

Appendix G Framework CEMP

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Glossary

Term	Definition
CEMP	Construction Environmental Management Plan
dB(A)	Decibels using the 'A' weighted scale, measured according to the frequency response of the human ear.
DECC	NSW Department of Environment and Climate Change
DEWHA	Department of Environment, Water, Heritage and the Arts
DoP	NSW Department of Planning
DPI	Department of Primary Industries
DWE	Department of Water and Energy
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ESCP	Erosion and Sedimentation Control Plan
EWP	Environmental Work Procedures
EWSP	Environmental Work Site Plans
JSEA	Job Safety and Environmental Analysis
MCoA	Minister's Conditions of Approval
NPWS	National Parks and Wildlife Services
PHUP	Pacific Highway Upgrade Project
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
REF	Review of Environmental Factors
ROL	Road Occupancy Licence
RTA	Roads and Traffic Authority
SoC	Statement of Commitments
The project	The proposed Glenugie Upgrade project
TSC Act	<i>Threatened Species Conservation Act 1995</i>

1 Introduction

1.1 Purpose and scope

This Framework Construction Environmental Management Plan (Framework CEMP) specifies the NSW Roads and Traffic Authority (RTA) requirements for the actions and environmental controls required during construction of the Glenugie Pacific Highway upgrade (the project). The primary purpose of the Framework CEMP is to provide a framework reference document detailing the RTA's environmental commitments and the environmental impact mitigation and management measures for project construction. The Framework CEMP also documents the processes for implementing, monitoring and auditing the project's environmental impact mitigation and management measures. The Framework CEMP applies to all staff and sub-contractors during project construction.

The Framework CEMP is a working document for the construction contractor to ensure that obligations and commitments provided in the Environmental Assessment, Submissions Report, Statement of Commitments and the Minister's Conditions of Approval (MCoA) are made known to all staff (including sub-contractors) and implemented effectively as an integral part of project construction. The Framework CEMP is to be updated, as required, to ensure ongoing relevance to the project and effective environmental management. Review of the Framework CEMP will reflect continuous improvement of processes, controls and procedures.

The Framework CEMP has been prepared in accordance with the *Department of Planning's Guideline for the Preparation of Environmental Management Plans* (DIPNR 2004). The Framework CEMP contains core environmental management system elements and follows the principles of ISO 14001 – 1996. The Framework CEMP must be approved by the RTA and the project's Environmental Representative prior to the commencement of work on-site, apart from those activities that may not be included in the definition of "construction" in the MCoA (such as construction compounds or other minor activities).

Copies of the Framework CEMP (and any updates) would be provided to DoP and relevant agencies and made publically available on the project web site. The Framework CEMP has been included in the project environmental assessment report so that it can form part of the project approval application and to allow for early commencement of project construction.

1.2 Overview of project environmental assessment and approval

Assessment and determination of the project is under Part 3A of the *Environment Planning and Assessment Act 1979* (EP&A Act). This process requires preparation of an environmental assessment report. The environmental assessment identifies environmental impact mitigation and management requirements for the project and provides a Draft Statement of Commitments.

The Framework CEMP would be updated as necessary following approval of the project. The update would be approved by RTA and the project's Environmental Representative.

1.3 Project description

1.3.1 Overview

The project involves construction and operation of a new section of highway, about seven kilometres in length, to duplicate the existing Pacific Highway at Glenugie. The new section of highway is to be located on the eastern side of the existing Pacific Highway within Glenugie State Forest, between Franklins Road and Eight Mile Lane. The existing highway is to be retained as a local access road.

The principle driver for the project is to improve road safety and travel efficiency within the upgrade section. The project will also add to the safety and travel efficiency benefits already provided by other Pacific Highway upgrade projects.

The project follows the preferred alignment for the Wells Crossing to Iluka Road Pacific Highway upgrade for the section of highway between Franklins Road and Eight Mile Lane at Glenugie. The northern end of the project, at Eight Mile Lane, is located about 68 km north of Coffs Harbour and 15 km south of Grafton.

1.3.2 The approved project and staging

Approval has been given [insert date] for a motorway style upgrade for the section of the existing highway between Franklins Road and Eight Mile Lane. This upgrade will involve construction of about seven kilometres of dual carriageway with two lanes in each direction. The median area of the new road would also be wide enough to accommodate future upgrading to three lanes in each direction, if required. At its southern end, the new road will tie into the existing highway just to the south of Franklins Road. At its northern end, the new road will tie into the existing highway just south of Eight Mile Lane. The existing highway will be retained as a local access road.

Approval has also been given to stage the construction of the upgrade, with an initial upgrade involving the following combination of arterial and motorway style road:

- A section of motorway style road, about 2.5 km in length, at the northern end of the upgrade route. In this section, the existing highway will become a local access road.
- A section of arterial style road, about four kilometres in length, at the southern end of the upgrade route, to carry southbound traffic. In this section, the existing highway will become the northbound carriageway.
- The northern end of the upgrade will connect to the existing highway via a section of two lane road, about 1.5 km in length,
- The southbound carriageway will connect to the existing highway near Franklins Road.

1.4 Construction environmental management system

The construction environmental management system for the project complies with the requirements of ISO 14001. The construction environmental management system comprises the overarching Framework CEMP (this document) and additional procedural and supporting documents providing more detailed environmental management specifications, including the Construction Environmental Management Plan (CEMP) and associated sub-plans. The structure of the construction environmental management system, showing possible sub-plans that may be required for the project, is presented in **Figure 1-1**. A register of the environmental management documentation comprising this system will be developed and maintained for the project.

