

## Appendix B

### EMP Induction Plan

# Mount Emerald Wind Farm



## Environmental Management Plan Training Program Induction Plan

---

Prepared by:

**RPS AUSTRALIA EAST PTY LTD**

135 Abbott Street  
PO Box 1949  
CAIRNS QLD 4870

T: +61 7 4031 1336  
F: +61 7 4031 2942  
E: [mellissa.jess@rpsgroup.com.au](mailto:mellissa.jess@rpsgroup.com.au)

Client Manager: Mellissa Jess  
Report Number: PR2130417 / R75944  
Version / Date: Final – 17 November 2016

Prepared for:

**RATCH AUSTRALIA CORPORATION LTD**

Level 4,  
231 George Street,  
BRISBANE QLD 4001

T: +61 7 3214 3401  
F: +61 7 3214 3499  
E: [terry.johannesen@ratchaustralia.com](mailto:terry.johannesen@ratchaustralia.com)  
W: [www.ratchaustralia.com](http://www.ratchaustralia.com)

## **IMPORTANT NOTE**

Apart from fair dealing for the purposes of private study, research, criticism, or review as permitted under the Copyright Act, no part of this report, its attachments or appendices may be reproduced by any process without the written consent of RPS Australia East Pty Ltd. All enquiries should be directed to RPS Australia East Pty Ltd.

We have prepared this report for the sole purposes of RATCH Australia Corporation Limited (“**Client**”) for the specific purpose of only for which it is supplied (“**Purpose**”). This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter.

In preparing this report we have made certain assumptions. We have assumed that all information and documents provided to us by the Client or as a result of a specific request or enquiry were complete, accurate and up-to-date. Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.

This report is presented without the assumption of a duty of care to any other person (other than the Client) (“**Third Party**”). The report may not contain sufficient information for the purposes of a Third Party or for other uses. Without the prior written consent of RPS Australia East Pty Ltd:

- (a) this report may not be relied on by a Third Party; and
- (b) RPS Australia East Pty Ltd will not be liable to a Third Party for any loss, damage, liability or claim arising out of or incidental to a Third Party publishing, using or relying on the facts, content, opinions or subject matter contained in this report.

If a Third Party uses or relies on the facts, content, opinions or subject matter contained in this report with or without the consent of RPS Australia East Pty Ltd, RPS Australia East Pty Ltd disclaims all risk and the Third Party assumes all risk and releases and indemnifies and agrees to keep indemnified RPS Australia East Pty Ltd from any loss, damage, claim or liability arising directly or indirectly from the use of or reliance on this report.

In this note, a reference to loss and damage includes past and prospective economic loss, loss of profits, damage to property, injury to any person (including death) costs and expenses incurred in taking measures to prevent, mitigate or rectify any harm, loss of opportunity, legal costs, compensation, interest and any other direct, indirect, consequential or financial or other loss.

### Document Status

Version	Purpose of Document	Orig	Review	Review Date
1	Report	MJ/BC	L. Liessmann	12.08.2016
2	Review	BC/MJ	TJ	18/08/2016
3	Final	TJ	BC	18/11/2016

### Approval for Issue

Name	Signature	Date
Mellissa Jess		18/11/2016

# Contents

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.0</b>	<b>MOUNT EMERALD WIND FARM .....</b>	<b>3</b>
2.1	<b>The Site .....</b>	<b>3</b>
2.2	<b>Construction .....</b>	<b>3</b>
<b>3.0</b>	<b>LEGISLATION AND OTHER CONSIDERATIONS .....</b>	<b>6</b>
3.1	<b>Legislative and Other Considerations .....</b>	<b>6</b>
3.2	<b>Approval Requirements.....</b>	<b>8</b>
3.2.1	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> Approval .....	8
3.2.2	State <i>Sustainable Planning Act 2009</i> Approval .....	8
<b>4.0</b>	<b>PROJECT PLAN AND ENVIRONMENTAL MANAGEMENT SYSTEM .....</b>	<b>9</b>
4.1	<b>Environmental Records.....</b>	<b>9</b>
<b>5.0</b>	<b>ENVIRONMENTAL ELEMENTS .....</b>	<b>10</b>
5.1	<b>Sediment, Erosion and Stormwater .....</b>	<b>10</b>
5.1.1	Sediment and Erosion Control Techniques .....	10
5.2	<b>Air Emissions .....</b>	<b>11</b>
5.2.1	Control Devices - Air.....	11
5.3	<b>Noise and Vibration .....</b>	<b>11</b>
5.4	<b>Cultural Heritage .....</b>	<b>11</b>
5.5	<b>Flora.....</b>	<b>12</b>
5.6	<b>Fauna.....</b>	<b>12</b>
5.7	<b>Weeds and Pests.....</b>	<b>13</b>
5.7.1	Weeds.....	13
5.7.2	Pests .....	14
5.8	<b>Waste Management.....</b>	<b>16</b>
5.8.2	Management Strategies:.....	16
5.9	<b>Fuel and Chemical Management .....</b>	<b>17</b>
5.9.1	Hydrocarbons and Hazardous Substances .....	17
5.9.2	Incident Response .....	18
5.10	<b>Land Management.....</b>	<b>19</b>
5.10.1	Bushfire Management and Emergency Evacuation .....	19
5.10.2	Fire Fighting Equipment.....	19
5.10.3	Water Supply Tanks .....	19
5.10.4	Evacuation Routes.....	20
5.10.5	Emergency Contacts .....	20
5.10.6	Emergency Services Contacts .....	20
5.10.7	Rehabilitation Management Plan.....	20

---

<b>5.11 Unexploded Ordinance (UXO)</b> .....	<b>21</b>
--	-----------

## Tables

Table 1 Environmental legislation, policies and standards relevant to the Project .....	7
Table 2 Environmental Records .....	9
Table 3 Fauna Management Plan Detail .....	13
Table 4 Declared Pest species on MEWF .....	14
Table 5 Control Methods Required at Each Stage of MEWF Project Development .....	15
Table 6 Site Contacts Details .....	18

## Figures

Figure 1 Project Site Location .....	5
Figure 2 Waste Tracking Process .....	16
Figure 3 Waste Management Principles.....	17

## I.0 Introduction

RPS Australia East Pty Ltd (RPS) has prepared the following Environmental Management Plan Training Program Induction Plan (herein known as the 'Induction Plan') for works on the Mount Emerald Wind Farm (MEWF) project developed by RATCH Australia Pty Ltd (RATCH). The Induction Plan is designed to be provided as an induction tool to be used in conjunction with the *Mount Emerald Wind Farm Induction Slide Show* (RPS 2016) to deliver an induction program to new personnel.

