Plan

GEN-HSE-EMP-UPS

Uranquinty Pow
Environmental M
Plan

Version 8.0

Released 30 January2014

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make a difference.™

Definitions

Definitions of terms used in this EMP:

Term	Definition
UPS	Uranquinty Power Station
dBA	Decibel in A-weighting scale.
EPA	NSW Environmental Protection Authority
DoP&I	NSW Department of Planning and Infrastructure
Other Appropriate Regulatory Authorities	As per PEOA, 1997 means – • Ministry of Health, • NSW WorkCover or • NSW Fire & Rescue
EMR	Environmental Management Register
PEOA	NSW Protection of the Environment Operations Act, 1997
EP&A Act	NSW Environmental Planning & Assessment Act, 1979
EMP	Environmental Management Plan
ERP	Emergency Response plan
HSE	Health, Safety and Environment
MSDS	Material Safety Data Sheet
Objective	Generations document filing system.
OCIS	Origin Collective Intelligence System
RCMS	Regulatory Compliance Management System
Source	Origin Energy's intranet site

Contents

1. Introduction

1.1 Purpose

The purpose of this Uranquinty Power Station (UPS) Environmental Management Plan (EMP) is to identify and communicate site specific environmental management requirements to eliminate or minimise potential adverse environmental impacts and to develop positive environmental practices.

The EMP also details UPS's incident and complaints management process.

1.2 Objectives

The key objectives of the EMP are to:

- ensure that all people onsite are fully informed of their responsibilities and accountabilities at UPS with regard to the environment; and
- ensure day to day operational activities of UPS are conducted in a manner consistent with the applicable regulatory approvals including permits and licences, legislation and industry standards.

Further objectives of the EMP are to:

- Encourage good environmental management practices through planning, commitment and continuous improvement;
- Define roles and responsibilities of site personnel;
- Define reporting requirements and performance evaluation criteria;
- Provide a framework to track, document and monitor compliance with statutory requirements and to ensure full compliance is achieved;
- Set out work practices, procedures and controls established to minimise environmental risks and to ensure statutory compliance;
- Set out the monitoring procedures for identifying potential impacts on the environment; and,
- Establish response procedures for actual or potential environmental problems including community complaints and ensure effective corrective action is taken.

1.3 Environmental Duty

There is an Environmental Duty identified under the NSW Protection of the Environment Act 1997:

> ***"124 & 139 Operation of plant***
>
> *The occupier of any premises who operates any plant (other than control equipment) at those premises in such a manner as to cause the emission of pollution from those premises is guilty of an offence if the pollution so caused, or any part of it, is caused by the occupier's failure:*
>
> *(a) to maintain the plant in an efficient condition, or*
>
> *(b) to operate the plant in a proper and efficient manner.*
>
> ***148 Pollution incidents causing or threatening material harm to be notified -***
>
> *(1)* ***Kinds of incidents to be notified***
>
> *This Part applies where a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened.*
>
> *(2)* ***Duty of person carrying on activity to notify***
>
> A person carrying on the activity must, immediately after the person becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it."

2. Site Description

Table 2.1: Property Description

Property	Description
Site Name	Uranquinty Power Station.
Approximate location	The Uranquinty Power Station is located on Uranquinty Cross Road near Uranquinty, approximately 15km south-west of Wagga Wagga in New South Wales
Site Address	280 Uranquinty Cross Road, Uranquinty NSW 2652
Postal Address	PO Box 46 Uranquinty NSW 2652
Land Lot Description	Lot 782 on DP878179 and Lot 76 on DP754573, Parish of Yarragundry
Business Owner	Origin Energy Uranquinty Power Pty Ltd.
Local Authority	Wagga Wagga City Council
Land use zoning	Primary Production

2.1 General

The Uranquinty Power Station is a gas fired power station in NSW. The plant output is generated by four nominally 166MW open cycle gas turbines.

The Power Station is fuelled by natural gas that passes through the site at a pressure of up to 102 MPa.

The existing buried natural gas pipeline runs along the western side of the Plant and then diverts north-east between the Plant and switchyard. The natural gas enters the facility through a metering skid and a gas receiving station and is then directed to the gas turbines. Exhaust gases are dispersed via a stack, 35m in height, adjacent to each gas turbine building.

Process water is obtained from the town water reticulation system and treated via the demineralization plant to meet process specifications. This process uses reverse osmosis technology with electrodeionization (EDI) to turn pure water into ultra pure water, water treatment wastes are pumped to the evaporation pond.

Approximately 1ML of the town water storage is held in reserve for firefighting purposes.

The basic components or structures involved in the facility are:

- gas pipelines and gas fuel filter and reduction station;
- gas turbine buildings, transformers and exhaust stacks;
- water storage and demineralization plant (reverse osmosis);
- power control centre/building;
- emergency diesel generators and minor distillate tanks; and
- fire control facilities.

Other support facilities include an office building, warehouse, workshop, storm water holding pond and evaporation pond are also constructed adjacent to the Plant.

Refer also to the *Site Layout Schematic – Appendix 1* which shows the key components or structures of the Power Station.

The Power Station is licenced by the NSW EPA for Electricity Generation at a scale of between >1000-4000 GWh.

Table 2.2: Overview of UPS

Category	Description
Power Generating Capacity	Rated output of each Unit is 166MW.
Fuel	Natural Gas
Technology	4x Siemens SGT5-2000E turbines
Facility Footprint	35 ha
Plant Operating Mode	Manned & Remote Operation
Personnel	9
No Units	4

2.2 Site Locality

The Uranquinty Power Station is located on Uranquinty Cross Road near Uranquinty, approximately 15km south-west of Wagga Wagga in New South Wales. It covers a portion of Lot 782 on DP878179 and Lot 76 on DP754573, Parish of Yarragundry. The designated site area is 450m x 775m (35 Hectares).

The site is located on an intersection or crossover between an existing natural gas pipeline, which traverses local rural properties from south to north, and 132 kV electricity transmission lines. Direct access to the site is available from the sealed Uranquinty Cross Road. A disused railway line also runs along the southern boundary of this road corridor.

The map below shows the locality of the Power Station Site in relation to Wagga Wagga:

Figure 2.1 – Project Site Location in Relation to Wagga Wagga

2.3 Site ownership

Origin Energy Power Limited

2.4 Environmental context

Topography

The site is located on the catchment divide between the Sandy Creek drainage to the east and the Roping Pole Swamp drainage to the west.

Sandy Creek is an intermittent stream, which flows through Uranquinty Township and drains to the north to the Murrumbidgee River.

The general topography of the Uranquinty area consists of extensive, gently undulating plains at around RL 200 - 240 metres, 10 to 20 metres above the regional alluvial plain surface. The drainage lines identified in the area are sparse and shallow.

Climate

The typical average climate for the area is characterised by warm to hot summers (>10 days in January and February where maximum temperature exceed 30°C) and cool winters.

The average annual rainfall is 450 – 550 mm per year which predominantly falls in the winter months. Summer rainfall is highly variable and during dry periods can result in substantial curing of pastoral and grazing land. Summer storms are possible and are often associated with lightning strikes with potential to ignite cured vegetation.

The prevailing wind directions during the bushfire danger period (September to December) are strongly from the west to southwest with easterly influences associated with storm activity noticeable during Late Summer (January and February).

Access

Access to the facility is from Uranquinty Cross Road that is an all-weather road that connects to the Olympic Way Highway to the east of the site.

Vegetation

The vegetation structure on the site is typical of agricultural landscapes in the region. Only one vegetation type occurs on the UPS site, which is best described as exotic grassland with scattered trees.

The roadside verge consists of Yellow Box and White Cypress Pine. The verge is narrow, but contains several mature Yellow Box trees and some Acacia, particularly on the eastern side of the site.

Based on the remnant trees present, the UPS site would originally have been White Box, Yellow Box, Blakely's Red Gum Woodland which is an Endangered Ecological Community (EEC) in NSW. However, very few features of this original community now remain.

The vegetation on-site is of low conservation value. While the site contains trees indicative of the NSW EEC, the site is almost completely covered with exotic pasture species and weeds, with few features of the described community.

The roadside vegetation is of moderate conservation value. It contains a mixture of trees, regenerating trees, shrubs and native ground cover. Exotic species still dominate the ground cover, but the site provides important resources in a landscape widely cleared of native vegetation.

3. Environmental Management Structure

3.1 Context of this Document

The OEMP provides the environmental component of Origin's Health, Safety and Environment Management System (HSEMS) for the operation of the Uranquinty Power Station.

In line with this role, the EMP contains environmental detail sufficient to ascertain project:

- Governance – the EMP establishes a framework for management and control of activities with environmental aspects and key risks identified;
- Assurance – the EMP is the key plan describing how Origin and its contractors will control the environmental aspects of Station operation and how appropriate reviews will be carried out;
- Verification and validation – the EMP provides a framework to assure environmental quality and performance outcomes can be verified and validated.

3.2 Health, Safety and Environment Policy

Origin's commitment to the Environment and to responsible Environmental Management is outlined in their Health, Safety and Environment (HSE) Policy. This HSE Policy can be found on the Origin Intranet site 'Source'.

3.3 Origin HSE Management System (HSEMS)

Origin has a Health Safety and Environmental Management System (HSEMS). Origin has a Group Manager, HSE, who is responsible for the development, implementation, review, audit and improvement of the HSEMS. The HSEMS comprises the following;

- HSE policy, which describes Origin's high level commitment to HSE;
- HSE Standards, which describe the minimum HSE and community criteria that is to be achieved by Origin and its respective business units
- HSE Directives, which set out the minimum requirements for meeting and maintaining the HSE standards;
- Emergency Response and Crisis Management Plans for the company and for specific operations and sites;
- Incident Management procedures, reporting requirements and rehabilitation programs;
- Access to reference documents, encompassing HSE legislation, Australian Standards and Guidelines, Industry Codes and other relevant publications;

These documents are available on 'Source' and 'Objective' Generation's document filing system.

3.4 Origin Environmental Management Structure

Figure 3.1 illustrates the HSE management structure specifically relevant to the UPS.

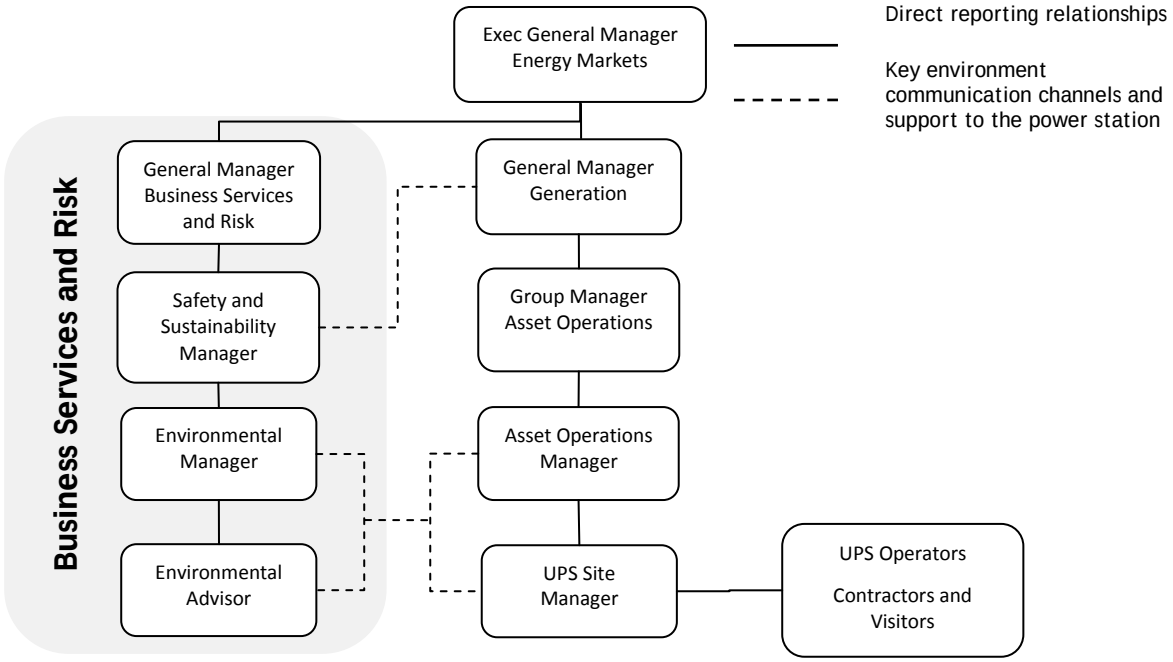


Figure 3.1: Reporting Relationships and Key Environmental Communication Channels.

3.5 RCMS and eAMS

A Regulatory Compliance Management System (RCMS) assists in keeping track of compliance obligations in Generation. The system generates and sends reminder communications to responsible personnel when an obligation is due and provides necessary reference materials to personnel. Where the requirements identified in the compliance matrix include an external party they will be entered into and managed through RCMS by Risk and Compliance or HSE depending on the jurisdiction of the requirement.

The enterprise asset management system (eAMS) is also used for compliance obligations at UPS. Any requirements that are related to plant maintenance activities and routines shall be entered by the Administrator/Maintenance Planner into eAMS with assistance from HSE. These shall be identified specifically as compliance items by use of the compliance attribute.

4. Roles, Accountability and Responsibility

All Origin personnel, contractors and visitors are responsible and accountable for HSE implications of their actions and have a duty to work in a manner which does not present risk to themselves, others or the environment.

All employees, contractors and visitors have a minimum responsibility to:

- Notify the appropriate personnel of any environmental issue, incident, emergency, complaint that arises, **as soon as possible** (Site Manager, HSE Manager or Asset Operations Manager);
- Undertake relevant inductions and complete relevant environmental training;
- Undertake works in accordance with legislative and internal requirements and in an environmentally responsible manner; and
- Monitor and communicate environmental management issues as they arise.

The following table outlines more specific responsibilities for Origin personnel, contractors and visitors in relation to the UPS.

Table 4.1: Outlines the accountability for environmental aspects in the Generation Business Unit.

Position	Role
General Manager, Generation	• Ensure Generation's environmental issues are dealt with responsibly and in accordance with legislative and internal requirements. • Provide guidance/support from GLT level to resolve high-risk activities.
Group Manager Asset Operations	• Ensure sites' environmental issues are dealt with responsibly and in accordance with legislative and internal requirements.
Asset Operations Manager	• Ensure relevant sites' environmental issues are dealt with responsibly and in accordance with legislative and internal requirements. • Monitor and communicate environmental management issues. • Ensure personnel are inducted and have completed relevant environmental training. • Oversee incident investigations, emergencies and complaint investigations; monitoring the reporting, recording and associated corrective and preventative measures. • Ensure that regular inspections and audits of the systems of work and the workplace are conducted. • Reviewing environmental documentations.
UPS Site Manager	• Ensure that any necessary consents, licences, approvals, permits and certificates from the EPA (pollution control works) and any other relevant regulatory authorities are obtained and maintained. • Ensure that appropriate resources are made available to enable compliance with the requirements of this EMP during the project. • Ensure the EMP has been completed, signed off by HSE Manager – Generation and implemented. • Ensure the project is undertaken in a manner which protects the environment and in accordance with statutory requirements and Origin's Environmental Policy. • Ensure implementation of environmental management plans listed in Section 15 of this EMP. • Ensure the implementation of an Environmental Surveillance and Auditing Schedule, listed in Section 14.1 of this EMP. • Participate in environmental audits of the project, report non-conformances and take preventative and corrective actions as required. • Ensure that all site personnel, including sub-contractors, are aware of their environmental responsibilities in the management and implementation of

Position	Role
	safeguard controls and actions. • Ensure that corrective and preventative actions arising from internal assessments or environmental audits are implemented. • Ensure that any spills or accidents on site that are likely to cause significant pollution are reported to Origin Executive Management Team in accordance with Origin's Incident Management Procedure (HSE-PRC-004) and dealt with appropriately. Ensure that records are kept including details of the incident, notification of EPA and actions taken. • Report on effectiveness of safeguard measures to the Generation Management Team. • Participate in community consultation/liaison contact. • Undertake annual review and update of EMP. • Ensure Annual Environmental Report is prepared and submitted
Site Environmental Coordinator	• Co-ordinate weekly/monthly Site Environmental Inspections • Manage maintenance works for off-site screening Manage site landscape works • Manage environmental filing system • Participate in environmental audits of the project, report non-conformances and take preventative and corrective actions as required. • Co-ordinate water quality sampling and monthly metrological weather & CEMS data downloads. • Participate, with assistance where required from HSE Generation, in production of environmental reports
HSE Manager	• Provide a decision-making framework based on advice and recommendations from the Environment Manager, where a decision is outside the operating authority of the Environment Manager. • Conduct or oversee assurance and audit activities.
Environment Manager	• Provide technical environmental support to the HSE Manager and site. • Lead the environment functional group to support and provide advice to site on environmental issues. • Liaise with regulatory authorities on behalf of site. • Ensure that relevant changes in environmental legislation are reviewed and communicated upwards and to the relevant stakeholders who may be affected. • Assist with environmental hazard identification, risk assessment and environmental risk management programs. • Ensure relevant environmental training is presented and induction material updated.
Environment Advisor	• Provide technical environmental support to the Environment Manager and site. • Provide advice and support that reflects current environmental management practice and regulatory frameworks.
Contractors and visitors	• Undertake works in an environmentally responsible manner, and in accordance with legislative and internal requirements. • Create appropriate procedures for their specific tasks/ duties as required • Report incidents or emergencies as soon as possible.

