White Rock Wind Farm

Stage 1

EPL 20665

Pollution Incident Response Management Plan

Document No.	WR-PM-PLN-0012 (Version 2.4)
Revision Date	August 2024

Prepared by: Goldwind Australia (GWA)

For: White Rock Wind Farm Pty Ltd

PIRMP Document Revision and PIRMP Testing Details

1 - Document Information - For submission to NSW EPA in association with EPL 20665

	Information
Document No.	WR-PM-PLN-0012
Document Author	*Brad Fernie*
Document Reviewer	*Darcie McNamara/Brendan Trevithick*
Document Approved by	*Jeff Ware (CECEP)*
Version:	*2.4*
Issue Date	*23 August 2024*
File Name (Current version)	*WRWF PIRMP Version 2-4 23_August_2024*

2 – Document Approvals

The people identified as reviewing and approving this document have an understanding of the purpose and content of this document and agree to this document as the required Management Plan for the Project.

3 – Document History

Version	Issue Date	Changes
1.0	*24 June 2016*	*Initial issue to WRWFPL*
	18 July 2016	*Issued to EPA*
1.1	*05 December 2016*	*Updated for Ancillary facilities*
1.2	*2 March 2017*	*Full review of PIRMP and update to PIRMP*
1.3	*26 April 2017*	*Updated in association with test of the PIRMP*
1.4	*29 September 2017*	*Updated for Operational Phase of WRWF Stage 1*
1.5	*3 October 2017*	*Updated contact for EPA Pollution Line and Armidale Office*
1.6	*26 April 2018*	*Review and update of PIRMP following commencement of operations & PIRMP*
2.0	*28 March 2019*	*Review and update of PIRMP including addition of harmonic filter information*
2.1	*8 April 2019*	*Review and update following test of PIRMP*
2.2	*28 July 2020*	*Review and update with new Risk Matrix and test of PIRMP*
2.3	*19 April 2021*	*Review and update pre EPL 20665 Anniversary on 27 April 2021*
2.4	*23 August 2024*	*Full review of PIRMP and update to PIRMP*

4 – Testing of PIRMP Document (Routine testing and recording of testing is required - Section 5.10)

Date Tested	Version	Person leading	Staff involved with review	Type of Test
26 April 2017	1.3	Leigh Denton	Stuart Hitchcock, David Davies	Desktop / Interview
16 April 2018	1.6	Leigh Denton	Mark Brabant, Sarah White	Desktop / Interview
4 April 2019	2.0	Kylie Hampel	Mark Brabant, Site Service Technicians	Desktop exercise / Interview

20 July 2020	2.2	Anthony Polidano	Mark Brabant, Site Service Technicians	Desktop exercise / Interview

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1 INTRODUCTION

1.1 Project Background

The White Rock Wind Farm (**WRWF**) received Planning Approval on 10 July 2012, from the NSW Minister for Planning. The Project Approval has been modified by Department of Planning and Environment (DPE) in July 2015 (MOD 2), 01 April 2015 (MOD3), 31 May 2017 (MOD4), 11 October 2017 (MOD5) and 13 December 2019 (MOD6 that relates to WRWF Stage 2). This Plan has been prepared by GWA for White Rock Wind Farm Pty Ltd (**WRWFPL**) the proponent for WRWF.

The WRWF Stage 1 has involved installation of 70 wind turbines and associated infrastructure including a 33kV/132kV substation and connection to TransGrid's existing 132kV Glen Innes to Inverell transmission line (Figure 1.1). The WRWF Stage 1 commenced full operations from 19 March 2018. Site restoration works, following the construction phase is in progress and well advanced but will continue until the disturbed areas are appropriately stabilised and revegetation has been verified as satisfactory in accordance with Project Approval Condition F5.

An Environment Protection Licence (EPL) No. 20665 was issued for WRWF Stage 1 (under the Protection of the Environment Operations Act, 1997 (POEO Act) on 27 April 2016 and applies to:

- *Scheduled Development Works* – involving the construction phase of the Stage 1 project; and
- *Scheduled activities* – three associated with construction and one for operations as follows;
    - Concrete works;
    - Crushing grinding or separating;
    - Extractive activities; and
    - Electricity generation (wind farms) applicable to the Stage 1 operations phase

The Licence was last varied on 14 March 2019. In addition to EPL 20665, the WRWF Stage 1 activity is required to have a Pollution Incident Response Management Plan (PIRMP) (This Plan).

A separate Environment Protection Licence (EPL) No. 20869 is held by a WRWF host landowner for a quarry on their property, which is located within the WRWF Project Area near White Rock Mountain. The operation of the quarry is independent of the WRWF operations.

1.2 Purpose of this PIRMP document

This PIRMP addresses requirements of Part 5.7A of the Protection of the Environment Operations (POEO) Act and POEO Regulations 2009 (General) for WRWF. The Plan must include the information detailed in the POEO Act (section 153C) and be in the form required by the POEO (G) Regulation (Clause 98B) and with additional matters described in Clause 98C of the Regulation.

Key management aspects described in this PIRMP are also addressed by the DPE approved WRWF Construction Environmental Management Plan (CEMP) and WRWF Operations Environmental Management Plan (OEMP) including the WRWF Emergency Response Plan (ERP) that are referenced by Site Staff and contractors. This PIRMP refers to these documents as applicable.

1.3 Overview of requirements for the PIRMP

Holders of EPLs are required to prepare, keep, test and maintain a PIRMP. WRWFPL holds EPL 20665 that relates to the construction phase of Stage 1 development of the White Rock Wind Farm and the Operations phase. The EPA advocates that the PIRMP, its use and applicability to the activities of the

licensed premises is an important consideration in risk assessments of premises to be undertaken by the EPA as part of the transition into Risk Based Licensing (RBL).

Section 153C of the POEO Act, specifies information to be included in the PIRMP as follows:

(a) the procedures to be followed by the holder of the relevant environment protection licence, or the occupier of the relevant premises, in notifying a pollution incident to:
(i) the owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and
(ii) the local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and
(iii) any persons or authorities required to be notified by Part 5.7,
(b) a detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant environment protection licence, or the occupier of the relevant premises, to reduce or control any pollution,
(c) the procedures to be followed for co-ordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and, in particular, the persons through whom all communications are to be made,
(d) any other matter required by the regulations.

Section 98C of the POEO Regulation also prescribes additional matters to be addressed by the PIRMP.

1.4 WRWFPL Ownership and project delivery structure for WRWF Stage 1

WRWFPL is the Proponent for WRWF and is owned; 75% by CECEP Wind Power Australia Holding Pty Ltd and, 25% by Goldwind Australia Pty Ltd. WRWFPL engaged Goldwind to project manage the construction and operation of WRWF Stage 1. Goldwind Australia was the EPC contractor for construction of the project and engaged Fulton Hogan as the Balance of Plant contractor to undertake the bulk of civil works for the wind farm installation. WRWFPL also engaged TransGrid for the grid connection components. Zinfra was subcontracted by TransGrid to construct the substation and 132kV transmission line. Goldwind International has supplied the wind turbine equipment and been involved with the commissioning of the wind turbines. Goldwind Australia has established a Service Team to operate and maintain the WRWF Stage 1.

1.5 Components of the PIRMP

This PIRMP addresses the following matters in respect of WRWF Stage 1.

Description of facilities, their location and construction, operation and maintenance activities

Description and likelihood of hazards

GWA Risk Management procedure

Inventory of pollutants

Pre-emptive actions to be taken

Safety equipment (Pollution control equipment)

Contact details

Communicating with neighbours and the local community

Minimising harm to persons on the premises

Maps relevant to Pollution Incident Response

Actions to be taken immediately after an incident

Staff training

Figure 1.1 White Rock Wind Farm Stage 1 – Drawing from Licence Application

2 DESCRIPTION OF SITE FACILITIES

2.1 Overview of Site Facilities

The WRWF Stage 1 comprises:

- 70 Goldwind GW121-2.5MW wind turbines. Turbine locations are shown in Figure 2.1;
- Approximately 32km of access tracks to provide access to wind turbine sites and substation
- 33kV electrical collection circuits, comprising approximately 46km of underground cabling and 1.1km of overhead line
- a 33kV/132kV substation and switchyard. A Harmonic filter system was added 2018/2019
- a main Operations and Maintenance Office and Compound to the north of the site, and
- a smaller satellite Operations and Maintenance Compound to the south of the site on Kelleys Rd (Figure 2.4)

The construction phase also included the establishment of construction compounds and ancillary facilities (e.g. batch plants and laydown areas), however these have been decommissioned and the areas rehabilitated.

The EPL does not apply to the grid connection components of the project that do not constitute Scheduled Premises. The grid connection components have been designed, constructed and, are operated by TransGrid, and include:

- a 132kV switchyard;
- a 33kV/132kV substation;
- 8 km of 132kV double circuit overhead line; and
- a control room and amenities building.

Nevertheless, to provide comprehensive risk assessment for all WRWF facilities, the substation and switchyard facilities are described together with relevant management controls, while noting that the grid connection facilities are managed by Transgrid and not subject to EPL 20665.

2.2 Wind Farm Construction Activities

The Stage 1 wind farm construction involved installation of 70 wind turbines and ancillary facilities as follows:

- Clearing and grubbing of turbine sites, hardstands, access tracks and substation and line route;
- Preparatory site works including excavation in rock for footings and access tracks;
- Earthworks to prepare hardstands for large cranes needed to erect turbine components (excavation in soil and rock, stockpiling of topsoil, formation of hardstand, batters and drainage)
- Drainage works incorporating suitable erosion and sedimentation controls
- Formation of turbine footings with up to 450 m^3 of concrete per turbine footing
- Erection of tower sections, nacelle, generator and turbine rotor using a large crane (Plate 2.1)
- Installation of kiosk type transformer near base of tower and two banks of coolers
- Construction of substation with 33kV/132kV transformer and associated structures;
- Construction of 8km of 132kV transmission line and internal 33kV transmission line; and
- Commissioning of turbines involving tests of operation and any adjustments to ensure safe, efficient and reliable operation

Details regarding the risks and management measures associated with the construction phase of Stage 1 have been removed from this PIRMP now that the wind farm is fully operational. However, these would be returned to the document should Stage 2 (MOD6) progress to construction. Risks relating to rehabilitation are however applicable and these have been retained.

2.3 Wind Farm Operations activities

During wind farm operations and maintenance, on-site staff of approximately 14 persons form the service team. Additional personnel may be required for maintenance activities. Activities associated with the wind operations and maintenance can include inspection and scheduled and unscheduled repairs. Activities include:

- Movements of service team to and from site and within the site on access tracks
- Transport of any replacement parts to site (may include large components e.g. Generator)
- Use of large crane and tailing crane to hoist equipment into position and secure components
- Use of elevated work platforms or abseiling for minor repairs, maintenance or inspections of turbine components
- Maintenance of substation, turbines, active harmonic filters, overhead lines, cable routes
- Rehabilitation and maintenance to access tracks, drainage or erosion and sediment controls

Plate 2.1 – View of wind turbine T10 under construction at WRWF (June 2017).

The GW121 2.5MW turbine model, being used at WRWF, has a 121m diameter rotor. The nacelle houses the generator and various control equipment.
The hub height is approximately 89m.