The success of an Environmental Management Plan (EMP) depends on all those responsible for its implementation and review being thoroughly conversant with its contents, interpretation and performance measurements. The construction contractor and its sub-contractors will be responsible for ensuring project personnel have sufficient knowledge and awareness to identify potential environmental issues and that they are trained to take appropriate corrective action if incidences arise.

Conditions relevant to the preparation and implementation of this Induction Plan are detailed in Condition 13 of the Ministerial Decision Notice (dated 18 December 2015) particularly Attachment 1, which states;

*Environmental management plan training program:*

*The environmental management plan must include a training program for construction workers and permanent employees or contractors at the site, including a site induction program relating to the range of issues addressed by the environmental management plan.*

It is essential all personnel are familiar with the procedures for reporting on issues that may impact on environmental values. This includes informing key construction personnel and relevant regulatory authorities.

This induction provides environmental management information relevant to everyone working on site. Therefore it is expected all staff, including construction and field staff, will complete a comprehensive project induction prior to commencing work on the Project. Where required, specific operations inductions will be dealt with in detail in subsequent management plans (e.g. Quoll Management Plan and Habitat Clearing and Management Plan) at the discretion of the Environmental Manager/Officers and the Construction Manager.

The aim of this induction plan is to ensure all relevant contractors understand their role in achieving the required environmental requirements.

Topics covered include:

- (1) Environmental Role
- (2) Environmental Legislation and Approvals
- (3) Project Plans and Environmental Management Systems
- (4) Environmental Elements, Impacts and Management
  - (a) Soil (ESC)
  - (b) Water
  - (c) Air, Noise, Vibration
  - (d) Cultural Heritage
  - (e) Flora
  - (f) Fauna

- 
- (g) Weeds and Pests
  - (h) Waste Management
  - (i) Fuel and Chemical Management
  - (j) Unexploded Ordinance (UXO)



## 2.0 Mount Emerald Wind Farm

### 2.1 The Site

General site details are stated below:

- Approved to build 63 wind turbines generating up to 189 megawatt (MW) of power.
- Approximately 20 km SSW of Mareeba on the Atherton Tablelands in north Queensland (**Figure 1**).
- Towers will be approx 80-90m high with approximately 50m blades, utilising 3 MW machines.
- The land encompasses an area of 2,422ha.
- Virtually all the wind farm project area is covered by remnant and relatively undisturbed vegetation, where the only land modification is associated with the existing 275 kV transmission line infrastructure and its series of access tracks.
- Elevation range of the site is between 540m up to 1089m above sea level (ASL).
- Project estimates to deliver in the order of 650,000 megawatt hours of renewable energy, which is predicted to meet the annual needs of approximately 75,000 north Queensland homes over a 20 year period.
- The wind farm will be connected to the existing Chalumbin –Woree 275 kV transmission line via a substation, which is to be located within the site.
- The site has eight recognised rare and threatened flora and fauna species located across its ranges.

### 2.2 Construction

Access to the site will be via Kennedy Highway, onto Hansen Drive and then onto the site at a realigned Springmount Road - Kippen Drive intersection. Kippen Drive is currently unsealed. A series of access and interconnecting tracks will need to be constructed within the wind farm site, and will take advantage of existing transmission line infrastructure tracks wherever possible.

A number of new tracks will need to be constructed to an initial cleared width of 10m. The interconnecting tracks will form the routes for the inter-turbine underground cabling - expected to be buried in trenches at approximately 1m deep.

Each turbine construction pad is expected to occupy an area in the order of 40m (long) x 60m (wide). The substation and associated compound will be in the order of 200m x 200m or similar configuration and will be located close to the existing 275 kV transmission line which crosses the site.

Wind turbines will be "micro-sited" - a technique which involves selecting a position in the landscape where the environmental, constructability and other impacts are considered and weighed up. As part of this procedure, comprehensive ground surveys will be undertaken of each site to ensure impacts to conservation significant species and other matters of importance are minimised or avoided.

A wind farm operations building will be constructed adjacent to the substation, which will house monitoring and communications equipment. Other associated internal infrastructure will include car parking areas, construction compound and machinery area. Depending on the outcomes of relevant approvals, a batching plant may be temporarily constructed within the site.

The Mount Emerald Wind Farm project has been broadly categorised into four phases: pre-construction, construction, operation and maintenance and decommissioning. Rehabilitation and impact



mitigation will be actively practiced throughout these stages and will be informed by respective plans and strategic documents.

In preparing the Environmental Impact Statement (EIS), several specialist investigations were undertaken and accompanying technical reports prepared. These include the disciplines of flora, fauna, general environmental reporting and offsets plan; town planning; aeronautical assessment; transport and traffic assessment; shadow flicker, electromagnetic interference and energy yield; geotechnical; visual and landscape aesthetics; noise mapping; cultural heritage; community consultation; and social and economic assessment.