4.1 Environmental Representative

Generation shall nominate a suitably qualified and experienced Environmental Representative for the Project. The Environmental Representative will be employed on a full-time basis during the life of the development and will also be approved by the Director General.

The Environmental Representative shall be:

- the primary contact point in relation to the environmental performance of the development;
- responsible for all Management Plans and Monitoring Programs required under this consent;
- responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development;
- responsible for the management of procedures and practices for receiving and responding to complaints;
- given the authority and independence to require reasonable and feasible steps be taken to avoid or minimise unintended or adverse environmental impacts, failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

The current Project Environmental Representative and contact details are listed below.

Generation Environmental Representative	Contact Details
Fiona Allen	Email: Fiona.allen.com.au 07 3867 0364 04088 401 788

In the event there is a change to the current Environmental Representative, the Site Manager is to prepare and submit an application detailing the qualifications and experience of the nominated Environmental Representative to the Director General for Department of Planning & Infrastructure (DOP&I) for approval.

After DOP&I approval, the Site Manager shall notify the Director-General, the EPA, WWCC and the Community Participation Panel of the name and contact details of the new Environmental Representative. The contact details in this EMP will also be updated.

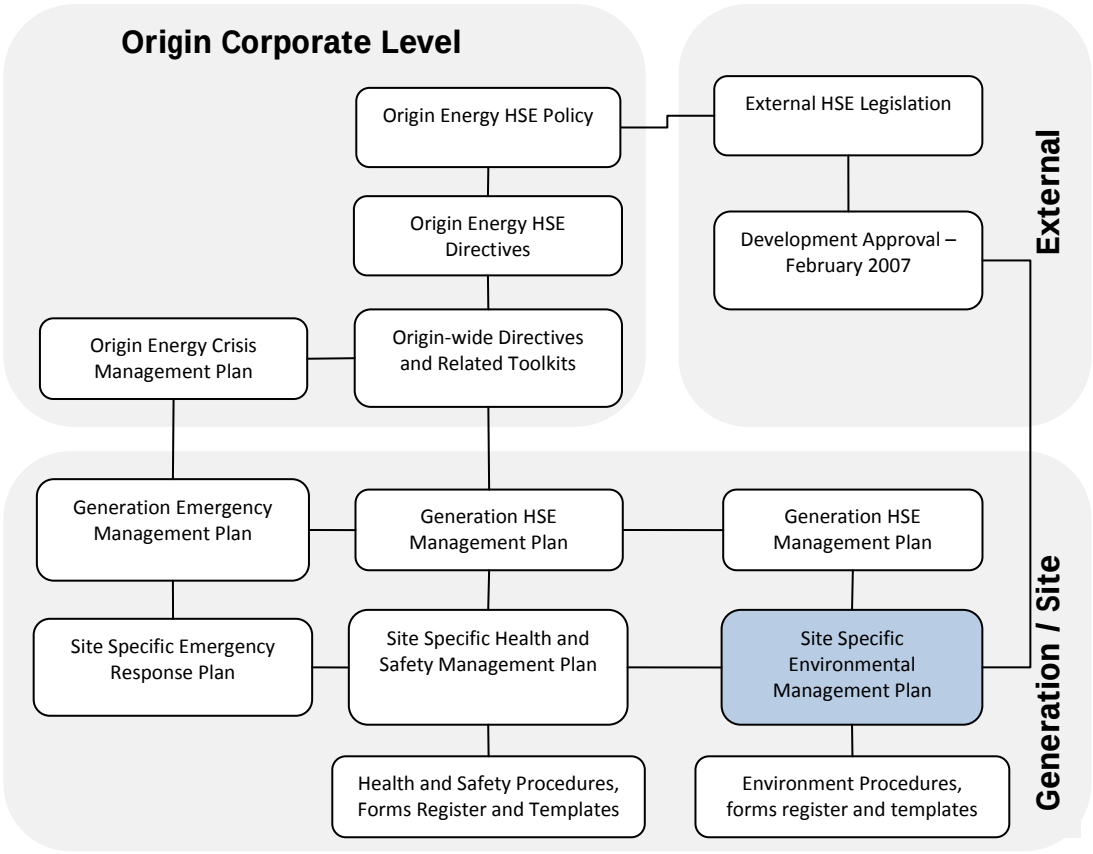
The Environmental Coordinator will ensure all correspondence in regard to changes to the Environmental Representative is stored in the site environmental files.

5. EMP Documentation

5.1 Documentation Hierarchy

In relation to the Uranquinty Power Station Environmental Management Plan, a brief hierarchy of documents is set out below:

Figure 5.1: Generation HSE Documents



6. Legislative

This section outlines the environmental legislative requirements and approvals that need to be complied with to minimise the risk of environmental harm from project work.

6.1 Environmental Legislation

The Generation Business Unit maintains regulatory registers summarising regulation in regard to how it affects Generation activities. A broader Obligations Register is also maintained by Origin Corporate office.

The primary pieces of environmentally related legislation affecting operation of Uranquinty Power Station are the Environmental Planning & Assessment Act, 1979 , and the Protection of the Environment Operations Act, 1997, and their subsidiary regulations and associated guidelines including the NSW Industrial Noise Policy.

6.2 Project Specific Environmental Conditions

6.2.1 Site Development Consent

As well as complying with relevant legislation, all site activities must comply with the provisions set out in the following Department of Planning Development Consent – DA-31-2-2004-i.

The following table provides a summary of the Department of Planning Development Consent and modifications to date.

Approval	Nature of approval	Relevant Authority	Date
DA-31-2-2004-i 600MW Gas-fired Power Station	Development Consent	NSW Department of Infrastructure Planning and Natural Resources	10/06/2005
DA MOD Stage 2 of development combined with stage 1	Modification to Consent	NSW Department of Infrastructure Planning and Natural Resources	8/08/2006
MOD-47-5-2007-i Change to operational noise limits	Modification to Consent	NSW Department of Planning	6/07/2007
MOD-66-12-2009 Administrative corrections to wording of DA	Modification to Consent	NSW Department of Planning	18/12/2008
DA-31-2-2004I MOD4 Application for the building of a storage shed onsite	Modification to Consent	NSW Department of Planning	14/07/2009
DA-31-2-2004I MOD5 Modification to preclude the application of noise limits where a noise agreement is in place or for residences which are authorised after a specified date *(Refer Below)*	Modification to Consent	NSW Department of Planning	11/12/2009
DA-31-2-2004I MOD6 Application for installation of 60 metre weather mast	Modification to Consent	NSW Department of Planning	13/8/10
DA-31-2-2004I MOD7 Modification to preclude the application of noise limits where a noise agreement is in place or for residences which are	Modification to Consent	NSW Department of Planning	27/8/10

authorised after a specified date			
DA-31-2-2004I MOD8 Clarification on Normal Operating Hours to allow for Noise Testing	Modification to Consent	NSW Department of Planning	21/9/10
DA-31-2-2004I MOD9 Modification of Water Treatment Plant and Water Recycling Project	Modification to Consent	NSW Department of Planning	12/11/10
DA-31-2-2004I MOD10 Construction & Operation of extended on-site storage shed	Modification to Consent	NSW Department of Planning	28/5/10

The Modification to Development Consent DA-31-2-2004I MOD5 on the 11th December 2009 refers to noise limits at some residences in close proximity to the Power Station. As a result noise limits in the Consent and Licence do not apply at residents where an agreement is in place, or at residential dwellings authorised for construction after the date the Modification was approved.

The Development Consent DA-31-2-2004I is available on-site as up to date hard copy or electronic format.

6.2.2 Site Environment Protection Licence

A copy of the site EPA Environmental Protection Licence – 12490 will be stored in hard copy at all times in any easily accessible location on-site. It is also available on the EPA Public Register which is available on the Internet at:

- http://www.environment.nsw.gov.au/

The Site Licence is to be made available to any authorised officer of the EPA. The Site Licence also must be made available for inspection by any employee or contractor working at the site.

The Environmental Coordinator will be responsible for ensuring an up to date copy of the Site EPA Licence is stored on-site and is available for inspection. All Generation personnel will know where the Site Licence is stored so, if required, they can produce the Site Licence for inspection.

The following table provides a summary of the Environmental Protection Licence and it's variations to date.

Approval /Licence	Nature of approval	Relevant Authority	Date
Environment Protection Licence 12490	Environment Protection Licence	NSW Environment Protection Authority	27/11/2006
Notice 1088683 to vary the licence, generation capacity and operational noise limits	Licence variation	NSW Environment Protection Authority	03/07/2008
Notice 1090067 to vary the licence, generation capacity and operational noise limits	Licence variation	NSW Environment Protection Authority	18/07/2008
Notice 1090485 to vary the licence, generation capacity and operational noise limits	Licence variation	NSW Environment Protection Authority	22/07/2008
Notice 1090485 to vary the licence preclude the application of noise limits where a noise agreement is in place	Licence variation	NSW Environment Protection Authority	24/12/2009

Notice 1115626 to vary the licence allow for noise testing & additional water quality conditions for stormwater pond release and irrigation.	Licence variation	NSW Environment Protection Authority	23/9/2010
Notice 1126629 to vary the licence allow for relaxation of noise limits during prescribed noise testing.	Licence variation	NSW Environment Protection Authority	30/3/2011

7. Generation Risk Management

Risk Management across all Generation sites is in accordance with Generation's Risk Management Procedure, GEN-PRC-001 available on 'Source'. This document outlines the relationship between the principles for managing risk, the framework in which it occurs, and the risk management process as it applies to Generation.

7.1 Risk Assessment

All personnel receive regular training in the implementation of this procedure and use of the relevant risk assessment tools used to identify, assess and manage risks across site. All personnel and contractors are responsible for completing a GenSafe, JSEA or formal risk assessment prior to conducting any task, in accordance with Generation's Workplace Risk Assessment Procedure (GEN-HSE-SOP-071).

All sites maintain a register of all operational risks across site including those of an environmental nature and these are updated with any change in risk level, as new risk items are identified and as part of annual risk reviews facilitated by Generation's Risk & Governance Team. All actions nominated within this risk register for the improved management of risks are tracked for completion by nominated responsible and accountable parties within the Origin Collective Intelligence System (OCIS).

8. Environmental Training

8.1 Training

Environmental training shall be conducted for all employees and contractor(s) associated with UPS operations. The environmental training to be undertaken by personnel (induction, environmental awareness and additional modules) will depend on their site activities.

8.2 Induction Programs

All Employees and contractors to the site shall complete the induction. The induction program shall include but not be limited to the following elements;

- Understanding of the environmental policy and obligations associated with environmental management;
- Understanding of the environmental aspects and associated impacts of the site's operation;
- Outline of the management plans relevant to the works being undertaken; and
- Outline of the incidents/accidents notification procedures and corrective action procedures
- Visitors shall complete the OLMS visitor induction.

8.3 Environmental Awareness

Environmental Awareness training shall be undertaken on an as needed basis, as directed by the Asset Operation Manager, UPS Site Manager, or advised by the Environment Manager. This environmental awareness training may include:

- Overview of Origin Health Safety and Environment Policy and management system;
- Due Diligence;
- Environmental legislation;
- General environmental issues;
- Roles and responsibilities;
- Environmental management; and
- Operational management procedures for specific environmental issues.

8.4 Operator Training

In addition to the above induction and specific environmental training, Generation personnel undertake a range of other training specific to the Power Station's operations and hazards inherent to the maintenance activities required at the site. The requirement to source and undertake this training for personnel is undertaken via a needs analysis process where on site operational roles, plant interactions and work activity hazards and energies are identified for each worker with subsequent awareness, training and competency requirements matched-up accordingly.

Examples of such training include, but are not limited to: *Gas Turbine Familiarisation & Simulator Training, Gas Supply Training, Water Treatment Plant Training, Transformer Training, Risk Assessment Training, PTW Training,* ***and*** *Hazardous Area Awareness Training.*

9. Complaints Handling

The site maintains the following for community complaints:

- A 24-hour, toll-free telephone number on which complaints about the facility may be registered;
- A postal address to which written complaints may be sent;
- An email address to which electronic complaints may be transmitted.

Complaints Notification Channels	
Toll Free Phone Number	1800 465 719
Postal Address	PO Box 46 Uranquinty NSW 2652
Email Address:	uranquinty@originenergy.com.au

Records of all complaints received by the site from a complainant shall be maintained in a Complaints Register.

The Complaints Register shall record,

- the date and time, where relevant, of the complaint;
- the means by which the complaint was made (telephone, mail or email);
- personal and contact details of the complainant that were provided, or if no details were provided, a note to that effect;
- the nature of the complaint;
- any action(s) taken by the site in relation to the complaint, including any follow-up contact with the complainant;
- and, if no action was taken by the site in relation to the complaint, the reason(s) that no action was taken.

The Complaints Register shall be made available for inspection by the EPA and the Director-General upon request.

All complaints must be recorded in Origin's Collective Intelligence System (OCIS) in accordance with the Incident Management Procedure. The Complaints Register may comprise the relevant reports extracted from OCIS.

A current summary of the Complaints Register, without details of the complainants, will be developed and maintained by the site. This summary document will be made available to the public for inspection upon request.

The Site Manager shall be notified of all complaints received in relation to the project.

9.1 Complaints Response Process

The Uranquinty Power Station toll free complaints phone number will be manned 24 hours a day. Complaints received will be directed to the on-call operator or Site Manager in appropriate notification order.

All received complaints will be investigated as soon as practicable. Origin aims to advise noise complainants within one hour and all other complainants within 24 hours that their complaint has been received and the action being taken to investigate.

If appropriate, a response will be provided within a further 24 hours for noise complaints and within 48 hours for all other complaints, advising the action that has been taken, whether no action is proposed to be undertaken and the reasons for no action; or the action that is in progress and when a detailed response will be provided.

10. Community Engagement

A Community Participation Panel was established during the construction and commissioning phase of the Power Station to oversee community consultation. Following commissioning of the facility, the Community Participation Panel voted to go into recess, with the option of reconvening should the need arise.

A continuous process of community engagement will continue to be undertaken by Origin, to build positive relationships, trust and credibility in the community.

The community engagement process will ensure that:

- there is a basis for structured two way dialogue with the community, including a mechanism for the community to provide feedback in relation to environmental management and site impacts;
- the community's interests in Origin's activities are understood and mutual understanding is established;
- the risk of creating disaffected parties is minimised;
- a foundation for positive and beneficial corporate and community engagement is established;
- there is continuous improvement of Origin's relationship with the community
- a structured and documented grievance process to address and resolve community complaints is operational.

A Community Consultation Management Plan is available for the site and includes:

- general information about the environmental management and impacts of the facility on the community;
- the means by which information will be provided to the community (e.g. presented at regular meetings, website information etc);
- a system and procedure to address community complaints.

The Community Relations Advisor is responsible for managing the Community Consultation Management Plan. The Plan is available on site in hard copy or electronic format.

10.1 Community Access Document Register

Subject to confidentiality, the site shall make all documents required under the Development Consent available for public inspection on request. This shall include provision of all documents at the site for inspection by visitors, and in an appropriate electronic format on the Generation internet site.

Documents will include but not limited to:

- Development Consent
- DECCW Licence
- EIS
- Water Management Strategy
- Statutory Monitoring
- Complaints Register (Summary)

The Environmental Coordinator will be responsible for keeping this community access document register up to date both in site hard copy form and electronic form.

10.2 Web Based Reporting of UPS Environmental Data

As per the modified PEOA, 1997, the UPS will display all the environmental monitoring data results on the UPS external web site.

The data will be published on the web site within 14 days of receiving or downloading the environmental monitoring results or data.

The Environmental Coordinator will be responsible for keeping this web based display up to date.

