheim wellpad.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> (5) Provide further desktop assessment of GDEs within the proposed action development envelope (see Question 19 of the previous RFI). 	<ol style="list-style-type: none"> 2. have sufficient mitigation in place to prevent the event occurring or in the unlikely event it does occur / mitigate against any potential impacts, and 3. only one wellsite (of the proposed 10) are located adjacent to an ephemeral stream potentially considered a GDE. <p>BNR believes that the modelling completed was sufficient to inform the extent of potential impact to GDEs. The model has assumed that:</p> <ol style="list-style-type: none"> 1. connectivity exists 2. no recharge will occur. <p>These assumptions are conservative as the wet season in Kimberley will recharge the Liveringa Aquifer causing all ephemeral water features (referred to as GDE's within the Development Envelope) to comprise surface expression, ensuring that any impacts (regardless of magnitude) are negated each year. Further to this, water is abstracted from a single wellsite once. Not continuously so the exposure is temporary and would be expected to rapidly recover. Even with these assumptions in place, the model still only predicts a 1mm drawdown at 700 m from the abstraction point, so BNR does not believe that providing any information is required to support the assessment given water is only abstracted.</p> <p>BNR acknowledges the 2023 document mapping aquatic groundwater dependent ecosystems in the Fitzroy Area but notes these have been developed through the joining and interrogation of broadscale</p>
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				<p>spatial datasets. No high potential GDE’s were located within close proximity of the wellsite’s.</p> <p>Further, DWER (2023) state <i>“Confidence in the accuracy of the water regime attribute is variable across the Fitzroy water planning area.”</i> Given their absence in confidence of the dataset created, they stated that <i>If an aquatic ecosystem had periodic inundation, we considered there was a low likelihood of groundwater interaction occurring (rating 1).</i></p> <p>The rating of the “GDE” selected for this comment is low likelihood which is consistent with BNR’s understanding of the entire area which is that is subject to seasonal inundation.</p> <p>Further to this, BNR based our desktop assessments not just on spatial mapping (which included government spatial datasets including those from BoM) but on data gathered by stakeholders that live work and know the land in this region. FitzCAM—a community group comprising representatives from the key Traditional Owner groups of the Fitzroy River Catchment, pastoralists, irrigators, recreational fishers and catchment residents—developed a draft table of assets known to be water-dependent features (Harrington & Harrington, 2015). A review of these assets did not identify any additional assets within close proximity of the Disturbance footprint as previously identified by BoM data.</p>
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				Modelling completed to date indicating that a drawdown of 1 mm 700 m from the Disturbance footprint would be unlikely to expose Mount Hardman creek. The closest Moderate Potential GDE (DWER 2023) – which is defined as “a non-permanent river”, is located over 700 m from the abstraction point. Consequently, the modelling provided by BNR including the assessment of impacts to GDE is considered suitable.
6.	Groundwater Contextualisation	PD Section 5.3 Section 5.3.1.1 Attachment 3	<p>Comments: Not adequate</p> <p>The department considers conceptualisation of the groundwater system remains unclear, and the absence of connectivity between surface water and groundwater is not demonstrated.</p> <p>As previously provided the IESC Information Guidelines provide a useful reference for the kind of information necessary for an adequate assessment of groundwater systems in similar settings (noting comment . The department advises desktop assessments using the WA Government maps of aquatic GDEs in the Fitzroy area and Geoscience Australia’s Northern Australia Solid Geology dataset (Stewart et al. 2020).</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (6) Further demonstrate the absence of surface and groundwater connectivity (see Question 19 of the previous RFI). 	<p>(6) Further demonstrate the absence of surface and groundwater connectivity (see Question 19 of the previous RFI).</p> <p>BNR notes that Section 5.4.3.3.1 Recharge and discharge mechanism of the ERD should have been included in the PD however the text was provided in the original referral and BNR wrongly concluded this information had been considered.</p> <p>Updated PD Section 4.2.4.1.1 Recharge and discharge mechanism to include Section 5.4.3.3.1 of the ERD</p> <p>BNR cannot “demonstrate the absence of surface and groundwater connectivity”. Please note that in the PD we state:</p> <p>Groundwater recharge to the Liveringa Aquifer is believed to be mainly from rainfall on outcrop areas (Lindsay & Commander, 2005). During the Fitzroy River integrated ground and surface water hydrology assessment conducted between 2008 and 2011, monitoring of the Liveringa Aquifer and surface alluvial</p>

				<p>waters associated with the Fitzroy River indicated a strong connection between the river and the aquifer. This project was led by the then WA Department of Water (DoW) with funding provided by National Water Commission under the Raising National Water Standards (RNWS) program. The multilevel piezometers that were installed at three sites on Noonkanbah Station as part of the DoW and RNWS project showed a groundwater response to high river flow events (Lindsay & Commander, 2005). This, and comparatively low groundwater salinities measured in these piezometers compared with other regional bores, suggests some recharge to the aquifer by floodwaters. Infiltration to the Liveringa Formation (and subsequent aquifers) from rainfall will be retarded by clay, shale and siltstone layers, both above and below the water table. Water is likely to take 70–300 days to travel from the ground surface to the water table within the Development Envelope (ERD Appendix I (Rockwater, 2016)).</p> <p><i>On this basis groundwater drawdown modelling completed by BNR has assumed connectivity with surface waters.</i></p> <p>Additionally, the conceptualisation of the groundwater system as presented in Sections 2 and 3 of INTERA, 2024 (ERD Appendix L), does not assume an absence of connectivity between the surface water and groundwater. Rather, the conceptualisation presented in INTERA, 2024 (ERD Appendix L) assumes that there is complete lateral continuity across the entire model domain with no hydraulic separation between the</p>
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				<p>groundwater and the surface waters within the project area.</p> <p>It should also be noted that the numerical model used to evaluate potential impacts to the surface waters and GDEs in the study area does not include any boundary conditions at Mt. Hardman Creek that could result in reductions in impact to the creek-supported GDEs.</p>
7.	Uncertainty Analysis (UA)	PD Section 5.3.1.1 Attachment 3	<p>Comments: Partially adequate</p> <p>The department considers the updated sensitivity and uncertainty analyses provided used scientifically robust methods and appear adequate for the intended use of the model – to conservatively model potential groundwater drawdown impacts due to extraction.</p> <p>However, as discussed in the previous sections above, further comprehensive desktop or field assessments of GDE presence within the proposed action development envelope is required. Following the revised conceptualisation and characterisation of GDEs in the area, the model provided could be used to identify where impacts to receptors could occur.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (7) After further characterisation of GDEs has occurred, apply the uncertainty analysis model to any additional GDEs (if any) located within 	<p>(7) After further characterisation of GDEs has occurred, apply the uncertainty analysis model to any additional GDEs (if any) located within the proposed action development envelope.</p> <p>Refer to Section 5 and 6 above.</p> <p>BNR does not believe anything further is required to adequately assess impacts to GDE’s (based upon information in Section 5 and 6), given the modelling utilized suitably conservative assumptions that are unrealistic given surface infiltration provides recharge of the Liveringa (and subsequently further ensures even if the modelling is incorrect and impacts are not limited to 1 mm at 700 m with quick recovery) that impacts are only temporary.</p> <p>Additionally, the UA provided in the RFI Response (PD Attachment 3) delineated “impact zones” around each proposed rig supply bore location that define the area in which there is a greater than zero probability of abstraction-induced drawdowns exceeding 0.1 m. This zone is defined as the area of impact to the aquifer from</p>

			the proposed action development envelope.	bore abstraction, and areas outside of this zone are not expected to experience any impact from bore abstraction. Refer to updated PD Section 4.2.5.1.
8.	Alluvium	<p>PD Section 4.1.1.4 Section 5.3.1.1</p> <p>Attachment 1, Appendix C</p> <p>Attachment 3</p>	<p>Comments: Seeking further justification</p> <p>The department considers the response to questions regarding the extent of alluvium requires further justification. There are multiple references to alluvial deposits and aquifers throughout the preliminary documentation and appendices (e.g. ERD, Appendix C, Appendix S) and in regional studies which were used for preliminary site conceptualisation. The Fitzroy Alluvium is recharged in losing portions of the Fitzroy River, and by upward leakage from the Liveringa and Grant/Poole aquifers (Taylor et al. 2021, pp. 66-67).</p> <p>The 1:1,000,000 scale mapping of solid geology of the North Australian Craton by Geoscience Australia (Stewart et al. 2020) shows alluvial deposits of various ages across the proposed action development envelope. The extent, properties and connection to the broader aquifer system appear to be a critical aspect of the conceptual site model and an impact pathway that has not been considered.</p> <p>Tasks for action:</p>	<p>(8) Demonstrate the extent of alluvium referred to in the preliminary documentation and appendices (see Question 18 a) ii) of the previous RFI). Added to PD Section 4.2.5.2</p> <p>Figure 4-22 Supplemental Geology Map is a map of the extent of the alluvium within the development envelope, based on the solid geology mapping (Stewart et al., 2020). This map shows a laterally extensive deposit of Cenozoic alluvium, with some overlying Quaternary dune sands, in direct lateral connection to the Quaternary alluvium within the Mt. Hardman Creek floodplain. As indicated by the dashed line on the map, the Liveringa is separated from the alluvium by the Blina shale throughout the southern part of the development envelope. Throughout the remainder of the development envelope, including throughout most of the Quaternary alluvium around Mt. Hardman Creek, the Liveringa appears to be in direct contact with the surficial alluvial deposits. This is consistent with the assumptions built into the groundwater conceptualisation and the numerical model, both of which assume that the aquifer is in direct hydraulic communication with the surface waters in the development envelope. To reiterate, the conceptualisation of the groundwater system as presented in INTERA, 2024 (ERD Appendix L) and the RFI Response (PD Attachment 3) does not assume an</p>

			<ul style="list-style-type: none"> (8) Demonstrate the extent of alluvium referred to in the preliminary documentation and appendices (see Question 18 a ii) of the previous RFI). 	absence of connectivity between the surface water and groundwater.
9.	Wastewater Sumps and Ponds	PD Section 5.3.2.3 Attachment 3	<p>Comments: Seeking supporting analysis/source material</p> <p>The department has identified a freeboard level of 500 mm in the design of on-site wastewater sumps and ponds, based on the results of the proponent’s flood modelling. The modelling was informed by the Bureau of Meteorology record of a 1-in-100 flood event threshold reported by local news reports. However, given SILO rainfall data records for the proposed action development envelope include multiple longer events with higher rainfall, there is a risk that higher flood events may be possible and that this freeboard level will not be adequate to prevent overtopping and contaminant release.</p> <p>The department is unclear as to what guideline was followed in construction of the ponds, noting the proponent makes reference to 500 mm freeboard in the context of WA wastewater pond design:</p> <ul style="list-style-type: none"> The Australian Petroleum Production and Exploration Association (APPEA 2018) industry submission to the WA Inquiry (2018), but which does not 	<p>(9) Provide clarity on what guideline was followed for the construction of the wastewater sumps and ponds.</p> <p>As detailed in the mitigation tables (Attachment 14 to the PD) the reference is the Department of water’s Water Quality Protection Note 26 (DoW, 2013). <i>“They [all lined storage compounds] should also have sufficient freeboard (at least 50 cm) maintained to prevent unintended overflow of water from storms with an average return frequency of at least 20 years”</i></p> <p>PD Section 2.4.2 updated for further clarity on pond design and disposal – restating the guidelines used.</p> <p>(10) Provide further justification that the wastewater sumps and ponds do not pose a risk to overtopping and contaminant release with a 500 mm freeboard.</p> <p>BNR has utilized standard WA state accepted practices for assessing flood risk and pond design. This is consistent with all other drilling evaporation ponds in the state (consistent with the aforementioned WQPN guidelines). The assessment completed was based upon an indicative design, however on award of a drilling contractor, this assessment will be updated with specific pond designs and submitted for approval by DMPE.</p>

			<p>include a reference to supporting analysis or source material</p> <ul style="list-style-type: none"> • Documents submitted to the EPA WA by the proponent, but which do not go to supporting analysis or source material • A care and maintenance environment management plan for Buru Energy’s Canning Basin operations (Buru Energy 2015), but which does not include a reference to supporting analysis or source material • Environmental approvals documents for conventional gas projects in the northern Perth Basin, (e.g. ‘Waitsia’ and ‘Lockyer’ projects), but which does not include a reference to supporting analysis or source material • A WA government guideline (DWER 2022) for leachate storage ponds for organics recycling where it is cited as the ‘minimum’ freeboard indicating that more may be warranted based on local site conditions <p>Tasks for action:</p> <ul style="list-style-type: none"> • (9) Provide clarity on what guideline was followed for the construction of the wastewater sumps and ponds. • (10) Provide further justification that the wastewater sumps and ponds do not pose a risk to overtopping and 	<p>As detailed in Section 5.3.2.3 Potential Contamination of Surficial Aquifers from an accidental release at the surface of drilling fluids, HFS chemicals, liquid hydrocarbons, or produced formation water, of the PD: BNR does not believe that there is real chance or possibility that a one in 100-year rainfall event occurs (in the 7-year timeline associated with the Proposed Action), and that even if it did occur, the facilities are suitably engineered (and managed) to prevent a flooding resulting in a loss of containment event. Consequently, BNR believes that there is only a remote chance that conditions would be present to result in a spill event causing a water quality contamination event. This risk is not unique to unconventional gas projects and BNR does not believe that this risk fits within the definition of a Significant impact under the EPBC Act.</p>
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			contaminant release with a 500 mm freeboard.	
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References

- INTERA, 2024. Revised modelling of drawdown impacts from proposed rig supply bores in the Bennett Resources Valhalla Gas Development Project; technical memo to Ashley Fertch and Marnie Leybourne from Matthew Uliana, 16 May 2024. *In* "Appendix 4. INTERA modelling assumption review and sensitivity analysis (updated report)" in Valhalla Exploration Drilling Response to Public Submissions – EPA Assessment No. 2281.
- Harrington, G.A., Stelfox, L., Gardner, W.P., Davies, P., Doble, R. and Cook, P.G. 2011. Surface water – groundwater interactions in the lower Fitzroy River, Western Australia. CSIRO: Water for a Healthy Country National Research Flagship. 54 pp.
- RFI Response: "Attachment 3: Valhalla Gas Exploration and Appraisal Program Select RFI Responses by INTERA Geosciences Pty Ltd" in Valhalla Gas Exploration and Appraisal Program EPBC Act Preliminary Documentation 2024/10006
- Stewart AJ, Liu SF, Highet, LM, Woods, M, Czarnota, K, Bonnardot, M, Brown, C, Clark, A and Connors, K 2020. Solid Geology of the North Australian Craton, 1:1 000 000 scale, 1st edition. Geoscience Australia, Commonwealth of Australia, Canberra.
- Taylor AR, Barron OV, Mule S and Ibrahim T 2021. Groundwater baseline review of the Canning Basin, Western Australia. A technical report from CSIRO to GISERA. CSIRO Technical Report EP2021-1700, Australia.



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References cited within the comments

Buru Energy 2015. Canning Basin Well Care and Maintenance Environment Plan: Summary Document. Buru Energy Limited (Buru Energy). Available [online]:

<https://ace.dmp.wa.gov.au/ACE/Public/PetroleumProposals/ViewPlanSummary?registrationId=54059>

Doody TM, Hancock PJ, Pritchard JL 2019. Information Guidelines Explanatory Note: Assessing groundwater-dependent ecosystems. Report prepared for the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development Office of Water Science 9 through the Department of the Environment and Energy, Commonwealth of Australia 2019.

Available [online]: [Information Guidelines Explanatory Note — Assessing groundwater-dependent ecosystems](#)

DWER 2022. Guideline: Better practice organics recycling. Department of Water and Environmental Regulation (DWER), Government of Western Australia. Available [online]:

<https://www.wa.gov.au/system/files/2022-11/Guideline-Better-practice-organicsrecycling.pdf>

Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia (WA Inquiry) 2018. Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia. Final Report to the Western Australian Government September 2018.

Available [online]: [Report and Papers | Scientific Inquiry into Fracking in Western Australia](#)

Murray TA and Power WL 2021. Information Guidelines Explanatory Note: Characterisation and modelling of geological fault zones. Report prepared for the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development through the Department of Agriculture, Water and the Environment, Commonwealth of Australia 2021. Available [online]:

[Information Guidelines Explanatory Note - Characterisation and modelling of geological fault zones](#)

Shanafield, M., Cook, P.G. and Simmons, C.T. 2019. Towards Quantifying the Likelihood of Water Resource Impacts from Unconventional Gas Development. *Groundwater*, 57: 547-561.

