MEMORANDUM

DATE	16 April 2025
TO	[redacted], Dept of Water & Environmental Regulation
FROM	[redacted], WISE Consulting
COPY	[redacted], QSD Hire Pty Ltd (Proponent) [redacted], Dept of Water & Environmental Regulation
PROJECT	Cat 54 Licence application - Landing WWTP, Port Hedland [SR-0181523], APP-0027570
SUBJECT	Request for Further Information, dated 18 / 3 /2025
DOC NO	1020-05-01-MEM-001

RE: Application for a Licence Under the *Environmental Protection Act 1986* – Request For Further Information for The Landing Wastewater Treatment Plant, Great Northern Highway Port Hedland, Category 54 Sewage Facility.

Alison and Adam,

Thank you for the clarification meeting on 25/3/2025 and subsequent correspondence.

Please find enclosed response to the Schedule 1 information requirements.

Supporting documents attached:

- 1020-05-01-TRG-001-Douglas Partners Geotech-RevA (2012)
- 1020-05-01-DAT-014-The Landing WWTP Development Approval Town of Port Hedland (2025)
- 1020-05-01-TRG-002 Permeability Results (2024)
- 1020-05-01-TRW-002 ALS Results, as raw wastewater quality prior to treatment (2012)

Relevant part of application form	Information requirements	DWER Rationale	Proponent Response
Part 4 Table 4.1 Infrastructure and equipment	Attachment 3B – Table 1 provides specifications of the five ponds, and Figure 3 provides a schematic. In addition to each pond and aerators, more detailed information is required on any other infrastructure components, such as pumps, inlet works, sludge compounds and storage tanks. Photos would also greatly assist in this regard. E.g. The aerial imagery shows what appears to be several tanks on the eastern boundary of the Premises, however it is not clear whether these are part of the WWTP.	Wastewater storage ponds are typically considered critical containment infrastructure. This information is required to inform the risk assessment, to determine whether critical containment infrastructure has been constructed with no material defects. Without this information there is uncertainty as to whether applicant controls will adequately manage the risk.	▪ Photographs are attached in the following pages. ▪ The waste stabilisation ponds treatment process is gravity flow (no pumps) and does not require chemical addition. ▪ There are no inlet screens or any other equipment. The two (2) sewer pumps deliver sewage directly into Pond 1. ▪ There are no desludging facilities or equipment. The WWTP is operating at 50% of available capacity (200 kL/day) and has not required desludging, as far as known. Floating or mounding sludge is not visually evident in the ponds. ▪ No additional equipment is installed other than as detailed in Attachment 3B. ▪ The Proponent plans to HDPE line the treatment ponds 1 – 3 in accordance with WQPN 26 Liners for containing pollutants, using synthetic membranes. The lining is planned for one pond /year over the next 3 years, including any desludging requirements. ▪ Ten (10) tanks are located within the WWTP fenceline, on the western boundary. These are fire water tanks, filled with scheme water. There is no connection to the WWTP process or treated effluent.

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Part 4 Table 4.1 Infrastructure and equipment	*Continued:* Page 1 of Attachment 3B states that geotechnical testing of the evaporation ponds was utilised to determine infiltration rates. Please provide the geotechnical testing report. Please also provide information on how sewage sludge and biosolids is/proposed to be processed, stored and disposed of.		Geotechnical report is attached: ***1020-05-01-TRG-001-Douglas Partners Geotech-RevA***. Refer sections 4.3 and 7.2 which generally define the permeability as 1-6 x 10^{-6} m/s. Construction Sciences testing verified for pond 5 for **permeability 5 x 10^{-6} m/s**, as attached. The WWTP utilises Pond 1, 2 and 3 for treatment and Pond 4 and 5 for evaporation and infiltration. There is no biosolids produced as part of the treatment process. Sewage sludge is contained within the treatment process and when de-sludging is required the respective pond will be taken offline to allow the sludge to dry. Representative samples will be taken and tested for Landfill Disposal Criteria compliance. The Proponent has committed to the de-sludging when Pond 1, 2 and 3 are individually taken offline to be re-lined. Future de-sludging will be determined based on visual inspection of the pond sludge levels and the effluent quality monitoring, specifically BOD.

Relevant part of application form	Information requirements	DWER Rationale	Proponent Response
Part 7 – 7.5 Relevant Planning Approvals	Please provide details of development approval for the Premises.	The Premises is located on UCL leased by the Applicant from DPLH. A copy of the 2023 development approval for adjacent Lots 2 and 3 has been provided, however this approval does not extend to the WWTP on the Premises. Without certainty that all relevant development approvals have been or will imminently be granted, the Department may defer a decision on the Licence.	Refer attached document ***1020-05-01-DAT-014-The Landing WWTP Development Approval Town of Port Hedland.*** The Town of Port Hedland advice of approval document for Lots 5820 and 5821, use for effluent disposal. Town of Port Hedland contact can address further clarifications if required.
Part 9 – 9.2 and Table 9.2 – Waste Types	Noting that Table 9.2 of the application form was not completed, please provide additional information on how grit and screenings (if applicable), sewage sludge and biosolids are processed, stored and disposed of, and whether any ongoing monitoring is occurring or proposed by the Applicant.	This information is required to inform the risk assessment, and to determine whether applicant controls will adequately manage the risk. Assessing whether material is waste *Waste is defined section 3(1) of the EP Act and section 3(1) of the WARR Act to include matter:* *(a) whether liquid, solid, gaseous or radioactive and whether useful or useless, which is discharged to the environment; or* *(b) prescribed to be waste*	Section 9.2 item (c) waste (sewage) is processed on the premises. There is no solid waste production or disposal. ▪ No inlet screening infrastructure exists or is planned. ▪ Ponds anaerobic sludge is typically desludged every 10-15 years (based on Water Corporation experience). ▪ No storage or disposal of solids or sludge is occurring or currently planned / required. ▪ Visual monitoring of ponds and treated effluent sampling are typical methods for monitoring sludge accumulation and is planned for the WWTP.