11. Environmental Emergency Response Plan

Emergency Response Plans are a requirement for all Origin Generation Sites, and supplement the Origin Generation ERP. The ERP provides guidance to employees on how to respond to an emergency, accountabilities & responsibilities, notification and specific site requirements. In addition the plan provides a basis for the establishment and ongoing management of an emergency response exercise programme.

Emergencies are considered to be unplanned incidents with the potential to harm people, property, the environment or Origin's interests, in which control is lost and immediate response action is required. In this situation, such as an unplanned release of contaminants from site entering the surrounding environment the Site Manager, or in his/her absence, the site operators or Environmental Management Representative will immediately implement the response actions detailed in the UPS Emergency Response Plan (ERP).

An Emergency Response Plan GEN-HSE-ERP-UPS for the Uranquinty Power Station has been prepared. Detailed information relating to response procedures, responsibilities and contact details are included in this plan. This Plan also covers the requirements for a Pollution Incident Response Management Plan as required under the modified PEOA, 1997.

11.1 What is an Environmental Incident

An Environmental Incident is an event which has the potential to cause environmental nuisance or harm or is an external complaint relating to an incident.

An incident is recognised to have occurred if staff answers yes to one of the following questions:

- Did the incident cause or threaten to cause an exceedance of an air or water discharge limit?; or
- Did the incident cause or threaten to cause damage to the environment (e.g., land contamination, Fire)?; or
- Did the incident cause or threaten to cause a nuisance to our neighbours (e.g. excessive noise, dust blown from site, odours)?; or
- Was an external complaint received?; or
- Did the incident result or could have resulted in a release of contaminants to land, water or air due to an abnormal event? Contaminants could be oil, chemicals, dust, bacteria, and solvents. An abnormal event could be mechanical failure of pipes, valves, tanks, drums. Where contaminants can or have reached storm water drains, these should be lodged as incidents.

According to the Performance Measurement and Reporting Protocol Environmental (HSE-PTC-001) Incidents are:

- All losses of containment (greater than 1 litre liquids, 1 kilogram solids, 100 cubic metre gas)
- Any volume of hazardous substance or dangerous goods spills (any volume or weight)
- All non-routine emissions or discharges

11.2 Environmental Incident Categories

11.2.1 Incident -CRISIS/Emergency Management (Very high risk):

- A situation where serious environmental harm is occurring and beyond the projects resources to control. Also covers disaster recovery from fire, explosion, toxic release or natural disasters.
- This covers those incidents which require outside assistance from emergency services, has an effect on the community / public; requires media response; may

involve compensation claims; requires immediate relief; extensive environmental remediation; immediate management response.

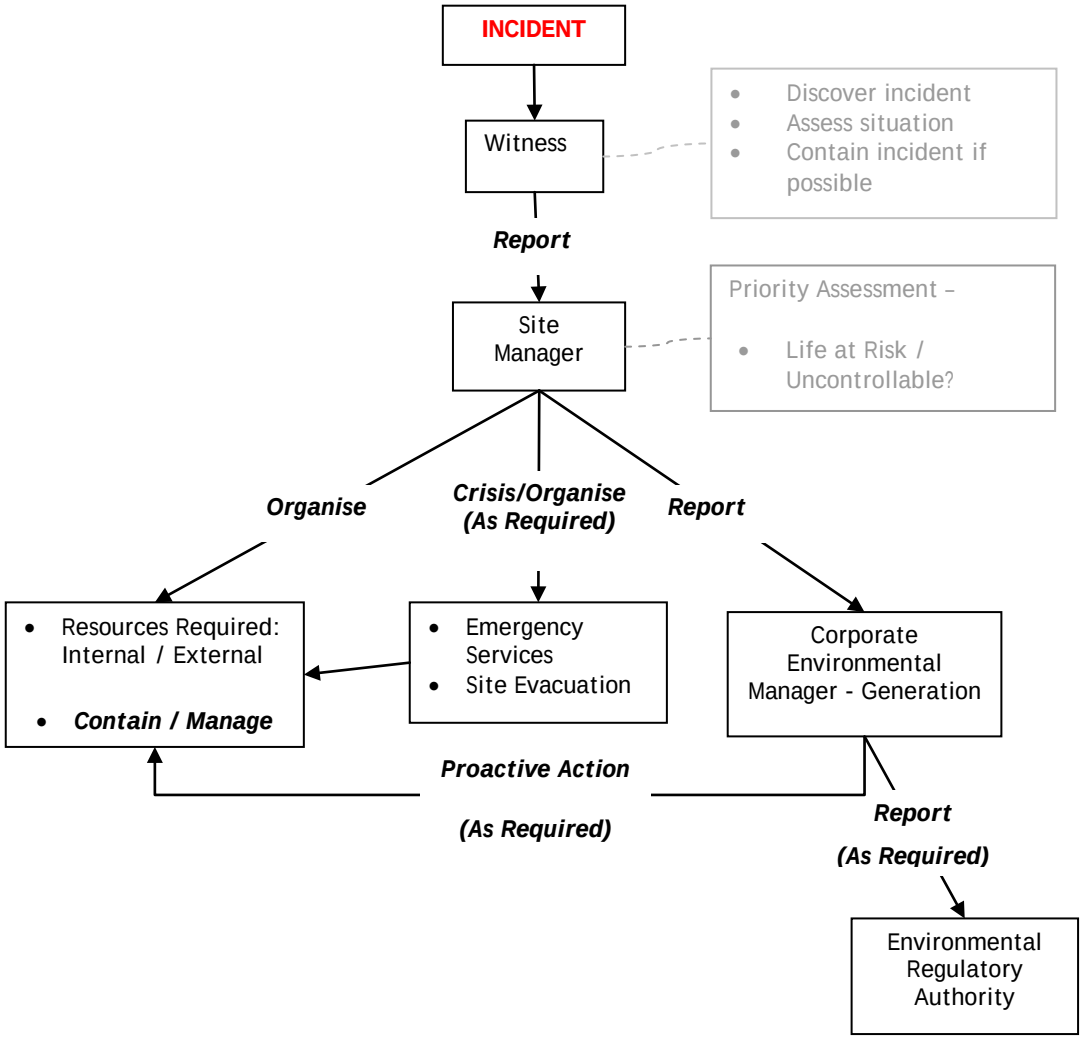
11.2.2 Incident - Medium Risk: These incidents include events involving:

- the release of medium quantities (> 1000 litres) of contaminants to land, water, or air due to an abnormal event
- breaches of licence compliance or the potential to
- contaminants requiring specialist management due to containment difficulties or their higher potential for impact
- valid external complaints
- These incidents may cause environmental harm or nuisance.

11.2.3 Incident - Low risk:

- These incidents involve small quantity (< 1000 litres), low impact contaminants and are well contained on site. These can be managed by individuals without requiring additional assistance or specialist resources.

11.3 Roles in an Environmental Incident



11.4 Pollution Incidents Reporting

HSE should be made aware of all environmental incidents **as soon as possible**. An environmental incident constitutes anything that may cause environmental nuisance or environmental harm to the surrounding environment and/ or community. Incidents are managed in accordance with the *Generation Incident Management and Observation Procedure GEN-HSE-SOP-048*. Should an environmental incident, accident or emergency occur, being an event that causes environmental nuisance, material environmental harm or serious environmental harm, the UPS site will immediately take action/s to minimise the impact. The following defines the process for internal and external notification.

11.4.1 Internal Incident Notification

The UPS Site Manager will escalate the notification as required based on their consideration of the consequence rating (using the Origin Risk Matrix) of the incident following discussions with the Immediate One-up Manager. All environmental incidents/accidents, near misses, regardless of actual or potential severity or magnitude, must be reported to the Asset Operations Manager and Manager of HSE as soon as possible.

11.4.2 External Incident Notification

Where notification to the EPA or other Appropriate Regulatory Authorities (Ministry of Health, NSW WorkCover or NSW Fire & Rescue) or the DoP&I may be required by legislation or where deemed appropriate by the HSE Manager, the person in control of the area/workplace must ensure the scene of the incident and any evidence (including reference notes and photographs) are preserved as far as practicable until instructed otherwise by the relevant statutory authorities.

Where there is a requirement to notify the EPA or other Appropriate Regulatory Authorities or the DOP&I the UPS Site Manager must contact the HSE Environmental team immediately to discuss the occurrence before contact with the external agencies is made.

The HSE Environmental team will manage the notification process to the relevant authority. When formalising communications to the relevant Authority all documented submissions **must** be reviewed and approved by the appropriate Asset Manager or their delegate before submission. Notification must be made:

- To the relevant authority as per the timeframes detailed below after becoming aware of the event.
- In writing to the relevant authority using the appropriate notice form.
- In writing to the occupiers or registered owners of affected land.
- The Asset Manager must also follow the appropriate Generation notification protocols and contact Risk and Compliance regarding any notification.

Notification to EPA or other Appropriate Regulatory Authorities

The EPA or other Appropriate Regulatory Authorities are to be contacted **immediately** should a notifiable incident occur, as defined under the Protection of the Environment Operations Act. A notifiable incident is where actual or potential harm threatens the environment, guidance as to the magnitude of such an incident is:

- the actual or potential harm to the health or safety of human beings or ecosystems is not trivial; or
- the actual or potential loss or property damage (including clean-up costs) associated with a pollution incident exceeds $10,000.

Notification to DoP&I

In accordance with Condition of Approval 101 the DoP Director-General and any relevant Government authority must be notified of any incident with actual or potential significant off-site

impacts on people or the biophysical environment **as soon as practicable** after the occurrence of the incident ("initial notification").

Written details ("written report") of the incident must be provided to the DoP Director-General and any relevant Government authority within seven days of the date on which the incident occurred.

Duty to Notify Pollution Incidents	
What must be notified:	Pollution incidents causing or threatening material harm to be notified. Meaning of "Harm": a. Harm – actual or potential harm to health/safety of humans or to ecosystem that is not trivial or results in actual loss or property damage of an amount exceeding $10,000. b. Loss – Includes all reasonable costs & expenses that would be incurred preventing, mitigating or making good damages. Under this section it does not matter if the pollution event did not go off-site. Pollution events on-site that meet these criteria have to be notified.
Who to Notify (External):	• NSW EPA • NSW DOP&I • Other Appropriate Regulatory Authorities (as required) – o Ministry Health o NSW WorkCover o NSW Fire & Rescue
Who to Notify (internally):	• UPS Site Manager • Operations Manager • General Manager (depending upon incident severity) • HSE Manager - Generation
Contact Details (External):	• NSW EPA - 131 555 (local call cost throughout NSW except from mobile phones), or (02) 9995 5555 (if calling from outside NSW). • NSW DOP&I - 02 9228 6111 • Other Appropriate Regulatory Authorities (as required) – o Ministry Health – 02 9391 9000 o NSW WorkCover – 131 050 o NSW Fire & Rescue – 000 (Emergency), Sydney Head Office – 02 9265 2999, Wagga Fire Station – 02 6921 4375
Timeframe (External):	• NSW EPA or other Relevant Regulatory Authority – Verbal notification **IMMEDIATELY** and full written details within seven days of incident occurring. • NSW DOP&I – Verbal notification **as soon as practicable** and full written details within seven days of incident occurring.
Notification Details (External):	a. Verbal notification first off followed by written notification. b. Relevant information required – • Time, date, nature, duration, location • Location of place pollution occurring from • The nature, concentrations, quantity of pollutant • Circumstances (causes) • Action taken or proposed actions to deal with incident.
External Notification to be Undertaken By:	HSE Manager - Generation, or delegate Depending upon the circumstance notification should be made by the site Environmental Representative. Contact HSE Group for advice.

11.5 Emergency Response Planning

Despite having inherently safe operations, safeguards and work processes, Generation recognises that there are potential emergency situations that specifically apply to its location and operations.

A site Emergency Response Plan (ERP) has been developed and implemented for the Uranquinty Power Station. The ERP details specific responses to environmental incidents and conditions. As a minimum, the *Emergency Response Plan GEN-HSE-ERP-UPS* shall be maintained such that it contains the following information:

- Emergency priorities
- Hazardous materials
- Emergency types
- Emergency Response Processes
- Responsibilities in an Emergency event
- Resources
- Training
- Notification & Contact Details

The Uranquinty Power Station is to maintain its response capability based on the most probable emergencies that may occur at the site. This response capability is dependent on emergency services and facilities in the immediate area.

At a corporate level, Origin maintains two separate Emergency Response Plans (Crisis Management Plan and Generation Group Emergency Management Plan) and how the site ERP links into these plans is illustrated in the Documentation Hierarchy diagram in 5.1 *Documentation Hierarchy of this EMP*.

12. Environmental Monitoring

As part of implementing this EMP, Generation recognise that processes for inspection, monitoring, and auditing, are essential in determining how well the environmental management on-site is:

- addressing key plant and environmental risks;
- achieving policy and regulatory objectives;
- responding to identified incidents, non-compliances or non-conformance issues;
- keeping up-to-date with legislative and industry standards.

Environmental monitoring to be undertaken during the project is detailed below in Section 12.1 and the sites regulatory environmental limits are detailed in Section 12.2.

12.1 Environmental Monitoring/Inspection/Auditing Program

Issue	Summary of Monitoring Requirements	When	Responsibility
Surface Water Quality	Inspect stormwater drainage, stormwater pond, evaporation pond, irrigation equipment/areas during the fortnightly Environmental Inspection.	At least fortnightly depending on activities and wet weather events	Environmental Coordinator
Stormwater pond	Stormwater pond discharge water quality – Sampling & Monitoring: • Chloride • Conductivity • pH • Sodium • Total Suspended Solids	Daily for any discharge off-site exceeding two hours	Environmental Coordinator
	Irrigation water quality monitoring – • Conductivity – Weekly • Sodium – Monthly • Chloride - Monthly • pH - Weekly • Total Suspended Solids - Monthly • Hydrocarbons - Monthly	Weekly or monthly as detailed during the irrigation season	Environmental Coordinator
Stormwater Pond and Evaporation Pond Water Blending	Blending to be undertaken as per Work Procedure UPS-PRC-009 - UPS Stormwater / Evaporation Pond Water Blending	Prior to all water blending events	Environmental Coordinator
Hazardous Chemical Storage	Inspect chemical storage areas, lube skids and equipment to ensure no leaks are occurring. Inspect oil water separator to ensure proper operation.	Daily & Weekly	Plant Technicians / Environmental Coordinator
Air Quality	NOx Monitoring	Continuous	Plant Technicians / Environmental Coordinator -
	Continuous Emission Monitoring System inspection	Daily / Weekly	Plant Technicians / Environmental Coordinator
	Continuous Emission Monitoring System data downloads as per Work Procedure UPS-PRC-010 - UPS CEMS Download and Data Management	Monthly	Environmental Coordinator
	Predictive Emission Monitoring System (PEMS) NOx calculation as per Work Procedure UPS-PRC-011 - PEMS Model Calculation & Data and Data Management	Following failure of CEMS Units	Environmental Coordinator

	Stack emission testing – • Velocity • Volumetric flow rate • Temperature • Moisture content in stack • Dry gas density • Molecular weight of stack gases • Carbon dioxide • Oxygen	Annually	Environmental Coordinator
On-site Landscaping	Inspect site screening works for: • Replanting requirements • Weed Control • Watering schedule • General maintenance	Monthly	Environmental Coordinator
Septic Waste System	Inspection operation of overflow submersible pump	Fortnightly	Environmental Coordinator
	Inspect waste tank level & arrange empting when required	Monthly	Environmental Coordinator
	Inspect transpiration trench area for – • Water pooling • Vegetation Maintenance	Monthly	Environmental Coordinator
Waste Disposal/Recycling	Inspect bins to ensure organise bin emptying before overflowing.	Fortnightly	Environmental Coordinator
Noise Emissions	Qualitative Noise Checks	When plant or equipment is introduced to the site or new activities undertaken	Environmental Coordinator
	Quantitative noise assessments – As per Section 15.3 Noise Management Plan	As required –	Site Manager/ Environmental Coordinator
Meteorological Monitoring	Monitoring for – • Temperature at 2 metres • Temperature at 10 metres • Wind speed at 10 metres • Wind direction at 10 metres • Sigma theta at 10 metres • Solar Radiation	Continuous	Environmental Coordinator
	Continuous Meteorological Monitoring System inspection	Fortnightly	Environmental Coordinator
	Continuous download & storage of data in Site DCS or if required manual download & file storage as per Work Procedure UPS-PRC-012 - UPS Weather Data Download and Data Management	Continuous	Environmental Coordinator
Aboriginal Artefacts	Observe excavation works to detect Aboriginal artefacts	During excavation works	Environmental Coordinator
Housekeeping	Environmental Inspection Checklist	Fortnightly	Environmental Coordinator
EMP Review	Internal Environmental Review of EMP	Annually	Site Manager/ HSE Manager - Generation
	External Environmental Audit of EMP and site compliance	Tri-Annually	Site Manager/ HSE Manager - Generation

12.2 Site Environmental Limits:

NOx:		
	100 Percentile Limit (mgm-3)	**Reference Conditions**
Nitrogen dioxide ($N0_2$) or nitric oxide (NO), or both (as NO_2)	51 (Natural gas)	Dry, 273 K, 101.3 kPa, and 15% 0_2
	Diesel fuel not being used as power station fuel	

Noise:				
Residence	**Day**	**Evening**	**Night**	
	7am-6pm Mon-Sat 8am-6pm Sunday & PH	6pm – 10pm all days	10pm-7am Mon-Sat 10pm-8am Sunday & PH	
	L_{Aeq}(15 minute)	L_{Aeq}(15 minute)	L_{Aeq}(15 minute)	L_A(1 minute)
Pine Grove	38	38	38	45
The Wardrobe	37	37	37	45
Any other residence	35	35	35	45

Note: The noise levels do not apply while an agreement is in place with the respective neighbour, there is currently an agreement in place at Pine Grove, the Wardrobe, Wallace, and at three other neighbours.