<https://doi.org/10.1111/gwat.12825>

Stewart AJ, Liu SF, Hight, LM, Woods, M, Czarnota, K, Bonnardot, M, Brown, C, Clark, A and Connors, K 2020. Solid Geology of the North Australian Craton, 1:1 000 000 scale, 1st edition. Geoscience Australia, Commonwealth of Australia, Canberra.

<https://ecat.ga.gov.au/geonetwork/srv/api/records/82a436d4-2df4-4952-aa3d199af1ad04b9>

Taylor AR, Barron OV, Mule S and Ibrahim T 2021. Groundwater baseline review of the Canning Basin, Western Australia. A technical report from CSIRO to GISERA. CSIRO Technical Report EP2021-1700, Australia.

<https://doi.org/10.25919/wsky-g072>



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Attachment A: Feedback and comments on EPBC 2024/10006 – Valhalla Gas Exploration & Appraisal Program (Phase I and II), WA – draft Preliminary Documentation and associated documentation – Version 2 (V2)

Summary of feedback

- A. The Department of Climate Change, Energy, the Environment and Water (the department) notes these comments are in addition to those provided 12 September 2025.
- B. The department considers that the groundwater management plan developed to meet State EPA Guidelines for the management of impacts must also reflect the requirements of the EPBC Act. The department considers the mitigation measures raised in various attachments must be incorporated into the Preliminary Documentation to accurately describe what impacts are being mitigated by the measure.
- C. The avoidance and mitigation measures provided for the Greater Bilby (*Macrotis lagotis*) regarding pre-clearance do not appear to be consistent with the current DBCA guidelines, nor the draft conditions of approval set by the state.
- D. As per the discussion with the proponent and the department on 5 September 2025 the department considers Traditional Owners of adjoining lands to the proposed action remain relevant stakeholders and demonstrated engagement with these relevant stakeholders should be included in the PD package.



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Attachment A: Feedback and comments on EPBC 2024/10006 – Valhalla Gas Exploration and Appraisal Program (Phase I and II), WA – draft Preliminary Documentation V1

Table #	PD Item	Reference	Department Comments	
Water resources that relate to unconventional gas development and large coal mining development				
1.	Groundwater management plan	PD Section 9.1 Attachment 13 Attachment 14	<p>The GWMP includes that, in reference to the EPAs inland waters environmental objectives:</p> <ul style="list-style-type: none"> - Direct impacts from the proposed action includes: <ul style="list-style-type: none"> o changes to groundwater levels (groundwater drawdown) associated with water extraction and o contamination of surficial aquifers due to lost circulation. - Indirect impacts from the proposed action includes: <ul style="list-style-type: none"> o contamination of aquifers through unplanned fracture heights and o contamination of surficial aquifers from an accidental release chemicals, liquid hydrocarbons or produced formation water. <p>Throughout the PD V1, BNR determine that there is no significant impact to a water resource from the proposed action as “This</p>	<p>(1) Provide clarity as to the purpose, and expectations of BNR, in regard to the GWMP</p> <p>PD Section 9.1 has been updated to provide further clarity on the purpose of the GWMP, the BNRs' requirements for the GWMP, and the approach to proposed future updates.</p> <p>Updated PD Section 9.1 <i>A Groundwater Management Plan has been developed to manage the environmental risks associated with the Proposal for the purpose of managing impacts to groundwater. Although the GWMP has not set out in the Template required under the EPBC act (as it has been developed and reviewed separately under the state EP Act and PGER Act which BNR believes is more than sufficient to manage the same risks) all key monitoring requirements that include baseline, trigger and threshold criteria are included in Table 3-1. BNR has attached this for DCCEEW information (PD Attachment 12 Groundwater Management Plan).</i></p> <p><i>BNR cannot update this document for the purposes of this assessment given the document must also be</i></p>

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		<p>risk is not unique to unconventional gas projects and BNR does not believe that this risk fits within the definition of a Significant impact under the EPBC Act”</p> <p>The department notes that BNR has provided a table of mitigation measures using the DCCEEW – Offsets Mitigation Hierarchy (DCCEEW, 2025) in order to avoid, minimise or reduce impacts where possible (PD - Attachment 14). There is no provision of how/where/when these measures are to be implemented, nor, any follow up as to monitoring on if these measures are working.</p> <p>The GWMP (PD – Attachment 13), which as is outlined at PD section 9.1, BNR does not believe is required nor a suitable for DCCEEW to request for this project, provide relevant detail on monitoring that the department considers is required to be provided for the purposes of this assessment. Further, the GWMP PD section 9.1 provides that the GWMP has been developed to meet State EPA Guidelines for the purpose of managing impacts to groundwater (as defined under the EP Act and PGER Act).</p> <p>The department considers the GWMP includes measures required to enable an assessment of acceptability of impacts posed by the proposed action to matters of national environmental significance (MNES).</p>	<p><i>updated post State EPA approval and updating the document now risks BNR needing to have two separate and completely different management plans to manage the same risks (under two different legislative regimes).</i></p> <p>The document provided to DCCEEW is the final document on which a decision is to be made at the state level and BNR will update this document to include compliance provisions during the documents next update in collaboration with the Office of Water, the Department of Water Environment Regulation and the Department of Mines, Petroleum and Exploration to ensure a single water management plan is in place to manage a the identified water risks. Specifically, in the event that threshold criteria are exceeded during the annual reporting period, exceedances will be reported to the DWER compliance branch within five days.</p> <p>(2) The department notes the provision of the ERD in response to questions asked, however, currently the information in the ERD is inconsistent with the PD. I.e. the assessment of direct / indirect impacts to water resources, as stated above. Please provide clarification.</p> <p>PD Section 5.3 Water Quality of a Water Resource has been updated to include all risks that are addressed in the ERD:</p> <ul style="list-style-type: none"> • Section 5.3.2.3 Potential Contamination of Surficial Aquifers from an accidental
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		<p>Tasks for action:</p> <ul style="list-style-type: none"> • (1) Provide clarity as to the purpose, and expectations of BNR, in regard to the GWMP • (2) The department notes the provision of the ERD in response to questions asked, however, currently the information in the ERD is inconsistent with the PD. I.e. the assessment of direct / indirect impacts to water resources, as stated above. Please provide clarification. • (3) Provide clarity on the purpose of the mitigation’s tables provided as attachments 14 and 15 as these appear to be a list of measures, without any enforceable commitments. Provide justification that these measures mitigate impacts, including clarifying which impacts, include commitment of the implementation of these measures, and, where required, any monitoring proposed to ensure the measures are working. • (4) The department will require the GWMP to include reporting compliance provisions to the department in addition to DWER. i.e. GWMP Monitoring Program Section 3.2 States “in the event that threshold criteria are exceeded during the annual reporting period, exceedances will be reported to 	<p>release at the surface of drilling fluids, HFS chemicals, liquid hydrocarbons, or produced formation water</p> <ul style="list-style-type: none"> • Section 5.3.2.5 Potential Contamination of Land and Soils from unplanned Surface Spills). <p>(3) Provide clarity on the purpose of the mitigation’s tables provided as attachments 14 and 15 as these appear to be a list of measures, without any enforceable commitments. Provide justification that these measures mitigate impacts, including clarifying which impacts, include commitment of the implementation of these measures, and, where required, any monitoring proposed to ensure the measures are working.</p> <p>The <i>Table of Mitigation Measures (Water)</i> (Attachment 11) has been updated to meet DCCEEW request and ensure that the measures are expressed as enforceable commitments.</p> <p>When BNR realised that the Proposed Action would be subject to multiple regulators, a standardised list of mitigations was developed to ensure that these could be replicated through all the required approvals. It should be noted that although each piece of legislation requires the mitigations to be set out and describe slightly different things, the actual risk control / or mitigation will be identical. Consequently, the purpose of the <i>Table of Mitigation Measures (Water)</i> (Attachment 11) is to outline a</p>
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			<p>the DWER compliance branch within five days.</p>	<p>summary of measures designed to avoid and minimise impacts to water resources. Mitigation measures were provided in the ERD for the State (under the <i>Environmental Protection Act 1986</i>) and are to be included in the Environment Plan for assessment and acceptance under the <i>Petroleum and Geothermal Energy Resources Act 1967 (WA)</i> by the Department of Mines, Petroleum and Exploration (DMPE).</p> <p>(4) The department will require the GWMP to include reporting compliance provisions to the department in addition to DWER. i.e. GWMP Monitoring Program Section 3.2 States “in the event that threshold criteria are exceeded during the annual reporting period, exceedances will be reported to the DWER compliance branch within five days.</p> <p>When BNR updates the GWMP in accordance with the requirements of the State Ministerial Statement, it will also include any additional reporting requirements relevant to the Commonwealth under the EPBC Act. BNR has made a commitment to this in the PD Section 9.1:</p> <p><i>“...in the event that threshold criteria are exceeded during the annual reporting period, exceedances will be reported to the DWER compliance branch within five days.”</i></p>
2.	Groundwater management	PD Section 9.1	Comments: Not adequate	

<p>plan (Baseline Monitoring)</p>	<p>Attachment 12</p> <p>Attachment 13</p>	<p>The department notes the current sampling frequency in the groundwater management plan (PD - Attachment 13) states:</p> <ul style="list-style-type: none"> • Baseline samples from the Liveringa will be collected quarterly from at least the upgradient control bore prior to conducting drilling activities to gather season variation over a single year, • Where impact/surveillance bores are installed prior to drilling activities commencing, they will join the baseline sampling program to gather as much data as possible prior to drilling activities commencing, and • Baseline samples from the only two Poole (aquifer) bores installed for the proposal will be collected at least 6 months prior to drilling either the first or second exploration well. <p>There is a footnote within the plan stating that there are a number of reasons that downgradient impact (surveillance) bores cannot be installed pre activity and meet the 12-month baseline requirements with, the major reason being operational constraints.</p> <p>The department considers that while two years of baseline data would provide the most accurate picture, 12 months of baseline data in conjunction with already collected data may also provide a suitable contextualisation of site-specific hydrology.</p>	<p>(5) Provide further details on the operational constraints being faced by BNR to achieve the 12 months of baseline data.</p> <p>The installation of impact monitoring bores is subject to a number of operational constraints. Placement and appropriate installation of impact monitoring bores are more important than the collection of baseline data given the up-gradient control monitoring bore will be collecting sufficient baseline data for each wellsite.</p> <p>Operational constraints include the location of the wells and the ponds on each wellsite which are subject to detailed wellsite design and engineering.</p> <p>The final detailed well design for each well pad will only be completed after receiving State and Commonwealth environmental approval. The final well pad designs (each well pad design will vary) will inform the monitoring bore locations which will be agreed through consultation with DWER and DMPE.</p> <p>Detailed well site design and engineering are dependent on:</p> <ul style="list-style-type: none"> • optimal location of the exploration well within the well pad (each pad will be different) • drilling rig design (rig design will also influence the positioning of the exploration well on the well pad).
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		<p>Tasks for action:</p> <ul style="list-style-type: none"> • (5) Provide further details on the operational constraints being faced by BNR to achieve the 12 months of baseline data. • (6) Provide justification as to why the Poole aquifer will only begin monitoring 6 months prior to drilling either the first or second exploration well, and clarification on what is meant by “either the first or second exploration well”. • (7) Provide an approximate timeframe between the drilling of the first and second exploration well. 	<ul style="list-style-type: none"> • location of ponds, which are required to be downgradient of the control monitoring bore and upgradient of the impact monitoring bores. <p>To inform the wellsite design and engineering, the drilling rig that will be utilised needs to be contracted given the rig will determine the layout of infrastructure to ensure that everything is positioned to enable the rig to operate safely. The Rig will not be contracted until all approvals are in place (resulting in multiple dependencies that will cause significant time constraints). If the impact bores are installed too early, there is the potential for them to be:</p> <ul style="list-style-type: none"> • damaged given well cellar and pond construction requires heavy civil / earthmoving machinery, and • mispositioned resulting in them not being optimally placed for identifying contamination events arising from the activity. <p>To summarise, the local siting of monitoring bores is usually completed in consultation with DWER Hydrogeologists during the development of an Environment Plan under the PGER Act to enable specific requirements for each site to be bespoke such that the environmental outcomes are achieved.</p> <p>Other operational constraints include:</p> <ul style="list-style-type: none"> • State and Commonwealth environmental approvals
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				<ul style="list-style-type: none">• other regulatory approvals• access and site conditions for each well pad• regional weather conditions• local weather conditions• contractor availability• equipment availability• logistics and supply chain issues• health and safety considerations <p>(6) Provide justification as to why the Poole aquifer will only begin monitoring 6 months prior to drilling either the first or second exploration well, and clarification on what is meant by “either the first or second exploration well”.</p> <p>Water will only be abstracted from the Liveringa aquifer in line with the findings of the most recent Independent Expert Scientific Committee (IESC) report (IESC, 2024), BNR maintains that sampling within the Poole Aquifer is not warranted.</p> <p>However, in response to direction from the Environmental Protection Authority (EPA) and to further support the development of regional baseline groundwater data, BNR has committed to collecting groundwater quality data from the Poole Aquifer at each wellsite. This will include a single monitoring location per site, with an associated upgradient control bore to provide representative background data.</p>
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				<p>As stated in EPBC Referral 2024/10006 Section 1.2.1, the Proposed Action includes the construction of up to twenty (20) exploration wells on ten (10) well sites, under two phases. Depending on the geotechnical risk assessment and seismic results a well pad may have more than one exploration well on each well pad, hence the “first or second exploration well”.</p> <p>The commitment to “begin monitoring 6 months prior to drilling either the first or second exploration well” was a requirement requested by EPA during the State assessment process.</p> <p>(7) Provide an approximate timeframe between the drilling of the first and second exploration well.</p> <p>The first and second exploration well (on the same wellsite) will be approximately 1-2 years apart. Again, this is dependent on the drilling rig design geology and other operational constraints as listed above. The second wellsite will only be drilled where the pond has capacity to support an additional well. Wells (on the same wellsite) may be drilled 1-2 years apart to enable water contents to evaporate</p>
3.	Duplication of regulatory authorities, and state	PD Section 9.2 GWMP	Section 9.2 of the PD states that “ <i>A Well Management Plan is not an environmental management document and is a technical engineering document that details how well integrity is managed over the lifecycle of well. This document has a very specific format,</i>	Noted.

