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APPLICATION ON NOTIFICATION – CROWN DEVELOPMENT

Type of development:	SECTION 49 - STATE AGENCY DEVELOPMENT
Development Number:	711/V029/19
Applicant:	SA Water
Nature of Development:	Installation of solar photo voltaic cells, single access tracking system, four inverter stations within all weather proof structure. Associated works comprising site clearance, earthworks, electrical cabling, access tracks, laydown areas and security fencing.
Subject Land:	2844 Reedy Creek Road, Palmer and Lot 91 Randell Road, Palmer
Development Plan:	Mid Murray Council Development Plan
Zone / Policy Area:	Rural Zone/ Murray Plains Policy Area 16
Contact Officer:	Janine Philbey
Phone Number:	7109 7062
Consultation Start Date:	Tuesday 12 November 2019
Consultation Close Date:	Wednesday 11 December 2019
During the notification period, hard copies of the application documentation can be viewed at the Department of Planning, Transport and Infrastructure, Level 5, 50 Flinders St, Adelaide, during normal business hours. Application documentation may also be viewed during normal business hours at the local Council office (if identified on the public notice).	

Written representations must be received by the close date (indicated above) and can either be posted, hand-delivered, faxed or emailed to the State Commission Assessment Panel (SCAP). A representation form is provided as part of this document.

Any representations received after the close date will not be considered.

Postal Address:
The Secretary
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Street Address:
Development Division
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Email Address: scapreps@sa.gov.au

Fax Number: (08) 8303 0753

Government of South Australia

Department of Planning, Transport and Infrastructure

DEVELOPMENT ACT 1993

SECTION 49 - STATE AGENCY DEVELOPMENT

NOTICE OF APPLICATION FOR CONSENT TO DEVELOPMENT

Notice is hereby given that an application has been made by **SA Water Corporation** for consent to establish a solar farm for the purposes of electricity generation (and expand a previously approved but not constructed solar farm and related infrastructure under DA 711/V026/18).

The new works would comprise the installation of solar photovoltaic cells, with single access tracking system and four inverter stations within weather proof structures on 22 hectares of land to the immediate south-east of the approved development. Associated works will comprise site clearance, earthworks, electrical cabling, access tracks, laydown areas and security fencing. Development Number: **711/V029/19**.

The subject land is situated at 2844 Reedy Creek Road, Palmer and Lot 91 Randell Road, Palmer (Allotment 233, F169982: CT 5720/548; and A91, F170193: CT 6107/623).

The development site is located within the Rural Zone [Murray Plains Policy Area 16] of the Mid Murray Council Development Plan (Consolidated 20 December 2018).

The application may be examined during normal office hours at the office of the State Commission Assessment Panel (SCAP), Level 5, 50 Flinders Street, Adelaide and at the office of Mid Murray Council, 49 Adelaide Road, Mannum. Application documentation may also be viewed on the SCAP website https://www.saplanningportal.sa.gov.au/public_notices.

Any person or body who desires to do so may make representations concerning the application by notice in writing delivered to the Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide SA 5001 **NOT LATER THAN WEDNESDAY 11 DECEMBER 2019**. Submissions may also be emailed to: scapreps@sa.gov.au

Each person or body making a representation should state the reason for the representation and whether that person or body wishes to be given the opportunity to appear before the SCAP to further explain the representation.

Submissions may be made available for public inspection.

Should you wish to discuss the application and the public notification procedure please contact Janine Philbey on 7109 7062 or Janine.Philbey@sa.gov.au

Jessie Surace
A/SECRETARY
STATE COMMISSION ASSESSMENT PANEL
scapreps@sa.gov.au

PUBLISHED IN : The Advertiser + Murray Valley Standard
PUBLICATION DATE : Tuesday 12 November 2019

DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION

Applicant:	SA Water
Development Number:	711/V029/19
Nature of Development:	Installation of solar photo voltaic cells, single access tracking framework, 4 inverter stations within all weather proof structures and associated works.
Zone / Policy Area:	Rural Zone/Murray Plains Policy Area 16
Subject Land:	2844 Reedy Creek Road, Palmer and Lot 91 Randell Road, Palmer
Contact Officer:	Janine Philbey
Phone Number:	7109 7062
Close Date:	Wednesday 11 December 2019

My Name: _____ My phone number: _____

Primary method(s) of contact: Email: _____

Postal Address: _____

_____ Postcode: _____

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

- ☐ owner of local property
- ☐ occupier of local property
- ☐ a representative of a company/other organisation affected by the proposal
- ☐ a private citizen

The address of the property affected is: _____

_____ Postcode _____

My interests are:
(please tick one)

- ☐ I support the development
- ☐ I support the development with some concerns
- ☐ I oppose the development

The specific aspects of the application to which I make comment on are: _____

_____

_____

_____

_____

I:
(please tick one)

- ☐ wish to be heard in support of my submission
- ☐ do not wish to be heard in support of my submission
  (Please tick one)

By:
(please tick one)

- ☐ appearing personally
- ☐ being represented by the following person
  (Please tick one)

Signature: _____

Date: _____

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 /or
Email: scapreps@sa.gov.au

SECTION 49 & 49A – CROWN DEVELOPMENT
DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: __**Mid Murray Council** _____

APPLICANT: ___**SA Water Corporation**_____

ADDRESS: _250 Victoria Square, Adelaide SA 5000__

CROWN AGENCY: _South Australian Water Corporation_____

FOR OFFICE USE

DEVELOPMENT No: _____

PREVIOUS DEVELOPMENT No:_____

DATE RECEIVED: / /

CONTACT PERSON FOR FURTHER INFORMATION

Name: _Lauren Nicholson (Aurecon - on behalf of SA Water)_

Telephone: _08 8237 9762__ [work] _0478550440____ [Ah]

Fax: _____ [work] _____ [Ah]

Email: __lauren.nicholson@aurecongroup.com _____

❒ Complying ❒ Merit ❒ Public Notification ❒ Referrals	Decision: _____ Type: _____ Finalised: / /

NOTE TO APPLICANTS:

(1) All sections of this form must be completed. The site of the development must be accurately identified and the nature of the proposal adequately described. If the expected development cost of this Section 49 or Section 49A application exceeds $100,000 (excl. fit-out) or the development involves the division of land (with the creation of additional allotments) it will be subject to those fees as outlined in Item 1 of Schedule 6 of the *Development Regulations 2008.* Proposals over $4 million (excl. fit-out) will be subject to public notification and advertising fees.
(2) Three copies of the application should also be provided.

	Decision required	**Fees**	**Receipt No**	**Date**
Planning:	_____	_____	_____	_____
Land Division:	_____	_____	_____	_____
Additional:	_____	_____	_____	_____
Minister's Approval				

EXISTING USE:_ Agriculture (Cropping)_____

DESCRIPTION OF PROPOSED DEVELOPMENT:__The installation of solar Photovoltaic arrays and associated infrastructure ___within the land described below (in connection with SA Water's Mannum PPS.2) , along with 2.4m high chainmesh ___security fence and required earthworks for construction. _____ _____

LOCATION OF PROPOSED DEVELOPMENT:___**multiple parcels affected - see attached CT's (Appendix A)**_____

House No: _____ Lot No: _91__ Street: _Randell Road_____ Town/Suburb: __Palmer_____

Section No [full/part] _____ Filed Plan: _170193_____ Volume: __6107___ Folio: __623_____

Section No [full/part] _____ Hundred: __Tungkillo_____ Volume: _____ Folio: _____

LAND DIVISION:

Site Area [m^2] _____ Reserve Area [m^2] _____ No of existing allotments _____

Number of additional allotments [excluding road and reserve]: _____ Lease: **YES** ❒ **NO** ❒

DEVELOPMENT COST [do not include any fit-out costs]**:** $ _14,000,000.00_____

POWERLINE SETBACKS: Pursuant to Schedule 5 (2a)(1) of the *Development Regulations 2008,* if this application is for a building it will be forwarded to the Office of the Technical Regulator for comment unless the applicant provides a declaration to confirm that the building meets the required setback distances from existing powerlines. The declaration form and further information on electricity infrastructure and clearance distances can be downloaded from the DPLG website (www.dac.sa.gov.au).

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the *Development Act 1993.*

SIGNATURE: _  _____ Dated: 11/10/2018

DEVELOPMENT REGULATIONS 2008
Form of Declaration (Schedule 5 clause 2A)

Government of South Australia

To: **State Commission Assessment Panel (SCAP)**

From: **South Australian Water Corporation (C/- Aurecon Australasia Pty Ltd)**

Date of Application: **11/10/2019**

Location of Proposed Development: **land surrounding Mannum PPS.2 (Multiple CT's)**

House No: _____ Lot No: **91** Street: **Randell Road**

Town/Suburb: **Palmer**

Section No (full/part): _____ Hundred: **Tungkillo**

Volume: **6107** Folio: **623**

Nature of Proposed Development:

Installation of Solar PV arrays and associated equipment within the above allotment. Energy generation capabilities for the direct benefit of ongoing water treatment and pumping operations by SA Water.

I **Lauren Nicholson (of Aurecon Australasia)** **being a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the Electricity Act 1996. I make this declaration under clause 2A(1) of Schedule 5 of the Development Regulations 2008.**

Signed: _____ **Date:** **11/10/2019**

Government of South Australia

Note 1

This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the Development Act 1993), other than where the development is limited to –

a) an internal alteration of a building; or
b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2

The requirements of section 86 of the Electricity Act 1996 do not apply in relation to:

a) an aerial line and a fence, sign or notice that is less than 2.0 m in height and is not designed for a person to stand on; or
b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3

Section 86 of the Electricity Act 1996 refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4

The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply.

Particular care needs to be taken where high voltage powerlines exist; or where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5

An information brochure: 'Building Safely Near Powerlines' has been prepared by the Technical Regulator to assist applicants and other interested persons.

This brochure is available from council and the Office of the Technical Regulator. The brochure and other relevant information can also be found at **sa.gov.au/energy/powerlinesafety**

Note 6

In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

11 October 2019

Attention: Simon Neldner, DPTI
Team Leader – Crown and Major Developments
Planning and Land Use Services
GPO Box 1815
ADELAIDE SA 5000

Dear Simon

Development Application – Section 49 (Crown Development) for Solar PV installation at Mannum to Adelaide Pipeline Pumping Station No.2

SA Water is seeking Development Approval for the installation of solar PV arrays and associated battery storage facilities along with ancillary equipment in connection to the Mannum to Adelaide Pipeline Pumping Station No.2 ('Mannum PPS.2') land. The proposed works at Mannum PPS.2 form part of the *Zero Cost Energy Future* project, where solar Photovoltaic (PV) cells and Battery Energy Storage Systems (BESSs) are planned for installation across SA Water's key sites.

A separate Development Application was previously submitted and recently approved (Appian ID 3747/ DA No. 711/V026/18) for the installation of solar PV arrays and associated infrastructure in connection with the Mannum PPS.2 operations. The proposed development outlined within this application is required in addition to that previously approved and it is understood that a separate assessment is required of this additional installation.

Please find attached copies of the completed development application form and associated supporting documentation. Further details regarding elements of the overall design require confirmation and will be provided for consideration by SCAP as part of forthcoming Detailed Designs. Notwithstanding this, the attached supporting documentation has been prepared to the highest level of accuracy possible and reflects 'upper limit estimates' where appropriate.