Land & Water:	
	Conductivity - 100 Percentile Limit (us/cm)
Water released off-site from stormwater pond	800
Water irrigated on-site from stormwater pond	800

13. Environmental Reporting

13.1 Statutory Environmental Reporting

Generation shall ensure that it meets all the statutory environmental reporting requirements detailed in the sites EPA Licence and Development Consent. The table below details the statutory reporting requirements for the site.

Statutory Environmental Reporting			
Reported:	**Reference:**	**To:**	**When:**
Hazard Audit Report	DA-31-2-2004-i: Section 4.8	Department of Planning	Every 3 years.
Environmental Audit Report	DA-31-2-2004-i: Section 4.9	Department of Planning	Every 3 years.
Annual Environmental Report	DA-31-2-2004-i: Section 7.3	Department of Planning	Annually – Due before 31st March
EPA Annual Return	EPA Licence -12490: Section R1.1	NSW EPA	Due 60 Days after 27 November annually
Environmental Monitoring Data	Modified PEOA, 1979	UPS External Web Site	Within 14 days of receiving/downloading environmental data/results

14. Environmental Review

14.1 Environmental Inspections and Auditing

Environmental site inspections will be carried out by the site Environmental Coordinator on a fortnightly and monthly basis to ensure compliance with this EMP and statutory requirements. The findings of these inspections shall be documented on the Environmental Inspection Checklist to be utilised on-site.

Other environmental inspections and their frequency have also been identified in 12.1 *Environmental Monitoring/Inspection/Auditing program.*

14.2 Project Management Review

This EMP shall be formally reviewed by the Site Manager and Environmental Representative every 12 months or when significant changes are made to the plant or its associated systems and processes. The review shall ensure that the EMP is maintained and kept up-to-date such that changes to legislative requirements, procedures and practices are fully incorporated into the EMP.

Upon amendment of document content and subsequent release of the reviewed EMP, the version number and version release date at the back of this Plan shall also be updated as well as other associated plans and procedural documents as relevant.

14.3 Environmental Auditing

External EMP audits shall be undertaken 3 yearly. These audits shall be undertaken by external Environmental Auditing Consultants to review the overall implementation and effectiveness of the EMP, related site specific plans, procedures and associated documentation and overall standard of onsite compliance with legislative requirements.

Audit reports, action plans and any other documentation stemming from the audit process shall be kept for a minimum of six years to demonstrate ongoing OHS monitoring and improvement. The Environmental Coordinator will be responsible for site filing of these documents.

15. Significant Environmental Issues and Management Plans

The following environmental issues are considered to warrant specific management actions for the operation of the Uranquinty Power Station. These issues have specific regulatory requirements (contained in the development consent or Environmental Protection Licence) and/or are considered to have the potential to result in a non-compliance with a legislative requirement or generate community complaints.

- Air Quality Management Plan
- Sediment Control and Water Quality Management Plan
- Noise Management Plan
- Visual Amenity Management Plan
- Storage and Handling of Chemicals Management Plan
- Heritage Management Plan
- Waste Management Plan
- Transport Code of Conduct

The following management plans identify the regulatory requirements associated with the significant environmental issues of this project and specify the actions required to manage the environmental risks and comply with these regulatory requirements.

15.1 Air Quality Management Plan

<table>
<tr><th>Element</th><th>Management Plan</th></tr>
<tr><td>Potential Impacts</td><td>

Release of above-guideline-levels of air pollutants, e.g. NO2 and Greenhouse gases.
Odour from Power Station operations affecting the surrounding community
Dust and particulates from stacks, vehicle usage, and post-construction establishment of vegetation affecting the surrounding community

</td></tr>
<tr><td>Sources</td><td>

Power station stacks
Emergency Generators (Diesel)
Fire Fighting Pump (Diesel)
Dust off Roads
Dust off former construction areas

</td></tr>
<tr><td>Objective</td><td>

To ensure emissions are within the Air Quality limits contained in the DOP&I Development Consent and EPA Site Licence.
To ensure that odour resulting from the Power Station’s operations is minimised
To ensure that dust resulting from the Power Station’s operations is minimised

</td></tr>
<tr><td>Actions/Controls</td><td>
Stack Emissions:
Emission Characteristics at full load per Unit-
<table>
<tr><th>Parameter</th><th>Units</th><th>Emissions per Unit</th></tr>
<tr><td>No Of Units operating</td><td>-</td><td>4</td></tr>
<tr><td>Fuel</td><td>-</td><td>Gas</td></tr>
<tr><td>Exit Velocity</td><td>m/s</td><td>40.6</td></tr>
<tr><td>Temperature</td><td>°C</td><td>552</td></tr>
<tr><td>NOx – Concentration
- Emission rate
- No_2/NO_x ratio</td><td>Ppmvd @ 15%0_2
g/s</td><td>25
21
0.1</td></tr>
<tr><td>CO emission rate</td><td>g/s</td><td>5.1</td></tr>
<tr><td>SO_2</td><td>g/s</td><td>0.7</td></tr>
<tr><td>PM_{10}</td><td>g/s</td><td>4.1</td></tr>
</table>
Efficient plant operation and meeting regulatory stack emissions will be undertaken on-site by:
Design & Commissioning -

The Power Station has been modeled and designed so as to ensure stack emissions and air quality falls within the regulatory levels.
The Power Station has been designed and constructed so release of emissions from the turbine stacks will only be released into the atmosphere:-
<ol type="a">
from the top of the stacks at 35 metres in height; and
is directed vertically upwards without any impedance or hindrance.

Management Controls –

The employment of suitably qualified personnel is managed through Origin HR Management Procedures;
Appropriate training and demonstrated Operator competence in operations of BOP & Turbine operation. The site maintains an Operations Training Program and Training Register. Operator Training is detailed in the Site Operation Plan and Section 8.4 (Operator Training) of this EMP.

</td></tr>
</table>

	• BOP & Turbine *Operating, Maintenance and Calibration Manuals, Procedures & Schedules* ***Operational Controls –*** • The turbine manufacturers have guaranteed emissions levels of the Units to meet regulatory emission limits at operation above 50% load. To ensure operational efficiency the following actions will occur: • Control set points will be implemented to ensure base operations are greater than 50% unit load. • The Units operate on an auto start up and auto shut down sequence at all times to ensure the fastest, most efficient plant starting and shut downs; • Start-ups will occur in 'Diffuser Mode' which is a more stable process but higher NOx emissions, but the auto start up sequence will move the plant to 'Pre-Mix Mode' which will then run the plant during normal operations above 50% load for efficient operation and reduced NOx emissions. • 'Pre-Mix Mode' is when air and gas is premixed before combustion to give a more efficient combustion. • For shut downs, the operating system will automatically move the plant from 'Pre-Mix Mode' back to 'Diffuser Mode' for fastest and most efficient shut downs. • Plant high NOx emission alarms are fitted to operational control panel for each Unit. • The UPS has a 100 percentile limit (except start-up & shutdown) for NOx emissions. In events where NOx exceedances occur, the UPS Operators will follow the actions detailed as per Procedure *UPS_PRC-014 UPS NOx Exceedance Procedure*. • *Manufacturers Plant Operating Procedures & Trouble Shooting Guides*
	Diesel Emergency Generators & Fire Fighting Pump: The diesel Emergency Generators and Fire Fighting Pump are expected to operate only in emergencies, for maintenance or for testing. The emissions from these diesel motors are considered insignificant due to their size and infrequent operation. Specific controls to reduce the emissions from these include: • *BOP Plant Operating, Maintenance and Calibration Manuals, Procedures & Schedules* • Operations Training Program and Training Register. Operator Training is detailed in the *Site Operation Plan* and Section 8.4 (Operator Training) of this EMP.
	Odour: • On-site odour will be minimised by the successful implementation of the Site Waste Management Plan as detailed in Section 15.7 of this EMP.
	Dust: Dust management will be undertaken on-site by: ***Design -*** • The Power Station has been built so all access roads are sealed, and all exposed areas have been covered with blue stone or road base material. Within the site internal security fence there are no exposed soil areas. ***Landscape Plan –*** • Rehabilitation of construction areas outside of the site security fence will be undertaken by the successful implementation of the Site Landscaping Plan as detailed in Section 15.4 Visual Amenity Management Plan of this EMP.
Maintenance	• All Power Station equipment will be maintained according to *Plant Operating, Maintenance and Calibration Manuals, Procedures & Schedules* • Roads will be sealed and maintained to ensure that dust from road or vehicle sources will not exceed prescribe levels. • Landscape maintenance will be as detailed in Section 15.4 Visual Amenity Management Plan of this EMP.
Performance Indicators	• NOx emissions will not exceed the statutory levels prescribed in the Development Consent and EPA Licence. • To ensure odour is not generated on-site and the local community is not affected by odours.

Monitoring	• A Continuous Emission Monitoring System (CEMS) is installed on each Unit to continuously monitor for NOx. • If there is a fault with the Unit CEMS, the affected Unit is authorized to continue operating as long as the Predictive Emissions Monitoring System (PEMS) approved by EPA is utilised to calculate NOx emissions or the site mobile NOx analyser is mobilized to the affected Unit. The PEMS is to be utilized only as detailed in Work Procedure *UPS-PRC-011 PEMS Model Calculation and Data Management.* • Stack monitoring will be undertaken as per Section 12 Environmental Monitoring of this EMP. • Dust (visual monitoring) & odour (quantitative assessment by site personnel) monitoring will be undertaken by informal daily checks and formal weekly checklists. • A complaints register will be held, in which any complaints from the community will be logged. Complaints will be investigated and, if appropriate, acted upon.
Corrective Action / Reporting	***Stack Emissions:*** If emission limits are exceeded during plant operation the following will occur: • Operators will follow Procedure *UPS-PRC-014 Nox Exceedance Procedure*. • No response mechanism has been developed for potential elevated air impacts on surrounding land uses as a consequence of meteorological conditions. This is because as detailed above, at all times the fastest, most efficient plant starting and shut downs will occur and the plant will always operate above 50% load. In these operating conditions, the plant consistently runs with stack emissions above 500^0C and high velocity stack emissions. During low wind and temperature inversion meteorological conditions – emission dispersion is obtained by vertical dispersion and in light to windy conditions - a combination of vertical and horizontal dispersion will occur. Under all meteorological conditions there will not be a buildup of air emissions that could impact on surrounding land uses. This scenario is supported by modeling undertaken during the Air Quality & Greenhouse Gas Assessment under taken as part of the EIS for the project. ***Stack Emission Reporting*** • NOx emission data will be collected on-site by the site CEMS. The CEMS data will be downloaded and filed on a monthly basis following Procedure *UPS-PRC-011 UPS CEMS Download Procedure.* • NOx annual emission totals that are reported in the site EPA Annual Return and DOP&I Annual Report will be calculated utilising Procedure *UPS-PRC-013 Nox Annual Emission Calculation Procedure.* • Annual stack testing will be undertaken as per Procedure *UPS-PRC-015 UPS Annual Stack Monitoring Procedure* and will reported in the site EPA Annual Return and DOP&I Annual Report.

15.2 Sediment Control and Water Management Plan

<table>
<tr><th>Element</th><th>Management Plan</th></tr>
<tr><td>Potential Impacts</td><td>

Waste water entering surrounding properties. The surrounding properties are undulating farm land. The farming practices in the area are cattle & sheep grazing and annual cropping. The nearest stream/creek is approximately 3km from site. This creek is not a permanent flowing creek but a small creek that flows only in storm events.
Inefficient irrigation practices leading to land degradation or irrigation water leaving site.
Chemical spills/oily waste contaminating the site storm water pond or potentially leaving the site.
Soil erosion on-site leading to land degradation and potential sediment load leaving site.

</td></tr>
<tr><td>Sources</td><td>
<table>
<tr><th>Source</th><th>Expected Volumes /Annum</th><th>Characteristics</th></tr>
<tr><td>Storm water</td><td>Up to 20 mega litres per annum in the wettest year in 10.</td><td>Suspended solids - <100mg/l
Hydrocarbons - <10mg/l
Conductivity - <800mg/l</td></tr>
<tr><td>Demin Waste Water</td><td>1680 m^3</td><td>Salt load of 11,160 kg/annum or
30.6 kg/day</td></tr>
<tr><td>Oil Water separator</td><td>Separator can handle 10,000 litres per hour</td><td>Discharge of clean water at <10 mg/l of oil.</td></tr>
<tr><td>Rainfall Runoff of admin building</td><td>-</td><td>Clean water suitable for domestic reuse</td></tr>
<tr><td>Septic</td><td>Sized for 10 person full time use.</td><td>Suitable for transpiration trench disposal only</td></tr>
<tr><td>Exposed soil areas during landscaping works</td><td>-</td><td>Potential high suspended solids content.</td></tr>
</table>

Figure 15.1 Site Waste Waters below and site layout diagram in Appendix 4 illustrates the sources of both clean and dirty waste waters on-site. Clean waste water is uncontaminated storm water collected for reuse and dirty waste water is contaminated storm water or process water for on-site cleanup or off-site disposal after treatment.

</td></tr>
<tr><td>Objective</td><td>

To minimise erosion of sediment on site during establishment of vegetation.
To provide permanent erosion and sediment control measures where required.
To ensure the design and construction of storm water and process water works are appropriate and maintained during operations.
To minimise the risk of contamination of surface water, groundwater and storm water through leaks or spills of chemicals / polluting substances during the operation of the Power Station.
To achieve objectives detailed in the site Water Management Strategy document submitted to and approved during the development approval process by the DOP&I and EPA.

</td></tr>
<tr><td>Actions/Controls</td><td>
Sediment Control:
Sediment control will be undertaken on-site by:
Design -

The Power Station has been built so all access roads are sealed, and all exposed areas have been covered with blue stone or road base material.
Landscape Plan –
Rehabilitation of construction areas outside of the site security fence will be undertaken by the successful implementation of the Site Landscaping Plan as detailed in Section 15.4 Visual Amenity Management Plan of this EMP.
Temporary sedimentation control barriers will be installed and maintained until areas within the Landscape Plan have been stabilized to limit soil erosion.