The CEMP and associated sub-plans that underpin the construction environmental management system will be prepared by the construction contractor in accordance with this Framework CEMP and the requirements of the MCoA and other approvals. Procedures, checklists, forms and other components of the environmental management system would also be developed by the construction contractor. These would include:

- Environmental site inspection checklists.
- Environmental inspection reports (for minor issues).
- Environmental incident reports.
- Environmental improvement notices.
- Environmental action registers.
- Environmental monitoring reports.
- Audit reports.
- Non-compliance reports.

1.4.1 Construction environmental management plan

The CEMP describes the construction contractor's system for minimising and managing environmental risks associated with project construction. The objectives of the CEMP are to:

- Provide certainty of delivery of the prescribed environmental outcomes during all phases of the project construction.
- Implement a system for compliance with all applicable requirements, obligations and commitments for the project including:
 - Relevant legislative requirements.
 - Licences, approvals and/or permits needed to construct and/or operate the project.
 - Obligations and commitments from the environmental assessment process (Environmental Assessment Report and Submissions Report).
 - Minister's Conditions of Approval.
 - The RTA's requirements including technical criteria.
 - Non-legislative requirements and commitments (e.g. International Standard for Environmental Management Systems - ISO 14001:1996; *NSW Government Environmental Management Systems Guidelines*; RTA's Corporate Policy and Environmental Management System (EMS); and best practice environmental management, design and sustainability principles).
- Develop, implement and monitor measures that minimise pollution and optimise resource use.

The CEMP is prepared in accordance with a number of guidelines including:

- Relevant RTA specifications and guidelines.
- *Guideline for the Preparation of Environmental Management Plans* (DIPNR 2004).
- AS/NZS ISO 14001:1996 – Environmental Managements Systems.

The CEMP includes:

- A description of the project, including construction staging.
- Details of environmental management documentation.
- Details of statutory compliance requirements, including relevant guidelines and policies.
- A description of construction activities and risk assessment.
- Details of the environmental management structure and responsibilities.
- Details of environmental training.
- Incident management protocols.
- Environmental monitoring, inspections, reporting and auditing.

- Document management and control.
- Environmental control plans (for environmental aspects that are not considered a significant risk and do not have sub-plans).

1.4.2 Sub-plans

Detailed sub-plans will be prepared to address the risks and impacts relating to the key environmental issues. These sub-plans will:

- Document the aspects, impacts, safeguards and monitoring requirements for each key environmental element.
- Nominate who is responsible for implementing the environmental safeguards.
- Nominate the frequency/timing of safeguard implementation.

The MCoA will define the content and issues that must be addressed in the sub-plans. The key issues for which sub-plans will be prepared are identified in **Figure 1-1**. Other environmental management documents, such as an Audit and Inspection Plan, Environmental Incident Management Plan, Construction Complaints Management System, Compliance Tracking Program, and Community Communication Strategy may also be required.

1.4.3 Environmental work site plans

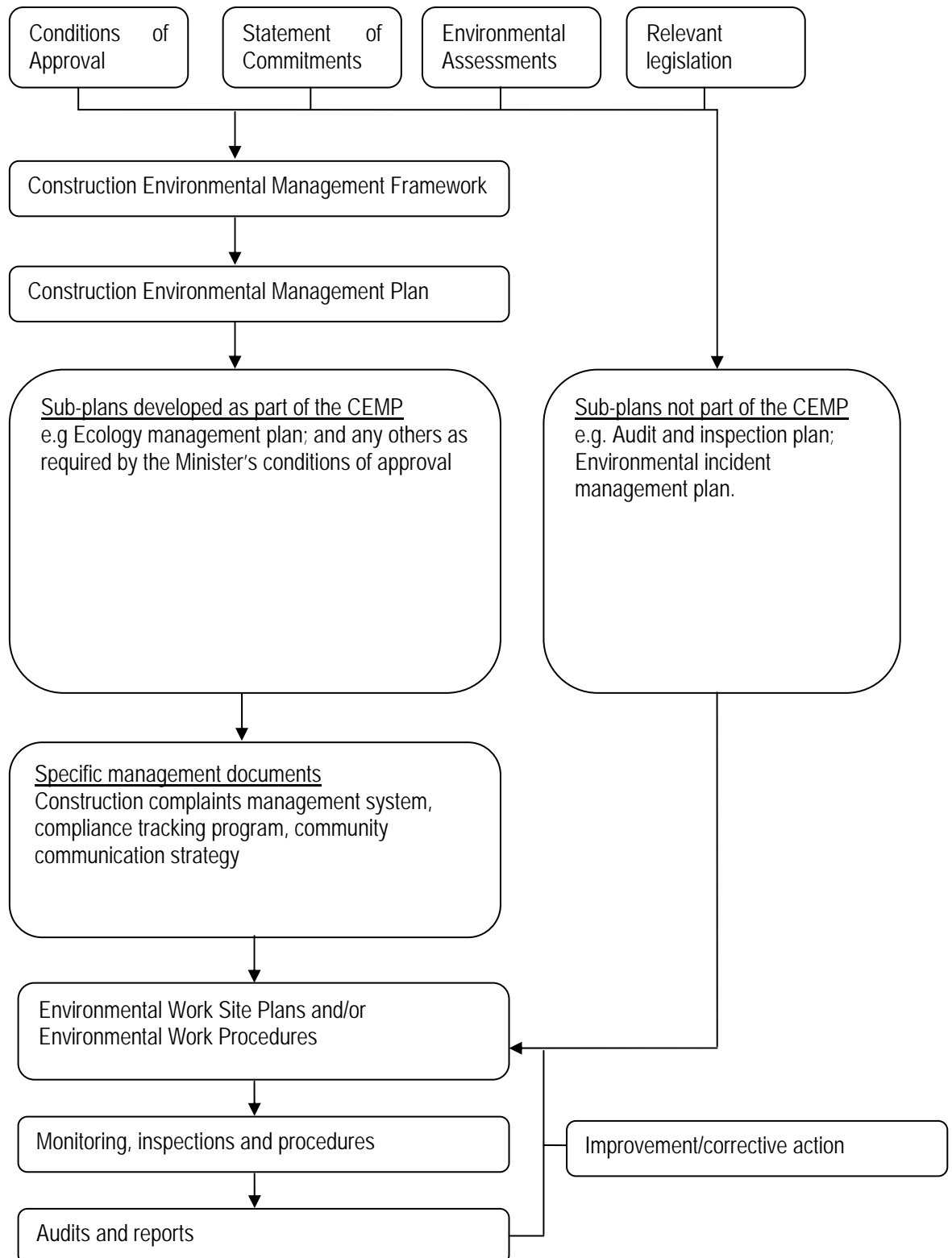
Depending on the construction contractor's Environmental Management System (EMS), Environmental Work Site Plans (EWSPs) may be prepared for each stage or area of construction as required. Each EWSP will consist of maps detailing all the significant features of the work to be undertaken as part of the upgrade. This may include information such as:

- The different stages of the construction works.
- Areas where clearing will occur.
- Location of temporary stockpiles.
- Location of sensitive receivers.
- Areas of significant ecological or historical value.
- The location of environmental controls.

1.4.4 Environmental work procedures

Depending on the construction contractor's EMS, Environmental Work Procedures (EWPs) may be developed for repetitive or critical construction activities. These EWPs will specify actions to be undertaken to ensure compliance with the environmental requirements and will draw on the mitigation measures detailed in the CEMP and sub-plans. Examples of activities for which EWPs may be required include topsoil stripping and stockpiling, construction of sediment basins, sediment basin management, chemical spill management and plant noise management.

■ **Figure 1-1 Environmental management framework**



2 Objectives and targets

The RTA's Environmental Policy (**Attachment A**) includes a commitment by the RTA to undertake its activities in an environmentally responsible manner and effectively managing any risks that may adversely affect the environment. Key elements of the Policy include effective environmental management of all activities, on-going communication and awareness raising, active reporting of environmental incidents, continuous learning from experience, and continuous improvement in environmental performance.

Consistent with the RTA's Environmental Policy, preliminary environmental objectives and targets have been established for the project and are detailed in **Table 2-1**. These objectives and targets, and the strategies for achieving the targets, will be reviewed following project approval and incorporated into the CEMP and associated sub-plans, with detailed specifications provided in EWPs as required. Additionally, so that the objectives and targets remain realistic and relevant for maintaining or improving environmental performance, a systematic review of objectives and targets, at both the CEMP and sub-plan level, will be carried out when one of the following occurs:

- Changes in environmental policy.
- Changes in relevant legislation that impact on environmental control limits.
- Action by an enforcement authority.
- Changes in environmental risk.
- Relevant environmental objectives have been met or repeatedly not achieved.
- Yearly review (minimum frequency of review).

■ **Table 2-1 Preliminary project environmental objectives and targets**

Environmental issue	Objective	Target
Ecology	Minimise adverse impacts on flora and fauna, including terrestrial and aquatic ecosystems.	<ul style="list-style-type: none"> ■ Minimise construction footprint and clearing of native vegetation. ■ Provide effective fauna crossing points along road alignment. ■ Minimise impacts on threatened species or endangered ecological communities. ■ Successful revegetation of road side areas and medians using endemic native plant species. ■ Effective soil and water management during construction and operation. ■ Provide offsets for unavoidable impacts on important vegetation and habitat
Channel structure	Minimise adverse impacts on the channel structure of receiving waters.	<ul style="list-style-type: none"> ■ Effective control of stormwater runoff direction and intensity through appropriate design, location and sizing of drainage structures. ■ Effective soil and water management during construction and operation.
Operational traffic and transport	Minimise impacts on access to Glenugie State Forest and the local road network.	<ul style="list-style-type: none"> ■ Construct a new service road to maintain an efficient access route for Forests NSW to between Eight Mile Lane and Lookout Road within Glenugie State Forest. ■ Maintain efficient and safe access routes to/from the local road network and properties.
Operational noise	Minimise operational noise impacts.	<ul style="list-style-type: none"> ■ Confirm results of environmental assessment (no significant operational noise impacts) through monitoring 12 months after completion of construction. ■ Implement feasible and reasonable noise mitigation and management measures if need is indicated by post-construction monitoring.
Aboriginal heritage	Minimise impacts on Aboriginal cultural and archaeological heritage.	<ul style="list-style-type: none"> ■ Appropriate management and protection measures implemented for any previously unidentified Aboriginal sites discovered during construction. ■ DECC notified of any previously unidentified Aboriginal sites discovered during construction. ■ Compliance with the NSW Government's Aboriginal Participation in Construction Guidelines.
General construction impacts: Construction traffic	Minimise impacts associated with construction traffic, including impacts on traffic flow, road safety, local road surfaces and access.	<ul style="list-style-type: none"> ■ No significant impacts on traffic flow on the Pacific Highway or local roads as a result of construction activities. ■ Maintain suitable, safe access to local road network, Glenugie State Forest and properties throughout construction. ■ Any damage to local roads as a result of construction activities identified and repaired in consultation with Clarence valley Council.