Plate 2.2 – T56 Installed Turbine

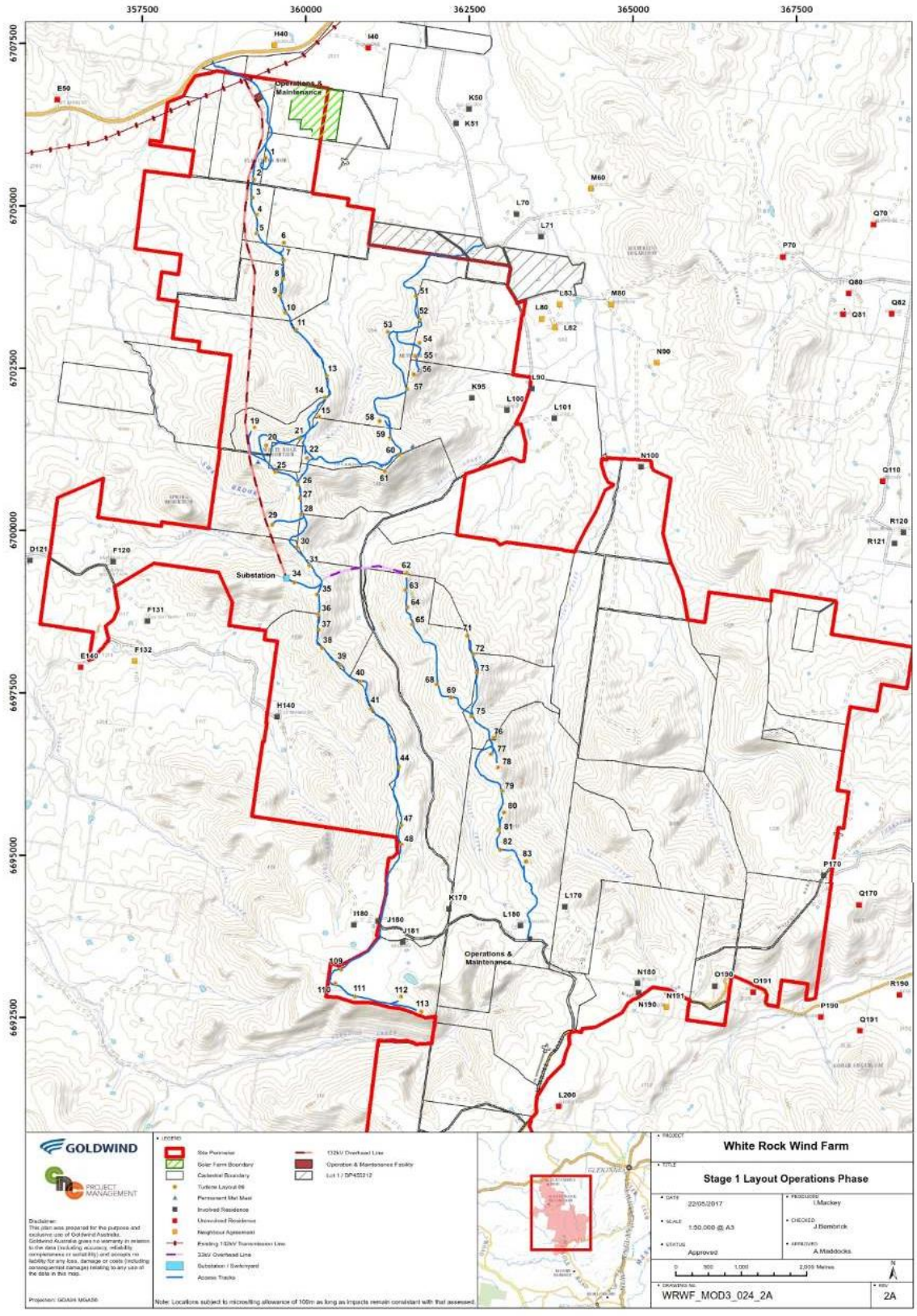


Figure 2.1 – WRWF Stage 1 – Approved Turbine Locations

	**Plate 2.3** – Base of Wind Turbine Tower Section The GW121-2.5MW wind turbines each have two banks of coolers and a kiosk transformer located near the base of each tower. Photo shows typical arrangement of a bank of coolers at base of tower T2 and a second bank is located on the far side of the tower. Each cooler has 160 litres of coolant, total coolant is 320 litres for each turbine.
	**Plate 2.4** – Kiosk type transformer near base of tower for Turbine 2. The kiosk transformer increases the voltage of the output to 33kV. The electricity is transported by underground cable to the WRWF 33kV/132kV substation. Each turbine transformer holds approximately 1,885 litres of insulating oil.
	**Plate 2.5** – A spare set of Wind Turbine Blades on hardstand at Operations and Maintenance Area (March 2019).

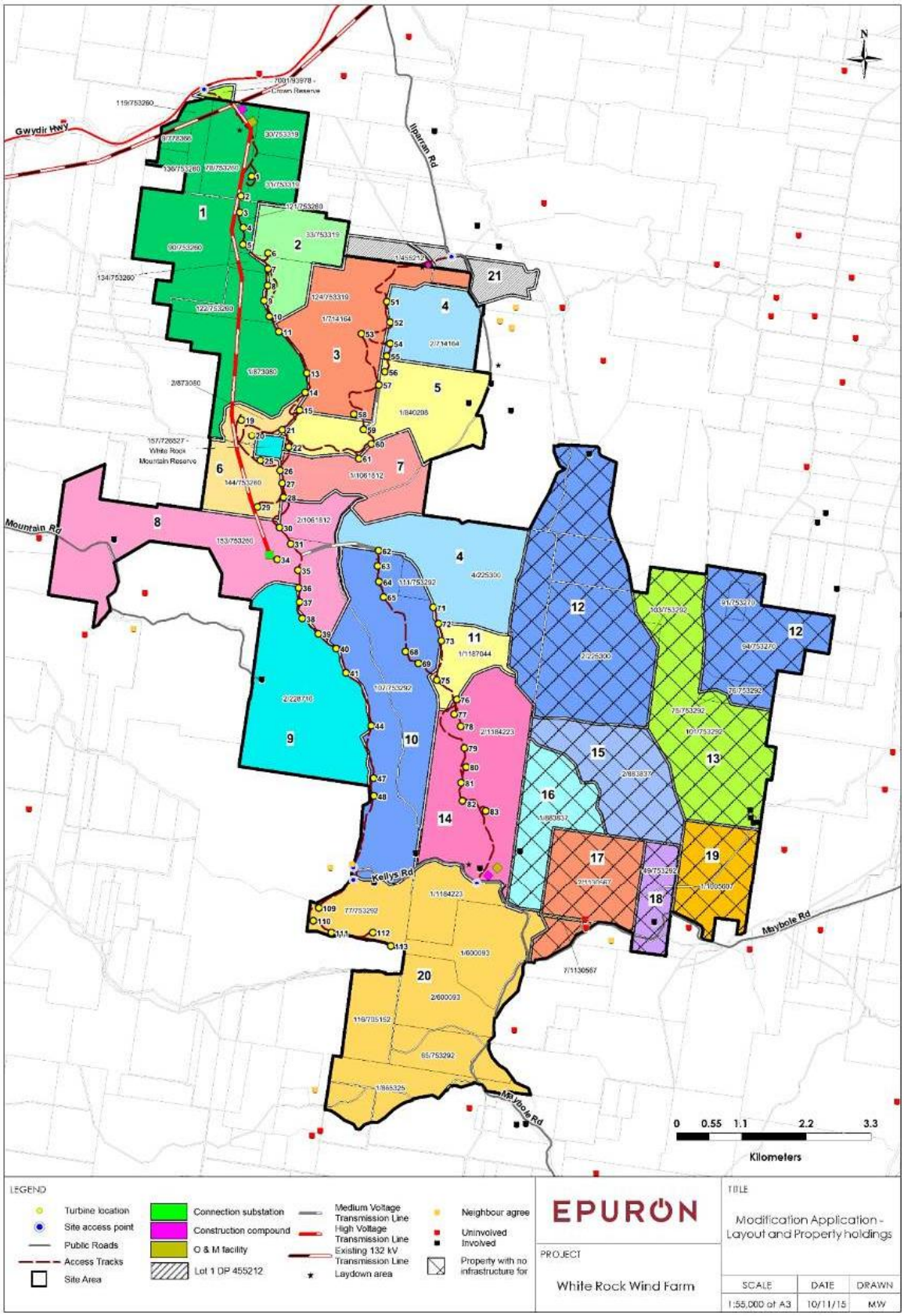


Figure 2.2 – WRWF Stage 1 – Approved Turbine Locations and Property Holdings

2.4 Operations and Maintenance Compounds

2.4.1 Main Operations and Maintenance Compound (Northern)

The main Operations and Maintenance Compound (O&M Compound) is located in the northern portion of the wind farm and is accessed from the Gwydir Hwy (see Figure 2.1 and Figure 2.3). The main O&M Compound comprises office facilities, amenities, carparking, a warehouse and laydown area. The toilet facilities are connected to a septic system which has been approved by Inverell Council. Treated effluent is discharged to a designated fenced-off irrigation area within the O&M compound. The main O&M Compound was established in October 2017.

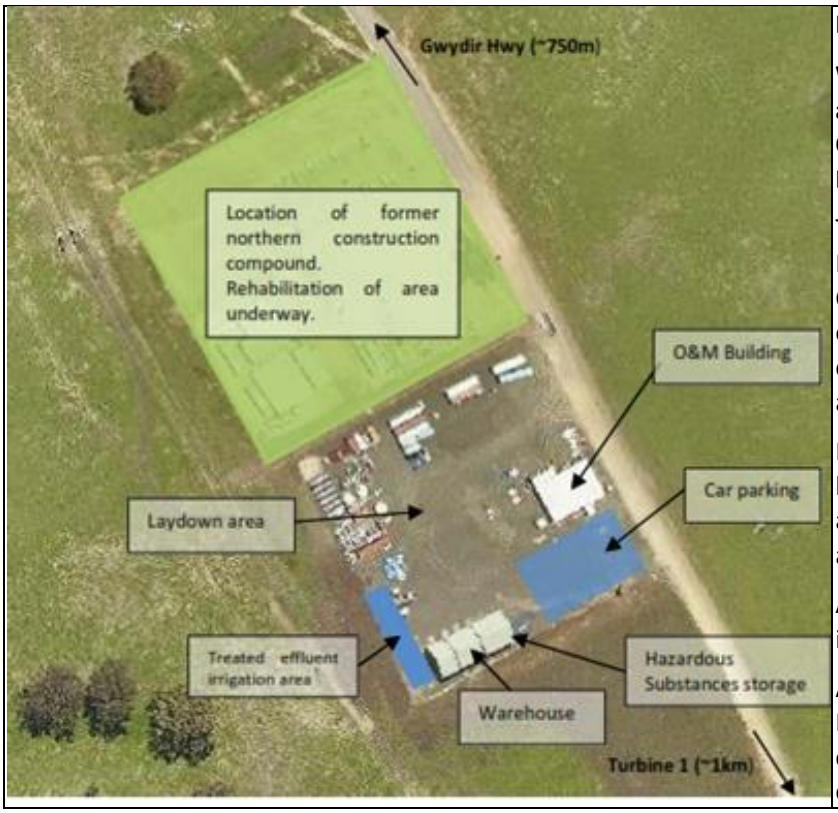


Figure 2.3

WRWF Stage 1 Operations and Maintenance Compound Location and Layout.

The Operations and Maintenance (O&M) Compound occupies a part of the former construction compound and laydown area.

Minimal storage of hazardous substances occurs at warehouse in a bunded area.

A septic toilet system is installed at the O&M facility.

Aerial photo taken in November 2017 prior to commencement of operations

Plates 2.6 to 2.9 show pertinent aspects of the O&M compound.

Plate 2.6 shows the secure storage compound that is fenced and locked when not in use. The compound has a large sealed area for vehicle access and outdoor storage. A storage building and workshop is located in part of the yard.

Hazardous Substances are mostly stored on a concrete pad under cover at an end of the storage building (Plate 2.7). Two secure self bunded containers are located in this area. Additional portable bunds are located here and hazardous substances and other items are stored on these bunds.

Plate 2.8 shows effluent irrigation area at the rear of the O&M Yard and Waste Skip storage area (Plate 2.9).

Plate 2.6 – O&M Storage Shed and Laydown area

Plate 2.7 – O&M Hazardous substances storage area (March 2019)

Plate 2.8 – Effluent area and waste skips -Mar 2019

Plate 2.9 Waste skip bins at O&M area - Mar 2019

2.4.2 Kelleys Road Operations and Maintenance Compound

A smaller satellite O&M Compound is located in the southern part of WRWF accessed from Kelleys Rd (see Figure 2.4). The Kelleys Road O&M Compound includes amenities and small office space. A smaller septic system approved by Inverell Council is also installed including a designated area for discharge of treated effluent within the compound.

The hardstand areas associated with the Kelleys Road O&M Compound may be used for WRWF Stage 2 temporary construction facilities.

Figure 2.4 –Southern (Kelleys Road) Compound, including satellite O&M compound layout and location.

A septic toilet system is installed at the O&M facility.

Aerial photo taken in November 2017 prior to commencement of operations and prior to demobilisation of remaining construction compound infrastructure and revegetation of batch plant area. Previous laydown area at west retained at request of host landowner to use as stockyards and loading area in future.

2.5 Access Tracks

Approximately 32km of access tracks and associated drainage were established to provide access to wind turbine sites and the substation (refer to Figure 2.1).

Control of dust generation is required for disturbed areas in dry windy conditions or where there are frequent vehicle movements. Water trucks or sprays can be used for control of dust as well as reducing vehicle movements. Rehabilitation of road verges reduces the risk of dust generation.

Periodic maintenance of access tracks will be required such as grading and the maintenance of drainage and erosion controls. Revegetated and rehabilitated areas also require monitoring and maintenance as detailed in the OEMP.

2.6 Collection Circuits

The 33kV collection circuits provide connections between the substation and the wind turbines utilising approximately 46km of 33kV underground cables and 1.1km of 33kV overhead line. These have all been installed and the cable and line routes have been rehabilitated.

2.7 Substation and Switchyard

The 33kV/132kV substation is located towards the middle of the project area and on the western side of WRWF, approximately 1.5km south of White Rock Mountain (refer to Figure 2.1). The grid connection components have been designed, constructed and are operated by TransGrid. Construction of the substation commenced in December 2016 and the facility was energised in June 2017.

The grid connection facilities include 8 km of double circuit 132kV transmission line, a 33kV/132kV transformer, 33kV switchgear, a control room and amenities building. The amenities building includes a septic pump out system approved by Inverell Council. The Substation and Switchyard are not 'Scheduled Premises', and are not part of the facilities subject to EPL 20665 and, do not need to be addressed by this PIRMP, but have been included here for completeness to ensure consistent consideration of risks posed by site facilities.