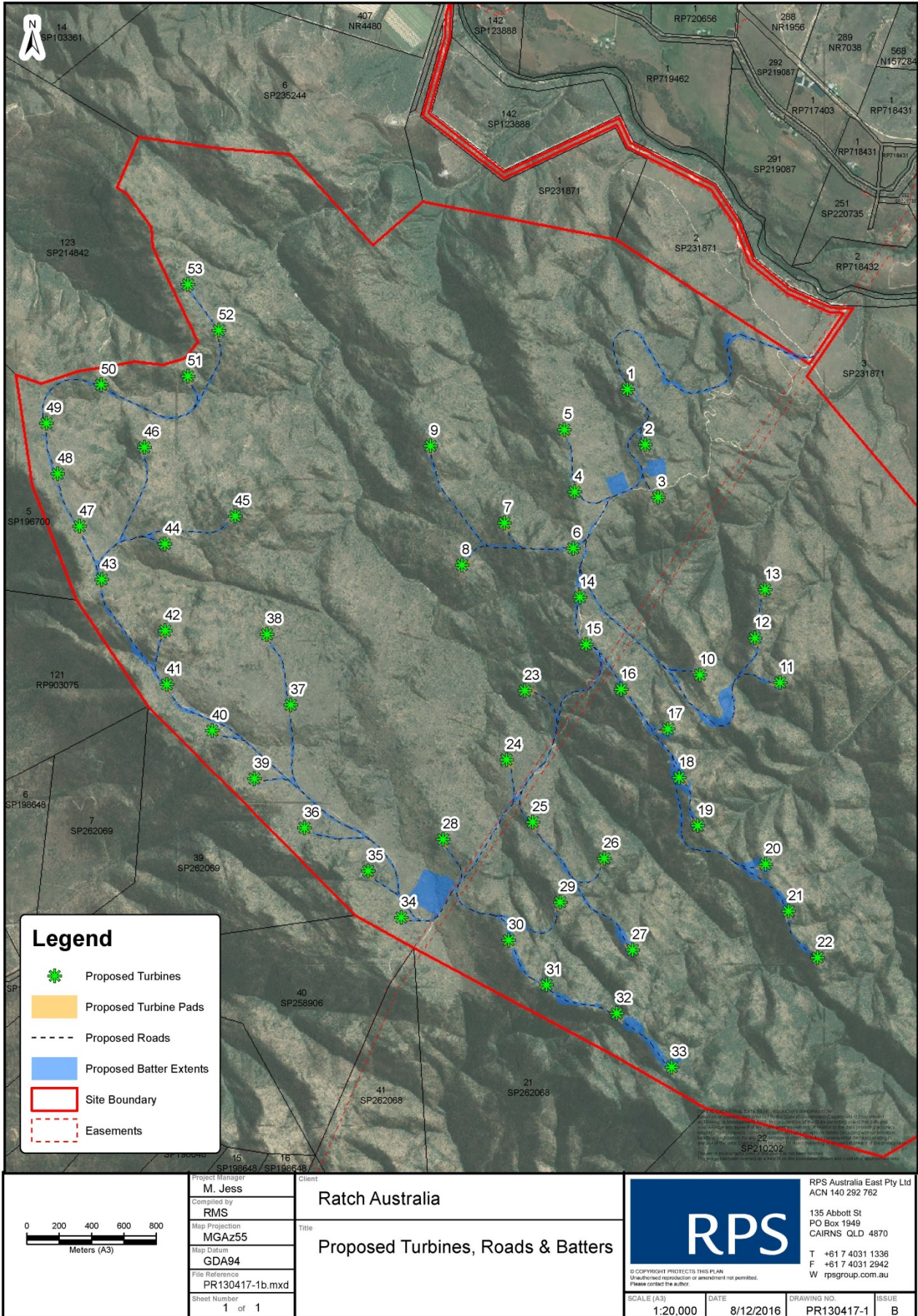


Figure 1 Project Site Location



## 3.0 Legislation and Other Considerations

Environmental legislation consists of a large number of acts, policies, codes, standards and regulations and there are instances where permits and other forms of approval are required. General personnel are not expected to have this knowledge however it is necessary to appreciate the importance of this legislation to works being undertaken.

Each person should become familiar with aspects of the **project plans** that outline applicable environmental legislation, permits and licenses required. This will assist in achieving good compliance outcomes.

Under the *Environmental Protection Act 1994* all employees must understand the following duties:

- The General Environmental Duty – requires all persons to minimise or prevent “Environmental Harm”
- The Duty to Notify - requires persons to notify supervisors (and subsequently the Department of Environment and Heritage Protection) of “Material” or “Serious” environmental harm

Environmental Harm is considered:

- Nuisance – Noise, odour, dust
- Material - >\$5K to clean up and/or restore environment
- Serious – >\$50K to clean up and/or restore environment

The Heritage Act applies a similar “duty of care” in relation to the protection and preservation of heritage values.

Environmental legislation is administered by various government departments. Authorised Officers have power to issue:

- (i) On-the-spot fines – fines issued by Authorised Officers.
- (ii) Remedy notices – written order to make good.

In extreme cases, an individual or company may be prosecuted.

Any concerns regarding legislative compliance should be raised with the Project Manager and / or Environmental Officer.

### 3.1 Legislative and Other Considerations

**Table 1** below identifies the many legislations, policies and standards that are relevant to the project. Potential areas for concern are identified.

**Table 1 Environmental legislation, policies and standards relevant to the Project**

Element	Legislative and Other Requirements	Area of Concern
Construction— General	<i>Environmental Protection Act 1994 (Qld)</i> <i>Environmental Protection Regulation 2008 (Qld)</i> <i>Workplace Health and Safety Act 1995 (Qld)</i> <i>Workplace Health and Safety Regulation 1997 (Qld)</i>	Safety of person and property
Noise and Vibration	<i>Environmental Protection (Noise) Policy 2008 (Qld)</i> <i>Workplace Health and Safety Act 1995 (Qld)</i> AS 1055.1 & .2: Acoustics—Description and measurement of environmental noise AS 2436: Guide to noise control on construction, maintenance and demolition sites	Noise Compliance
Air Quality	<i>Environmental Protection (Air) Policy 2008 (Qld)</i> National Health and Medical Research Council Guidelines 1985 (Cwth) Draft National Environmental Protection Measures and Impact Statement for Ambient Air Quality 1997 (Cwth)	Dust creation Impact on local amenity
Water Quality	<i>Environmental Protection (Water) Policy 1997 (Qld)</i> Australian Water Quality Guidelines for Fresh and Marine Waters, ANZECC 2002 <i>Water Act 2000 (Qld)</i>	Taking water from a natural source. Concern is the uncontrolled removal of water may impact viability of natural system. Vegetation on banks provides stability and its damage or removal may impact water quality via sedimentation Uncontrolled activity may damage waterway. Uncontrolled releases of contaminants may impact water quality.
Erosion and Sedimentation Control	Soil Erosion and Sediment Control, Engineering Guidelines for Queensland Construction Sites—IEAust (Qld) 1996	Erosion of sensitive ecosystems and sedimentation of watercourses.
Storage and Handling of Dangerous Goods	<i>Environmental Protection Act 1994 (Qld)</i> <i>Environmental Protection Regulation 2008 (Qld)</i> <i>Workplace Health and Safety Act 1995 (Qld)</i> AS1940 – The Storage and Handling of Flammable and Combustible Liquids	Many chemicals are hazardous and require specific handling and use practices. Contamination of soils, groundwater and surface water.
Transport of Dangerous Goods	Australian Code for Transport of Dangerous Goods by Road and Rail	Many chemicals are hazardous and require specific handling and use practices.
Waste Management	<i>Environmental Protection (Waste Management) Policy 2000 (Qld)</i> <i>Environmental Protection (Waste Management) Regulation 2000 (Qld)</i>	Impact of local amenity Wildlife accessing waste Waste contaminating watercourses
Flora and Fauna	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwth)</i> <i>Nature Conservation Act 1992 (Qld)</i> <i>Nature Conservation Regulation 1994 (Qld)</i> <i>Vegetation Management Act 1999 (Qld)</i> <i>Environmental Protection Act ( Qld)</i> <i>Land Protection (Pest and Stock Route Management) Act 2002 (Qld)</i>	Plants and animals are protected, some being specifically targeted for their significance and scarcity. Broad environmental areas (regional ecosystems) are protected because of their significance to the viability of plant and animal populations. Specifically identified environmental features are targeted for preservation.
Cultural Heritage	<i>Native Title Act 1993 (Cwlth)</i> <i>Native Title (Queensland) Act 1993</i> <i>Queensland Heritage Act 1992</i> <i>Queensland Heritage Regulation 2003</i> <i>Aboriginal Cultural Heritage Act 2003 (Qld)</i>	Heritage values are protected for preservation and a duty of care applies
Land Use	<i>Integrated Planning Act 1997(Qld)</i> <i>Biosecurity Act 2014</i>	Impact of weeds and pests