Environmental issue	Objective	Target
General construction impacts: Construction noise	Minimise impacts of construction noise and vibration.	<ul style="list-style-type: none"> Construction noise levels contained within predicted limits throughout construction period. All potentially affected residents given timely, prior notice of construction activities. All noise complaints promptly responded to and acted upon.
General construction impacts: Soil, water and riparian management	Minimise soil erosion and associated potential for impacts on receiving waterways and riparian areas.	<ul style="list-style-type: none"> All discharges of water off-site conform with EPL (if required). No significant impacts on waterways. No spills of chemical or fuels into waterways. Maximise the diversion of stormwater runoff onto the construction site. Effective soil and water management during construction.
Non-Aboriginal heritage	Minimise impacts on non-Aboriginal heritage.	<ul style="list-style-type: none"> Appropriate archival recording made, in accordance with the Department of Planning (Heritage Branch) guidelines, of the remnant section of the 1915 branch rail line to be impacted by the project. Appropriate management and protection measures implemented for any previously unidentified non-Aboriginal heritage sites or relics discovered during construction. Department of Planning (Heritage Branch) notified of any previously unidentified non-Aboriginal heritage sites discovered during construction.
Land use and socio-economic impacts	Minimise impacts on land use, including forestry operations.	<ul style="list-style-type: none"> Forests NSW provided with opportunity to remove harvestable timber from affected area of Glenugie State Forest before the start of construction. Requirements for relocation, diversion and/or protection of existing utilities identified before the start of construction and appropriate measures implemented in consultation with service providers. Customers given timely prior notice of service disruptions. No significant service disruptions during construction.
Greenhouse gasses and climate change	Minimise greenhouse gas emissions and energy consumption.	<ul style="list-style-type: none"> Whole of life reductions in greenhouse gas emissions and energy consumption considered in design. Greenhouse gas emissions minimised during construction through selection of materials and efficient operation of construction plant and equipment. Hierarchy of waste avoidance, reduction, reuse, and recycling incorporated into all aspects of construction, including procurement of materials.
Landscape character and visual impacts	Minimise visual and landscape character impacts.	<ul style="list-style-type: none"> Detailed design of built elements is consistent with the <i>Pacific Highway Urban Design Framework</i> (RTA 2005). Successful revegetation and landscaping of road side areas and medians using native, locally indigenous plants.

Environmental issue	Objective	Target
Community notification complaint resolution	Minimise impacts on the local community.	<ul style="list-style-type: none"> ■ Potentially affected community members and stakeholders kept informed of project status and construction schedule. ■ Potentially affected community members and stakeholders given timely prior notice of construction activities that may affect traffic, access, noise or general amenity. ■ All complaints and enquiries relating to construction promptly responded to with appropriate action.
Environmental induction and site awareness	All work staff to be informed of the project environmental requirements, including the requirements and responsibilities for implementing impact mitigation and management measures and reporting environmental incidents.	<ul style="list-style-type: none"> ■ Site-specific environmental inductions provided to all work staff before starting work on-site. ■ Specialised training in environmental management procedures (such as erosion and sediment control) provided to all relevant staff prior to starting work on-site.
Environmental approvals	Project to be constructed in accordance with planning, environmental and other approvals.	<ul style="list-style-type: none"> ■ No identified non-compliances with approvals.

3 Legislative and other requirements

3.1 Key legislative requirements

Table 3-1 provides a list of legislation, policies, guidelines and standards of relevance to the project. Changes may occur to some existing legislation prior to completion of the project. If this occurs, it will be necessary for the CEMP to be reviewed and amended accordingly. Licences, permits and approvals applicable to the project will be retained by the Construction Manager.

■ **Table 3-1 Environmental legislation relevant to the project**

Legislation and administering authority	Summary of requirements	Timing
<i>Environmental Planning and Assessment Act 1979</i> – NSW Department of Planning	<ul style="list-style-type: none"> ■ The project has been approved under Part 3A of the Act as critical infrastructure. Any changes to the project will require additional assessment. Those changes not consistent with the MCoA may require additional approval (modification of the MCoA). ■ Compliance with the MCoA via a compliance tracking program. 	<ul style="list-style-type: none"> ■ Construction contractor to advise RTA of any changes that require additional assessment through the completion of appropriate EIA (EA or REF Consistency Report) in accordance with RTA guidelines. ■ RTA and construction contractor would agree on responsibilities in compliance tracking program.
<i>Protection of the Environment Operations Act 1997</i> – NSW DECC Environmental Protection Authority Branch	<ul style="list-style-type: none"> ■ Environment protection licence(s) under the Act may be required. ■ Requirement to prevent pollution. ■ Duty to notify the DECC of any environmental harm. 	<ul style="list-style-type: none"> ■ Environmental protection licence to be obtained by the construction contractor prior to the commencement of any scheduled activity. ■ The construction contractor/ RTA to prevent pollution. ■ The construction contractor/ RTA to notify the DECC of any actual or potential environmental harm caused by the project.
<i>Roads Act 1993 (RTA)</i>	<ul style="list-style-type: none"> ■ Establishes procedures for closing of public roads, road works, and traffic control devices. 	<ul style="list-style-type: none"> ■ The construction contractor is to obtain Road Occupancy Licences (ROL) for use of lanes, and consult on establishing access / exit to construction sites, and prior to transport of spoil from the construction sites.
<i>Occupational Health and Safety Act 2000 and OHS Regulation 2001</i> – WorkCover (storage licence) and DECC (transport licence for dangerous goods)	<ul style="list-style-type: none"> ■ Storage and transport of dangerous goods in to be in accordance with the Act. Licence required for storage and/or transport of prescribed quantities of dangerous goods. 	<ul style="list-style-type: none"> ■ The construction contractor is to obtain Road Occupancy Licences (ROL) for use of lanes, and consult on establishing access / exit to construction sites, and prior to transport of spoil from the construction sites.

