



ENVIRONMENTAL MANAGEMENT PLAN – TARCOOLA TO DARWIN NETWORK

Document No.: EV-PLN-003

Revision: 003

Issue Date: 17/01/2019

THIS DOCUMENT IS UNCONTROLLED WHEN COPIED OR PRINTED.

IMPORTANT: The master of this document is controlled by Genesee & Wyoming Australia Pty Ltd (GWA).

Anyone producing a hard copy of a GWA controlled document must verify the revision number of the document prior to using it. This may be done by visiting the GWA SharePoint site.
Draft and archived/obsolete revisions are not to be used.



DOCUMENT REVIEW AND AUTHORISATION DETAILS

Author	
Name:	Mark Smith
Position:	National Workplace Health, Safety and Environmental Manager
Signature:	
Date:	17/01/2019

Reviewer	
Name:	Adam Reed
Position:	Environment Manager
Signature:	
Date:	17/01/2019

Authoriser	
Name:	Luke Anderson
Position:	Chief Executive Officer
Signature:	
Date:	17/01/2019



TABLE OF CONTENTS

1. INTRODUCTION5
2. BACKGROUND.....5
3. PURPOSE.....5
4. SCOPE.....5
4.1. Exclusions to Scope.....6
5. DEFINITIONS AND ACRONYMS6
6. SENIOR MANAGEMENT COMMITMENT.....8
7. RISK MANAGEMENT8
7.1. Risk Identification.....8
7.2. Risk Assessments.....8
7.3. Risk Control9
7.4. Risk Evaluation & Review9
7.5. Review and Approval of Aspects and Impacts Register9
7.6. GWA Risk Methodology10
8. COMPLIANCE OBLIGATIONS.....12
8.1. Regulatory Compliance.....12
8.2. Approvals, Consents and Deeds12
8.3. Objectives & Targets.....12
8.4. Concession Deed Monitoring Tasks & Performance Indicators.....12
9. IMPLEMENTATION AND OPERATION.....15
9.1. Resources, Roles, Responsibilities & Authority.....15
9.2. Competence, Training & Awareness17
9.3. Communication.....17
9.4. GWA Integrated Management System Documentation18
9.5. Control of Documents18
9.6. Operational Control.....18
9.7. Emergency Preparedness & Response19
9.8. Environmental Related Complaints.....19
10. CHECKING, EVALUATION & REVIEW.....20
10.1. Monitoring & Measurement20
10.2. GWA Operations and Activities20
10.3. Evaluation of Compliance.....20
10.4. Environmental Incident Reporting & Investigation.....21
10.5. Corrective & Preventative Action21
10.6. Control of Records21
10.7. Environmental Management Plan Audits.....21
10.8. Management Review22
10.9. Interfacing Polices, Procedures & References.....22
2. CONSTRUCTION AND OPERATIONAL MANAGEMENT24



2.4. Monitoring tasks.....	24
3. FIRE MANAGEMENT.....	25
3.4. Monitoring tasks.....	25
4. FLORA AND FAUNA CONSERVATION	26
4.4. Monitoring Tasks.....	26
5. SOIL CONSERVATION.....	27
5.4. Monitoring tasks.....	27
6. WATER MANAGEMENT	28
6.4. Monitoring tasks.....	28
7. WASTE MANAGEMENT	29
7.4. Monitoring tasks.....	29
8. DUST AND NOISE MANAGEMENT	30
8.4. Monitoring Tasks.....	30
9. BITING INSECTS CONTROL	31
9.4. Monitoring tasks.....	31
10. DISEASE, PEST AND WEED CONTROL.....	32
10.4. Monitoring tasks.....	32
11. CULTURAL AND HERITAGE MANAGEMENT	33
11.6. Monitoring tasks.....	33
12. REHABILITATION AND MANAGEMENT	34
12.4. Monitoring Tasks.....	34



1. INTRODUCTION

This Environmental Management Plan (EMP) is part of the GWA Integrated Management System, which incorporates aspects of the GWA Rail Safety Management System, the GWA Work, Health and Safety Management System and the GWA Environmental Management System (EMS).

This plan applies to the Tarcoola to Darwin railway corridor, and incorporates all the associated activities within this corridor as outlined in **Section 4** of this Plan.

This EMP enables Genesee & Wyoming Australia (GWA) to undertake business activities associated with the Tarcoola to Darwin railway corridor to ensure compliance with the requirements of the Concession Deed, and all other obligations to which GWA prescribes.

2. BACKGROUND

In 2010, Genesee & Wyoming Australia (GWA) acquired the 2,200-km Tarcoola-to-Darwin railway line under a 50 year lease arrangement. GWA currently operates six general freight train services per week between Adelaide and Darwin with connecting rail services to other interstate locations. In addition, GWA provides bulk haulage services between mine sites and the Port of Darwin and Adelaide. GWA also has established third party track access agreements with other rail operators, including, Great Southern Railway (GSR) which operates the passenger service The Ghan.

As per the arrangements of the Concession Deed, GWA has a number of obligations for which it is responsible for administering. These specific obligations are detailed within the AARC – Concession Deed – Section 11 - Environmental Planning and Management Issues and related referenced documents.

3. PURPOSE

This EMP focuses on the management of environmental impacts associated with the GWA operations and activities conducted on the Tarcoola to Darwin railway line, and draws on the GWA Integrated Management System Framework which incorporates Rail Safety, Work, Health & Safety and Environmental Management. This EMP, where able, has been aligned to the Australian Standard AS/NZS ISO 14001, and the Guideline for the Preparation of an Environmental Management Plan from the Northern Territory Environmental Protection Authority¹. This EMP underpins the GWA Environmental Policy (EV-POL-001) and defines procedures and initiatives to achieve the objectives of the policy. It is intended that this EMP be used as a reference document for environmental matters. It has been specifically developed for use by those conducting activities on the Tarcoola to Darwin railway line including:

- Employees of GWA
- Contractors of GWA
- Third Party Above Rail Operators; and
- Concession Deed stakeholders

4. SCOPE

The geographical scope of this EMP includes the railway corridor from Tarcoola (South Australia) to Darwin (Northern Territory), including the Alice Springs, Tennant Creek, Katherine and Berrimah (Darwin) Terminals.

The operational activities that are conducted within this geographical scope include, but are not limited to the following:

- Rollingstock Operational Activities

¹ DRAFT Guideline for the preparation of an environmental management plan (NT EPA 2015)



- Minor Rollingstock Maintenance Activities
- Locomotive Refueling
- Bulk Fuel Storage (on rail)
- Transportation of Intermodal Freight including Dangerous Goods
- Generation & Transportation of Waste Products
- Trade Waste & Effluent Collection, Containment, Treatment & Disposal
- Rail Infrastructure Maintenance and Repair Activities
- Vegetation Maintenance of the Railway Corridor
- Maintenance of Fire Breaks and trackside Access Roads
- Derailment & Incident Recovery
- Energy Consumption (electricity, diesel, gas, fuel)
- Terminal infrastructure maintenance
- Loading and unloading of freight
- Bulk minerals transport

Key Infrastructure located within the geographical boundaries of the scope of the Tarcoola-Darwin rail corridor includes:

- Track, including rail and sleepers
- Ballast and formation
- Bridges and culverts
- Level crossings
- Freight terminals

The EMP forms part of an Integrated Rail Safety, Work, Health & Safety and Environment System that draws on common procedures wherever possible to support the requirements of the plan. It is therefore important that the EMP be read in conjunction with existing GWA policies and procedures as referenced throughout this Plan.

