

GRIFFIN ENERGY PTY LTD

Collie B Power Station

Construction Environmental Management Plan

April 2005

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1 FOREWORD

This Environmental Management Plan (EMP) covers the environmental requirements of the contractor for site construction works (Contractor) and will be modified for commissioning and operations at the appropriate time.

The plan is comprehensive but will need to be adapted as the need arises. The plan is consistent with Griffin's Environmental Policy and will be developed in conjunction with the "Proponent's Environmental Management Commitments – December 2004 for Collie B" as detailed in the Collie B Public Environmental Review (PER) document.

The EMP provides the guidance for ensuring construction is undertaken with the full knowledge and requirements of the environment and regulatory compliance. Routine monitoring will be carried out to detect any non-conformance during construction of the power station along with corrective action to prevent any recurrence of such an event.

The Contractors will be responsible for following the EMP, however, Griffin Energy's representative will have the responsibility to monitor and audit the Contractor's performance and ensure adherence to the guidelines and relevant legislation.

The following plan provides the environmental framework within which the Contractor and its subcontractors will work.

2 PROJECT ENVIRONMENTAL MANAGEMENT POLICY

In managing the environment, the Construction EMP will target such issues as:

- Monitoring and ongoing assessment during the construction period.
- Minimisation of waste produced from its operations.
- Ensure emissions comply with contract obligations.
- Implement land and catchment management within the power station site.
- Take due account of heritage issues during the construction and commissioning of the plant.
- Work in cooperation with subcontractors and regulatory authorities and communicate openly and critically on environmental matters.
- Communicate openly with the community on environmental matters.



3 STRATEGIC ENVIRONMENTAL OBJECTIVES

The strategic vision on the environment for the Construction site is proactive and aimed at maintaining a high standard of environmental care, compliance with statutory environmental obligations and working with others to take account of community issues.

In achieving this vision, there is recognition of the need to target:

- Zero environmental excursions attributed to the construction work
- Zero non-conformances in reporting
- Meeting Government and community expectations for protection of the environment
- Efficient storage, handling and use of materials to ensure minimum wastage and loss

Appropriate action will be taken to identify and assess any deficiencies in the system and to document and apply appropriate countermeasures for prevention recurrences.



4 ENVIRONMENTAL PHILOSOPHY & OBJECTIVES

The philosophy is to manage the environment in a structured way in accordance with regulations and objectives set out in this plan.

The process will be implemented using a tiered approach for overall co-ordination and control. The management process recognises the need for an integrated approach with a clearly defined structure, employee environmental awareness at all levels of technical competence, continued assessment of environmental impact and working effectively on community consultation.

Staff will be encouraged to have an awareness of the environment, not only in the workplace but also in their normal life.

It will be a requirement of the plan that the Contractors and its subcontractors will demonstrate a commitment to environmental management.

Griffin's representative will take a leading role in the promotion of environmental awareness ensuring that The Contractors and its subcontractors think ahead and take action immediately and positively in the event of any incident.

The goal will be zero environmental incidents.

5 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (EMP)

5.1 INTRODUCTION

In undertaking the works, the Contractor has previously been involved in building power stations with surrounding areas of urban development, public recreation and environmentally sensitive areas.

To meet these particular requirements, the Contractor's EMP is required not only to meet the necessary environmental standards but the Contractor is required to be a leader in environmental management.

The following plan is aimed at achieving these important objectives.

5.2 PURPOSE

The purpose of this Construction EMP is to provide details of the environmental management plans for the construction, commissioning and initial operation activities for the power station. The Construction EMP is to ensure that these activities are carried out in an environmentally responsible manner.

This EMP is a "living" document and will be further developed during construction, commissioning and initial operation. The EMP will be reviewed regularly and updated on an as needs basis to reflect any changes in project requirements and processes and environmental laws, standards and guidelines.

This EMP, based on the PER, forms the basis of the Contractor's EMP which will require Griffin's approval before the commencement of site work. The Contractor's EMP will then form part of the Contractor's application for the appropriate approvals for the construction phase.

5.2.1 Environmental Management Structure

Construction of the power station will be carried out by the Contractor, appointed by Griffin Energy.

The Contractor will appoint a Construction Environmental Responsible Officer (CERO) who will be responsible for managing environmental aspects of the construction activities.

Griffin Energy's representative will liaise with the CERO on construction environmental activities.

A responsibility chart will be produced as part of the construction phase EMP that fully describes the position interaction among the officers in relation to environmental management during the construction and commissioning phases.

6 OBJECTIVES

6.1 General Objectives

The general objectives of the Construction EMP are to:

- contain provisions which comply with the Griffin Energy's PER for the power station and any relevant requirements of the applicable environmental authorities and associated Integrated Environmental Management Systems. Applicable environmental authorities would include the Works Approval held by Griffin Energy.
- encourage good management practices by planning, allocation of appropriate resources, commitment to environmental protection and continual improvement of environmental practices;
- define day-to-day roles and environmental responsibilities for construction personnel;
- define how the management of the environment is to be reported and performance evaluated;
- continually identify possible environmental hazards associated with the power station construction and commissioning activities to ensure that the information which supports the EMP is up-to-date and enables compliance with relevant statutes and standards;
- describe work practices, procedures and controls established to ensure compliance with relevant statutes and standards, strive to achieve current best practice, prevent impacts and minimise risks related to environmental issues;
- describe resources allocated to environmental protection;
- describe monitoring procedures required to identify impacts on the environment as a result of the construction and commissioning activities ;

- establish procedures for response to actual or potential environmental problems, community complaints and ensure corrective action is taken;
- describe the environmental requirements resulting from the interface between the construction activities with the operational activities of Western Power.
- manage the environmental component for training and induction of all construction staff.
- establish procedures where Griffin Energy is notified that sub-contractors will comply with the Construction EMP and that sub-contractors will report on environmental performance via the Contractor.
- to review and amend (as necessary) the EMP to ensure compliance with
 - > the PER and, relevant requirements of the appropriate authorities
 - > environmental laws, standards and guidelines.

This Construction EMP, will form the basis of an Integrated Environmental Management System and will be further developed in conjunction with the relevant authorities as described in the commitments table in the PER.

6.2 Specific Objectives

The following specific objectives apply:

6.2.1 Environmental Training

The Contractor will be responsible for ensuring environmental training and awareness programs are provided to construction staff. All construction staff will be required to participate in an induction programme so that a minimum level of environmental awareness is achieved. This induction programme will be directed to assist in minimising any on-site environmental problems including noise, air and water quality, and contamination. The Contractor will maintain a record of environmental training undertaken for all employees, detailing the type and purpose of the training, and require the same of its subcontractors.

6.2.2 Monitoring Requirements

All measurements, monitoring and reporting required by the EMP will be undertaken by a person possessing appropriate experience and qualifications to perform the measurements or monitoring, and in accordance with the required legislation.

All instruments and devices used for the measurement or monitoring of any parameter under any condition of the EMP must be calibrated, and appropriately operated and maintained.

6.2.3 Reporting Requirements

The Contractor will provide Griffin Energy with written reports regularly during the construction period reporting on compliance with the elements of the Construction Management Plans included in the EMP.

The reporting requirements will be developed with Griffin Energy's representative and follow the elements outlined hereafter in the plan.

6.2.4 Auditing Requirements

The Contractor will undertake and report on all auditing requirements of the Construction EMP and the Works Approval.

The Contractor will submit to Griffin Energy a schedule of the proposed internal audits to be undertaken – audit areas will include but be not limited to the following areas: currency of the Construction EMP, Environmental Policy and Environmental Management System; incident reporting; complaint handling; compliance with the Works Approval; environmental inspection and monitoring; waste audits.