Legislation and administering authority	Summary of requirements	Timing
Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> – Commonwealth DEWHA	<ul style="list-style-type: none"> Applicable to environmental impacts on Commonwealth land and impacts on matters of national significance. 	<ul style="list-style-type: none"> The project may require approval under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>. The construction contractor is to advise the RTA of any changes that require assessment through the completion of appropriate EIA (EA or REF), prior to construction of the component(s).
<i>Waste Avoidance and Resource Recovery Act 2001</i> – DECC	<ul style="list-style-type: none"> To reduce environmental harm and provide for the reduction in waste generation in line with ESD principles. 	<ul style="list-style-type: none"> The objective of the Act would be addressed through environmental management.
<i>Rural Fires Act 1997</i> - NSW Rural Fire Service	<ul style="list-style-type: none"> To provide for the prevention, mitigation and suppression of bush and other fires across the State. 	<ul style="list-style-type: none"> As the project has been approved under Part 3A of the EP&A Act, approval from the NSW Rural Fire Service is not required. The construction contractor will consult the NSW Rural Fire Service where required, prior to the development of bushfire prone land.

3.2 Project environmental obligations

The environmental obligations for the project are defined by a number of documents and approvals, which need to be addressed collectively in project implementation. Specifically, the environmental obligations for the project are defined by the following documents and approvals:

- Environmental assessment, including the Draft Statement of Commitments.
- Submissions Report.
- Minister's Conditions of Approval (MCoA).
- Environmental Protection Licence (EPL).
- Other approvals as required.

A compliance tracking program would be developed by the RTA and construction contractor to address all project obligations. The RTA and construction contractor would agree on the responsibilities for implementing and demonstrating compliance for each identified obligation.

3.3 Compliance standards and guidelines

Compliance standards, policies and guidelines relevant to the project will be detailed in the respective CEMP sub-plans. The requirements of these standards will also be considered during the preparation of EWSPs and EWPs.

4 Environmental risk assessment

4.1 Environmental risk assessment for CEMP preparation

Identification of the environmental aspects and impacts of construction is central to the selection of appropriate environmental protection measures. The environmental aspects of construction are those activities that have the potential to result in environmental impact. The relationship between aspects and impacts is one of cause and effect. The process of identifying impacts involves breaking down each activity into its environmental aspects.

For the CEMP, aspects and impacts must be identified for all construction activities that have the potential to:

- Impact ecology, channel structure, traffic and transport, heritage, water quality, or land use.
- Cause soil erosion and sedimentation of waterways.
- Generate noise.
- Result in discharge or release of pollutants to water, air or land.
- Cause visual or landscape impacts.
- Present environmental hazards or risks
- Generate wastes.

Once the environmental aspects and associated impacts have been identified, the relative level of risk must be assessed and ranked using the risk analysis matrix presented in **Figure 4-1**. Each environmental risk is categorised based on:

- The environmental aspect.
- Relative scale of the potential impact.
- Type of potential impact.
- Likelihood of occurrence.

The risk rankings identified via the risk assessment must then be documented in a table (see **Attachment B**) and used to develop the impact mitigation and management strategies for the CEMP and associated sub-plans and procedures.

■ **Figure 4-1 Risk analysis matrix**

	Consequence		
Likelihood	High	Medium	Low
High	HH	HM	HL
Medium	MH	MM	ML
Low	LH	LM	LL

HH = Extreme Risk	Serious, long term environmental impact/ significant prosecution fines
HM = High Risk	Long term impact/ major breach of legislation
MH, MM, HL = Moderate Risk	Short term impact/ investigation or report to regulatory authority
ML, LH, LM, LL = Low Risk	Minor environmental impact

4.2 Preliminary risk analysis

A risk analysis has been undertaken as part of the environmental assessment. This risk analysis was used to confirm the key issues and identify the scope of environmental impact mitigation and management measures required for the project. The results of this risk analysis need to be considered in conjunction with the MCoA in the risk assessment undertaken for the CEMP.

4.3 Ongoing risk assessment

The environmental risk assessment will be reviewed regularly after project approval to ensure the risk registers remains current. During construction, the environmental risk assessment will be updated:

- Regular six monthly review of the risk assessment.
- If a significant incident or impact occurs.
- If activities or the project changes.

An assessment of potential risk to the environment will also be undertaken as part of the development of environmental work procedures for specific activities or works in specific areas. This should include both the direct impact of the activity and the impact of any incident that could result from the activity. This will be incorporated through the Job Safety and Environmental Analysis (or similar). Outcomes from the ongoing risk assessments will be incorporated into the appropriate CEMP sub-plans and Construction Work Method Statements as amendments to those documents.

All sub-contractors are required to operate within the requirements of the CEMP and associated documents. Based on a risk assessment, a sub-contractor may be required to develop a project-specific Environmental Management Plan, or Work Method Statement, to confirm that their processes and procedures conform to the approved CEMP or sub-plans. All sub-contractors are also required to comply with the MCoA and all licenses and permits for the project. All sub-contractors will be required to demonstrate their environmental performance history and capability.

5 Roles and responsibilities

5.1 Project team

Appropriate responsibilities are provided to ensure effective environmental management for the duration of the project. The responsibility and authority for environmental performance of key personnel in the project team is summarised in **Table 5-1**. These responsibilities would be reviewed once the construction contractor is appointed and their team is known. For all key management positions a duty statement containing environmental responsibilities would be prepared and the individual appointed to the position would be required to review and sign-off on their responsibilities.

The Department of Planning or the RTA may also require the appointment of an Environmental Representative to the project. This individual would be independent of the construction contractor and would have the power to order construction activities to cease immediately if a significant impact had occurred or was likely to occur. Other responsibilities of the Environmental Representative could include:

- Approval of the CEMP by the RTA and the project's Environmental Representative prior to the commencement of work on-site.
- Regular environmental site inspections.
- Regular auditing of compliance and/or implementation of construction management plans.
- Approval of minor modifications to the CEMP, sub-plans and other environmental management documents.
- Liaison with other government agencies.