## 3.2 Approval Requirements

### 3.2.1 Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* Approval

Approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was required due to the presence of federally protected flora and fauna. This approval stipulates conditions such as:

- The area of clearing allowed;
- Requirements to monitor and ensure the Northern Quoll population is not adversely impacted;
- Requirements to monitor and ensure the Bare-rumped Sheath-tail Bat and Spectacled Flying-fox populations are not adversely impacted by turbine collision;
- Offsets to compensate for the loss of habitat for EPBC listed threatened species from the wind farm site; and
- Other administrative conditions such as records management requirements.

### 3.2.2 *State Sustainable Planning Act 2009* Approval

Approval under the *Sustainable Planning Act 2009* (SPA) was required due to the impacts on local and state government economic, environmental and social interests. This approval stipulates conditions relating to the following:

- Social Requirements;
- Setback distance from existing dwellings;
- Visual amenity – i.e. turbine heights, paint finish, lighting, landscaping;
- Acoustic amenity – maximum noise levels;
- Television and Radio Reception;
- Traffic Management;
- Community engagement;
- Environmental Requirements;
- Environmental Management Plans detailing how to mitigate impacts on the environment.

## 4.0 Project Plan and Environmental Management System

The MEWF project plan has been developed by the Contractor from the contract documentation and details the roles and responsibilities, permits, licenses etc. of all aspects of the development. The Environmental Management Plan (EMP) is to be used in conjunction with that plan and is considered a mitigation strategy to control for risks against the project.

The Environmental Management System (EMS) is the support system that is operated by the Contractor on the MEWF project. The role of the EMS is to assist the contractor with environmental management and includes all management plans processes, practices and responsibilities that make up the environmental component of the project.

An EMS has provisions for monitoring and corrective actions to ensure that organisations/companies will improve procedures where required (i.e. following an uncontrolled event or incident which may impact the environment).

### 4.1 Environmental Records

A number of environmental records are required to be documented and kept for this project (Table 2). They are the responsibility of the Construction Manager and Environmental Officers on site however, it is important for all employees to be aware of these documents.

**Table 2 Environmental Records**

Document	What is it used for?	When required
Environmental Management Plan	Details control strategies to mitigate against the potential impacts to the environment as a result of the project. Plan to be amended during project to address changes in design and methodology.	Prior to works commencing
Site Specific Environmental Induction	Addresses environmental management needs and constraints applicable to the project.	Delivered to all new personnel to site
Permits, Licences and Approvals	Details which approvals have been obtained and their conditions.	Duration of project
Induction Register	Register of all personnel that have undertaken environment and cultural heritage training and induction prior to commencement.	Ongoing
Waste Transport Certificate	Required under legislation to keep official receipts of disposed regulated and trackable wastes.	Waste collected by Contractor
Weed Hygiene Declaration Forms	Weed seed control: weed hygiene declarations are required for all plant and vehicles (subcontractors) arriving & leaving site.	Plant/Vehicles arriving & leaving site
Water Extraction Log	Record details of water extraction.	When water is being extracted
Monitoring Results Log	This will document the results of water quality monitoring	Post monitoring
Audit Reports	Details compliance with contracts, systems and lists and identifies the requirements of corrective actions.	After audit has been completed
Cultural Heritage Monitor Timesheets	Document the working hours of any Cultural Heritage Monitors that work on our job sites (use localised form).	During Monitoring
Fill Agreement	Manages the risks associated with spoiling on private property	Prior to spoiling
Project diary	Daily site inspections to verify compliance with the EMP, licences, permits and approvals and other environmental performance requirements specified within the Contract.	Daily

## 5.0 Environmental Elements

### 5.1 Sediment, Erosion and Stormwater

A *Sediment, Erosion and Stormwater Management Plan* has been created to manage water quality and soil erosion, along with the risk of adverse impacts associated with the proposed works on the site and to the receiving environment.

In general, best practice erosion and sedimentation control involves the principles of (in order of preference):

- Avoidance;
- Minimisation; and
- Treatment.

A primary objective for erosion control is avoidance by limiting the amount of exposed soil subject to erosion. This should be achieved through measures such as minimising clearing extents, staging clearing and progressively revegetating areas as soon as practicable. Planning to ensure works requiring the most exposed soil are completed during the dry season months with lower rainfall. However, where avoidance is not possible the following erosion and sediment control mitigation measures should be implemented:

- Conduct all earthworks in accordance with the detailed Erosion and Sediment Control Plan;
- Protect topsoil, root and seed stock;
- Install and maintain temporary erosion and sediment control measures during construction;
- Inspect disturbed areas and maintain erosion and sediment controls as necessary during and after construction until stabilisation is achieved;
- Achievement of downstream water quality targets (e.g. turbidity, TSS);
- Adequate spacing of stormwater diversion drains in areas of erosion potential;
- Maintain vegetation cover along hardstands and access tracks where possible. Reduce damage to grass cover and sensitive heath vegetation types by limiting vehicle movements to work areas and approved access tracks; and
- Limiting off road vehicle movements after rainfall events to those essential for efficient and safe construction activities.

#### 5.1.1 Sediment and Erosion Control Techniques

A range of available techniques should be considered for sediment and erosion control. Potential techniques are outlined, but not limited to those shown below:

- Rock check dams;
- Rock-lined channels;
- Rock filter dam;
- Grass filter strips with returns;
- Sediment fences (ensure they are trenched in);
- Divert drainage around areas of disturbance; and
- Protect exposed surfaces and revegetate.



## 5.2 Air Emissions

Dust can cause an environmental nuisance to local residents and businesses. Works must be completed in a manner which maintains ambient air quality of the local area.

### 5.2.1 Control Devices - Air

- Vehicles and machinery shall be maintained in accordance with manufacturer's specifications.
- Watering of construction site and access tracks will be carried out when visible dust is observed, with increasing frequency particularly on dry and windy days and especially near residences.
- Avoid smoke generation by a strict no burning policy.
- Implement fire control measures during welding operations.

## 5.3 Noise and Vibration

Noise and vibration can cause an environmental nuisance to local residents and businesses. Construction works can result in vibration causing property damage or cause environmental nuisance or harm.