External environmental audits will be conducted by Griffin Energy following consultation with the Contractor.

6.2.5 Environmental Incidents

As soon as reasonably practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of the EMP or Works Approval or otherwise having potential to cause environmental harm, the Contractor will notify by Griffin Energy' representative as soon as practicable.

A record of such events will be maintained by the Contractor and this will include, but not be limited to the following:

- the location of the emergency or incident;
- the details (i.e., name and telephone number) of the person reporting the emergency or incident;
- the estimated time of the emergency or incident;

- the time at which the Contractor was made aware of the emergency or incident;
- the suspected cause of the emergency or incident;
- the environmental harm and or environmental nuisance caused, threatened, or to be caused by the emergency or incident; and
- actions already taken to prevent further any release and mitigate any environmental harm and or environmental nuisance caused by the emergency or incident.

Not more than 14 days following the initial notification of an emergency or incident, the Contractor must provide written advice of the above in addition to:

- proposed actions to prevent a recurrence of the emergency or incident (i.e. amendments to the EMP);
- outcomes of actions taken at the time to prevent or minimise environmental harm and or environmental nuisance; and
- the results of any environmental monitoring performed.

6.2.6 General Environmental Responsibilities of Staff

Staff must comply with the requirements of the EMP. If any person, while performing their work, notices that serious or material environmental harm is being caused or threatened by their actions or the actions of someone else, they are required to report the matter and take immediate steps to correct or prevent serious environmental harm.

The Contractor will have a responsibility to:

- Comply with all legislative requirements;
- Comply with the requirements of the EMP;
- Comply with the requirements of the Works Approval;
- Provide any training required to enable its staff to effectively perform its environmental responsibilities and procedures;
- Ensure its servants or agents report environmental accidents and incidents and participate in their investigation and implementation of corrective action;
- Ensure its servants or agents promptly notify any cases of environmental harm, either actual or threatened by their actions, or by the actions of another person, to the Contractor and thence to Griffin Energy.

- Immediately notify and provide copies to Griffin Energy of any notices, directions or orders given or received under an environmental law.
- Consult with Griffin Energy on the conditions, including draft conditions, of any proposed permit, authority, approval required under any environmental law for the construction work or the occupation of the site.

6.2.7 Environmental Management Plan

This EMP will be developed by the Contractor in consultation with Griffin Energy.

7 RELEVANT ENVIRONMENTAL LEGISLATION

The current environmental legislation relevant to the operation of the power station includes but is not limited to the following major statutes:

Table 1 – Environmental Legislation

Applicable Legislation - State		
Department of Indigenous Affairs		
• Aboriginal Heritage Act, 1972 - 1980		
Scope: Protects aboriginal sites		
Department of Agriculture		
• Agriculture and Related Resources Protection Act, 1976		
Scope: Management of pests and weeds		
Local Government Authority		
• Bush Fires Act, 1974		
Scope: Fire safety		
Department of Conservation and Land Management		
• Conservation and Land Management Act, 1984		
Scope: Protection and management of national, marine, conservation and regional parks,		
State forests, and timber, nature, and marine nature reserves.		
Wildlife Conservation Act, 1950		
Scope: Protection of rare and endangered flora and fauna.		
Environmental Protection Authority - Department of Environment		
• Environmental Protection Act, 1986		
Scope: The EPA was established as in independent authority with the broad objective of		
protecting the State's environment.		
Department of Industry and Resources		
• Explosives and Dangerous Goods Act, 1961 - 1986		
Scope: Regulates the manufacture, use and storage of explosives and dangerous goods.		
• Collie Coal (Griffin) Agreement Act 1979		
Scope: Provides administrative arrangements for Collie coal mined by Griffin.		
Department of Environment		
• Rights in Water and Irrigation Act, 1914		
Scope: Regulates water issues with respect to water supply and irrigation.		
Department of Health		
• Health Act, 1911		
Scope: Regulation for the protection of public health.		
Native Title Tribunal		
• Native Title Act, 1993		
Scope: Deals with aboriginal claims for native title to land.		
WA Planning Commission		
State Planning Commission Act, 1976		
Scope: Controls the State's land development.		
Water and Rivers Commission (now DoE)		
Waterways Conservation Act, 1976		
Scope: Conservation and management of waters and the associated land and environment.		
• Rights in Water and Irrigation Act, 1914		
Scope: Conservation and management of riparian water rights.		

Water Corporation

• *Country Areas Water Supply Act, 1947* Scope: Regulates supply of water to country areas.

Department for Planning and Infrastructure

• Town Planning and Development Act 1928

Scope: Legislative framework for the preparation of Local Town Planning Schemes and Amendment to Schemes.

Shire of Collie

• Shire of Collie Town Planning Scheme Number One

Scope: Zoning of land, classification of land uses and development control provisions to assess new land developments.

Applicable Legislation – Commonwealth

Department of Environment and Heritage

• Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act) Scope: Protects matters of national environmental significance, including National Heritage Places.

8 RELEVANT GUIDELINES

The National guidelines relevant to the construction and operation of Griffin Energy's plant include but are not limited to:

- Australian Water Quality Guidelines for Fresh and Marine Waters, 1992 (Australian and New Zealand Environment and Conservation Council) (ANZECC);
- ANZECC Guidelines for the Assessment and Management of Contaminated Sites 1992;
- National Health and Medical Research Council (NHMRC)/AEC National Guidelines for Control of Emission of Air Pollutants from New Stationary Sources, 1986; and
- National Environment Protection Measure for Ambient Air (air NEPM), 1997.
- National Environment Protection Measure for the National Pollutant Inventory (NPI-NEPM), 1998.
- ANZECC Guidelines for Groundwater Protection in Australia, 1995.
- Draft National Environment Protection Measure for the Movement of Controlled Waste between States and Territories.

Under the NEPM - National Pollutant Inventory, the Contractor may be required to submit a report form for the power station for those reporting periods for which the Contractor has responsibility for the construction and commissioning phases.

9 RELEVANT AUSTRALIAN STANDARDS

Australian Standards that are relevant to the construction and operation of the power station include but are not limited to:

- Australian Standard 1940-1993 The Storage and Handling of Flammable and Combustible Liquids. AS1940 - 1993 sets out the requirements for the design, construction and operation of installations for the storage and handling of flammable and combustible liquids and includes matters relating to operations and management of emergencies.
- Australian Standard 3780-1994 The Storage and Handling of Corrosive Substances. AS3780 - 1994 sets out requirements and recommendations for the safe storage and handling of corrosive substances that meet the Class 8 classification of the Australian Dangerous Goods Code.
- Australian Standard 4323.1-1995 Stationary Source Emissions Selection of Sampling Positions AS4323.1-1995 outlines the methodology for selection of sampling positions for obtaining representative samples of atmospheric discharges from stationary sources such as stacks, ducts or other similar outlets.
- Australian Standard 1055.1 Acoustics Description and Measurement of Environmental Noise Parts 1-3 AS1055.1-3-1989 outlines procedures for the description and measurement of environmental noise.
- Australian Standard AS2985 Workplace atmospheres Method for sampling and gravimetric determination of respirable dust 1987.
- Australian Standard AS3640 Workplace atmospheres Method for sampling and gravimetric determination of inspirable dust 1989.
- Australia / New Zealand Standard AS/NZS ISO 14001 Environmental Management Systems – Specification with Guidance for Use – 1996.