</td></tr>
</table>

	• Temporary sedimentation traps will be installed and maintained such that they will be cleaned out when the traps are at 50% capacity. The temporary traps will be removed after site stabilization. • Disturbance of vegetation and topsoil will be kept to a practical minimum. • Movement of vehicles on and off site is to be through approved access points *only*
	Oil/Chemical Spill Control: Oil/chemical spill control will be undertaken on-site by: ***Design -*** • The Power Station has been designed so all lube oil, diesel fuel and transformer oil storage tanks are contained within bunded areas • The site has a dedicated oil/chemical store that has its own bund and is fully enclosed; • All areas within the turbine enclosure drain to the oil/water separator collection pit • A oil/water collection pit and oil/water separator has been installed on-site to collect and treat all storm water/spills from – • Oil/Chemical store • Maintenance work shop • Transformer bunds • Within Turbine enclosures. ***Operations -*** • The storage of flammable and combustible liquids such as fuels and oils shall be undertaken as per Section 15.5 Storage and Handling of Oils/Chemicals Management Plan of this EMP. • Site personnel will be trained in appropriate spill response strategies and spill kit use using the UPS Spill Response & Cleanup Procedure. • Ensure spill kits are available on site to clean up spills and leaks. • Oil water separator will be operated as per manufacturer's guidelines.
	Evaporation Dam Control: Demin waste water will be controlled by: ***Design -*** • The sites demineralisation plant is a reverse osmosis plant which is designed to remove dissolved solids out of the raw water supply. • The demin plant has been designed to produce 20% waste water from raw water inputs. • A site water balance has been undertaken and documented in the site Water Management Strategy document submitted to and approved during the development approval process by DOP&I and EPA. • Two demineralisation waste water evaporation ponds have been sized and constructed onsite. The ponds have been sized taking into account demin waste water produced and evaporation capacity within the Wagga Wagga region. The ponds have been fully lined with a 5mm poly liner. • Waste water from the demin is piped directly to the demin evaporation ponds. ***Operations -*** • The site demin plant will be operated as per Manufacturers *Operating Procedures and Manual*. All personnel working within the demin plant will be fully trained in its operation and troubleshooting guide. • Water from the demin evaporation ponds will not be allowed to flow uncontrolled into the sites Storm water Pond or flow uncontrolled off the site; • The Environmental Coordinator will manage the scheduling of cleanouts of the evaporation ponds. • Disposal of dried out dissolved solids will be as per Section 15.7 Waste Management Plan of this EMP. • Blending of the site evaporation pond water and the site storm water pond water is permissible. Blending to be undertaken as per Work Procedure *UPS-PRC-009 - UPS Stormwater / Evaporation Pond Water Blending*.
	Storm water Control: Storm water control will be undertaken on-site by: ***Design -***

	• The storm water system on-site is composted of: • A diversion bank around the inner security fence to ensure storm water is diverted around the Power Station area to minimise the amount of storm water collected on-site. • A series of storm water collection pits and underground storm water mains to collect and transport storm water to the sites storm water pond. All clean storm water from the site will be directed to the site storm water pond. • Storm water collected of the sites roofs (except administration building) is directed to the sites storm water pond. • Storm water collection pond. The pond size is 15 mega-liters. The pond size was calculated after a site water balance was undertaken and documented in site Water Management Strategy document. The storm water pond is designed to hold the amount of storm water generated off the site in the wettest nine years in ten (i.e. 90th percentile rainfall figures for Wagga Wagga). • Figure 3 Site Waste Water Sources below, illustrates the sources of storm water from the site (within the security fence), direction of flow and the final storm water collection pond. Appendix 4 Site Water Drainage and Discharge Off-Site Points, details stormwater direction and off-site discharge for the landscaping and external paddock areas of the site as a whole. ***Operation -*** • The site storm water pond will be managed so that it will be empty before the start of each winter (wetter part of year) so that there is full storage capacity available to collect and hold storm water during the wetter period of the year when storm water reuse is restricted. • The collected storm water will be reused as per the Irrigation Plan detailed below or in heavy rainfall events the storm water pond is allowed to overflow as long as the irrigation/discharge limits detailed in Section 12.2 Site Environmental Limits are met and monitoring is undertaken as per Section 12.1 Environmental Monitoring.
	Irrigation System: Storm water reuse will be undertaken by irrigation of on-site landscaping areas and on-site pasture irrigation. Irrigation system control will be undertaken on-site by: ***Design -*** • The sites irrigation system has been designed to fully re-use the sites collected storm water. • The irrigation system design supports the site On-site Landscape Plan detailed in Section 14.4 Visual Management Plan of this EMP. The irrigation system will provide water to the landscape plantings. • Excess water above the requirements of the landscape plantings will be irrigated on to pasture on the west side of the Power Station. • The amount of collected storm water required to be re-used through the sites irrigation system is 20 mega-liters per annum (i.e. 15ML collected during the 90th percentile rainfall period when rainfall exceeds evaporation + 5ML collected during the irrigation period). The irrigation total was calculated after a site water balance was undertaken and documented in site Water Management Strategy document. The actual irrigation capacity of the irrigation system is 27.3 ML to ensure overcapacity of irrigation availability. • The on-site irrigation design and layout is detailed in Appendix 2. • Irrigation limits are detailed in Section 12.2 Site Environmental Limits and monitoring as per Section 12.1 Environmental Monitoring. ***Operation -*** • The irrigation system is a fully automated process. • The irrigation system runs off an automatic irrigation controller. The controller will be reset each month to adjust the irrigation rate to meet the changing weather conditions from autumn into summer and late summer. • The irrigation controller will be reset each month by the site Environmental Coordinator. An irrigation schedule has been developed for the site and is detailed below in Table 1 Irrigation Scheduling. • Pasture growth in the pasture irrigation area will be managed by stock grazing. The Site Manager will enter into an agreement with a local farmer to lease the area west & north of the Power Station for stock grazing. The agreement reached will ensure that over grazing is avoided to ensure bare soil is not exposed.

<table>
<tr><td></td><td>Administration Roof Storm water Tank Collection and Reuse:

Storm water is collected off the site Administration Building roof. The collected water is stored in a 10,000 litre storage tank and is reused in the buildings toilets as flush water.</td></tr>
<tr><td>Maintenance</td><td>Sediment Control:

• Temporary sediment traps to be cleaned out when traps reach 50% capacity.
• Landscaping trees and grasses stabilised areas to be replaced/replanted as required.

Oil Water Separator:

• Oil water separator will be maintained and repaired as per Manufacturers Operating Manual.

Evaporation Pond:

• Evaporation pond will be cleaned out as required and demin wastes to be removed from site as per Section 14.7 Waste Management Plan of this EMP.
• Repairs to pond poly liner to occur immediately if tear occurs in liner.

Stormwater Collection Pond:

• Repairs to pond poly liner to occur immediately if tear occurs in liner.

Irrigation System:

• Irrigation components maintained and repaired as per Manufacturers Operating Manual.
• Any system failures, the irrigation system is to be shut down immediately and repairs made immediately.</td></tr>
<tr><td>Performance Indicators</td><td>• Surface waters are not impacted upon by contaminated storm water leaving the site
• No degradation of irrigation receiving paddocks.</td></tr>
<tr><td>Monitoring</td><td>• Monitoring of the areas identified in this management plan will be undertaken as per Section 12.1 Environmental Monitoring of this EMP. This monitoring also includes irrigation water quality monitoring.
• Irrigation water from the Storm water Pond will be sampled and analyzed as per section 12.2 Environmental Monitoring. The frequency of sampling is based on the combination of the consistent nature of storm water collection on the site, weekly monitoring of the storm water pond during irrigation (mainly looking for oil on pond surface) and reporting protocols and procedures the site has in place for responding to on-site chemical spills. Storm water pond sampling will be required immediately after a chemical spill if spill enters the storm water pond.
• Monitoring Criteria
<table>
<tr><th>Criteria</th><th>Maximum Concentration</th></tr>
<tr><td>Conductivity</td><td>800 uS/cm</td></tr>
<tr><td>pH</td><td>6.5 – 9</td></tr>
<tr><td>Total Suspended Solids</td><td>100 ppm</td></tr>
<tr><td>Hydrocarbons</td><td>No Visual oil - <10mg/l</td></tr>
</table>
• Irrigation monitoring (equipment and reuse area) will also be undertaken by informal daily checks and formal fortnightly checklists.
• Storm water pond, evaporation pond, and sedimentation controls will be inspected after each rainfall event.
• A complaints register will be held, in which any complaints from the community will be logged. Complaints will be investigated and, if appropriate, acted upon.</td></tr>
<tr><td>Corrective Action / Reporting</td><td>• Evaporation Ponds Reaching Capacity:

Demin water will not be pumped to evaporation ponds at any time if the minimum freeboard requirements will be violated. Demin water production will be ceased on site and as such flows to the demin pond will stop if the freeboard requirements are reached. Storm water/Evaporation Pond water blending can be undertaken as per Work Procedure UPS-PRC-009 - UPS Stormwater / Evaporation Pond Water Blending to provide additional capacity in the evaporation ponds or the Site Manager can utilise a contract pumping truck to remove and dispose of the excess waste water in the evaporation pond. Disposal of the pumped waste water will be undertaken as per</td></tr>
</table>

	Section 15.7 Waste Management Plan. • **Irrigation System Failure:** Short term failure of the irrigation system will not be a critical issue to the operation of the plant. The irrigation system is comprised of readily available or interchangeable parts/equipment so extended delays is not anticipated in regard to failure of the irrigation system. In the event of irrigation failure, the Site Manager will be responsible for managing the rectification works using either internal maintenance personnel or external contractors. • **Oil Water Separator Failure:** The Oil Water Separator system is comprised of a 750,000 litre concrete storage pit, sump pump and Oil Water Separator. Short term failure of the Oil Water Separator will not be a critical issue to the operation of the plant because – o The oil water collection pit has been sized so that is of sufficient size to hold bund discharge water from rain fall events for up to 5 days. o The Oil Water Separator has no moving parts and consists of a series of screens and baffles. As long the separator is well maintained and screens cleaned regularly as per the maintenance program the separator should be relatively issue free. o The oil water pit pump is not a specialised pump and is comprised of readily available or interchangeable parts/equipment so extended delays are not anticipated in regard to failure of the Oil Water Sump Pump. In the event of the Oil Water Separator failure, the Site Manager will be responsible for managing the rectification works using either internal maintenance personnel or external contractors. • **Oil/Chemical Leaks:** Corrective Action is required to be undertaken immediately if a complaint is made, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the effected environment as much as practically possible and taking preventative measures. • **Storm water Pond Water Out of Spec for Irrigation:** In the event of Storm water Pond contamination, the actions detailed in the site Chemical & Oil Spill Procedure will be followed. Incident reporting investigation and corrective actions will follow the process detailed in Section 13 Environmental Reporting of this EMP. Irrigation re-use of the storm water in the pond will be ceased immediately and will not recommence until cleanup activities have been completed. In the event that water quality at the monitoring locations is found to fall outside of Maximum Concentration levels (detailed above), the source of the deviation will be investigated and measures taken to correct the issue as per Section 13 Environmental Reporting of this EMP. Irrigation re-use of the storm water in the pond will be ceased immediately and will not recommence until rectification activities have been completed.

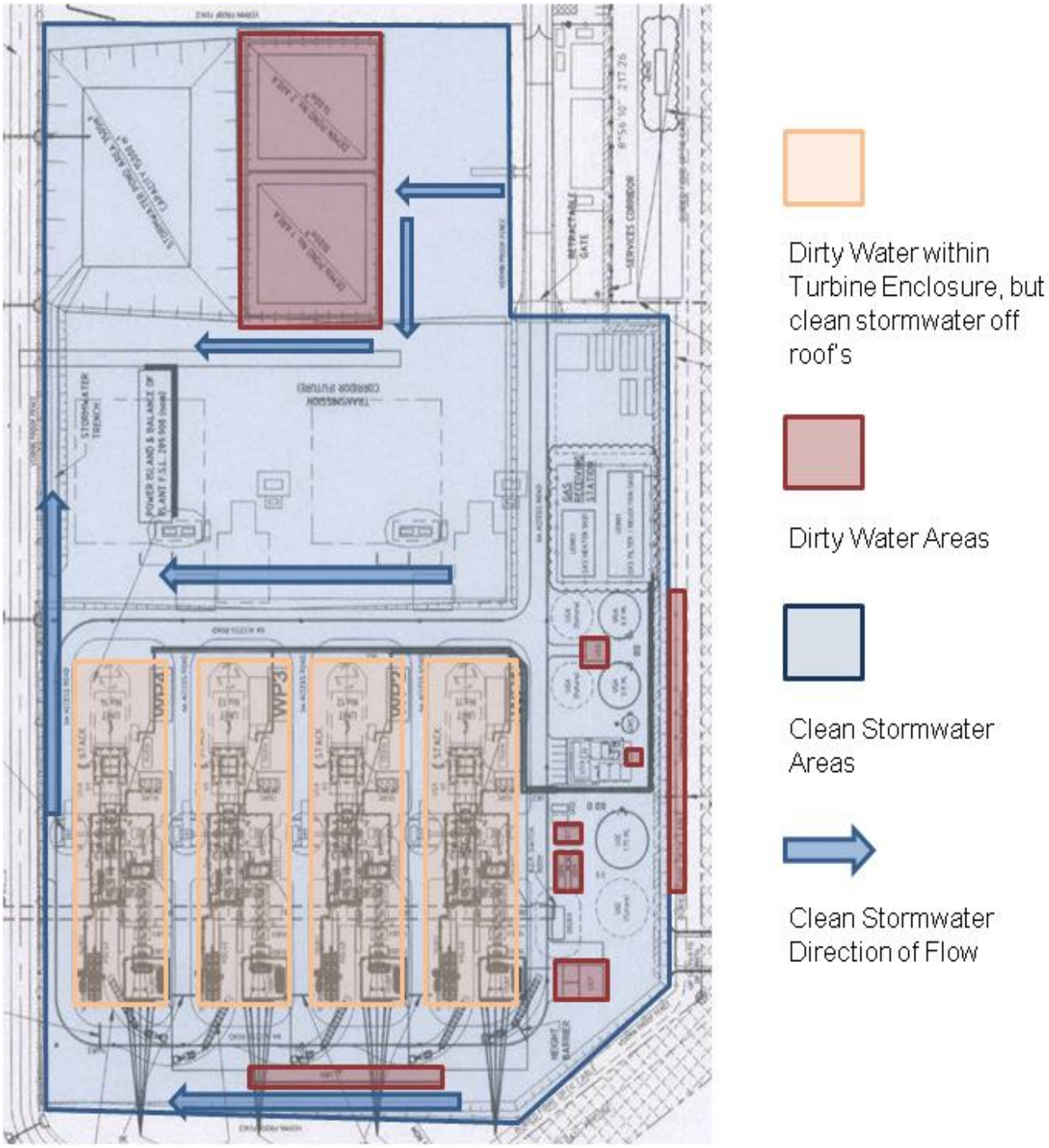


Figure 3 - Site Waste Water Sources

Western Mound					
Planting Dimensions		**Evaporation**		**Irrigation Hours/Month Required**	**Irrigation Hours/Week**	**Total Water Use**
Width	50 m	October	146 mm	7.2 Hrs/Mth	1.8 Hrs/Week	124,260.16 L
Length	417 m	November	213 mm	10.5 Hrs/Mth	2.6 Hrs/Week	181,283.66 L
Irrigation Type:		December	295 mm	14.5 Hrs/Mth	3.6 Hrs/Week	251,073.62 L
External Drippers		January	310 mm	15.2 Hrs/Mth	3.8 Hrs/Week	263,840.07 L
Dripper Spacing	2.5 m	February	263 mm	12.9 Hrs/Mth	3.2 Hrs/Week	223,838.51 L
Line Spacing:	5 m	March	214 mm	10.5 Hrs/Mth	2.6 Hrs/Week	182,134.76 L
Number of Rows	13	**Total**	**1441 mm**			**1,226,430.78 L**
Dripper Output:	8 l/hr	**Water Application (mm)**		**Evaporation Correction Factor**		
Drippers per Tree	1	Dripper Radius	0.5 m	0.5		
Drippers per Line:	167	Surface Area	0.785 m2			
Total Drippers:	2168	Water application	10.19 mm/hr		**1.23**	**Megalitres**
Water Output per Line:	1334 l/hr					
Total Water Output:	289 l/min					
Total Water Output:	17,347 l/hr					

Southern Mound					
Planting Dimensions		**Evaporation**		**Irrigation Hours/Month Required**	**Irrigation Hours/Week**	**Total Water Use**
Width	80 m	October	146 mm	7.2 Hrs/Mth	1.8 Hrs/Week	59,826.42 L
Length	173 m	November	213 mm	10.5 Hrs/Mth	2.6 Hrs/Week	87,281.01 L
Irrigation Type:		December	295 mm	14.5 Hrs/Mth	3.6 Hrs/Week	120,882.15 L
External Drippers		January	310 mm	15.2 Hrs/Mth	3.8 Hrs/Week	127,028.70 L
Dripper Spacing	2.5 m	February	263 mm	12.9 Hrs/Mth	3.2 Hrs/Week	107,769.51 L
Line Spacing:	5 m	March	214 mm	10.5 Hrs/Mth	2.6 Hrs/Week	87,690.78 L
Number of Rows	26	**Total**	**1441 mm**			**590,478.57 L**
Dripper Output:	8 l/hr	**Water Application (mm)**		**Evaporation Correction Factor**		
Drippers per Tree	1	Dripper Radius	0.5 m	0.5		
Drippers per Line:	-	Surface Area	0.785 m2			
Total Drippers:	1044	Water application	10.19 mm/hr		**0.59**	**Megalitres**
Water Output per Line:	- l/hr					
Total Water Output:	139 l/min					
Total Water Output:	8,352 l/hr					

