GOVERNMENT OF WESTERN AUSTRALIA

Environmental Protection Authority

CBH Kwinana Fertiliser Project

Co-operative Bulk Handling Limited (CBH Ltd)

Report 1701

June 2021

This assessment report has been prepared by the Environmental Protection Authority (EPA) under s. 44 *Environmental Protection Act 1986*. It describes the outcomes of the EPA's assessment of the CBH Kwinana Fertiliser Project proposed by CBH Ltd.

This assessment report is for the Western Australian Minister for Environment and sets out:

- what the EPA considers to be the key environmental factors identified during its assessment
- the EPA's recommendations as to whether the proposal may be implemented and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

Professor Matthew Tonts
Chair, Environmental Protection Authority

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Summary

Proposal

The CBH Kwinana Fertiliser Project is a proposal to develop a facility for the import and storage of dry (granular) and liquid urea ammonium nitrate (UAN) fertiliser products. The proposal is located within the Kwinana Industrial Area and includes onshore and offshore (marine) components.

The offshore component involves the construction of a dedicated pipeline on the existing Kwinana Grain Terminal jetty which then crosses the shoreline and proceeds underground to the proposed onshore facility. The facility will comprise of liquid UAN storage tanks, a dry fertiliser shed and associated infrastructure.

Mitigation hierarchy

The mitigation hierarchy is a sequence of proposed actions to reduce adverse environmental impacts. The sequence commences with avoidance, then moves to minimisation/reduction/rehabilitation, and offsets are considered as the last step in the sequence.

The proponent has applied mitigation measures to the proposal to avoid potential impacts to the marine environmental quality of Cockburn Sound, including implementing pipeline transfer mechanisms to ships that will prevent spills and detect any leaks. Construction of the pipeline will be undertaken on the existing Kwinana Grain Terminal jetty, avoiding disturbance of the benthic marine environment.

The proponent has also proposed measures to avoid and minimise potential impacts to the groundwater beneath the proposed onshore facility. The proposed containment and drainage measures required for this proposal mean that the activities of the onshore facility are manageable. Construction will be subject to a works approval under Part V of *Environmental Protection Act 1986* which requires the facility to be designed and constructed adequately through risk based conditions.

Assessment of key environmental factors

The EPA has identified the key environmental factors (listed below) in the course of the assessment and has assessed the likely residual impacts to these factors.

Marine environmental quality

- There is the potential for the spill of liquid UAN fertiliser to Cockburn Sound during the transfer of product from the cargo vessels, via the transfer pipeline, to the storage tanks. A large spill could result in a significant impact to the ecosystem health of Cockburn Sound. However, the likelihood of a spill is low due to the design, location and engineering of the pipeline and associated infrastructure, and the restricted shipment schedule.
- In the event of a spill, the proponent will implement a marine response monitoring plan (condition 2-2(1)).

Inland waters

- There is potential for the proposal to impact the quality of the groundwater beneath the facility from nutrient enriched water filtering into the surface aquifer. The potential for proposal attributable impact is considered manageable.
- The site is located above two aquifers that discharge into Cockburn Sound, the shallow Safety Bay Sand/Becher Sand aquifer and the deeper Tamala Limestone aquifer. Any potential large spill onshore will likely be confined to the shallow aquifer where groundwater recovery is possible.
- The onshore facility has been designed to ensure any areas where there is potential for spills and leaks are bunded and/or on hardstand areas where washdown runoff or stormwater are diverted to a lined evaporation pond.
- The proponent is undertaking a monthly groundwater sampling program over 12 months to establish groundwater trigger criteria. This information will inform the proponent's routine biannual groundwater monitoring program to detect any operation related impacts to the groundwater and early detection prior to a plume migration to Cockburn Sound (conditions 2-2(7) and 2-2(8)).

Holistic assessment

Given the link between inland waters (groundwater inputs) and marine environmental quality, the EPA also considered the connections and interactions between parts of the environment to inform a holistic view of impacts to the whole environment. The EPA formed the view that the impacts from this proposal can be managed to be consistent with the EPA's environmental factor objectives.

Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values established in the *State Environmental (Cockburn Sound) Policy 2015* potentially affected by the proposal
- residual impacts to the key environmental factors, separately and holistically (this has included considering cumulative impacts on marine environmental quality and groundwater quality on the environmental values of Cockburn Sound)
- the likely residual impacts (taking into account the EPA's recommended conditions), and consistency of these with the EPA's objectives for the key environmental factors
- the EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the *Environmental Protection Act 1986*.

It is the EPA's view that reasonable conditions could be imposed on the proposal to ensure its implementation will be consistent with the EPA's objectives for the key environmental factors.

The EPA has recommended that the proposal may be implemented subject to the conditions recommended in Appendix A.

Contents

1 Proposal

The CBH Kwinana Fertiliser Project is a proposal to develop a facility for the import and storage of dry (granular) and liquid urea ammonium nitrate (UAN) fertiliser products. The proposal is located at Lot 108 on Deposited Plan 400167, within the Kwinana Industrial Area in the City of Rockingham.

The offshore component is located within Cockburn Sound (see Figure 1) and involves the construction of a dedicated pipeline that will follow the alignment of the existing Kwinana Grain Terminal jetty, crossing the shoreline, and proceeding underground to the proposed onshore facility. The proposed onshore facility will comprise of 3 liquid UAN storage tanks with a total capacity of 48,000 tonnes, a shed for the storage of up to 80,000 tonnes of dry fertiliser, water management infrastructure including swales and a 3,000 cubic metre evaporation pond, hardstand areas including access roads, truck washdown bays, a site office and amenities, and weighbridges.

The liquid UAN will be transferred from cargo vessels to the onshore storage tanks via a dedicated pipeline which will be constructed in-situ along the existing Kwinana Grain Terminal jetty. The pipeline will then run underground from the shoreline to the storage tanks. Up to 6 cargo vessels will be unloaded annually. The dry fertiliser will be trucked to and from the Kwinana Bulk Jetty and stored within the dry fertiliser shed at the proposal facility.

The proponent is Co-operative Bulk Handling Limited (CBH Ltd). The proponent referred the proposal to the EPA on 23 September 2020. On 20 January 2021 the EPA decided to assess the proposal and set the level of assessment at Referral Information, with additional information required.

The proposal is set out in the proponent's referral form, which is available on the EPA website. The elements of the proposal which has been subject to the EPA's assessment is included as Table 1.

Proposal alternatives

The proposal is an expansion of the existing CBH Kwinana fertiliser storage facilities. No alternative location to importing liquid UAN was proposed as the proponent currently operates the Kwinana Grain Terminal jetty.

Proposal Context – Cockburn Sound State Environmental Policy

The proposal is located in the Protected Area of the *State Environmental (Cockburn Sound) Policy 2015* (SEP) (see Figure 1).

The SEP provides an important mechanism to ensure that the values and uses of Cockburn Sound are protected. Decision making about new uses in Cockburn Sound need to ensure that the values of the Sound are fully considered.

The overall objective of the SEP is to ensure that water quality of Cockburn Sound is maintained, and where possible improved, so that there is no further net loss and preferably a net gain in seagrass area, and that the other values and uses are maintained.

The SEP provides for an environmental quality monitoring program to be implemented in Cockburn Sound to determine if the established Environmental Quality Objective[1] set for Cockburn Sound is achieved, and therefore whether the Environmental Values[2] are protected. Under the SEP, the Cockburn Sound Management Council has responsibility to oversee the environmental quality monitoring program and publicly reports the findings each year.