10 DRAFT ENVIRONMENTAL MANAGEMENT PLANS -CONSTRUCTION

The environmental aspects for which management plans have been prepared include:

- air quality construction;
- noise control construction;
- chemical and oil management construction / commissioning and initial operation;
- stormwater management construction / commissioning and initial operation;
- waste management construction;
- discharge water quality construction;
- complaints and notifications- construction / commissioning and initial operation;
- notification of emergencies or incidents construction / commissioning and initial operation;
- emergency response construction / commissioning and initial operation;
- contingency/emergency plan construction / commissioning and initial operation;
- ash management commissioning and initial operation;
- air quality commissioning and initial operation;
- noise control commissioning and initial operation;
- waste management commissioning and initial operation; and
- discharge water quality commissioning and initial operation.

For the purpose of this Construction EMP plan, "site" refers to all areas covered by the construction of Collie B including laydown areas.

10.1 Air Quality - Fugitive Emissions - Construction Phase

Fugitive emissions will predominantly consist of dust. Based on the nature of the construction activities on site, surrounding land uses and the buffer area adjacent to the station, dust from construction is not expected to create significant impacts.

Fugitive emissions from the construction are expected to result from earth works and the movement of delivery vehicles.

ELEMENT	FUGITIVE EMISSIONS CONTROL
Policy	To prevent the release of fugitive emissions from the site.
Performance Objective	Minimal impact of fugitive emissions, including but not limited to odour, dust, smoke, fumes, particulates, and aerosols causing or be likely to cause an environmental nuisance beyond the boundaries of the construction site. No deliberate burning of vegetation or waste materials will be conducted.
	Dust will not cause an occupational health and safety issue on site and will be managed under the Health and Safety Plan.
Implementation Strategy/Mitigation	A survey will be conducted by the Contractor to identify those areas not required for day-to-day operations. Such areas will not be disturbed.
Measures	Removal of topsoil at any one time will be limited to that necessary to provide for construction.
	Progressive rehabilitation of disturbed areas will be carried out throughout the construction period.
	Dust generated by vehicle movements will be managed by regular watering of unsealed roads during dry conditions and regular sweeping of sealed roads.
	Dust generated from topsoil stockpiles will be managed by regular watering during dry and/or windy conditions.
	Mobile machinery movement will be restricted to designated routes and standing areas.
	Exhaust emissions from mobile plant will be directed away from the ground.
	Vehicle speeds will be controlled on site (30 km/h) for safety requirements and to minimise dust generation.
Monitoring	Areas which have high potential for dust generation will be identified. Should a complaint be received, depending on the nature of the complaint either
	• dust deposition gauges will be installed at the complaint source, or
	 high volume (PM₁₀) monitoring will be conducted at the complaint source to determine compliance with performance objectives.
Reporting	All complaints will be documented on the complaints register, investigated according to the applicable site licence conditions, and reported as required including the Annual Report. An approved Complaints Register Proforma will be used. Complaints will be notified to Griffin Energy.
Identification of Incident or Failure to Comply	Receipt of a fugitive emissions complaint or dust creating a health and safety issue on site.

 Table 2 - Management Plan for Fugitive Emissions from Construction.

ELEMENT	FUGITIVE EMISSIONS CONTROL
Corrective Action	 Should an incident or failure to comply with relevant statutes and standards occur in relation to fugitive emissions from construction activities, one or more of the following corrective actions will be implemented as appropriate: assess processes to identify any significant sources of emissions and if required, modify activities/processes;
	• investigate complaints received and identify the issue. If required, monitoring and assessment, in accordance with DoE requirements, will be conducted to monitor emissions and identify possible solutions;
	• increased irrigation of areas generating dust.
	Griffin Energy will be notified as per the Complaints Management Plan.

10.2 Noise Control - Construction Phase

Noise sources from the construction activities include the following:

- civil work like piling, earth moving machinery;
- cranes and other construction machinery;
- power tools and compressors;
- vehicle movements;
- plant commissioning; and
- other construction activities.

Noise generated during the construction is not expected to have a significant impact on surrounding land uses due to the distance to the nearest sensitive receptors from the site.

Table 3 outlines the management plan for environmental noise control.

The construction activity most likely to result in the greatest impact is the piling. Piling typically generates impulsive sound levels of 75 dB(A) at a distance of 100 m. Noise levels at the nearest residence will be well below the recommended maximum noise level of 75 dB(A).

ELEMENT	ENVIRONMENTAL NOISE CONTROL
Policy	To prevent excessive noise emissions from site operations and activities.
Performance Objective	Construction noise is not to exceed 75 dB(A) at the nearest residence.
Implementation	All construction equipment will be regularly inspected and maintained in good

Table 3 – Noise Management Plan (Construction)
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ELEMENT	ENVIRONMENTAL NOISE CONTROL
Strategy/Mitigation	working condition.
Measures	Where possible, noisy activities will be limited to 0700 to 1900 hours from Monday to Saturday and 0800 to 1900 hours for Sunday.
Monitoring	Monitoring will be conducted immediately following a noise complaint, in accordance with Australian Standard 1055 Acoustics – Description and Measurement of Environmental Noise AS1055.1-1997.
Reporting	All complaints will be documented on the complaints register, investigated in accordance with the licence conditions, and reported in Annual Report. An approved Complaints Register Proforma will be used.
Identification of	The following represents an incident or failure to comply:
Incident or Failure to Comply	• noise complaint received; and
	• exceedance of statutory or guideline noise criteria.
Corrective Action	In the event of an incident or failure to comply with statutory or guideline noise criteria, one or more of the following corrective actions will be undertaken appropriate:
	 Investigate operations and activities to identify the likely source of problem noise.
	• Measure sound power and pressure levels emitted from equipment identified as the likely cause of the problem and review possible mitigation techniques.
	Adopt or implement effective noise mitigation strategies. Report corrective action to Griffin Energy.

10.3 Chemical and Oil Management - Construction Phase

Limited quantities of chemicals including fuels, oil and grease, paints and solvents will be stored on site for use in the construction activities. Table 4 details the management plan for chemical and oil management during construction.

ELEMENT	CHEMICAL AND OIL MANAGEMENT
Policy	To manage the purchase, storage, handling and disposal of chemicals and oil and prevent the uncontrolled release of chemicals or oil to the environment.
Performance Objective	Compliance with AS1940-1993 Storage and Handling of Flammable and

Table 4 - Chemical and Oil Management Plan (Construction)

ELEMENT	CHEMICAL AND OIL MANAGEMENT
	Combustible Liquids and other relevant Australian Standards.
	No significant chemical spillage is to occur.
	No release of chemicals or oil to the environment.
Implementation Strategy/Mitigation Measures	As required by the Workplace Health and Safety Act, Material Safety Data Sheets (MSDSs) will be kept in a register at the site office along with a copy located near the chemical storage facility and stored together with a copy of the Workplace Health and Safety Act. Records will be kept on existing inventory, storage location, personnel training and disposal of waste for all hazardous materials used on site. Records will be kept by the CERO on current inventory (including storage location, volumes, types of chemicals and receipt date), personnel training and disposal of waste for all hazardous materials used on site. These records will be reviewed regularly. All relevant construction staff will be trained in appropriate handling and storage requirements and spill clean-up requirements. Evidence of training records is to be
	maintained. Corrosive materials will be stored and handled in accordance with AS3780.8 (Class 8 substances - Corrosives).
	Chemicals stored in aboveground tanks will be bunded to contain at least 100% of the capacity of the largest tank plus at least 10% of the second largest tank. Chemicals stored in drums will be bunded to contain at least 25% of the maximum stored quantity of chemicals. Packaged goods will be segregated in accordance with Australian Standards and be stored in a roofed bunded enclosure.
	Waste oils will be stored in accordance with site requirements and will be removed off site for recycling by approved contractors.
	Spills will be cleaned up immediately by the Contractor. Contaminated runoff, contaminated soil and waste clean-up materials will be collected and remediated or disposed of in accordance with local authority requirements.
Monitoring	The Contractor will inspect bulk and packaged chemical containers, bunded areas and waste oil storage areas on a daily basis.
	Potentially contaminated stormwater will be monitored to determine disposal options.
Reporting	A record of all inspections and audits will be maintained for future review.
	The CERO will record and sign off on monthly inspections of containers, bund integrity and valves. The CERO will report the results of monthly inspections to Griffin Energy. Results of monthly inspections by the CERO will be documented and reported to the Contractor's Site Manager and Griffin Energy.
	Any spills will be reported on a site incident form to the CERO including actions