SA Water has developed a Community and Stakeholder Engagement Strategy to identify key stakeholders and is committed to ensuring a high level of engagement in order to manage expectations, community concerns and any other issues associated with the project. Members of SA Water's Environment and Heritage Services team met with Mid Murray Council Development Services team members on 30th August 2018 to discuss the originally proposed development at Mannum PPS.2, as well as other identified sites within this council region. Continued correspondence between this council and SA Water throughout the Development Assessment process will ensure that any potential concerns can be addressed as efficiently as possible.

SA Water have engaged the services of Aurecon Australia Pty Ltd in order to facilitate the process of obtaining Development Approval for each of the planned Solar PV installations. Should you have any queries in relation to the applications or proposed works please feel free to contact Lauren Nicholson (Aurecon – on behalf of SA Water) on 0478550440 or lauren.nicholson@aurecongroup.com .

Yours Sincerely,

Lauren Nicholson (Aurecon)
Senior Consultant, Environment and Planning

*For billing purposes, please address all tax invoices (fee requests) as follows:

South Australian Water Corporation
Attn: Jackie Griggs (Senior EIA Officer- *Zero Cost Energy Future*)
EIA@sawater.com.au
250 Victoria Square
GPO Box 1751
ADELAIDE SA 5001

SA Water

Development Application

Mannum to Adelaide PPS.2

Zero Cost Energy Future

Solar Photovoltaic Project

Version: 2
Date: 11/10/2019
Status: Final

Government of South Australia

Document Controls

Version History

Version	Date	Author	Comments
1.0	07/08/2019	Lauren Nicholson	Draft
1.2	03/10/2019 09/10/2019	Jackie Griggs Ben Lewis	SA Water Environment, Land and Heritage comments incorporated SA Water Project Manager review
1.3	10/10/2019	Ben Lewis (on behalf of John Hart)	SA Water Project Manager sign off
Final	11/10/2019	Lauren Nicholson	Submitted to DPTI for Approval

Template: Report Version 4.0 31/07/17

Table of Contents

1 Introduction

1.1 Outline

SA Water Corporation is proposing an additional installation of solar photovoltaic (PV) equipment and associated works in connection to its Mannum to Adelaide Pipeline Pump Station No.2 (Mannum PPS.2). The works form part of the broader Zero Cost Energy Future project, which aims to reduce the operating costs of, and improve reliability of energy supplies to, SA Water's critical water infrastructure. The originally proposed solar PV installation was the subject of a separate Development Application submission, and approval was granted for this application (subject to conditions) on 5th July 2019. The original application was assessed as DA No. 711/V026/18 and a copy of the Decision Notification Form and stamped plans are included as Appendix D. The purpose of this Development Application is to seek approval for the additional solar PV installation required in connection to the Mannum PPS.2 SA Water operations.

Details of the previously approved solar PV installation are included to assist in understanding the development context as a whole. Importantly, the status of the previously granted approval is not affected by this application and it is furthermore understood that any amendments to the design and details of DA No. 711/V026/18 will be addressed separately to this Development Application.

Aurecon Australasia Pty Ltd has been engaged by SA Water to provide planning advice and to assist in obtaining a development approval for the proposed development in accordance with the *Development Act 1993*. SA Water is an agency for the Crown and the works proposed are for the purposes of public infrastructure; as such, the proposal is a Crown Development in accordance with section 49 of the Development Act.

This Planning Report has been prepared to support the Crown Development Application and provides:

- an overview of the Zero Cost Energy Future project;
- a description of the subject land and locality;
- details of the proposed development;
- an outline of procedural matters related to the assessment of the application; and
- our assessment of the development having regard to the provisions of the Mid Murray Council Development Plan.

1.2 Proponent

The proponent for the project is SA Water, which is a government enterprise, wholly-owned by the Government of South Australia, and established by the proclamation of the *South Australian Water Corporation Act 1994*. SA Water is an agency of the Crown for the purposes of Section 49 of the Development Act.

The primary point of contact for any and all correspondence relating to this development application is listed below:

Ms Lauren Nicholson
Town Planner
Aurecon (on behalf of SA Water)
Ph: 0478550440
Email: Lauren.Nicholson@aurecongroup.com

The primary point of contact for all applicable project finance matters, including the issuing of invoices, is listed below:

Dr Jackie Griggs
Senior Environmental Impact Assessment Officer - *Zero Cost Energy Future*
SA Water
Ph: 0448 379 303
Email: Jackie.griggs@sawater.com.au

2 Zero Cost Energy Future Project Overview

Electricity costs comprise a significant operating cost across all SA Water assets. Recent increases in the cost of electricity present a risk for SA Water with impacts on SA Water's operating budget and the associated cost of service provision to SA Water customers. Currently SA Water is a wholesale (spot) market participant and as such is exposed to spot market price risk. The electricity price risk is mitigated through SA Water's own power generation, curtailment of consumption and other hedging strategies.

SA Water has developed an Energy Management Framework which includes a range of strategies for reducing operational energy costs. A key component of this overarching framework is the installation of solar PV cells and battery energy storage systems (BESSs) across a number of SA Water's sites with greatest energy needs to facilitate their operations.

The proposed installation of solar PV cells at key SA Water operating sites, such as the Mannum PPS.2 site, will immediately reduce the operating energy costs for the site and reduce exposure to increases in electricity costs.

The works and activities contributing to the proposed installation of solar PV cells across key SA Water sites is being completed under the project banner of *Zero Cost Energy Future*.

3 Subject Land and Locality

The subject land proposed to accommodate the development described herein, comprising the installation of solar PV arrays and associated infrastructure, is located within the open rural landscape to the southeast of the Palmer Township. The subject land comprises two separate land parcels, legally described as per below:

- Allotment 91, Filed Plan 170193, in the Area named Palmer within Certificate of Title Volume 6107, Folio 623, Hundred of Tungkillo.
- Allotment 233, Filed Plan 169982, in the Area named Palmer within Certificate of Title Volume 5720, Folio 548, Hundred of Tungkillo.

Certificate of Titles have been included as Appendix A.

The proposed development is to be located approximately 280m south-southeast of the existing SA Water landholding at 1780 Randell Road (Lot 79, Deposited Plan 110976) which contains the infrastructure and operations associated with the second major pumping station along the Mannum to Adelaide Pipeline. A separate Development Application was previously submitted and recently approved (Appian ID 3747/ DA No. 711/V026/18) for the installation of solar PV arrays and associated infrastructure in connection with the Mannum PPS.2 operations. The proposed development outlined within this report is required in addition to that previously approved.

The placement of the proposed solar PV arrays has been configured so that the development does not infringe upon a minor watercourse to the south and a more marked creekline to the north which is lined by vegetation. The eastern boundary of the development footprint has been informed through preliminary geotechnical surveys which found ground/ soil conditions towards the eastern extent of the subject land to be unsuitably rocky. The western boundary of this proposed development adjoins the eastern extent of the previously approved solar PV installation in connection to SA Water's Mannum PPS.2.

Figure 1, below, depicts the location of the proposed installation in relation to that previously approved and the immediate locality.

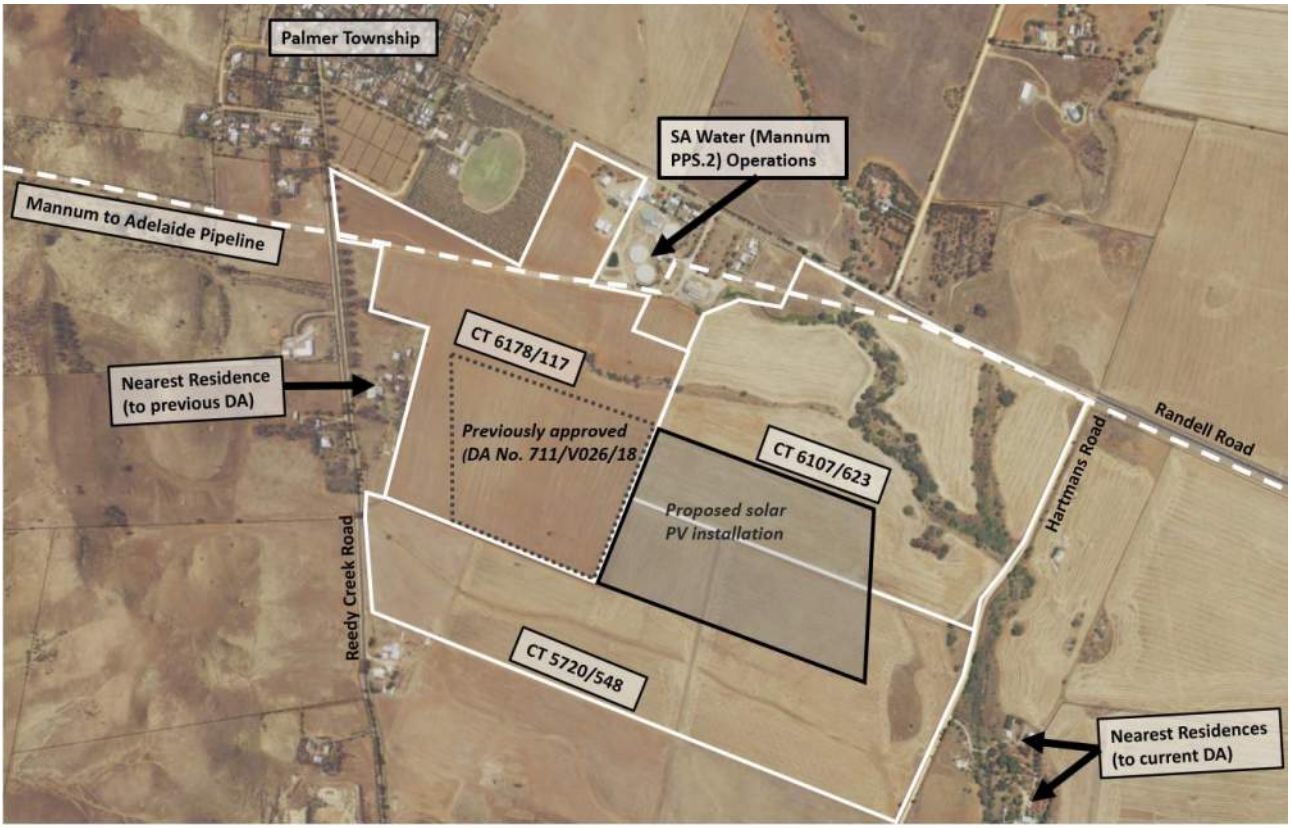


Figure 1. Mannum PPS.2- Original / Proposed solar PV installation areas. Note: boundaries are approximate and shown for illustrative purposes only. Base image source: SAPPA, https://maps.sa.gov.au/SAPPA/

The two allotments proposed to accommodate the second installation of solar PV arrays and associated equipment in connection with SA Water's Mannum PPS.2 site are presently under private ownership. SA Water's property services team have engaged directly with each of the respective land owners for these parcels and appropriate written agreements have been reached to allow for site investigation work (including land, geotechnical, and heritage surveys) to be undertaken. It is intended that, once confirmed viable in supporting the proposed development, these parcels will be formally acquired by SA Water.