The EMP is a dynamic document that will evolve and be continually improved over time with the ongoing development of the GWA Integrated Management System including environmental procedures and initiatives. The EMP will be revised as required by the GWA Environment Manager.

4.1. Exclusions to Scope

Exclusions to the scope of this EMP include significant construction related activities, including Major Track and Infrastructure Upgrades. If a significant construction project is to be undertaken, consultation will occur with all Concession Deed stakeholders, and an individual Construction Environmental Management Plan (CEMP) shall be developed which will be specific to that project. This CEMP will be tabled and agreed to at the Environmental Advisory Group level before works commence.

All passenger terminal buildings owned and maintained by Great Southern Rail or other third party are excluded from this EMP, as well as spur lines connecting to passenger terminals in Alice Springs which are the responsibility of the third party owner.

5. DEFINITIONS AND ACRONYMS

Environmental Aspect

An element of an organisation's activities, products or services which has the potential to interact with the natural environment, whether it is positive or negative.



Environmental Impact

Any change to the natural environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

Corridor

The Existing Corridor and the New Corridor (or a part of them), as varied from time to time in accordance with clause 15 of the Aboriginal Land Sub-Leases and clause 15 of the Crown Land Sub-Leases. The parcels of land are outlined in Schedule 2 of the Concession Deed.

Railway Reserve

The land on which the track infrastructure is located, or which is used for railway purposes.

Significant Construction Activities

Major track and infrastructure upgrades are that which are carried out by GWA or contractors of GWA which occur in the rail corridor.

Significant Impact

An environmental aspect is one that can have a significant impact on the natural environment and surrounds. Significant impacts include but are not limited to large scale vegetation disturbance, significant erosion, opportunity for new weed infestations, the creation of new borrow pits and significant changing of natural contours.

Performance Indicators

Performance indicators are set for each of the issues. These reflect the standards by which the objectives are to be assessed and the degree of success in achieving the set objectives can be gauged.

Major Track and Infrastructure Upgrades

Major projects that have the potential for Significant Impact within or adjacent to the corridor.

Monitoring Tasks

The issues that require on-going monitoring as detailed in the original Concession Deed. Responsibilities and frequency of monitoring for these tasks is defined in **Appendix 1** of this EMP.

Acronyms

AARC - AustralAsia Railway Corporation

AAPA – Aboriginal Areas Protection Authority

CEMP - Construction Environmental Management Plan

DIPL - Department of Infrastructure, Planning and Logistics.

DENR - Department of Environment and Natural Resources

EAG - Environmental Advisory Group

EMP - Environmental Management Plan

IMS - Incident Management System

MEB - Medical Entomology Branch

NT EPA - Northern Territory Environment Protection Authority



OEMP - Operational Environmental Management Plan

SEC - GWA Safety & Environmental Council

TCIR - Train Control Incident Report

6. SENIOR MANAGEMENT COMMITMENT

GWA has an established documented Environmental Policy (EV-POL-001) which is endorsed by the GWA Chief Executive Officer. The policy commits GWA to undertaking its business operations in a manner that recognises the importance of good environmental stewardship and sound environmental risk management programs. The policy is included as **Appendix 2** of this EMP.

7. RISK MANAGEMENT

GWA is committed to ensuring all risks are identified, assessed, controlled, evaluated and reviewed. GWA provides resources to assist with the maintenance and continual improvement of its risk management programs incorporating this EMP.

Outlined below are the risk management procedure guidelines for GWA. The Risk Management Process and Methodology is detailed within procedure MS-PRC-004 – *Risk Management Framework*.

7.1. Risk Identification

GWA is committed to identifying all potential situations that could cause damage to the environment, or have the potential to cause environmental harm while conducting its business activities. GWA has undertaken a comprehensive risk identification process where applicable with its contractors, which identifies the potential risks (impacts) as a result of its business activities (aspects), and incident situations that could arise while conducting these activities.

The potential environmental aspects and impacts associated with the Tarcoola to Darwin railway line have been documented within the GWA Aspects and Impact Register for Tarcoola to Darwin (EV-FRM-013).

An **environmental aspect** is an element of an organisations activities or products or services that may interact with the natural environment.

An **environmental impact** is any change to the natural environment, whether adverse or beneficial, wholly or partially, resulting from the organisations environmental aspects.

7.2. Risk Assessments

GWA has a responsibility to assess all risks identified as a result of its business activities. All identified risks have been formally risk assessed within the Aspects and Impact Register for the Tarcoola-Darwin railway corridor reference (EV-FRM-013).

The identified risks have been assessed using the methodology outlined in **section 7.6** where a *Likelihood* and *Consequence* rating has been assigned to each risk. In the event a risk could be assigned to two likelihood or consequence levels, then GWA procedure is to assign the highest level of the two ratings. As a result of this assessment, risks have been determined and categorised into Low, Medium, High or Extreme risk. Refer to the GWA Risk Matrix within this Plan.

In the event a risk has been assessed as a HIGH or EXTREME risk, then the activity must stop immediately, until additional control measures can be identified and implemented and it can be confirmed the risk has been reduced adequately before the activity can resume.



7.3. Risk Control

GWA adopts a risk based approach to the management of its identified risks.

GWA provides significant resources to ensure risks are adequately managed within the required timeframes. Control measures relating to identified environmental risks are documented within the GWA Aspects and Impacts Register specific for the Tarcoola-Darwin railway corridor.

Where new or additional controls are required or planned, they shall be documented and responsibilities and time frames shall be assigned. This can be documented within the Aspects and Impacts Register, or on the relating incident report, risk assessment form or corrective action register. Actions relating to incidents are captured within the Transport Control Incident Report (TCIR) incident reporting program, and are then then transferred to the Incident Management System (IMS) Database.

The TCIR reporting system is used by GWA to capture all operational incidents that occur within its operations. The information from this system is distributed automatically via email and fed into a number of safety and risk systems and forms the basis for corrective actions and risk treatments.

The IMS database allows GWA to formally assign responsibilities for incident investigations, management of actions, timeframes for action closure, and incident review and approval requirements.

The Safety & Environmental Council (SEC) review incidents that have been rated as High or Extreme.

Time frames for implementation can vary depending on factors such as the level of risk and complexity of the control measures or involvement of other stakeholders, resource availability and demonstration of reasonably practicable.