Table 1: Location and proposed extent of proposal elements

Proposal element	Location	Maximum extent or range
Physical elements		
UAN storage tanks Dry fertiliser storage shed Supporting infrastructure	Onshore facility (Figure 1)	Operational capacity 48,000 tonnes Operational capacity 80,000 tonnes Clearing of no more than 5.2 hectares of native vegetation within the 10.2 hectare development envelope
Import pipeline (UAN)	Offshore facility – located on the Kwinana Grain Terminal jetty, Cockburn Sound (Figure 1)	Total capacity 170 tonnes
Operational elements		
Import shipments	Offshore – via pipeline on the Kwinana Grain Terminal jetty	Up to 6 per annum
Timing elements		
Project life		30 years

[1] Environmental Quality Objectives (EQOs) have been established by the SEP for each Environmental Value. EQOs are specific management goals for a part of the environment and are either ecologically based by describing the desired level of health of the ecosystem or socially based by describing the environmental quality required to maintain specific human uses.

[2] Under the SEP, Environmental Value means a particular value or use of the marine environment that is important for a healthy ecosystem or for public benefit, welfare, safety or health and which requires protection from the effects of pollution, environmental harm, waste discharges and deposits. The Environmental Values that apply to the Cockburn Sound policy area are listed in Clause 4 of the SEP.

Figure 1: Proposal location within Cockburn Sound State Environmental Protection Area

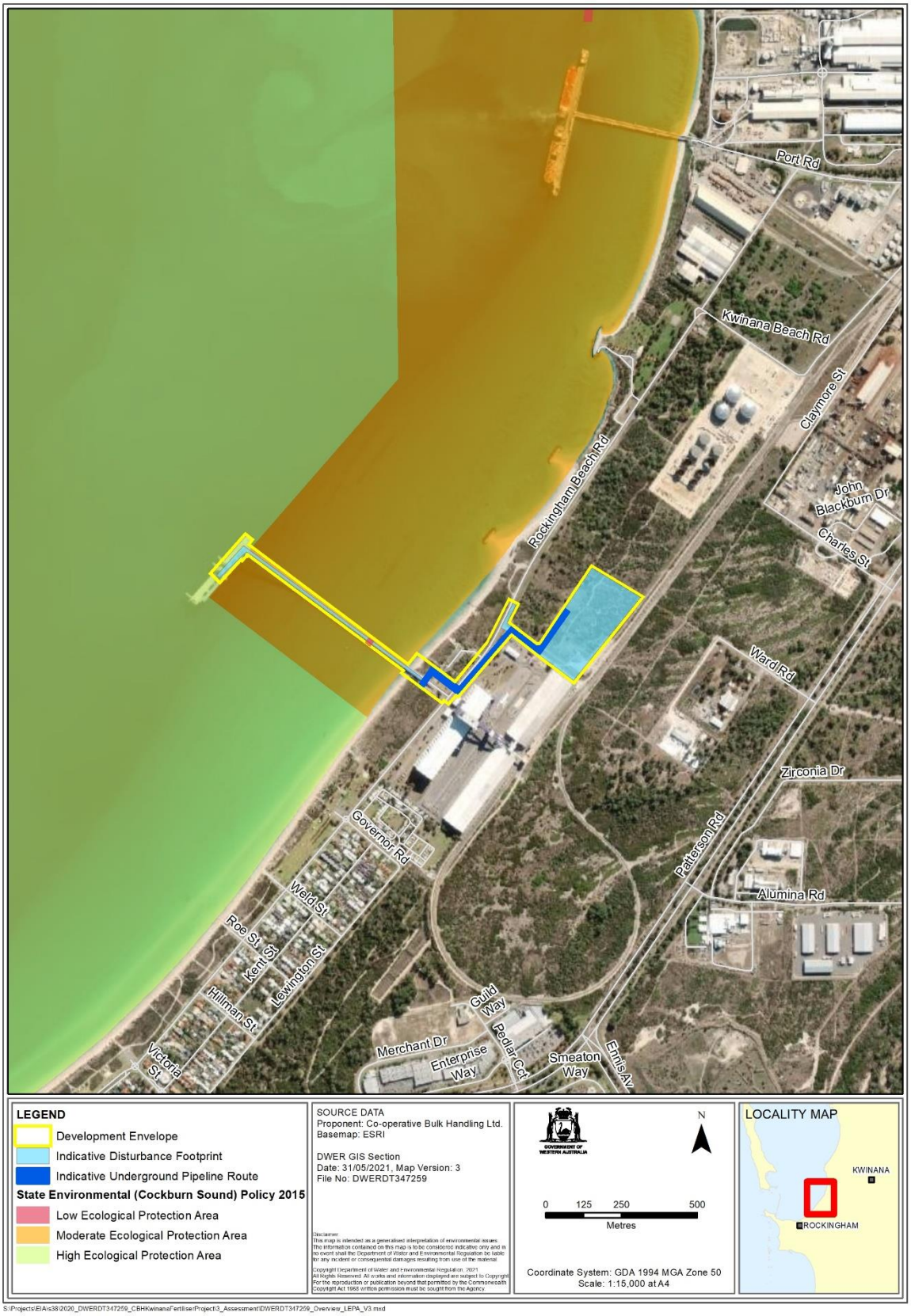

Figure 2: Proposal development envelope and Cockburn Sound ecological protection areas

2 Assessment of key environmental factors

2.1 Marine environmental quality

2.1.1 Environmental objective

The EPA's environmental objective for marine environmental quality is to *maintain the quality of water, sediment and biota so that environmental values are protected* (EPA 2016a).

2.1.2 Proposal context - existing environment

The marine (offshore) element of the proposal is located within the Protected Area of the *State Environmental (Cockburn Sound) Policy 2015* (SEP) (see Figure 1).

The location of the existing Kwinana Grain Terminal ship berth is situated within an area that is designated a 'high' level of ecological protection under the SEP. The jetty and associated infrastructure from the ship berth to the shoreline is within an area designated a 'moderate' level of ecological protection (see Figure 2). The area also contains a zone of 'low' level ecological protection for Mintech Chemical Industries adjacent to the Kwinana Grain Terminal jetty.

Status of Cockburn Sound

Under the SEP, the Cockburn Sound Management Council has responsibility to oversee the environmental quality monitoring program and publicly reports the findings each year. In 2018, the Council prepared a *State of Cockburn Sound Marine Area Report 2018* (in addition to the public reporting program), which was tabled in Parliament (Cockburn Sound Management Council 2018).

Based on the best available information and expert advice, there appears to have been no significant change in the overall health of Cockburn Sound since monitoring programs began in 2000. Overall, based on the available information, the water quality in Cockburn Sound is such that the other values and uses, including recreational use, ensuring shellfish from harvesting areas in southern Cockburn Sound are safe to eat, and industrial water supply, are being maintained.

The Cockburn Sound Report Cards for 2016–2017, produced from data collected during 2016–2017 reporting period, indicate that investigation and/or action was required in relation to several parameters monitored for ecosystem health in Mangles Bay: Seagrass shoot density, chlorophyll-*a*, and light attenuation (Cockburn Sound Management Council 2018). Monitoring these parameters assists in identifying impacts to Cockburn Sound.

2.1.3 Investigations and surveys

The proponent undertook limited water quality sampling near the ship berth in February 2021(CBH 2021). To characterise the marine water quality of the receiving environment, the proponent has referred to previous water quality monitoring

undertaken as part of the Cockburn Sound Management Council annual program of summer water quality monitoring. Data collected at site CS10N 100 m to the south of the Kwinana Grain Terminal jetty, was considered the most relevant, given its proximity.

Water quality data collected by both the proponent and the Cockburn Sound Management Council indicates that applying the relevant environmental quality guidelines in the *Environmental quality criteria reference document for Cockburn Sound* (EPA 2017) to the proposal is appropriate and achievable.