This second installation of solar PV arrays and associated equipment is required to support ongoing SA Water operations at the Mannum PPS.2 facility, as well as to support the broader Mannum to Adelaide Pipeline system. The overarching objective of the Zero Cost Energy Future program is based upon the installation of a commensurate amount of power generation (via solar PV) to meet the needs of the respective infrastructure site where the development is located. In this instance, an additional amount of solar PV installation is required at the Mannum PPS.2 site not only to better support future operations at this pumping station, but also to account for the whole Mannum-Adelaide Pipeline system, where shortfalls exist in the ability to install commensurate solar PV at all pumping stations along this pipeline network.

The original proposal (within CT Vol. 6178 / Folio 117) sought approval for an approximate land area of 24 hectares to support the solar PV arrays and associated equipment. Reconfigurations have been made to this original installations' layout to better facilitate the ongoing functionality, where the two installations will operate and be mainted as one cohesive development site. These reconfigurations have allowed for greater separation to be achieved from the western property boundary in order to better protect the nearest residential property from potential interface concerns. The land area proposed to accommodate the second installation equates to approximately 21.81 hectares, with the total combined land area equaling 37.35 hectares. The original installation area (as reconfigured) is illustrated below in Figure 2, alongside the proposed additional installation (which is the subject of this application).

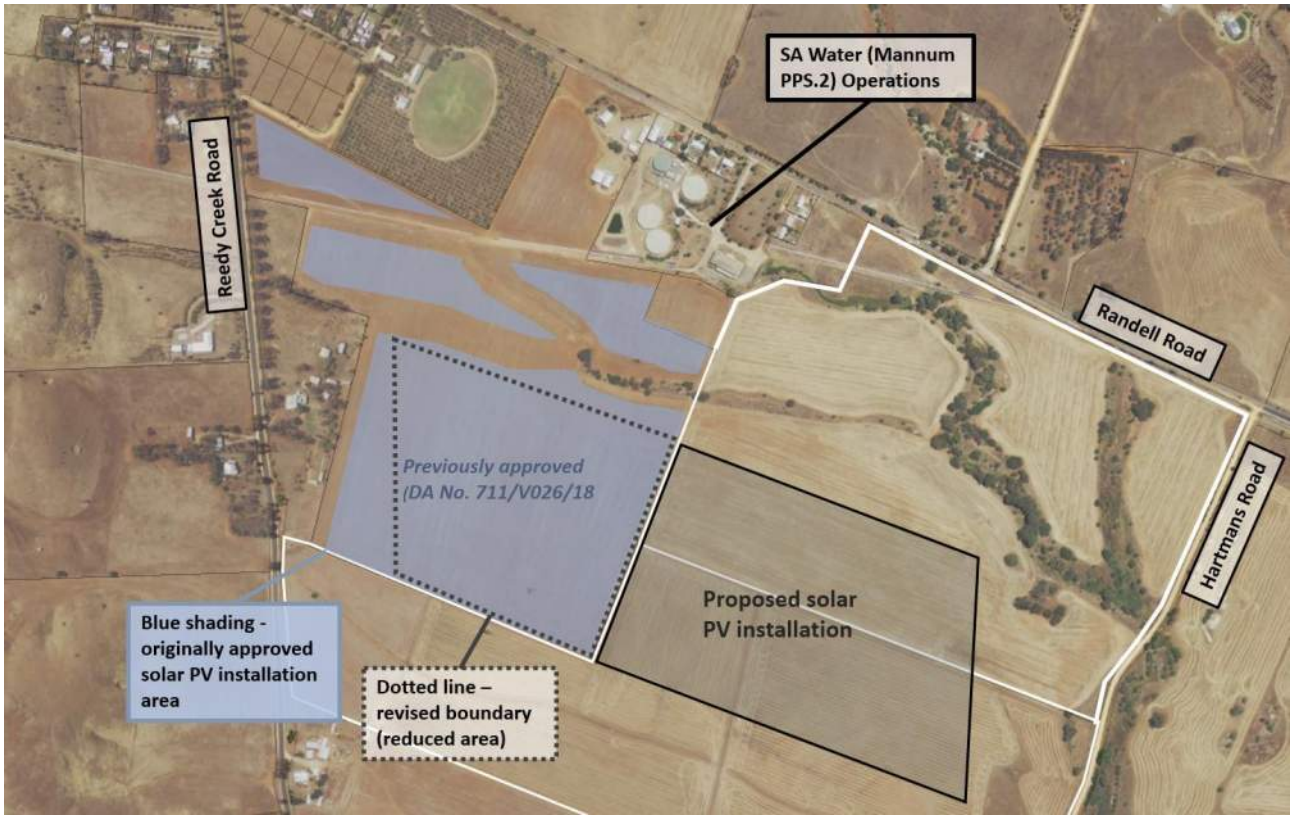


Figure 2. Mannum PPS.2 – Reconfigurations to original proposal and overall development site. Note: boundaries are approximate and shown for illustrative purposes only. Base image source: SAPPA,

The proposed development is well separated from the surrounding road network and other publicly accessible points. Figures 3-5 depict the proposed installation from points along the surrounding road network and demonstrate the role played by physical separation, existing vegetation, terrain and existing infrastructure in reducing the overall visual prominence of the installation.

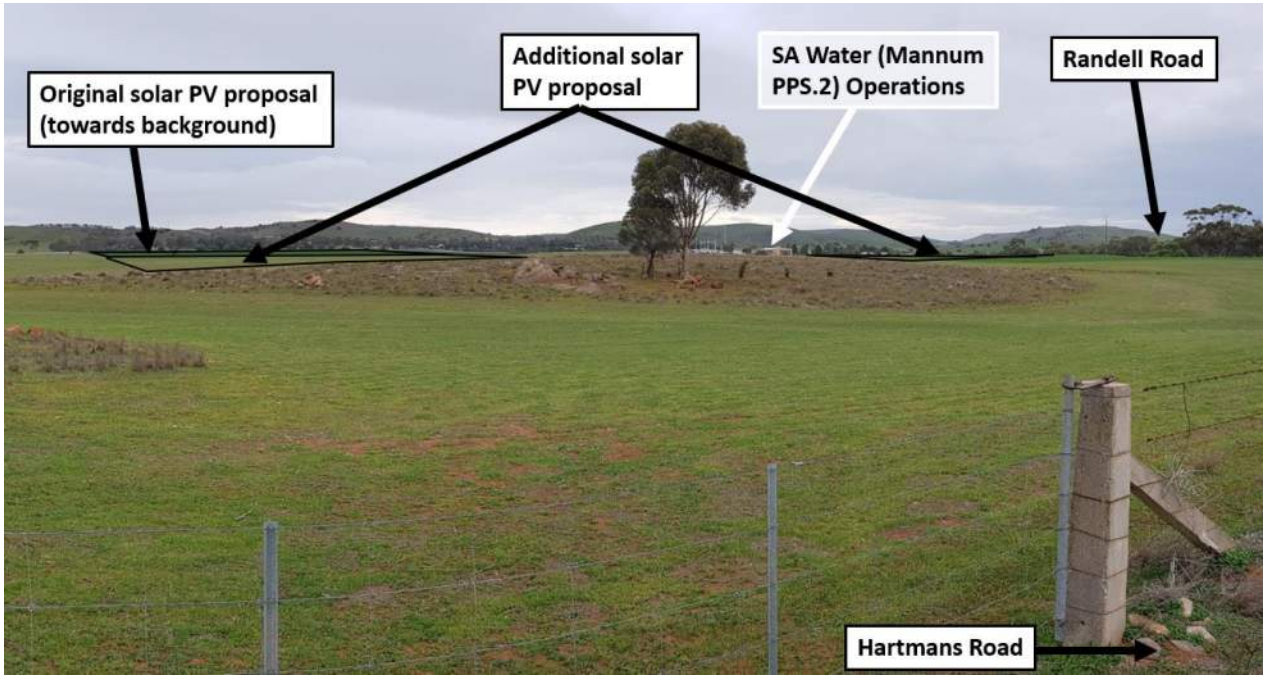


Figure 3. Mannum PPS.2, Originally approved and proposed solar PV area. View from Hartmans Road looking northwest. Note: boundaries are approximate and shown for illustrative purposes only. Base image source: Site photo.

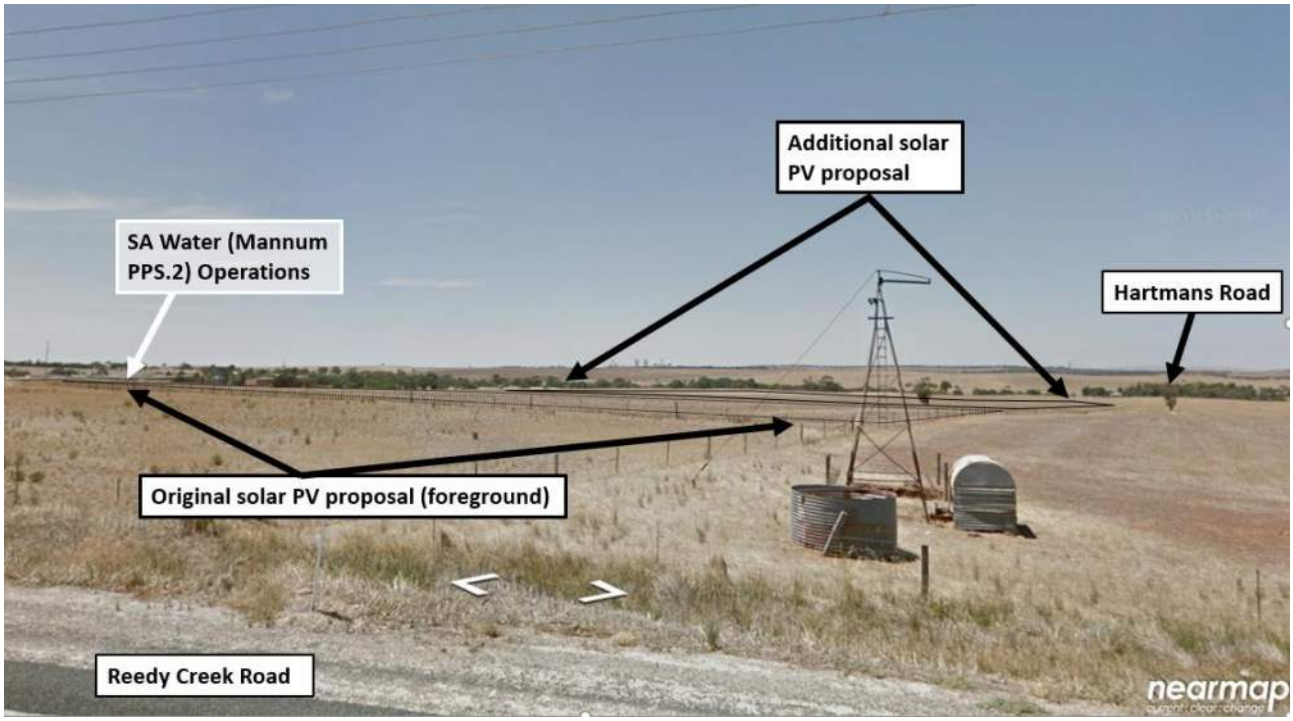


Figure 4. Mannum PPS.2, Originally approved and proposed solar PV area. View from Reedy Creek Road looking east. Note: boundaries are approximate and shown for illustrative purposes only. Base image source: Nearmap, http://maps.au.nearmap.com/