		<p><i>and it is completely inappropriate for DCCEEW to ask that this document “prepared in accordance with the Environmental Management Plan Guidelines – DCCEEW” which does not cover technical engineering documents. It is important to note that the Proposed Action cannot commence without a DMPE approved Well Management Plan and as such DCCEEW should have confidence that the Well Management Plan will meet all requirements under the Petroleum and Geothermal Energy Act 1967 prior to commencing.”</i></p> <p>The department does not intend on duplicating regulatory functions with Department of Mines, Petroleum and Exploration (DMPE), and understands that the draft conditions from state refer to the various regulatory requirements under the DMPE, to be provided prior to commencement of the action.</p> <p>However, where there are potential impacts to MNES as a result of the proposed action, for the department to consider that the impact is being managed or the delegate considers the impact is acceptable, this information (that may be required by DMPE) is required to be provided in a manner that outlines how the regulatory auth / requirement manages the impact, what the proponent is doing to meet this auth / requirement, and any monitoring that is required.</p>	
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			<p>The department will consider conditions, as per the state, which provides that the impact is managed through other state regulations, prior to commencement of the action, and may not require a separate plan for this, but will require evidence that these regulations are complied with prior to the action commencing.</p> <p>Tasks for action</p> <ul style="list-style-type: none"> - Nil, above for noting only. 	
4.	Table of Mitigation Measures (Water)	<p>PD Section 5.3.1 Section 5.3.2 Section 5.3.2.1 Section 5.3.2.2 Section 5.3.2.3</p> <p>Attachment 12 (Titled Attachment 14)</p>	<p>Comments: Integrate into PD</p> <p>Based on discussions with the proponent on 23 September 2025, the department understands avoidance and mitigation measures contained in this table have been committed to by BNR. These measures are intended to be included in an Environment Plan for assessment and acceptance under the <i>Petroleum and Geothermal Energy Resources Act 1967</i> (WA) by the Department of Mines, Petroleum and Exploration (DMPE).</p> <p>The department notes these measures and commitments need to be clearly articulated, and where possible, be integrated into the Preliminary Documentation to as evidence for avoiding and mitigating relevant impacts (e.g. surface casing to prevent contamination of groundwater).</p>	<p>(8) Integrate Attachment 12 (Table of Mitigation Measures (water)) into the PD, where each mitigation measure is connected to the impact pathway it aims to avoid or mitigate.</p> <p>BNR believes that, for the purposes of an environmental approval document, the mitigation measures are more appropriately presented in a dedicated section the Attachment 12 (Table of Mitigation Measures (water)) is now PD Attachment 11 and has been updated. This approach ensures clarity for regulators and stakeholders and allows for a more focused assessment of how potential impacts will be effectively managed.</p> <p>NOTE: the Table of Mitigation Measures (water) has been updated.</p> <p>The Environmental Plan (EP) for assessment and acceptance under the <i>Petroleum and Geothermal</i></p>

		<p>As it stands, the current iteration of the PD states due to the measures which have been committed to by BNR, risks associated with the proposed action are not planned impacts and controls and mitigations in place ensure that all risks are either non-credible or highly unlikely for the events to occur. Similarly, to point 3 in this table regarding duplication of regulatory authorities and state, the department is of the view that the risks or events are potential impacts, however because of the regulatory functions in place, those impacts are avoided or mitigated to an acceptable level. For example, potential contamination due to lost circulation or well integrity issues (including case failures) poses a potential impact to surficial formations; however, due to the standard practice mitigations through WA state regulations, this impact has been avoided or mitigated.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (8) Integrate Attachment 12 (Table of Mitigation Measures (water) into the PD, where each mitigation measure is connected to the impact pathway it aims to avoid or mitigate. • (9) Consider use of wording such as “impacts” as opposed to “event” or “risk”. • (10) Consider the provision of the environment plan to be submitted to 	<p><i>Energy Resources Act 1967 (WA)</i> by the Department of Mines, Petroleum and Exploration (DMPE) will be structured in accordance with the EP framework, ensuring that appropriate mitigation measures are applied to all identified environmental impacts and risks.</p> <p>(9) Consider use of wording such as “impacts” as opposed to “event” or “risk”.</p> <p>BNR notes that the EPBC does not define what an environmental risk is, the definition of an impact clearly pertains to a direct correlation between the activity and a consequence (i.e. a planned impact) and further notes that indirect consequences are those associated with the primary event or action.</p> <p>BNR has tried where possible to clarify where an event MUST occur for an environmental consequence to occur (such as a surface spill event, flooding event etc.) and these are all risks which do not meet the definition of an impact or indirect impact under the Act.</p> <p>(10) Consider the provision of the environment plan to be submitted to the department prior to commencement of drilling.</p> <p>Whilst BNR can submit the Environment Plan to DCCEEW prior to the commencement of drilling, the Environmental Plan is subject to assessment and acceptance under the <i>Petroleum and Geothermal Energy Resources Act 1967 (WA)</i> by the Department of Mines, Petroleum and Exploration</p>
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			the department prior to commencement of drilling.	(DMPE). This approval is not sought at the same time as primary approvals given the significant uncertainty associated with these processes. Any EP would comprise the same risk assessments and subsequent mitigations included in the PD. BNR does not believe that providing this document to DCCEE post approval to be suitable given the document covers many other requirements that are outside of the EPBC Act remit.
Listed Threatened and Migratory Species				
5.	Pre-clearance Surveys (Greater Bilby)	PD Section 7.1.1 Attachment 11	<p>Comments: Seeking clarification</p> <p>The department considers the proposed avoidance and mitigation measures for pre-clearance surveys (requested in Question 25 c) of the previous RFI) do not clearly articulate consistency with best practice and current recommendations.</p> <p>Avoidance and mitigation measures in Attachment 11 include targeted pre-clearance surveys will be undertaken at least 6 months prior to clearing but also states Bilby survey guidelines will be implemented and followed. Current greater bilby guidelines state that pre-clearance surveys must be undertaken immediately before clearing, no more than two weeks prior to the clearing activities, and to be conducted in accordance with <i>Guidelines for pre-clearing searches to locate resident bilbies</i> (DBCAs 2018).</p>	<p>(11) Update the pre-clearance surveys to act consistently with the DBCA guidelines (see Question 25 c) of the previous RFI) and state draft conditions, or</p> <p>The following mitigation measures in PD Attachment 10 Mitigation Measures (Flora and Fauna) have been updated:</p> <p>‘Pre-clearance survey’ now states: <i>“Bilby survey guidelines are implemented and followed pre-clearing survey undertaken no more than two weeks prior to the clearing activities, and to be conducted in accordance with Guidelines for pre-clearing searches to locate resident bilbies (DBCAs 2018).”</i> And <i>“The timing of pre-clearance surveys will also be undertaken in accordance with the relevant State Ministerial Conditions (i.e. if less than two weeks prior to clearing is required).”</i> And</p>

			<p>The department notes the state draft condition B2-3 states pre-clearance surveys will occur within seven (7) days prior to clearing using a licensed fauna spotter.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> (11) Update the pre-clearance surveys to act consistently with the DBCA guidelines (see Question 25 c) of the previous RFI) and state draft conditions, or (12) Provide justification as to why these guidelines will not be adhered to. 	<p>Mitigation measure ‘Targeted Bilby Survey’ has been updated, it now states: <i>“A Targeted survey is to be undertaken to identify presence of bilby’s and identify any potential bilby burrows.”</i></p> <p>These management measures are consistently stated in PD Attachment 8 Assessment of Impacts to MNES as well as Section 7.1.1 of the PD,</p> <p>(12) Provide justification as to why these guidelines will not be adhered to.</p> <p>N/A see (11) BNR will comply with the DBCA Guidelines for pre-clearing searches to locate resident bilbies (DBCA, 2018) as well as the Final State Ministerial conditions.</p>
6.	Clearing of burrows (Greater Bilby)	<p>PD Section 5.3.3.2 Section 7.1.2 Section 7.2.1</p> <p>Attachment 8, Table 1</p> <p>Attachment 11</p>	<p>Comments: Seeking clarification</p> <p>The department considers the avoidance and mitigation measures relating to greater bilby burrows require further clarification.</p> <p>Avoidance and mitigation measures in Attachment 11 state that:</p> <ul style="list-style-type: none"> No clearing undertaken within 50 m of any identified burrows No clearing undertaken within 75 m of identified active burrows <p>However, the department notes management measures in Table 1 of Attachment 8 state</p>	<p>(13) Provide clear avoidance measures, preferably in one place, currently there are multiple places where these are listed, this makes it difficult to be consistent, and also review.</p> <p>Avoidance measures are stated in PD Attachment 10 Mitigation Measures (Flora and Fauna) as well as Attachment 8 Assessment of Potential Impacts to MNES (threatened species and migratory species) have been updated and are consistent.</p> <p>(14) Confirm whether avoidance buffers around burrows will be implemented, or if</p>

			<p>that, ‘no clearing will be undertaken within 75 m of identified active burrows. If burrows are located and cannot be avoided a Bilby Management Plan, in accordance with the pre-clearing searches guideline and approved by the DBCA will be implemented in accordance with Box 2. Guidelines for relocation of bilbies prior to vegetation clearing’. Section 7.2.1 of the PD states that relocation is not planned, favoring natural dispersal and encouraging dispersal to adjacent and protected habitat.</p> <p>The department notes State draft condition B2-3 does not include avoidance buffers for active or inactive bilby burrows and instead halts commencement of ground disturbing activities until the CEO and DBCA are notified, and individuals located in the pre-clearance survey have been relocated, moved on or deemed no longer to occur within the area.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (13) Provide clear avoidance measures, preferably in one place, currently there are multiple places where these are listed, this makes it difficult to be consistent, and also review. • (14) Confirm whether avoidance buffers around burrows will be implemented, or if translocation/dispersal will be implemented prior to clearing burrows. 	<p>translocation/dispersal will be implemented prior to clearing burrows.</p> <p>Avoidance buffers will be implemented in accordance with the Mitigation Measure (Flora and Fauna). Translocation will not take place as per PD Section 7.2.1.</p> <p>The following statement in PD Attachment 8 Assessment of Potential Impacts to MNES (threatened species and migratory species) has been removed.</p> <p><i>“If burrows are located and cannot be avoided a Bilby Management Plan, in accordance with the pre-clearing searches guideline and approved by the DBCA will be implemented in accordance with Box 2. Guidelines for relocation of bilbies prior to vegetation clearing”</i></p> <p>(15) If a Bilby Management plan is required, the department considers this will be required to be approved by the Minister for Environment and Water.</p> <p>BNR does not propose to implement a standalone Bilby Management Plan, as the management measures outlined in the State ERD and the Commonwealth PD are considered sufficient to manage potential impacts to the Bilby. Management measures will also be included in the Environment Plan (EP) for assessment and acceptance under the <i>Petroleum and Geothermal</i></p>
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			<ul style="list-style-type: none"> (15) If a Bilby Management plan is required, the department considers this will be required to be approved by the Minister for Environment and Water. 	<p><i>Energy Resources Act 1967 (WA)</i> by the Department of Mines, Petroleum and Exploration (DMPE).</p>
7.	Impacts to Northern Blue-tongued Skink	PD Section 5.1.2 Attachment 5	<p>Comments: Partially adequate</p> <p>The department notes in the response prepared by eco logia in Attachment 5 of the PD submission, no individuals of the species were recorded within the <i>disturbance footprint</i> of the proposed action development envelope. However, it was also stated based on previous records and desktop assessment, as well as the presence of suitable habitat within the disturbance footprint, it is considered possible that the northern blue-tongued skink may occur.</p> <p>One of the key threats identified in the Conservation Advice for <i>Tiliqua scincoides intermedia</i> (northern blue-tongue skink) is water drawdown, and that projects that use or drawdown surface or groundwater beyond sustainable levels are a threat to the integrity and existence of GDEs that provide critical habitat for the northern blue-tongued skink.</p> <p>The department has provided previous comments addressing the concerns regarding potential GDEs within the proposed action</p>	<p>(16) Provide further desktop assessment of GDEs within the proposed action development envelope.</p> <p>Refer to updated PD Section 4.2.5.1.</p> <p>(17) Demonstrate whether targeted surveys along the disturbance footprint adequately capture the extent of impacts potentially brought on from groundwater drawdown (i.e. do the surveys include a buffer of 400 m to capture the areas impacted by drawdown?)</p> <p>The targeted survey was conducted within the disturbance footprint and was undertaken in accordance with the <i>Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment</i> (EPA, 2020).</p> <p>For further explanation as to why BNR does not believe a 400 m buffer around the well pad disturbance footprint was necessary for the Targeted Survey please refer to PD Section 4.2.5.1 Groundwater Dependent Ecosystems (GDEs). In summary BNR believes potential impact to GDEs is not significant as modelling indicates the potential groundwater drawdown impacts are limited to</p>

			<p>development envelope not being captured within the desktop assessment.</p> <p>The department believes there is a real and not remote possibility of the species being impacted by the proposed action.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (16) Provide further desktop assessment of GDEs within the proposed action development envelope. • (17) Demonstrate whether targeted surveys along the disturbance footprint adequately capture the extent of impacts potentially brought on from groundwater drawdown (i.e. do the surveys include a buffer of 400 m to capture the areas impacted by drawdown?) 	<p>1 mm drawdown at 700 m from the abstraction point.</p> <p>The model has assumed that:</p> <ol style="list-style-type: none"> 1. connectivity exists 2. no recharge will occur. <p>These assumptions are conservative as the wet season in Kimberley will recharge the Liveringa Aquifer causing all ephemeral water features (referred to as GDEs within the Projects Area) to comprise surface expression, ensuring that any impacts (regardless of magnitude) are negated each year during the wet season. Further to this, water is abstracted from a single wellsite once and not continuously, so the exposure is temporary and would be expected to rapidly recover.</p>
8.	Impacts to Largetooth Sawfish	PD Section 5.1.3 Attachment 6	<p>Comments: Partially adequate</p> <p>The department acknowledges in the response prepared by eco logia in Attachment 6 of the PD submission, although no targeted surveys have occurred to locate the species within the proposed action development envelope, habitat assessment descriptions did not indicate nearby surface water, including 0 m² of surface water located at Mount Hardman Creek. The proponent has stated that while ephemeral flooding events may enable transient movement of the species into</p>	<p>(18) Provide further desktop assessment of GDEs within the proposed action development envelope.</p> <p>Refer to PD Section 4.2.5.1</p> <p>(19) Further justification that while current habitat assessment does not indicate water, why it is not anticipated that surface water will continue not to be present within the proposed action development envelope over the course of the life of project.</p>

			<p>upstream areas, the species is unlikely to utilise habitat within the proposed action development envelope.</p> <p>However, similarly to the northern blue-tongued skink, the department reiterates the ongoing concern with GDE/surface water mapping within the proposed action development envelope. While the proponent advises there is a lack of aquatic habitat suitable for the species to occur in, until there is further desktop assessment to confirm the hydrology within the proposed action development envelope, the department remains of the view that potential impacts may occur to the species as a result of contamination spill or groundwater drawdown.</p> <p>Further, the department notes in Attachment 6, the Fitzroy River is recognized as an important nursery area for the species in Western Australia.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (18) Provide further desktop assessment of GDEs within the proposed action development envelope. • (19) Further justification that while current habitat assessment does not indicate water, why it is not anticipated that surface water will continue not to be present within the proposed action 	<p>Neither BNR in PD Section 5.1.3 nor the subject matter expert at ecologia, who was engaged to undertake further assessment and analysis for the Largetooth Sawfish (PD Attachment 6) state that <i>“it is not anticipated that surface water will continue not to be present within the proposed action development envelope over the course of the life of project.”</i></p> <p>As indicated in the following extracts from PD Attachment 6, the expert clearly states that, based on Normalized Difference Water Index (NDWI) data, surface water within the development envelope, including Mount Hardman Creek, is ephemeral in nature. The NDWI data for the 2024 and 2025 dry seasons demonstrate that no surface water was retained during those periods, with 0 m² of surface water recorded within the Development Envelope.</p> <p>In contrast, during the January 2025 wet season, 6,190 m² of surface water was observed within the Development Envelope, specifically in Mount Hardman Creek. Importantly, no surface water (0 m²) was recorded within any of the identified impact areas (i.e., the disturbance footprint).</p> <p><i>“Analysis using the Normalized Difference Water Index (NDWI) indicates variable surface water availability within the creek intersecting the project footprint. Imagery captured on 24 January 2025 using Sentinel-2 satellite data indicates that approximately 6,190 m² of surface water was present within the development envelope in Mount</i></p>
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			<p>development envelope over the course of the life of project.</p>	<p><i>Hardman Creek and 0m2 within any impact areas (Figure 1). In contrast, imagery from 9 September 2024 (the previous dry season) detected 0 m² of surface water in the same area, suggesting that the creek does not retain permanent pools year-round and instead provides only ephemeral aquatic habitat. Further analysis of imagery captured in May 2025 also showed 0 m² of surface water within Mount Hardman Creek in the impact area”</i></p> <p><i>“Although aquatic fauna was not being sampled, survey methods including habitat descriptions did not indicate nearby surface water, indicating the ephemeral nature of the creek line. (EcoLogical Australia, 2021; Ecologia 2024).”</i></p> <p><i>“NDWI analysis indicates that Mount Hardman Creek stretch within the impact envelope does not retain water through the dry season. Specifically, in September 2024, no surface water was detected, indicating the absence of persistent aquatic habitat during the dry season. During the wet season (January 24th, 2025), NDWI analysis identified approximately 6,190 m² of surface water within the impact area. However, the depth, duration, and ecological suitability of this surface water as habitat for <i>Pristis pristis</i> remain unknown.”</i></p> <p>In PD Section 5.3.2.4 Potential Risk to Site Activities and Infrastructure due to Extreme Rainfall Events, BNR clearly states that flood events do occur, therefore acknowledging that there is a possibility</p>
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				that surface water may occur in the Project Area over the course of the life of project.
National Heritage – The West Kimberley National Heritage Place				
9.	Rainbow Serpent Tradition Values	<p>PD Section 5.2 Section 5.2.2 Section 5.2.3</p> <p>Stakeholder Engagement and Consultation Report prepared by Salerno Law (received separately on 17 July 2025)</p>	<p>Comments: Not yet adequate</p> <p>The department notes protected value in question is Criterion (d) due to the Rainbow Serpent traditions tied to the Fitzroy River and its tributaries. BNR has stated in Section 5.2.2 of the Preliminary Documentation that, “BNR understands that the Rainbow Serpent lives in the rivers and deep waters.” This is not considered the only expression of the Rainbow Serpent tradition.</p> <p>To quote the Australian Heritage Database: <i>Within the Fitzroy River Catchment there are four distinct expressions of the Rainbow Serpent tradition... [t]he Fitzroy River and a number of its tributaries, together within their floodplains and the jila sites of Kurrpurrngu, Mangunampi, Paliyarra and Kurungal, demonstrate four distinct expressions of the Rainbow Serpent tradition associated with Indigenous interpretations and of the different ways in which water flows within the catchment and are of outstanding heritage value to the nation under criterion (d) of their exceptional ability to convey the diversity of the Rainbow Serpent tradition within a single freshwater hydrological system.</i></p>	<p>(20) Provide further demonstration of the impact pathways for the proposed action against multiple expressions of the Rainbow Serpent tradition.</p> <p>BNR believes that the impact pathways associated with the proposed action on multiple expressions of the Rainbow Serpent tradition have been sufficiently demonstrated through the identified pathways impacting both water resources.</p> <p>BNR evaluated the exposure mechanisms by which the proposal could directly or indirectly impact any water resources (both within the Development envelope and outside of the Development Envelope).:</p> <ul style="list-style-type: none"> • Groundwater drawdown (Section 5.3.1.1 of the PD) • Potential contamination of aquifers through unplanned fracture heights (non-credible risk due to existing geological conditions) (Section 5.3.2.1 of the PD) • Potential contamination of surficial formations due to lost circulation or well integrity issues, including casing failures (event is risk is no different to conventional drilling activities) (Section 5.3.2.2 of the PD)