The following control measures are to be implemented to ensure negative impacts do not occur:

- Provide advance notice of any scheduled atypical noise events to nearby residents.
- Equipment selected based on its low inherent potential to generate noise and vibration and be maintained in accordance with manufacturer's specifications.
- Enclose noisy equipment and use mufflers where appropriate
- Schedule atypical noise events for appropriate times.
- Any blasting is to be carried out in accordance with current practice standards with particular reference to AS 2187.
- Maintain liaison with nearby residents.
- Noisy construction activities in proximity to residences to be limited to 7.00 am to 6.00 pm Monday to Saturday or in accordance with local permits.

## 5.4 Cultural Heritage

An indigenous cultural heritage site contains artefacts and other physical evidence of indigenous Australian life in the past, or is a place of mythological, spiritual or religious importance. These sites are not only of scientific or historical interest, many continue to be a vital part of indigenous culture today. Indigenous cultural heritage sites are protected in all States and Territories, with severe penalties for unauthorised damage or destruction.

As contractors working in the field, it is important to recognise there is an obligation in ensuring protection of indigenous cultural heritage sites.

In Queensland, indigenous cultural heritage sites are protected under the *Aboriginal Cultural Heritage Act, 2003*. Requirements include:

- The *Heritage Act* applies a Duty of Care, no indigenous site, object or remains may be damaged, disturbed or interfered with;
- Areas must be assessed before they are disturbed;
- Once discovered, any indigenous site, object or remains must be reported to the Minister for Natural Resources and Mines (who is responsible for administering this Act) and Traditional Owners;

- Areas known to have heritage value are to be isolated and works must be stopped.
- Penalties for breaches are severe with fines of up to \$1,275,000 for individuals or imprisonment for two years, and \$1,275,000 for a company.

The appropriate Aboriginal Parties for the area are the Barbarrum People. A specific Cultural Heritage Management Plan (CHMP) has been established with the Barbarrum People, which contains detail on actions and responsibilities expected of all parties. All works are to be conducted in accordance with the provisions of the CHMP.

## 5.5 Flora

Works will aim to minimise the effect on vegetation and habitat for flora and to promote regeneration of native vegetation on areas affected by construction phase. Several significant conservation flora species exist on the Mt Emerald Wind Farm site, these include:

- *Homoranthus porteri* – Vulnerable under NCA and EPBC
- *Grevillea glossadenia* – Vulnerable under NCA and EPBC
- *Acacia purpureopetala* – Critically Endangered EPBC Vulnerable NCA
- *Prostanthera clotteniana* – Critically Endangered EPBC and Endangered NCA
- *Melaleuca uxorum* – Endangered under NCA

A Protected Plant Management Plan has been created to ensure impacts to these species are minimized and mitigated. This management plan details management strategies such as:

- Preconstruction surveys to identify locations of rare and threatened species and other significant plants (including habitat trees);
- Avoiding as to the greatest extent feasible during the detailed design phase;
- Clearing limits should be well identified and communicated to relevant staff;
- No unauthorised clearing;
- Stockpiling of topsoil;
- Collection and storage of seed and plant propagules to accumulate a seed bank for future rehabilitation;
- Placement of physical barriers around significant vegetation areas in order to restrict access and prevent disturbance; and
- Transplanting of conservation significant species.

## 5.6 Fauna

Three significant conservation fauna species exist on the Mt Emerald Wind Farm site, including:

- *Northern Quoll* – Endangered under NCA
- Bare-rumped Sheath-tail Bat – Critically Endangered under NCA
- *Spectacled Flying-fox* – Vulnerable under EPBC and NCA

The following management plans (**Table 3**) have been created to minimise and mitigate impacts to the above conservation significant fauna.

**Table 3 Fauna Management Plan Detail**

Plan	Details
Northern Management Plan Quoll	<p>The <i>Quoll Management Plan</i> (QMP) has been developed to minimise the potential impacts on the Northern Quoll (<i>Dasyurus hallucatus</i>) from the construction and operation of the Mount Emerald Wind Farm (MEWF) Project. Specific management actions include for example:</p> <ul style="list-style-type: none"> <li>▪ Conduct intensive pre-construction live-trapping surveys in the vicinity of the planned infrastructure areas, beginning when Northern Quoll are likely to be large enough to be fitted tracking collars. This will allow for the location of denning sites, including maternal sites which can be checked for occupation immediately prior to ground disturbance.</li> <li>▪ An exclusion zone shall remain in place until an identified den has been inspected by a suitably qualified and experienced person and confirmed the den is not being utilised by Northern Quoll or other threatened species of fauna..</li> <li>▪ Anyone working on these specific sites will also have regular toolbox meeting updates on the Northern Quoll.</li> </ul>
Habitat Clearing and Management Plan	<p>This plan encompasses spotter catcher pre-clearance and fauna management strategies during the clearing process and includes</p> <ul style="list-style-type: none"> <li>▪ Fauna and flora assessment;</li> <li>▪ Species identification;</li> <li>▪ Animal trapping, capture and handling;</li> <li>▪ Assessment of animal health and injuries;</li> <li>▪ Husbandry of captured wild animals;</li> <li>▪ Identification of suitable wildlife release sites;</li> <li>▪ Emergency management and/or euthanasia of injured or sick animals; and</li> <li>▪ Ensuring all State and Commonwealth policies, permits and conditions are met.</li> </ul>
Northern Quoll Outcomes Strategy	<p>For the protection of the Northern Quoll, MEWF must maintain a viable population (that is a population that is in good condition for a species that is endangered) on the Wind Farm site.</p> <p>The Outcomes Strategy is a monitoring program. In this program quarterly baseline data is collected on quoll population size, site occupancy (how many are there and how are they using the site), population vital statistics and habitat condition on the site and in at least three regional reference sites within a 50km radius of the site.</p>
Implementation Plan	<p>The MEWF Implementation Plan is currently being developed and will be completed before the wind farm is operational.</p> <p>The purpose of the Implementation Plan is to protect the Spectacled Flying Fox and the Bare-rumped Sheath-tail Bat, and it will include measures to avoid and mitigate the impacts of turbine collisions with these species.</p>

## 5.7 Weeds and Pests

### 5.7.1 Weeds

Environmental weeds are required to be controlled in accordance with the provision of the *Weed and Pest Management Plan*.

The greatest risk in relation to weeds on the project site is the potential of them spreading by the movement of material, plant (including vehicles) and equipment that is contaminated with seed or other productive components of the weed, as such;

- All vehicles and machinery are to be washed down and certified weed free prior to entering site.

Any vehicles and machinery working in internal weed infested areas are not to continue work in weed-free zones unless certified clean and weed free. *The Biosecurity Act 2014* regulates weed management in

Queensland. Under this legislation MEWF is required to develop management strategies for weeds on land under their control.