The substation/switchyard layout contains a single 33kV/132kV transformer as shown in Figure 2.6. The main transformer (Plate 2.5), voltage transformers and other High Voltage equipment contain in the order of 36,000 litres of insulating oil. The main transformer is located within a concrete bund. The bund drains to a compartmentalised oil containment tank which incorporates an oil water separator system (see Plate 2.10 and Figure 2.5). Treated water from the oil separator flows to the outlet located outside the southern perimeter fence. The oil containment tank is located adjacent the western side of the transformer bund (see Figure 2.5).

Plate 2.10 – Photo of the WRWF substation transformer (under construction) with spill oil tank shown in foreground

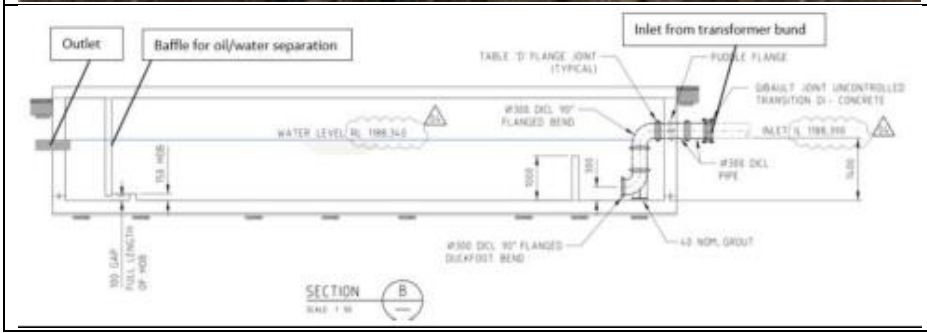


Figure 2.5 – Cross section of the WRWF spill oil containment tank design

2.8 33kV Switchroom and Harmonics Filter Yard

33kV Switchroom comprising of 33kv switch gear and control room, no possible pollutants in this control room.

Four banks of Harmonic Filter System equipment have been installed by WRWFPL in a compound (Plate 2.11) within the approved Substation Site as shown in Figure 2.6. Each of the four HFS banks has a bunded 33kV transformer holding 2,680 litres of oil per transformer. Each bund is fitted with an oil/water separator. These oil/water separators are separate from the Transgrid inground oil/water separator tank as shown in Figure 2.5 and Plate 2.10.

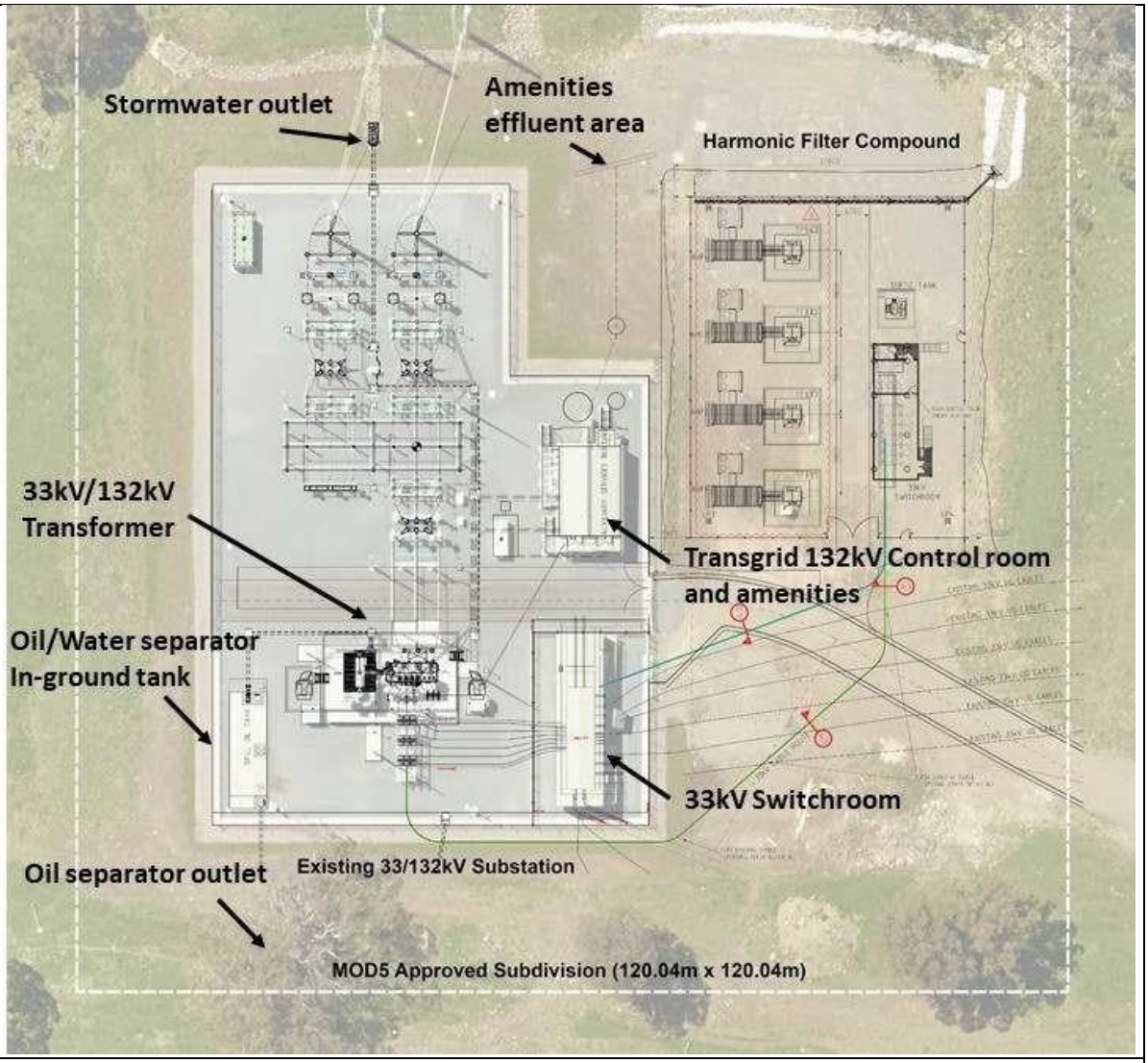


Figure 2.6 WRWF Substation Layout including Harmonic Filter System Compound within Substation Site

Plate 2.11 - Harmonic Filter Compound viewed from southern side (March 2019)

2.9 Inventory of pollutants used or stored within the Project Area

Potential pollutants that are either being used or are stored within the WRWF Stage 1 project area are listed at Table 2.1 together with the locations shown where they may be present.

Table 2.1 – Potential pollutants and locations where they may be present at WRWF

Substance	Location / volume of potential pollutants within project area			
	Substation/Switchyard incl. Harmonic Filters	O&M Compound	Turbine Sites	Mobile around Sites
Oil - Insulating	One 33kV/132kV Transformer 36,239L	Auxiliary Pole Top Transformer (O&M Building	70 Kiosk style transformers 1,885L each 131,950L Total	Low volumes, infrequent handling
	Three voltage transformers 180L Total			
	Four 33kV transformers (HFS) 2,680 L			
Oil – Hydraulic	Low	Low	Likely	Low
Oil – Engine	Low	Low	Likely	Low
Gear Oil/Grease lubricating	Low	500L	Minor	Low
Waste – Oil and Grease	Low (at Separator)	Up to 3000L	Low	Low
Oily and Greasy Rags	Low	Low, occasional	Low, occasional	Low
Coolant biodegradable	Low	Up to 5,000L	320L each turbine cooler (22,400L WRWF)	Low
Fuel	Backup Generator (600L)	Low	Low	Low
Battery Bank	TransGrid Control Room	Nil	Nil	Nil
	33kV Switch Room			
	Harmonics Switch Room			
Cleaning Agents	Low	Low	Low	Low
Solvents	Low	Low	Low	Low
Paints	Low	Low	Low	Low, infrequent
Herbicides	Nil	Low	Nil	Scheduled weed spray contractor 1,800-2,000L per vehicle (incl. water)
Sewage Effluent	One on-site septic system	Two septic systems, one at each O&M	Nil	Occasional use of portaloos for major works

	HFS Amenities			
Packaging treated with methyl bromide	Low	Spare component packaging (wooden)	Low, infrequent	Low, Infrequent
Contaminated wastes	Low, infrequent	Bins at main O&M compound	Low, infrequent	Low, infrequent

3 DESCRIPTION AND LIKELIHOOD OF HAZARDS

3.1 3.1 Definition of Harm to the Environment

The potential hazards associated with Stage 1 of the WRWF are identified below in terms of the type of hazard and the location where the hazards may occur.

The POEO Act refers to actual or potential material harm to the environment. Section 147 describes the meaning of material harm to the environment.

(1) For the purposes of this Part:

(a) harm to the environment is material if:

(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

(2) For the purposes of this Part, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

3.2 Types of Hazards

Hazards may be associated with impacts on air quality, water quality, ecosystems or neighbour amenity. The general categories considered by the EPA risk assessment tool include, Air, Water, Waste and Noise. These are further described below relevant to WRWF. The risks are subject to management through the Stage 1 CEMP and OEMP.

Air (WRWF Stage 1 CEMP - Section 6.8 and WRWF Stage 1 OEMP – Section 5.8)

The key hazards relevant to air include (reduced risk as activities transition to operations):

- Dust from access tracks or, any unstabilised surfaces or stockpiles (Higher risk in dry windy conditions).
- Vehicle emissions – Higher for earthmoving and transport vehicles or defective vehicles.
- Potential for vehicle emissions has been vastly reduced since construction has been completed.

Water (WRWF Stage 1 OEMP Section 5.7) (PIRMP Figure 3.1 Catchments/Drainage)

The key potential hazards relevant to water include:

- Spillage or leaks of fuel/oil/chemicals from plant, equipment, storage containers/areas or vehicles
- Spills of coolant at turbine sites or during handling/transport of coolant – biodegradable coolant
- Spills of oils or minor amounts of chemicals at substation/turbine sites and kiosk transformers/O&M compounds – Controls included in design and procedures to mitigate risk.
- Leaks/spills of effluent from the site septic systems through failed infrastructure.
    - Erosion and transfer of sediment (and weed seed) across project area, higher risk during civil (maintenance) works with reduced level of risk following site restoration. Greater risk with high intensity rainfall.

Noise (WRWF Stage 1 OEMP Section 5.1)

The key potential hazards relevant to noise during operations include:

- Noise impacts for neighbours from turbine mechanical noise during operations – preventative inspections and maintenance aims to ensure efficient operation of turbines
- Noise impacts for neighbours from turbine maintenance, operation of large cranes and use of tools such as rattle guns
- Noise from earthworks activities associated with site rehabilitation – progressively less as rehabilitation work is completed
- Noise from occasional access track maintenance works
- Traffic noise entering or leaving the site.

Waste (WRWF Stage 1 OEMP Section 5.10)

The key potential hazards relevant to waste for the remainder of project include:

- Unsecured or wind-blown waste.
- Inadequate storage or mixing of waste streams.
- Inappropriate disposal of wastes.

3.3 Locations associated with respective hazards

The hazards identified above may be present at the locations indicated below.

Operation and Maintenance Compounds (Northern and Southern)

- Storage of oils, fuel and chemicals – minor volumes.
- Amenities - Council-approved septic systems installed for the Operations and Maintenance Compound.
- Chemicals – Coolant stocks of the order of 2,000 litres but up to 5,000 litres in 1,000 Litre containers at O&M Compound. Coolant is fully biodegradable and stored on mobile bunding.
- Waste storage and removal from site –waste volumes generated have significantly declined since the completion of turbine installation and will remain minimal during the regular operations of WRWF.

Substation, Control building and associated compound (Figure 2.6 and Plate 2.10)

- The main transformer contains approximately 36,000 litres of insulating oil. Leak or failure could release oil to the environment. The transformer is installed in a purpose designed concrete bund that drains to a large oil/water separation tank. A water/overflow discharge point is located on the southern side of the substation (refer to Figure 2.6).

- Combined transformers within the Harmonic Filter yard contains approximately 11,000 Litres of oil.
- Pump out Septic system (TransGrid yard) which has been approved by Council.
- Surface runoff and sediment transfer for unstabilised soil area. Reduced risk as disturbed ground is progressively stabilised. Sediment contained at source.
- Waste removal from the substation compound by licensed waste contractor or transferred to Site Office compound ready for removal from site.
- Transformer noise

Wind Turbines (At locations shown in Figure 2.1 and OEMP Annex C.1)

- Kiosk transformers at turbines contain 1,885 litres of insulating oil. Leak or failure could release oil to the environment. Controls include in-built containment of oil leakage. Any spill would be expected to be localised.
- GW121-2.5 utilise coolers that are located adjacent the base of the tower (320L in two coolers). Turbine coolant is fully biodegradable.
- The turbines require servicing, generally low levels of oil and grease volumes as there are no gearboxes on the turbine generator. Procedures for maintenance and spill recovery are in place.
- Removal and recycling of packaging materials as part of ongoing maintenance works.
- Turbine noise aerodynamic or mechanical, including fans.