GWA plans and conducts regular reviews and audits of its EMS. GWA plans and provides adequate resources to ensure the effectiveness of its Environmental Management system in managing and reducing risk so far as is reasonably practicable.

7.4. Risk Evaluation & Review

It is the responsibility of the relevant manager for the specific activity or task to ensure that all risk assessments under their control are reviewed.

The manager responsible for the relating activity must ensure that hazards and risks associated with that activity are detailed within the Aspects and Impacts Register, and are reviewed whenever there are new work tasks, processes, or changes to existing work tasks or processes, as a result of an incident, when new plant or equipment is introduced, or existing plant/equipment is modified, new materials are introduced, or there are new hazards or risks identified within the workplace.

Risks that have been identified and controlled then need to be evaluated and reviewed to ensure that:

- Control measures have been implemented correctly
- Control measures are effective at reducing the risk(s) and are available and being used
- No new risks have been introduced as a result of the control measure being implemented
- Instructions, timeframes and responsibility for the review of risk management activities are followed
- The adequacy and effectiveness of the implemented control measure is evaluated and reviewed
- No further controls are required
- Controls implemented are adequate

7.5. Review and Approval of Aspects and Impacts Register

The Aspects and Impacts Register shall be reviewed internally every 12 months. The review shall include a review of any environmental incidents within the past 12 months, and the Aspects and Impacts Register should be updated as a result. The review should also incorporate any new activities that may have the



potential to impact the environmental risk portfolio for the Tarcoola-Darwin rail corridor. Outcomes and details of this review, shall be documented in meeting minutes or within a new revision of the Aspect and Impacts Register.

Whenever there is an update to the Impacts and Aspects Register for the Tarcoola-Darwin rail corridor, this register shall be tabled at the Safety & Environmental Council meeting for review. Approval is the responsibility of the National WHSE Manager. Outcomes and details of this review, shall be documented in meeting minutes.

7.6. GWA Risk Methodology

LIKELIHOOD OR PROBABILITY OF RISKS OCCURING

Likelihood Score			
Score	Rating	Description	Probability
5	Almost Certain	Has occurred. Is expected to occur in most circumstances and frequently during the year.	>90% to 99%
4	Likely	Will probably occur in most circumstances. Is expected to occur several times during the year.	>70% to 90%
3	Possible	Might occur at some time. Event could occur once every three years.	>30% to 70%
2	Unlikely	Could occur at some time but unlikely. May occur once every five years.	>5% to 30%
1	Rare	May occur only in exceptional circumstances. Event is known to have occurred elsewhere. May occur once every 10 years	<5%



CONSEQUENCES OF RISKS

Score	Descriptor	Environmental Risk Consequence
5	<p>Catastrophic</p> <p><i>Changes in operations and additional resources may be required that exceed the company's resource capability</i></p>	Occurrence/Avoidance of significant long term or widespread environmental harm with extensive remediation required and little if any potential for effective recovery. Confidence of customers and general public undermined. Cost to recover expected to exceed materiality threshold.
4	<p>Major</p> <p><i>Changes in operations and additional resources may be greater than those available internally or within necessary response times</i></p>	Occurrence/avoidance of moderate environmental harm with long term recovery. Cost to recover may exceed the current materiality threshold.
3	<p>Moderate</p> <p><i>Changes in operations may be required and additional resources are needed – may result in disruption to other work operations</i></p>	Occurrence/avoidance of moderate environmental harm with mid-term effects. Incident requires external assistance. Cost to recover expected to be less than current materiality threshold.
2	<p>Minor</p> <p><i>Can be managed without operational change, but may need changes to priorities and resource allocation</i></p>	Occurrence/avoidance of temporary environmental harm with short term effects. Management effort required to resolve.
1	<p>Limited</p> <p><i>Can be managed without operational change or resource relocation</i></p>	Occurrence/avoidance of temporary environmental harm with effective remediation.

GWA RISK MATRIX

		Likelihood				
		Rare	Unlikely	Possible	Likely	Almost Certain
Consequence		1	2	3	4	5
Catastrophic	5	6	7	8	9	10
Major	4	5	6	7	8	9
Moderate	3	4	5	6	7	8
Minor	2	3	4	5	6	7
Limited	1	2	3	4	5	6



8. COMPLIANCE OBLIGATIONS

8.1. Regulatory Compliance

GWA has identified environmental compliance obligations applicable to its operations. These have been detailed within the GWA Environmental Compliance Register (EV-FRM-015). The register includes environmental requirements and commitments for each State and Territory within Australia where GWA conduct business operations. It also includes applicable Commonwealth legislative requirements, and a specific section for the obligations specific to the Concession Deed requirements.

The Environment Manager is responsible for the maintenance and review of the GWA Environmental Compliance Register. Other requirements specific to the Concession Deed, are detailed in **Section 8.3 Objectives & Targets**.

8.2. Approvals, Consents and Deeds

GWA has identified a number of approvals, consents, deeds, licenses and permits which may be required to comply with statutory and regulatory requirements when undertaking its operations. This list is indicative only and is presented in the Environmental Compliance Register. Specific to this EMP is the Concession Deed requirements.

To ensure that these requirements remain applicable, and that all future requirements are identified, the document will be subject to an annual review as part of the Management Review process.

8.3. Objectives & Targets

GWA is committed to the protection of the environment as a result of all business activities. The GWA Environmental Policy defines the business objectives.

Objectives and targets have been detailed within the GWA WHSE Strategy (HS-PLN-002), and the GWA WHSE Improvement Plan. Additional to this, and specific for this EMP, are performance indicators and monitoring tasks relating to the Concession Deed. These plans detail the roles within the business that are responsible for these obligations.

GWA reviews applicable objectives and targets on a quarterly basis as part of the Safety & Environment Council (SEC) meetings. Quarterly SEC review will ensure the adequacy and relevance of objectives, and the achievement of targets including:

- GWA will meet all legal and regulatory requirements for environmental management and protection of activities associated with providing rail services. Where these are lacking or insufficient to protect the environment, GWA will apply sound environmental practices.
- GWA conducts and maintains a level of environmental awareness incorporating communication programs relating to this plan and the requirements of the Concession Deed amongst its employees and contractors.
- GWA regularly review its railway operations to identify and assess the environmental impact associated with those operations. GWA has programs and procedures which assist with the maintenance and continuous improvements of the Integrated Management System, including this Plan.

8.4. Concession Deed Monitoring Tasks & Performance Indicators

There are a number of Monitoring Tasks and Performance Indicators relating to the Concession Deed. These are detailed within Exhibit 9 – Environmental Management Plan². Details of how GWA manage these obligations during the operational phase have been detailed below.

² Alice Springs to Darwin Railway Environmental Management Plan (Dames and Moore 1997)



Appendix 1 outlines all of the obligations and those which have been agreed with the AARC by means of the EAG, as requiring ongoing or periodical monitoring and those which are no longer relevant.