ELEMENT	CHEMICAL AND OIL MANAGEMENT
	taken to control, contain and clean up the spill. All spills will be reported to the Site Manager and Griffin Energy.
	Any significant chemical or oil spill to the environment will be reported to the appropriate authorities.
Identification of Incident or Failure to Comply	 The following constitutes an incident or failure to comply in relation to chemical or oil management: oil or chemical spill which cannot be immediately controlled, contained and cleaned up by the individual who discovers the spill, without obtaining additional equipment or assistance:
	 storage areas which do not meet relevant Australian Standards;
	• chemicals or oils stored in areas not containing suitable bunding; and
	release of chemicals or oils to the environment.
Corrective Action	Should an incident or failure to comply occur with current statutes and/or standards in relation to the chemical and oil management, the following corrective actions will be undertaken:
	 contain and clean up spill material immediately and remediate or appropriately dispose of contaminated material;
	• inspect bunds and carry out necessary repairs to ensure they are maintained in good working condition;
	• locate chemicals in appropriately bunded or approved storage areas;
	 notify Emergency Services (if required). Notify authorities and Griffin Energy of any significant spill and subsequent follow up actions as soon as possible as described in the Notification of Emergencies or Incidents (Construction) Management Plan.

10.4 Stormwater Management - Construction Phase

Overall controls for the management of stormwater on site are provided in Table 5 below.

Stormwater runoff from the construction site will be directed to the appropriate sediment and oil trap installed to prevent sediment or oil from the construction site discharging the site.

Table 5 - Stormwater Management Plan (Construction)

ELEMENT	STORMWATER MANAGEMENT

ELEMENT	STORMWATER MANAGEMENT
Policy	To prevent the release of contaminated stormwater from the site.
Performance Objective	Prevent stormwater runoff from contacting wastes or contaminants on the site by segregating clean runoff water from the runoff generated in construction and storage areas.
	Minimise the potential for suspended sediments, chemical or oil residues or other residues in stormwater from the construction site, being released.
	Control stormwater runoff to minimise or prevent impacts offsite.
Implementation Strategy/ Mitigation Measures	The Contractor will develop and maintain workforce awareness of the importance of overall good housekeeping and the prevention of stormwater runoff contamination in order to achieve an acceptable stormwater runoff quality. General housekeeping will be checked by the CERO fortnightly. At least fortnightly, and where possible prior to a significant rainfall event, the integrity and effectiveness of sediment and oil traps will be checked.
	The sedimentation pond and oil trap within site will be maintained and cleaned out regularly. Sediments from the dam will be analysed and disposed of in an appropriate manner.
	All chemicals and oils will be stored in bunded areas, preferably under cover.
	If an oil sheen develops on the surface of the sedimentation pond through which the construction site runoff passes, the oil will be cleaned up using appropriate methods. Options include the use of passive absorbent materials and skimmers.
	All chemicals will be stored and handled in accordance with relevant Australian Standards to minimise the potential for contamination of stormwater runoff from the site.
	Used passive absorbent materials and oil/water separator wastes will be stored in an appropriate manner for disposal as approved by the relevant authority.
	Protect table drains and channels from scouring as necessary.
	Restrict mobile equipment and vehicles to defined roadways.
Monitoring	The sedimentation pond will be checked visually for possible contamination on regular basis and treated as required.
	The water and sediment levels in the sedimentation pond will be checked on regular basis. The pond will be checked following a significant rainfall event.
	Diversion bunds and drains on the construction site will be checked on a daily basis by designated construction staff and formally on a weekly basis by the CERO to ensure they are working effectively.
	The integrity of the bunds and drains will be formally audited by a responsible person appointed by the Contractor on a quarterly basis.

ELEMENT	STORMWATER MANAGEMENT		
	Sediment traps will be inspected regularly and immediately following rainfall events to ensure they are working effectively and are cleaned out if necessary. Inspections will be conducted as part of the general housekeeping to ensure stormwater runoff does not contain rubbish or contaminants.		
Reporting	A record of all inspections and audits will be maintained for future review.		
	The CERO will report upon all incidents that result in actual or potential environmental harm or have significant impacts on the quality of stormwater from the site.		
Identification of Incident or Failure to	The following is to be classified as an incident or failure to comply with the stormwater management plan:		
Comply	• breach in integrity of pavement, bunds or drains;		
	 spilled chemicals or liquid wastes entering the stormwater drainage system; 		
	 sedimentation pond demonstrating insufficient available volume for settling capacity; and 		
	• inadequate general housekeeping to prevent general rubbish and contaminants from entering the stormwater runoff leaving the construction site.		
Corrective Action	Should an incident or failure to comply occur in relation to the stormwater management plan, the following corrective actions will be undertaken by the as appropriate:		
	• repair stormwater controls (eg. pavement, bunds and drains);		
	• contain and remediate or dispose of contaminated material or contaminants;		
	• treat or dispose of contaminated stormwater;		
	• clean out the sedimentation pond		
	• undertake additional general housekeeping to minimise rubbish and contaminants entering the stormwater; and		
	• review work place practices in relation to stormwater management.		
	• report corrective action.		

10.5 Waste Management - Construction Phase

Wastes generated from the construction activities on the site include:

- scrap metal;
- general building rubbish;
- waste soil from excavations;
- waste concrete;
- waste oils and solvents; and
- general office waste/rubbish.

The plan for managing on-site waste generation during construction is outlined in Table 6.

ELEMENT	WASTE MANAGEMENT	
Policy	To prevent or minimise the generation of wastes (where practicable) and to contain, control and dispose of waste in accordance with required waste management practices.	
Performance Objective	All wastes will be minimised, recycled, or disposed of in an appropriate manner.	
Implementation Strategy/Mitigation Measures	 The following measures will be implemented during the construction. waste materials will be separated for storage and prepared for transport and disposal; where practicable, timber, metal, bricks and other major recyclable wastes will be stored in safe, secure areas away from drains or watercourses prior to reuse or collection by contractors; waste paper will be collected and prepared for removal by a paper recycler or will be mulched and used on landscaped areas where ever possible; management of stormwater is to be in accordance with the Stormwater Management Plan for Construction; waste oil and grease will be stored in a suitable facility, away from drains or watercourses in bunded, roofed (where practicable) and sealed areas prepared for collection by a licensed waste recycler or contractor; stormwater from the stormwater sedimentation pond is available to be used on site: 	

Table 6 - Waste Management Plan (Construction)

ELEMENT	WASTE MANAGEMENT	
	 loading and unloading of hazardous materials will only be undertaken in designated areas in a manner that minimises the potential for spillage or loss of materials requiring subsequent disposal. 	
	 construction personnel, trained in contingency action and spill clean up procedures, will supervise all bulk transfers of fuel and/or chemicals on site to minimise the potential for spillage; and 	
	• regulated wastes for disposal or recycling off-site, will be removed by an approved contractor. Regulated wastes will not be sent for disposal at any facility without written approval from the person operating that facility.	
Monitoring	The CERO or designated personnel will conduct daily checks of waste chemical storage containers and bunds.	
	The CERO will record the following when regulated wastes are removed from the site: • date:	
	• quantity;	
	• type of waste removed;	
	• name of waste transporter and/or disposal operator; and	
	 intended treatment/disposal destination of waste. 	
Reporting	The CERO will report results of monthly inspections to the Site Manager and Griffin Energy.	
	The CERO will record details of storage and disposal of waste in accordance with licence conditions.	
	A record of all inspections and audits will be maintained for 5 years for future review.	
	Changes to the Waste Management Plan will be submitted to Griffin Energy for review and approval.	
Identification of Incident or Failure to	The following would constitute an incident or failure to comply in regards to waste management:	
Comply	• unauthorised removal of wastes from the premises;	
	• disposal of waste management records prior to five years;	
	• any breach in containers for transporting or storing hazardous materials; and	
	• transport, storage or disposal of wastes by an unlicensed contractor and/or to a facility unlicensed to accept a specific waste.	