			<p>The department acknowledges the proponent and Traditional Owners of the land overlapping the proposed action development envelope do not consider the Rainbow Serpent tradition values will be impacted as a result of the proposed action. However, due to the diverse expressions of the Rainbow Serpent tradition across a large spanning area, any concerns the department has regarding impacts to the freshwater hydrological system; be it flowing surface water, underground water flows, excavated waterholes or discrete pools, are linked to the heritage value under criterion (d) for their exceptional ability to convey the diversity of the Rainbow Serpent tradition.</p> <p>For that reason, the department is seeking further justification to ensure the impact assessment of the project is considered against multiple expressions of the Rainbow Serpent tradition that are more likely to be affected by the proposed action.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> • (20) Provide further demonstration of the impact pathways for the proposed action against multiple expressions of the Rainbow Serpent tradition. 	<ul style="list-style-type: none"> • Potential risk to site activities and infrastructure due to extreme rainfall events. (event is no different to conventional drilling activities) (Section 5.3.2.4 of the PD) <p>PD Section 5.3 Water Quality of a Water Resource has been updated to include all risks that are addressed in the ERD, additional sections include:</p> <ul style="list-style-type: none"> • Section 5.3.2.3 Potential Contamination of Surficial Aquifers from an accidental release at the surface of drilling fluids, HFS chemicals, liquid hydrocarbons, or produced formation water and • Section 5.3.2.5) Potential Contamination of Land and Soils from unplanned Surface Spills. <p>Mitigation measure to avoid and minimise these impacts are detailed in PD Section 7 Avoidance and Mitigation Measures. Attachment 11 Table of Mitigation Measures (Water) details the mitigation measures</p> <p>NOTE this has been updated since PD V1</p> <p>Additionally, management measures will be included in an EP for assessment and acceptance under the <i>Petroleum and Geothermal Energy Resources Act 1967 (WA)</i> by the Department of Mines, Petroleum and Exploration (DMPE).</p>
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				<p>In all of these assessments, with mitigation measures implemented the outcome is that BNR does not believe that based upon the subsurface geology and proposed mitigations in place, that the Proposal could impact any surface water feature. Based upon this assessment, further consideration to specific surface water values and sensitivities outside the Development Envelope (i.e. multiple expressions of the Rainbow Serpent tradition) is not required as exposure to these sensitivities is not deemed credible.</p> <p>In addition to PD Attachment 11 Table of Mitigation Measures (Water) a Groundwater Management Plan (PD Attachment 12) has been developed to manage the environmental risks associated with the Proposal for the purpose of managing impacts to groundwater. The GWMP describes the proposed groundwater monitoring program as well as trigger and threshold criteria that will be implemented to minimise impacts associated with the Proposal. The GWMP will be implemented to demonstrate that residual impacts on groundwater are not greater than predicted.</p>
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<p>10.</p>	<p>Stakeholder Engagement</p>	<p>PD Section 3 Section 3.1 Section 3.1.1 Section 3.1.2 Section 3.2 Section 3.3</p> <p>Stakeholder Engagement and Consultation Report prepared by Salerno Law (received separately on 17 July 2025)</p>	<p>Comments: Not yet adequate</p> <p>The National Heritage listing for the West Kimberley notes the Fitzroy River and a number of its tributaries, together with their floodplains and the jila sites (freshwater springs) of Kurrpurrngu, Mangunampi, Paliyarra and Kurungal have outstanding heritage value to the nation for its exceptional ability to convey the diversity of the Rainbow Serpent tradition within a single freshwater hydrological system.</p> <p>The department draws the Proponent’s attention to the department’s <i>Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999</i> (Interim Engagement Guidelines) which notes the department expects that proponents will engage respectfully and effectively with First Nations peoples and communities in meeting their statutory obligations.</p> <p>The department acknowledges that Indigenous people are the primary source of information on the value of their heritage and should be consulted on a proposed action likely to significantly impact on the listed Indigenous heritage values of the place and/or on a protected matter that has Indigenous heritage values. In keeping with the advice on the</p>	<p>(21) Demonstrate, and provide evidence, that stakeholder engagement with Traditional Owners has extended outside of the Traditional Owner groups overlapping the proposed action development envelope.</p> <p>BNR maintains its position, as outlined in Section 5.2.2, that consultation with relevant stakeholders has been complete and inline with the accepted standards. DCCEEW states that:</p> <p>“prior to undertaking any action, proponents should contact the appropriate Aboriginal Traditional Owners and Custodians of the land on which the action will occur that has listed values that may be significantly impacted, as well as the Aboriginal Traditional Owners and custodians of adjoining lands that may be significantly impacted by the action.”</p> <p>BNR has stated, and maintains, that there will be no significant impact to the Fitzroy River (PD Section 5.3). Given the intrinsic cultural and spiritual connection between the Fitzroy River and the Rainbow Serpent tradition, it follows that there will be no significant impact to this tradition. Consequently, Aboriginal Traditional Owners and custodians of adjoining lands are considered as interested stakeholders which have access to information on the project through various public avenues.</p>
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			<p>extent of potential impacts to the Rainbow Serpent tradition and associated attributes within the WKNHP.</p> <p>The department notes the Australian Heritage Council's final assessment report discusses the significance of the Fitzroy River, with referenced sources. This includes:</p> <ul style="list-style-type: none"> • Discussion on the significance of the Fitzroy River on pp 32-35, with specifics on the Rainbow Serpent tradition on p 33 • Extensive discussion of the Rainbow Serpent tradition on pp169-175 in relation to how the values of the Rainbow Serpent tradition were determined for the purposes of the National Heritage listing under criterion d. <p>The department notes the proponent considers relevant stakeholders have been engaged and are limited to the Traditional Owners overlapping the proposed action development envelope.</p> <p>The department reiterates its previous advice to consider use of Martuwarra Fitzroy River Council and/or the Kimberley Land Council to support the most suitable pathway forward to</p>	
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			<p>effectively engage with all relevant stakeholders.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> (21) Demonstrate, and provide evidence, that stakeholder engagement with Traditional Owners has extended outside of the Traditional Owner groups overlapping the proposed action development envelope. 	
11.	Relevant Traditional Owner Groups (WAC)	<p>PD Section 3.1.1 Section 3.1.2</p> <p>Stakeholder Engagement and Consultation Report prepared by Salerno Law (received separately on 17 July 2025)</p>	<p>Comments: Partially adequate</p> <p>A letter of support was provided to the department signed by Steve Horton CEO on behalf of the YAC and NAC. However, a letter of support has not been provided by Blina Station or the WAC. Although it is acknowledged Thomas Skinner, Chairperson of the Board of the NAC and the YAC is connected to the WAC and represented their views during the process, the department is requesting evidence of consultation via written document from the WAC confirming the consultation and providing their support or otherwise for the proposed action in relation to protection of their heritage values and sites.</p>	<p>(22) Provide letter of support/evidence of consultation from the WAC</p> <p>Please refer to WAC Letter of endorsement supplied to DCCEEW separately to PD.</p>

			Tasks for action: <ul style="list-style-type: none">• (22) Provide letter of support/evidence of consultation from the WAC	
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Australian Government

Department of Climate Change, Energy,
the Environment and Water

Attachment A: Feedback and comments on EPBC 2024/10006 – Valhalla Gas Exploration & Appraisal Program (Phase I and II), WA – draft Preliminary Documentation and associated documentation – Version 3 (V3), 30 January 2026.

Summary of feedback

- A. The Department of Climate Change, Energy, the Environment and Water (the department) notes these comments incorporate the IESC Advice published on 22 December 2025.
- B. The department considers the current monitoring program outlined in the Groundwater Management Plan (GWMP) requires further consideration, particularly for the Poole aquifer, to include additional monitoring bores and increased monitoring time. The department considers a baseline is required for the purposes of monitoring water quality prior to any drilling activities occurring at the site, this has been accepted to be at least 12 months of data for the Liveringa, and the same should be applied to Poole.
- C. The department notes that the table of mitigation measures for water has been updated, these should be reflected in the PD; with avoidance / mitigation measures being directly linked to the impacts. The department considers there is a potential impact to water resources from the proposed action and these impacts are being mitigated by the measures outlined in the table. To reduce administrative burden, the department requests the proponent clearly articulate in the PD which of the measures are mitigating which impacts, and how these measures reduce any impact to an acceptable level. Noting that a reference to an Environmental Plan (EP) that will be prepared in line with State requirements, is not adequate to meet the EPBC Act regulatory requirements.
- D. The department refers the proponent to the IESC Advice, which supports previous comments provided, on the substantial uncertainty regarding hydrogeological and hydrological processes, surface water-groundwater interactions and presence of groundwater dependent ecosystems (GDEs) at the project scale which limits the ability to assess all potential impacts on water resources. The department considers (as per previous advice) site-specific work is required to characterise GDEs within the project area, particularly around the Muspelheim well site (refer Para 1 IESC Advice and previous RFI .18).
- E. Given the hydrology of the project area has not been adequately conceptualised, particularly regarding Mount Hardman Creek and its connection to any adjoining alluvium, the department considers the monitoring program, as pointed to in B, will be required to be extended to 12 months. Additional information on the ecological character of GDEs in the project area, especially around bores that access the Liveringa aquifer, should be obtained prior to operations commencing (refer Para 2 in IESC Advice).
- F. Further site-specific mapping and characterisation of the alluvium in the project area is required, specifically for understanding impact pathways associated with contaminations, spills or leaks (refer para 4 IESC advice) (also see comment 4 in the

below table).

- G. Further consideration into the design, operation, and calculations for the wastewater sumps and ponds are required to ensure the potential impacts from spills or leaks are mitigated to MNES, in line with the recommendations expressed in the IESC advice.
- H. The department considers the lack of site-specific GDEs and surface water-groundwater connectivity characterisation does not allow the department to accurately assess the impact pathways associated with the northern blue-tongued skink and the largetooth sawfish.
- I. The department reaffirms that further stakeholder engagement is required to consider the values of the WKNHP.

Further work to be conducted

In addition to the points above, the department notes that the IESC have identified additional work required to address the key potential impacts detailed in the advice, including:

- (Point 1) Assess near-term climatic conditions using relevant datasets to ensure that the water balance model incorporates adequate freeboard and accounts for flood loading on the water management system.

BNR Response

BNR has provided additional water balance modelling support to its position relating to near term climatic conditions and extreme rainfall events in relation to the proposed produced water wastewater ponds.

Modelling confirms that the Proposed Action can be managed within the 500 mm freeboard limit, noting that probability of a 1 in 100 year (1% AEP) or 1 in 200 year (0.5% AEP) storm event occurring during the proposed action duration of 7 years is estimated at 6.8% and 3.4%, respectively and based on results from previous HFS activities in the Canning Basin, as well as analogues from similar fields globally, typical recovery rates are around 50%¹.

The results from the model, regardless of the scenario presented, do not provide any additional evidence to indicate that a freeboard of 500mm is not sufficient when monitoring and mitigation measures proposed are implemented, which are detailed in PD Table 5-9 to prevent overtopping during extreme or prolonged rainfall events.

For detailed information please Refer to PD Section 2.4.3, Section 5.1.2.8 and Attachment 14 for updated Water Balance Modelling.

- (Point 2) Provide information on the evapoconcentration of analytes and potential ecotoxicology of pond water to understand impact pathways from possible overtopping and contaminant release into the surrounding environment.

BNR Response

BNR acknowledges the request for information on the evapoconcentration of analytes and the potential ecotoxicology of produced wastewater to understand possible impacts of overflow

¹ Buru Energy Submission to the Scientific Inquiry into Hydraulic Fracture Stimulation in Western Australia (Buru, 2018)

and contaminant release pathways to surface water, including GDEs. Consistent with DCCEEW's EPBC Act assessment requirements, BNR has considered whether sufficient information has been provided to:

- Identify potential impact pathways,
- Assess the likelihood of those pathways occurring, and
- Determine whether those pathways could lead to significant impacts on MNES.

At this stage, the exact evapoconcentration behaviour and ecotoxicity profile of produced wastewater from the proposed activities cannot be fully quantified because drilling and production operations have not yet commenced, and State and Commonwealth environmental approvals are required before drilling or hydraulic stimulation can occur.

However, the information available to date provides a reasonable basis to characterise likely risks. Previous completed ecotoxicity testing undertaken by Buru in 2018 demonstrated extremely low inherent toxicity of produced water (EC50 values of 7,100 mg/L and >200 mg/L), and measured analyte concentrations in flowback water that were several orders of magnitude below acute or chronic aquatic toxicity thresholds (PD Section 5.1.2.5, Table 55).

Given the same geological formation and similar operational conditions, BNR considers it reasonable to expect a comparable ecotoxicological profile for future produced water, with no indicators of significant environmental concern.

To address remaining uncertainties, BNR has formally committed to ecotoxicology testing of pond water at each well site. Testing will be undertaken by an independent NATA-endorsed laboratory using the *Heliocidaris tuberculata* sea urchin fertilisation test or other appropriate methodologies, with results reported annually through compliance reporting to the DMAs. This commitment ensures that any potential ecotoxicity will be directly measured and transparently reported.

Regarding evapoconcentration, the primary environmental concern relates to the potential for overtopping and subsequent release. The evapoconcentration of analytes is not considered a credible risk pathway because:

- Ponds will be double-lined, have built in leak detection systems between liners and engineered with adequate freeboard. *This is consistent with the States HFS Inquiry's conclusion that risks to near-surface aquifers from waste management practices are low where regulatory requirements are met (Finding 30).*
- Trigger- and threshold-based monitoring measures (PD Section 5.1.2.9, Table 5-13) will ensure that any unexpected increases in analyte concentrations or pond levels are detected early.
- Extreme rainfall events will be actively monitored, and pond operating levels managed to ensure overtopping is not a credible pathway. Please also Refer to PD Section 2.4.3, Section 5.1.2.8 and Attachment 14 for updated Water Balance Modelling.
- The two potential impact pathways identified have been analysed and shown to be non-credible when mitigation measures are applied, see sections in PD for the detailed assessment:

- Potential Contamination of Surficial Aquifers from an accidental release at the surface of drilling fluids, HFS chemicals, liquid hydrocarbons, or produced formation water (PD Section 5.1.2.5).
- Potential Risk to Site Activities and Infrastructure due to Extreme Rainfall Events (flooding) (PD Section 5.1.2.8).

Having regard to the EPBC Act Significant Impact Guidelines 1.1, including scale, intensity, likelihood, and duration of potential impacts, BNR considers that the residual risk associated with wastewater storage and management is unlikely to result in significant impacts on MNES. Therefore, further characterisation of evapoconcentration processes or ecotoxicological effects is not required at this stage for DCCEEW to undertake its assessment.

BNR would like to note in the WA EPA Assessment Report 1800, it was stated:

“While recognising some uncertainty in the composition of flowback water over time, the EPA considers that, with appropriate containment and management, including lined evaporation ponds with freeboard allowances the likelihood of contamination of groundwater or surface water is low. This is consistent with the HFS Inquiry’s conclusion that risks to near-surface aquifers from waste management practices are low where regulatory requirements are met (Finding 30).”