2.1.4 Potential impacts from the proposal

The marine components of the proposal include the construction and operation of a dedicated pipeline and the associated infrastructure on the existing Kwinana Grain Terminal jetty. This enables the offloading of liquid UAN fertiliser from the vessels and pumping to storage tanks located within the onshore facility.

The proposal has the potential to impact on marine environmental quality as a result of accidental spills of liquid UAN fertiliser to the environment during the transfer of product from vessels to the onshore storage tanks.

The likelihood of a large spill is low, but possible. Accidental spills and leaks during operation would add to the nutrient loading of Cockburn Sound impacting the marine environmental quality around the jetty. This could compromise the environmental values established under the SEP.

In Cockburn Sound additional nutrient loading may result in bio-stimulation effects (for example increases in phytoplankton biomass and algal blooms). Under certain conditions an acute increase in ammonia concentrations can be toxic to marine organisms including fish and benthic fauna such as sponges and sea stars.

2.1.5 Consultation

The Cockburn Sound Management Council has advised it has been consulted on the proposal. Three questions were raised by the Council and related to the assessment process and the onshore facility storage capacity. Confirmation was received from the Council on 22 March 2021 that they had no further questions relating to the proposal.

2.1.6 Avoidance measures

The proponent has committed to avoiding impacts to benthic habitats and communities by installing the pipeline on the existing jetty structure and ship berth. This avoids the use of construction barges and associated anchoring, and other construction methods, such as marine piling, which have indirect impacts to water and sediment quality and the seabed.

During operation of the proposal the proponent has advised there will be no ongoing and/or chronic discharge of wastes and nutrients from the proposal to the marine environment.

2.1.7 Minimisation measures (including regulation by other DMAs)

The *Environmental Management Plan* as detailed in the Environmental Assessment Supporting Report (CBH 2021) has been prepared to minimise the likelihood of unplanned spills of liquid UAN fertiliser. The management plan includes a *UAN Spill Response Procedure* which will be implemented in the event of an accidental liquid UAN spill.

The proponent has proposed operational measures and engineering controls designed to reduce the likelihood of an accidental spill to the marine environment, these include:

- The liquid UAN pipeline will be designed, constructed, tested, operated and maintained in accordance with Australian Standards (AS 4041 and ANSI / ASME Standard B31.3). The design includes, but is not limited to, features such as isolation valves, surge control, and pressure and flow monitoring. This reduces the likelihood of a large spill caused by pressure build up.
- The liquid UAN pipeline will be constructed on the deck of the existing jetty. Any leaks can be contained within the area and visual inspections undertaken on a regular basis.
- Bunding of pipeline hose reel and coupling to contain minor spills and stormwater. Isolation valves are installed at the cargo hose and all connections to the pipeline. Should there be a fault during transfer, the amount of liquid UAN lost will be minimised.
- The liquid UAN transfer from cargo vessels is limited to 6 ship loads per year.
- At all other times, the pipeline will be blown dry and remain clean. Any residual UAN in the pipeline is captured by cleaning pigs. Removal of liquid UAN between ship loadings and maintaining a dry pipeline, avoids any leaks to the marine environment.
- Cargo vessels are double hull tankers and will be required to comply with the *Port Authorities Act 1999* and Port Authorities Regulations 2001. The vessels are required to meet the International Convention for the Prevention of Pollution from Ships (MARPOL).

If an unlikely spill or leak occurs, then nutrient loading to Cockburn Sound would be an important issue requiring a rapid management response to prevent further release from the proposal to the environment. The proponent has provided contingency measures in the event of a spill or where monitoring results show that the high level of ecological protection is not being met.

For this aspect of the proposal, the EPA notes there is a requirement for planning approval from the Fremantle Port Authority for any proposed development within the Authority's land and waters. All tenancies within the Port require an Operational Environmental Management Plan to be prepared. Furthermore, a Construction Environmental Management Plan is also required for tenants undertaking construction activities.

2.1.8 Residual impact assessment

The proponent considers that a spill occurring under normal operating conditions is unlikely. This is primarily because of the low frequency of unloading events and engineering controls.

Although considered unlikely, any spills have the potential to impact on water quality. In the case of large spills there would be consequences on the environmental quality to the extent that the environmental values established under the SEP could be compromised.

As the overall objective of the SEP is to ensure that the water quality of Cockburn Sound is maintained and where possible improved, any further nitrogen input (even if accidental) would be considered by the EPA as a significant issue.

In the rare event of an accidental spill during unloading, the proponent estimates that up to 37.5 tonnes of nitrogen could be released into Cockburn Sound. The current estimates of nitrogen input into the Cockburn Sound range between 265 to 685 tonnes per year (BMT 2018). When considered in combination with best available estimates of cumulative nitrogen loading, an unplanned spill from the proposal could increase the nitrogen loading by 5 to 14 per cent.

The impact from any consequential algal blooms on seagrass communities is considered low. This is because the likelihood of a spill event is considered low plus there are no seagrass communities near the jetty. The most recent mapping indicates that the closest seagrass is approximately two kilometres west of the end of the proposal at Southern Flats (Hovey and Fraser 2018).

Any potential toxicity effects from an acute increase in ammonia would need to be monitored by the proponent to show how benthic fauna have responded and the extent of any impacts.

Given the proponent does not propose any ongoing and chronic discharge of waste to the environment, it is highly likely that the proposal can be implemented in a manner which does not impact on any of the environmental values established under the Cockburn Sound SEP. The EPA has assessed the proponent's avoidance, minimisation and response measures as likely to be adequate to minimise the possibility of a spill event and therefore avoid significant impacts to the environmental values of Cockburn Sound as a result of the proposal.

Summary of likely residual impacts of the proposal

The EPA has assessed the likely residual impact of the proposal on marine environmental quality to be:

1. Increase nutrient loading into Cockburn Sound as described in Table 2.

   The proposal is unlikely to result in significant impacts to marine water quality and the associated environmental value of ecosystem health provided the proposal is managed to meet the environmental objective for *ecosystem health* which is the *maintenance of ecosystem integrity* and the relevant levels of ecological protection that apply to the 'moderate' and 'high' ecological protection

areas in the SEP. The proposal is also unlikely to impact on the maintenance of all other environmental values established under the SEP.

2.1.9 Consideration of conditions

The EPA has considered whether the residual impact is consistent with the principles of the *Environmental Protection Act 1986* (EP Act) and the EPA environmental objective for the marine environmental quality factor. In doing so, the EPA has also considered whether reasonable conditions could be imposed to ensure consistency with the EP Act principles and the EPA's factor objective.

The EPA has recommended the following conditions:

- a limit on the extent of the project (condition 1)
- a requirement to meet the environmental outcome in condition 2-1, which aligns with the relevant SEP ecological protection areas (see Figure 2)
- preparation and implementation of an *Environmental Quality Management and Monitoring Plan* to demonstrate that the environmental outcome mentioned above is being met (condition 2-2)
- implementation of the *UAN Spill Response Procedure* in the first instance (condition 2-2(6))
- implementation of response measures in the unlikely event an accidental spill/leak occurs (condition 2-5).

Table 2: Summary of assessment and recommended conditions and DMA regulation for marine environmental quality

No.	Residual impact	Assessment finding	Recommended conditions and DMA regulation
1.	Increase nutrient loading into Cockburn Sound.	As the proponent does not propose any ongoing and chronic discharge of waste to the environment, it is highly likely that the proposal can be implemented in a manner which does not impact on any of the environmental values established under the Cockburn Sound SEP. The likelihood of a large spill of liquid urea ammonium nitrate is considered low based on the design of the transfer pipeline and frequency of unloading. Therefore the	Regulated by conditions 1 and 2.