The Monitoring Tasks have been broken down into the following sections, this section should be read in conjunction with **Appendix 1**.

Monthly reporting is undertaken by the GWA Environment Manager to report on anomalies associated with Concession Deed environmental obligations.

8.4.1. Construction & Operational Management

During the operation of the railway the access track will be maintained to ensure access, this process is carried out during the normal track maintenance activities by grading and repairing the tracks as needed. Track inspectors monitor the condition during on track (Hi-Rail) inspections. Reports will be raised via the TCIR process described in **section 10.4** of this plan.

The safety management system is subject to annual audit in accordance with a schedule which is developed by the Risk and Compliance section in consultation with the Operations Group and other affected parties. The audit schedule adopts a risk based approach and aims to give precedence to those operational aspects that present the greatest risk to safety.

8.4.2. Fire Management

The access tracks are deemed a firebreak, these tracks are maintained by herbicide application and grading, as to allow access to the track for maintenance purposes. The condition of the access track is monitored by the track inspectors, who travel the corridor frequently and the weed management contractor, who travel the rail corridor twice per annum.

Strategic firebreaks are implemented on an as needs basis in consultation with Bushfires NT, this is for planned works or high risk areas.

Track maintenance vehicles are equipped with fire extinguishers which are inspected at regular intervals. Additional firefighting equipment is provided and maintained for track maintenance activities with elevated fire risk (eg welding, grinding and associated hot work), this equipment is maintained and inspected as part of the pre-start inspections.

8.4.3. Flora and Fauna conservation

A weeds management specialist is engaged on an annual basis to monitor the status of the flora throughout the rail corridor. The plan for the management is defined within the contract with weeds management specialist.

The weeds management specialist travels throughout the rail corridor several times per year to monitor, identify and control emerging declared weeds. There has been a consultative approach with the NT Government Weeds Branch should the weeds management specialist identify introduced presence of declared weeds on nearby properties.

GWA track inspectors conduct frequent trips along the rail corridor for the purpose of visual monitoring of the overall condition and obvious signs of illegal activities.



8.4.4. Soil Conservation

The condition of the formation and the access tracks will be monitored on a weekly basis by the track inspectors who travel the corridor every week. They will identify areas of abutment scour, significant erosion or slope instability.

GWA also maintain a register of corridor scour sites. The information contained within the register enables GWA to prioritise repair activities and to measure deterioration of new or existing sites.

The track inspectors will monitor the condition of access tracks at locations where they cross a water course (within the corridor) to ensure vehicles are not the cause of erosion.

Part of their inspection includes visually inspecting the condition of vegetation growth throughout the corridor and adjacent water courses (streams or drainage lines).

Any identified issues will be managed through work orders raised by the track inspector.

Note: Vegetation is only inspected in the immediate proximity of the structure within the corridor.

8.4.5. Water Management

GWA will monitor all activities to ensure that they do no impact natural water courses.

The track inspectors will visually inspect the condition of creek crossings and permanent water bodies for signs of environmental damage.

Any identified issues will be managed through work orders raised by the track inspector.

8.4.6. Waste Management

Within the terminals GWA manages all of its waste with licenced waste removal organisations, where required GWA will receive the waste tracking documentation. Where maintenance activities are undertaken, all waste is removed at the completion of the task and all chemicals and hydrocarbons are stored on the gang trucks.

Workplace inspections and audits are undertaken to monitor the effectiveness.

8.4.7. Hydrocarbon Storage

Hydrocarbon storage (primarily diesel) is carried out for the purposes of plant and locomotive refuelling in Manguri and Berrimah.

Fuel is contained within double skin internally banded tanks or externally banded tanks at all locations and equipped with dry break fuel fittings.

Spill response equipment is available to all staff to contain incidental fuel spills.

8.4.8. Dust & Noise Management

For construction works there will be a project specific CEMP developed to address these issues.

Dust and noise are managed during day to day operation of the railway through effective rollingstock maintenance, review of loading techniques and dust suppression when carrying out maintenance of the infrastructure in sensitive locations.



8.4.9. Biting insect control

At the commencement of each wet season GWA will contact the MEB to understand where the potential breeding areas are for Mosquitoes. Through this GWA will know what they have to do to assist in managing the problem.

GWA will not allow water to pond in areas where maintenance activities are being undertaken, the track inspectors will monitor conditions during the wet season and report any anomalies through the TCIR system.

8.4.10. Disease, Pest and Weed Control

GWA utilize the services of a weed management specialist to monitor and manage the weeds within the corridor. Weed eradication is undertaken as required throughout the corridor according to the annual growth cycle. Mapping is also undertaken at this time in order to plan for future works. They will eradicate where possible based on available resources and growth cycle.

GWA have posters highlighting the declared weeds to enable the GWA employees to monitor conditions as they carry out normal maintenance and track inspection works.

GWA workers will report any anomalies with respect to feral animals and illegal dumping of rubbish. EMP inspection items are also included within the weekly track inspection report to flag any issues requiring further investigation.

8.4.11. Cultural and Heritage Conservation

GWA has recorded all of the locations of sites of cultural and heritage significance. This register consists primarily of Aboriginal Areas Protection Authority (AAPA) sites identified prior to construction, and is reviewed prior to any works being undertaken to ensure locations are protected.

The track inspectors are familiar with these sites and monitor the locations for anomalies.

8.4.12. Rehabilitation and Management

Where GWA carries out clearing work for the operational and maintenance requirements, any requirement for rehabilitation and management will be defined on a project basis within a CEMP.

8.4.13. Mangroves, Mangrove Mud and Potential and Actual Acid Sulphate Soils.

During the track inspectors' weekly runs they will monitor the mangrove stands along the railway embankment.

GWA will understand where the Acid Sulphate Soils are prior to commencing any construction works, and seek guidance on the correct management of these, this will form part of the CEMP.

9. IMPLEMENTATION AND OPERATION

9.1. Resources, Roles, Responsibilities & Authority

The maintenance and continual improvement of the GWA Integrated Management system is the responsibility of all GWA workers and contractors.

GWA encourages feedback on its systems and strives to continually improve its processes. GWA has formally assigned roles and responsibilities in respect to the key requirement of this plan and relating obligations. These have been detailed below.



9.1.1. Chief Executive Officer

The CEO shall be accountable and shall ensure all managers under their control are aware of, and comply with the requirements of this EMP.

The CEO is accountable and shall ensure control measures and procedures associated with this plan are developed, implemented, maintained and reviewed to ensure compliance, continual improvement and application to the organization's operations and activities. The CEO must also ensure adequate resources are allocated to achieve committed objectives and targets detailed within this Plan.

9.1.2. National Workplace Health Safety and Environmental Manager

The GWA National WHSE Manager is responsible for approving any changes to this EMP and associated procedures. The GWA National WHSE Manager will also be present on the EAG and present any environmental matters requiring escalation to the GWA SEC.

