

Ngukurr Wastewater Treatment Ponds WDL 234-02 Performance Improvement Plan

2025

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1. Introduction

Discharges from the Ngukurr Wastewater Treatment Ponds (WwTPs) are regulated under conditions specified in Waste Discharge Licence WDL234-02, granted under Section 74 of the Water Act 1992.

Condition 34 of WDL 234-02 states, “the licensee must review and update the Performance Improvement Plan for the licensed activity, as required and at minimum every 2 years”.

This updated Performance Improvement Plan outlines actions to be implemented in upcoming years to improve the performance of Ngukurr WwTPs, and in turn improve environmental outcomes. It is important to understand the context in which this improvement plan has been developed and that the implementation of the suggested improvement strategies are subject to many factors, not least of which is funding.

The Ngukurr WwTPs is situated within the Daly Roper Beetaloo Water Control District and the water quality objectives declared for the district are described in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000). All improvement actions are geared toward reducing risks to the receiving environment, declared beneficial uses and water quality objectives. This risk-based approach is the foundation for decisions on improvement strategies outlined in this Performance Improvement Plan.

2. Scope

The performance improvement plan will identify measures as necessary to reduce or otherwise manage the impacts associated with a discharge in order to maintain the relevant environmental values. This includes the development of appropriate commitments, such as schedules for:

- Implementation of measures to rectify any non-compliance(s);
- Design studies for the improvement of wastewater treatment and discharge strategies and infrastructure; and
- Further monitoring and impact assessment.

The emphasis for Power and Water for the immediate future at wastewater treatment sites that discharge to the environment is on:

- Providing appropriate infrastructure to remove, collect and treat centralised wastewater generated by communities;
- Operating and maintaining wastewater systems to protect the public from microbiological pathogens that can cause disease in the community and to minimise impacts of wastewater on the environment;
- Minimising adverse effects on the environment from the disposal of effluent to land, water and or water recycling, through prevention and continual improvement in accordance with the relevant legislation, regulation, guidelines and Power and Water documentation; and
- Improving our understanding of the water cycle flows through the wastewater systems and the impacts of these on the waste stabilisation pond treatment performance.

An environmental risk assessment (ERA) undertaken on the Ngukurr WwTPs indicates:

- Discharge from the Ngukurr WwTP poses low risk to the identified values (i.e. environmental and cultural endpoints) of the receiving area.

- The influence of the discharge on the receiving environment is considered sustainable given the low discharge volumes which most only occur during the Wet Season, and the use of irrigation and evaporation where possible.
- There is limited evidence to suggest deleterious impacts to the receiving environment.
- The risk rankings may change as uncertainties associated with current assessments are addressed.

3. Beneficial Uses

The Water Act 1992 is the primary piece of legislation that governs water resource regulation and management in the Northern Territory. Under the Water Act 1992, beneficial uses can be declared for specific Water Control Districts and water bodies, and water quality objectives are established to describe the water quality targeted to protect the relevant beneficial uses.

As stated, Ngukurr WwTPs are located within the Daly Roper Beetaloo Water Control District. The beneficial uses for the Daly Roper Beetaloo Water Control District (Northern Territory Government Gazette G41, 19 October 2022) identify the following for surface water and groundwater:

- Agriculture;
- Aquaculture;
- Public water supply;
- Cultural;
- Industry;
- Rural stock and domestic;
- Mining activity; and
- Petroleum activity.

4. Statement of Corporate Intent

Power and Water is established under the Power and Water Corporation Act 2002 and the Government Owned Corporations Act 2001. We have a board of directors, which is responsible to the shareholding minister for our operating and financial performance. The Statement of Corporate Intent (SCI) outlines how we intend to meet the expectations of our shareholder.

Our objectives are to:

- operate at least as efficiently as any comparable business
- maximise the sustainable return to the NTG on its investment in Power and Water.