No.	Residual impact	Assessment finding	Recommended conditions and DMA regulation
		implementation of the proposal is unlikely to result in a residual impact to Cockburn Sound. The EPA has recommended conditions under Part IV of the EP Act to align with the Cockburn Sound SEP environmental objective.	

2.2 Inland waters

2.2.1 Environmental objective

The EPA's environmental objective for inland waters is *to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected* (EPA 2018).

2.2.2 Proposal context - existing environment

The onshore facility is underlain by two aquifers that discharge into Cockburn Sound. The unconfined superficial aquifer system includes the shallow Safety Bay Sand/Becher Sand aquifer, which overlies the deeper Tamala Limestone aquifer.

Groundwater in the superficial aquifer flows generally in a westerly direction and discharges to the near shore marine environment along the coastline of Cockburn Sound (Smith et al. 2003) where it mixes with the overlying seawater. Groundwater has been identified as the major pathway for nutrient and contaminant loads in the Sound.

2.2.3 Investigations and surveys

Seven groundwater monitoring wells were installed on the proposed site in 2020 to establish the groundwater conditions, derive baseline trigger values and determine groundwater flow rate and direction. The bores are sited in the upper shallow aquifer only. Groundwater samples were collected in March 2020 and again in February 2021. Potential contaminants sampled included metals, hydrocarbons and nutrients. All analyses were undertaken by a NATA accredited laboratory.

A nutrient plume was not detected beneath the proposed site from the initial surveys. The proponent intends on undertaking additional groundwater sampling (for a further 12 months) to develop site-specific trigger levels.

The proponent has estimated a maximum groundwater level onsite of approximately 1.95 m Australian Height Datum (AHD). Groundwater flow was estimated by the proponent, on average, to be 30 metres per year (m/yr) and in a westerly direction. This is consistent with advice from the Department of Water and Environmental Regulation of flow rate of approximately 24 m/yr in the shallow aquifer.

2.2.4 Potential impacts from the proposal

The proposal has the potential to impact on inland waters from:

- the spill or leak of liquid UAN from the onshore facility from a fault in the underground pipeline, storage tanks or during the transfer of product for export
- leaks from the evaporation pond (designed to contain any contaminated water form washdown areas and bunds)
- uncontained stormwater filtering into shallow aquifer
- diesel and other hydrocarbon spills from the trucks or diesel storage tank.

2.2.5 Consultation

The Cockburn Sound Management Council has advised it has been consulted on the proposal as stated in section 2.1.5 of this report.

2.2.6 Avoidance measures

To avoid contamination of the groundwater, impervious bunds will surround the liquid UAN tanks (AS 1940). Fertiliser, both liquid and dry will be contained in enclosed, sealed storage facilities, avoiding the likelihood of spill to ground. The dry fertiliser shed will have a continuous concrete floor.

2.2.7 Minimisation measures (including regulation by other DMAs)

The onshore activities are considered to be manageable and the operation of importing, blending and storing the fertilisers is unlikely to cause a discharge of waste into the environment. The proponent has developed a *Water Management Strategy* (within the *Environmental Management Plan*) that details how wastewater, stormwater, groundwater, and water conservation will be managed onsite. This will include measures such as:

- separating clean stormwater runoff from contaminated runoff, which will be collected within the lined evaporation pond
- using underground cells, infiltration swales and soak wells to collect and infiltrate clean runoff and uncontaminated runoff in larger rainfall events (more than 15 millimetres), and
- ensuring an estimated finish floor of 4 m AHD (the estimated maximum groundwater level is 1.95 m AHD).

To minimise spillages on the road, trucks enter a wheel wash area on exiting the warehouse.

The EPA notes that there is a requirement for a:

- Works approval and registration of the proposal by the Department of Water and Environmental Regulation under Part V of the EP Act. The works approval will require the facility to be designed and constructed adequately through risk-based conditions. This ensures any spills or leaks during the construction and operation of the proposal will be contained.
- Planning Approval under the Town Planning Scheme No. 2, Building Approval from the City of Rockingham under the *Planning and Development Act 2005.* Stormwater management will also be assessed under the *Planning and Development Act 2005*.
- Planning approval from the Fremantle Port Authority for any construction or work on the Kwinana Grain Terminal jetty.

The proponent has prepared an *Environmental Management Plan*, as detailed in the Environmental Assessment Supporting Report (CBH 2021). The plan includes:

- UAN Spill Response Procedure
- Diesel Fuel Spill Response Plan

- Groundwater Subplan – with biannual routine monitoring and response monitoring in the event of an accidental spill.

The truck loading station will be located within a paved and bunded area where any spills can be captured. Pump shut down controls are located at each of the loading stations.

2.2.8 Remediation measures

Biannual sampling of the existing groundwater will be undertaken for the duration of the project to inform early detection of potential impacts from the operation of the facility. The proponent is establishing trigger values based on the 12 month groundwater sampling program. In the event of a spill to ground or a leak detected, the groundwater response monitoring plan will be implemented. An emergency response procedure for any spills will be in place.

Should a contaminant plume as a result of the proposal spill or leak be detected, the proponent will undertake remedial action. Remediation and recovery of the plume may be possible if contaminants are restricted to the shallower aquifer and contained in a smaller area that could be accessed via recovery bores (DWER 2021). This process has been adopted across the Kwinana Industrial Area.

The likelihood of contaminating the deeper aquifer after a large spill is low. The likelihood of contamination has been mitigated by engineering and the requirement for environmental commissioning prior to operation.

2.2.9 Residual impact assessment

The likelihood of a spill onsite is considered low. However, the potential for an accidental spill exists and can impact on the quality of the groundwater beneath the site. Any nutrient enrichment of the groundwater has the potential to impact the environmental values of Cockburn Sound. Historically the southern area of the Sound has a higher nutrient contamination of groundwater.

The onshore component of the proposal does not involve any ongoing and/or chronic direct discharge of waste to the environment.

The EPA has assessed the proponent's avoidance, minimisation and response measures as being adequate to minimise the likelihood of a fertiliser spill to ground or pipeline leak. Therefore, significant impacts to the environmental values of Cockburn Sound as a result of the proposal can be avoided.

Summary of likely residual impacts of the proposal

The EPA has assessed the likely residual impacts of the proposal on inland waters (see Table 3) to be:

1. Direct impact to the groundwater aquifer from a large spill – unlikely to be significant, provided the proposed avoidance and minimisation measures are implemented and regulation under complementary regulation occurs.

2. Potential discharge of nutrient enriched groundwater to Cockburn Sound – unlikely to result in any impacts to hydrological regimes within the onshore facility provided the proposal is implemented as outlined in Table 3 and includes the complimentary regulation.

2.2.10 Consideration of conditions

The EPA has considered whether the residual impacts are consistent with the principles of the EP Act and the EPA environmental objective for the inland waters factor. In doing so, the EPA has also considered whether reasonable conditions could be imposed to ensure consistency with the EP Act principles and the EPA's factor objective.

The EPA has recommended the following conditions:

- preparation and implementation of a groundwater quality monitoring program to demonstrate that the environmental objectives for Cockburn Sound are likely to be met during the import of liquid UAN to the sites (condition 2-2 (7-8))
- specification of trigger levels derived from at least 12 months of groundwater baseline data for nutrients, specifically nitrogen, that will trigger management and/or contingency actions (condition 2-2 (8))
- implementation of response measures in the unlikely event an accidental spill/leak occurs (conditions 2-5 and 2-6).