9.1.3. General Manager Infrastructure

The General Manager Infrastructure is responsible for the effective implementation of this plan, including communication of this plan and relating policies and procedures to GWA workers and contractors engaged to support rail infrastructure maintenance. They are also responsible for a number of monitoring tasks as detailed within **Section 8.4** of this Plan and are represented on the EAG and the GWA SEC.

9.1.4. General Manager Rail Safety

The GWA General Manager Rail Safety in conjunction with the Environment Manager are responsible for the review, update and continual improvement of the GWA Integrated Management System incorporating rail safety, work, health, safety and environmental requirements.

9.1.5. Environment Manager

The GWA Environment Manager is responsible for the review and update of this plan and relating policies and procedures which form the GWA Integrated Management system. The Environment Manager also assumes responsibilities for those items assigned to the Environmental or Safety Officer within the Concession Deed.

9.1.6. Track Superintendents and Depot Coordinators

All Track Superintendents and Depot Coordinators shall be responsible for ensuring that staff under their direct supervision are familiar with and comply with the requirements of this EMP and related procedures.

They shall also be responsible for ensuring that incident investigations involving GWA resources are carried out in accordance with the requirements of this management plan and related procedures.

9.1.7. GWA Employees

It shall be the responsibility of all GWA employees to promptly and accurately report any non-compliance to their immediate manager, who will in turn ensure that these are reported to the relevant manager.

Alternatively, the employee shall directly contact the GWA Environment Manager.

All GWA employees have an environmental duty and an obligation to ensure they demonstrate good environmental stewardship when conducting tasks and activities that have the potential to impact the environment.



9.1.8. Contractors and Sub-contractors

All contractors and sub-contractors engaged by GWA or another party to undertake activities on behalf of GWA are required to comply with the requirements of this EMP and related procedures.

9.1.9. GWA Safety & Environment Council (SEC)

This Council is an internal GWA Council which is limited to senior management representatives whom have significant responsibilities in relation to GWA's operational business activities. The Council is responsible for the effective management of the GWA strategy in respect to risk management and the implementation of this Plan.

9.1.10. Environmental Advisory Group (EAG)

This group is made up of representatives from the AARC, the Northern Territory Government (Water, Land, & Resource Management), Northern Territory Environment Protection Authority and GWA. The objective of the Group is to promote the implementation of the EMP and sharing of information and resources. The function of the Group will be to provide a forum for the consideration and discussion of issues relating to the Environment and the EMP.

9.2. Competence, Training & Awareness

GWA employees and contractors associated with operational activities within GWA-controlled facilities and rail reserves undertake an environmental awareness learning module.

GWA is committed to the training and development of its workers, contractors and visitors to ensure risks and control procedures and processes are communicated, and workers are aware of their responsibilities under these procedures. All workers and contractors will be trained in the key elements of this Plan and the relating Environmental Management procedures where they are applicable to the tasks and activities they are conducting.

GWA has a process for ensuring employees conducting business tasks and activities within the Tarcoola-Darwin railway line have the required skills, qualifications and experience. These records are kept with the GWA Training Department and are detailed within a skill matrix for that job role. The manager of the activity being conducted by the GWA worker or contractor is responsible for ensuring all workers and contractors under their supervision have the relevant licenses, training, induction, skills and competencies for the tasks and activities being undertaken.

9.3. Communication

GWA is committed to reporting and communicating environmental information internally and externally.

Site operational staff are made aware of the key process conditions, the status of the control measures, and any other key issues that affect the operation by means of effective two-way communications between management and employees.

This communication is to be disseminated to the operational staff by the following means:

- Inductions
- Training
- Emergency Exercises
- Site Meetings as required
- Regional Meetings
- Written safety and environmental alerts
- Incidents reports
- Emails



- Notice board communication.

9.4. GWA Integrated Management System Documentation

The GWA Integrated Management System consists of the following environmental specific components:

- Environmental Policy
- Environmental Management Plans
- Aspects and Impacts Registers
- Environmental Compliance Register
- Procedures and Work Instructions
- Forms and Registers
- Emergency Response plans
- Incident Reporting and Investigation Procedure
- Meeting minutes and meeting agendas
- Action plans and Electronic systems for action management.

This EMP shall be reviewed for adequacy and suitability on an annual basis as part of the Management review process. This review will look at all identified aspects and impacts and associated objectives and targets. All other Integrated Management System documentation will be reviewed on a two yearly basis as part of the same process.

9.5. Control of Documents

All GWA Integrated Management System documentation is managed in accordance with GWA procedure for Document and Data Control reference RS-PRC-002.

9.6. Operational Control

The respective site operational managers, in conjunction with GWA Environment Manager shall develop procedures to ensure that all activities carried out within their operational control are documented and implemented to ensure environmental risks are managed adequately and comply with the GWA Environment Policy and stated objectives and targets. GWA has a number of specific work instructions that relate to the management of the environmental impacts identified which are referenced within the aspects and impacts register for the Tarcoola-Darwin railway line.

9.6.1. Rail Infrastructure Maintenance and Improvements

GWA has identified that track infrastructure maintenance has the potential to impact the environment adversely, therefore GWA has implemented a number of processes to manage these activities. Before undertaking maintenance works that could impact Aboriginal Areas Protection Authority sites on the Tarcoola-Darwin railway line, GWA reviews the location of the work within the GWA Geographical Information System (GWA Maps).

Track inspections are conducted weekly, and these are documented on the Track Inspection Summary Form IN-FRM-038. Actions arising from these inspections are managed by Track Superintendents. Depending on the inspection finding, external resources may be engaged to assist. GWA has its own internal resources for track maintenance activities, however, some infrastructure maintenance and services at times can be out-sourced to a third party provider.

9.6.2. Annual Operations and Infrastructure Maintenance Plan

Each year, the General Manager Infrastructure, in conjunction with other GWA stakeholders prepares an annual operations and rail infrastructure maintenance plan as required by the Concession Deed. This plan details the maintenance activities for the year ahead with regard to the Tarcoola-Darwin railway line. This plan is provided and communicated to the Concession Deed stakeholders once prepared.



9.6.3. Safety Interface Agreements & Access Agreements

GWA has a procedure whereby there is a requirement to have documented safety interface agreement developed with all parties that interface GWA operations and or GWA controlled rail infrastructure. This is to ensure safety and environmental requirements have been identified and formalised.

All third party operators must have an access agreement in place with GWA prior to entry to the Tarcoola to Darwin corridor. The access agreement includes an acknowledgment that each party will comply with environmental obligations including dangerous goods requirements.

9.7. Emergency Preparedness & Response

GWA have a documented Response Plan for ‘On-Rail’ Emergencies (RS-PRC-006) which is applicable to GWA railway activities and to other railway network operators for whom may operate on the GWA controlled network. This procedure defines an emergency two levels.