ELEMENT	WASTE MANAGEMENT	
Corrective Action	In the event of an incident or failure to comply, the following corrective actions will be undertaken as appropriate:	
	• review work practices and update plan and procedures accordingly;	
	• any spillage will be cleaned up immediately and the waste disposed of in an approved manner.	
	Corrective action will be reported to Griffin Energy.	

10.6 Discharge Water Quality - Construction Phase

The ANZECC 1992 Guidelines will be used as guidelines for discharge water quality.

Water discharged from construction activities predominantly will consist of stormwater from the site via overland flow and drainage.

Sewage effluent and all ablution waste generated on site will be processed by the existing sewage treatment plant.

ELEMENT	DISCHARGE WATER QUALITY MANAGEMENT	
Policy	To minimise and prevent the release of contaminants that may have any potential	
	adverse impacts on downstream water quality and other resources.	
Performance	Contaminants must not be directly or indirectly released to surface or	
Objectives	groundwaters.	
Implementation	Stormwater is to be managed in accordance with the Stormwater Management Plan	
Strategy/Mitigation	The existing sewage treatment plant will process all sewage generated on the site.	
Measures		
Monitoring	The quality of surface water discharged site will be monitored at the discharge	
	points detailed in Appendix A "Water Sampling Points" and will include discharge	
	from the sedimentation pond. Water parameters to be monitored include pH,	
	Electrical Conductivity/Total Suspended Solids, Total Oil and Grease.	
Reporting	The Contractor will prepare an annual monitoring report and this will be made	
	available to Griffin Energy. Non conformance to the water quality criteria	
	(Appendix B) will be reported with proposed mitigation measures to be	
	implemented within 7 days of the receipt of analytical results.	
Identification of	Discharge of water from the site outside of quality guidelines.	

Table 7 - Discharge Water Quality Management Plan (Construction)

ELEMENT	DISCHARGE WATER QUALITY MANAGEMENT	
Incident or Failure to Comply	Failure to undertake sampling and reporting as per the EMP.	
Corrective Action	 Should an incident or failure to comply in relation to discharge water quality occur, the following corrective actions will be implemented as considered appropriate: investigate causes of incident or failure; review work place practices and update plans and procedures accordingly; repair water containment structures; and/or implement additional water quality control measures to minimise discharge of water. report corrective action. 	

10.7 Complaints and Notifications - Construction Phase

The management plan for documenting complaints is detailed in Table 8:

ELEMENT	MANAGEMENT OF COMPLAINTS	
Policy	To manage environmental complaints from the community regarding construction, commissioning and initial operation activities.	
Performance Objective	Complaints regarding construction activities/operations to be minimised and mitigation measures implemented to reduce the incidence of complaints.	
Implementation Strategy/Mitigation Measures	 All complaints will be documented on a complaints register. The register will be maintained as an ongoing record of complaints. The complaints form will document at least the following information: time, date and nature of complaint; type of communication (telephone, letter, personal, etc.); name, contact address and contact number¹; response and investigation undertaken as a result of the complaint; and action taken and signature of responsible person. Each complaint will be investigated as soon as practicable in relation to requirements of site licence conditions by the CERO. 	
Monitoring	The complaint form will be checked by the CERO two weeks following receipt, to	

Table 8 - Management	Plan for	Complaints	(Constru	(ction)
Table 6 - Management	1 1411 101	Complaints	Constru	iction)

ELEMENT	MANAGEMENT OF COMPLAINTS		
	ensure follow-up has occurred and the issue is resolved. The CERO will maintain the complaints register and ensure all complaints are expediently resolved.		
	the complaints register and ensure all complaints are expediently resolved.		
Reporting	Immediately following the investigation, the CERO will report each complaint and the follow up action taken to the Site Manager and Griffin Energy.		
	A summary of complaints will be reported in the Annual Report.		
Identification of Incident or Failure to	The following constitute examples of incidents or failure to comply in relation to the management of environmental complaints:		
Comply	• complaints that remain unresolved or not addressed within 28 days;		
	• sufficient information as outlined above is not recorded; and		
	 complaints not documented or reported, and/or records are not maintained. 		
Corrective Action	Should an incident of failure to comply occur in relation to the management of environmental complaints one or more of the following corrective actions will be undertaken as appropriate:		
	• conduct additional training of staff to handle environmental complaints;		
	• investigate why the environmental complaint was not addressed within the specified time frame; and		
	• investigate complaint and action follow-up according to results of investigation.		
	report corrective action to Griffin Energy.		

If the complainant does not wish to be identified, "not identified" is to be recorded.

10.8 Cultural Heritage – Construction Phase

Table 9 - Cultural Heritage Management Plan (Construction)

ELEMENT	CULTURAL HERITAGE MANAGEMENT PLAN
Policy/Performance Objective	To prevent loss of or damage to potential cultural heritage sites during construction activities.
Performance Objective	Compliance with the Aboriginal Heritage Act, 1972 – 1980.

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ELEMENT	CULTURAL HERITAGE MANAGEMENT PLAN
Implementation Strategy/Mitigation Measures	If archaeological material including possible human bone material is identified at any stage during the construction of any part of the Works, work must cease immediately within that area and the Contractor must advise Griffin Energy and then contact the appropriate authority and await advice on how to proceed.
Monitoring	Not required
Reporting	Summary details of finding (eg where, when, witnesses etc) to be recorded
Identification of Incident or Failure to Comply	Not applicable – mandatory reporting action.
Corrective Action	Not applicable

11 COMMISSIONING AND INITIAL OPERATION PHASE MANAGEMENT PLANS

The commissioning and initial operation phase management plans are indicative only and will be finalised prior to the completion of a specific commissioning and initial operation program.

11.1 Ash Management - Commissioning and Initial Operation Phase

An Ash Management Plan will be prepared by Griffin Energy.

11.2 Air Quality - Commissioning and Initial Operation Phase

Point source emissions to atmosphere from the power station stacks will include particulates, sulphur dioxide and nitrogen oxides. Fugitive emissions will include dust (which would be covered by the existing management plan for the construction phase) and water drift losses from the cooling towers. Based on the nature of the operations and the large buffer area surrounding the station, dust is not expected to impact on the surrounding land uses.

11.2.1 Point Source Emissions

The major point source emissions from the power station during commissioning and initial operation will be the boiler stack.

Table 10 outlines the management plan for point source emissions.