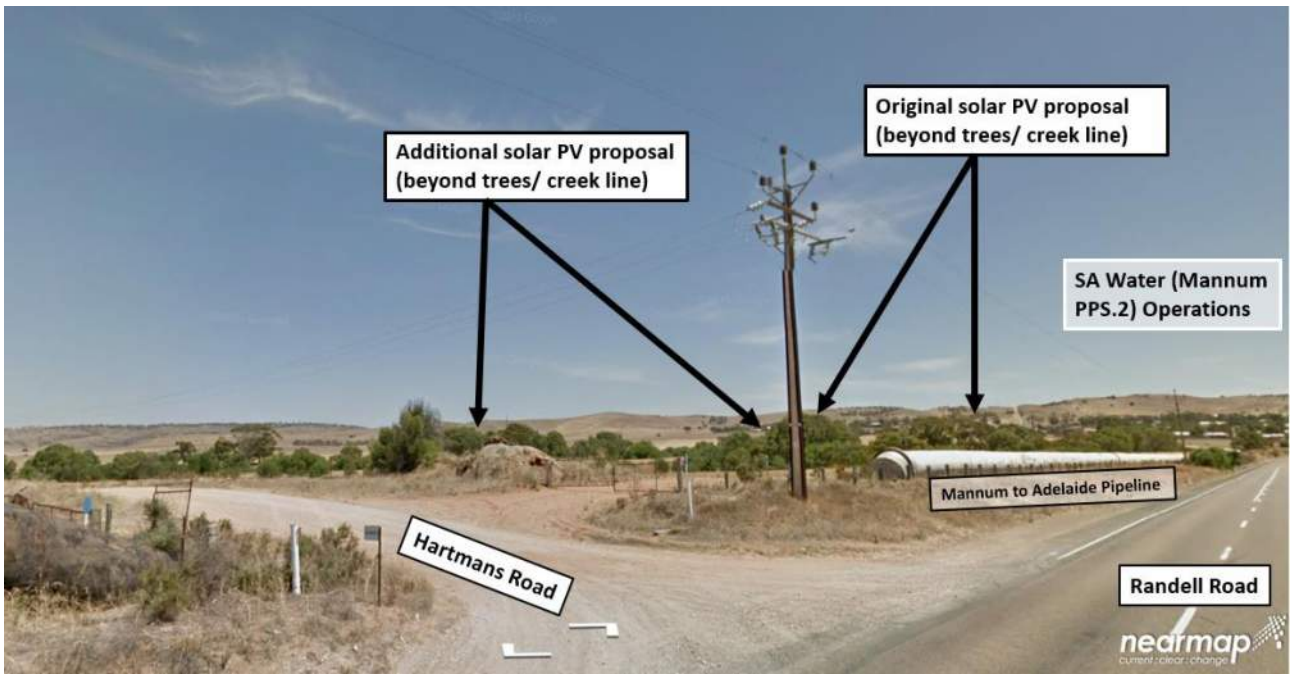


Figure 5. Mannum PPS.2, Originally approved and proposed solar PV area. View from the corner of Randell Road and Hartmanns Road looking southwest. Note: boundaries are approximate and shown for illustrative purposes only. Base image source: Nearmap, http://maps.au.nearmap.com/

4 Proposed Development

4.1 Description of Proposal

The proposed development of a ground-mounted solar generation plant involves the below components;

- Approximately 34,496 indivual solar PV cells, each measuring approximately 1960mm long x 991mm wide and 40mm in base;
- Associated Single Access Tracking framework for the solar panels (indicative framework design illustrated in Figure 7);
- Approximately four (4) Inverter stations installed centrally to the development footprintwithin appropriate weather-proof shelters and located centrally within development site (see Figure 9 for standard design);
- Provision of a lay-down area for construction;
- Establishment of a central access track (gravel surface) to ensure all-weather access to the centrally located inverter stations within the additional installation area. This access track will form a continuation from within the originally approved solar installation to the west;
- Electrical cabling, installed via underground trenching and overhead lines;
- Installation of 2.4m high chainmesh security fencing around the northern, eastern and southern development perimeters (standard design example within Figure 10) .

The proposed installation which is the subject of this Development Application requires approximately 21.81 hectares of land for the installation of solar PV arrays and associated infrastructure within the two separate land parcels comprising the subject land.

Individual solar panels are installed on tracking tables, which are aligned with an axis in a North-South orientation, with a tracking range of +/- 55° in an East-West direction. An indicative maximum height of 2.33 metres from ground level to the top of the solar panels (when positioned at the highest angle) is provided within the attached plans (Appendix B- Design Drawings. NB: details to be confimed within final designs).

The positioning of the proposed solar arrays will incorporate sufficient setback from each of the perimeter site boundaries to allow for the free movement of vehicles associated with ongoing maintenance. An approximate setback distance of 10 metres (measured from the outer edge of proposed solar PV arrays) from all development perimeters (as demarcated by the proposed security fence line) has been included within the attached site plans. Appropriate setbacks of have also been provded from the existing High Voltage overhead powerlines, as well as identified watercourses.

The installation of the required solar PV panels will be fully engineered to ensure that the panel frames can withstand all loading, including wind loading.

The proposed location and formation of the solar PV arrays and associated development componenets is exampled in Figures 6-10, below.

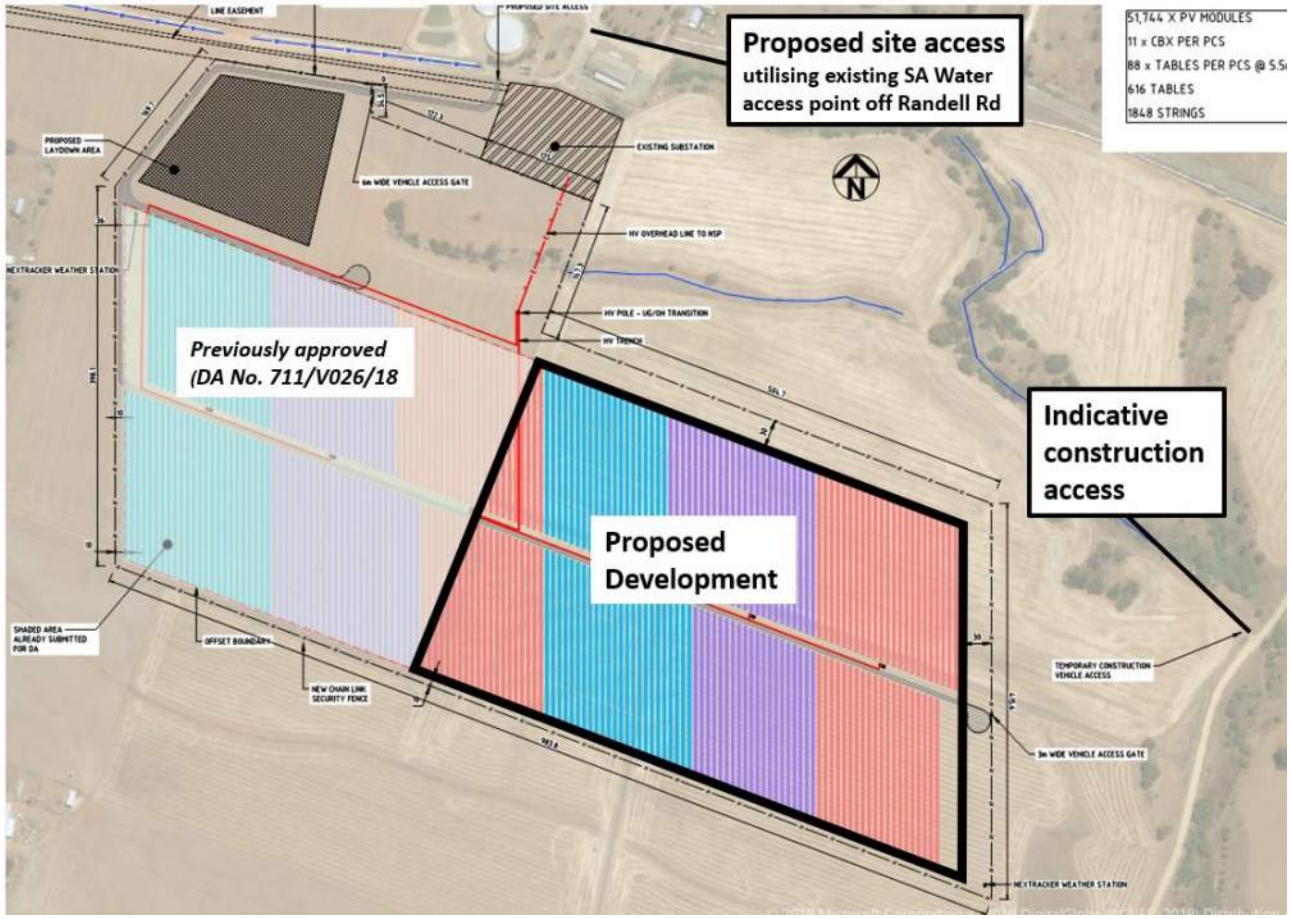


Figure 6 . Mannum PPS.2 Solar PV layout design – excerpt from site plan, see Appendix B - Design Drawings for greater detail.

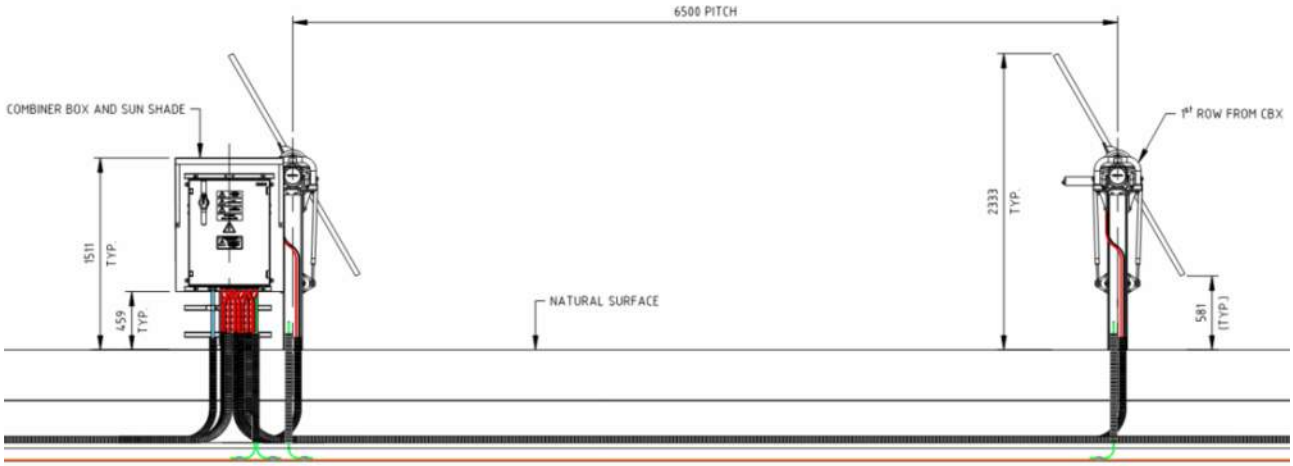
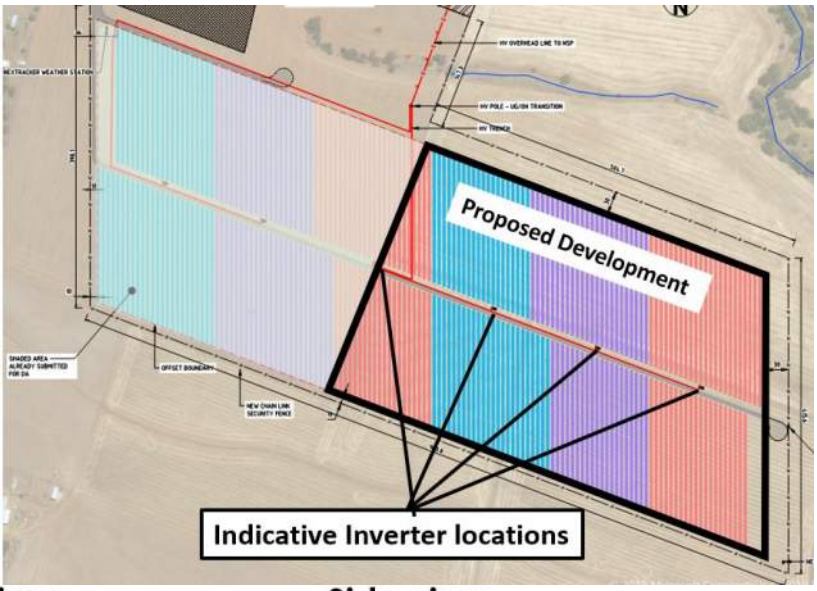