	Occurrence Type	
	Level 1	Level 2
Human Impact	Multiple loss of life/significant injuries to multiple parties	Loss of life or serious injury
Property Damage	Loss or damage > \$10 million	Loss or damage > \$1 million
Environmental Impact	Significant impact/release of pollutants off-site over a wide area	Significant impact/contaminants contained on-site
Example	<ul style="list-style-type: none"> Bush fire Running line collision involving a passenger train Explosion involving dangerous goods in a populated area 	<ul style="list-style-type: none"> Level crossing collision with motor vehicle
Response Required	Long-term sustained response by emergency services with significant expenditure of resources	Short-term response by emergency services

Copies of this plan are kept in the cab of the locomotives, and emergency drills are conducted with other interfacing stakeholders annually.

It is the responsibility of the General Manager of Rail safety to co-ordinate the review the emergency response plan, to organise drills associated with this plan and review, and to update the plan annually.

Each GWA depot also has its own emergency response plan covering those persons working within office buildings and terminal activities. It is the responsibility of the depot manager to review their plans annually.

9.8. Environmental Related Complaints

GWA records and reports all environmental incidents and complaints using the GWA Near Miss Hazard & Incident Form (MS-FRM-002). Incidents and complaints are investigated using the GWA Data Collection & Incident Investigation Form (MS-FRM-003). Incidents and complaints are also captured within the GWA TCIR system. Each complaint is given a unique identification number and details associated with the complaints are captured within this system. The cause of the event is required to be logged into the TCIR system, including the date and time of the incident/complaint. The action that was taken as a result of the complaints, persons responsible for actions and action timeframes for completion is to be captured in the TCIR system. This register is used to review GWA’s environmental performance and is reviewed as part of the management review process.



10. CHECKING, EVALUATION & REVIEW

10.1. Monitoring & Measurement

GWA utilise a range of methods to monitor and measure the effectiveness of the GWA Integrated Management System, and to monitor and measure the key characteristics of the operations that have the potential to result in a significant environmental impact and/or legal non-compliance.

Effectiveness of the Integrated Management system is monitored through various methods, including but not limited to:

- SEC Quarterly Meetings
- Weekly Operational Meetings
- Third party independent audits and reports
- Internal audits
- Incident reporting
- Annual management reviews

10.2. GWA Operations and Activities

Effectiveness of the key characteristics within the operations that support legal compliance and ensure operational controls at the site level are adequate include:

- Site meetings
- Meeting with customers and clients
- Third party independent audits and reports
- Internal audits and incident reports
- Specific internal procedures for maintenance and measurement of critical equipment
- Inspections
- Measuring and monitoring programs for individual equipment and processes

The inspections and monitoring processes are to be scheduled by the National WHSE Manager in conjunction with the General Manager Rail Safety, to ensure conformance to the relevant standards including, but not limited to:

- Compliance with environmental procedures & work instructions
- Fire protection equipment
- Emergency response equipment
- Workplace hazards and housekeeping
- Process conditions
- Legislative requirements
- GWA Integrated Management Plan (incorporating rail safety, work, health, safety and environment)

10.3. Evaluation of Compliance

GWA has a number of methods which it utilizes to evaluate the adequacy and effectiveness of its IMS, and its legal and other requirements that are prescribed. These processes include, but are not limited to:

- Third party audits
- Workplace inspections
- Corridor Inspections – Track Inspectors and Infrastructure staff
- Incident reporting
- Internal audits
- Desktop audits
- Concession Deed stakeholder reviews
- Compliance audits



- Governance processes
- Internal reviews

When corrective actions are generated as a result of these review processes, they are entered into the GWA Corrective Action Register. This register is reviewed regularly by senior management including the SEC.

10.4. Environmental Incident Reporting & Investigation

The GWA Incident Response Procedure (MS-PRC-004) details the criteria for reporting, and details the people required to be contacted in the event of an incident.

This procedure considers incidents arising, or likely to arise, as a consequence of abnormal operating conditions, accidents, and potential emergency situations.

In the event that the incident is more of a public nuisance level i.e. locomotive exhaust emissions, noise or dust generation, this will be reported using the GWA Near Miss Hazard & Incident Form (MS-FRM-002) and investigated using the GWA Data Collection & Incident Investigation Form MS-FRM-003. A TCIR will also be raised. The investigation must be carried out in accordance with the Environment Incident Response Procedure EV-PRC-002.

It is the responsibility of the Environment Manager to review all incidents that have the potential to trigger notifiable reporting requirements.

It is the responsibility of the Environment Manager to report all notifiable incidents to the applicable regulator within the required timeframe.

Some GWA contractors have incident reporting forms and procedures. In the cases where an incident occurs as part of their operations that relate to GWA business, a copy of their form needs to be forwarded to the GWA Environment Manager.

10.5. Corrective & Preventative Action

Procedures are in place to ensure that breaches of legislation and incidents resulting in deviation, near miss, injury or accidents are reported, appropriately investigated and corrective actions put in place to minimise the risk of re-occurrence.

GWA use a Corrective Action Register to capture all corrective actions arising from incidents and audits. This register is reviewed by the SEC as required.

10.6. Control of Records

All records generated shall be identified, collected and stored in accordance with

Procedure RS-PRC-002 Document & Data Control.

Environmental records generated will include, but will not be limited to:

- Management review minutes and agendas
- Internal and external audit reports
- Non-conformance and corrective actions
- Records of customer and public complaints
- Incident reports

10.7. Environmental Management Plan Audits

All internal audits will be managed in accordance with the GWA Auditing Procedure (RS-PRC-003). All Environmental Audits are to be carried out in a timely manner in accordance with the GWA Audit Schedule. The results of all internal, and any external audits will be reported at management review



meetings. Copies of compliance audits will be made available to all relevant internal and external stakeholders on request.

Actions generated from audit are captured in the Corrective Action Register.

10.8. Management Review

The management review of the GWA Integrated Management System is undertaken through the quarterly SEC meetings. Senior management from all relevant departments across the GWA business is represented at this forum. Meeting minutes and action plans are developed as a result of the outcomes of these on-going reviews.

This EMP and its associated documents are reviewed by the Concession Deed third party representatives. These reviews are formalised through meeting minutes and email acknowledgment. The review frequency by the Concession Deed stakeholders is conducted at the discretion of the Environmental Advisory Group.

10.9. Interfacing Policies, Procedures & References

GWA has a number of internal policies, procedures, forms and registers which form part of its Integrated Management System. The following documents are of relevance to this EMP.