Access tracks and hardstands (At locations shown in Figures 2.1 and OEMP Annex C.1)

- Erosion of hardstands, tracks, drains and/or batters with potential to transfer sediment to pasture and creeks.
- Greater risk for steeper slopes or where there is less resistant rock and soil materials, with potential of batter failure / land slips.
- Vehicle or mechanical plant problems with oil or fuel spill.
- Vehicle accidents resulting in oil or fuel spill.

Weed infested areas and wash-down stations

- Use of herbicide to control weed infestations across the project area. Application by experienced contractors or trained service personnel minimises the risk. Additional provisions in proximity to waterways which are few along the elevated ridgelines.
- Weed wash down if vehicles or equipment are required to drive off formed roads or hardstands.

Sensitive areas (Watercourses in Figure 3.1)

- Native vegetation and Endangered Ecological Communities (EECs) (Shown on Site Constraints Maps within the OEMP appendix C.1)
- Fauna habitat (Associated with vegetation communities)
- Stocked areas or areas used for cropping (as used by host landowners)
- Watercourses are not common on elevated ridges. Site is divided between Severn and McIntyre catchments.
- Proximity to residences and potential for noise impact – pre-construction planning, implementation of controls and compliance checking assesses impact.

3.4 Proponent, Contractors and other stakeholders

WRWFPL is the proponent for WRWF Stage 1. All contractors engaged to undertake work at the wind farm are required to undertake a project induction in accordance with the OEMP and provisions of the Project Approval and EPL 20665.

Goldwind has been contracted as the Warranty Operations Maintenance (WOM) Service provider for the WRWF Stage 1 Wind Farm. Various contractors support the service function. The O&M activities are undertaken in accordance with the WRWF Stage 1 OEMP and all site personnel appropriately inducted.

3.4.1 Non WRWF activities

- **White Rock Solar Farm (WRSF)** is within the broader WRWF Project Area but is excluded from the EPL area apart from the 33kV cable that is part of the shared infrastructure with WRWF and connects the WRSF to the substation.
- **A Vodafone communications facility** is located on one or two met masts within the WRWF project area. This is maintained by Vodafone.
- **Landowners** conduct pastoral activities that include inspecting, mustering, ploughing, fencing, track establishment and maintenance, herbicide, pesticide and fertiliser application across the extent of the project area.
- **A separate quarry**, referred to as 'The Hugan Pit' is located within the Project Area near White Rock Mountain and has obtained planning approval from Glen Innes Severn Council. The Hugan Quarry holds an Environment Protection Licence (EPL 20869) from the EPA. Gravel from the quarry has been supplied to WRWF.

Figure 3.1 WRWF Stage 1 Layout relative to catchments, creeks and site drainage (ref. CEMP-CSWQMP

4 ENVIRONMENTAL MANAGEMENT SYSTEM

4.1 Proponent

WRWFPL is 75% owned by CECEP Wind-Power Corporation (CECWPC) and 25% Goldwind. Goldwind managed the construction, supplied the wind turbines and operates and maintains WRWF on behalf of WRWFPL.

4.2 Goldwind Australia Pty Ltd and Certification to ISO 14001

Goldwind Australia Pty Ltd (GWA) must conduct WRWF Service activities in accordance with the DPE approved OEMP and EPL 20665 issued by EPA. The DPE approved Environmental Representative oversees the project compliance and performance.

GWA has been certified for its implementation and maintenance of an Environmental Management System (EMS) in accordance with ISO 14001: 2015. The certification was obtained in 2017 and has been maintained successfully and the current certificate is valid until 2026 A copy is attached in Appendix A1. Audits of GWA EMS are undertaken annually.

GWA also conducts or arranges environmental audits of its activities and has completed a series of audits of the Stage 1 construction works. Audits continue during the operations of WRWF and are arranged by WRWFPL through CECEP the major shareholder. DPE and/or EPA may undertake reviews of the site compliance and performance at any time.

4.2.1 WRWF Stage 1 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) approved by DPE was implemented for the construction of WRWF Stage 1. The CEMP was prepared in accordance with requirements of Project Approval Conditions E21 and E22. The CEMP addresses potential environmental risks to ensure performance objectives are achieved. The CEMP applies for any residual construction related activities which primarily relate to rehabilitation and drainage works.

4.2.2 WRWF Stage 1 Operational Environmental Management Plan

An Operational Environmental Management Plan (OEMP) for WRWF Stage 1 has been approved by DPE. The OEMP was prepared in accordance with requirements of Project Approval Condition F19. The OEMP addresses potential environmental risks to ensure performance objectives are achieved and all activities are compliant.

All site personnel, contractors and subcontractors must comply with the requirements of the DPE approved WRWF Stage 1 OEMP.

4.2.3 Goldwind Australia HSE Risk Management Procedure

Goldwind Australia (EPC) established a HSE Risk Management Procedure (GWA-HSE-PRC-0017) that sets out the methodology to assess and evaluate risks that may arise during GWA activities. The risk management process aims to address the process outlined in AS/NZS ISO 31000:2009 as outlined in Figure 4.1 below.

The application of mitigation measures aims to reduce the risks to an acceptable level. A Risk Matrix is shown in Figure 4.2 which can be applied to analyse risks for the purpose of developing mitigation

strategies for unacceptable risks. A risk register is maintained on site. A summary of identified risks which relate to this PIRMP is provided in Table 4.1. New activities are reviewed in accordance with the process outlined in Figures 4.1 and 4.2

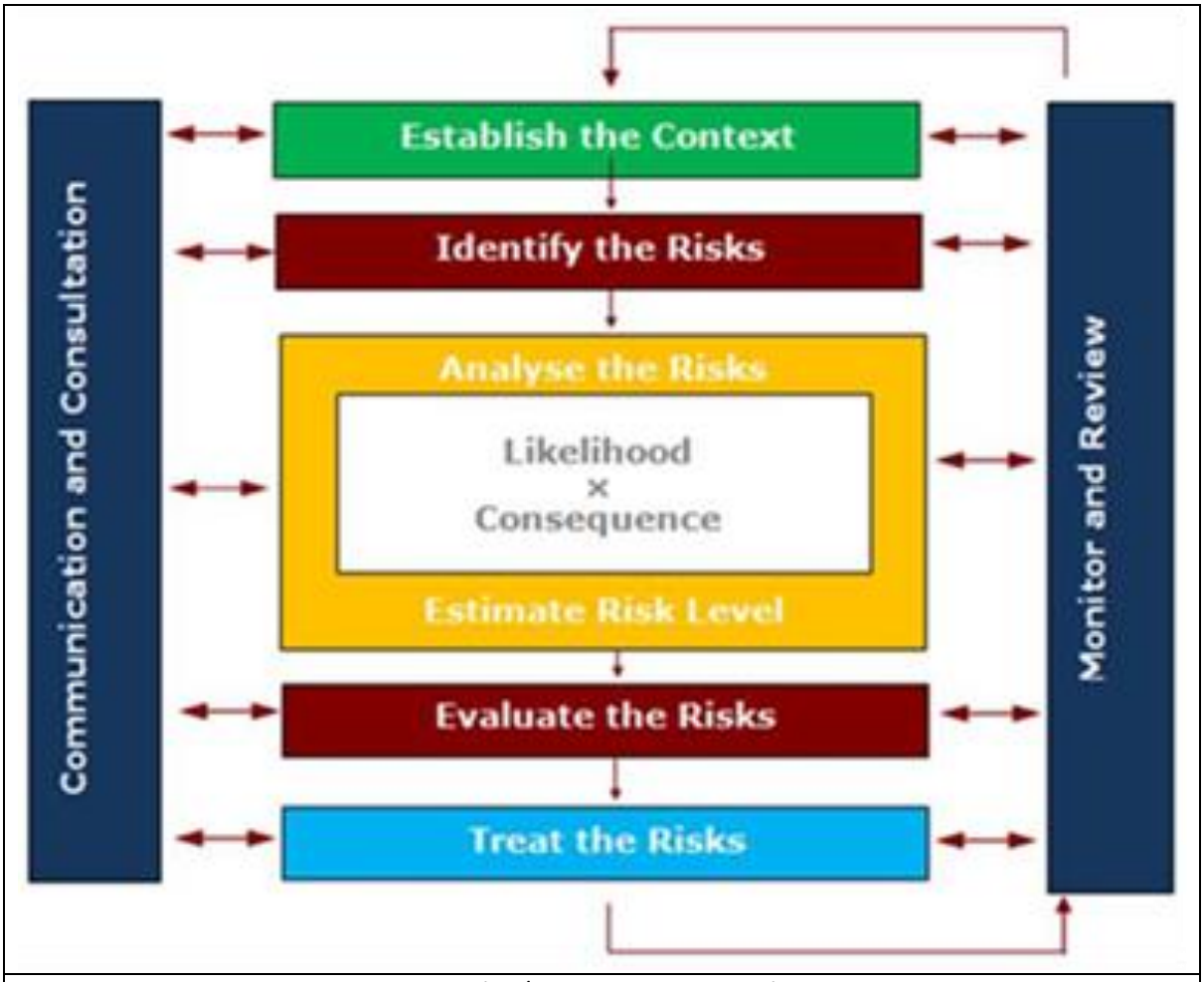


Figure 4.1 – Risk Management Process (AS/NZS ISO 31000:2009)

GWA Risk Matrix					
	Likelihood				
Severity	Very Unlikely - 1	Unlikely - 2	Possible - 3	Likely - 4	Very Likely - 5
No or Marginal Impact - 1	1	2	3	4	5
Minor Impact - 2	2	4	6	8	10
Moderate Impact - 3	3	6	9	12	15
High Impact - 4	4	8	12	16	20
Major Impact - 5	5	10	15	20	25

Risk Class	Accountability/Responsibility to residual or unmitigated risks
15-25	Risks that significantly exceed the risk acceptance threshold and need urgent and immediate attention. Identify and implement controls and recovery measures to reduce the risk to As Low As Reasonably Practicable (ALARP). MANAGEMENT MUST REVIEW CONTROLS.
10-14	Risks that exceed the risk acceptance threshold and require proactive management. Identify and implement controls and recovery measures to reduce risk to As Low As Reasonably Practicable (ALARP). MANAGEMENT MUST REVIEW CONTROLS.
4-9	Risks that lie on the risk acceptance threshold and require active monitoring. Manage for continuous improvement through the effective implementation of the QHSE Management Systems. SUPERVISORS MUST REVIEW CONTROLS.
1-3	Manage for continuous improvement and the possibility of further risk elimination. PROCEED WITH CAUTION.

Figure 4.2 – GWA HSE Risk Matrix (From Risk Management Procedure) (See following page, explanation of Consequence and severity score

Consequence or Severity Rankings (In relation to Figure 4.2)								
Ranking	**Injury**	**Environment & Community**	**Project Schedule**	**Budget**	**Property / Asset Damage**	**Legal**	**People, Brand and Reputation**	**Finance Impact ROI $AUD**
5	Multiple fatalities, or significant irreversible effects to multiple people. Single fatality or severe irreversible disability. Moderate irreversible disability or impairment to one or more persons includes Serious Personal injuries where a person is on WC for a continuous period of 1 month	Catastrophic impact resulting in widespread irreversible damage to the environment, including listed environmental values and/or significant heritage value. Complete loss of trust by affected community leading to long term social unrest.	>50%	>20%	$1M+	Major litigation. Investigation by regulatory body resulting in long term interruption of operations. Criminal liability (e.g. corruption, fraud or goal) Punitive fine or penalty	Total loss of shareholder and customer support. Prolonged impact to share price. Group MD and/or Board members resign. International press reporting.	$30M+ loss or gain
4	Mod irreversible disability or impairment to one or more persons Includes Serious Personal Injuries where a person is on WC for a continuous period of 1mth	Significant damage to the environment or, a listed heritage value (5-10 yrs to recover) Prolonged community outrage.	>30%	>16%	$700k - $1M	Major breach of legislation or contract with punitive fine or damages and involving 3 months of senior management time. Resignation of senior staff members as a result of breach of major breach	Subsidiary MD leaves. Short term impact on share price (months) Customers terminate contracts. Australia-wide press reporting. Senior Management Team leave business	$10M <$30M
3	Lost Time Injury Hospitalisation required.	Mod damage to environment or a listed/known heritage value that may extend off site (<5 yrs to recover) Long term community irritant leads to disruptive actions and requires continual Management attention.	20%	>12%	$50k-$500k	Breach of contract or legislation with moderate fine, damages and non-criminal or misdemeanor criminal penalty	Customers register strong concerns and threaten contract termination. State based media reporting. Manager leaves. Customer complains strongly. Local media reporting.	$1M < $10M Loss or gain
2	Medium term largely reversible disability to one or more persons Medical treatment provided by medical practitioner.	Minor-Moderate reversible damage to the environment that is contained on site (<1 year to recover) Short term community outrage or longer-term unrest	>10%	>8%	$1k – $50k	Breach of contract or legislation with moderate fine, damages, or misdemeanour criminal penalty	Local media reporting. Employee leaves	$100k<$1M loss or gain
1	First Aid incident	Negligible-Minor environmental damage contained on-site. One-off community protest requiring intervention and management attention	>2%	>2%	up to 1k	Minor breach of contract or legislation with fine, damages or non-criminal penalty	Customer aware and affected.	0 <100k loss or gain