Switch Yard Area					
Planting Dimensions - Triangle		**Evaporation**		**Irrigation Hours/Month Required**	**Irrigation Hours/Week**	**Total Water Use**
Width	60 m	October	146 mm	7.2 Hrs/Mth	1.8 Hrs/Week	2,865.25 L
Length	90 m	November	213 mm	10.5 Hrs/Mth	2.6 Hrs/Week	4,180.13 L
Irrigation Type:		December	295 mm	14.5 Hrs/Mth	3.6 Hrs/Week	5,789.38 L
External Drippers		January	310 mm	15.2 Hrs/Mth	3.8 Hrs/Week	6,083.75 L
Dripper Spacing	2.5 m	February	263 mm	12.9 Hrs/Mth	3.2 Hrs/Week	5,161.38 L
Line Spacing:	5 m	March	214 mm	10.5 Hrs/Mth	2.6 Hrs/Week	4,199.75 L
Number of Rows	12	**Total**	**1441 mm**			**28,279.63 L**
Dripper Output:	8 l/hr	**Water Application (mm)**		**Evaporation Correction Factor**		
Drippers per Tree	1	Dripper Radius	0.5 m	0.5		
		Surface Area	0.785 m2			
Total Drippers:	50	Water application	10.19 mm/hr		**0.03**	**Megalitres**
Total Water Output:	7 l/hr					
Total Water Output:	400 l/hr					

Pasture Irrigation Area						
Dimensions		**Evaporation**		**Irrigation Hours/Month Required**	**Irrigation (each sprinkler) Hours/Week**	**Total Water Use**
Width	105 m	October	146 mm	14.1 Hrs/Mth	3.5 Hrs/Week	2,529,450.00 L
Length	165 m	November	213 mm	20.5 Hrs/Mth	5.1 Hrs/Week	3,690,225.00 L
Irrigation Type:		December	295 mm	28.4 Hrs/Mth	7.1 Hrs/Week	5,110,875.00 L
Turf Sprinklers		January	310 mm	29.8 Hrs/Mth	7.5 Hrs/Week	5,370,750.00 L
Sprinkler Spacing	15 m	February	263 mm	25.3 Hrs/Mth	6.3 Hrs/Week	4,556,475.00 L
Number of Rows	10.000	March	214 mm	20.6 Hrs/Mth	5.1 Hrs/Week	3,707,550.00 L
Number per Row	6.000	**Total**	**1441 mm**			**24,965,325.00 L**
Number of Sprinklers	60	**Water Application (mm)**		**Evaporation Correction Factor**		
Output per Sprinkler:	50 l/min	Surface Area	17325 m2	1.0		
Output per Sprinkler:	3000 l/hr	Surface Area	1.7325 hectares		**24.97**	**Megalitres**
Total Water Output:	300.000 l/hr					
Total Water Output:	180,000 l/hr	Water application	10.39 mm/hr			

Total Water Use per Annum	26.78 Megalitres

Table 1 – Site Stormwater Irrigation Schedule

15.3 Noise Management Plan

Element	Management Plan
Potential Impacts	• Nuisance noise from maintenance activities affecting the surrounding community • Nuisance noise from the operations affecting the surrounding community • Transport noise affecting the surrounding community
Sources	• Staff transport and equipment transport • Turbine operation • Diesel generator • Maintenance activities • Fire pump house
Objective	• To minimise noise impacts on the surrounding community from the Power Station's operations • To comply with regulatory noise levels detailed in the sites Development Consent and EPA Licence.
Actions/Controls	***Turbine Operation:*** Efficient plant operation and meeting regulatory noise emissions will be undertaken on-site by: ***Design & Commissioning -*** • The Power Station has been designed and constructed to minimise plant noise emissions from the BOP & turbine operation by:- a. The turbine and generator housed in noise controlling building; b. Diffuser and bottom half of stack enclosed in noise controlling structure; c. Additional baffles added inside stack to reduce stack emission noise; d. Noise insulation surrounding turbine casings, and e. Insulated and sealing access doors into turbine building. ***Management Controls –*** • Appropriate training and demonstrated Operator competence in operations of BOP & Turbine operation. The site maintains an Operations Training Program and Training Register. Operator Training is detailed in the Site Operation Plan and Section 8.4 (Operator Training) of this EMP. • *BOP & Turbine Plant Operating, Maintenance and Calibration Manuals, Procedures & Schedules* to ensure all site plant is maintained for optimal performance and reduced noise levels. • Site induction to cover site noise management issues & procedures • The Site Manager having clear and open communication channels with near neighbours and the Uranquinty community by the on-going implementation of the Community Participation Program as detailed in Section 10 of this EMP. • Noise Mitigation and Remediation Strategy was developed in 2009 in consultation with EPA and DOP&I and subsequently approved by DOP&I. It sets out remediation strategies including investigations of mitigating noise at the source, and shorter term strategies including agreements with identified neighbours. ***Operational Controls –*** • The Units operate on an auto start up and auto shut down sequence at all times to ensure the fastest, most efficient plant starting and shut downs; • The plant will operate under specific Operational Procedures developed on-site specifically to manage noise emissions from the site. These procedures include operating checklists, and ensuring all doors, vents, louvers are closed as required during operation to limit the releases of noise from the generator/turbine enclosures. • Running all Plant as per *Operational Procedures.*
	Transport Noise: • Transport noise impacts from, personnel car movements, site deliveries and truck movements will be minimised by the successful implementation of the Transport Code of Conduct Plan as detailed in Section 15.8 of this EMP.

	Maintenance Noise: Ensuring maintenance activities noise levels are below regulatory noise emissions will be undertaken on-site by: • Programming routine maintenance activities so they occur on weekdays during normal working hours wherever possible; • Ensuring all operators or contracted maintenance personnel working on plant on weekends, during evenings or at nighttime understand the noise management issues on-site and complete their work with no noise impacts on the sites near neighbours. • The Site Manager/ Community Relations Advisor communicating to the local community through the Community Participation Program any upcoming major outages or maintenance programs that may mean new on-site activities, increased transport to site or any additional planned noise sources
Maintenance	• All plant and equipment, including vehicles, will be properly maintained in order to minimise noise generation • All Power Station equipment will be maintained according to *Plant Operating, Maintenance and Calibration Manuals, Procedures & Schedules.*
Performance Indicators	• No complaints concerning noise • Compliance with annual noise monitoring
Monitoring	• Informal observation of on-site noise levels by the Site Manager, Environmental Coordinator and Plant Operators. • Complaints will be investigated and, if appropriate, acted upon as per the Corrective Action/Reporting Section below. • A Complaints register will be held, in which any complaints from the community will be logged.
Corrective Action / Reporting	In the case that complaints are received, the following procedure would be implemented: 1. The complaint is to be recorded on the project Complaints Register held by the UPS Community Relations Advisor and treated as an incident as per Origin procedure. 2. The complaint is to be investigated as per Origin's incident management and investigation procedures. Investigations could include: • A site visit / meeting with the complainant; • Review the Noise Monitoring Program reports, the EA, or any other documents which may assist in determining whether an exceedance of noise criteria has occurred; • Review climatic conditions at the time of the complaint; • Consider specific noise monitoring to determine whether any exceedances of the noise criteria are being experienced; and/or • Communication with DoP&I and/or NSW EPA as required • If necessary, a management response would be developed in consultation with DoP&I, NSW EPA and the affected landholder. The Site Manager will report on compliance with this EMP as required by the administering authorities.

15.4 Visual Management Plan

Element	Management Plan
Potential Impacts	• Negative visual impacts on amenity for the surrounding community.
Sources	• Visual impact of Power station and Switch Yard • Roadways • On-site lighting causing off-site impacts
Objective	• To minimise visual impacts on the Immediate, Middle and Broad view distances • To ensure on-site lighting does not affect near neighbours
Actions/Controls	***Site Design:*** • Use of low reflective materials on buildings • Use of colours on buildings and plant that are neutrally toned and suit the surrounding landscape.
	On-site Landscape Management Plan: An on-site landscaping plan has been developed and implemented for the site. The plan has been developed to restore former construction areas as well as to work in with the Off-site Tree Planting Screening that has been undertaken to provide a visual barrier to near neighbours of the Power Station site. The On-Site Landscape Plan is visually presented in Appendix 3 with the main aspects of the plan including: • Retention of all existing vegetation on-site; • Use of endemic native vegetation to screen the development at both the middle and broad scale to aid in camouflaging the structures at distances; • Implementation of native endemic tree/ shrub plantings to the east, west and south of the site; • A list of native vegetation planting is provided in Appendix 5. EPA & WWCC have been consulted in regard to the types of vegetation to be used in the landscape plan. • Additional planting of native endemic vegetation along the road way into the site. • Vegetation planted under the landscape plan will be irrigated from water collected in the sites storm water pond. • Site car parking will occur on-site within the sites internal security fence and away from landscaping areas. • All shrubs and tree plantings will be protected from vehicle encroachment and stock grazing by appropriate fencing.
	Off-Site Screening of Residual Amenity Impacts: Off-site screen planting as per the Development Consent has been completed for the properties who nominated for screening works. These screening works were completed in October 2007. Generation responsibility for the maintenance including watering, pruning and replacement of dead vegetation of these screening areas was concluded in October 2012 after the required 5 years. Under the conditions of the Development Consent, prior to January 2012, selected existing properties (residential property within 3 km of the site) around the Power Station site could have nominated to have screen plantings undertaken on their properties. No further properties nominated within this timeframe.

	On-site Lighting: ***Design -*** • A site lighting plan has been developed that provides adequate on-site lighting to meet OH&S requirements but minimise off-site lighting impacts. • The lighting plan has limited lighting under lumi-trol and most lighting is manually operated. The plan also allows selected areas of plant to be lit up as required leaving the rest of the site unlit. • Spot lights are only utilised in limited use areas and the majority of external lighting is down lights. ***Operations -*** • The plant will operate under specific *Operational Procedures* developed on-site specifically to manage lighting on the site. These procedures include using minimal lighting as required to undertake work on-site, ensuring lighting is turned off immediately after use and ensuring lighting is turned off if no personnel are on site.
Maintenance	• Onsite landscaping and offsite vegetation screening will be monitored and maintained as per Section 12 Environmental Monitoring of this EMP. • On-site landscaping will have programmed maintenance to include irrigation scheduling, mowing, weed spraying pruning and tree replacement as required. Vegetation maintenance will be outsourced to an external landscape contractor.
Performance Indicators	• No complaints regarding visual impacts during operations • No complaints regarding lighting impacts off-site.
Corrective Action / Reporting	• Corrective action is required to be undertaken immediately after a complaint is made or nonconformance identified. • Complaints receival and corrective action will be undertaken as per Section 9 Complaints Handling of this EMP. • The Site Manager will report on compliance with this EMP as required by the administering authorities.

15.5 Storage and Handling of Oils/Chemicals Management Plan

Element	Management Plan
Potential Impacts	• Release of contaminated water from contact with spilled chemicals. • Fuel source for onsite fires. • Generation of contaminated wastes.
Sources	• Generating units • Transformers • Hazardous Goods Store • Emergency Generators (Diesel) & Fire Fighting Pump (Diesel)
Objective	• To ensure that the storage and handling of chemicals, oils and diesel on site does not cause pollution of the environment or harm to persons. • To ensure that the storage and maintenance of machinery on site does not cause pollution of the environment or harm to persons.
Actions/Controls	• The storage of flammable and combustible liquids such as fuels and oils shall comply with *AS1940*. • The storage and handling of chemical substances will be in accordance with *AS 3780.* • Site personnel will be trained in appropriate spill response strategies and spill kit use. • Any spills shall be rendered harmless and arrangements made for appropriate collection and disposal, including cleaning materials, absorbents and contaminated soils in accordance with Section 15.7 Waste Management Plan of this EMP. • Ensure spill kits are available on site to clean up spills and leaks. • Oil water separator will be operated as per manufacturer's guidelines. • Transport of all hazardous substances will be in accordance with the *Australian Code for the Transport of Dangerous Goods by Road and Rail.*
Maintenance	• Spill and emergency response equipment will be accessible at appropriate locations across the site. • Bunds and storage facilities will be maintained to ensure design capacity is available. • Oil water separator will be maintained as per manufacturer's guidelines. Maintenance protocols will be established in the sites *Maintenance Program.*
Performance Indicators	• No chemical/oil spills outside of designated storage areas.
Monitoring	• Observation and supervision of chemical storage and handling practices by the Site Manager throughout the Power Station's operations phase. • Inspection of demineralisation plant chemicals storage for corrosion - sites *Maintenance Program.* • Inspection of diesel fuel tanks and lines for evidence of damage/leaking sites -*Maintenance Program.* • Inspection of bunding integrity, stability and function – Section 12 Environmental Monitoring of this EMP. • A complaints register will be held, in which any complaints from the community will be logged - Section 9 Complaints Handling of this EMP.
Corrective Action / Reporting	• Corrective Action is required to be undertaken immediately after a complaint is made or nonconformance identified. • Any spills shall be rendered harmless and arrangements made for appropriate collection and disposal, including cleaning materials, absorbents and contaminated soils in accordance with Section 15.7 Waste Management Plan of this EMP. • The Site Manager will report on compliance with this EMP as required by the administering authorities.

15.6 Heritage Management Plan

Element	Management Plan
Potential Impacts	• Heritage objects or artifacts found on site and inappropriately dealt with. It should be noted that in heritage & artifact assessments undertaken during the development of the site EIS found that there is a low potential for heritage objects or artifacts to occur on-site.
Objective	• To ensure that any indigenous or non-indigenous heritage objects found on site are treated appropriately and in accordance with the relevant legislation.
Actions/Controls	• OPEU will ensure all staff are familiar with the procedures for dealing with indigenous or non-indigenous heritage objects • A policy will be implemented, and all staff advised, that if a heritage object is found, staff must immediately stop work on the area and advise the Site Manager.
Maintenance	• Staff awareness of procedures for dealing with heritage objects will be updated when necessary.
Performance Indicators	• All heritage items located are dealt with as per the legislative guidelines.
Monitoring	• Due care will be taken during earthworks and disturbance of land by all staff and to report any heritage objects found. • Any future disturbance of locations where heritage items have been previously found will be the subject of re-inspection by interested parties prior to permission being granted by the Site Manager for disturbance.
Corrective Action / Reporting	• If a heritage object is found, work in that area will be stopped immediately, and appropriate specialists brought in to assess and notify the administering authority of the item.

15.7 Waste Management Plan

Element	Management Plan
Potential Impacts	• Inefficient use of resources resulting in excessive waste generation • Litter or contamination of the site or water through poor waste disposal methods
Sources	• Office and workshop facilities • Gaseous wastes • Waste water • Solid waste • Regulated Wastes • Sewerage
Actions/Controls Gaseous Wastes	• Installation of the low NOX burner technology. • High exit velocity for maximum dispersion and dilution of exhaust gases. • Section 15.1 Air Quality Management Plan in this EMP.
Waste water	• Separation or contaminated waste water and clean storm water for effective reuse. Waste water sources are illustrated in Figure 3. Site Waste Water Sources. • Policy of on-site management of waste water and storm water generated on-site. • Section 15.2 Sediment Control and Water Quality Management Plan in this EMP. • Excess waste water will be removed from evaporation ponds if freeboard levels are exceeded.
Solid Waste	***Demin Evaporative Residue from Evaporation Ponds*** • Records of all demin evaporative residue disposals will be kept by the site as per Section 16.2 Records Management of this EMP. ***Recycling:*** • The Environmental Coordinator will investigate and implement a recycling program across the site with the objective of recycling as much of the waste stream generated on-site. • Areas of recycling that will be investigated will include office wastes such as paper and cardboard, waste oils, plastic chemical containers and metals. • Once the recycling program is implemented, appropriate receptacles will be provided for site segregation of wastes, appropriate training will be provided for site and contract personnel and the management of the system will be undertaken by the Environmental Coordinator as per Section 12.1 Environmental Monitoring of this EMP. • Investigate on-site reuse of demin waste water for on-site. • Records of all recycling will be kept by the site as per Section 16.2 Records Management of this EMP. ***General Wastes:*** • General wastes unable to be recycled, will be stored in appropriate receptacles and picked up as required by a licensed contractor and disposed of at the licensed WWCC Landfill. • The management of the system will be undertaken by the Environmental Coordinator as per Section 12.1 Environmental Monitoring of this EMP. • No on-site burning of wastes will be allowed at any time. • Records of all general waste disposals will be kept by the site as per Section 16.2Records Management of this EMP. ***Green Wastes:*** • Green wastes from landscape maintenance activities will be reused on site where possible or disposed of uncontaminated to the green waste section of the WWCC landfill facility.