Policy

- EV-POL-001 Environmental Policy

Plans & Procedures

- IN-PRC-020 Rail Infrastructure Inspections
- RS-PRC-002 Document & Data Control
- RS-PRC-003 GWA Auditing Procedure
- MS-PRC-004 GWA Incident Response Procedure
- RS-PRC-006 Response Plan for 'On-Rail' Emergencies
- EV-PRC-003 Register of Significant Sites
- EV-PRC-004 Vegetation Removal Procedure
- EV-PRC-005 Phytophthora Threat Management Procedure
- EV-PRC-010 Site Clean-up Procedure
- EV-PLN-001 GWA Environmental Management Plan
- Annual Infrastructure Maintenance Plan
- (Requirement of the Concession Deed, Clause 22,6)
- Depot Specific Emergency Response Plans
- Safety Interface Agreements with other network operators and service providers

Registers

- Master Document Register
- Chemical & Hazardous Substance Register
- Asbestos Registers (locomotives/rollingstock)
- Asbestos Registers (Buildings)
- Environmental Compliance Register
- GWA Corrective Action Register (CAR)

Forms, Guides & Handbooks

- HR-STR-001 GWA Company Structure
- MS-FRM-002 Near Miss Hazard & Incident Form
- MS-FRM-003 GWA Data Collection & Incident Investigation Form



- HS-GUI-004 WHSE Definitions
- EV-FRM-013 GWA Aspects and Impact Register
- IN-FRM-038 Weekly Track Inspection Summary Sheet
- Induction GWA Code of Ethics and Conduct
- Induction Contractor Induction
- Dangerous Goods Initial Emergency Response Handbook (SAA/SNZ HB76:2010)

References

- AAPA Register of Heritage Sites and Cultural Sites <http://www.aapant.org.au/>
- Train Control Incident Report Program (TCIR)
- GWA IMS Database
- Concession Deed Exhibit 9 Environmental Management Plan (original)
- Concession Deed
- Environmental Impact Assessment (Dames & Moore, 1984)
- Notice of Intent (Dames & Moore, 1996)
- Northern Territory EPA Guideline for the Preparation of an Environmental Management Plan
- Centrogen Annual reports (Weed Control)
- GWA Maps Database.



A.1 GWA's CONCESSION DEED OBLIGATIONS

Note: numbering maintained from the concession deed to maintain continuity.

2. CONSTRUCTION AND OPERATIONAL MANAGEMENT

2.4. Monitoring tasks

Monitoring Task	Purpose	Comments
2.4.1 During construction phase, liaise with Landholders on fortnightly basis to discuss progress of activities and other issues which may arise	To maintain good relations with Landholders	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
2.4.2 During construction phase, monitor condition of access tracks on a monthly basis	To maintain condition of access tracks	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
2.4.3 During construction phase, implement monthly audit of safety program implementation at construction camps	To assess adequacy of safety procedures	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
2.4.4 During railway operation, ensure access track used during construction is maintained to provide access for inspection and maintenance, as required.	To facilitate future access	Refer to section 8.4.1 of this EMP
2.4.5 During railway operation, conduct annual audits of safety program implementation.	To assess adequacy of safety procedures and security arrangements	Refer to section 8.4.1 of this EMP
2.4.6 Maintain records for accidents, incidents and security breaches. Document in annual report.	To facilitate effective future management	Refer to section 10.4 of this plan



3. FIRE MANAGEMENT

3.4. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
3.4.1 Monitor and maintain condition of all fire breaks seasonally.	To keep firebreaks effective	Refer section 8.4.2 of this EMP.
3.4.2 Inspect all firefighting equipment to ensure it is serviceable and properly located monthly	To ensure firefighting equipment is available for immediate use	Refer section 8.4.2 of this EMP.
3.4.3 Annually assess and document achievements of fire management against objectives for the year.	To determine effectiveness of current and future programs.	Refer section 10.6 of this EMP.
3.4.4 Long term monitoring of fire history using aerial photography and ground truthing methods should be carried out annually.	To determine effectiveness of current and future programs	It was agreed with the EAG that this task is no longer required for the operation and maintenance of the corridor.
3.4.5 Establish and maintain a fire monitoring program using nominated photographic sites.	To monitor fire impacts	It was agreed with the EAG that this task is no longer required for the operation and maintenance of the corridor.



4. FLORA AND FAUNA CONSERVATION

4.4. Monitoring Tasks

Monitoring Task	Purpose	GWA Comments
4.4.1 Routine Inspection along the railway corridor will be undertaken on a regular basis to monitor the introduction/ spread of declared weeds.	Prevent Introduction and spread of declared weeds in accordance Weeds Management Act	Refer section 8.4.3 of this EMP
4.4.2 Visually monitor and photographically record impacts of fire on habitat and species distribution	Evaluate whether any specific protection measures are required	It was agreed with the EAG that the photographic component of this task is no longer required for the operation and maintenance of the corridor. Refer section 8.4.3 of this EMP for the visual monitoring.
4.4.3 Monitor any illegal hunting, trapping or plant collecting activities and notify the authorities promptly.	Conserve flora and fauna	Refer section 8.4.3 of this EMP
4.4.4 Record sightings and signs of feral animals during construction and operation.	Reduce the spread of feral animals	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.



5. SOIL CONSERVATION

5.4. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
5.4.1 Routine inspection of the railway corridor will be undertaken on a monthly basis during the wet, and three monthly during the dry, to identify areas of soil erosion, abutment scour, and slope instability.	To identify potential soil erosion problems	Refer to section 8.4.4 of this EMP
5.4.2 Inspections will be made at monthly intervals to identify areas that require additional brush cover to reduce wind erosion.	To reduce the impacts of wind erosion	It was agreed with the EAG that there would not be a need to add additional cover unless disturbed by GWA during maintenance activities as the coverage is now well established.
5.4.3 Inspect conditions of all roads, particularly at stream crossings, to ensure construction/ maintenance vehicles are not creating erosion (weekly during the wet)	To monitor for potential soil erosion	Refer to section 8.4.4 of this EMP
5.4.4 Biennially inspect vegetation along streams and major drainage lines and rehabilitation areas.	To monitor efficacy of program.	It was agreed with the EAG that there would not be a need to continue these inspections unless disturbed by GWA during maintenance activities as the vegetation is now well established.



6. WATER MANAGEMENT

6.4. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
6.4.1 Carry out monthly visual inspections of creek crossings and permanent water bodies for signs of environmental damage	To determine if erosion, pollution or other damage has occurred.	Refer to section 8.4.5 of this EMP
6.4.2 Sample any borehole used for drinking and have sample analysed for standard parameters (pH, EC, TDS, Turbidity Na, Mg, Ca, Cl, SO4, NO3, Fe, Mn, F, Cu, As, Ag) and bacteriological parameters. Re-deploy any borehole with non-potable water. Sample before initial use and annually.	To ensure good drinking water quality is maintained.	It was agreed with the EAG that there would not be a need to continue the water sampling as the bores are no longer used for drinking purposes.
6.4.3 Inspect bore heads for adequate sealing, before commissioning and annually, implement remedial action if appropriate.	To reduce loss of water	N/A - See comment 6.4.2
6.4.4 Annually inspect vicinity of boreholes for any source of potential contamination	To maintain high water quality	N/A - See comment 6.4.2
6.4.5 Record water levels and discharge meter readings for each bore on a monthly or quarterly basis	To monitor water supply levels	N/A - See comment 6.4.2
6.4.6 Annually review borehole water-level and abstraction records. Implement corrective action if required.	To ensure safe yield is not being exceeded	N/A - See comment 6.4.2