Figure 7 . Typical Ground-mounted, Single Access Tracking Solar Panel Layout (see Appendix B- Design Drawings for greater detail)

Figure 8 . Typical Ground-mounted (Fixed Tilt) Solar Panel Layout (this development proposes SAT array type, however the visual profile is similar to above example which is included to illustrate the PV panels)



End view Side view

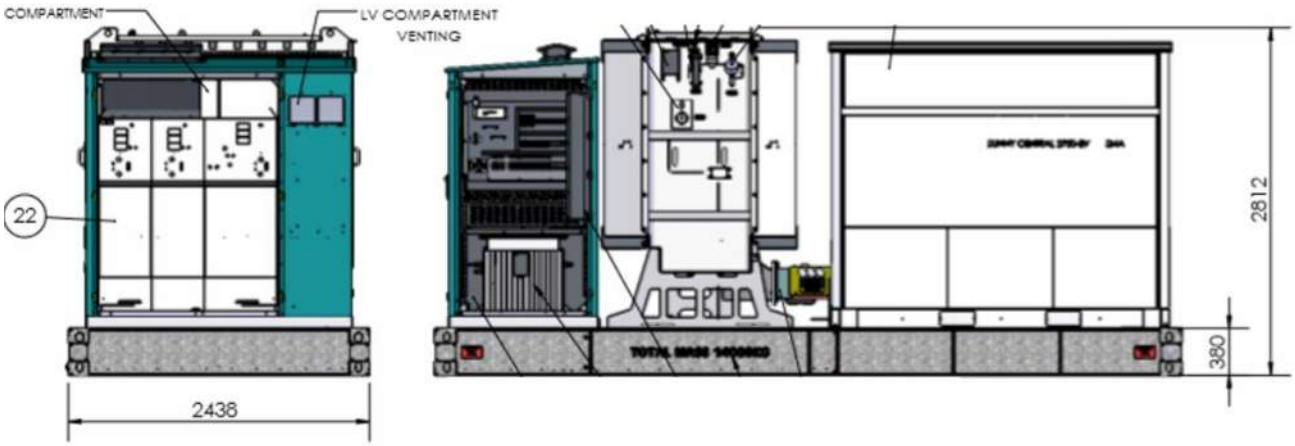


Figure 9. Typical Inverter block elevation - end (width) view to the left and side (length) view to the right, demonstrating approximate dimensions of 2812mm high x 2438mm wide x 5855mm long (final design subject to confirmation). Indicative central Inverter locations shown above in site layout excerpt.

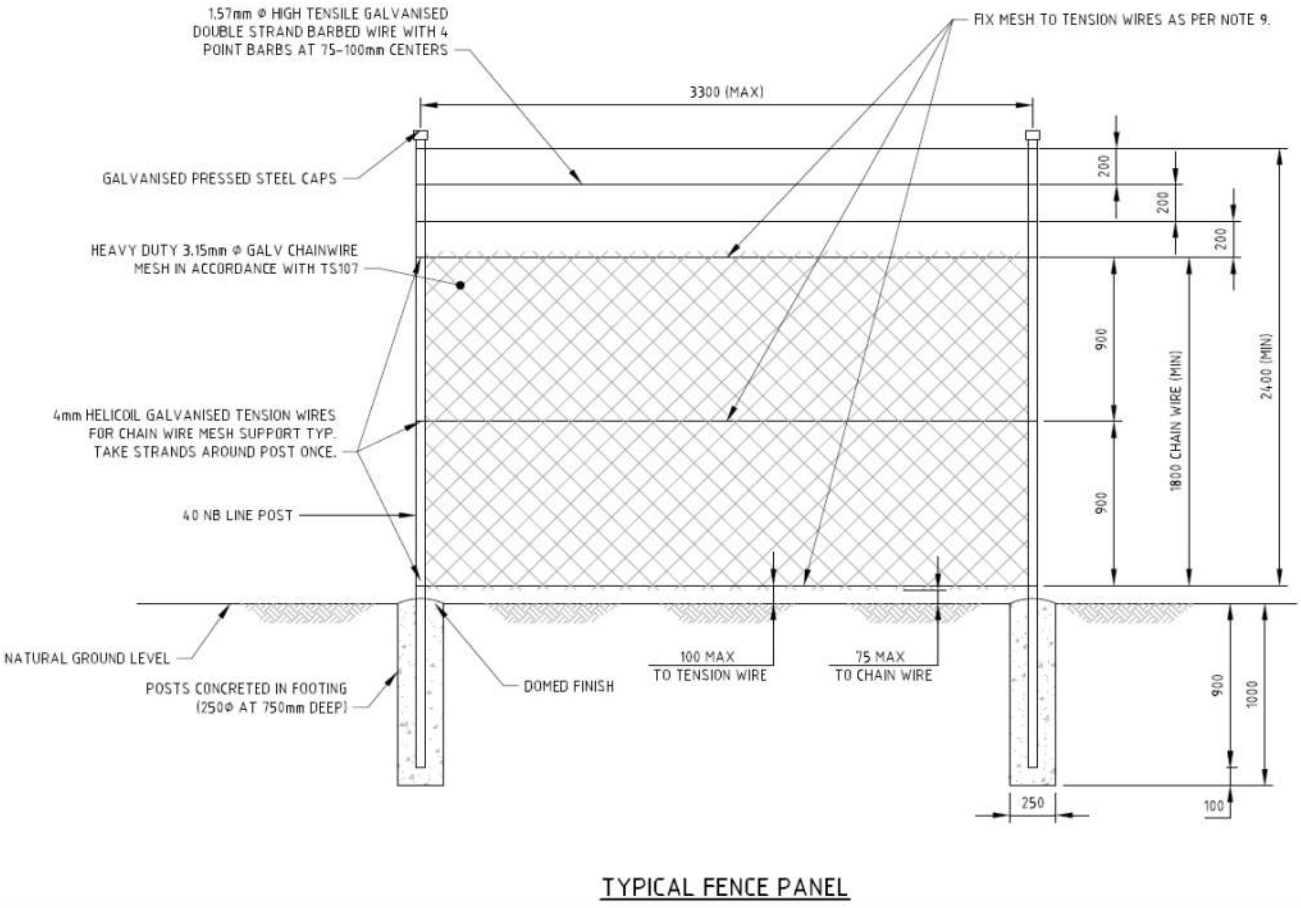


Figure 10. Typical 2.4m high chainmesh security fence design.

4.2 Environmental management

SA Water is committed to ensuring the Mannum PPS.2 solar PV installation project is constructed in a sustainable manner which minimises impacts to the surrounding environment- a commitment which extends to all installations within the Zero Cost Energy Future project. An overview of potential construction activities and associated environmental impacts with the upgrade works are detailed in Table 2 below.

Table 2. Construction Activities and Associated Environmental Impacts

Activity / Aspect	Potential Environmental Issues/Impact
Use of vehicles, equipment & plant	• Noise creating nuisance • Property damage from vibration • Emissions to air from equipment • Introduction/spread of weed seeds or plant pathogens • Fire (hot works or use near dry vegetation) • Nuisance to neighbours – access, light spill etc.
Storage of materials, maintenance and refuelling of machinery and equipment	• Spills leading to pollution and contamination of soil, water • Damage to vegetation and fauna • Emissions of noxious / toxic gases
Washdown of equipment/plant	• Pollution to water (watercourses or stormwater) • Introduction/spread of weed seeds or plant pathogens • Damage to vegetation and fauna

Activity / Aspect	Potential Environmental Issues/Impact
Excavation and earthworks **limited to the digging of trenches for electrical cabling. Extensive earthworks not required.*	• Damage to vegetation and fauna • Disturbance or damage to Aboriginal and non-Aboriginal Heritage • Discovery/management of soil or groundwater contamination • Dust • Erosion of exposed surfaces • Pollution to water (watercourses or stormwater)
Stockpiling / spoil management	• Damage to vegetation and fauna • Pollution to water bodies from poor location / erosion /runoff • Water management and flooding • Dust • Inappropriate waste disposal/landfill • Contamination • Amenity of the estuarine/beach environment for water/beach users
Waste Management and Disposal	• Aesthetics – litter/ debris • Inappropriate waste disposal/landfill • Resource use
Import of fill material	• Introduction of weeds and diseases (phytophthora) • Contamination (imported)
Site / compound establishment	• Aesthetics – visually intrusive structures • Inappropriate waste management, litter • Access impacts and nuisance to neighbours • Noise creating nuisance
Dewatering or other discharges/ water released from site	• Pollution • Water management and flooding • Contamination • Damage to vegetation
Management of contaminated or hazardous materials	• Pollution to soil or water

The ZCEF program-wide Construction Environment Management Plan (CEMP) is included in Appendix E, this has been prepared by SA Water's design and construction partner, Enerven. The plan addresses the potential environment and heritage impacts associated with key construction activities and outlines the minimum controls and monitoring responsibilities to ensure compliance with the requirements of the project environmental controls.

4.2.1 Legal and other requirements

In addition, SA Water recognises A key governing legal requirement for all projects is set out in the SA *Environment Protection Act 1993*, Section 25:

A person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.

A summary of the environment and heritage approval / permits associated with the project is provided below, with the status and where relevant, conditions, for each.