Table 10 - Point Source Emissions	Management Plan	(Commissioning a	nd Initial
Operation)			

ELEMENT	POINT SOURCE EMISSIONS MANAGEMENT
Policy	To control emissions to atmosphere of pollutants from power station operations to comply with relevant standards.
Performance Objective	Minimise the release of contaminants to the atmosphere from point sources. Stack emissions are to be in accordance with the Operations Licence limits.
	Ambient emissions from the power station are to comply with NEPM - Air standards.
Implementation Strategy/Mitigation Measures	Emissions of oxides of nitrogen will be minimised by the application of Best Practice Environmental Management to the burner systems.
Monitoring	Results of the fuel analysis will be reviewed monthly by the Employer to ensure SO2 emissions do not exceed the recommended guidelines.
	All monitoring will be conducted in accordance with Australian Standard AS4323.1-1995 Stationary Source Emissions Method 1: Selection of sampling provisions. Production rates, equipment, operation conditions, fuel type, and date and time of sampling will be recorded during each monitoring period.
	Samples taken will be representative of the contaminants discharged when maximum emission rates occur.
	Stack emission monitoring for oxides of nitrogen, sulphur dioxide, gas flow and composition to determine the performance of the proposed technology will be performed.
	Monitoring requirements will be reviewed in accordance with the final versions of the Operations Licence.
Reporting	Results of monitoring will be provided in the Annual Environmental Report.
	Any non conformances to the recommended guidelines will be reported to the DoE upon receipt of the results.
Identification of	Air emissions exceed the recommended limits.
Incident or Failure to Comply	Monitoring not conducted within specified time frames.

ELEMENT	POINT SOURCE EMISSIONS MANAGEMENT
Corrective Action	Should an incident or failure to comply be identified in relation to point source emissions, the following corrective actions will be undertaken:
	• appropriate monitoring as soon as possible to determine the level of exceedance; investigate exceedances and implement recommended control measures; and
	• report corrective action to appropriate authorities.

11.3 Noise Control - Commissioning and Initial Operation Phase

On-site noise sources during commissioning and initial operation include the following:

- rotating machinery;
- steam release from the vents on the boiler house during shutdown and restart of the boilers;
- steam blow through;
- vehicle movements including transportation of coal and ash; and
- earthworks.

Noise generated during the operation is not expected to have a significant impact on surrounding land uses due to the distance of the nearest sensitive receptors from the station. Additional to general operational noise, venting safety valves and steam blow through may result in atypical noise events of a short duration only.

Table 11 outlines the policy and procedures for environmental noise control.

Table 11 - Noise	Managemen	t Plan (Co	ommissioning a	and Initial	Operation)
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ELEMENT	NOISE MANAGEMENT
Policy	To prevent excessive noise emissions from site operations and activities.
Performance Objective	Daytime (0700-1800 hrs) and Evening (1800-2200 hrs) noise levels taking account of background noise.
	Night-time (2200-0700 hrs) noise levels taking account of background noise and contract allowance.
Implementation Strategy/Mitigation	All power station equipment will be regularly inspected and maintained in good working condition.
Measures	Safety valve vents on boilers will be fitted with silencers.

ELEMENT	NOISE MANAGEMENT			
Monitoring	If appropriate, monitoring will be conducted immediately following a noise complaint, in accordance Australian Standard 1055 Acoustics – Description and Measurement of Environmental Noise AS1055.1-1997.			
Reporting	All complaints will be documented on the complaints register, investigated in accordance with the licence conditions, and reported in the Annual Report. An approved Complaints Register Proforma will be used. All complaints will be reported.			
Identification of Incident or Failure to Comply	 The following will constitute on incident or failure to comply in relation to noise: noise complaint received. non conformance to noise criteria. 			
Corrective Action	 In the event of an incident or failure to comply in relation to noise one or more of the following corrective actions will be undertaken as appropriate: investigate operations and activities to identify the likely source of problem noise: measure sound power and pressure levels emitted from equipment identified as the likely cause of the problem, and review possible mitigation techniques; if appropriate, adopt or implement suitable noise mitigation strategies; and report corrective action. 			

11.4 Waste Management - Commissioning and Initial Operation Phase

Wastes generated on the site during commissioning and initial operation include:

- ash
- waste oils and solvents;
- general office waste/rubbish;
- maintenance parts, scrap metal;
- other solid wastes; and
- waste water from various sources;
- waste chemicals from boiler chemical cleaning.

11.4.1 Solid Waste

The plan for managing on-site solid waste generation is outlined in Table 12 while the plan for managing ash disposal will be developed by Griffin Energy.

ELEMENT	SOLID WASTE MANAGEMENT		
Policy	To prevent or minimise the generation of wastes, where practicable and to contain, control and dispose of waste in accordance with required waste management practices and the applicable Environmental Authorities.		
Performance Objective	All wastes will be minimised, recycled or disposed of in a manner approved by appropriate authorities.		
Implementation Strategy/Mitigation Measures	 appropriate authorities. The following measures will be implemented at the power station: disposal of ash in accordance with Griffin Energy's ash management plan; waste materials will be separated for storage and prepared for transport and disposal; where practicable, timber, metal, bricks and other major recyclable wastes will be stored in safe, secure areas away from drains or watercourses prior to reuse or collection by contractors. Where this is not practicable, controls will be installed to prevent wastes from entering drains of watercourses; waste paper will be collected and prepared for removal by a paper recycler or will be mulched and used on landscaped areas wherever possible; loading and unloading of hazardous materials will only be undertaken in designated areas in a manner that reduces potential for spillage or loss of materials. Materials from spillages will be disposed of in accordance with the Waste Management Plans; personnel, trained in contingency action and spill clean up procedures will supervise all bulk transfers of fuel and/or chemicals on site to minimise the potential for spillage; 		
	• the CERO will be responsible for notifying the appropriate authority if any regulated waste or any materials which may have been disposed of on site and have potential to cause land contamination;		
	• regulated wastes, excluding fly ash for disposal or recycling off-site, will be removed by an approved contractor.		

 Table 12 - Solid Waste Management Plan (Commissioning and Initial Operation)

ELEMENT	SOLID WASTE MANAGEMENT		
	• Regulated wastes will not be sent for disposal at any facility without written approval from the person operating that facility; and		
	• wastes will be stored in a secure (and where practicable covered) area for collection by an approved operator.		
Monitoring	Daily checks of waste chemical storage containers and secure areas will be conducted by a competent person nominated by the CERO.		
	The CERO will record the following when regulated wastes are removed from the site:		
	 date; quantity; 		
	 type of waste removed; name of waste transporter and/or disposal operator; and 		
	• intended treatment/disposal destination of waste.		
	The CERO will prepare and submit an annual review including the following:		
	• all wastes produced by the facility;		
	• the amount of waste which is recycled;		
	• cost associated with disposal and/or treatment of each waste material; and		
	• a written plan for reducing, to the extent possible, the amount of waste generated by the power station.		
Reporting	The construction staff will report (by exception) the results of daily and monthly checks of waste storage areas to the CERO, within 24 hours. A monthly summary report will be provided to the CERO on the results of daily check inspections.		
	Griffin Energy on a monthly basis.		
	The mass and/or volume of each class of waste material disposed from the site will be reported on a monthly basis to the CERO and the OERO.		
	The CERO will record details of storage and the OERO will record details of disposal of waste in accordance with licence conditions.		
	The CERO will be responsible for notifying appropriate Authority if any regulated wastes or any materials which may have been disposed of on site and have potential to cause land contamination.		
Identification of Incident or Failure to	The following would constitute an incident or failure to comply in regards to waste management:		
Comply	• unauthorised removal of wastes from the premises;		

ELEMENT	SOLID WASTE MANAGEMENT		
	 disposal of waste management records prior to 5 years; any breach in containers for transporting hazardous materials; and transport, storage or disposal of wastes by an unlicensed contractor and/or to a facility unlicensed to accept a specific waste. 		
Corrective Action	 In the event of an incident or failure to comply then one or more of the following corrective actions will be undertaken by the CERO: review work place practices; the CERO will notify appropriate authorities immediately in the event waste is removed from the premises in an unauthorised manner; any spillage of waste will be cleaned up immediately and the waste disposed in an approved manner; and report corrective action. 		