	• No on-site burning of green wastes will be allowed at any time.
Regulated Wastes: • Waste Chemicals • Waste Oils • Contaminated Soils • Spill Clean-Up Material and Absorbents	• Regulated Waste will only be transported from the site by companies licensed to do so. • Appropriate disposal will be arranged with a licensed facility in consultation with the administering authority. • Regulated Waste removal records will be kept for a minimum of 6 years. Records of all regulated waste disposal will be kept as per Section 4.4 Records Management of this EMP.
Sewage	• Treated through on-site septic treatment facility. • Septic system will be inspected by WWCC Officer annually to ensure efficient and safe operation. • Transpiration area is to remain fenced off from vehicle and stock access. • The management of the system will be undertaken by the Environmental Coordinator as per Section 12.1 Environmental Monitoring of this EMP.
Maintenance	• General wastes will be removed at least weekly for disposal. • Contaminated or regulated wastes will be disposed of as required and in accordance with legislation • An incident/complaint register will be established and maintained
Performance Indicators	• No unnecessary wastes generated. • Recycling performance indicators to be generated to reflect percentage of wastes generated being recycled. • No adverse impacts on land and water resources
Monitoring	• Visual inspection of the site will be carried out daily for evidence of litter or waste material that has been inappropriately disposed of by site personnel. Formal monitoring will be undertaken weekly. • Waste collection will be monitored on a regular basis • Waste documentation will be completed and available for inspection on request • A complaints register will be held, in which any complaints from the community will be logged. • Complaints will be investigated and, if appropriate, acted upon
Corrective Action / Reporting	• Corrective action is required to be undertaken immediately after a complaint is made or nonconformance identified. • Complaints receival and corrective action will be undertaken as per Section 9 Complaints Handling of this EMP. • The Site Manager will report on compliance with this EMP as required by the administering authorities.

15.8 Transport Code of Conduct

Element	Management Plan
Potential Impacts	• Disturbance of neighboring residences and the Community of Uranquinty by transport vehicles to site.
Sources	• Generation personnel transport to and from Power Station • Transport deliveries to site
Actions/Controls	• Heavy vehicles shall only be permitted to enter and leave the site between 7.00am and 7.00pm on any day. This condition does not apply in the event of a direction from police or other relevant authority for safety reasons. • Access route to the site for delivery vehicles will be limited to Uranquinty Cross Road via the Sturt Highway at Uranquinty. • The site induction for site personnel and regular delivery drivers will cover: • The need to observe speed zones, especially the 50km speed zones through Uranquinty and the 100k speed zone along Uranquinty Cross Road. • The need to ensure appropriate behavior on community roads. • The need to ensure that noise levels are kept to a minimum especially through the township of Uranquinty and into the Power Station site. • Loads entering or leaving site will be suitably covered to ensure loads are secure.
Performance Indicators	• No community complaints in respect to Generation personnel driving or transport deliveries
Monitoring	• Informal observations by Site Manager and Environmental Coordinator; • A complaints register will be held, in which any complaints from the community will be logged. • Complaints will be investigated and, if appropriate, acted upon
Corrective Action / Reporting	• Corrective action is required to be undertaken immediately after a complaint is made or nonconformance identified. • Complaints receival and corrective action will be undertaken as per Section 9 Complaints Handling of this EMP. • The Site Manager will report on compliance with this EMP as required by the administering authorities.

16. Documentation

16.1 Amendments and Variations to this EMP

The requirements of this EMP may need to be amended or varied, at any time during the life of the power station.

The procedure for amending the EMP is a formal process in order to ensure that the environmental implications for the proposed amendments are acceptable. The procedure outlined below will maintain the integrity of the EMP and ensure that any amendments are approved by the Asset Operations Manager. For all proposed amendments or variations to this EMP:

- Notify the Asset Operations Manager for the proposed amendment.
- The Asset Operations Manager will discuss with the Environmental Coordinator, Environmental Manager – Generation and or external environmental consultants. If the amendment is approved, the EMP will be altered. The Version Status Table in Section 17 of the EMP will be updated to reflect the EMP alteration.

Once approved, the amended aspects of the EMP are now required to be implemented along with the other environmental management actions listed.

16.2 Records Management

Generation recognise the importance of retaining business information in a manner that is readily available to personnel and easily retrieved.

For the purposes of this section, a record may include such items as:

- minutes of meetings;
- induction and training attendance records;
- environmental related inspection, review and audit report records;
- plant inspection, testing, calibration, servicing, maintenance and monitoring records;
- completed hazard and incident reports;
- documented incident investigations as well as follow-up action;
- plant and substance records such as manufacturer instructions, operational manuals and material safety data sheets;
- completed environmental management plans, performance reports or statistical reports;
- records of inspections, services or audits provided by external authorities or agencies;
- environmental related email which may be considered as official correspondence

At the UPS, specific filing locations are maintained to enable easy filing of hard copy records. Furthermore, electronic or soft copy records are maintained within the enterprise document and records management system, 'Objective'.

The minimum retention period of records shall be undertaken as defined within the following table. Where any doubt exists in relation to the minimum period of retention of a particular record type, it is to be retained indefinitely.

Retention Period	Record Description / Type
6 years	• Incident or investigation reports of any kind • Induction and training records of any kind • All other environmental related records (e.g. completed assessments, permits, inspections, audits, logs, minutes)
30 years	• Risk assessment, atmospheric/environmental monitoring, EPA or DOP&I correspondence, related records
Indefinitely	• Operational manuals for the Power Station plant • Drawings relating to Power Station plant design

17. Document Control

OWNER (To whom any changes are to be recommended)	
Position	**Incumbent**
Asset Operations Manager	Stuart Atkinson

STAKEHOLDERS AND OTHER CONTRIBUTORS

Position	Incumbent

REVIEWED BY

Position	Incumbent	Review date
Acting UPS Site Manager	Brendan Nilsen	
Environment Representative	Fiona Allen	
HSE Manager	Geoff Burns	
Asset Operations Manager	Stuart Atkinson	

APPROVED BY

Position	Incumbent	Approval date
HSE Manager, Generation	Geoff Burns	

HISTORY

Nature of change	Author	Version	Date
Original Version for Issue	Guy Corbett	1	1/9/2008
Edits to meet DOP&I Requirements	Guy Corbett	1a	18/10/2008
Update to reflect Origin format and procedure identification	Ian Smith	2	28/07/2009
Updated to noise management section, project description to reflect operations, new document format as per Generation requirements	Ian Smith	3	29/10/2009
Incorporation of comments from DOP&I	Ian Smith	4	21/01/2010
Annual EMP review & update	Guy Corbett	5	8/11/2011
Annual EMP review & update (MOC UPS/047)	Guy Corbett	6	17/08/2012
Annual EMP review & update	Guy Corbett	7	25/6/2013
Annual EMP review & update	Guy Corbett	8	30/1/2014

RELATED DOCUMENTS

Title	Review Date

NEXT REVIEW DUE (default review interval is 2 years from release date)

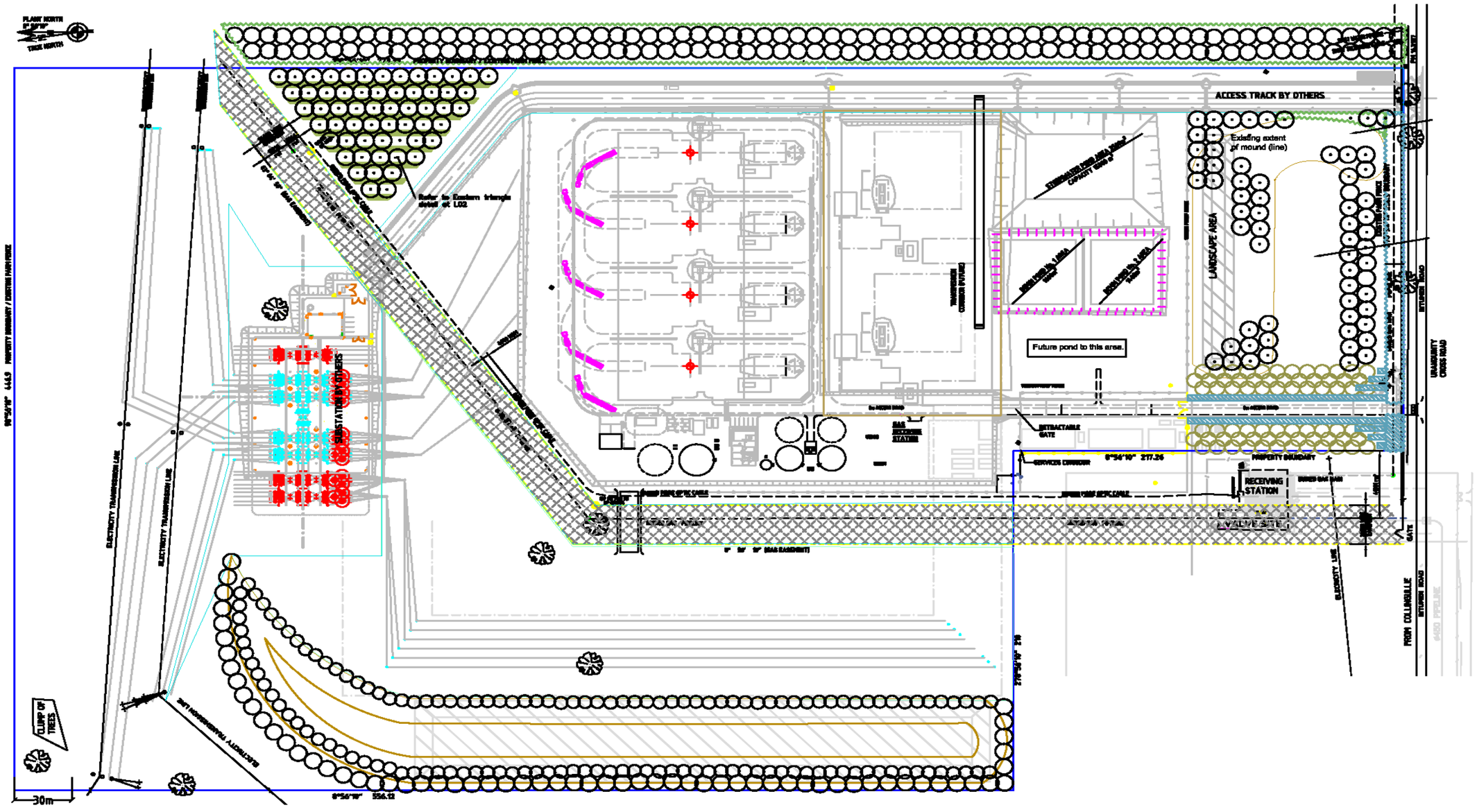
January 2015

CONTROLLED DOCUMENT LOCATION

Objective ID – A3533

18. Appendix 1. Site Layout Schematic

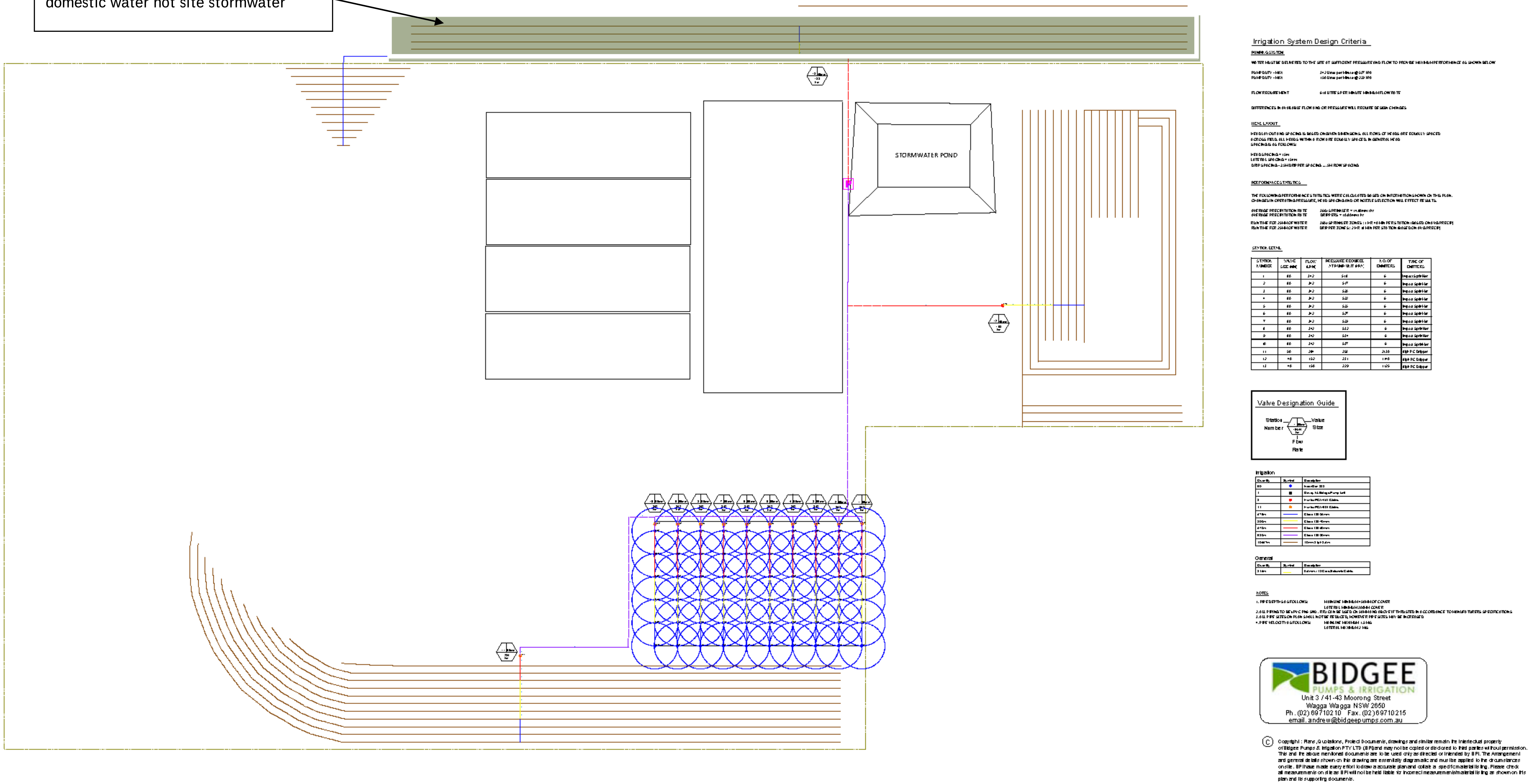
Potential Future Off-Site Visual Amenity Planting on Neighbouring Paddock – The Jacks