Act	Description	Tick if relevant to project	Status/Assessment outcome/ comments	Summary of approval/ assessment conditions (if relevant)
Environment Protection and Biodiversity Conservation Act 2000 (Cth)	Approval from the Commonwealth Environment Minister is required for actions that have or are likely to have a significant impact on matters of national environmental significance (MNES). If project triggers above, referral under EPBC Act required.	☐	EBPC self-assessment has been completed.	Self-assessment indicates that the project is not likely to have a significant impact on any MNES.
Development Act 1993	Works that constitute Development require approval. Development includes (not limited to): • Change of land use • Building works • Prescribed earthworks • Impacts to Significant/Regulated Trees	☒	Development approval is required	Development Application will be lodged with SCAP for approval. Information regarding the proposal will be provided to the Mid Murray Council in parallel to DA lodgement to outline project objectives and to identify potential concerns prior to the formal referral of the application to Council by SCAP.
Heritage Act/Development Act	Works that impact on State heritage require development authorisation	☒	Search of heritage databases complete	No listed heritage places occur within the project site.
Environmental Protection Act 1993 (Section 36 – Requirement for licence)	Prescribed activities of Environmental Significance require an EPA licence. (E.g. dredging/earthworks drainage/abrasive blasting, transport of contaminated soil, sewage treatment, desal, etc.)	☐		
Environmental Protection Act 1993 (Section 10 & 25) General Environmental Duty and Standard for the Production and	Excavation of borrow pits, diversion channels and construction of temporary roads, blocking banks etc. where materials are planned for re-use off site, or materials are imported from off-site	☒	No approval required	Need to ensure spoil management is undertaken in accordance with the EPA's Waste Derived Filled requirements.

Act	Description	Tick if relevant to project	Status/Assessment outcome/ comments	Summary of approval/ assessment conditions (if relevant)
Use of Waste Derived Fill (WDF)				
Native Vegetation Act 1991	Approval for clearance of native vegetation is required under the Act. Native vegetation includes trees, shrubs, groundcovers and grasses.	☐	The Native Vegetation Act 1991 does not apply in this instance.	No native vegetation identified within the project location.
National Parks and Wildlife Act 1972 (SA)	Scientific Permit.	☐	No impacts to National Parks land	N/A
Aboriginal Heritage Act 1988	Authorisation from the Minister for Aboriginal Affairs is required to interfere, damage or disturb Aboriginal heritage sites, objects or remains.	☐	A search of Aboriginal Heritage Sites and Objects is being undertaken via the Aboriginal Affair Register for the subject land parcels proposed to accommodate the Mannum PPS.2 solar PV development.	All Aboriginal sites and objects protected under the Aboriginal Heritage Act 1988. In event of discovery, stop work follow the SA Water SOP for Discovery of Aboriginal heritage Sites
Natural Resources Management Act 2004 (Section 175—transporting declared plants)	Consultation with NRM Board is required if transporting plants declared under Part 175 of NRM Act	☐		The Contractor will be responsible for obtaining authorisation from the Natural Resources Management Board to transport declared plants on a public road, in accordance with Section 175 and 188 of the Natural Resources Management Act 2004 (SA).
Native Title Act 1993	Notice to be issued if works Native Title. Note: ILUA notification process may be applicable in some areas.	☒	The proposed development area is undergoing review as part of land acquisition process to ensure the status of Native Title claims is known.	SA Water will ensure that all acquired land parcels are investigated for respective Native Title status.
Local Government Act 1999 (SA)	Section 221: Alteration of road a Person must not make an alteration to a public road unless authorised to do so by the council. Section 31 permit required where roads to be temporarily closed.	☒	Existing points of access to be used wherever possible and disruption/ alteration / closure of local roads to be avoided.	SA Water / Enerven to liaise with Mid Murray Council once design finalised and where alterations/ closures to local roads identified as required.

Act	Description	Tick if relevant to project	Status/Assessment outcome/ comments	Summary of approval/ assessment conditions (if relevant)
Road Traffic Act 1961 (SA)	Section 33 Council approval is required for temporary closure of a public road to facilitate an event	☐	Approval required if temporary closure if a Council Road	N/A
Parliamentary Committees Act 1991 (SA)	16A: Certain public works referred to Public Works Committee (PWC) Subject to subsection (3), a public work is referred to the PWC by force of this section if the total amount to be applied for the construction of the work will, when all stages of construction are complete, exceed $4M	☒	Infrastructure construction works in excess $4M require Public Works Committee (PWC) referral and associated Cabinet Submission	As the total expected construction cost exceeds $4m, a referral to the Public Works Committee (PWC) will be undertaken.

4.3 Site works and Construction

The expected site works will include:

- Earthworks including minor levelling works as preparation for panel installation. The existing landform is largely flat, minimal earthworks expected to be required, subject to confirmation in Final Designs.
- Trenching/ installation of new High-voltage and Low-voltage electrical cabling. This will consist of both aboveground (i.e. within cable support systems) and underground cable routes.
- Site works will include installation of the framework to support the panel arrays, with a layout, height and configuration similar to that shown in Figure 7, above.
- Installation of a 2.4m high chainmesh security fence around the development perimeter.
- Upgrades will be required of SA Water's electrical infrastructure to facilitate connecting the array to a High Voltage (HV) switchboard.
- All construction work and equipment installation at the site will take approximately 20 weeks. This includes commissioning of the solar plant, which involves connection and testing works.

4.4 Project Timing

The proposed timing for the installation of the photovoltaic panels at the site is currently being finalised, but will follow the following high-level plan:

- Tender Review: October 2018
- Tender Award: November 2018
- Detailed Design: February 2020
- Solar PV Installation and Connection: June-July 2020
- Site Acceptance Tests/Panels Operational: August-September 2020

4.5 Stakeholder Engagement

SA Water has developed a community and stakeholder engagement strategy to identify key stakeholders, potential project impacts and highlight key messages for communication. SA Water will seek to secure stakeholders' understanding of the need for the project, the expected timing and the construction methodology.

SA Water is committed to ensuring a high level of stakeholder engagement in order to manage expectations, concerns and any other stakeholder issues associated with the project. Details of the proposed solar PV installation, as well as the broader objectives of SA Water's Zero Cost Energy Future will be provided to the Mid Murray Council in parallel to the Development Application lodgement. Continued correspondence between Aurecon (on behalf of SA Water) will be maintained throughout the development process to ensure the Mid Murray Council are made aware of any important milestones, and so that we can more readily address any items raised by Council staff.

In the case of the Mannum PPS.2 (and specifically the second installation which is the subject of this application), SA Water's Stakeholder Engagement Team have previously engaged with residents nearest to the previously approved solar PV installation area. SA Water plan to continue to work with these residents as well as those nearest to this second proposed installation to ensure that visual impact and other amenity concerns (both for construction periods and the developments' lifespan) can be addressed, and appropriate measures for mitigation are in place. As these discussions are ongoing, Aurecon will ensure that any

outcomes which may require alterations to the proposed development will be communicated to the assessing officer for this application.

The SA Water Stakeholder Engagement Team will monitor the progress and effectiveness of the stakeholder engagement strategy and provide regular reports to the Project Manager on issues and opportunities identified through the stakeholder engagement process.

5 Procedural Matters

5.1 Relevant authority

The Minister for Planning is the relevant authority for Crown Development, taking advice from the State Commission Assessment Panel (SCAP).

5.2 Nature of development

The nature of the development is best described as an electricity generating plant in the form of a solar PV installation with a generating capacity of more than five megawatts.

This Development Application is made in regards to a solar PV installation that is required in addition to a previously approved installation. Details for this previously approved installation are included to assist in understanding the development context as a whole, as it is intended that the two portions of solar PV installation will function as one cohesive infrastructure site once established (pending relevant approvals). Importantly, it is understood that the status of the previously granted approval is not affected by this application and it is furthermore understood that any amendments to the design and details of DA No. 711/V026/18 will be addressed separately to this Development Application.

An electricity generating station is not listed as complying or non-complying development within the Rural Zone, Murray Plains Policy Area 16, noting that these provisions do not apply to a Crown Development assessment.

Acknowledging the electricity generating capacity of the proposed development, SA Water has obtained a broad approval for the Zero Cost Energy Future project from the Office of the Technical Regulator (OTR). A copy of the OTR's advice is provided in Appendix C.

5.3 Referral bodies

Pursuant to Section 49(4a) of the *Development Act 1993*, SCAP must provide notice of the Crown Development Application to the Mid Murray Council.

Having regard to Schedule 8 of the *Development Regulations 2008*, we consider that a Referral is likely to be required to the Commissioner of Highways due to the proposed use of an existing access way off Randell Road (Mannum to Adelaide Road) which comprises a Secondary Arterial Road, as delineated within Map MiMu/1 (Overlay 1) of the Mid Murray Council Development Plan. The existing access way off Randell Road serves the agricultural operations occurring within Lot 77 (Deposited Plan 110976) and is not expexted to require any upgrade/ alterations in order to be made suitable for the construction and ongoing access needs relating to this proposed development, however this is to be confirmed through final design work. Throughout the construction period it is expected that vehicles will also utilise an existing access point off Reedy Creek Road, also delineated to be a Secondary Arterial Road.

No other State Agency Referrals are considered to be required.

5.4 Public notification

The cost of the proposed development is more than $4 million; as such formal public notification of this Crown Development Application is considered to be required.

6 Planning Assessment

The site of the proposed development is located within the Mid Murray Council. Accordingly, The Mid Murray Council Development Plan (consolidated 23 August 2018) is the relevant Development Plan. As delineated within the Development Plan, the proposal lies wholly within the Rural Zone and Murray Plains Policy Area 16.

The table below outlines the objectives and principles of development control considered to be relevant to the assessment of the proposed development. These reflect items within the General Section of the Development Plan, as well as those appearing within the relevant Zone and Policy Area provisions.

Table 1. Relevant Development Plan Provisions

Zone Specific		
Rural Zone	Objectives	1, 2, 3, 4, 5, 6, 17, 19, 21, 23, 25
	Principles of Development Control	1, 2, 4, 7, 11, 15, 16, 18, 20
Pastoral Policy Area 16	Objectives	None
	Principles of Development Control	1

Council Wide		
	Objectives	**Principles of Development Control**
Form of Development	1, 7	1
Movement of People and Goods	15, 16	40, 41
Public Utilities	17	44, 45, 46, 53
Appearance of Land and Buildings	18, 20	66, 67, 72, 76, 78, 79
Interface Between Land Uses	25, 26	85, 86, 87
Rural Development	51, 52	
Siting and Visibility	54	162, 163, 166, 168
Natural Resources	55, 58, 59, 60, 62, 64, 67, 68	170, 171, 200, 201
Energy Efficiency	75	224
Hazards	91, 92	377, 378
Bushfire Protection	101, 102	394, 397
Renewable Energy	103, 104, 105	401
Noise		91, 92
Flooding		218

6.1 Land Use

The Rural Zone envisages the continuation of agriculture and broader primary production activities as the predominant land use within the zone, along with developments associated with primary production purposes. The Rural Zone also envisages the establishment of windfarms and ancillary development as a desired land use within the zone, so long as they are located outside of the Barossa Valley Character Preservation district. Murray Plains Policy Area 16 envisages the land is used for "*dryland farming although in proximity of the River Murray Zone where it is economical to reticulate River water, horticultural development of a variety of types is undertaken compared to other agricultural regions*". It further notes that "*there are a number of large stands of the original Mallee vegetation of the Plains which should be preserved*".