■ **Table 5-1 Roles and responsibilities of project team personnel**

Role	Responsibility
RTA Project Manager	<ul style="list-style-type: none">■ Review and endorse the CEMP and sub plans in conjunction with the Construction Manager, Environmental Manager and relevant government agencies.■ Ensure all statutory approvals, licences and permits are obtained prior to the commencement of construction works.■ Ensure all environmental planning documents, MCoA and other approvals are complied with.■ Liaise with government agencies including DoP, DECC, DWE and DPI.■ Participate in environmental audits and undertake regular site inspections.

Role	Responsibility
Construction Manager	<ul style="list-style-type: none"> ■ Ensure Construction Method Statements are implemented appropriately include environmental controls. ■ Ensure that sub-contractors comply with all CEMP Sub Plans and report any non-conformances to the project engineer. ■ Be responsible for receiving and responding to complaints regarding construction. ■ Provide induction, training and educational resources to staff and sub-contractors. ■ Reporting where required. ■ Ensure sufficient resources are available and planning is undertaken to comply with environmental requirements.
Environmental Manager	<ul style="list-style-type: none"> ■ Be responsible for all environmental management plans including sub-plans. ■ Be responsible for considering and advising on matters specified in the conditions of consent, and compliance with such matters. ■ Review, and modify where required, each of the management plans as required. ■ Receive and respond to complaints. ■ Facilitate an induction and training program for all persons involved with the construction and operation. ■ Ensure compliance with auditing and corrective action where required.
Project engineer	<ul style="list-style-type: none"> ■ Liaise closely with the Construction Manager to ensure that the environmental controls and procedures contained in the CEMP are implemented. ■ Conduct regular checks of the site to ensure environmental controls e.g. sediment fences and dust suppression are functioning effectively. ■ Where applicable, the project engineer will be responsible for ensuring that any work performed by external parties such as utility authorities meets with the requirements of this CEMP and sub-plans, including identifying and documenting the environmental risks of the proposed works.
Foreman/Superintendent	<ul style="list-style-type: none"> ■ Report to the project engineer and will have a direct role in the compliance with identified environmental procedures and controls. ■ Be responsible for checking the site on a regular basis and ensuring that regular maintenance is undertaken to minimise environmental impacts. ■ Ensure that personnel are provided with appropriate environmental "toolbox" training. ■ Where applicable the Foreman/Superintendent will be responsible for ensuring that any work performed by external parties such as utility authorities meets with the requirements of this CEMP and sub-plans, including identifying, documenting and mitigating the environmental risks of the proposed works.
Construction personnel and other staff	<ul style="list-style-type: none"> ■ Attend all environmental training required and adhere and remain familiar with the principles covered in the training session(s). ■ Undertake all activities in accordance with agreed procedures and work methods. ■ Ensure that they are aware of the contact person for environmental matters. ■ Ensure that any clearances are obtained from the environmental team where required. ■ Report any activity that has resulted, or has the potential to result in an environmental incident.

5.2 Sub-contractors

Sub-contractors present the greatest environmental risks to a project due to:

- Their detachment from the main construction delivery teams, and therefore the potential for poor communication regarding environmental risks.
- The large number of sub-contractors on site.
- Sub-contractors operating under a different management system from the contractors.

Project specific environmental management requirements will be included in the selection and management of sub-contractors working on site.

The CEMP will ensure that all persons on the project including sub-contractors and their employees comply with the relevant environmental requirements. As a minimum, sub-contractors and their employees will be required to comply in full with the CEMP and sub-plans. Sub-contractor personnel will be included in the on-site induction process.

Sub-contractors working on the project will be required to:

- Observe subcontract and statutory requirements relating to environmental protection and other environmental legislation and to follow instructions issued by the construction contractor's management and supervisory personnel.
- Nominate site representatives to liaise with the construction contractor's representatives with respect to, and take responsibility for, environmental requirements for the site activities.
- Adhere to the construction contractor's management system as it applies to their operations on the site.
- Co-operate fully with site emergency incident procedures and consultative arrangements.
- Follow procedures incorporated in the CEMP.

The construction contractor will ensure that the work of sub-contractors is monitored through the site inspection process. Observations will be made by relevant personnel to assess the effectiveness of the environmental protection measures being used on site by the subcontractor and to determine compliance with the requirements of the CEMP.

Internal audits will also be undertaken by the Construction Manager to assess:

- Communication with sub-contractors.
- Compliance with contractual requirements.
- Knowledge of and compliance with the CEMP.
- Work procedures and environmental management controls used on site.

6 Training awareness and competence

6.1 General

Three main forms of training will be provided on site:

- Site induction.
- Environmental management training.
- "Toolbox" training.

Records of induction and training will be kept on file including the type of training carried out, dates, names and trainer details. Inductees will be required to sign-off that they have been informed of the environmental issues and that they understand their responsibilities.

6.2 Site induction (environment and OH&S)

Before working on site, all personnel and sub-contractors will undertake a site induction incorporating environmental requirements. The induction will address a range of environmental awareness issues including but not limited to:

- The CEMP.
- Legal requirements including due diligence, duty of care and potential consequences of infringements.
- Environmental responsibilities.
- Conditions of licences, approvals and permits.
- Significant environmental issues and areas of the site including identification of boundaries for clearing and construction work, sediment control areas of protected flora and fauna and any "no go" areas in sensitive parts of the site, location of rubbish bins, washing, refuelling and maintenance of vehicles, plant and equipment.
- Environmental management techniques for key environmental elements.
- Incident management and emergency plans.
- Reporting process for environmental harm/incidents.
- Protection and maintenance of environmental controls.

The training will generally be prepared by the Environmental Manager or delegate.

6.3 Environmental awareness training

Targeted environmental management training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. This environmental training will aim to achieve a level of awareness and competence appropriate to their assigned activities.

The target groups and suggested training topics are shown in **Table 6-1**.