Classification of potential weeds are:

- Class 1 declared weed plant: one that has potential to become a very serious weed in Queensland in the future – introduction, possession and sale of these species is prevented. All landholders are required by law to keep their land free of Class 1 weed without a permit.
- Class 2 declared weed plant: one that has already spread over substantial areas of Queensland and needs to be controlled. Landowners must try to keep their land free of Class 2 weeds and it is an offence to possess, sell or release these weeds without a permit.
- Class 3 declared weed plant: one that is commonly established in Queensland but control by landholders is not required unless the plant is impacting upon a nearby ‘environmentally significant area’ (eg national park). It is an offence to sell, introduce, release or supply a Class 3 weed.

### 5.7.2 Pests

For successful management of pest species there are four principles:

- Identify the pests and the area of infestation;
- Avoid utilising and placing infrastructure in areas of know infestation;
- Prevent/minimise the translocation spread of pests by implementing sound work practices and promotion of risk awareness; and
- Control – identified pests to contain or eradicate populations as required.

The pest species likely to be found on the MEWF project that require control and monitoring are detailed in **Table 4**.

**Table 4 Declared Pest species on MEWF**

Species Name	Declared Species	Potential Species Impact
<i>Rhinella marinus</i> Cane Toad	Class 2	The Cane Toad is poisonous at every stage of its life cycle and it's known to impact nearly all native frog larvae and many aquatic invertebrates. Cane toads are known to have caused a severe decline in small predatory mammal species across northern Australia since their introduction.
<i>Canus lupus dingo</i> Dingo	Class 2	Dingoes prey on local native fauna and often carry parasites and pathogens.
<i>Canus lupus familiaris</i> Wild Dog	Class 2	Wild dogs prey on local native fauna and often carry parasites and pathogens.
<i>Sus Scrofa</i> Feral Pig	Class 2	Feral pigs damage crops, stock, property and the natural environment. They transmit disease and could spread exotic diseases such as foot and mouth if this was introduced to the country.
<i>Felis catus</i> Feral Cat	Class 2	Feral cats prey on local native fauna and often carry parasites and pathogens.
<i>Oryctolagus cuniculus</i> Rabbit	Class 2	This species causes destruction of native vegetation and subsequent erosion. They compete heavily with native species for food and shelter therefore reducing the native species ability to survive predation.

A number of control methods have been identified to control pests on the project site (**Table 5**). This is the responsibility of the Environmental Manager and the Construction Manager unless otherwise advised.

**Table 5 Control Methods Required at Each Stage of MEWF Project Development**

Project Phase	Objective	Action
Preconstruction	Identify abundance of pest species on MEWF project site	<ul style="list-style-type: none"> <li>▪ Record the incidental occurrence of pests at key locations on project site.</li> <li>▪ Liaise with local government Pest Management Officer regarding pest species management on site and methods of control undertaken.</li> </ul>
Construction	Ensure effective pest control is undertaken for the project area	<ul style="list-style-type: none"> <li>▪ Manage solid and liquid waste generated from the site compounds.</li> <li>▪ Avoid creating artificial water points.</li> <li>▪ Dump all the non-hazardous waste in a designated location which (fenced if required) can then be removed from site.</li> <li>▪ Ensure appropriate training and induction of staff on pest issues and strategies.</li> </ul>
Ongoing	Ensure pest control is undertaken	<ul style="list-style-type: none"> <li>▪ Survey periodically (quarterly) of high risk areas.</li> <li>▪ Continue the management of waste products.</li> <li>▪ Promote continued education and training of staff to ensure implementation and changes to plan are ongoing.</li> <li>▪ Liaise with local and state government to ensure management of declared pests around property remains current and in line with other property holders and council.</li> <li>▪ Continue management of solid and liquid waste.</li> <li>▪ Report infestations to Environmental Manager.</li> </ul>

## 5.8 Waste Management

Waste is anything left over from, or an unwanted by-product of a process or activity (**Figure 2**).

**General Waste:** Not regulated (generally benign), Suitable for general landfill disposal.

**Regulated Waste:** Non-domestic, hazardous/targeted wastes, special transport and disposal.

**Trackable Waste:** Specific regulated wastes, special transport and disposal, special record management.

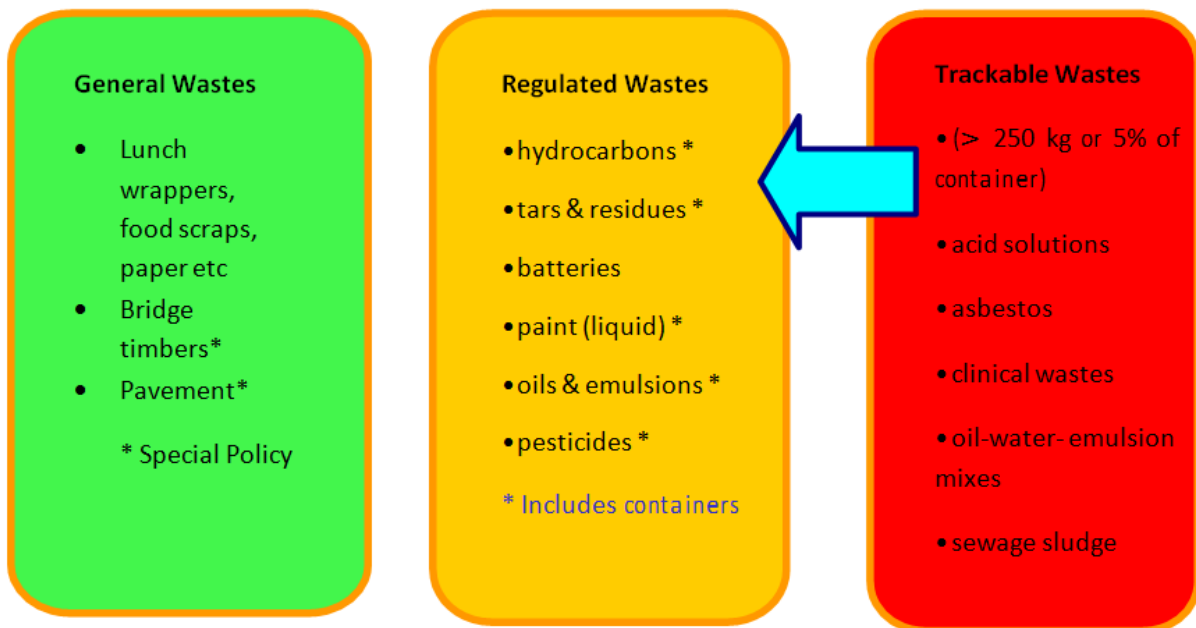


Figure 2 Waste Tracking Process

### 5.8.2 Management Strategies:

All personnel shall be instructed in project waste management practices as a component of the environmental induction process. The management of wastes on site should include, but not be limited to:

- Stockpiling and salvaging reusable and recyclable wastes, such as timber skids, pallets, drums and scrap metals.
- Collecting and removing waste oil and solvents from site for recycling, reuse or disposal at approved locations.
- Disposing of sewage and sullage from camp site via a packaged mini sewerage treatment plant (greywater may be discharged to land in accordance with local approvals).
- Collection of chemical wastes in 200 L drums (or similar sealed container), appropriately labelled, for safe transport to an approved chemical waste depot or collection by a liquid waste treatment service.
- All binding material and dunnage from transport vehicles and unloading areas is to be collected and transported off the easement to designated disposal areas.
- Collecting and transporting general refuse to a Local Government approved disposal site.
- Ensure wastes are not accessible by stock or wildlife.
- Refuse containers will be located at each worksite.