Table 4.1 WRWF Stage 1 - Risk Management – Examples of Pollution Incident Risks (Relevant items to be added to Site HSE Risk Register as necessary)						
Work step or facility	**Hazards**	**Risk**	**Risk Score**	**Mitigation Strategies (Control Measures)**	**Residual Risk Score**	**Responsibility** for implementing controls
Construction of WRWF						
Site Rehabilitation	**Inadequate stabilisation / vegetation coverage**	**Erosion and sedimentation**	Moderate	**CEMP Section 6-13 Site Rehabilitation. Ongoing monitoring and rectification works by BOP Contractor to fulfil rehabilitation requirements and fulfil Condition F5 of Conditions of Approval.**	Low	EPC Manager
Site Rehabilitation	**Weeds**	**Weed infestations**	Moderate	**CEMP Section 6-13 Site Rehabilitation. Ongoing monitoring and rectification works by BOP Contractor to fulfil rehabilitation requirements and fulfil Condition F5 of Conditions of Approval. OEMP requirements for**	Low	EPC Manager
Operation of substation (Transgrid facilities - Switchyard, Main Transformer, Ancillary Facilities Building, In-Ground Oil Water Separator, metering, auxiliary generator, amenities – to be completed and managed by Transgrid – Information included here for reference purposes only in terms of Total Site assessment – Any concerns to be raised with TransGrid)						
Large transformer 33kV/132kV	**Loss of large oil volume**	**Soil or water pollution**	Moderate	**Design includes location within substantive concrete bund and inground oil/water separator. Regular inspection and maintenance**	Low	TransGrid
Oil Water Separator	**Ineffective operation**	**Oil discharge to soil and waters**	Low	**Regular inspection and maintenance, clean**	Low	TransGrid
Transformer Oil Cleaning	**Leakage / Loss of oil volume**	**Soil or water pollution**	Moderate	**Established maintenance procedure undertaken by specialist contractors. Adequate controls put in place during activity.**	Low	TransGrid
Hazardous substance storage	**Storage of waste oil and chemicals**	**Spillage to soil and waters**	Low	**Storage of relatively small amounts of hazardous substances, oil and chemicals.**	Low	TransGrid
Sewage system on-site	**Leakage to waters**	**Failure of pipework**	Low	**Septic system approved by Council for operations. Checks on operation of systems.**	Low	TransGrid
Small plant equipment / auxiliary generator	**Refueling, servicing, wastes**	**Spillage of fuel or oil**	Low	**Fuel and oil handling procedures, spill response equipment. Auxiliary/backup generator is bunded.**	Low	TransGrid
Waste	**Inappropriate disposal**	**Pollution, Fines, penalties**	Moderate	**Minimal waste during operations. Clearly defined waste handling processes, separation of wastes, Use of waste licensed contractor**	Low	TransGrid

Table 4.1 WRWF Stage 1 - Risk Management – Examples of Pollution Incident Risks (Relevant items to be added to Site HSE Risk Register as necessary)						
Work step or facility	**Hazards**	**Risk**	**Risk Score**	**Mitigation Strategies (Control Measures)**	**Residual Risk Score**	**Responsibility** for implementing controls
Operation of substation (WRWF – 33kV Switchroom, Harmonic Filter System Compound and associated items)						
5 x transformer 33kV/400V	**Loss of oil volume**	**Soil or water pollution**	Low	**Design includes location within individual concrete bund above ground oil/water separator. Regular inspection and maintenance**	Low	WRWF
5 x Oil Water Separator	**Ineffective operation**	**Oil discharge to soil and waters**	Moderate	**Regular inspection and maintenance, clean**	Low	WRWF
Transformer Oil sampling	**Leakage / Loss of oil volume**	**Soil or water pollution**	Low	**Established maintenance procedure undertaken. Adequate controls put in place during activity.**	Low	WRWF
Sewage system on-site	**Leakage to waters**	**Failure of pipework**	Low	**Discharges into TransGrid septic system approved by Council for operations. Checks on operation of systems.**	Low	WRWF
Waste	**Inappropriate disposal**	**Pollution, Fines, penalties**	Low	**Minimal waste during operations. Clearly defined waste handling processes, separation of wastes, Use of waste licensed contractor**	Low	WRWF
Wind Turbines						
Kiosk type 33kV transformers	**Loss of oil from transformer**	**Soil or water pollution**	Moderate	**Controls to prevent malfunction, inspection to check for leaks, inbuilt containment, spill response procedures**	Low	Site Operations
Turbine Coolant system (320L per turbine)	**Loss of chemical from coolers**	**Soil or water pollution**	Moderate	**Use of Biodegradable coolant, regular inspections and maintenance. Procedure for top-up of coolant to avoid spills**	Low	Site Operations Manager
Turbine oil and grease systems and servicing	**Leak or Spill of oil or grease**	**Contaminate soil or water**	Low	**Low volumes of oil, Inspections to detect leakage, spill oil recovery, maintenance of plant, use of self-bunded trailer for transportation of bulk oils**	Low	Site Operations Manager
Turbine noise (aerodynamic &/or mechanical)	**Noise emission**	**Non-compliance with limits. Disturb nearby receivers**	Low	**Regular inspections to ensure equipment is functioning effectively. Serrations installed on various turbines. Operational compliance monitoring completed and validated noise model and confirm noise compliance. Regulator acceptance of testing received**	Low	WRWFPL + Site Operations Manager
Operation and Maintenance of wind farm						
Erosion of disturbed ground	**Soil erosion and sediment transfer**	**Intense rain event**	Moderate	**Effective erosion and sediment control. Stabilised all disturbed areas. Revegetation Program ongoing and subject to verification. Routine weed management**	Low	Site Operations

Table 4.1 WRWF Stage 1 - Risk Management – Examples of Pollution Incident Risks (Relevant items to be added to Site HSE Risk Register as necessary)						
Work step or facility	**Hazards**	**Risk**	**Risk Score**	**Mitigation Strategies (Control Measures)**	**Residual Risk Score**	**Responsibility** for implementing controls
	/ weeds					Manager
Material storage	**Fuel, oil, chemicals**	**Soil contamination**	Moderate	**Classification, designated storage areas, Bunding, spill control procedure, spill control equipment**	Low	Site Manager
Waste Management	**Oil, chemicals, rags, plastics, steel, wood, other**	**Soil contamination, amenity, visual**	Moderate	**Classification, designated waste areas, labelling, recycling, appropriate/legal disposal**	Low	Site Manager
Various	**Bushfire**	**Impact from bushfire/wildfire**	Moderate	**Bushfire Risk Management Plan, fire-fighting equipment on-hand (especially for hot works), communications enhanced through phone and appuse**	**Low-Med**	Site Operations Manager
Wind farm infrastructure	**Equipment Fire**	**Ignition of bushfire. Harm to life & property**	Low-Moderate	**Bushfire Risk Management Plan, control ignition source, sensors and automated shutdown systems on turbines, fire-fighting equipment on-hand (especially for hot works)**	**Low**	Site Operations Manager
Vehicle movements	**Air borne dust**	**Roads poorly maintained**	Moderate	**Maintain road surfaces to limit dust generation when vehicles use road. Deploy water cart as required. Reduce vehicle speeds. Consider application of surfactants.**	Low	Site Operations Manager
Access track maintenance	**Erosion of tracks and adjacent land**	**Sediment transfer**	Moderate	**Higher risk on steeper slopes and erodible soils. Ensure drains are lined to reduce flow velocity and prevent scouring of drain. Stabilise batters. Rehabilitation Programme.**	Low	Site Operations Manager
Turbine coolant storage (O&M) and other chemical storage	**Damage to storage container**	**Spillage of coolant**	Low	**Stored in appropriate manner on designated bunding adjacent to storage shed at O&M Compound**	Low	Site Operations Manager
Herbicide use on disturbed area	**Inappropriate use/application**	**Spills, penalties**	Low	**Handling procedures, Persons applying herbicides to be appropriately trained and certified. Review weather forecast prior to application.**	Low	Site Operations Manager
Turbine operation is noisy	**Aerodynamic noise**	**Disturbs neighbours, non-compliant**	Low	**Design for compliance, Required Compliance monitoring undertaken, Regulators approved report. investigation of complaints, as required.**	Low	Site Operations Manager
Turbine operation is noisy	**Mechanical noise**	**Disturbs neighbours**	Low	**Non-routine incident potentially due to malfunction. Quick response needed to limit disturbance to neighbours and to avoid damage to equipment. Regular**	Low	Site Operations Manager

5 SPECIFIC PROJECT ENVIRONMENTAL MANAGEMENT MEASURES

5.1 Pre-emptive actions to be undertaken

General WRWF Stage 1 OEMP and site Operational Management Plan (OMP), provide principal reference for

Site environmental management during operations

Air (WRWF Stage 1 OEMP – Section 5.8)

- Maintain compacted surface on site roads
- Stabilise all disturbed areas to prevent or minimise dust generation. Successful progressive revegetation/rehabilitation reduces the surface area of unstabilised surfaces thereby minimising the potential for dust generation.
- Apply dust control measures such as wetting down, if required
- Reduce vehicle speeds below site speed limit, if dust risk increased
- Vehicle emissions – All vehicles to be properly maintained.

Water (WRWF Stage 1 OEMP Section 5.7)

- Rehabilitate all construction works with disturbed ground – Regular inspections and controls
- Monitoring program during operations to identify and rectify erosion and drainage issues
- Regular equipment inspections and maintenance to detect and correct any oil/fuel leaks early
- Procedures for safely handling oil, fuel and chemicals on site
- Appropriate storage and containment for all hazardous liquids
- Ensure sufficient spill control equipment of the right type for relevant substances
- Training/Familiarisation in containment and recovery procedures and exercises
- Monitoring of all systems over time to ensure effectiveness.

Noise (WRWF Stage 1 OEMP - Section 5.1)

- Compliance with approved working hours or any approved OOHW requirements
- Layout design to achieve compliance
- Noise compliance assessments for operating wind farm
- Reporting of noise compliance results and any mitigation
- Complaint investigation and responses

Waste management and soil contamination issue – (WRWF Stage 1 OEMP- Section 5.10)

- Separation of wastes
- Storage and handling procedures – covered waste storage skips or bins
- Waste classification where required
- Appropriate and compliant disposal of wastes
- Testing, storage and treatment or disposal of contaminated soil

Environmental Management (WRWF Stage 1 OEMP - Section 3)

- Ensure all hazards have been identified and are included in the Site Risk Register
- Ensure all hazards are appropriately addressed by suitable control measures (risks acceptable)

- Ensure that the management system provides regular inspections of the effectiveness of controls
- Maintain hazardous substances register on site and SDS for all listed items
- Reporting as required
- Controls are outlined in the OEMP, OMP and ERP which will together address the hazards described in this PIRMP.
- The PIRMP provides a planning and management document and should also be addressed by relevant site management documents, including the OEMP, OMP and ERP.
- Testing of the PIRMP within every 12 month period.

5.2 Equipment to reduce risk of pollution

Erosion and Sediment Controls were installed during construction (Identified in Progressive Erosion and Sediment Control Plans (PESCPs)). These have been replaced by permanent drainage features and confirmed in As-Built drawings once works completed. These include:

- Lined drains, flow controls, energy dissipaters and rehabilitation measures.
- Equipment controls for transformers, coolers and wind turbines, (Shut down, alarms, etc.)
- Bund and Oil Water Separator for 33kV/132kV transformer (inspection and maintenance by TransGrid)
- Kiosk transformers have internal bunds to contain potential leaks or spills
- Spill containment equipment (bunds, spill kits, recovery/contaminated material storage container(s))
- Spill collection equipment and oil-absorbent materials
- Flow control devices and site drainage controls to limit erosion potential.

The turbines and transformers have protection controls incorporated that limit the risk of damage to the equipment or failure of the site systems.

The large 33kV/132kV transformer at the substation is located within a concrete bund that is purpose designed and complies with AS 1940. It is part of TransGrid responsibilities. The bund drains to a large underground oil containment tank which incorporates an oil/water separator. The oil containment tank is located adjacent the western side of the transformer bund (see Plate 2.10 & Figure 2.6).

The oil/water separator is designed to remove free transformer oils from flows of water to achieve a concentration of <10ppm in the discharging stream and providing 'no visible oil sheen' so as to satisfy typical Australian EPA requirements. The WRWF transformer, the bund, drainage, oil/water separator, discharge outlet outside the substation fence and the septic tank are managed by TransGrid through routine inspections, maintenance and cleaning that ensures that these pollution control devices are effective.

Erosion and Sediment flow controls have been employed during construction in areas of earthworks. The Stage 1 Construction Soil and Water Quality Management Plan (a sub-plan of the CEMP) has been used to guide management of erosion and sediment control. The development and implementation of Progressive Erosion and Sediment Control Plans has been undertaken for each new area where construction occurred. These plans were prepared prior to commencement of construction in each area.

As the site is rehabilitated and surfaces are stabilized there is less need for temporary erosion controls however drainage controls are installed across the site including, lined drains, flow controls and energy dissipaters. Routine inspections include observations to assess erosion risks or sediment transfer on the site. Maintenance is applied as required.