■ **Table 6-1 Possible training topics**

Target Group	Topic
Project engineer	<ul style="list-style-type: none"> ■ Content and requirements of the CEMP and sub-plans.
Work crew	<ul style="list-style-type: none"> ■ Management and maintenance of sediment basins and controls. ■ Working near sensitive receivers or waterways. ■ Management of potentially noisy activities. ■ Incident response.
Emergency response crew	<ul style="list-style-type: none"> ■ The location of emergency response equipment. ■ The use of such equipment. ■ Safety issues. ■ Internal notification procedures. ■ Disposal of clean up materials.

6.4 Toolbox Training

'Toolbox' training will assist in communicating relevant information to the workforce and providing feedback on issues of interest or concern. "Toolbox" training will be prepared and delivered by the project engineers or site foreman. Environmental work procedures detail the required subjects to be addressed in 'tool box' talks. 'Toolbox' training topics may also include:

- The efficient use of plant and materials.
- Waste management, minimisation and recycling.
- Noise and vibration minimisation.
- Management of hazardous materials.
- Dust control.
- Wastewater control.
- Work methods.

Records of toolbox talk topics and persons attending will be retained on site.

7 Incident and emergency preparedness and response

7.1 Emergency planning

An example emergency contacts list is included in **Attachment C**.

7.2 Preparedness

The key to effective prevention of incidents is monitoring, surveillance and training. During construction activities, inspections and preventative actions will include:

- Daily inspections of active work sites.
- Completion of routine environmental checklists.
- Issue and quick close-out of non-compliance notices.
- Maintenance of constant supervision on site.
- On-going environmental training.
- Environmental audits of work sites, sub-contractors and compliance issues.

Environmental and safety information on hazardous substances (e.g. Materials Safety Data Sheets) will be available at the main site office and where such substances are to be stored. Spill kits and other emergency supplies (e.g. silt fences, pumps) would also be located where required.

Testing of environmental response procedures may be conducted in areas where a pollution risk is present, such as in workshops. Personnel involved in emergency response activities will be provided with specific training. An up-to-date list of emergency response personnel and organisations will be maintained at the main office and compounds.

7.3 Notification

An incident management procedure would be developed by the construction contractor in compliance with the MCoA and other requirements. These requirements include the RTA's *Incident Classification and Management Procedure* and *Incident Reporting Form*. The RTA Environment Branch must be notified of all environmental incidents.

7.4 Incident investigation

To prevent repeat occurrences, all incidents will be documented, investigated and responded to with appropriate action plans. Where lessons are learnt from the investigation or current procedures are identified as being ineffective, the CEMP will be revised by the Environmental Manager, or their nominated delegate, to include the improved procedures or requirement.

An environmental investigation includes the following basic elements:

- Identifying the cause, extent and responsibility of the incident.
- Identifying and implementing the necessary corrective action.
- Identifying the personnel responsible for carrying out the corrective action.
- Implementing or modifying controls necessary to avoid a repeat occurrence of the incident.
- Recording any changes in written procedures required.
- Advising the environmental authority if any substantial pollution has occurred.

8 Environmental monitoring, inspections and auditing

8.1 Inspections

There will be a number of different types of inspection programs. These may include:

- Construction diaries.
- Audits.
- Non-conformance investigations.
- Incident investigations.
- Erosion and sediment inspections.
- Regular, routine reporting against Environmental Site Inspection Checklists (see example in **Attachment D**).

8.2 Environmental monitoring

Environmental monitoring, involving the collection and interpretation of data, may be undertaken for key environmental issues to:

- Assess the effectiveness of environmental protection measures being implemented through the CEMP, sub-plans and work procedures.
- Identify the need for additional environmental management measures or modifications to existing strategies.

The scope, timing, methodology and responsibilities for environmental monitoring programs would be specified in the respective CEMP sub plans for each key issue. Monitoring may range from formal sample collection, analysis and measurement, through to more qualitative assessments based on observations.

8.3 Audits

8.3.1 Internal

A program of internal audits will be undertaken. Elements that may be audited include:

- Compliance with the MCoA and SoC.
- Compliance with the CEMP.
- Compliance with other approval, permit and licence obligations.
- Compliance with environmental work procedures.
- Complaint response.
- Sub-contractor activities.
- Training records.
- Non-conformances.

- Monitoring results.
- System documentation such as checklist completion.

These audits will be performed at least once every six months.

8.3.2 External

External audits may be required as part of the MCoA and/or by the RTA. It would cover the same elements as those covered by the internal audit. A program of external audits would be developed by the construction contractor.

8.4 Internal management review

An internal management review will be undertaken on an annual basis. The review will take account of environmental audit outcomes, monitoring records, performance in achieving environmental targets and compliance limits, complaints, non-conformance, corrective and preventative actions and any changes to statutory requirements.

8.5 Reporting

Typical reporting requirements that are likely to be applicable to the project are summarised in **Table 8-1**.

■ **Table 8-1 Typical project reporting requirements**

Report	Details	Timing
Internal audit reports	Audit for compliance against the MCoA, relevant licenses and approvals, ECMSs.	At least 6 monthly
External audit reports	Audit for compliance against the MCoA, relevant licences, permits and approvals.	As required
Monitoring results / data	Potential exceedances against criteria reported by environment officers, filed electronically and in hard copy.	As required
Environment team meeting	Minutes of meetings to be recorded by Environment Manager and distributed to project team	1-2 weekly
Corrective action, environmental inspection report, environmental improvement notice, stop work notice	Corrective Action/ Notices/Inspection Reports registered by environment team.	As required
Site environmental checklists	Completed weekly and kept on site. Major repeated non conformances reported to Environmental Manager.	Weekly
Site meetings	Minutes of meetings held onsite.	Weekly
Complaints report	Monthly summary report, filed electronically.	Monthly

9 Environmental non-conformance

An environmental non-conformance system would be developed by the construction contractor to ensure that the environmental management system requirements are met. Procedures developed by the construction contractor to detect non-conformances include:

- Site inspections.
- Audit reports.
- Incident reports.