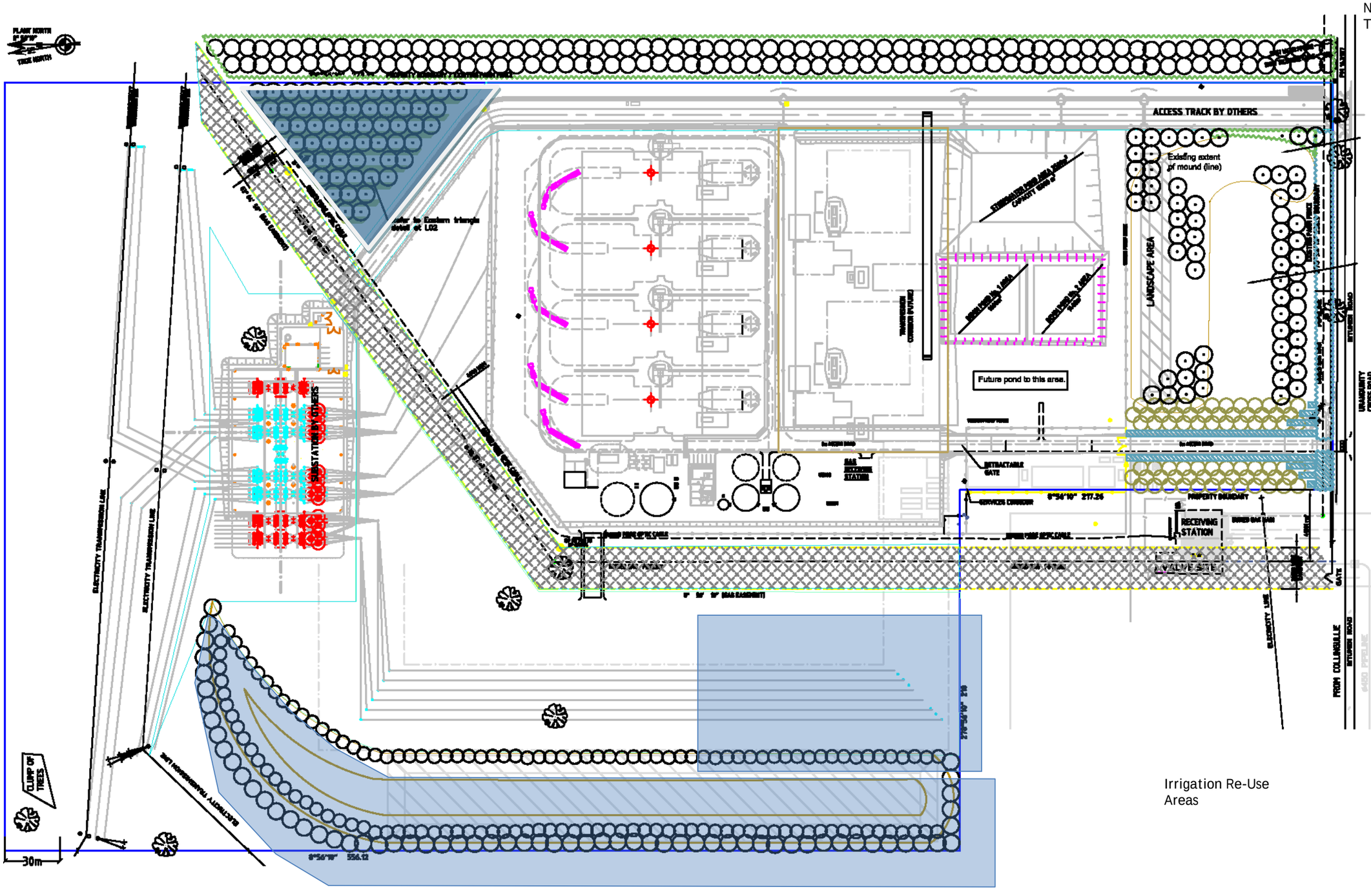
19. Appendix 2. Site Irrigation Layout

Irrigation water for this off-site vegetation planting will be supplied by domestic water not site stormwater

Potential Future Off-Site Visual Amenity Planting on Neighbouring Paddock – The Jacks



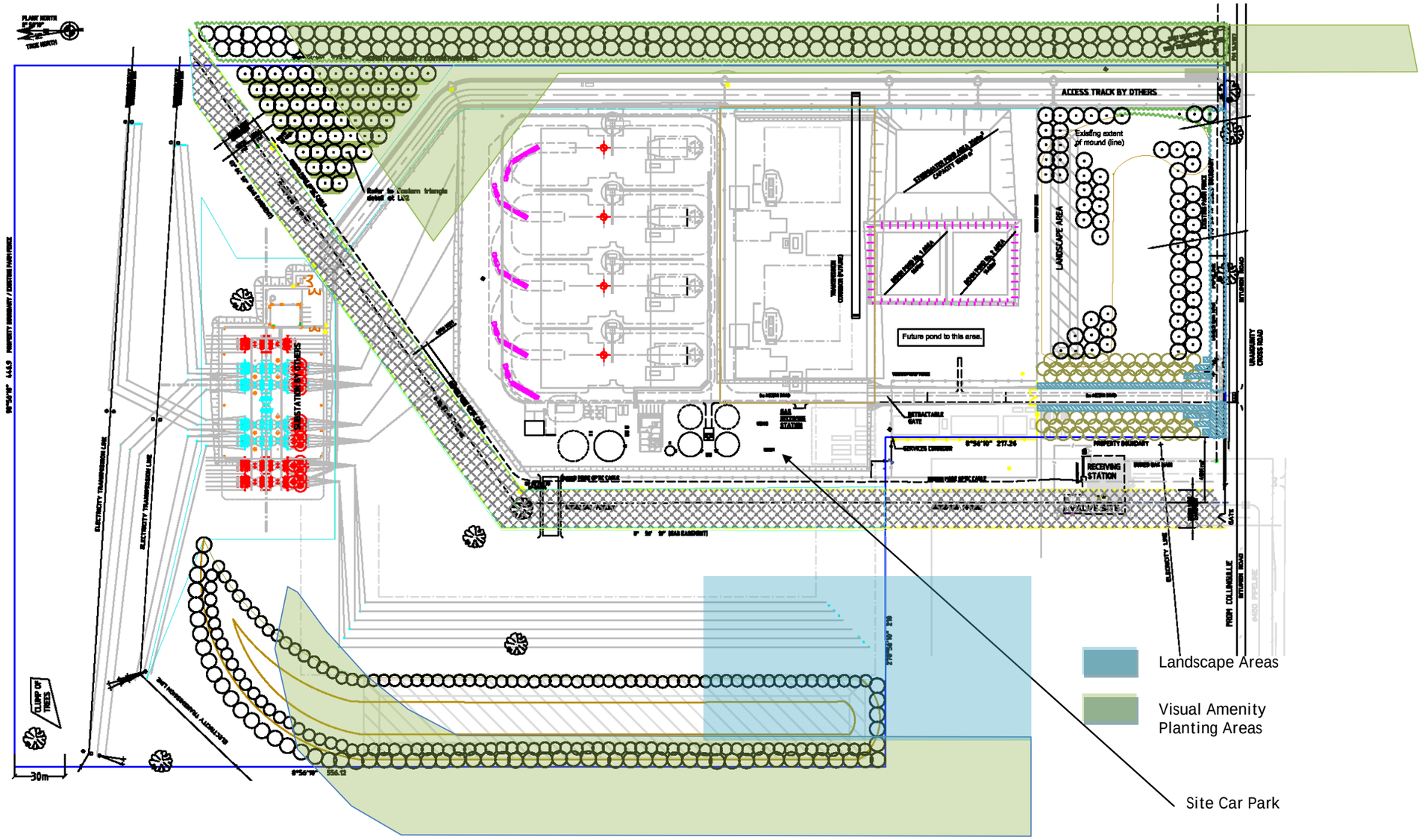
20. Appendix 2a. Irrigation Reuse Areas



Potential Future Off-Site Visual Amenity Planting on Neighbouring Paddock – The Jacks

Irrigation Re-Use Areas

21. Appendix 3. Site Landscape Plan



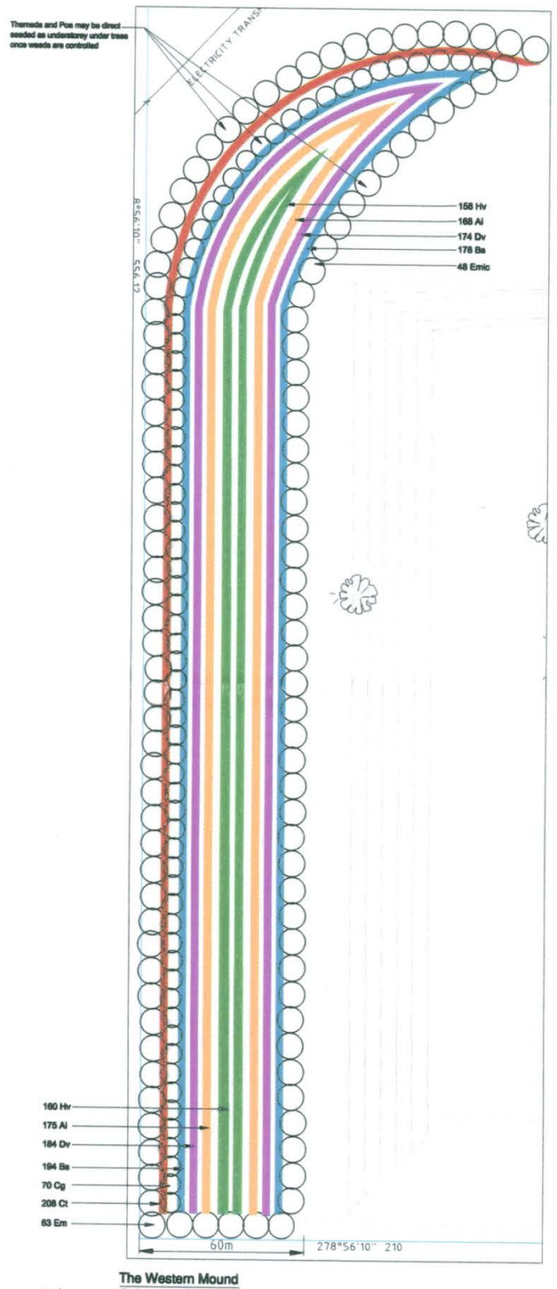
Potential Future Off-Site Visual Amenity Planting on Neighbouring Paddock – The Jacks

NOTE:
Refer to accompanying specification, document and typical details for further information.

REVISION	AMENDMENT :	ISSUED
B	Planning Issue	18-06-08

BILFINGER BERGER Services

NEWGEN POWER URANQUINTY PTY. LTD.
URANQUINTY GAS-FIRED POWER STATION
Landscape Plan
Materials and Layout
CONCEPT
L01
B



The Western Mound
Scale 1:750 at A0

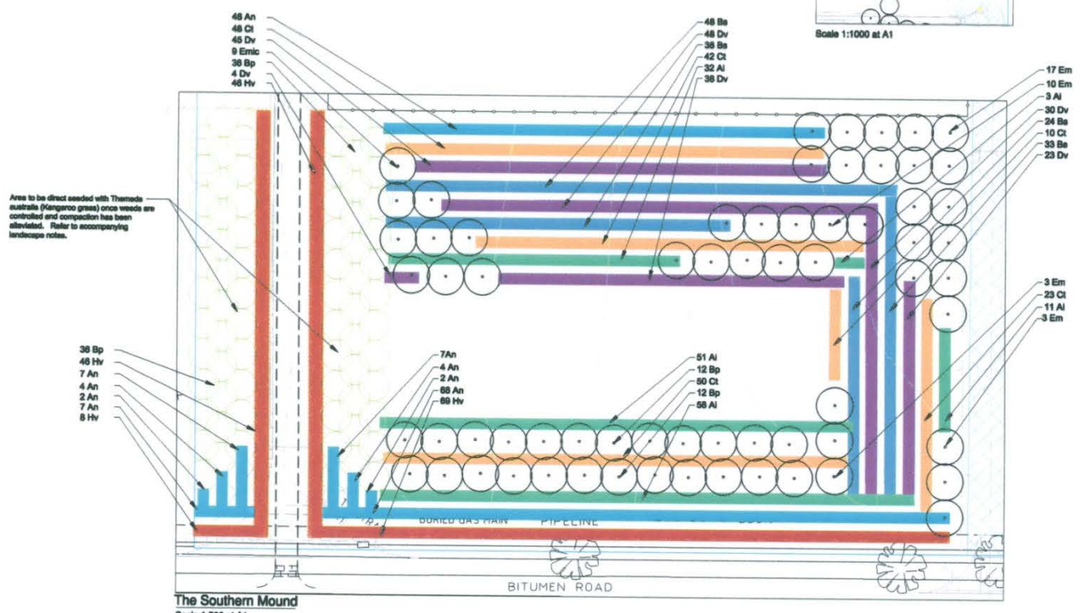
WESTERN MOUND

Code	Species	Pot size	Spacing	Nos
Ai	Acacia iteaphylla	S	2.5m	343
Bs	Bursaria spinosa	S	2.5m	372
Cg	Callitris glaucophylla	S	10m	70
Ct	Calytrix tetragona	S	2.5m	208
Dv	Dodonea viscosa subsp cuneata	S	2.5m	358
Eb	Eucalyptus blakelyi	S	10m	40
Em	Eucalyptus melliodora	S	10m	63
Emic	Eucalyptus microcarpa	S	10m	48
Hv	Hardenbergia violacea	S	2.5m	318

SOUTHERN MOUND AND ENTRANCE

Code	Species	Pot size	Spacing	Nos
An	Atriplex nummularia	Speedling	2.5m	149
Ai	Acacia iteaphylla	S	2.5m	155
Bp	Brachychiton populneus	S	10m	96
Bs	Bursaria spinosa	S	2.5m	143
Ct	Calytrix tetragona	S	2.5m	173
Dv	Dodonea viscosa subsp cuneata	S	2.5m	188
Em	Eucalyptus melliodora	S	10m	33
Emic	Eucalyptus microcarpa	S	10m	9
Hv	Hardenbergia violacea	S	2.5m	169

NB.Native grasses Lomandra longifolia, Pos labillarderi and Themeda australis may be direct seeded as an understorey to all tree plantings if weeds can be controlled and compaction alleviated.



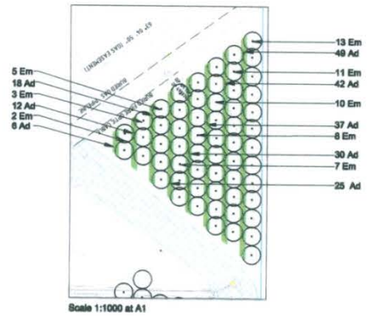
The Southern Mound
Scale 1:500 at A1

THE EASTERN BOUNDARY PLANTATION

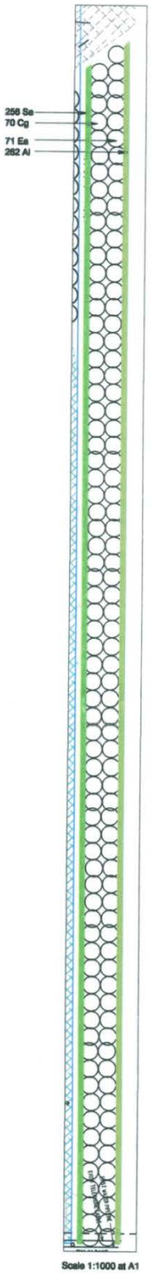
Code	Species	Pot size	Spacing	Nos
Ai	Acacia leucoclada	Speedling	2.5m	262
Cg	Callitris glaucophylla	S	10m	70
Ea	Eucalyptus albens	S	10m	71
Sa	Senna artemisiodes	S	2.5m	256

THE EASTERN TRIANGLE

Code	Species	Pot size	Spacing	Nos
Ad	Acacia deanei	Speedling	2.5m	219
Em	Eucalyptus melliodora	S	10m	59



Scale 1:1000 at A1



Scale 1:1000 at A1

Potential Future Off-Site Visual Amenity Planting on Neighbouring Paddock – The Jacks

TRUE NORTH
PLANT NORTH
8°55'10"

NOTE:
Irrigation lines to all planted areasat 5m spacings, with in-line drippers at 2.5 m spacings.
All trees at 10m centres
All shrubs/groundcovers at 2.5m centres.
Refer to accompanying specification document and typical details for further information.

REVISION	AMENDMENT :	ISSUED
B	Planting layout	18-06-08

LANDSCAPE ARCHITECT
Somewhere
LANDSCAPE ARCHITECTS, DESIGNERS AND DREAMERS
Olde Milong YOUNG NSW 2594
P 0263847333 F 0263847358
oles@somewhere.net.au

CONTRACT No.		
DESIGN BY	A.DALGLISH	
DRAWN	O.CONDON	18-06-08
CHECKED		

BILFINGER BERGER Services

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NEWGEN POWER URANQUINTY PTY. LTD.
URANQUINTY GAS-FIRED POWER STATION
LANDSCAPE PLANTING PLAN
CONCEPT

Scale	A0	DRG No	REV.
See plan		L02	B

Landscaping Tree Planting Species

The codes reference back to Site Landscape Plan Drawings 1 and 2 above

The Eastern Boundary Plantation

Code	Species
Cg	Callitris glaucophylla
Ea	Eucalyptus albens
Sa	Senna artemisiodes

The Eastern Traingle

Code	Species
Ad	Acacia deanei
Em	Eucalyptus melliodora

Southern Mound and Entrance

Code	Species
Bp	Brachychiton populneus
Bs	Bursaria spinosa
Ct	Caltrix tetragona
Dv	Dodonea viscose subsp cuneata
Em	Eucalyptus melliodora
Emic	Eucalyptus microcarpa
Hv	Hardenbergia violacea

Western Mound

Code	Species
Bs	Bursaria spinosa
Cg	Callitris glaucophylla
Ct	Caltrix tetragona
Dv	Dodonea viscose subsp cuneata
Eb	Eucalyptus blakelyi
Em	Eucalyptus melliodora
Emic	Eucalyptus microcarpa
Hv	Hardenbergia violacea

22. Appendix 4. Site Water Drainage and Discharge Off-Site Points