The site has a spill control procedure which is documented in detail in the project Emergency Response Plan (ERP). Spill containment and recovery equipment is available at key locations across the site, such as the construction compounds and the O&M compounds. Portable spill kits are also a requirement for all site vehicles. This aspect is addressed by the site induction process. The Spill Response Procedure Outline is provided in Figure 5.1.

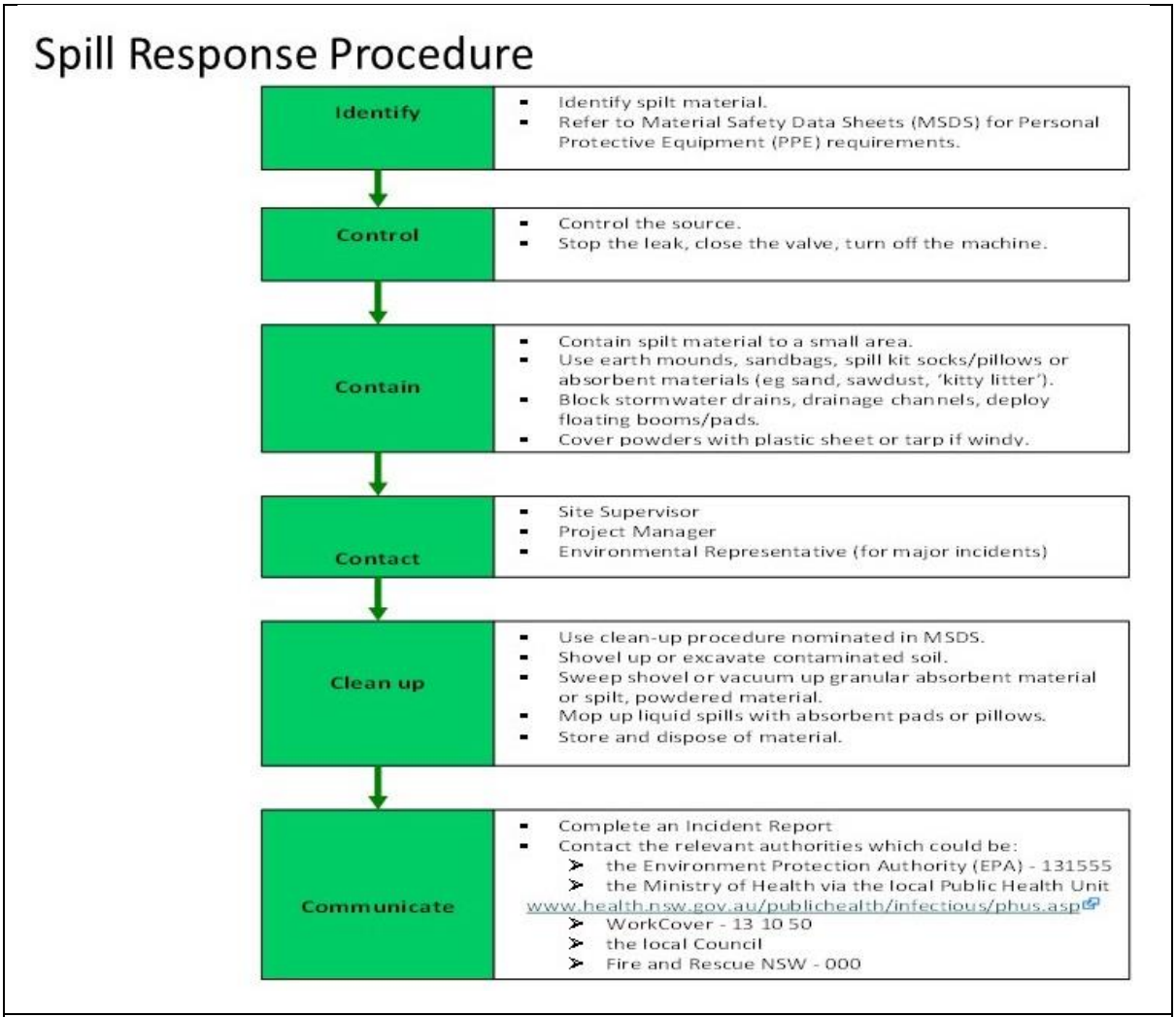


Figure 5.1 – Outline of White Rock Wind Farm Spill Response Procedures

5.3 Contact Details

A full set of contact details are defined in the WRWF Emergency Response Plan (ERP). Copy of key contacts relevant to Pollution Incident Response are provided in Table 5.1. The WRWF ERP is the relevant site reference for all contacts relating to Health Safety and Environment. Site access routes are shown in Figure 5.2.

Table 5.1 – Pollution Incident Emergency - Key Contact Details (To be reviewed annually)

Position / Agency	Person / Agency function	Phone	Mobile
WRWFPL Owners Corporate Team			
CECEP Asset Manager	Jeff Ware		0448 790 008
CECEP Site Representative	Ben McFarlane		0439 509 878
Site Management Team (Goldwind)			
WRWF Site Office	7.00am to 3.00pm only	(02) 8279 9220	
Site Service Manager	Brendan Trevithick		0420 588 697
Site Administrator & Occupational First Aider	Jane Alt+/dd]l d]f]d		0420 613 397
Owners Site Representative	Ben McFarlane (CECEP)		0439 509 878
HSEQ Manager (WOM)	Brad Fernie		0437 352 917
HSEQ Advisor	Darcie McNamara		0400 999 766
TransGrid (Substation and Transmission Line Operator)	System Operator	(02) 4014 5700	1800 027 253
Agency contact details			
EPA	24 hr EPA and OEH hotline	13 15 55	13 15 55
State Emergency Service – Glen Innes	Flood, Storm	13 25 00	13 25 00
RFS Glen Innes		(02) 6732 7046	000
NSW Fire Brigade – Glen Innes / Inverell (Fire and Emergency)	NSW Fire and Rescue	000	000
Ambulance	Accident and emergency	000	000
Police	Emergency	000	000
Glen Innes Hospital	Medical Assistance	(02) 6739 0200	
Inverell Hospital	Medical Assistance	(02) 6721 9500	
NSW Poisons Information	Health	13 11 26	13 11 26
Roads and Maritime Services	Response	(AH – 132 701)	13 22 13
Bureau of Meteorology	Weather	www.bom.gov.au	
Glen Innes Severn Council	General enquiries	02 6730 2350	
Inverell Shire Council	General enquiries	02 6728 8288	
Safe Work NSW	Work Health and Safety	13 10 50	13 10 50
Essential Energy	Electrical matters (local network)		132 391
TransGrid	Electrical matters (transmission)		1800 027 253

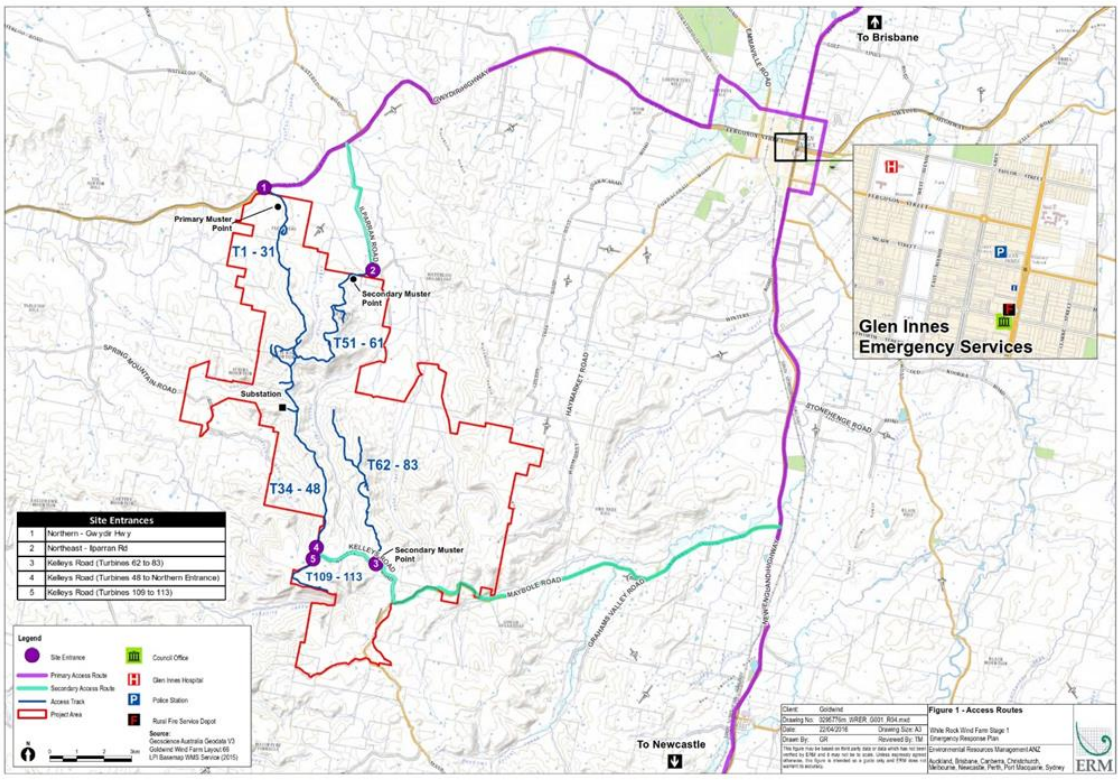


Figure 5.2 – Emergency Response Site Access Routes

5.4 Communicating with neighbours and the local community

WRWFPL has an ongoing program of communications with property owners for the wind farm and the neighbours to the project. There are active programs of consultation with the community through the Community Consultative Committee and mechanisms such as the project website, Newsletters, Media advertisements, and other events. Separate mechanisms have been established with host landowners through regular meetings and other lines of communication.

A program of background noise monitoring has been undertaken from December 2015 to February 2016 at representative neighbouring residences. Compliance noise monitoring was undertaken after the site became fully operational from 19 March 2018. The results demonstrated compliance and the regulators have acknowledged noise compliance test results.

5.5 Minimising harm to persons on the premises

WRWFPL site management system integrates various elements to minimise harm to persons on the premises. These include, but are not limited to, the following.

- Inductions
- Training and Toolbox meetings
- Personal Protective Equipment (PPE) requirements
- Site vehicle requirements
- OEMP and sub-plans, such as the Emergency Response Plan

- Operations Management Plan (OMP)
- Defined procedures including incident and near miss reporting
- Nominated safety wardens
- Designated muster points
- Safe Work Method Statements (SWMS)
- JSEA Process

5.6 Maps

Management of pollution incident response is assisted by comprehensive information on hazards, control equipment and sensitive areas. Applicable maps/drawings are indicated below. Others are available at the site office for utilization by site staff responding to any incident.

- Map of turbine locations (Figures 2.1)
- Layout - O&M Facilities (Figure 2.3 and Figure 2.4)
- Layout of substation site (Figure 2.6)
- Map of residence locations and project host properties (Figure 2.1 and Figure 2.2)
- Location of hazards are shown on various plans showing turbine sites and substation layout (Figures
- 2.1 to 2.6)
- Location of hazardous liquids (Table 2.1)
- Septic system locations (Table 2.1)
- Catchment boundary map (Appendix A2)
- Final drainage controls shown in as-built drawings
- Site Access Routes (Figure 5.3)
- Status of rehabilitation (internal document)

5.7 Actions to be taken immediately after an incident

The measures to address pollution incident response are detailed in the Site Emergency Response Plan (ERP) that addresses, health, safety and environmental matters. This provides a more practical basis for site management using a single document for emergency response. Key actions include the following:

- Limit the extent of the incident – contain or eliminate the source of the incident
- Alert site management of the incident
- Management to determine whether external resources needed
- Assess reporting requirements and report as necessary
- Plan for clean-up or corrective action
- Investigate reasons for incident
- As necessary, amend procedures or facilities to avoid recurrence
- Review and update PIRMP as necessary (considering need for further testing of PIRMP)
- Provide incident report and submit for management review
- Obtain close-out for the incident

Section 148 of the POEO Act also sets out requirements for notifications where a pollution incident causes or threatens material harm to the environment. A person carrying out the activity must, immediately after the person becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it. The responsibility for notification extends to employees and occupant of the land depending on the circumstances and awareness of the incident

Relevant authority *means any of the following:*

(a) the appropriate regulatory authority, (for WRWF, this is the EPA)

(b) if the EPA is not the appropriate regulatory authority—the EPA is the appropriate authority,

(c) if the EPA is the appropriate regulatory authority—the local authority for the area in which the pollution incident occurs, (for WRWF this includes Glen Innes Severn and Inverell Councils)

(d) the Ministry of Health,

(e) the WorkCover

Authority, (f) Fire

and Rescue NSW.

In addition, the Secretary, Department of Planning and Environment shall be notified.

For any pollution incident affecting the Severn or McIntyre catchment, DPI Water shall be notified. Where the incident is on leased land, the landowner is to be notified.

Where the incident is on Crown land, the Crown Lands Department (DPI-Lands) is to be notified. The PIRMP is to be reviewed and updated within one month of an incident.