- Where practical, wastes will be segregated and reused / recycled (e.g. scrap metal).
- Spraying of declared plants and disposal to regulated landfill.
- Complete waste tracking certificates where required.
- Littering even on a construction site is illegal and makes the site look untidy – use the bins or take your general wastes with you.

Wastes should be managed in accordance with the following principles (in order of preference):

Avoid – Prevent waste generation by substituting materials that produce a smaller volume of waste, or that produce wastes that are less hazardous.

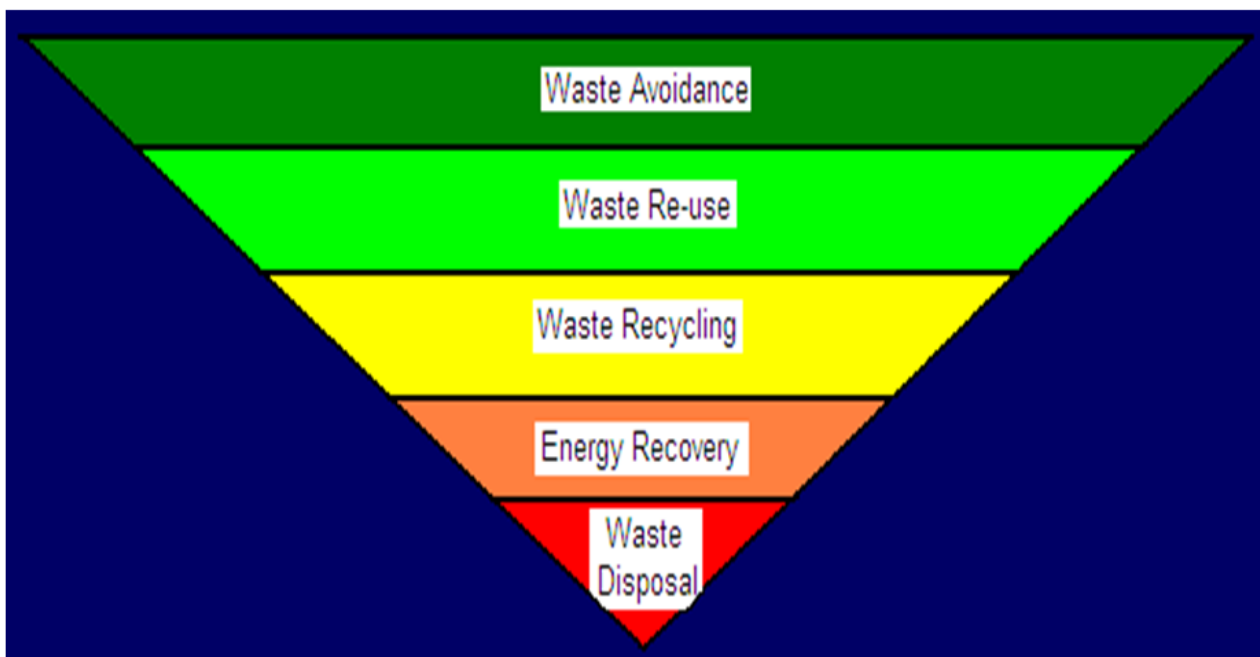
Reuse - Minimise waste generation by reusing materials or incorporating into projects.

Recycle - Separate materials that can be recycled from those that cannot.

Energy Recovery – for example burning waste, using the heat to heat water and using the hot water in an industrial process

Dispose - Dispose of wastes to landfill as a last resort.

**Figure 3** indicates the management value of these principles.



**Figure 3 Waste Management Principles**

## 5.9 Fuel and Chemical Management

### 5.9.1 Hydrocarbons and Hazardous Substances

When working with fuels and chemicals it is important to remember that safety must come first. Ensure you have the MSDS available for each chemical, and also be aware that some fuels and chemicals must not be stored together. For further advice, speak to your Environmental Officer.

The main environmental concern for fuel and chemical management is avoiding any spills on land or entering a watercourse.



A *Hydrocarbon and Hazardous Substance Plan* has been prepared to detail measures to ensure environmental incidents are avoided. This includes measures such as:

- Ensure spill response equipment is available on site for use in emergency.
- Spill response equipment must be the appropriate type and quantity for chemicals and fuels being stored on site.
- Maintain machinery to minimise the leakage of oil, fuel, and hydraulic and other fluids.
- During the servicing of machinery, use measures to capture and contain oils, fuels, hydraulic and other fluids so as to minimise contamination of the servicing area.
- Refuelling of machinery must conform to the following requirements:
- No refuelling of plant and equipment over or within 100m of watercourses.
- Waste flammable and combustible substances which cannot be recycled will be transported to a licenced waste disposal facility such as Springmount landfill.
- All hydrocarbon and hazardous chemicals will be stored in bunded areas which can contain 110% of the largest container.
- The storage area shall be adequately ventilated.
- Appropriate signage warning flammable liquids/dangerous goods are present.
- Spill kits containing absorbent and containment material (e.g. absorbent matting) will be available where hazardous materials are used and stored and personnel trained in their correct use.
- Spills of flammable and combustible substances will be rendered harmless and collected for treatment and / or remediation or disposal at an approved landfill, including cleaning materials, absorbents and contaminated soils and reinstatement made to the affected area.
- Personal protective equipment (PPE) appropriate to the materials in use will be provided.

### 5.9.2 Incident Response

Relevant site contacts for an incident response are detailed in **Table 6**.