- (Point 3) Clarify the proposed decommissioning of mud sumps once exploration and appraisal testing is complete at each well site.

BNR Response

Mud sumps and wastewater ponds constructed for exploration and appraisal activities are temporary facilities and will be managed and decommissioned in the same manner as conventional drilling operations, in accordance with the Petroleum and Geothermal Energy Resources (Environment) Regulations 2012 (PGER(E)R), relevant waste and contaminated land legislation, and an approved Environment Plan.

Please refer to the updated PD Section 7.1.3 which provides an outline of actions to be undertaken.

- (Point 4) Investigate potential groundwater-surface water connectivity, and groundwater fluxes between upper aquifers and alluvium associated with Mount Hardman Creek to determine relevant potential impact pathways of spills and leakage to water resources and dependent assets.

BNR Response

The assessment presented in the updated Preliminary Documentation demonstrates that the investigations into groundwater-surface water connectivity and groundwater fluxes between the upper aquifers and the Mount Hardman Creek alluvium are not required to determine whether the Proposed Action is likely to have a significant impact, because the significance assessment has already been completed using deliberately conservative, worst-case assumptions that greatly overstate any potential effect.

Groundwater modelling assumed full hydraulic connectivity, no recharge, simultaneous abstraction at all ten bores, and the highest credible extraction volumes, yet still predicted

negligible drawdown ~1 millimetre at 700 m, with Mount Hardman Creek located well outside this influence at ~1 km from the nearest well pad. Mount Hardman Creek is an ephemeral drainage line that flows only following major rainfall events and does not contain characteristics of a sensitive or high-value groundwater-dependent ecosystem, and the disturbance footprint avoids direct interaction with its channel or riparian zone, eliminating any physical disturbance pathway.

The geological framework further confines potential pathways as the shallow Liveringa Aquifer is separated from the underlying Poole Aquifer by the thick, regionally extensive Noonkanbah Formation, while the target Laurel Formation is located roughly 1,800m deeper again, and previous hydraulic fracture stimulation in the same area demonstrated that induced fracture heights remained far below aquifer interfaces, confirming the presence of robust geological barriers.

In addition to these natural controls, the Proposed Action includes a suite of mitigation measures that address each credible impact pathway identified in the environmental risk assessment:

- for groundwater drawdown, abstraction is short-term and highly localised, sits within the broader Fitzroy allocation framework, and is managed through a Groundwater Management Plan with trigger levels, thresholds, and adaptive management responses (PD Section 5.1.1.1)
- for unplanned fracture propagation, the HFS program incorporates microseismic monitoring, early warning systems, and mandated minimum vertical separation distances to ensure all fractures remain within the Laurel Formation; for risks associated with existing faults, site specific geomechanical assessments are required before stimulation to confirm fault stability (PD Section 5.1.2.1)
- for well integrity pathways, including lost circulation or casing failures, wells must comply with the PGER regulatory framework and undergo independent examination of it's Well Management Plan including well design, construction, and pressure containment barriers (Section 5.1.2.3)
- for surface spills and leakage, all chemicals, drilling fluids, and produced water will be managed on engineered hardstands with bunding, spill response procedures, and dual lined containment ponds with leak detection and capacity for extreme rainfall events, supported by ecotoxicology testing, conservative pond sizing, and flood resilience design criteria (PD Section 5.1.2.5 and 5.1.2.8).

These mitigation measures were assessed by the EPA as sufficient to ensure that all potential impact pathways are low risk, well controlled, and consistent with the environmental objectives for water resources (inland waters), noting that any remaining uncertainties are expected to be resolved through post approval monitoring, updated conceptual models, and adaptive management as required by the EPA's recommended conditions under the EP Act, RiWI Act, and PGER Act. Accordingly, the additional hydrogeological investigations requested by the Department are most appropriately completed after approval—not because they are unnecessary overall, but because they are relevant to refining operational thresholds and management responses, rather than determining whether the action poses a significant impact.

BNR has adopted a conservative assumption of surface water - groundwater connectivity within the Liveringa aquifer for the purposes of impact assessment. The PD identifies credible pathways by which spills or leaks could affect water resources and subsequently potentially impact associated water dependent assets (GDEs) within the Project area, and proposes mitigation measures to avoid, minimise, and manage potential impacts for each pathway. Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments. Refer to the PD:

- 5.1.2.1 Potential Contamination of Aquifers Through Unplanned Fracture Heights
- 5.1.2.3 Potential Contamination of Surficial Formations due to Lost Circulation or Well Integrity Issues, Including Casing Failures
- 5.1.2.5 Potential Contamination of Surficial Aquifers from an accidental release at the surface of drilling fluids, HFS chemicals, liquid hydrocarbons, or produced formation water
- 5.1.2.8 Potential Risk to Site Activities and Infrastructure due to Extreme Rainfall Events

Effectively, with implementation of mitigation measures for the impact pathways there is either no credible pathway for exposure, or the likelihood of exposure has been reduced to the point where any potential for impact to any MNES is Highly Unlikely. As no direct impacts to water resources from spill / leak are present, and as any indirect impacts are themselves expected to be small in the unlikely event any were to occur, understanding localised groundwater connectivity between the surficial (upper) aquifers and alluvium associated with Mount Hardman Creek would provide no material change to the assessment which has clearly demonstrated that assuming connectivity, the magnitude of any impacts (should they arise) would not be significant.

BNR notes that EPA Assessment Report 1800 stated in regards to surface spills:

“The EPA considers that small volume incidental spillages and leaks of chemicals, fuel and wastewater may occur. However, the EPA advises that with standard operational controls and mitigation measures, there is a low likelihood of significant adverse impacts to groundwater or surface water quality.”

BNR notes that EPA Assessment Report 1800 stated in regards to wastewater ponds:

“While recognising some uncertainty in the composition of flowback water over time, the EPA considers that, with appropriate containment and management, including lined evaporation ponds with freeboard allowances the likelihood of contamination of groundwater or surface water is low. This is consistent with the HFS Inquiry’s conclusion that risks to near-surface aquifers from waste management practices are low where regulatory requirements are met (Finding 30).”

- (Point 5) Conduct field sampling to determine the presence of subterranean GDEs and, if detected, monitor and assess potential impacts from the project.

Based on the information provided in Point 4 above, and noting the EPA statements below, BNR does not consider that additional field sampling is required to determine the presence of subterranean GDEs for the current assessment phase. The identified impact pathways have

been described and assessed (refer to PD Section 5.1). The assessments conclude that impacts to GDEs and subterranean fauna are low potential impacts and are highly unlikely to occur with mitigations and management measures in place. Refer to impact pathways in the PD:

- 5.1.1.1 Groundwater Drawdown (Hydraulic Connectivity Between Aquifer and Surface Water)
- 5.1.2.1 Potential Contamination of Aquifers Through Unplanned Fracture Heights
- 5.1.2.3 Potential Contamination of Surficial Formations due to Lost Circulation or Well Integrity Issues, Including Casing Failures
- 5.1.2.5 Potential Contamination of Surficial Aquifers from an accidental release at the surface of drilling fluids, HFS chemicals, liquid hydrocarbons, or produced formation water
- 5.1.2.8 Potential Risk to Site Activities and Infrastructure due to Extreme Rainfall Events

With the implementation of standard mitigation and management measures (PD Section 5), BNR does not expect these indirect pathways to result in a significant environmental impact. Accordingly, impacts to subterranean fauna and subterranean GDEs, including their ecological values, are not expected to be significant under the EPBC Act.

On this basis, BNR considers that additional baseline sampling for subterranean GDEs is not required for the assessment period. The proposed action is not likely to have a significant impact, as no credible pathway exists by which it would adversely affect habitat critical to the survival of a listed threatened species, or modify, destroy, remove, isolate, or reduce habitat availability or quality to an extent that would cause species decline or impair survival or reproduction.

In addition to the matters outlined above, BNR notes that notwithstanding the limited site-specific information on stygofauna diversity, EPA Assessment Report 1800 concluded impacts to stygofauna are unlikely to be significant:

“The EPA notes that groundwater drawdown may also result in potential impacts to stygofauna through loss of habitat and individuals. Noting the considerations above, and notwithstanding the limited knowledge of site-specific stygofauna biological diversity, the EPA considers that potential impacts to stygofauna are not likely to be significant. Subterranean fauna is not considered to be a key environmental factor for the EPA’s assessment and is discussed in Appendix E – ‘Other environmental factors’.”

“Subterranean fauna was identified as a preliminary key environmental factor when the EPA decided to assess the proposal; however, the EPA considers it to not be a key factor at the conclusion of its assessment. The EPA acknowledges the limited survey or local data available to understand the potential richness of subterranean fauna communities within the proposal area. However, having regard for:

- *the proponent’s subterranean fauna desktop assessment (Bennelongia 2023) that concluded there was a little likelihood of impact to subterranean fauna irrespective of the biodiversity that may be present in the area*
- *advice received from DWER that further surveys are not warranted given the likelihood and scale of expected impacts to subterranean fauna*

- *impacts to stygofauna habitat and individuals are not expected to be significant given the small magnitude and short duration of groundwater drawdown, reinforced through recommended condition B1-1(1)*
- *impacts to troglofauna habitat and individuals are not expected to be significant given the relatively”*

If not explicitly mentioned in tasks for action below, demonstrate how BNR will conduct further works to investigate the above dot points.



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Attachment A: Feedback and comments on EPBC 2024/10006 – Valhalla Gas Exploration and Appraisal Program (Phase I and II), WA – draft Preliminary Documentation V3

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
Water resources that relate to unconventional gas development and large coal mining development					
1. V2 Comments 29/9/25	Groundwater Management Plan	PD Section 9.1 Attachment 13, 14	<p>Comments: Partially adequate</p> <p>BNR advised no further updates can be made to the Groundwater Management Plan (GWMP) as the current iteration is the final document on which a decision is to be made at state level. BNR has committed to updating the GWMP to include compliance provisions relevant to the EPBC Act in a future collaboration with the Office of Water (DCCEEW), DWER and DMPE, ensuring a single water management plan is in place to manage the identified water risks.</p> <p>The department acknowledges, similarly to the IESC findings, that the GWMP in its current iteration outlines the proposed monitoring program for the Liveringa and Poole aquifers. As explained below in more detail, the</p>	IESC Advice Paragraph 15	<p>(1) Confirm if BNR intends the GWMP to form part of the condition set; noting a revised, EPBC-compliant version would need to be submitted prior to this occurring.</p> <p>BNR confirms its intention that the GWMP should form part of the Commonwealth condition set.</p> <p>BNR commits to updating the GWMP to include compliance provisions relevant to the EPBC Act in a future collaboration with the Office of Water (DCCEEW), DWER and DMPE, ensuring a single water management plan is in place to manage the identified water risks.</p> <p>BNR would also like to note the EPA Assessment Report 1800 EPA Report 1800 Valhalla.pdf has conditioned the review of the GWMP as well as annually reporting effectiveness in the Performance report which is subject to an independent review.</p>

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Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>monitoring program will require further review or justification as to its efficacy.</p> <p>The department notes that it will consider the adequacy of the GWMP and the trigger and thresholds that have been provided once updated as per the above. Noting that the trigger and threshold levels should be guided by baseline data that is gathered.</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) Confirm if BNR intends the GWMP to form part of the condition set; noting a revised, EPBC-compliant version would need to be submitted prior to this occurring. 		<p><i>“Recognising the critical role of groundwater management, the EPA recommends that the Groundwater Management Plan (GWMP) be approved by the EPA, following advice from DMPE and DWER, prior to any exploration drilling (condition C1-1). This ensures groundwater-related risks are managed within a robust and transparent framework. The GWMP must include local-scale groundwater monitoring for at least 12 months before drilling to establish baseline data, and a revision of groundwater modelling for each well site prior to the drilling of the exploration well (condition C4 3). Importantly, findings from recommended environmental performance reporting and independent review (condition B6) trigger revisions and updates to the GWMP which includes a review of the project-scale hydrological and hydrogeological conceptualisation (condition C2-2(4)) ensuring that learnings are integrated, and safeguards are progressively strengthened. This adaptive approach provides assurance that the EPA’s environmental objectives will be met and maintains public confidence in the proposal’s implementation.”</i></p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
					BNR have started working on the updated plan which will include amended triggers, thresholds and monitoring for Poole Aquifer consistent with those now provided in the PD (Section 5.1.2.1, Table 5.3).
2. V2 comments 29/9/25	Groundwater Management Plan (Baseline Monitoring)	PD Section 9.1 Attachment 13, 14	<p>Comments: Partially adequate (Liveringa Aquifer)</p> <p>The department considers the baseline monitoring outlined in the current iteration of the GWMP is adequate for the Liveringa aquifer, consisting of one upgradient control bore and two downgradient bores per wellsite, which will operate over the course of a single year to gather seasonal variation.</p> <p>The department notes that either within the GWMP or as a condition of any approval this monitoring will be required to commence at least 12 months prior to any construction activities occurring on site, and the data will be required to be provided to the department for consideration.</p> <p>The IESC has also noted in paragraph 16 of their advice, the monitoring for the Poole aquifer needs to be reviewed</p>	IESC Advice Paragraph 15, 16	<p>(1) Provide an updated monitoring program for the Poole aquifer that adequately addresses the concerns raised by the IESC advice and previous departmental advice, with a commitment for at least 12 months of baseline data collected prior to HFS and construction; similar to the monitoring proposed for the Liveringa aquifer.</p> <p>(2) Install additional monitoring bores within the Poole aquifer prior to well drilling to provide greater coverage of the project area, as per recommendation by IESC (Paragraph 16 of IESC Advice). If this is not completed, provide evidenced based justification as to why this is not required to ensure any potential impacts are mitigated. Note that an impact is NOT an event that MUST occur it is the potential of an impact (see comment 4).</p> <p>BNR Response</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>prior to any approval. In its current iteration, the GWMP is proposing monitoring of the Poole aquifer to occur at least 6 months prior to the commencement of HFS, meaning it is likely the exploration wells will be drilled before sufficient site-specific data surrounding the water level and water quality can be taken. The department agrees with the IESC’s concern that changes to water quality could occur before the proposed monitoring program has commenced.</p> <p>In addition to this, the IESC has also indicated for the purposes of baseline monitoring, that additional monitoring wells should be installed in the Poole aquifer prior to exploration well drilling to provide greater coverage of the project area and ensure that any leaks and water quality changes can be detected and remediated.</p> <p>For these reasons, the department reiterates its previous comments regarding the baseline monitoring in comments sent on 29 September 2025.</p>		<p>BNR acknowledges the advice of the Independent Expert Scientific Committee (IESC) and previous departmental advice regarding the monitoring of groundwater resources potentially connected to unconventional gas activities. BNR also recognises the importance of groundwater monitoring programs in providing confidence that potential impacts from the Proposed Action to water resources are detected and managed appropriately.</p> <p>Subsurface contamination of the Poole Aquifer is not considered a credible impact pathway (PD Section 5.1.2.1). This position is supported by IESC advice on deep unconventional gas exploration and appraisal (IESC Report 2024-150), which states that <i>“hydraulic fracturing of the deep shales for exploration and appraisal is not considered to be a major risk to the Basin’s[Beetaloo] groundwaters if conducted according to industry best practice”</i> (IESC, 2024).</p> <p>BNR acknowledges that different locations present different subsurface geological</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>Tasks for action:</p> <ol style="list-style-type: none"> 1) Provide an updated monitoring program for the Poole aquifer that adequately addresses the concerns raised by the IESC advice and previous departmental advice, with a commitment for at least 12 months of baseline data collected prior to HFS and construction; similar to the monitoring proposed for the Liveringa aquifer. 2) Install additional monitoring bores within the Poole aquifer prior to well drilling to provide greater coverage of the project area, as per recommendation by IESC (Paragraph 16 of IESC Advice). If this is not completed, provide evidenced based justification as to why this is not required to ensure any <u>potential</u> impacts are mitigated. Note that an impact is NOT an event that MUST occur it is the potential of an impact (see comment 4). 		<p>conditions and that comparisons between the Beetaloo Basin and the Valhalla Proposed Action Area are not directly equivalent. However, the relevant impact pathways are comparable. At Valhalla, the subsurface geology includes significant geological separation between the Laurel Formation and the overlying Poole Sandstone, including the presence of the Noonkanbah Formation aquitard (Lindsay & Commander, 2005). Accordingly, the conclusions of the IESC investigation are considered relevant to the assessment of potential impact pathways for the Proposed Action.</p> <p>BNR’s proposed monitoring framework for the Poole Aquifer is therefore designed to be risk-proportionate, adaptive and capable of detecting any credible impact pathway, while avoiding unnecessary disturbance to groundwater systems where the likelihood of impact is extremely low.</p> <p>Based on the hydrogeological assessment presented in PD Sections 5.1.2.1, 5.1.2.3 and 5.1.2.5, there are no credible subsurface or</p>