A flow chart summarising the key actions and contact requirements following an incident is provided at Figure 5.3.

5.8 Staff training, awareness and familiarisation

WRWFPL has prepared suitable training material and provides this to relevant site staff and, as appropriate, visitors. The training includes:

- Site inductions
- Toolbox talks
- Pre-activity environmental review to ensure adequate controls
- Details of hazards and controls
- Locations of sensitive areas
- Incidental Finds Protocol as part of Bird and Bat Adaptive Management Program
- Ensure staff trained in incident response procedures
- Have post incident review with staff to review performance and any need for improvements

Emergency Response Drills are scheduled on an annual basis

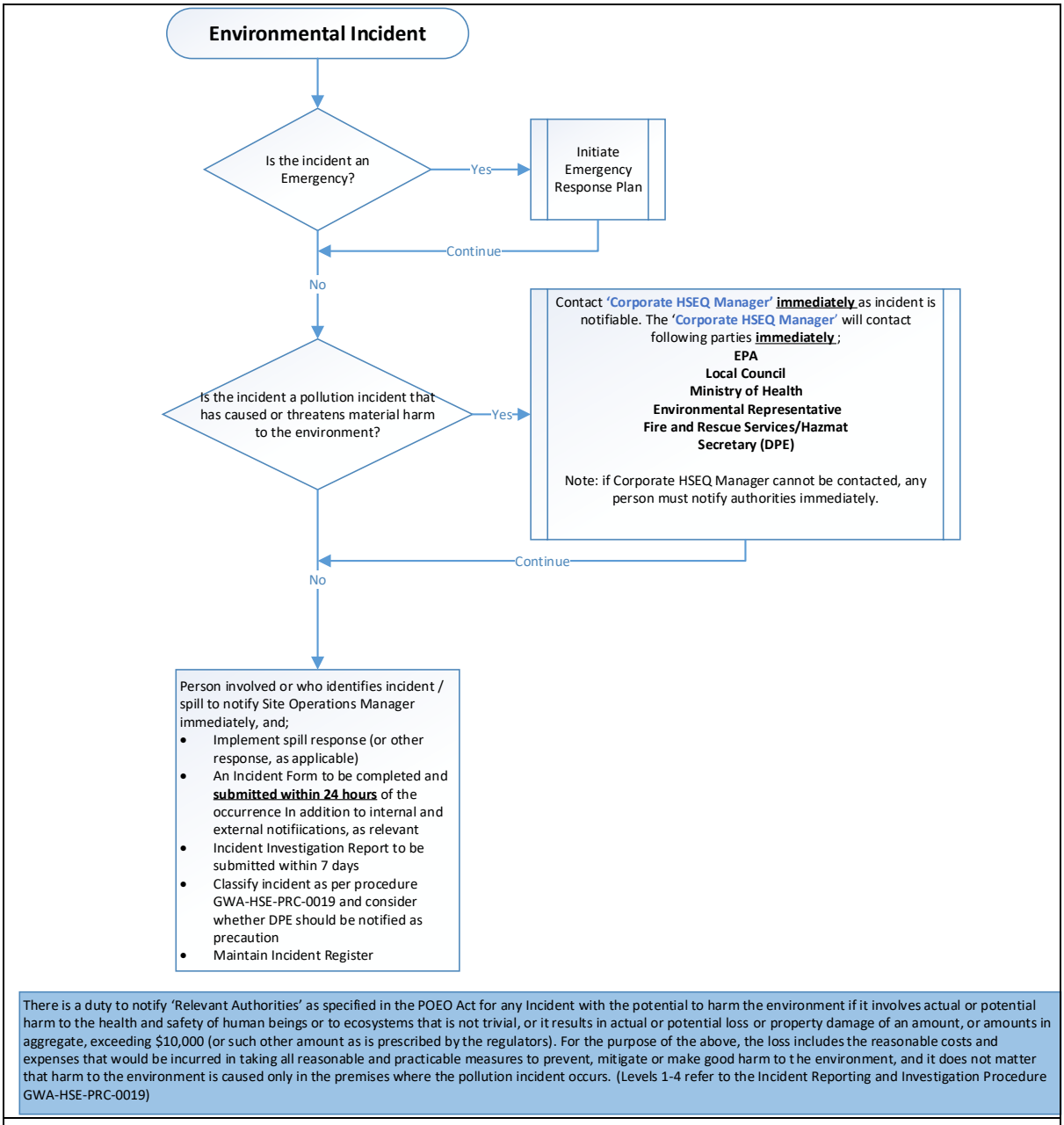


Figure 5.3 – Incident Response Flowchart

5.9 Review and Update of PIRMP

The PIRMP is to be periodically reviewed by WRWFPL and as required updated by GWA HSE Supervisor, as necessary with review by CECEP and GWA Development Compliance Manager to ensure that it remains relevant and effective.

Reviews of PIRMP will occur, after any licence variation, following audits, any pollution incident or after a non-compliance incident.

Updates required include the following, as a minimum:

- Register of Hazardous substances to be periodically reviewed and updated (annually as minimum).

Should Risk Reviews or annual Emergency Response Drills identify any deficiencies in management processes or controls requiring corrective actions, these details should be addressed by an updated PIRMP.

5.10 Testing of PIRMP

EPA guidance states that it is a legislative requirement that PIRMPs must be tested as follows:

- Routinely tested at least once every 12 months; and
- Within one month of any pollution incident occurring in the course of any activity to which the licence relates.

The PIRMP Test Plan must include details such as:

- The manner in which the plan is to be tested and maintained;
- The dates on which the plan was tested and the name of the staff members who carried out the testing; and
- The date the plan was updated.

Should the Plan be incorporated in another site management document then that document will need to be routinely tested as per the requirements of 153C of the POEO Act and Section 98E of the POEO (G) Regulation

Testing methods may include undertaking desktop simulations and/or practical exercises or drills.

Testing must cover all components of the plan, including the effectiveness of training.

Training could involve selecting a potential incident identified in the PIRMP and reviewing the processes for notifications, actions to be taken to reduce or control pollution, process for coordination with agencies and other responders, the suitability of information in the PIRMP, identifying any gaps in the PIRMP and other matters such as adequacy of inventories and currency of contact details.

Details of the test of the PIRMP need to be recorded and, where the PIRMP is updated, the updated version, once approved by WRWFPL, must be uploaded to the WRWF website.

The EPA advises that significant penalties apply for not complying with this requirement.

6 APPENDICES

Appendix A1 - ISO 14001:2015 Current EMS Certification – Goldwind Australia (pages 1 and 2)

Appendix A2 – Border Rivers Catchment Boundary

Appendix A3 – Rainfall Statistics - Intensity Chart, IFD Table and Chart, Average Monthly

Appendix A4 – Onsite septic system

Appendix A1.1 – ISO 14001:2015 GWA Current EMS Certificate Registration No. 50000130

CERTIFICATE

This is to certify that

GOLDWIND INTERNATIONAL HOLDINGS (HK) LIMITED

Goldwind

Flat/RM 1701, 17/F, Honest Building 9-11, Leighton Road, Causeway Bay
Hongkong
China

with the organizational units/sites as listed in the annex

has implemented and maintains an **Environmental Management System.**

Scope:
Development, Engineering and Project Management, Procurement and Installation, Commissioning, Servicing and maintaining wind turbines and related solutions of wind turbines, Renewable energy facilities and associated assets

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001 : 2015

Certificate registration no.	50000130 EM15
Valid from	2023-02-05
Valid until	2026-02-04
Date of certification	2023-02-05

IAF

DAkkS Deutsche Akkreditierungsstelle D-ZM-16074-01-00

DQS GmbH

Markus Bleher
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
Administrative Office: DQS Certification AUSNZ PTY LTD, 480 Collins Street, Melbourne VIC 3000, Australia
The validity of this certificate can only be verified by the QR-code.

1 / 2

Appendix A1.2 – ISO 14001:2015 GWA Current EMS Certificate Registration No. 50000130 Annex

Annex to certificate
Registration No. 50000130

GOLDWIND INTERNATIONAL HOLDINGS (HK) LIMITED

Unit G, 19/F., King Palace Plaza, 55 King Yip Street, Kwun Tong, Kowloon Hong Kong

Location

50000120
BEIJING GOLDWIND NEW ENERGY TRADE CO., LTD
Address: NO.8, BoXing, 1st Road, Beijing Economic & Technological Development Zone
100176, Beijing
China

50000121
GOLDWIND USA, INC.
Address: 20N. Wacker Drive, Suite 1375 Chicago, IL 60606
USA

50000026
GOLDWIND AUSTRALIA PTY LTD
Address: Level 25, Tower 1, International Towers Sydney, 100 Barangaroo NSW 2000,
Australia

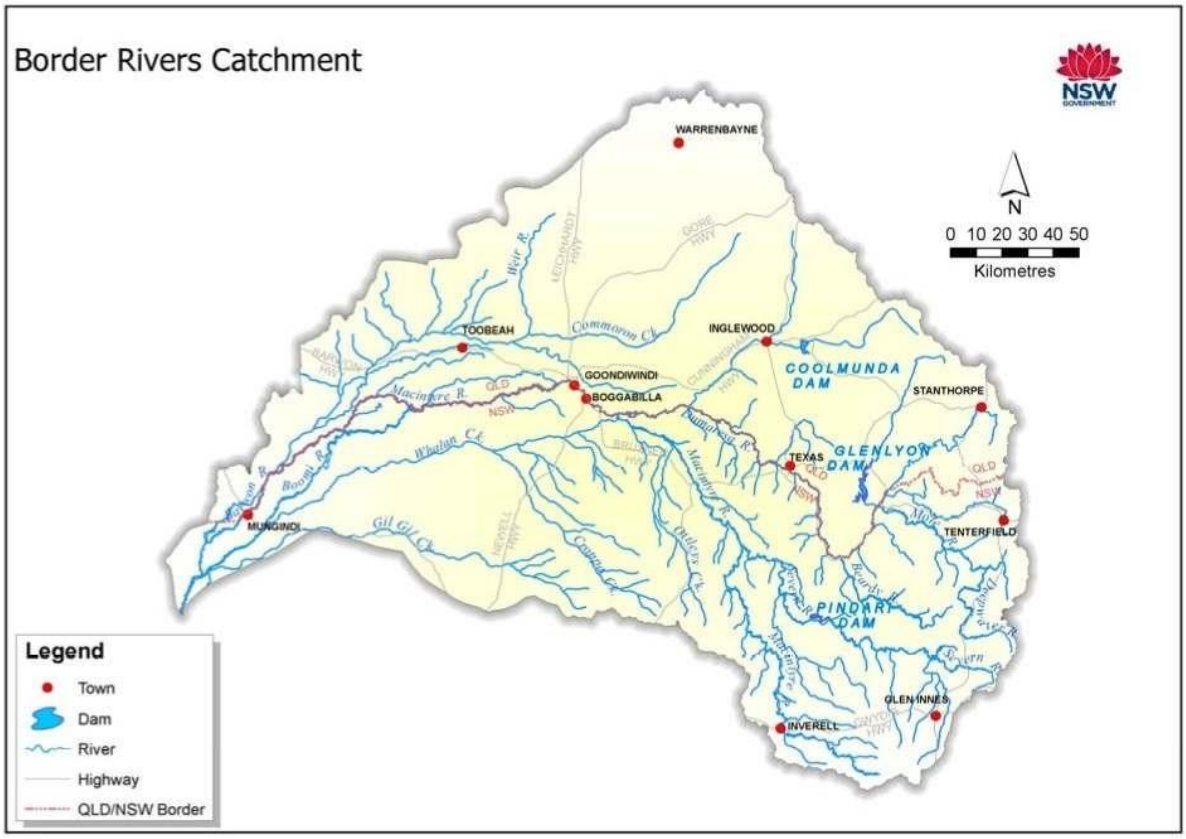
50000122
GOLDWIND AFRICA (PTY) LTD
Address: 3rd Floor, China Construction Bank, 95 Grayston Drive, Sandton, Johannesburg
South Africa

This annex (edition: 2020-02-11) is only valid in connection
with the above-mentioned certificate.