Table 3: Summary of assessment, recommended conditions and DMA regulation of inland waters

No.	Residual impact	Assessment finding	Recommended conditions and DMA regulation
1.	Direct impact to the groundwater aquifer from a large spill.	Unlikely residual impact. The onshore component can be managed under Part V of the EP Act (works approval). Environmental commissioning of infrastructure will be required prior to registration of the site. Stormwater management under *Planning and Development Act 2005* to mitigate the likelihood of a large spill to ground and contamination of aquifer.	Regulated by condition 2. Part V of the EP Act • Regulated through works approval, prescribed premises, Category 75, Schedule 1, Part 1, Environmental Protection Regulations 1987. *Planning and Development Act 2005* • Stormwater management.
2.	Potential discharge of nutrient enriched	Unlikely residual impact to Cockburn Sound	Regulated by conditions 2-2 and 2-5.

No.	Residual impact	Assessment finding	Recommended conditions and DMA regulation
	groundwater (plume) to Cockburn Sound.	'moderate' and 'high' levels of ecological protection area. Groundwater monitoring program will be implemented to establish site-specific trigger values for early detection of impacts to the shallow aquifer. Environmental commissioning of infrastructure under Part V of the EP Act (works approval), stormwater management under *Planning and Development Act 2005* to mitigate the likelihood of large spill to ground and contamination of aquifer.	Part V of the EP Act • Regulated through works approval. *Planning and Development Act 2005* • Stormwater management.

3 Holistic assessment

While the EPA assessed the impacts of the proposal against the key environmental factors individually, given the inextricable link between marine environmental quality and inland waters, the EPA also considered the connections and interactions between parts of the environment to inform a holistic view of impacts to the whole environment.

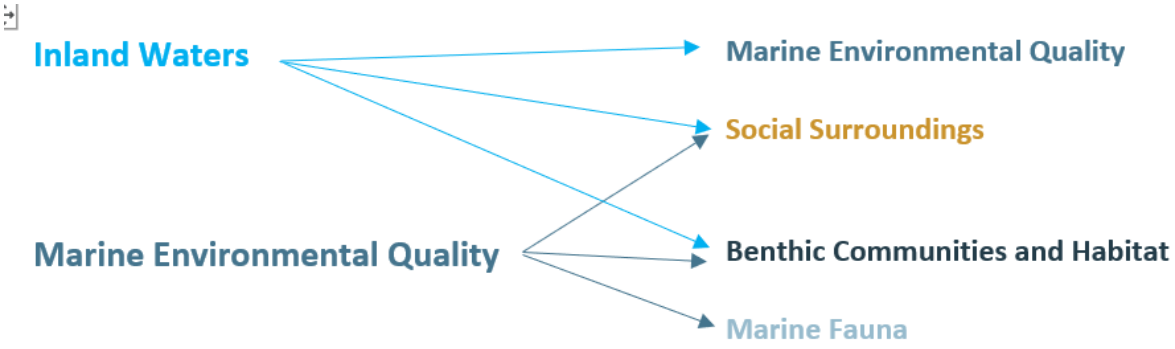

Figure 3: Intrinsic interactions between key environmental factors

Central to the EPA's assessment of the proposal is the extent to which the proposal avoids and minimises impacts to marine water quality and the associated environmental values established under the SEP. The maintenance of environmental values in the SEP are generally reliant on good marine environmental quality and quality of groundwater inputs.

In assessing the impacts of the proposal against the EPA's key environmental factors and objectives for marine environmental quality and inland waters, it is recognised that avoiding the effects of pollution and waste discharges (particularly on groundwater), and therefore maintaining the quality of the marine environment, is important in protecting the ecosystem health of Cockburn Sound and other environmental factors such as benthic communities (particularly seagrass) and marine fauna (such as fish).

This in turn supports other environmental values and beneficial uses such as aquaculture, fishing, and aesthetic quality of Cockburn Sound, which all rely on good marine water quality.

In the case of this proposal, the proponent has demonstrated sufficient measures to avoid and minimise the potential of waste discharges to the environment. Nutrient loads from an accidental spill have been considered in combination with best estimates of annual nutrient inputs into the Cockburn Sound. The proposal is also relatively small in scale and utilises existing marine infrastructure rather than proposing new disturbance to Cockburn Sound habitat.

In terms of the terrestrial component, the proposal is located within the existing Rockingham Industrial Zone, which is an already highly disturbed industrial area. The onshore facility will require 5.2 hectares of native vegetation to be cleared.

Surveys confirmed vegetation condition as degraded or completely degraded with a high ratio of weed to native species. Clearing will include the removal of two tuart trees of which no hollows were present, and there was no evidence of black cockatoo breeding within the development envelope. No surface water features, including surface drainage, exist on the site. The impacts from implementation of the proposal to flora and vegetation, terrestrial fauna, and social surroundings are considered unlikely to be significant, even when considered holistically with the key environmental factors of marine environmental quality and inland waters.

When the separate environmental factors of the proposal were considered together, the EPA formed the view that, due to the relatively small size of the proposal, and application of the mitigation hierarchy, the impacts from the proposal can be managed to be consistent with the EPA's factor objectives.

4 Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values established in the *State Environmental (Cockburn Sound) Policy 2015* which may be significantly affected by the proposal
- residual impacts to key environmental factors, separately and holistically (this has included considering cumulative impacts on marine environmental quality and groundwater quality on the environmental values of Cockburn Sound)
- the likely environmental outcomes (taking into account the EPA's recommended conditions) and consistency of these with the EPA's objectives for the key environmental factors
- the EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the EP Act.

It is the EPA's view that reasonable conditions could be imposed on the proposal to ensure its implementation will be consistent with the EPA's objectives for the key environmental factors.

The EPA has recommended that the proposal may be implemented subject to the conditions recommended in Appendix A.

Appendix A: Recommended conditions

Section 44(2) of *Environmental Protection Act 1986* specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This appendix contains the EPA's recommended conditions and procedures.

CBH KWINANA FERTILISER PROJECT

Proposal: Kwinana Fertiliser Project is an import and storage facility for dry (granular) and liquid urea ammonium nitrate (UAN) fertiliser products, located within Lot 108 on Deposited Plan 400167, whole of Title Volume 2953 Folio 177, Kwinana Industrial Area. The proposal includes an onshore facility which involves the construction and operation of UAN storage tanks and a dry fertiliser storage shed. The offshore component (import facility) involves the construction and operation of a dedicated liquid UAN pipeline on the existing Kwinana Grain Terminal (KGT) jetty to the onshore facility. Supporting Infrastructure includes, but not limited to, water management infrastructure, weighbridges, and hardstand areas.

Proponent: Co-operative Bulk Handling Limited (CBH Ltd)
Australian Business Number 74 068 223 147

Proponent Address: Level 6 240 St Georges Terrace Perth WA 6000

Assessment Number: 2277

Report of the Environmental Protection Authority: 1701

Pursuant to section 45 of the *Environmental Protection Act 1986,* it has been agreed that the proposal described and documented in Table 1 may be implemented and that the implementation of the proposal is subject to the following implementation conditions and procedures:

1 Limitations and Extent of Proposal

When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents:

Proposal element	Location	Limitation or maximum extent
Physical elements		
UAN storage tanks	Figure 1	Operational capacity 48,000 tonnes.

Dry Fertiliser Storage Shed Supporting Infrastructure		Operational capacity 80,000 tonnes. Clearing of no more than 5.2 ha native vegetation within a 10.2 ha development envelope
Import Pipeline (UAN)	Figure 1	Total capacity 170 tonnes
Operational elements		
Import shipments	Offshore – via pipeline on the Kwinana Grain Terminal jetty	Up to 6 per annum
Timing elements		
Project life		30 years

2 Cockburn Sound – Marine Environmental Quality

2-1 The proponent shall ensure there are no project attributable impacts on the following environmental outcome:

(1) ecosystem integrity and the levels of ecological protection are no lower than the **moderate** and **high ecological protection levels** for the **'Moderate Ecological Protection Area'** and the **'High Ecological Protection Area'** respectively, as defined in the *State Environment (Cockburn Sound) Policy 2015* and delineated and shown in Figure 1.