10 Review and improvement of the CEMP

10.1 Environmental management review

The effectiveness and proper implementation of the CEMP and sub-plans will be reviewed approximately every six months or as required. Review will be undertaken by the management team. The review will comprise:

- Reviewing the results of audits.
- Evaluation of the system which improvements and corrective actions will be sought.
- Evaluation of the operation of the CEMP.

10.2 Continual improvement

Continual improvement of the CEMP will be achieved by the continual evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continual improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management which leads to improved environmental performance.
- Determine the root cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

Attachment A - RTA Environmental Policy



Commitment

The Roads and Traffic Authority of NSW is committed to undertaking its activities in an environmentally responsible manner and effectively managing any risks that may lead to an impact on the environment. The RTA will do all that is reasonably practical to ensure that there is continuous improvement in environmental performance, including ongoing communication and awareness raising, active reporting of environmental incidents and continuous learning from experience.

The RTA is committed to environmental management being an essential element of effective road and traffic related infrastructure planning, construction, maintenance and operation that must be properly considered and integrated into all phases of RTA projects.

Accountability

Senior executive management is accountable for the RTA's overall environmental performance. This includes providing leadership, direction, and resources and support, to ensure the RTA's activities are undertaken in a manner that at all times considers and effectively manages potential environmental risks and always strives for environmental performance improvement.

Responsibility

Line managers and supervisors are responsible, within their work areas, for implementing the RTA's environmental policies and guidelines. They must proactively address issues that may adversely affect environmental performance at project worksites and workplaces for which the RTA is responsible.

Cooperation

The RTA requires its employees to cooperate in the management of environmental matters, including responding to the reasonable directions of external environmental regulators. Employees must monitor the continued effective installation and operation of environmental controls within the scope of their day to day work.

Consultation

The RTA will consult with management, employees, relevant regulatory agencies and where appropriate, the community, on the development, implementation and refinement of its environmental function.

Compliance

The RTA will conduct all its operations, whether carried out by or on behalf of the RTA, in accordance with relevant legislation and government policy and agreements.

Management

The RTA will demonstrate due diligence in the provision of its services, manage its work activities in a manner that is consistent with the principles of ecologically sustainable development, and will deliver continuous improvement in environmental performance through:

- Implementing the RTA's environmental management system.
- Assessing likely environmental outcomes before deciding to proceed with activities.
- Considering environmental outcomes when making decisions, in the same way that consideration is given to safety, cost, quality and time.
- Minimising pollution and managing potential environmental impacts resulting from the RTA's activities and promoting the efficient use, reuse and recycling of resources.
- Monitoring, reviewing and reporting publicly on the environmental performance of the organisation.
- Building constructive and collaborative working relationships with external stakeholders.

Employees

All RTA staff have a responsibility to actively contribute towards avoiding or minimising environmental impacts in their day to day work.

To do this staff must:

- Work carefully at all times to protect the environment.
- Report any environmental impacts, hazards or potential environmental management issues of which they become aware to the responsible officer, including poorly installed or poorly operating equipment they encounter in their working day.
- Work in a manner consistent with the RTA's legal environmental obligations.
- Work in accordance with all RTA environmental management programs and follow specified systems of work.
- Participate in relevant environmental management consultation and training initiatives, and use effective environmental management measures in their work.

This environmental policy will be reviewed in 2009.

Les Wielinga
Chief Executive

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Attachment B - Risk assessment

- **Example risk assessment table for CEMP**

[illegible]

Attachment C - Emergency procedures and emergency contacts

■ Example emergency contact table

Organisation	Name	Number/s	Address	Other details
Construction Manager				
Environmental Manager				
Foreman/Superintendent				
NSW Police				
NSW Fire Brigade				
NSW Ambulance Service				
Hospital				
Rural Fire Services				
State Emergency Services				
Poisons Information				
DECC				
DECC (NPWS)				
DoP				
DWE				
Local contractor services (e.g. waste collection, spill clean up)				

Attachment D – Environmental site inspection checklist

■ Example environmental site inspection checklist

AREAS INSPECTED:			
Date:		Time :	
Person undertaking inspection:			
Issued to contractor (Name/Date):			
Description of on-site activities			

	Items	Satisfactor y		Action Priority			Brief description of action if required	Initial and date for close out of actions
		Yes	No	1 <24h	2 <3day	3 <7day		
Ecology								
<input type="checkbox"/>	Protection of vegetation to be retained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Maintenance of drainage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Storage at base of trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Protection of heritage site/items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Parking of vehicles and machines within exclusion zones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Soil and water								
<input type="checkbox"/>	Silt fencing/ socks / diversion drains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Sediment control basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Stormwater drain protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Protection to water bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Erosion controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Timely treatment and dewatering of sediment basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Stockpile management practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Spoil Management								

	Items	Satisfactory		Action Priority			Brief description of action if required	Initial and date for close out of actions
		Yes	No	1 <24h	2 <3day	3 <7day		
<input type="checkbox"/>	Loads covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Designated haulage routes and access points being used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Air Emissions								
<input type="checkbox"/>	Stockpiles protected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Site road surface adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Dust/emissions controlled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Public roads clean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Revegetation and rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hazardous Materials								
<input type="checkbox"/>	Bunded storage fuel/chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Refuelling machinery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Spill procedure/kit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Noise								
<input type="checkbox"/>	Plant/equipment levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Mufflers to plant if required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Hours of operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Waste Management								
<input type="checkbox"/>	Segregation of waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	No oil leaks, drips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Site litter/general waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Contaminated soil/waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	Concrete washout managed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Other items	Priority	Actions required	Closed