Relevant part of application form	Information requirements	DWER Rationale	Proponent Response
Part 13 – Proposed Fee calculations 13.4 – Detailed licence fee calculation	For Part 3 component - Discharges onto land or into water please provide data for blank rows, or justification for the specified waste type not being present.	Only data for BOD, TN & TP has been provided. All prescribed waste types must be considered in the fee calculations, based on **current operational capacity 200 kL/day**. Where there are discharges, all prescribed waste types must be considered in the fee calculation. If a specified waste type is not present in the discharge, this must be justified using an appropriate emission estimation technique (for example, sampling data, industry sector guidance notes, National Pollution Inventory guides and emission factors).	National Performance Indicator (NPI) reporting Threshold is triggered for TP >10 Tonnes / year and TN >15 Tonnes / year. The Landing WWTP at 450 kL/day will infiltrate: ▪ TP 1.2 tonnes / year ▪ TN 7.3 tonnes / year Which will not trigger NPI monitoring requirements. The current engineering assessment has applied National Water Quality Management Strategy for contaminants definition: Australian Guidelines for Sewerage Systems Effluent Management - Paper 11 *Environmental Protection Regulations, 1987* Schedule 4, Part 3 Table 2 Discharge to Land Component: [redacted]

Relevant part of application form	Information requirements	DWER Rationale	Proponent Response
			Item 3 (a) TSS - contained in pond 5, N/A (b) surfactants - not typical in sewage & would kill algae treatment process, N/A (c) colour alteration – not applicable to sewage (d) Temperature – ambient air temperature water in ponds which is not discharge to surface water (eg seas), N/A **Item 4** (a) 'metals' (b) pesticides- not typical in sewage & would kill algae treatment process, N/A (c) fish tainting wastes – process not applicable (d) manganese – no additional inputs on drinking water quality **Item 5** E. coli bacteria (c) >20,000 cfu / 100mL = 15 units x Item 6 Other waste – no additional inputs over and above drinking water quality = N/A (a) Oil & grease – grease traps installed. (b) TDS – **sampled 800 – 850 mg/L** (c) Fluoride (d) Iron (e) Residual chlorine (f) Other

Part 4 Table 4.1 Infrastructure and equipment – Photographs

Aerial image, Google Earth July 2024

Photos of existing ponds **10 March 2025**

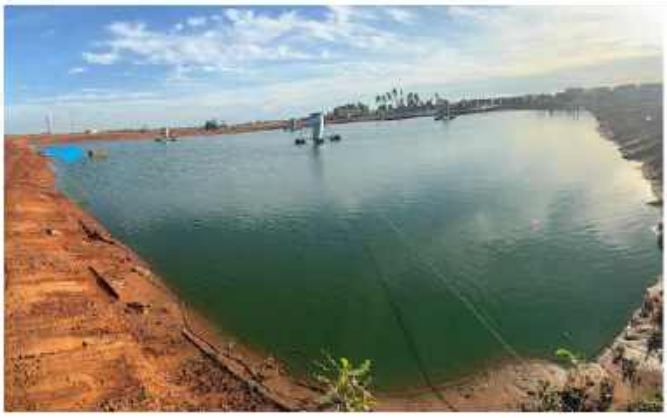
Pond 1 with single evaporator unit.

Tanks at rear of image (west) are fire water tanks and not related to the WWTP operation.

Pond 2 with single evaporator unit. Pond 1 and pond 3 in rear of image.

Photos of existing ponds **10 March 2025**

Pond 3 with single evaporator unit. Pond 1 on right of image, pond 4 in rear of image



Pond 4 with four (4of) evaporator units, inlet from pond 3.

Pond 5 evaporation / infiltration, no evidence of sludge build up. Photo is viewing west toward other ponds. Emergency overflow to left of image.

Pond 5 Emergency overflow pipe on internal embankment

Pond 5 Emergency overflow with rock armour embankment protection. Surface flow to NW Hwy culvert in rear of image

Pond 5 Emergency overflow pipe on external embankment with rock armour embankment protection.

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Other Information – Groundwater & Monitoring Bores

Refer to 1020-05-01-TRG-001-Douglas Partners Geotech-RevA (2012).

Section 4.1 defines a hard sandy clay horizon at approx. 4.0 – 4.4 m below surface surrounding the WWTP (test pits CPT 10 – 13, TP 18 – 23). Section 4.2 defines the perched groundwater table over the sandy clay horizon, at approx. 1.3 m below ground level. The report identifies that the perched aquifer may be more than usually present due to recent cyclone event (2012). No groundwater quality samples were taken. None of the drill site were cased as monitoring bores.

The Proponent will drill three (3) shallow monitoring bores (up to 6.0m) for groundwater monitoring purposes – levels and water quality. The bores must be drilled within the available land tenure. The planned bore locations include:

- One (1) upstream bore south of the WWTP to confirm groundwater hydraulic gradient and to monitor for other non-WWTP contaminant risks,
- One (1) downstream bore adjacent to pond 5 infiltration, east of the WWTP,
- One (1) downstream bore north of the WWTP (optional)

Note: infiltration area is hatched. Arrow indicates assumed groundwater flow.