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					<p>surface pathways through which activities associated with the Proposed Action could result in contamination of the Poole Aquifer. This conclusion is supported by the significant geological separation between the Laurel Formation and the Poole Sandstone, including the presence of the Noonkanbah Formation aquitard (Lindsay & Commander, 2005), together with the implementation of industry best-practice well integrity controls.</p> <p>Additional factors supporting the low-risk assessment include:</p> <ul style="list-style-type: none"> • The Poole Sandstone is not utilised within the Project Area. • Vertical migration from the Laurel Formation is not considered credible due to the following controls required under the Hydraulic Fracturing Scientific Inquiry (HFS): <ul style="list-style-type: none"> ○ geological separation of the Poole Sandstone from the

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
					<p>Laurel Formation by an intervening aquitard;</p> <ul style="list-style-type: none"> ○ completion of geotechnical risk assessments to identify and avoid potential faulting or migration pathways prior to stimulation; ○ maintenance of appropriate separation distances between stimulation zones and the Poole Aquifer; and ○ physical constraints, including pressure conditions, that limit achievable fracture height and length. <p>During drilling activities, the surface hole sections represent the most sensitive phase, as they intersect surficial aquifers that typically have lower salinity and are therefore most suitable for beneficial uses such as potable supply or agriculture. Consequently, loss of drilling fluid circulation resulting in the release of drilling fluids into surficial</p>

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					<p>formations represents the primary groundwater contamination risk during drilling activities (HFS Finding 25).</p> <p>As the Poole Aquifer is not a surficial aquifer, it is not intersected during these sensitive drilling phases. Accordingly, the associated risk to the Poole Aquifer during drilling activities is considered non-credible (PD Section 5.1.2.3, Table 5-4).</p> <p>The HFS Inquiry also found that global best-practice standards for the design, construction and operation of oil and gas wells, including those relating to hydraulic fracture stimulation, are generally sufficient to manage groundwater contamination risks if competently implemented (Finding 76). The Inquiry further recommended that well design, construction and testing be independently assessed by a certified well examiner (Recommendation 33). BNR has committed to implementing these requirements and will undertake well integrity risk assessments for each proposed well throughout the well</p>

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					<p>lifecycle to ensure that well integrity is maintained.</p> <p>Consistent with IESC advice that the most credible groundwater risks associated with hydraulic fracturing arise from surface spills or well integrity failure (IESC, 2024), the Proposed Action prioritises mitigation and monitoring measures associated with these pathways. These measures include monitoring of the Liveringa aquifer, management and mitigation measures such as spill prevention and response measures, and independent verification of well integrity.</p> <p>Notwithstanding the low likelihood of impact, BNR proposes a trigger-based monitoring framework for the Poole Aquifer. Under this framework, two monitoring bores (one control bore located hydraulically upstream of the Development Envelope and one surveillance bore located downstream) would be installed in the event that trigger or threshold are exceeded during hydraulic fracture stimulation activities. This approach ensures that monitoring can be implemented rapidly</p>

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					<p>should geomechanical or micro seismic monitoring indicate a potential contamination impact pathway.</p> <p>This adaptive monitoring approach ensures that groundwater monitoring remains proportionate to risk while retaining the capacity to detect and respond to any unexpected impacts, consistent with the objectives of the EPBC Act.</p> <p>BNR also notes that the installation of additional monitoring bores in the Poole Aquifer in the absence of a credible impact pathway would result in additional disturbance and drilling activities, which may introduce unnecessary environmental impacts within the Proposed Action Area. In particular, drilling directly into the Poole Aquifer would create a direct interaction with the groundwater system where the current project design presents only a very low potential for indirect interaction.</p> <p>Accordingly, BNR considers that monitoring requirements should remain proportionate to</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
					the level of environmental risk and aligned with the objectives of the monitoring program, while avoiding unnecessary disturbance to groundwater systems where potential impact pathways have not been identified.
3. V2 comments 29/9/25	Duplicatio n of regulatory authorities , and state		Comments noted, no action required		No comments required.
4. V2 comments 29/9/25	Table of Mitigation Measures (Water)	PD Section 5.3.1 5.3.2 5.3.2.1 5.3.2.2 5.3.2.3 Attachment 11	Comments: Not adequate – further work required The department considers the mitigation measures that have been updated in response to the previous comments still require further integration into the Preliminary Documentation (PD). The department acknowledges BNR’s comments about the mitigation measures being presented in a table. However, the department reiterates the importance of ensuring the relevant avoidance and mitigation measures are described and integrated in the PD next to the impact pathways they are	IESC Advice Page 2 Paragraph 6, 7, 8, 9, 10, 11	(1) Integrate the avoidance and mitigation measures that are outlined in Attachment 12 into the relevant sections of the PD, explicitly aligning each measure with the potential impact pathway it is intended to avoid or mitigate. (2) Align the assessment of impacts with the requirements under the EPBC Act. Reconsider the use of the word impact throughout the PD to accurately reflect that all impact pathways identified by the department and the IESC have been considered.

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>designed to avoid and/or mitigate (for example, mitigation measures in Attachment 12 for unplanned fracture heights, lost circulation or well integrity failure should be included in the PD, and make reference directly to Section 5.3.2.2 which covers this impact pathway).</p> <p>The department notes the previous comments regarding the use of the word ‘impact’ as opposed to ‘event’ or ‘risk’ may also be a contributing factor to these comments, as BNR have elected not to reconsider the wording due to BNR’s interpretation of what constitutes an impact for the purpose of the EPBC Act. The department does not agree with this interpretation and considers that an impact is not only ‘planned’ or ‘must’ occur, it includes where a potential impact is likely to occur (see Matters of National Environmental Significance: Significant Impact Guidelines 1.1), the impact must be managed and mitigation measures must be provided.</p>		<p>Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments.</p> <p>(3) Previous comment from BNR is not to provide EPs subject to acceptance. All mitigation and management measures for impacts to MNES must be provided to the department for assessment prior to the impact occurring. If the measure is an EP that is required under state framework, then this must be provided for assessment under the EPBC Act. If this is provided pre or post approval, can be negotiated with the department.</p> <p>BNR confirms that the Environment Plan (EP) will be prepared in accordance with the Petroleum and Geothermal Energy Resources (Environment) Regulations 2012 and submitted to the Department of Mines, Petroleum and Exploration (DMPE) for</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>The department reaffirms its recommendation to consider updating the terminology used in Section 5 of the PD to refer to the term ‘impact’. The department further notes that while BNR does not wish to update the terminology within the PD, the Table of Mitigation Measures (Water) (Attachment 12) refers to the impacts that can occur as a result of the proposed action; as does the Groundwater Management Plan.</p> <p>The department’s concerns are further affirmed in the IESC advice, particularly responses to Question 2, regarding impact pathways. Broadly speaking, these impacts include spills, leaks and overflows into the surrounding environment of contaminated water, waste or chemicals during storage or transport, including seepage into shallow aquifers and flow into watercourses, impacting EPBC Act-listed species or GDE’s. These impact pathways and specific measures are referred to in more detail in separate sections below.</p>		<p>assessment and approval in accordance with state legislative requirements.</p> <p>In response to request for further information from DCCEEW, BNR has updated the PD V3 to provide more prescriptive mitigation measures for the purposes of assessment under the EPBC Act. These mitigation measures will be incorporated into the EP, together with any additional measures required to meet applicable state legislation and regulatory requirements.</p> <p>Given that the mitigations included in the PD will now be a duplicate of the EP that must be submitted to a State regulator, BNR does not consider there to be a need for the EP itself to be provided / assessed by DCCEEW.</p> <p>(4) The department notes the comment “BNR does not believe that providing this document to DCCEEW post approval to be suitable given the document covers many other requirements that are outside of the EPBC Act remit.” It is BNR’s responsibility to determine which parts of the EP are relevant to the EPBC assessment and to provide only the information that is relevant</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>The department notes the comments on the provision of the Environment Plans as required under the WA PGER Act. Where a mitigation measure that is required to manage / mitigate an impact is required, this must be provided to the Minister for Environment, or their delegate, for consideration to ensure the impact is managed to an acceptable level.</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) Integrate the avoidance and mitigation measures that are outlined in Attachment 12 into the relevant sections of the PD, explicitly aligning each measure with the potential impact pathway it is intended to avoid or mitigate. 2) Align the assessment of impacts with the requirements under the EPBC Act. Reconsider the use of the word impact throughout the PD to accurately reflect that all impact pathways identified by the department and the IESC have been considered. 		<p>for the department to assess whether impacts are mitigated to an acceptable level for delegate consideration.</p> <p>Please see response (3) above.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>3) Previous comment from BNR is not to provide EPs subject to acceptance. All mitigation and management measures for impacts to MNES must be provided to the department for assessment prior to the impact occurring. If the measure is an EP that is required under state framework, then this must be provided for assessment under the EPBC Act. If this is provided pre or post approval, can be negotiated with the department.</p> <p>4) The department notes the comment “BNR does not believe that providing this document to DCCEE post approval to be suitable given the document covers many other requirements that are outside of the EPBC Act remit.” It is BNR’s responsibility to determine which parts of the EP are relevant to the EPBC assessment and to provide only the information that is relevant for the department to assess</p>		

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>whether impacts are mitigated to an acceptable level for delegate consideration.</p>		
<p>3. V1 comments 12/9/25</p>	<p>Impact Pathways</p>	<p>PD Section 5.3.1.1 5.3.2 5.3.2.1 5.3.2.2 5.3.2.3 5.3.2.4 5.3.2.5</p>	<p>Comments: Not adequate – further work required</p> <p>The department thanks BNR for the additional sections added in response to previous departmental comments (Sections 5.3.2.3 and 5.3.2.5). These are beneficial to the department’s understanding of what damage BNR considers could flow on from risks associated with the proposed action.</p> <p>However, the department reaffirms its previous comments in September 2025 that all impact pathways associated with the proposed action are yet to be adequately considered. This is also stated in paragraph 6 of the IESC advice. Each of these impact pathways are discussed in further detail below.</p> <p>Further to this, the department remains of the view that the lack of site-specific data limits BNR (and by extension, the department), from being able to</p>	<p>IESC Advice Paragraph 3, 6</p>	<p>(1) All impact pathways raised by the department and the IESC must be adequately discussed in the PD, and include mitigation measures to ensure the impacts (potential or likely, MUST is not required) are mitigated.</p> <p>Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments.</p> <p>BNR notes the comment regarding the classification of a “useable aquifer.” For clarity, the definition and applicability of this term to the Poole aquifer is ambiguous, as available hydrogeological information indicates variability in groundwater quality, depth to groundwater (and practical accessibility issues), yield, and potential beneficial use across the formation. In the absence of a clear and consistently applied regulatory definition, the classification of the</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>perform impact pathway assessments. Previous concerns noted by the department regarding the efficacy of the modelling being fit-for-purpose were also raised by the IESC. While the model was deemed adequate by the IESC in estimating drawdown associated with temporary extraction from the Liveringa aquifer (paragraph 3(b) of the IESC advice); the model does not support the assessment of other potential impacts such as potential flow paths or travel times arising from accidental contamination.</p> <p>The model also fails to consider the possibility of overlying alluvial or laterite deposits which may provide hydraulic connection to the Liveringa aquifer and provide alternative pathways for drawdown.</p> <p>In response to our previous comments, BNR advised that the mixture of desktop conceptualisation models were used to better inform groundwater resource depletion and were considered suitable and reviewed multiple times at state level. Having</p>		<p>Poole aquifer as a useable aquifer cannot be assumed.</p> <p>Where impact pathways relating to ‘useable aquifers’ have been identified the potential receptors has been identified by name i.e. Poole Aquifer, Liveringa Aquifer.</p> <p>BNR notes the departments view on the requirement for site-specific baseline studies to perform impact pathway assessments. However, BNR believe through the use of assumptions and modelling against ‘worst case scenario’, the ability to undertake impact pathways studies is not hindered but will support the adaptative management of site-specific trigger / threshold measures over the course of project execution.</p> <p>BNR have committed to undertaking further monitoring and risk analysis prior to fully implementing the Proposed Action to determine baseline levels.</p> <p>(2) The proponent must demonstrate further desktop conceptualisation to support the</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>given consideration to our internal line areas, the IESC advice, and our understanding of the relevant information; the department is not satisfied that the current iteration can be applied across all impact pathways (even if the data is conservative).</p> <p>For this reason, while the department is more likely to accept the impacts associated with groundwater drawdown for the exploration and appraisal phase of this project are likely to be small; further work is required to ensure all impact pathways have adequately discussed in the PD. The exception to this, is the groundwater drawdown associated with the Muspelheim well-site, in proximity to low-potential surface-expression GDE existing within the predicted drawdown extent (discussed below).</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) All impact pathways raised by the department and the IESC must be adequately discussed in the PD, and include mitigation measures to ensure 		<p>conclusion of no impact (see previous DCCEEW Previous tasks for action point 3).</p> <p>BNR has completed a full review of the potential impact pathways and associated mitigation measures for the proposal, this information has been integrated into the PD Section 5.1 in relevant sections.</p> <p>The updated information includes a breakdown of each potential impact pathway, identifying the potential impacts, mitigation measures, trigger and threshold criteria and action as well as monitoring commitments and the frequency of monitoring. The mitigation measures have been broken down and provided for each impact pathway in their respective sections of the PD Section 5.1.</p> <p>BNR believes that providing the information in this format gives visibility and support to its current impact outcome statements.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>the impacts (potential or likely, MUST is not required) are mitigated.</p> <p>As an example, Section 5.3.2.2 PD – indicates there is not a real chance or possibility that the proposed action will impact the water quality of a water resource from potential contamination of surficial formations due to lost circulation or well integrity issues, including casing failures, due to <i>‘this is a standard drilling risk’</i> and <i>‘Standard practice mitigations are in place through various WA state regulations and guidelines to prevent water quality impacts being realized from this risk, including:</i></p> <ul style="list-style-type: none"> <i>a. drilling top hole section with low toxicity biodegradable fluid systems</i> <i>b. public chemical disclosure and regulatory assessment processes in place for these fluid systems</i> 		

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p><i>c. installation and cementing of a surface casing across the useable aquifers to isolate them from deeper formations and aquifers.</i></p> <p>Given that the not real chance or possibility of these impacts occurring is based on the mitigation measures being in place, the department considers these measures are required to mitigate the impact and therefore requires these measures once finalised to be provided for consideration by the delegate to ensure the acceptability of impact. If this is pre or post an approval can be negotiated, noting that no impact can occur prior to these measures being provided.</p> <p>The Mitigation Table includes a suite of mitigation measures for this impact, including that a GWMP will be approved and implemented prior to any HFS activity, and a Well</p>		

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>Management Plan, will be implemented prior to any HFS activities. This is required to be provided to the department for consideration and DCCEEW must be included as a relevant agency. It would be beneficial for the department's assessment process, if each of these measures were articulated with the relevant impact. It is administratively burdensome for the department to have to filter across multiple documents to understand what impact is be mitigated / managed by what measure.</p> <p>This comment applies to each risk outline in section 5.3.2.</p> <p>2) The proponent must demonstrate further desktop conceptualisation to support the conclusion of no impact (see previous DCCEEW Previous tasks for action point 3).</p>		

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>The department has previously stated in V1 comments that the use of semi-quantitative methods based primarily on desktop conceptualisation and informed by some data and analysis can be used to further consider impact pathways such as contamination.</p> <p>In response to this, BNR advised that the model used to inform groundwater resource depletion was considered suitable and reviewed multiple times through the state assessment process. The department does not agree with this statement. The conservative assumptions made are only suitable when looking at impact pathways associated with groundwater drawdown. This view has been adopted by both the department's internal line areas and the IESC (see Paragraph 1, 3b and 3c of the IESC advice).</p>		