2-2 In order to demonstrate that the outcome of condition 2-1(1) is met, prior to the commencement of unloading of liquid UAN fertiliser from vessels for the operation phase of the proposal, the proponent shall prepare, submit and have approved by the CEO an Environmental Quality Management and Monitoring Plan which details:

Marine (spill response) monitoring

(1) the methodology, timing and location of marine water quality monitoring to be implemented in the event of a spill and/or pipeline leak to Cockburn Sound being detected, to substantiate and ensure that the outcome of condition 2-1(1) is being met. The methodology shall be consistent with the *Manual of Standard Operating Procedures for the Environmental Monitoring against the Cockburn Sound Environmental Quality Criteria 2017* and include the monitoring and assessment methodology for determining project attributability;

(2) the following environmental quality indicators:

(a) ammonia, nitrate-nitrite, Chlorophyll *a* (as a measure of phytoplankton biomass), and light attenuation;

(b) associated **environmental quality guidelines** and **environmental quality standards** based on the guidelines and recommended approaches in the *Environmental Quality Criteria Reference Document for Cockburn Sound* (2017), as amended or replaced from time to time;

(3) the reporting procedures, including the format, timing, and frequency for the reporting of monitoring data against the relevant **environmental quality guidelines** and **environmental quality standards** and the outcome of condition 2-1(1);

(4) in the event the outcome of condition 2-1(1) is not being met as a result of an accidental spill or leak, include details of additional monitoring to be implemented to determine the extent and scale of any impacts;

(5) the additional monitoring shall include surveys of the extent of any impacts to marine benthic biota and the use and interpretation of Landsat imagery to map the extent of any algal blooms;

(6) the *UAN Spill Response Procedure*, updated to be consistent with 2-1 and 2-2, and implemented in the first instance during a spill;

Groundwater monitoring (ongoing)

(7) the methodology, timing and location of groundwater quality monitoring to substantiate and ensure that the outcome of condition 2-1(1) is likely to be met; and

(8) specify trigger levels (for ammonia, nitrate-nitrite and total nitrogen in groundwater) derived from at least 12 months of groundwater baseline information, that will trigger the implementation of management and/or contingency actions to prevent impacts to groundwater quality and the risk of not meeting the outcome of condition 2-1(1), and also a monitoring and assessment program to determine whether the **environmental quality guidelines** and **environmental quality standards** required by condition 2-2(2) are being or likely to be met as a result of groundwater inputs.

2-3 Prior to and during the unloading of liquid **UAN** fertiliser from vessels for the operation phase of the proposal, the proponent shall implement the approved plan required by condition 2-2.

2-4 The Environmental Quality Management and Monitoring Plan required by condition 2-2 shall be made publicly available once approved by the CEO.

2-5 In the event that there is a spill or leak of liquid **UAN** fertiliser to the marine environment or groundwater, or monitoring required by condition 2-3 indicates that the outcome of condition 2-1(1) is not being met, or unlikely to be met at any time, the proponent shall:

(1) report the:

(a) spill or leak in writing to the CEO within forty-eight (48) hours of the spill being identified; and

(b) monitoring results and findings in relation to condition 2-1(1) in writing to the CEO within seven (7) days of the non-compliance being identified.

(2) investigate to determine the source and cause of the spill or leak and/or the outcome of condition 2-1(1) not being met;

(3) undertake the additional monitoring in 2-2(4) and 2-2(5) and investigate to provide information for the CEO to determine potential environmental harm or alteration of the environment that occurred due to spill or leak and/or the outcome of condition 2-1(1) not being met;

(4) provide a report to the CEO within twenty-one (21) days of the report being provided in condition 2-5(1)(a). The report shall include:

(a) details of contingency actions implemented;

(b) the effectiveness of the contingency actions implemented against the outcome of condition 2-1(1);

(c) the findings of the investigations required by conditions 2-5(2) and 2-5(3);

(d) measures to prevent the outcome of condition 2-1(1) not being met in the future; and

(e) measures to prevent, control or rehabilitate the environmental harm which may have occurred.

2-6 The proponent shall implement the contingency measures identified in the report required by condition 2-5(4) until the CEO has provided advice by notice in writing that the outcome of condition 2-1(1) is being met.

3 Contact Details

3-1 The proponent shall notify the CEO of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

4 Time Limit for Proposal Implementation

4-1 The proponent shall not commence implementation of the proposal after five (5) years from the date of this Statement, and any commencement, prior to this date, must be substantial.

4-2 Any commencement of implementation of the proposal, on or before five (5) years from the date of this Statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of five (5) years from the date of this Statement.

5 Compliance and Exceedance Reporting

5-1 The proponent shall prepare and maintain a Compliance Assessment Plan which is submitted to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 5-6, or prior to implementation of the proposal, whichever is sooner.

5-2 The Compliance Assessment Plan shall indicate:

(1) the frequency of compliance reporting;

(2) the approach and timing of compliance assessments;

(3) the retention of compliance assessments;

(4) the method of reporting of potential non-compliances and corrective actions taken;

(5) the table of contents of Compliance Assessment Reports; and

(6) public availability of Compliance Assessment Reports.

5-3 After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 5-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 5-1.

5-4 The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 5-1 and shall make those reports available when requested by the CEO.

5-5 The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.

5-6 The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then

annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO.

The Compliance Assessment Report shall:

(1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf;

(2) include a statement as to whether the proponent has complied with the conditions;

(3) identify all potential non-compliances and describe corrective and preventative actions taken;

(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and

(5) indicate any proposed changes to the Compliance Assessment Plan required by condition 5-1.

6 Public Availability of Data

6-1 Subject to condition 6-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal, the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)), management plans and reports relevant to the assessment of this proposal and implementation of this Statement.

6-2 If any data referred to in condition 6-1 contains particulars of:

(1) a secret formula or process; or

(2) confidential commercially sensitive information,

the proponent may submit a request for approval from the CEO to not make these data publicly available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.

Table 1: Abbreviations and definitions

Acronym or abbreviation	Definition or term
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.
EP Act	*Environmental Protection Act 1986*
ha	Hectare
UAN	Urea ammonium nitrate
High Ecological Protection Area	High Ecological Protection Area, as shown in Figure 1.
Moderate Ecological Protection Area	Moderate Ecological Protection Area, as shown in Figure 1.
Environmental quality guidelines	As defined in section 10 of the *State Environment (Cockburn Sound) Policy 2015.*
Environmental quality standards	As defined in section 10 of the *State Environment (Cockburn Sound) Policy 2015.*
High level of ecological protection	As defined in section 10 of the *State Environment (Cockburn Sound) Policy 2015.*
Moderate level of ecological protection	As defined in section 10 of the *State Environment (Cockburn Sound) Policy 2015.*