11.4.2 Liquid Waste

The management plan for managing on-site liquid waste generation is outlined in Table 13.

Table 13 - Liquid Waste	Management Pla	in (Commissioning	and Initial Operation)
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ELEMENT	LIQUID WASTE MANAGEMENT		
Policy	To prevent or minimise the generation of liquid wastes (where practicable) and to contain, control and dispose of waste in accordance with required liquid waste management practices and applicable Authorities.		
Performance Objective	All liquid wastes will be minimised, recycled or disposed of in an approved manner.		
Implementation Strategy/Mitigation Measures	 The following measures will be implemented at the power station: management of stormwater in accordance with the Stormwater Management Plan. liquid waste (where possible) will be separated for storage, transport and disposal; recyclable liquid wastes will be stored in safe, secure areas away from drains or watercourses prior to reuse or collection by contractors; loading and unloading of hazardous materials will only be undertaken in designated areas in a manner that reduces potential for spillage or loss 		

ELEMENT	LIQUID WASTE MANAGEMENT				
	requiring disposal;				
	• waste oil and grease will be stored in the existing facility away from drains or watercourses in bunded, roofed and sealed areas and collected by a licensed waste recycler or contractor;				
	• the integrity of all bunds, tanks, pipes and valves will be checked regularly to prevent leakage or spillage of hazardous materials;				
	 personnel, trained in contingency action and spill clean up procedures, will supervise all bulk transfers of fuel and/or chemicals on site to minimise the potential for spillage; 				
	• should a spill occur during bulk oil transfer, etc., waste oil will be captured in the bund system and pumped into 200 L drums (material will be assessed for reuse or disposal by a waste oil contractor);				
	• all liquid waste generated and utilised on site will be documented annually;				
	• regulated liquid wastes for disposal or recycling off-site, will be removed by an approved contractor. The volume of each class of regulated liquid waste disposed from the site will be recorded on a monthly basis. Regulated wastes will not be sent for disposal at any facility without written agreement from the person operating that facility;				
	• liquid wastes will be stored in a secure (and where practicable covered) area for collection by an approved operator; and				
	• waste process water will be discharged to a designated point by the Employer.				
Monitoring	Daily checks of waste chemical storage containers and bunds will be performed by a competent person nominated by the CERO.				
	The CERO will record the following when regulated wastes are removed from the site:				
	• date;				
	• quantity;				
	• type of waste removed;				
	• name of waste transporter and/or disposal operator; and				
	• intended treatment/disposal destination of waste.				
	The CERO will prepare and submit an annual review including the following:				
	• all wastes produced by the facility;				
	• the amount of waste which is recycled;				

ELEMENT	LIQUID WASTE MANAGEMENT				
	• cost associated with disposal and/or treatment of each waste material; and				
	• a written plan for reducing, to the extent possible, the amount of waste generated by the power station.				
	The CERO will report to the volume of each class of liquid waste disposed from the site.				
Reporting	The construction staff will report by exception the results of daily checks of liquid waste storage areas to the CERO, within 24 hours. A monthly summary report will be provided to the CERO on the results of daily check inspections.				
	The CERO will report results of check inspections to the Site Manager and Griffin Energy on a monthly basis.				
	A Waste audit will be arranged by the CERO with a view to reducing waste generation and introducing waste recycling.				
	Changes to the Liquid Waste Management Plan will be submitted to DoE for comment.				
	The CERO will record details of storage and disposal of waste in accordance with licence conditions.				
	The CERO will be responsible for notifying the appropriate Authority if any regulated wastes or any materials which may have been disposed of on site and have potential to cause land contamination.				
Identification of Incident or Failure to	The following would constitute an incident or failure to comply in regards to liquid waste management:				
Comply	• unauthorised removal of liquid wastes from the premises;				
	• disposal of waste management records prior to 5 years;				
	• any breach in containers for transporting hazardous materials;				
	• spillage of liquid wastes due to poor handling practices;				
	• transport, storage or disposal of wastes by an unlicensed contractor and/or to a facility unlicensed to accept a specific waste; and				
	• regulated wastes, oils, greases, chemicals and solvents not stored in				
	segregated containers for collection by an approved waste contractor.				
Corrective Action	In the event of an incident or failure to comply one or more of the following corrective actions will be undertaken by the CERO:				
	• review work place practices;				
	• the OERO will notify the DoE immediately in the event that waste is removed from the premises in an unauthorised manner;				

ELEMENT	LIQUID WASTE MANAGEMENT		
	• any spillage of liquid waste will be cleaned up immediately and the liquid waste disposed of in an approved manner; and		
	• report corrective action.		

11.5Discharge Water Quality - Commissioning and Initial Operation Phase

ANZECC 1992 Guidelines will be used as guidelines for discharge water quality.

Water discharged from site operations/activities during commissioning and initial operation includes:

- stormwater from the site via overland flow and drainage;
- seepage from sedimentation dams and other water storages;

Sewage effluent and all ablution waste generated on the site will be processed by the existing sewage treatment plant.

The management plan for the power station discharge water quality is detailed in Table 14.

Table 14 - Discharge Water Quality M	Management Plan (Commissioning and Initial
Operation)	

ELEMENT	DISCHARGE WATER QUALITY MANAGEMENT PLAN		
Policy	To minimise and prevent the release of contaminants that may adversely affect down-stream water quality and other resources.		
Performance Objectives	Contaminants must not be directly or indirectly released to surface or groundwaters.		
Implementation Strategy/ Mitigation Measures	Stormwater will be managed in accordance with the Stormwater Management Plan. The Sewage Treatment Plant will process all sewage generated on the site.		
Monitoring	Discharge water quality sampling will be conducted regularly. Water parameters to be monitored include, but are not limited to, pH, Total Dissolved Solids and Total Oil and Grease.		
Reporting	Discharge water quality monitoring will be reported in the Annual Environmental Report.		

ELEMENT	DISCHARGE WATER QUALITY MANAGEMENT PLAN		
Identification of Incident or Failure to Comply	Failure to undertake sampling as per the EMP.		
Corrective Action	 Should an incident or failure to comply in relation to discharge water quality occur, one or more of the following corrective actions will be implemented as considered appropriate: investigate causes of incident or failure; review work place practices; repair water containment structures; implement additional water quality control measures to minimise discharge of water; and report corrective action. 		

11.6 Chemical and Oil Management - Commissioning and Initial Operation Phase

Limited quantities of chemicals will be stored on site for use in the commissioning and initial operation phase of eg. fuels, oil and grease, paints, chemical clean chemicals and solvents.

Oil will be used for flushing and testing activities and will be stored in the permanent oil storage tanks. A range of chemicals will be utilised on site during pre-commissioning and boiler chemical cleaning. Table 15 details the management plan for chemical and oil management during commissioning and initial operation.