**Table 6 Site Contacts Details**

Issue	Organisation	Person	Position	Contact Details
Implementation and management of the various plans	Contractor	TBA	Project Manager / HSEQ Coordinator	
Receiving the following reports; monitoring, remedial action, environmental complaints and emergencies	Contractor	TBA	Project Manager / HSEQ Coordinator	
Ensuring measures/action plans are implemented	Contractor	TBA	Project Manager / HSEQ Coordinator	
Reporting	Contractor	TBA	Project Manager / HSEQ Coordinator	

Where a chemical spill occurs, consult the Material Safety Data Sheet (MSDS) for spill procedures. If the MSDS indicates a requirement for containment and clean up then the following steps should also be considered:

- (1) Stop the source and spread of the spill if safe to do so:
  - Check for danger;
  - Prevent the spill from getting larger (turn off valves, block damaged tanks or pipes), and

- Use any suitable material or equipment to confine the spill by “damming it off” (e.g. use available spill response equipment such as booms or absorbent or if unavailable then use soil or other suitable material).
- (2) Clean up the spill
- Once the spill has been contained, retrieve as much of the spilled liquid as possible and place in an appropriate container (e.g. 20 L drum or 1000 L pod). The liquid should then be disposed of;
  - Absorb remaining spill with absorbent material and place used absorbent in the appropriate waste bin; and
  - Where applicable, replenish equipment used from Spill Response Kit.
- (3) Report the spill
- Report and investigate all spills in accordance with Incident Reporting and Analysis (see below).

## 5.10 Land Management

### 5.10.1 Bushfire Management and Emergency Evacuation

It is crucial fire management of vegetation communities be undertaken on the MEWF project site to ensure that both the project and the environmental values of the property are also protected. A *Bushfire Management and Emergency Evacuation Plan* has been developed to ensure this objective is achieved and utilises the following mitigation measures to minimise the potential for a bushfire:

- Open fires will be banned on the project. Fires include open barbeques, billy fires, brush burning and rubbish burning.
- Adoption of lightning protection measures for both turbines and substations.
- Unnecessary build-up of flammable material near working areas will be prevented, with vegetation and other flammable material being stockpiled well clear of hot work activities.
- Water trucks (also used for dust suppression) will be available for use as fire trucks in the event of fire.
- All vehicles will be equipped with portable fire extinguishers.
- Fire extinguishers and a water cart will be available to the welding crew. All appropriate crew members will be trained in the use of fire fighting equipment.
- Emergency Response Plan shall include details on local contacts for fire fighting assistance.
- Construction management liaison with local Rural Fire Service personnel during high fire periods.
- The establishment of the Asset Protection Zone.
- Clearing and pruning.
- Fire breaks.

### 5.10.2 Fire Fighting Equipment

All project vehicles will contain a fire extinguisher and CB radios. A specific project vehicle will be fitted with a water tank, diesel pump, 30m fire hose and a knapsack spray. Each Wind Turbine Generator contains a fire extinguisher in the base of the tower and up in the nacelle.

### 5.10.3 Water Supply Tanks

One storage container will be located at the Substation, Operation and Maintenance Building with the other at the Contractors Site Compound. Each will contain a water tank (approx. 50,000 litres capacity) collecting

water from the buildings in the compound. The tank will be fitted with outlets allowing fire trucks to connect to the tank. Should the water level drop below a minimum set point, a water truck will deliver water to the tank. Guidance from Rural Fire Service Queensland (RFSQ) will be sought on what the minimum level within these tanks should be.

**5.10.4 Evacuation Routes**

TBC

**5.10.5 Emergency Contacts**

For all fires and emergencies call 000

	IN AN EMERGENCY CALL 000
---	--------------------------

In the instance that it is not an urgent emergency the following contact details may be of assistance.

**5.10.6 Emergency Services Contacts**

Service	Location and Phone Number
Ambulance	Cairns and Hinterland Local Area Service Network: (07) 4032 8615
Fire Warden (Urban Fire Brigade)	Atherton Fire Station: (07) 4091 9290 Mareeba Fire Station: (07) 4092 1044
State Emergency Services (SES)	Cairns: (07) 4032 8682

**5.10.7 Rehabilitation Management Plan**

Landscape rehabilitation aims at restoring native vegetation cover over sections of land that have been disturbed during the construction, operational and decommissioning stages of the wind farm. The main objectives of rehabilitation are to stabilise the disturbed ground surface by establishing plant cover; and to restore a vegetation community that is ecologically functional and self-sustaining.

Ultimately, and over a period of time which may take over five years to establish, the restored vegetation is to be of a similar floristic composition and structure as the adjacent remnant community on a similar landform. The restored vegetation is to be free of weeds and alien plants, and able to persist in the landscape without intervention or assistance.

This Rehabilitation Plan describes the strategies and actions that apply to mitigating the impacts of vegetation clearing and disturbance in the Mt Emerald Wind Farm project site, including:

- Identify areas for rehabilitation and assign priorities for treatment.
- Rehabilitate areas progressively
- Collect, acquire, manage and store adequate quantities and appropriate species of native plant seed throughout the construction, operation and decommissioning stages of the wind farm.

- Apply the most appropriate techniques and practices for rehabilitation on a site-specific basis.
- Translocate and manage threatened plants, grass trees and cycads where feasible.
- Establish trial rehabilitation plots in areas which are accessible and able to be monitored.
- Continuously maintain rehabilitation areas to a standard which excludes significant weed incursions and promotes healthy growth and development of native vegetation.
- Monitor rehabilitation areas and maintain records and data which will be used to inform improved rehabilitation practices.

### 5.11 Unexploded Ordinance (UXO)

Parts of the site have been designated by the Department of Defence (DoD) as at risk of containing unexploded ordinances due to past land use at the site by the DoD. A detailed investigation for UXO's has been undertaken by a DoD approved UXO expert within ~50m of planned infrastructure. This was a thorough search of the site using state of the art detection technology and included clearing any UXO's that were identified.

There is, however, still the potential for unexpected UXO finds. A procedure for dealing with this is included in the *Construction and Work Site Operational Management Plan* and includes the following:

Activities in which UXO contamination could be considered a potential hazard are:

- Enabling works
- Intrusive Site Investigations (Trial holes/trenches, boreholes, window samples)
- Excavations and Piling Works

Blast and fragmentation effects are the more obvious impacts from detonation of UXO's, however the potential for fire and chemical contamination from the degradation of unexploded bombs must be considered.

In areas where UXO's will be a risk there will be:

- Detailed Geotech investigations.
- Explosives Safety & Awareness Briefings / Explosives Site Safety Guidelines - Personnel conducting intrusive works should attend an Explosives Safety & Awareness Briefing.
- Explosives Engineer Supervision - Explosives Engineer to be present during any excavations/trial pits taking place at the site.
- Intrusive Magnetometer Survey
- Non-Intrusive Magnetometer Survey

ADD once agreed with Contractor. Need to confirm the agreed process for dealing with unexpected finds (may also need to deal with any contaminated land)