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>Impact pathways associated with the proposed action that are yet to be adequately considered (see Task 8 of these comments) must be informed by further analysis, and cannot be adequately considered based on current modelling provided within the PD.</p> <p>Information vital to the understanding of impact pathways associated with the proposed action include the groundwater fluxes between upper aquifers and alluvium associated with Mount Hardman Creek to determine relevant potential impact pathways of spills and leakage to water resources and dependent assets.</p>		
4. V1 comments 12/9/25	Faults and Fractures	PD Section 5.3.2.1	<p>Comments: Adequate</p> <p>The IESC advised the use of planned future seismic acquisition should be used to improve fault characterization; and that the use of microseismic</p>	IESC Advice Paragraph 10, 11	<p>(1) Consider including microseismic monitoring in the monitoring bore program.</p> <p>BNR has committed to microseismic early detection monitoring in the PD Section</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>approaches could better justify why aquifer contamination via HFS-induced fractures is unlikely.</p> <p>Tasks for action:</p> <p>1) Consider including microseismic monitoring in the monitoring bore program.</p>		<p>5.1.2.1, Table 5-3) as required by the scientific enquiry.</p> <p>Note also that the EPA Assessment Report 1800 includes the following draft condition which BNR have not contested.</p> <p>B1-2 Prior to the commencement of drilling, the proponent must prepare: B1-2(1) a micro seismic monitoring program that includes monitoring prior to, during and after HFS activities;</p>
<p>5. V1 comments 12/9/25</p>	<p>Groundwater Dependent Ecosystems</p>	<p>PD Section 4.2.5.1 5.3.1.1</p> <p>Attachment 3, 8</p>	<p>Comments: Not adequate - Further work required</p> <p>The department notes in response to previous comments raised regarding groundwater dependent ecosystems (GDEs), BNR stated it had identified all exposure pathways to GDE's arising from the proposal. Further, BNR states there are no <i>high</i> potential GDE's located within proximity of the well sites within the 700 m groundwater drawdown radius.</p> <p>However, as BNR has indicated, and further identified by the IESC, there is at least one potential aquatic GDE occurring within the predicted</p>	<p>IESC Advice Page 2</p> <p>Paragraph 2, 3a, 4</p>	<p>(1) Further work is required to obtain site-specific data pertaining to GDEs, in particular those close to the Muspelheim well site, to ensure consideration and mitigation of all potential impacts.</p> <p>BNR has identified and evaluated potential impact pathways to surface waters, including pathways that could affect GDEs.</p> <p>Please refer to Point 5 under the Further work to be conducted at the beginning of this document.</p> <p>PD Section 5.1 have been updated to address IESC and DCCEEW comments by: (i) describing source-pathway-receptor linkages;</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>drawdown area of the Muspelheim site and is shown as overlying older alluvium along Mount Hardman Creek. The department considers this site, and others potentially using alluvial groundwater require further investigation to determine the character and groundwater dependence of the GDEs, their relationships with alluvial or Liveringa aquifer groundwater, and assessment of impact.</p> <p>The department does not agree with BNR's assessment that the only direct impact pathway to GDE's that is reasonably foreseeable is groundwater drawdown (refer to point 3 of these comments regarding <i>Impact Pathways</i>). As the modelling provided by BNR operates under the assumption of surface water-groundwater connectivity, the department considers impacts associated with the proposed action regarding contamination, spills and leakages are also possible, refer paragraph 7d of the IESC advice, stating "a contamination event at the surface could result in impacts to both</p>		<p>(ii) applying conservative assumptions regarding surface water-groundwater connectivity; and (iii) specifying preventative mitigation measures that are effective irrespective of the presence or proximity of site-specific GDEs</p> <p>On the basis of available regional hydrogeological information, existing studies and local baseline data from previous works, BNR do not believe site-specific GDE investigations are required to identify impact pathways or define appropriate preventative controls at this stage of the assessment. Impact pathways for this activity are inherent, clearly understood and assessed in the PD Section 5.1.</p> <p>When these pathways indicate high exposure risk or infield monitoring during the activity indicates an elevated risk, site-specific GDE investigations will be considered.</p> <p>However, the pathways for impact are not uncertain, and residual risk is managed through design and operational controls,</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p><i>surface water and groundwater systems via seepage through the soil profile to aquifers and discharge to surface receptors. Alluvial or perched aquifers, if present, may also alter the migration of contaminants away from the source of a spill or leak.”</i></p> <p>Section 4.2.5.1 of the PD (<i>Groundwater Dependent Ecosystems (GDEs)</i>) acknowledges the low potential GDE located within <250 m of the Muspelheim wellsite. However, it continues to operate under the assumption that groundwater drawdown is the only potential impact pathway that could affect the GDE, despite operating on the premise that surface water-groundwater connectivity exists in the modelling, which would open up potential impacts associated with groundwater contamination, spills and leaks (which BNR has opted to call a ‘risk’ instead of an ‘impact’).</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) Further work is required to obtain site-specific data 		<p>supported by monitoring with defined triggers that are known to be effective in managing these risks across the industry.</p> <p>(2) BNR considers the risk to water resources from pond leakage through the soil profile to be remote (Bennett Resources 2025a, p. 106). Further justification is required to support this conclusion – for example, evidence of the thickness of the unsaturated zone, localised clayey soil layers that would impede leakage, or use of evidence-based engineering mitigations (IESC 7D).</p> <p>Please refer to PD Section 5.1.2.5 and 5.1.2.7 and Table 5.7) which includes engineered mitigation measures for produced wastewater pond leaks.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>pertaining to GDEs, in particular those close to the Muspelheim well site, to ensure consideration and mitigation of all potential impacts.</p> <p>2) BNR considers the risk to water resources from pond leakage through the soil profile to be remote (Bennett Resources 2025a, p. 106). Further justification is required to support this conclusion – for example, evidence of the thickness of the unsaturated zone, localised clayey soil layers that would impede leakage, or use of evidence-based engineering mitigations (IESC 7D).</p>		
6. V1 Comments 12/9/25	Groundwater Conceptualisation	PD Section 4.2.4.1 5.3 5.3.1.1	<p>Comments: Not adequate</p> <p>Paragraph 2 of the IESC Advice states that the regional conceptualisation of the hydrogeology is adequate, but the project area hydrology has not been adequately conceptualised.</p>	IESC Advice Paragraph 2, 3, 3c	<p>(1) BNR must demonstrate, or commit to, further work being undertaken to investigate potential groundwater-surface water connectivity, and groundwater fluxes between upper aquifers and alluvium associated with Mount Hardman Creek (IESC Advice at the bottom of page 2).</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>Specifically, information regarding the ecological character of GDEs in the project area, especially around bores that access the Liveringa aquifer should be obtained prior to commencement of any activity. The department notes that under the groundwater monitoring scheme data will be collected for at least 12 months prior to the commencement of drilling (for the Liveringa aquifer).</p> <p>Information on ecological water requirements of GDEs and the groundwater processes (for example, source aquifer, inflows and outflows) should also be collected prior to the commencement of drilling.</p> <p>In response to our previous comments, BNR has stated the groundwater drawdown modelling has assumed connectivity between surface water and groundwater, which is discussed more in-depth in multiple sections of these comments.</p> <p>The department reiterates that the purpose of establishing site-specific</p>		<p>Please refer to point 4 under the Further work to be conducted at the beginning of this document.</p> <p>(2) Similarly to the <i>Impact Pathways</i> section of these comments, the department notes there is additional work necessary to understand the significance of potential impacts as a result of the proposed action.</p> <p>BNR acknowledges the Department’s comment. The PD has been prepared to identify potential impact pathways and to assess the potential for significant impacts on relevant MNES, based on available information and conservative assumptions. Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments on water resources.</p> <p>The PD demonstrates that, with the implementation of the proposed mitigation measures, the Proposed Action is unlikely to result in significant impacts to MNES.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>understanding of surface water-groundwater connectivity extends beyond impacts relating to drawdown. The department considers understanding the interaction and relationship between groundwater and GDEs vital to assessing the acceptability of impacts from proposed action; as impact pathways associated with contamination, spills, and effects to surface water can, due to connectivity with groundwater, impact other environmental receptors.</p> <p>The department does not consider the assumption of connectivity to be sufficient in conceptualising the way that surface water and groundwater interact within the project area.</p> <p>If BNR intends to implement best practice methods and rely on the state regulatory framework to ensure there is an acceptable impact to water resources, BNR must be able to evidence that the suite of measures to be implemented can operate even without a more detailed site-specific understanding of the hydrology. The</p>		<p>All mitigations included will be duplicated into future state regulatory documents, thus provision of these documents (such as the EP or WMP) is not required given the commitments made in the PD are identical to those that will be made in future resultory plans.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>department reiterates site-specific groundwater conceptualisation is crucial to the assessment of this project.</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) BNR must demonstrate, or commit to, further work being undertaken to investigate potential groundwater-surface water connectivity, and groundwater fluxes between upper aquifers and alluvium associated with Mount Hardman Creek (IESC Advice at the bottom of page 2). 2) Similarly to the <i>Impact Pathways</i> section of these comments, the department notes there is additional work necessary to understand the significance of potential impacts as a result of the proposed action. 		
7. V1 Comments 12/9/25	Uncertainty Analysis (UA)	PD Section 4.2.5.1	Comments: Adequate	IESC Advice	No response required.

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
		5.3.1.1 Attachment 3	<p>The department considers the sensitivity and uncertainty analysis provided by BNR is sufficient in conservatively modelling potential groundwater drawdown impacts due to extraction.</p> <p>However, the department notes in other sections of these comments (i.e. Tasks 12 and 13), further work is required to determine presence and characteristics of GDEs within the project area, specifically the low-potential surface-expression GDE near the Muspelheim well site.</p> <p>Noting this, if presence of GDEs are located in the area through further investigation by BNR, the UA model should be applied to these GDEs to address impacts associated with groundwater drawdown.</p>	Paragraph 3a, 3b	
8. V1 Comments 12/9/25	Alluvium	PD Section 4.1.1.4 4.2.5.2 5.3.1.1	<p>Comments: Not adequate</p> <p>The department considers further investigation is required by BNR to determine the relationship between GDEs and alluvium, as well as the</p>	IESC Advice Paragraph 2, 3, 4, 5, 7d	(1) BNR must demonstrate further work has been, or will be, conducted to map the extent of alluvium within the project area, or to understand the relationship between alluvial groundwater and groundwater dependence of nearby GDEs.

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
		<p>Attachment 1, Appendix C</p> <p>Attachment 3</p>	<p>extent of alluvium mapped along Mount Hardman Creek.</p> <p>The department notes BNR does not assume an absence of connectivity between surface water and groundwater. However, the groundwater model provided does not consider the possibility of overlying alluvial or laterite deposits which may provide hydraulic connection to the Liveringa aquifer and provide alternative pathways for drawdown (Paragraph 3c of IESC Advice). Paragraph 2 of the IESC advice states that the hydrology of the project area, particularly Mount Hardman Creek and adjoining alluvium has not been adequately conceptualised.</p> <p>While the department acknowledges the topic of surface water-groundwater connectivity is not in contention, the provision of site-specific information regarding the extent of alluvium and its relationship with GDEs in the area is required by the department to understand other impact pathways, such as contamination. Paragraph 3b</p>		<p>Please refer to point 5 under the Further work to be conducted at the beginning of this document.</p> <p>BNR has assessed potential impact pathways to surface waters in the PD, including pathways that could affect alluvial groundwater and GDEs. Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments. This assessment is based on available regional hydrogeological information, existing studies, and conservative assumptions regarding surface water - groundwater connectivity.</p> <p>For the purpose of identifying potential impact pathways and defining appropriate mitigation measures, site specific GDE data is not considered necessary. The mitigation measures proposed are preventative in nature and are designed to avoid or minimise potential impacts irrespective of the presence or proximity of site-specific GDEs.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>of the IESC advice speaks to this topic, noting that without clear understanding of factors such as potential flow paths and travel times, assessing impact pathways associated with surface water contamination cannot be performed to an adequate level.</p> <p>Despite BNR’s insistence that the groundwater conceptualisation and numerical model operate under the assumption of connectivity, the department does not consider this model can be accurately applied to any other impact pathway except groundwater drawdown.</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) BNR must demonstrate further work has been, or will be, conducted to map the extent of alluvium within the project area, or to understand the relationship between alluvial groundwater and groundwater dependence of nearby GDEs. 2) As per paragraph 3c of the IESC Advice, the extent of the alluvium mapped along Mount 		<p>(2) As per paragraph 3c of the IESC Advice, the extent of the alluvium mapped along Mount Hardman Creek (Bennett Resources 2025a, Figure 4-23, p. 85) should be verified by methods such as remote sensing techniques and site inspections near the two closest drill sites (Muspelheim and Midgard).</p> <p>BNR has assessed potential impact pathways to surface waters in the PD, including pathways that could affect alluvial groundwater and GDEs. Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments.</p> <p>This assessment is based on available regional hydrogeological information, existing studies, and conservative assumptions regarding surface water - groundwater connectivity.</p> <p>For the purpose of identifying potential impact pathways and defining appropriate mitigation measures, site specific GDE and alluvium data is not considered necessary for</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>Hardman Creek (Bennett Resources 2025a, Figure 4-23, p. 85) should be verified by methods such as remote sensing techniques and site inspections near the two closest drill sites (Muspelheim and Midgard).</p>		<p>assessment as there are no credible pathways. However, Section 5.1.1.2, Table 5-1 has included the mitigation measures in regard to GDE health.</p> <p>The mitigation measures proposed are preventative in nature and are designed to avoid or minimise potential impacts irrespective of the presence or proximity of site-specific GDEs.</p>
<p>9. V1 Comments 12/9/25</p>	<p>Wastewater Sumps and Ponds</p>	<p>PD Section 5.3.2.3 Attachment 3 Attachment 11</p>	<p>Comments: Not adequate</p> <p>The current design metrics of the wastewater sumps and ponds are not considered appropriate as an avoidance and mitigation measure for impact pathways related to contamination and spills.</p> <p>The department notes the guideline used by BNR in the design of the wastewater sumps and ponds refer to the Water Quality Protection Note 26 (DoW, 2013). BNR also considers the likelihood of a one-in 100-year rainfall event occurring unlikely in the 7-year timeline for the proposed action. In the</p>	<p>IESC Advice Paragraph 7, 8, 12</p>	<p>(1) Given the potential toxicity of many of the contaminants, further justification of the adopted design criteria to prevent overtopping and consider events with an annual exceedance probabilities rarer than 1%;</p> <p>(2) The sizing of the water retention ponds do not account for the additional 1.3°C that has occurred as a result of global warming, and the rainfall intensities need to be adjusted in line with guidance provided in Wasko et al. (2024);</p> <p>(3) The freeboard level of 500 mm is based on a three-day storm event and 90th percentile wet season; but this approach is</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>event this would occur, BNR is satisfied there is only a remote chance that conditions would result in a spill event, potentially creating a water quality contamination event.</p> <p>Paragraph 7 of the IESC Advice has stated the potential for overtopping of waste storage and sump ponds to contaminate shallow groundwater or surface-water receptors requires further consideration for the following reasons:</p> <ol style="list-style-type: none"> 1. Given the potential toxicity of many of the contaminants, further justification of the adopted design criteria to prevent overtopping and consider events with an annual exceedance probabilities rarer than 1%; 2. The sizing of the water retention ponds do not account for the additional 1.3°C that has occurred as a result of global warming, and the rainfall intensities need to be adjusted 		<p>not considered an appropriate depiction of more recent climate conditions in the area. A more defensible approach should be adopted based on provision of a suitable freeboard above the maximum likely storage level obtained from water balance simulations over the service life of the pond; and</p> <p>BNR Response</p> <p>Please refer to Point 2 under the Further work to be conducted at the beginning of this document.</p> <p>Please also Refer to PD Section 2.4.3, Section 5.1.2.8 and Attachment 14 for updated Water Balance Modelling.</p> <p>In summary, additional modelling confirms that the Proposed Action can be managed within the 500 mm freeboard limit, particularly when implementing standard operational controls, and when realistic flowback recovery assumptions (50%) are applied. Where more intensive stimulation schedules are implemented, BNR has appropriate mitigation measures detailed in PD Section 2.1.2.8,</p>