Table 15 - Chemical and Oil Management Plan (Commissioning and Initial Operation)

ELEMENT	CHEMICAL AND OIL MANAGEMENT
Policy	To manage the purchase, storage, handling and disposal of chemicals and oil and prevent the uncontrolled release of chemicals or oil to the environment.
Performance Objective	Compliance with AS1940-1993 Storage and Handling of Flammable and Combustible Liquids and other relevant Australian Standards. Corrosive materials will be stored and handled in accordance with AS3780.8

ELEMENT	CHEMICAL AND OIL MANAGEMENT				
	(Class 8 substances – Corrosives).				
	No significant chemical or oil spillage is to occur.				
	No release of chemicals or oil to the environment.				
Implementation Strategy/Mitigation Measures	Material Safety Data Sheets (MSDSs) will be kept in a register at the site office along with a copy located near the chemical storage facility and stored together with a copy of the Workplace Health and Safety Act. Records will be kept on existing inventory, storage location, personnel training and disposal of waste for all hazardous materials used on site. Records will be kept by the CERO of current inventory (including storage location, volumes, types of chemicals and receipt date), personnel training and disposal of waste for all hazardous materials used on site. These records will be reviewed regularly.				
	All relevant construction staff will be trained in appropriate handling and storage requirements and spill clean-up requirements. Evidence of training records will be maintained.				
	Chemicals stored in aboveground tanks will be bunded to contain at least 100% of the capacity of the largest tank plus at least 10% of the second largest tank. Chemicals stored in drums will be bunded to contain at least 25% of the maximum stored quantity of chemicals. Packaged goods will be segregated in accordance with Australian Standards and be stored in a roofed bunded enclosure.				
	Waste oils will be stored in accordance with approved requirements and will be removed off site for recycling by approved contractors.				
	Spills will be cleaned up immediately. Contaminated runoff, contaminated soil and waste clean-up materials will be collected and remediated or disposed of in accordance with appropriate authority requirements.				
Monitoring	The Contractor will inspect bulk and packaged chemical containers, bunded areas and waste oil storage areas on a daily basis.				
	Potentially contaminated stormwater will be monitored to determine disposal options.				
Reporting	A record of all inspections and audits will be maintained for future review.				
	The CERO will report the results of inspections. Results of inspections by the CERO will be documented and reported to the Site Manager and Griffin Energy on a monthly basis.				
	Any spills will be reported on a site incident form to the CERO including actions taken to control, contain and clean up the spill. All spills will be reported.				
	Any significant chemical or oil spill to the environment will be reported.				
Identification of Incident or Failure to	The following constitutes an incident or failure to comply in relation to chemical or oil management:				

ELEMENT	CHEMICAL AND OIL MANAGEMENT		
Comply	 oil or chemical spill which cannot be immediately controlled, contained and cleaned up by the individual who discovers the spill, without obtaining additional equipment or assistance; storage areas which do not meet Australian Standards; chemicals or oils stored in areas not containing suitable bunding; and release of chemicals or oils to the environment. 		
Corrective Action	 Should an incident or failure to comply occur with current statutes and/or standards in relation to the chemical and oil management, the following corrective actions will be undertaken: contain and clean up spill material immediately and remediate or appropriately dispose of contaminated material; inspect bunds and carry out necessary repairs to ensure they are maintained in good working condition; locate chemicals in appropriately bunded or approved storage areas; 		
	• notify Emergency Services (if required).		

11.7 Notification of Emergencies or Incidents

The management of the notification of emergencies or incidents during construction, commissioning and initial operation phases will be conducted according to Table 16 below.

ELEMENT	NOTIFICATION OF EMERGENCIES OR INCIDENTS
Policy	The Contractor will notify relevant authorities, and Griffin Energy of any significant emergency or incident that occurs during the construction, commissioning and initial operation activities.
Implementation Strategy/Mitigation Measures	Any incidents or emergencies will be immediately reported to designated site personnel for action. All incidents will be documented on an incident form. All incidents and emergencies will be investigated to prevent further similar incidents from occurring.

Table 16	Natifi	nation /	of Im	arganaing	01	Indidanta
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ELEMENT	NOTIFICATION OF EMERGENCIES OR INCIDENTS				
	The Contractor will notify Griffin Energy and all other relevant groups of emergencies and significant incidents (eg. the release of contaminants to the environment) as described in reporting requirements below.				
	Relevant groups include government agencies and the local community.				
Monitoring	The following monitoring will be undertaken in relation to emergencies or incidents:				
	• incident forms will be checked within one week following the incident to ensure follow-up action (including reporting) is occurring;				
	• incident forms will be reviewed quarterly to identify opportunities for improving processes, activities or structural controls to prevent incidents; and				
	• where necessary, relevant environmental monitoring will be conducted as soon as possible to determine impacts.				
Reporting	 where necessary, relevant environmental monitoring will be conducted soon as possible to determine impacts. All environmental incidents/emergencies will be reported to the CERO and Site Manager or other designated person. The Contractor will notify other relevant groups of any emergencies/significant incidents. The Contractor will provide preliminary notification of any significant incident/emergency by facsimile to Griffin Energy within 24 hours. The following information will be provided as required: location of the emergency or incident; the name and telephone number of the designated contact person; time of emergency or incident; suspected cause for the release; the environmental harm or nuisance caused by the release; and actions taken to prevent further releases. The Contractor will supply written advice concerning the incident/emergency to relevant authorities within 14 days of initial notification. The report will contain the subsequent information: outcomes of actions taken at the time to prevent or minimise environmental harm or nuisance; actions to prevent a recurrence of incident/emergency; and 				
Identification of	The following constitutes an incident or failure to comply in relation to notification				
Incident or Failure to	of emergencies or significant incidents:				

ELEMENT	NOTIFICATION OF EMERGENCIES OR INCIDENTS
Comply	• incident or emergency not reported internally;
	• incident or emergency not documented;
	• incident or emergency not investigated or followed up;
	• Authorities not notified of emergency or incident if required; and
	• Written notification or results of monitoring not supplied to other relevant
	authorities and Griffin Energy within 14 days.
Corrective Action	Should an incident or failure to comply occur, an investigation will be undertaken
	to ensure future compliance with reporting requirements. Griffin Energy will be
	notified of the corrective action.

11.8 Emergency Response Plan

There may be chemical and petroleum storage areas for the construction, commissioning and initial operation of the power station.

In addition to routine management procedures, a non-routine hazard plan (Contingency/Emergency Plan) to minimise the impact of hazards on the environment during the course of operations is required. A draft site Contingency/Emergency Plan is outlined in Table 17 - specific details would be finalised after prior to the commencement of construction.

ELEMENT	CONTINGENCY / EMERGENCY PLAN
Policy/Performance Objective	The objective of the Contingency/Emergency Response plan is to protect site employees and to prevent or minimise the impact of an emergency on the environment during construction, commissioning and initial operation activities.
Implementation Strategy/Mitigation Measures	All bulk fuel oil tank storage areas will be provided in accordance with relevant Australian Standards. Lockable valve outlets on the bund for the bulk chemical and fuel oil storage areas will be provided for the controlled release of rainwater. Chemical storage areas will provided in accordance with relevant Australian
	Standards. Operational procedures for response to emergencies will be clearly marked in relevant areas. Training will be provided to all applicable staff and evidence of training maintained.

Table 17 - Contingency / Emergency Plan

ELEMENT	CONTINGENCY / EMERGENCY PLAN
	Operational procedures will be documented to ensure all tanker unloading activities are in accordance with AS 1940-1993 Storage and Handling of Flammable and Combustible Liquids.
	Plant personnel, trained in contingency action and spill clean up procedures, will supervise unloading of all bulk oil.
	Materials, equipment and trained personnel will be available on site for immediate action in the event of a spill.
	Spill clean up materials and response equipment will be stored in appropriate dedicated areas. Inventories of this equipment will be conducted to ensure they are properly maintained. Fire equipment will be maintained in the locations designated.
Reporting	This plan will be reviewed annually (revised as necessary).
	Environmental incidents will be reported as described in the Notification of Emergencies or Incidents (Construction) Management.

APPENDICES

Construction Environmental Management Plan