7. WASTE MANAGEMENT

7.4. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
7.4.1 During railway construction, routinely assess the effectiveness of pollution prevention and waste collection and disposal through visual inspection.	To identify areas where pollution prevention and waste disposal methods may be improved	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
7.4.2 During railway operation, assess on a monthly basis, the effectiveness of pollution prevention and waste collection and disposal through visual inspection.	To identify areas where pollution prevention and waste disposal methods may be improved.	Refer to section 8.4.6 of this EMP
7.4.3 Routinely check hydrocarbon storage and distribution areas for contamination.	To monitor hydrocarbon contamination	Refer to section 8.4.6 of this EMP



8. DUST AND NOISE MANAGEMENT

8.4. Monitoring Tasks

Monitoring Task	Purpose	GWA Comments
8.4.1 During railway construction, assess the effectiveness of dust and noise management through regular visual inspections and feedback from construction workforce and public, respectively.	To identify areas where dust and noise management may be improved.	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
8.4.2 During Railway operation, assess the effectiveness of dust and noise management through weekly visual inspection and feedback from operational workforce and public, respectively.	To identify areas where dust and noise management may be improved.	Refer to section 8.4.7 of this EMP



9. BITING INSECTS CONTROL

9.4. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
9.4.1 Prior to onset of wet season, consult with MEB regarding potential problem areas for mosquito breeding and discuss a possible eradication and/or monitoring program.	To ensure effective control of biting insect population.	Refer to section 8.4.8 of this EMP
9.4.2 Following every wet season, assess the effectiveness of biting insect safeguards	To identify areas where biting insect control methods may be improved	The MEB will have this data, no requirement for GWA to assess as GWA are not experts in this field.
9.4.3 During the wet season, inspect railway alignment for ponded water	To assess effectiveness of drainage systems.	Refer to section 8.4.8 of this EMP



10. DISEASE, PEST AND WEED CONTROL

10.4. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
10.4.1 Weed inspection and control will be carried out annually or seasonally along the corridor.	To reduce the distribution and spread of declared weeds.	Refer to section 8.4.9 of this EMP
10.4.2 Inspections will be made at regular monthly intervals during construction to identify and control declared weeds.	To reduce the distribution and spread of declared weeds.	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
10.4.3 To check the spread of declared weeds, DENR personnel will undertake periodic inspection of the corridor.	To reduce the distribution and spread of declared weeds.	Government agency responsibility.
10.4.4 Monitor the disposal of rubbish and cover all vessels (e.g. rainwater tanks).	Reduce breeding opportunities for mosquitoes.	Refer to section 8.4.9 of this EMP
10.4.5 Visually inspect vegetation to assess root-rot symptoms on disturbed vegetation (bi-monthly)	Monitor the spread of fungal-mediated dieback.	Refer to section 8.4.9 of this EMP
10.4.6 Monitor feral animal populations through regular bi-monthly inspections.	Monitor the distribution of feral animals.	The reconvened EAG will agree on a methodology for this as there are no defined standards by which this can be determined.
10.4.7 Maintain vigilance against the introduction of feral animal species (e.g. cats, dogs, and cane toads).	Reduce the distribution of feral animals and pests.	Refer to section 8.4.9 of this EMP



11. CULTURAL AND HERITAGE MANAGEMENT

11.6. Monitoring tasks

Monitoring Task	Purpose	GWA Comments
11.6.1 Ensure all sites which have not been disturbed or destroyed in accordance with the appropriate legal procedure are monitored, particularly during and after major construction programs and thereafter on a biennial basis.	To minimise risk of site disturbance	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
11.6.2 Undertake regular inspections of no go areas containing sites of significance to aboriginal people to ensure current construction activities are not resulting in their disturbance.	To protect culturally significant areas.	Refer to section 8.4.11 of this EMP



12. REHABILITATION AND MANAGEMENT

12.4. Monitoring Tasks

Monitoring Task	Purpose	GWA Comments
12.4.1 Inspections will be made at bi-monthly regular intervals after construction is complete to over sow bare areas with appropriate local seed mixes, as necessary.	To assist in revegetation.	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
12.4.2 After Rehabilitation begins, colonisation by animals from adjacent areas will be monitored annually.	To assess efficacy of rehabilitation.	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.
12.4.3 The success of rehabilitation will be monitored annually for the first two years after construction by qualified personnel.	To assess efficacy of rehabilitation.	N/A
12.4.4 Vegetative cover will be documented annually by written description, photographic record and the cover/ abundance rating of representative areas.	To assess efficacy of rehabilitation.	It has been agreed with the EAG that significant construction activities will have a project specific CEMP developed which will cover the requirements of this condition.

Addendum. Mangroves, Mangrove Mud and Potential and Actual Acid Sulphate Soils

Monitoring Tasks

Monitoring Task	Purpose	GWA Comments
Where PASS and AASS are known to exist conduct weekly water quality monitoring along the railway embankment during construction. Review frequency at end of construction. Monitor water temperature, pH, conductivity and salinity. Monitoring sites to be determined and reviewed in consultation with DIPL.	To determine if acid formation has occurred.	N/A
Carry out regular (weekly) visual inspections of the mangrove stands along the railway embankment.	To determine if dieback or other damage has occurred.	Refer to section 8.4.12 of this EMP



A.2 Environment Policy EV-POL-001

ENVIRONMENTAL POLICY

Genesee & Wyoming Australia (GWA) are committed to managing our business operations and activities in an environmentally responsible manner with an emphasis on achieving sustainable development and protection of the environment.

As a major national rail transport organisation, GWA recognises that our operations pose risks to the environment and will therefore take all reasonable and practicable measures to ensure adverse impacts to the environment are prevented or minimised.

To achieve this GWA will:

- Comply with applicable environmental laws and regulatory requirements;
- Establish and maintain an environmental management system utilising the framework of Australian Standard AS/NZS 14001;
- Establish objectives and targets for continual improvement in environmental performance;
- Ensure our staff have the skills and resources to comply with this policy;
- Ensure that areas of significant environmental risk, such as land degradation, community impact and the use and handling of hazardous materials are appropriately managed;
- Contribute to sustainable development through the responsible use of natural resources;
- Minimise emissions to the environment;
- Take appropriate action to rehabilitate and/or mitigate any environmental harm caused by our operations;
- Communicate this policy to and consult with employees, contractors and other relevant parties as appropriate.

Protection of the environment is both an individual and shared responsibility. All managers, supervisors, employees and contractors are accountable for protecting the environment from potential risks and impacts of operations and activities under their control. GWA will ensure that they follow established safe systems of work and take all reasonable care to ensure their own safety and that of the environment.

Luke Anderson
Chief Executive Officer
Genesee and Wyoming Australia