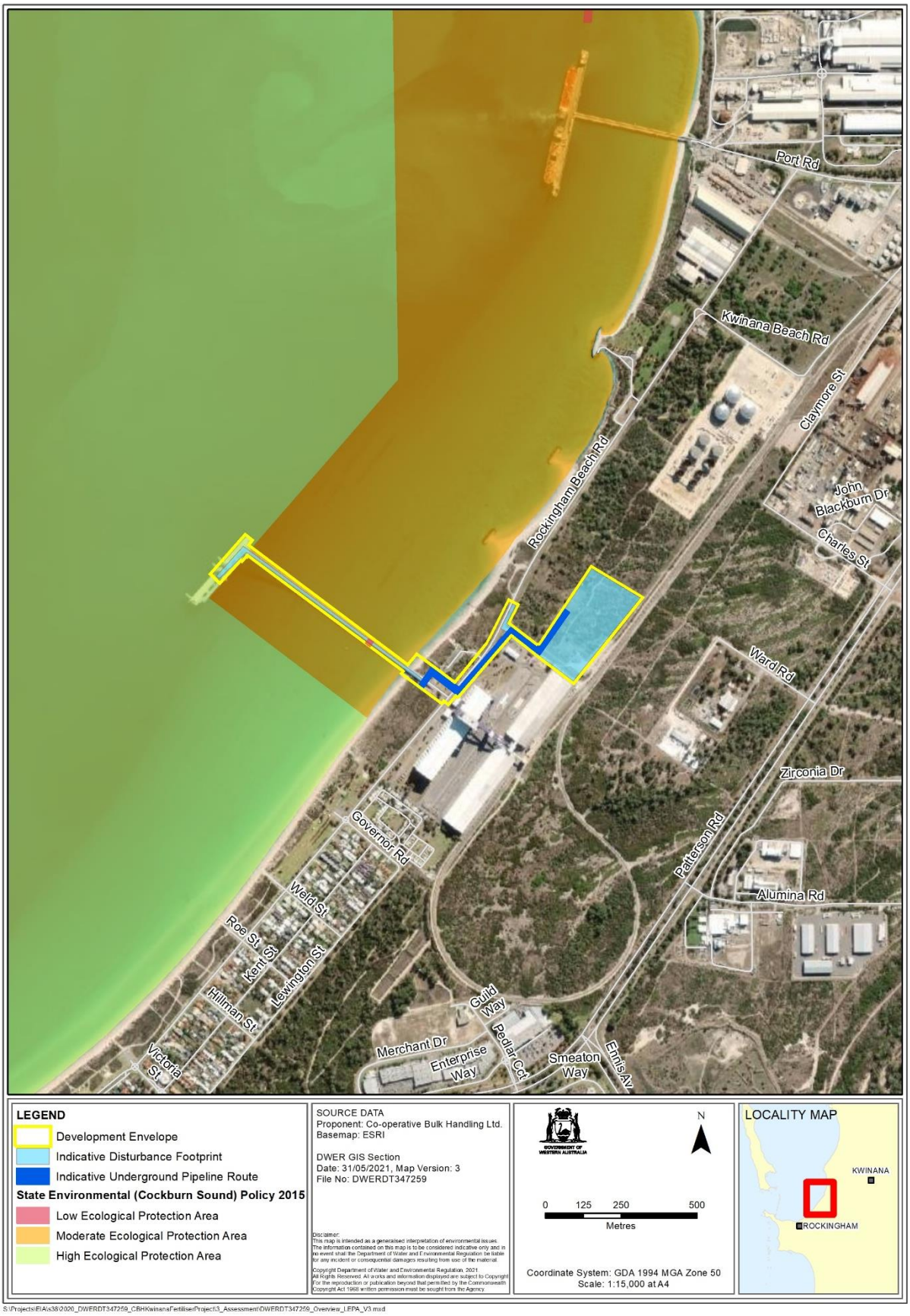

Figure 1: Development envelope, ecological protection areas and indicative underground pipeline route and disturbance footprint

Schedule 1

All co-ordinates are in metres, listed in Map Grid of Australia Zone 51 (MGA Zone 51), datum of Geocentric Datum of Australia 1994 (GDA94).

Coordinates defining the:

- development envelope
- indicative underground pipeline route
- indicative disturbance footprint

are held by the Department of Water and Environmental Regulation, Document Reference Number DWERDT369973.

Appendix B: Decision making authorities

Section 45(1) of the *Environmental Protection Act 1986* requires the Minister for Environment to consult with decision-making authorities (DMAs), and if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following DMAs have been identified:

Decision-making authority	Legislation (and approval)
1. Minister for Lands	*Lands Administration Act 1997* (Access over/under Crown land)
2. Minister for Ports	*Port Authorities Act 1999* (Access to Fremantle Port Area, management and operation of port related matters)
3. Minister for Transport	*Marine and Harbours Act 1981* (Approval for any construction on the jetty)
4. Acting Presiding Member, Metro Outer Joint Development Assessment Panel	*Planning and Development Act 2005* (Land use planning and development approval)
5. Chief Executive Officer, Department of Water and Environment Regulation	*Environmental Protection Act 1986* (Part V works approval)
6. Chief Executive Officer, City of Rockingham	*Planning and Development Act 2005* (Land use planning and development approval) *Building Act 2011* (Permit for office buildings) *Health Act 1911* and Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulation 1974 (Sewage treatment)

Note: In this instance, agreement is only required with DMAs 1–3 since these DMAs are a Minister.

Appendix C: Consideration of Environmental Protection Act principles

EP Act Principle	Consideration
1. The precautionary principle *Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.* *In application of this precautionary principle, decisions should be guided by:* *a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and* *b) an assessment of the risk-weighted consequences of various options.*	This principle was considered by the EPA when assessing the impacts of the proposal on the environmental factors of marine environmental quality and inland waters. The EPA notes that the proponent has identified measures to avoid or minimise impacts including avoiding impacts to marine environmental quality, groundwater quality and implementing appropriate response measures in the unlikely event an accidental spill/leak occurs. The EPA has considered these measures during its assessment. The EPA considers that there may be a threat of serious or irreversible harm to marine environmental quality given the possibility of accidental spills or leaks, which may cause additional nutrient loading within Cockburn Sound which can result in increases in phytoplankton biomass, algal blooms and toxic impacts to marine organisms. The EPA has recommended conditions to ensure that environmental protection outcomes are achieved and that an Environmental Quality Management and Monitoring Plan is implemented. From its assessment of this proposal the EPA has concluded that the environmental values will be protected provided its recommended conditions are implemented.
2. The principle of intergenerational equity *The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.*	This principle was considered by the EPA when assessing the impacts of the proposal on the environmental values of Cockburn Sound. In considering this principle, the EPA notes that marine environmental quality and inland waters could be significantly impacted by the proposal. The assessment of these impacts is provided in the report. Avoidance and management measures that will be implemented ensure the health, diversity and productivity of the environment will be maintained.

EP Act Principle	Consideration
	From the assessment of this proposal the EPA has concluded that the environmental values will be protected and that the health, diversify and productivity of the environment will be maintained for the benefit of future generations.
3. The principle of the conservation of biological diversity and ecological integrity *Conservation of biological diversity and ecological integrity should be a fundamental consideration.*	This principle was considered by the EPA when assessing the impacts of the proposal on the environmental values of Cockburn Sound. In considering this principle, the EPA notes that marine environmental quality and inland waters could be significantly impacted by the proposal. The assessment of these impacts is provided in this report. Biological diversity and ecological integrity are likely to be conserved due to the avoidance, minimisation and mitigation measures that will be implemented by the proponent and the conditions recommended by the EPA to ensure that environmental protection outcomes are achieved. From its assessment of this proposal the EPA has concluded that the proposal would not compromise the biological diversity and ecological integrity of the affected areas.
4. Principles relating to improved valuation, pricing and incentive mechanisms *(1) Environmental factors should be included in the valuation of assets and services.* *(2) The polluter pays principles – those who generate pollution and waste should bear the cost of containment, avoidance and abatement.* *(3) The users of goods and services should pay prices based on the full life-cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste.* *(4) Environmental goals, having been established, should be pursued in the most*	This principle was considered by the EPA when assessing the impacts of the proposal on the environmental values of Cockburn Sound. In considering this principle, the EPA notes that the proponent would bear the cost relating to ongoing management of the operations and the residual impact management. The EPA has had regard to this principle during the assessment of the proposal.