2 / 2

Appendix A2 – Border Rivers Catchment area

Figure 1: The Border Rivers catchment



The White Rock Wind Farm is located on ridges between Glen Innes and Inverell

Appendix A3

Rainfall Intensity Table (Glen Innes) - Modified from BOM Site

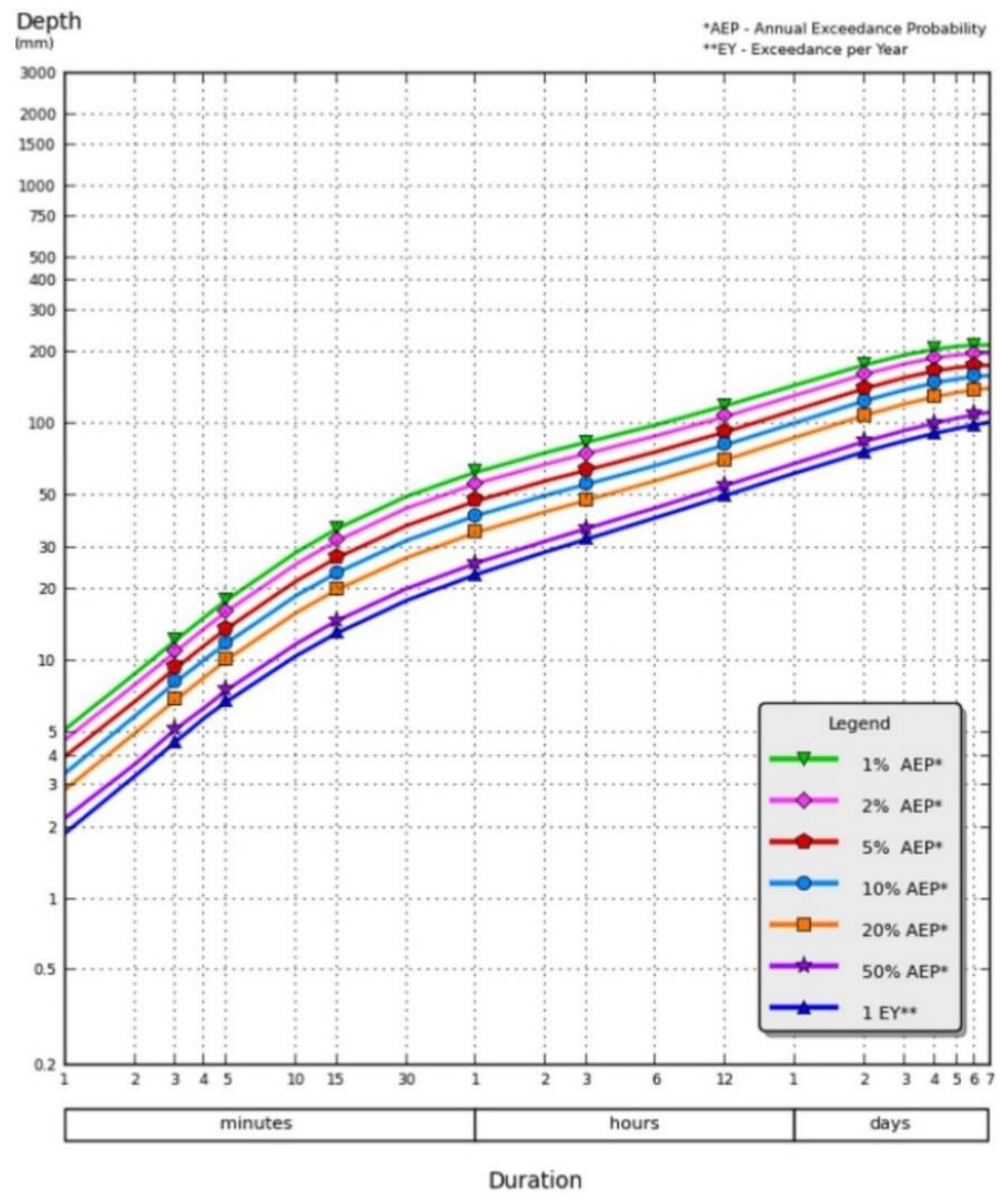
mm/hour	Average Recurrence Interval (ARI) (Years)						
DURATION	**1**	**2**	**5**	**10**	**20**	**50**	**100**
5Mins	70.1	91.9	121	140	166	202	231
6Mins	65.4	85.6	113	131	154	188	215
10Mins	53.4	69.8	91.4	105	124	151	172
20Mins	39.0	50.8	65.9	75.6	88.7	107	122
30Mins	31.6	41.1	53	60.7	71	85.3	96.8
1Hr	21.2	27.4	35	39.9	46.5	55.5	62.8
2Hrs	13.6	17.5	22.2	25.1	29.1	34.6	39
3Hrs	10.4	13.3	16.8	18.9	21.9	26	29.2
6Hrs	6.49	8.32	10.4	11.6	13.4	15.8	17.7
12Hrs	4.07	5.2	6.44	7.19	8.25	9.69	10.8
24Hrs	2.54	3.25	4.01	4.48	5.14	6.03	6.73
48Hrs	1.54	1.97	2.45	2.74	3.14	3.69	4.12
72Hrs	1.11	1.43	1.77	1.98	2.27	2.67	2.98

Sourced from http://www.bom.gov.au/hydro/has/cdirswebx/cdirswebx.shtml

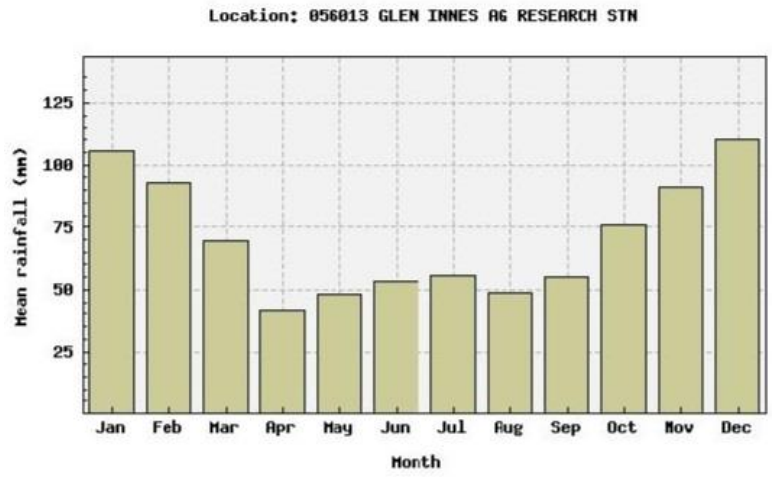
White Rock Mountain locality - Intensity Frequency Duration Table (Data - Bureau of Meteorology)

Duration		EY	Annual Exceedance Probability (AEP)					
Unit	minute	1EY	50%	20%	10%	5%	2%	1%
1 hour	60	23.3	26	35	41.2	47.5	56.2	62.9
2 hour	120	29	32.2	42.8	50.2	57.7	67.9	75.9
3 hour	180	32.8	36.3	47.8	55.8	64	75.1	83.9
6 hour	360	40.4	44.5	57.8	67.1	76.5	89.3	99.4
12 hour	720	50.1	55.1	70.8	81.8	92.8	107.7	119.6
24 hour	1440	**62.3**	**68.5**	**88**	**101.4**	**114.6**	**132.3**	**146.1**
48 hour	2880	76.6	84.5	108.9	125.4	141.4	162.2	177.8

See following figure for Chart of Intensity Frequency Duration



White Rock WF locality - Intensity Frequency Duration Chart
(Data from Bureau of Meteorology)



Glen Innes Agricultural Research Station

Average Monthly Rainfall 1910 to 2016

Appendix A4 – Onsite Septic System Approvals

Northern (Main) Operations and Maintenance Building Septic System

INVERELL SHIRE COUNCIL

www.inverell.nsw.gov.au

APPROVAL TO OPERATE A SYSTEM OF SEWAGE MANAGEMENT

19 January 2018

Goldwind Australia Pty Ltd
SUITE 2, LEVEL 23
201 Elizabeth Street
SYDNEY NSW 2000

OPERATION APPROVAL NO:	**O-4/2018**
PREMISES:	**Part Lot 78 DP 753260**
CLASSIFICATION:	**WASTE MANAGEMENT - MEDIUM RISK**

The above application to operate a system of sewage management has been approved pursuant to Council's power under Section 68 of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.

This approval is subject to the conditions of approval hereunder and on the attached sheet/s. These conditions are imposed to ensure that the operation of the system of sewage management, complies with the requirements of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.

Yours faithfully

HOWARD MARSDEN
BUILDING SURVEYOR

STANDARD CONDITIONS OF APPROVAL

1. **The sewage management facilities used in the operation of the system must be maintained in a sanitary condition.**
2. **A sewage management facility used in the operation of the system must not discharge into any watercourse or onto any land other than its related effluent application area.**
3. **The conditions (if any) of any certificate of accreditation issued by the Director-General of the Department of Health under this Division in respect of the plans or designs for any components of the sewage management facilities must be complied with.**
4. **A system of sewage management must be operated:**
   (a) in accordance with the relevant operating specifications and procedures (if any) for the sewage management facilities used for the purpose;
   (b) so as to allow the removal of any treated sewage (and any by-product of any sewage) in a safe and sanitary manner; and
   (c) details of (a) and (b) must be provided to Council on request.
5. **This system has been categorised as MEDIUM risk, therefore in accordance with Council's on-site sewage Management strategy this approval will expire within three (3) YEARS from the date of this approval.**

NOTE: The approval to operate is only in reference to drainage of the effluent from the septic tank and prospective owners are advised to have house drainage lines inspected by a qualified person if there is any doubt as to the adequacy of the plumbing or drainage.

Administration Centre, 144 Otho Street (PO Box 138), Inverell NSW 2360
Ph: 02 6728 8288 Fax: 02 6728 8277 DX 6159
council@inverell.nsw.gov.au

Appendix A4 – Onsite Septic System Approvals (continued)

Kelleys Rd Operations and Maintenance Building Septic System

INVERELL SHIRE COUNCIL

www.inverell.nsw.gov.au

APPROVAL TO OPERATE A SYSTEM OF SEWAGE MANAGEMENT

9 March 2018

Goldwind Australia Pty Ltd
SUITE 2, LEVEL 23
201 ElizabethStreet
Sydney NSW 2000

OPERATION APPROVAL NO:	O-11/2018
PREMISES:	Part Lot 2 DP 1187044
CLASSIFICATION:	WASTE MANAGEMENT - MEDIUM RISK

The above application to operate a system of sewage management has been approved pursuant to Council's power under Section 68 of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.

This approval is subject to the conditions of approval hereunder and on the attached sheet/s. These conditions are imposed to ensure that the operation of the system of sewage management, complies with the requirements of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.

Yours faithfully

HOWARD MARSDEN
HEALTH & BUILDING SURVEYOR

STANDARD CONDITIONS OF APPROVAL

1. The sewage management facilities used in the operation of the system must be maintained in a sanitary condition.
2. A sewage management facility used in the operation of the system must not discharge into any watercourse or onto any land other than its related effluent application area.
3. The conditions (if any) of any certificate of accreditation issued by the Director-General of the Department of Health under this Division in respect of the plans or designs for any components of the sewage management facilities must be complied with.
4. A system of sewage management must be operated:
   (a) in accordance with the relevant operating specifications and procedures (if any) for the sewage management facilities used for the purpose;
   (b) so as to allow the removal of any treated sewage (and any by-product of any sewage) in a safe and sanitary manner; and
   (c) details of (a) and (b) must be provided to Council on request.
5. This system has been categorised as MEDIUM risk, therefore in accordance with Council's on-site sewage Management strategy this approval will expire within three (3) YEARS from the date of this approval.

NOTE: The approval to operate is only in reference to drainage of the effluent from the septic tank and prospective owners are advised to have house drainage lines inspected by a qualified person if there is any doubt as to the adequacy of the plumbing or drainage.

Administration Centre, 144 Otho Street (PO Box 138), Inverell NSW 2360
Ph: 02 6728 8288 Fax: 02 6728 8277 DX 6159
council@inverell.nsw.gov.au

Appendix A4 – Onsite Septic System Approvals (continued)

TransGrid Substation Building Septic System

INVERELL SHIRE COUNCIL

www.inverell.nsw.gov.au

APPROVAL TO OPERATE A SYSTEM OF SEWAGE MANAGEMENT

19 January 2018

Received: 30.01.18
Job No: [redacted]
17-083
WRWF

Icubed Consulting
2/39 Sherwood Road
Toowong QLD 4066

OPERATION APPROVAL NO:	O-3/2018
PREMISES:	Part Lot 153 DP 753260
CLASSIFICATION:	WASTE MANAGEMENT - MEDIUM RISK

The above application to operate a system of sewage management has been approved pursuant to Council's power under Section 68 of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.

This approval is subject to the conditions of approval hereunder and on the attached sheet/s. These conditions are imposed to ensure that the operation of the system of sewage management, complies with the requirements of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.

Yours faithfully

HOWARD MARSDEN
BUILDING SURVEYOR

STANDARD CONDITIONS OF APPROVAL

1. The sewage management facilities used in the operation of the system must be maintained in a sanitary condition.
2. A sewage management facility used in the operation of the system must not discharge into any watercourse or onto any land other than its related effluent application area.
3. The conditions (if any) of any certificate of accreditation issued by the Director-General of the Department of Health under this Division in respect of the plans or designs for any components of the sewage management facilities must be complied with.
4. A system of sewage management must be operated:
   (a) in accordance with the relevant operating specifications and procedures (if any) for the sewage management facilities used for the purpose;
   (b) so as to allow the removal of any treated sewage (and any by-product of any sewage) in a safe and sanitary manner; and
   (c) details of (a) and (b) must be provided to Council on request.
5. This system has been categorised as MEDIUM risk, therefore in accordance with Council's on-site sewage Management strategy this approval will expire within three (3) YEARS from the date of this approval.

NOTE: The approval to operate is only in reference to drainage of the effluent from the septic tank and prospective owners are advised to have house drainage lines inspected by a qualified person if there is any doubt as to the adequacy of the plumbing or drainage.

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