Power and Water's not-for-profit subsidiary, Indigenous Essential Services (IES), supports 72 remote communities across the Territory. IES is funded through a funder-purchaser-provider model, with the specific terms set out in the Agreement for Provision of Essential Services to Nominated Aboriginal Communities (IES Agreement). The IES Agreement sets out the roles and responsibilities of Department Housing, Local Government and Community Development (DHLG&CD) and IES, governance structures, service levels and reporting requirements.

4.1. Strategic Plan

Our Strategic Plan focuses on 2 goals, each with its own objectives:

1. Modernising our business
2. Embracing a sustainable future with innovation.

Our Strategic Plan informs our planning cycle, focusing on our 2 strategic goals and 6 strategic objectives. Our planning underscores our commitment to embracing a sustainable future while connecting us to goals that enhance customer services and community experiences and help us meet the expectations of the NTG as our shareholder.

Our strategic plan crosses five key areas:

- **Health and Safety:** A proactive safety culture across the corporation based on accountability, trust and ethical behaviour.
- **People and Culture:** A high performing, diverse workforce that has capability to drive business effectiveness.
- **Financial Performance:** A financially robust commercially sustainable organisation with a strong capital discipline framework and delivering appropriate returns to our shareholders.
- **Operational performance:** An efficient provider of services supported by strong asset management, governance and protection of the environment.
- **Customer:** A customer-centric organisation achieving the respect and trust of all our customers and stakeholders across all parts of the business in delivering our services.

5. Improvement Plan Actions

Under this Improvement Plan, impacts associated with the licensed activity will be minimised by ensuring that:

- The discharge of treated effluent from the Ngukurr WwTPs will be undertaken within the regulatory framework provided by the licence; and
- Power and Water will progress the management actions identified in Table 1 within budgetary and resource constraints.

Table 1. Ngukurr Improvement Action Plan - informed by input from across all of Water Services.

Action No.	Action Identified	Action Progress	Timeframes	Status
				Completed = ✓
				In Progress = ✓
				On hold = ! No progress = ✗
1	Characterise the risks associated with the discharge through continued monitoring of wastewater discharged to the environment.	Routine wastewater quality monitoring programs have been developed, implemented and refined. • Review sampling and handling processes to ensure confidence in wastewater quality data collected.	2027	✓
2	Undertake a more robust Waste Stabilisation Pond process modelling assessment in line with the Power and Water Waste Stabilisation Pond Design Manual. This is an updated assessment of pond performance.	Conduct assessments at selected communities where population growth is expected - An assessment has not been completed at this site.	An assessment will be completed in the coming years subject to budgetary and resource constraints.	!
3	Develop an action plan to address “very high” or above level risks* as identified in the risk assessment. The action plan is to include an assessment of the discharge water quality in relation	No Very High level risks identified in environmental risk assessment.	N/A	Not Required

Action No.	Action Identified	Action Progress	Timeframes	Status
				Completed = ✓
				In Progress = ✓
				On hold = !
				No progress = ✗
	to factors that may affect discharge water quality (i.e. pond design, operational and maintenance factors) with respect to environmental values.			
4	Implement options to accurately quantify the volume of treated wastewater discharged to the environment.	Develop a risk-ranked program for installation of flow monitoring improvements. Flow meters have been installed progressively based on priority and budget availability. Flows at non-metered sites are estimated using water balances and climatic data as per the methodology in the Power and Water environmental risk assessments. A flow meter has not been installed at this site.	Magflow meter required to be installed by 2031	!
		Funding to be sought to add remote flowmeters to the regular maintenance schedule for calibration.	completed	✓
5	Develop and implement a desludging program for all remote communities to inform a desludging works prioritisation list	Schedule work orders per financial year based on funding availability. Conduct sludge surveys to inform the desludging program. - Desludging works were conducted at Ngukurr WwTPs in 2013. - A sludge survey was conducted at the Ngukurr WwTPs in 2020. - Ngukurr is on the desludge prioritisation list for secondary ponds only – Further discussions regarding long term sludge management is required.	By expiration of WDL234-02	✓
6	Short circuit prevention in the WSPs	Consider options to prevent short-circuiting and improve retention time, improving discharged wastewater quality. Not required	N/A	Not Required

Contact

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