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			<p>in line with guidance provided in Wasko et al. (2024);</p> <ol style="list-style-type: none"> 3. The freeboard level of 500 mm is based on a three-day storm event and 90th percentile wet season; but this approach is not considered an appropriate depiction of more recent climate conditions in the area. A more defensible approach should be adopted based on provision of a suitable freeboard above the maximum likely storage level obtained from water balance simulations over the service life of the pond; and 4. Further justification being required to support the conclusion that pond leakage through the soil profile is remote. <p>Impact pathways associated with contamination events affecting the ecological condition of receptors such as Mount Hardman Creek have not been properly explored. The IESC suggested a model of the</p>		<p>Table 513 to prevent overtopping during extreme or prolonged rainfall events.</p> <p>Please also refer to the updated PD Section 2.4.3 Water Balance Modelling and Sections 5.1.2.8 and 5.1.2.8 as well as Attachment 14 Water Balance Modeling.</p> <p>(4) Further justification being required to support the conclusion that pond leakage through the soil profile is remote.</p> <p>Refer to PD Section 5.1.2.5.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>evapoconcentration of contaminants of potential concern to define this impact pathway in conjunction with the water balance modelling discussion in IESC 7c.</p> <p>In addition to this, the IESC recommends BNR should consider adopting a fully closed or closed-open system as potential management strategies to reduce the risk of wastewater storages overtopping.</p> <p>Based on the above points, the department considers that further consideration is required from BNR as to the efficacy of the wastewater sump and ponds as an avoidance and mitigation measure, using the advice provided by the IESC.</p> <p>Similarly, paragraph 9 of the IESC Advice speaks to the risks of spillage when transporting wastewater, drilling muds and chemicals during transportation. Spills during transport, and any associated mitigation and management measures should be fully discussed. The department notes</p>		

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			<p>although the ‘event’ is discussed where an entire container during transport or handling is lost is referred to, no avoidance or mitigation measures are associated with this impact pathway. Instead, Section 5.2.5.2 simply provides reasons as to why the likelihood of this occurring is low, as opposed to explaining what measures would be in place should this occur.</p> <p>This is reiterated in paragraph 13 of the IESC Advice, which notes that mitigation methods relied up by BNR will consist of weekly monitoring and use of spill kits; with no corrective actions being proposed in the event a spill was to occur.</p> <p>Tasks for action:</p> <ol style="list-style-type: none"> 1) BNR must demonstrate that the calculations used for the wastewater sumps and ponds are consistent with and do not contradict the considerations provided by the IESC in paragraph 7 of the IESC advice and Wasko et al. (2024). The 		

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>department acknowledges previous guidelines relied on by BNR are from 2013, and the current calculations do not properly account for the increased temperature in the area, or rainfall intensities recorded in more recent years.</p> <p>2) BNR must demonstrate consideration of impact pathways associated with contamination events as a result of overtopping or spills, and provide mitigation and management measures for those impacts. If the mitigation measure is part of a PGER Regulation requirement, this should be provided.</p> <p>3) Provide comment as to whether BNR has given consideration to Paragraph 12 of the IESC Advice.</p>		
Listed Threatened and Migratory Species					

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
5. V2 Comments 29/9/25	Pre-clearance Surveys (Greater Bilby)	PD Section 7.1.1 Attachment 8, 10	Comments: Adequate. No further action required The department considers the updates applied to section 7.1.1 are consistent with the <i>Guidelines for pre-clearing searches to locate resident bilbies</i> (DBCA 2018).		
6. V2 Comments 29/9/25	Clearing of burrows (Greater Bilby)	PD Section 5.3.3.2 7.1.2 7.2.1 Attachment 8, Table 1 10	Comments: Adequate The department considers the updates to Attachment 8 and Section 7 of the PD provide sufficient understanding of the avoidance measures to avoid the clearing of greater bilby burrows by use of avoidance buffers (i.e. 50 m for inactive, 75 m for active burrows). The department notes BNR does not plan to implement a management plan specific to the greater bilby. Tasks for action (if applicable): 4) Consider including the buffer amounts in section 7.1.2 of the PD for the purpose of consistency with Attachment 10.		(1) Consider including the buffer amounts in section 7.1.2 of the PD for the purpose of consistency with Attachment 10 Added to the PD which is now Section 5.2.1.

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
7. V2 Comments 29/9/25	Impacts to Northern Blue- tongued Skink	PD Section 5.1.2 Attachment 8	<p>Comments: Not adequate</p> <p>The department considers there a potential significant impact to the northern blue-tongued skink as a result of the proposed action.</p> <p>Noting the Conservation Advice for the species (Conservation Advice for <i>Tiliqua scincoides intermedia</i> (northern blue-tongue skink)), the most likely impact associated with the proposed action is groundwater drawdown. The model provided by BNR has been confirmed by the IESC to be adequate for estimating drawdown (paragraph 3b of IESC Advice). However, the department and the IESC consider further investigation of GDEs within the project area is required to confirm the potential for impacts of abstraction-induced drawdown, specifically in the low-potential surface-expression GDE within the predicted drawdown extent of the Muspelheim well site.</p> <p>Even though the IESC has stated the short duration and of pumping and limited abstraction associated with</p>	IESC Advice Page 2, 3, 4	<p>(1) BNR must demonstrate, through site-specific investigation, an understanding of the low-potential surface-expression GDE predicted within the drawdown extent of the Muspelheim site. This investigation will need to confirm:</p> <ul style="list-style-type: none"> • the presence of the GDE in the area; • an understanding of the surface water-groundwater connection within the GDE; • the potential for impacts of abstraction-induced drawdown; and <p>evidence of the recharge rate of the GDE for the duration of the well testing.</p> <p>Please refer to point 4 and 5 under the Further work to be conducted at the beginning of this document.</p> <p>BNR has identified and evaluated potential impact pathways to surface waters, including pathways that could affect GDEs.</p> <p>PD Section 5.1 have been updated to address IESC and DCCEEW comments by: (i) describing source-pathway-receptor linkages;</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>exploration and appraisal would limit the impacts associated with groundwater drawdown, the GDE listed above remains an exception to this statement (paragraph 3a of the IESC Advice).</p> <p>Further, BNR have stated targeted surveys have not occurred within the modelled drawdown of each well site, as the modelled drawdown is limited to 700 m from each abstraction point. The department does not consider this adequate, as the Muspelheim well site contains a low-potential GDE that falls within that drawdown radius. Without further investigation to confirm the presence of this GDE, the department considers groundwater drawdown in this area presents a likelihood to significantly impact the northern blue-tongued skink.</p> <p>While the department acknowledges BNR consider impacts are limited due to abstraction only occurring at one well site once and not continuously, site-specific information about the Muspelheim-adjacent GDE is required</p>		<p>(ii) applying conservative assumptions regarding surface water-groundwater connectivity; and (iii) specifying preventative mitigation measures that are effective irrespective of the presence or proximity of site-specific GDEs</p> <p>On the basis of available regional hydrogeological information, existing studies and local baseline data from previous works, BNR do not believe site-specific GDE investigations are required to identify impact pathways or define appropriate preventative controls at this stage of the assessment. Impact pathways for this activity are inherent, clearly understood and assessed in the PD Section 5.1.</p> <p>When these pathways indicate high exposure risk or infield monitoring during the activity indicates an elevated risk, site-specific GDE investigations will be considered.</p> <p>However, the pathways for impact are not uncertain, and residual risk is managed</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>to support the conclusion that impacts from groundwater drawdown are not significant to habitat used by the species.</p> <p>Tasks for action:</p> <p>5) BNR must demonstrate, through site-specific investigation, an understanding of the low-potential surface-expression GDE predicted within the drawdown extent of the Muspelheim site. This investigation will need to confirm:</p> <ul style="list-style-type: none"> • the presence of the GDE in the area; • an understanding of the surface water-groundwater connection within the GDE; • the potential for impacts of abstraction-induced drawdown; and • evidence of the recharge rate of the GDE for the duration of the well testing. 		<p>through design and operational controls, supported by monitoring with defined triggers.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
8. V2 Comments 29/9/25	Impacts to Largetooth Sawfish	PD Section 5.1.3	<p>Comments: Not adequate</p> <p>The department considers there is a potential significant impact to the Largetooth Sawfish, as there is insufficient evidence at this time to conclude the proposed action will have no impact on Mount Hardman Creek, and by extension the Fitzroy River.</p> <p>Attachment 8 in the PD advises the only potential impacts for the species are likely to occur as a result of indirect impacts, including the contamination of surface waters, or contamination of groundwaters leading to contamination of surface waters.</p> <p>Unlike the northern blue-tongued skink discussed above, whose primary threats associated with the proposed action are based around groundwater drawdown; the department considers impact pathways associated with water quality are also relevant to the assessment of this species.</p> <p>The IESC advise states the hydrology of the project area has not been</p>	IESC Advice Paragraph 6, 7	<p>(1) Similar to the <i>Impact Pathways</i> tasks in these comments (Tasks 8 and 9), further discussion is required regarding impact pathways associated with contamination, spill and reduction in water quality.</p> <p>(2) BNR must provide avoidance and mitigation measures which outline corrective actions to take place should impacts identified occur.</p> <p>Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>adequately conceptualised, particularly regarding Mount Hardman Creek and its connection to any adjoining alluvium. As Mount Hardman Creek is considered a tributary to the Fitzroy River; it is not possible for the department to accurately consider impact pathways concerning overtopping, spills, contamination and the like without an adequate understanding of groundwater-surface water connectivity, and groundwater fluxes between upper aquifers and alluvium associated with Mount Hardman Creek. This connection has been previously discussed in other sections of these comments.</p> <p>The department also reiterates that the Fitzroy River is recognized as an important nursery area for the species in Western Australia, and as per the conservation advice (Conservation Advice for <i>Pristis pristis</i> (argetooth sawfish)), rely almost entirely on years with large wet season floods to replenish juvenile populations in the Fitzroy River nursery.</p>		

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			<p>BNR has confirmed in Section 5.3.2.4 of the PD that flood events do occur within the development envelope, and that surface water may occur within the project area over the life of the project.</p> <p>For the above reasons, the department reaffirms its previous comments regarding the potential significant impact on the largemouth sawfish.</p> <p>Tasks for action:</p> <ul style="list-style-type: none"> 6) Similar to the <i>Impact Pathways</i> tasks in these comments (Tasks 8 and 9), further discussion is required regarding impact pathways associated with contamination, spill and reduction in water quality. 7) BNR must provide avoidance and mitigation measures which outline corrective actions to take place should impacts identified occur. 		
National Heritage – The West Kimberley National Heritage Place					
9. V2 Comments 29/9/25	Rainbow Serpent Tradition Values	PD Section 5.2 5.2.2	<p>Comments: Partially adequate</p> <p>The department considers the inclusion of the additional sections</p>	IESC Advice Paragraph 6	(1) Demonstrate assessment of all impact pathways associated with the Rainbow Serpent Tradition Values.

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
		5.2.3	<p>regarding contamination in Section 5.3 of the PD is beneficial to ensure that all impact pathways which could potentially have an impact on the Rainbow Serpent Tradition Values have been discussed within the PD.</p> <p>However, as per previous departmental and IESC advice, there is still insufficient evidence to support the statement that BNR has adequately considered all impact pathways associated with the project's exploration and appraisal.</p> <p>Further to this, and as discussed in sections of these comments relating to Mount Hardman Creek; there is still insufficient evidence to adequately state that there will be no impact to the Fitzroy River as a result of the proposed action.</p> <p>For the above reasons, the department reaffirms its previous comments that further assessment of all impact pathways associated with the Rainbow Serpent Tradition Values.</p>		<p>Additional information on impact pathways and mitigation measures has been added to the PD in Section 5.1 to align with the IESC / DCCEEW comments. These pathways show that there is no credible impact pathway to the Fitzroy River which is culturally significant. On this basis, the proposed action is not expected to result in impacts to the identified Traditional Values.</p>

Comment # Date of BNR response	PD Item	Reference	Department Comments	IESC Pinpoint Reference	BNR Response
			<p>Tasks for action:</p> <p>1) Demonstrate assessment of all impact pathways associated with the Rainbow Serpent Tradition Values.</p>		
10. V2 Comments 29/9/25	Stakeholder Engagement	PD Section 3 3.1 3.1.1 3.1.2 3.2 3.3	<p>Comments: Partially adequate</p> <p>The department reaffirms its previous comments about the importance of stakeholder engagement with <u>all potential</u> relevant stakeholders.</p> <p>The department notes BNR continue to hold their position that consultation has been completed in accordance with relevant stakeholder guidelines, as speaking to additional Traditional Owner groups on adjoining lands is contingent on the impacts associated with the proposed action extending beyond the development envelope. As BNR does not believe there will be impacts to the Fitzroy River as a result of the proposed action, the intrinsic cultural and spiritual connection between the Fitzroy River and the Rainbow Serpent tradition is unlikely to be impacted.</p>	IESC Advice Paragraph 6	<p>(1) Demonstrate, and provide evidence, that stakeholder engagement with Traditional Owners has extended outside of the Traditional Owner groups overlapping the proposed action development envelope.</p> <p>BNR did not identify Traditional Owner groups located outside the Proposed Action Area as relevant stakeholders for this assessment, as these groups do not have interests, functions, or cultural responsibilities that extend into, or interact with, YAC/NAC or WAC country and BNR are certain there are no credible pathways (Refer to impact pathways assessed in Section 5.1) for potential impacts from the Proposed Action to intersect any other Traditional Owners lands. This is consistent with the EPA Assessment 1800. While BNR acknowledge that neighbouring groups may express views regarding the Proposed Action, BNR’s consultation with YAC/NAC and WAC has consistently indicated that these groups</p>

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			<p>However, as mentioned in other sections of these comments, uncertainty remains in the assessment of no impact to the Fitzroy River, and by extension the Rainbow Serpent tradition.</p> <p>Tasks for action:</p> <p>2) Demonstrate, and provide evidence, that stakeholder engagement with Traditional Owners has extended outside of the Traditional Owner groups overlapping the proposed action development envelope.</p>		<p>consider themselves the appropriate decision-makers for their own country.</p> <p>This context is important, as DCCEEW’s position in paragraph 110 of the Statement of Reasons appears to rely on comments from the Kimberley Land Council suggesting that BNR did not engage with all relevant stakeholders. BNR considers this conclusion inconsistent with the stakeholder engagement principles that emphasise long term, transparent, and trust- based relationships. Over many years, BNR has maintained ongoing engagement with the Traditional Owners of the country on which the Proposed Action is located-. Their views differ from those expressed by DCCEEW and the Kimberley Land Council.</p> <p>Recent engagement has reaffirmed that Traditional Owners are well informed about the direct and indirect impacts of the Proposed Action, given their involvement since activities commenced in 2012. They have continued to express the view that they are best placed to assess the impacts on their</p>

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					<p>country and consider it important that the Government recognises and respects the stakeholder engagement processes undertaken by BNR. Traditional Owners have also noted that while neighbouring communities may have an interest, they are located at significant distances from the Proposed Action Area, and that the Proposed Action and all potential impacts are confined to YAC/NAC/WAC land. YAC, NAC and WAC have emphasised that they speak for their own country in accordance with their cultural responsibilities.</p> <p>BNR acknowledges the rights of Traditional Owners to make decisions regarding their country and recognises that cultural authority is place based. For this reason, Traditional Owner groups outside the Proposed Action Area have been categorised as interested stakeholders rather than Relevant -Stakeholders. These groups were provided with access to all project information through multiple publicly available channels, including the Black Mountain Energy website, the DCCEEW website, the Derby Public</p>

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					<p>Library, Fitzroy Crossing Public Library, Broome Public Library, the State Library of Western Australia, and the EPA website.”</p> <p>The Proposed Action was subject to State-based consultation requirements EPA Assessment number 2281, including statutory notification and invitation for submissions. This process:</p> <ul style="list-style-type: none"> • Was publicly advertised (available for a public review for a period of 8 weeks from 12 August 2024, closing on Monday, 7 October 2024.). • Was not geographically limited to mapped development boundaries. • Allowed any individual, organisation, or Traditional Owner group to lodge submissions. <p>Importantly, the State consultation framework does not restrict participation to overlapping Native Title holders. As such, Traditional Owner groups with cultural, historical, or kinship connections extending beyond the defined Proposed Action Development Envelope were afforded equal opportunity to engage.</p> <p>Future public consultation on the Preliminary Documentation is also legislated and will also extend beyond the defined Proposed Action</p>

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					<p>Development Envelope and will be afforded equal opportunity to engage.</p> <p>This satisfies Commonwealth expectations that consultation consider cultural connection and authority, not solely tenure or spatial overlap.</p> <p>BNR notes the following statement in the EPA Assessment Report 1800:</p> <p><i>“The EPA considered that the level of consultation undertaken with the Yungngora and Warlangurru was sufficient to inform its assessment, and that the broader cultural significance of the Fitzroy River and related values of the WKNHA was available and documented, without specific consultation with other Traditional Owner groups.”</i></p>
11. V2 Comments 29/9/25	Relevant Traditional Owner Groups (WAC)	PD Section 3.1.1 3.1.2	<p>Comments: Adequate. No further action required.</p> <p>The department confirms the receipt of the signed letter from the WAC, indicating their support for the Valhalla Gas Exploration and Appraisal Program.</p>		No further action required.

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