EP Act Principle	Consideration
cost effective way, by establishing incentive structure, including market mechanisms, which enable those best placed to maximise benefits and/or minimize costs to develop their own solution and responses to environmental problems.	
5. The principle of waste minimisation *All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.*	This principle was considered by the EPA when assessing the impacts of the proposal on the environmental values of Cockburn Sound. In considering this principle, the EPA notes that the proponent does not propose any ongoing and/or chronic discharge waste to the environment. The EPA has had regard to this principle during the assessment of the proposal.

Appendix D: Evaluation of other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Sea			
Benthic communities and habitat	Increased nutrients from accidental spills contributing to algal blooms and resultant reduced light availability to sustain seagrass health.	There were no agency or public comments on benthic communities and habitat.	Benthic communities and habitat was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • the distance of the closest seagrass communities (2 km west of the proposed pipeline on the Kwinana Grain Terminal jetty) • design and engineering controls of pipeline and associated infrastructure • implementation of marine urea ammonium nitrate (UAN) spill response monitoring should any spills occur • *Environmental Factor Guideline – Benthic Communities and Habitats* (EPA 2016b) • the significance of considerations in the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a), the EPA considers it is unlikely that the proposal would have a significant impact on benthic communities and habitats and that the impacts to this factor are manageable. Accordingly, the EPA did not consider benthic communities and habitat to be a key environmental factor at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Marine fauna	• Noise impact. • Adverse changes to marine water quality due to accidental spills.	There were no agency or public comments on marine fauna.	Marine fauna was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. The proposal will result in an increase of 6 shipping vessel movements per year for the export of liquid UAN. The incremental risk to marine fauna associated with the proposal's shipping movements is unlikely to be significant. Having regard to: • limited shipping movements in Cockburn Sound from the proposal • no marine vessels to be used during construction phase • *Environmental Factor Guideline – Marine Fauna* (EPA 2016c) • the significance of considerations in the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a), the EPA considers it is unlikely that the proposal would have a significant impact on marine fauna and that the impacts to this factor are manageable. Accordingly, the EPA did not consider marine fauna to be a key environmental factor at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Land			
Flora and vegetation	• Clearing of 5.2 hectares of native vegetation, including vegetation associated with the Quindalup Complex. • Clearing 0.51 hectares of Priority 3 ecological community 'Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' .	**Agency comments** • Provide further information on presence/absence of tuart trees beyond the development area. • Provide information on potential impacts to Priority 3 ecological community 'Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain' **Public comments** There should be an offset for vegetation lost, preferably bringing nearby vegetation up to good or better condition.	Flora and vegetation was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • the degraded to completely degraded condition of the vegetation within the development envelope • site reconnaissance and botanical memo undertaken by 360 Environmental (CBH 2021) • existing conservation area as an offset under State and Commonwealth approvals (Ministerial Statement 863 and EPBC 2010/5337, respectively), associated with the Strategic Environmental Assessment for the Rockingham Industrial Zone • Approved Conservation Advice for the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (DotEE 2019) • *Environmental Factor Guideline – Flora and Vegetation* (EPA 2016d) • the significance of considerations in the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a), the EPA considers it is unlikely that the proposal would have a significant impact on flora and vegetation and that the impacts to this factor are manageable. Accordingly, the EPA did not consider flora and vegetation to be a key environmental factor at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Terrestrial fauna	• Disturbance of fauna during clearing activities. • Clearing potential fauna habitat.	There were no agency or public comments on terrestrial fauna.	Terrestrial fauna was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • degraded condition of potential fauna habitat within the development envelope • lack of viable black cockatoo habitat trees and no evidence of breeding within the development envelope • *Environmental Factor Guideline – Terrestrial Fauna* (EPA 2016e) • the significance of considerations in the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a), the EPA considers it is unlikely that the proposal would have a significant impact on terrestrial fauna and that the impacts to this factor are manageable. Accordingly, the EPA did not consider terrestrial fauna to be a key environmental factor at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Air			
Greenhouse gas Emissions	Emission of greenhouse gases that lead to excess warming of the earth's atmosphere.	**Agency comments** Provide calculations showing scope 1 greenhouse gas emissions. There were no public comments on greenhouse gas emissions.	Greenhouse gas emissions was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • the proposal contributing about 9,086 tCO_2-e from clearing, construction, and year one of operations. Scope 2 and 3 emissions are anticipated to contribute 1,000 tCO_2-e annually • *Environmental Factor Guideline – Greenhouse Gas Emissions* (EPA 2020b) which details that greenhouse gas from a proposal will be assessed where it exceeds 100,000 tonnes of scope 1 emissions each year measured in carbon dioxide equivalence (CO_2-e) • the significance of considerations in the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a), the EPA considers it is unlikely that the proposal would emit significant greenhouse gas emissions. Accordingly, the EPA did not consider greenhouse gas emissions to be a key environmental factor at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
People			
Social surroundings (Noise)	• Construction activities • Increase in trucking movements adjacent to recreational reserves within the industrial area • Increase in shipping movements at the Kwinana Grain Terminal jetty	**Agency comments** • Provide information on potential impact from shipping or traffic outside the onshore facility • Provide information on how noise from the proposal may impact public use of the area near the jetty **Public comments** Product should be put on rail and trucks loaded on the rural outskirts of the metropolitan area.	Social surroundings was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: • location of proposal within an existing industrial area • Acoustic assessments conducted (Herring Storer Acoustics 2020, 2021), which found that truck and ship noise levels would not have a significant impact on overall maximum noise levels or amenity of recreational users. • *Environmental Factor Guideline – Social Surroundings* (EPA 2020c) • the significance of considerations in the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a), the EPA considers it is unlikely that the proposal would have a significant impact on social surroundings and that the impacts to this factor are manageable. Accordingly, the EPA did not consider social surroundings to be a key environmental factor at the conclusion of its assessment.

Appendix E: Relevant policy, guidance and procedures

The EPA had particular regard to the policies, guidelines and procedures listed below in the assessment of the proposal.

- *Environmental Factor Guideline – Air Quality* (EPA 2020)
- *Environmental Factor Guideline – Benthic Communities and Habitats* (EPA 2016)
- *Environmental Factor Guideline – Flora and Vegetation* (EPA 2016)
- *Environmental Factor Guideline – Greenhouse Gas Emissions* (EPA 2020)
- *Environmental Factor Guideline – Inland Waters* (EPA 2018)
- *Environmental Factor Guideline – Marine Environmental Quality* (EPA 2016)
- *Environmental Factor Guideline – Marine Fauna* (EPA 2016)
- *Environmental Factor Guideline – Social Surroundings* (EPA 2016)
- *Environmental Factor Guideline – Terrestrial Fauna* (EPA 2016)
- *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual* (EPA 2020)
- *State Environmental (Cockburn Sound) Policy 2015*
- State of Western Australia 2016, *Western Australia Government Gazette, No. 223, Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures*, 13 December 2016
- *Statement of Environmental Principles, Factors and Objectives* (EPA 2020).

Appendix F: Assessment timeline

Date	Progress stages	Time (weeks)
20 January 2021	EPA decided to assess – level of assessment set	
28 April 2021	EPA received final information for assessment	13
20 May 2021	EPA board considered assessment	3
2 June 2021	EPA provided report to the Minister for Environment	2
8 June 2021	EPA report published	3 days
22 June 2021	Close of appeals period	2

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the Environmental Protection Authority (EPA) decides to assess the proposal and records the level of assessment.

In this case, the EPA met its timeline objective to complete its assessment and provide a report to the Minister.

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EPA 2020c, *Environmental Factor Guideline – Social Surroundings*, Environmental Protection Authority, Perth, WA.

EPA 2020d, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual,* Environmental Protection Authority, Perth, WA.

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