While solar PV installations are not specifically listed as an envisaged use for the zone or policy area, the proposed development is directly supportive of the continued operations of critical SA Water infrastructure within the Mannum PPS.2 pump station that serves communities along the Mannum to Adelaide pipeline within the Mid Murray Council region and beyond. The proposal has been sited and designed to ensure that it minimises impact upon existing and future planned operations within Mannum PPS.2, and has also been designed to ensure maximum energy generating capacity is achieved, thereby solidyfing it's important functionality to the plant. Once operational, the solar PV infrastructure will deliver significant and immediate benefit to the Mannum PPS.2 operations (and the Mannum to Adelaide Pipeline system as a whole) by reducing operational costs and allowing for greater security in the provision of ongoing reliable power.

6.2 Design and Appearance

The proposal will utilise design elements contributing to a coordinated appearance typical to solar PV installations. These elements include;

- Relatively low heights maintained by the panels (approximately 2.33 metres at highest positioning);
- Consistent orientation and spacing between 'strings', or rows; as well as
- Careful positioning of associated equipment such as the inverter stations (positioned towards the centre of the development footprint and away from outer boundaries) to ensure that a high visual standard of development is achieved.

The overall development footprint as proposed within this application forms an additional installation area to that previously approved, however, reconfigurations made to the placement and design of the broader installation have allowed for a more cohesive arrangement to be achieved.

Existing vegetation to the north (lining the watercourse/ creeklines) significantly reduces the likelihood that the proposal will be visible to motorists along Randell Road, which also benefit from the variable terrain and existing SA Water pipeline which further obscures views to the south from this roadway. Views towards the development from Hartmans Road will be possible given the more open terrain in this location, however the presence of a small rise and rocky outcrop within the subject land and to the forefront of the development (paired with the approximate 190m setback from this roadway) will serve to reduce the overall visual prominence.

6.3 Hazards

The proposed development has been sited within land outside of the River Murray Protection Area / Floodplain Area, as identified within Map MiMu/1 (Overlay 3)- Development Constraints (Water Management Areas) of the Mid Murray Council Development Plan (consolidated 23 August 2018). However, through the same assessment, the land is identified as postioned within the River Murray Protection Area – Tributaries Area, accordingly, the proposed development has been

appropriately positioned away from areas that are vulnerable to the risk of natural hazards such as flooding.

The installation of solar PV arrays and associated infrastructure involves relatively minor alterations to the existing land form by way of earthworks and will seek to maintain existing surface hydrology as far as possible. The proposal will seek to minimse the addition of impermeable ground surfaces to the subject land, pending confirmation by SA Waters construction partners within forthcoming detailed designs. Onsite management of stormwater, both during construction and operation, in order to prevent offsite soil erosion and transport, is recognised as an important element that will be addressed in the detailed design stage by SA Waters construction partner.

The proposed development is positioned more than 80m from all points along identified watercourses within the subject land, ensuring the risk of flooding is appropriately mitigated against and to ensure the proposal does not interfere with existing natural processes.

The proposed development is sited within a Medium Bushfire Risk area, as shown on Bushfire Protection Are Figure MiMu(BPA)/4 of the Mid Murray Council Development Plan (consolidated 23 August 2018). Accordingly, the proposed development will incorporate the use of existing and proposed access arrangements to ensure that vehicles, including emergency services vehicles, can be permitted safe and convenient access to the site and ensure free movement through the subject land. Further, the proposed development does not involve the storage of hazardous materials and the solar pv arrays and associated support frames will utilise a relatively open design to minimise the opportunity for debris to become trapped within the associated strings, or rows.

6.4 Interface between land uses

The proposed development has been sited within land used for agricultural (cropping) purposes within the Rural Zone. The proposed location is well separated from the main Palmer Township and surrounding road networks, as well as from native vegetation and residential land uses.

The development is designed and located to minimise the potential for adverse impact upon the existing amenity within this locality and to support the continued operation of desired land uses. The positioning of the proposed development towards the perimeter of the township and in proximity to existing established public infrastructure uses (the SA Water Mannum PPS.2 pumping station, and previously approved solar PV installation) allows for appropriate separation from surrounding sensitive land uses. The proposal utilises existing vegetation and (proposed) built form along each of the development perimeters to mitigate against visual impact concerns beyond the subject land. Views from the nearest residences, located off Hartmans Road, are interrupted by existing vegetation which surrounds the dwellings, though not completely obscuring the development. The proposals eastern perimeter (nearest to these residences) does not extend up to Hartmans Road and allows for appropriate separation to assist in reducing overall visual prominence.

The potential for adverse impacts upon the surrounding locality is minimised through the relatively inoffensive nature of the development, which requires little ongoing maintenance and operational activities. The greatest potential for adverse impacts such as noise and dust nuisance are largely limited to that associated with the construction period. Appropriate mitigation measures will be employed by SA Waters construction partner to ensure that the potential for adverse impacts throughout the construction period is suitably minimised. These are reflected through the CEMP prepared by Enerven and included as Appendix-E.

The proposal is consistent with the provisions of the respective zone and will not impact upon the continued operations within the pumping site, nor the ability of surrounding land uses to achieve the relevant provisions of respective adjoining zones.

6.5 Natural Resources

The proposed development will not require the clearing of native vegetation to allow for the installation of solar PV arrays and associated infrastructure, as the subject land is largely void of

native vegetation. Vegetation is limited to that within the northern creekline, which will not be impacted upon by this development.

The proposed installation of solar PV arrays and associated infrastructure in connection to the Mannum PPS.2 SA Water operations will require realtively limited alteration to the existing landform by way of earthworks as the site is already largely flat with little variation across the terrain. Development will seek to minimise the introduction of impermeable surfaces in order to protect natural ecological systems and preserve existing site hydrology with respect to the movement of surface waters across the land in high rainfall events.

6.6 Transportation and Access

The proposed development has been appropriately sited and designed to ensure that existing infrastructure is utilised wherever possible. This includes the use of existing access arrangements and internal movement systems, as well as the existing electrical sub-station at Mannum PPS.2. The proposed solar PV array positioning ensures adequate separation from existing utility easments to avoid the potential for impact upon these, as well as allowing for the continued use of SA Water land in the treatment and pumping of water.

The existing access arrangement for Mannum PPS.2 off Randell Road will be utilised throughout the construction of the solar PV arrays and associated infrastructure, subject to confirmation by SA Waters construction partner. Ongoing access throughout the life of the solar infrastructure will be limited to any required maintenance/ replacement or cleaning of the panels and other equipment and is expected to be of relatively low frequency.

Some minor upgrades to existing internal gateways and access tracks within the agricultural allotment may be required to allow for safe access and movement through the site, particularly for larger vehicles associated with construction. This information will be provided as part of the Detailed Designs, once confirmed by SA Waters' construction partners.

7 Conclusion

The proposed installation of solar PV arrays at key SA Water operating sites, such as the Mannum PPS.2 site, will immediately reduce the operating energy costs for the site and reduce SA Water's exposure to increases in electricity costs. It supports the continued operations of this important site of public infrastructure that supports the Mid Murray Council region and beyond.

The proposed development is considered to be relatively inoffensive in nature and has sought a location and design which will reduce the potential for detrimental impact on the locality. The layout and design of this proposed development allows rural land uses to continue within the remaining areas of the subject land, as well as ensuring the energy generation capacity is maximised and ease of operations/ maintence is optimised.

Once constructed, it will not significantly impact traffic flow, create noise/emissions, impede on the amenity or significantly impede rural views of nearby residences (though the development will be visible from some points in the surrounding locality). It will not conflict with the ongoing operations at SA Water's Mannum PPS.2 site but will instead directly contribute to increased energy efficiency for such operations. The development has been designed to minimise longer term impacts, although it is recognised that short term impacts will occur during the construction period. These impacts will be appropriately managed throughout the construction period in accordance with SA Water's PEMP.

The proposed development **is not** seriously at variance with the Mid Murray Council Development Plan, being generally consistent with the intent of the Zone, Policy Area and relevant Council Wide provisions, and merits the approval of the Minister for Planning.

Appendix A Certificates of Title

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 5720 Folio 548

Parent Title(s) CT 4009/368

Creating Dealing(s) SC 8767937

Title Issued 20/12/1999 **Edition** 3 **Edition Issued** 08/09/2014

Estate Type

FEE SIMPLE

Registered Proprietor

SIMON JAMES WEGENER
OF 2844 REEDY CREEK ROAD PALMER SA 5237

Description of Land

ALLOTMENT 233 FILED PLAN 169982
IN THE AREA NAMED PALMER
HUNDRED OF TUNGKILLO

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title NIL

Priority Notices NIL

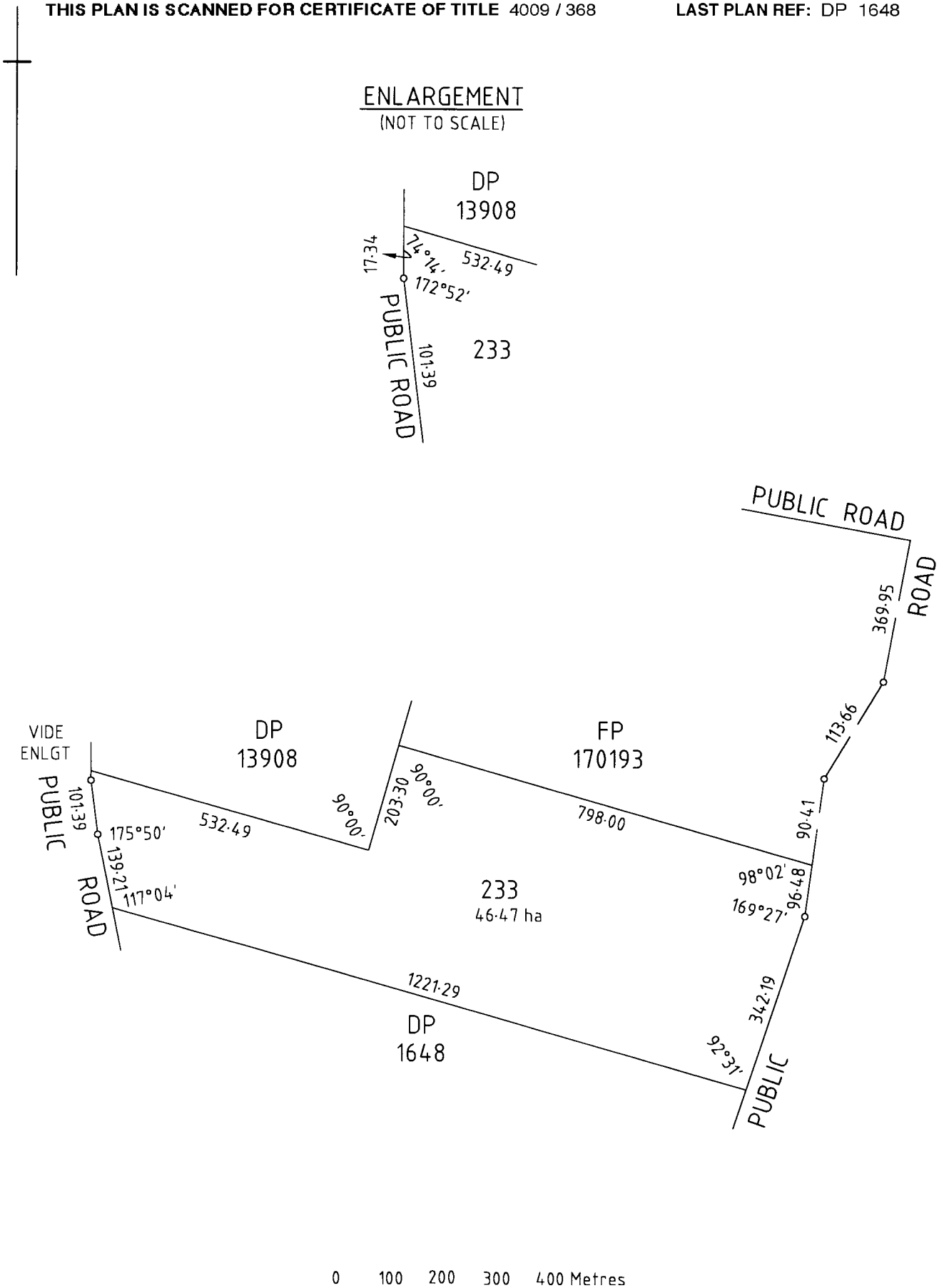
Notations on Plan NIL

Registrar-General's Notes

APPROVED D121679

Administrative Interests NIL

THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 4009 / 368 **LAST PLAN REF:** DP 1648



NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

Product	Register Search (CT 6107/623)
Date/Time	08/10/2019 08:34AM
Customer Reference	PZCEF IN234355
Order ID	20191008000439

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 6107 Folio 623

Parent Title(s) CT 6106/422, CT 6106/694

Creating Dealing(s) T 11881065

Title Issued 04/03/2013 **Edition** 1 **Edition Issued** 04/03/2013

Estate Type

FEE SIMPLE

Registered Proprietor

VICTOR PENG NAM WEE
HEAN BEE WEE
OF 34 CAMBRIDGE TERRACE MALVERN SA 5061
AS JOINT TENANTS

Description of Land

ALLOTMENT 91 FILED PLAN 170193
IN THE AREA NAMED PALMER
HUNDRED OF TUNGKILLO

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE MINISTER FOR INFRASTRUCTURE (T 1731873)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B TO TRANSMISSION LESSOR CORPORATION OF 1 UNDIVIDED 2ND PART (SUBJECT TO LEASE 9061500) AND ELECTRANET PTY. LTD. OF 1 UNDIVIDED 2ND PART (T 1922269)

Schedule of Dealings

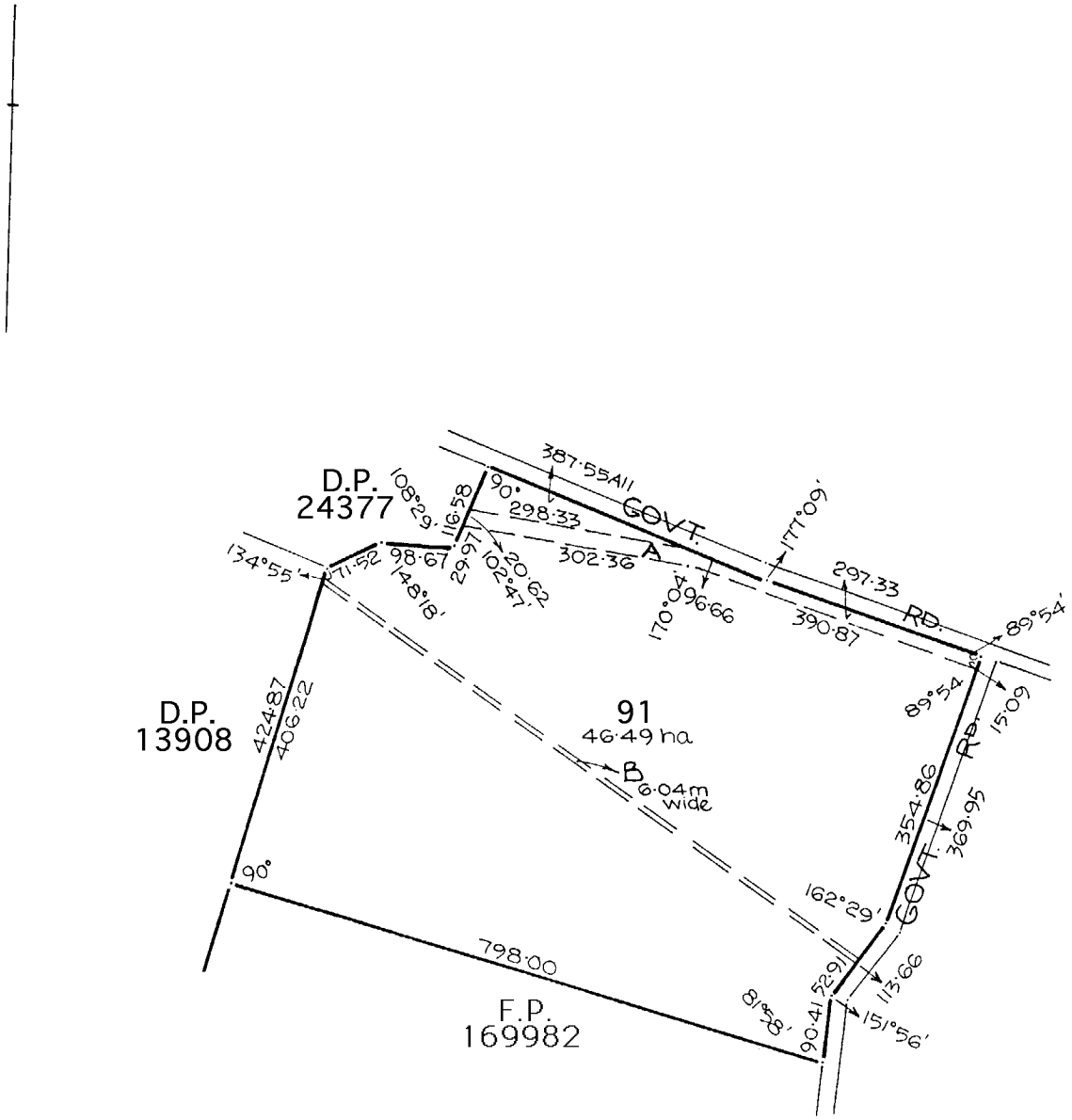
NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

This plan is scanned for Certificate of Title 4162/132 & 133
See title text for easement details.

LAST PLAN REF : D.P. 1648



Note : Subject to all lawfully existing plans of division

Appendix B Design Drawings

44,352 X PV MODULES
11 x CBX PER PCS
6 x PCS
88 x TABLES PER PCS @ 6.5m PITCH
528 TABLES
1584 STRINGS
DC OUTPUT: 16,853 MW

OVERHEAD POWER LINE EASEMENT
15m OFFSET FROM EASEMENT
PROPOSED SITE ACCESS
EXISTING SUBSTATION
N
504.7
30
10
6533
30
415.6
TEMPORARY CONSTRUCTION VEHICLE ACCESS
3m WIDE VEHICLE ACCESS GATE
NEW CHAIN LINK SECURITY FENCE
OFFSET BOUNDARY
NEXTRACKER WEATHER STATION

LEGEND:

- PROPOSED FENCE
- EASEMENT
- HV TRENCH
- WATER PIPELINE
- CENTRE OF CREEK
- LOT BOUNDARY

0 20 40 80 120
Full Size 1:2000 ; Half Reduction 1:4000
SCALE (m)

FOR APPROVAL

PV SITE PLAN
SCALE 1:2000

REVISION PANEL

REV	DATE	DRN	DETAILS	APR'D
C	11.11.2019	K.N	REVISED LAYOUT FOR DA PUBLIC NOTICE	P.C
B	16.10.2019	C.A	ISSUED FOR REVIEW	T.O
A	02.10.2019	C.A	ISSUED FOR INFORMATION ONLY	A.R

CURRENT REV CONTRACTOR:
CURRENT REV PROJECT: ENERVEN

CURRENT REV 11.11.2019
AUTHORISED
P.CHAROENLAB
SIGNATURE

DESIGN PANEL

DESIGNED	08.08.2019	AUTHORISED	03.10.2019
A.REIMANN		R.TIWARI	
DRAWN	02.10.2019	SIGNATURE	
C.ADAMS			
REVIEWED	03.10.2019		
P.CHAROENLAB			

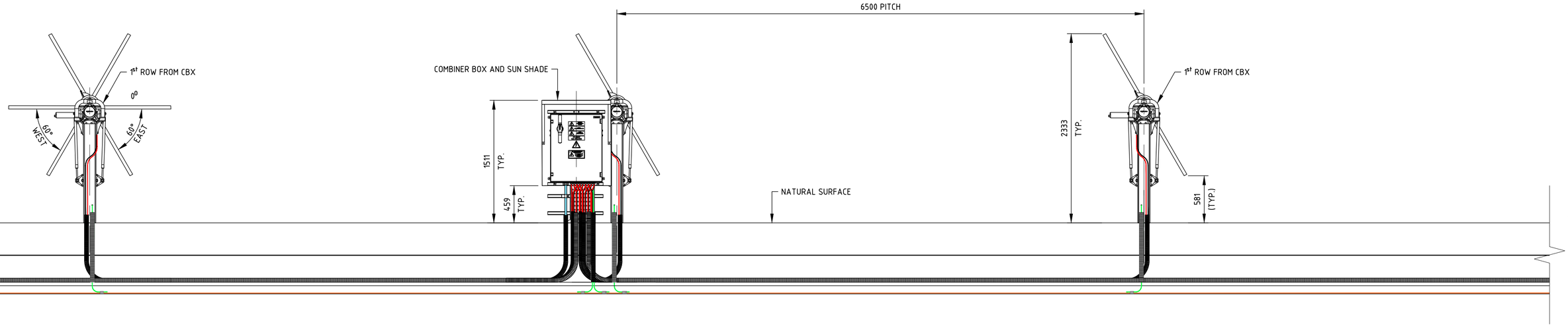
CONTRACTOR: ENERVEN

Government of South Australia
SA Water

MANNUM/ADELAIDE PL HIGH VOLTAGE WATER PUMP STATION NO.2 (RANDELL RD)

SITE PLAN/GA (INCLUDING FACILITIES)
TRACKER SYSTEM CONCEPT LAYOUT

A1 SHT SIZE
TOTAL SHEETS:
PROJECT No: A0047-0039
C REVISION
MAXIMO ID: MA3314
SUPERSEDES:
DRAWING NUMBER
MA3314-06-00001__01



NOTES:

1. FOR COMBINER BOX DETAILS REFER TO DWG M03354-03-00029__01 (EEI-03-00700) & M03354-03-00030__01 (EEI-03-00701).
2. FOR COMBINER BOX AND TRACKER TRENCHING DETAILS REFER TO DWG M03354-06-00020__01 (EEI-06-00082).
3. FOR TYPICAL DC TRENCH SECTIONS/DETAILS REFER TO DWG M03354-06-00009__01 (EEI-06-00058).
4. FOR PROTECTIVE EARTHING CONNECTIONS AND DETAILS REFER TO DWG M03354-03-00024__01 (EEI-03-00801) & M03354-03-00025__01 (EEI-03-00805).

**Reference design based on previous ZCEF Solar PV proposal utilising same technology type (Single Access Tracking) **

ENERVEN DWG NO. EEI-06-00081

ENERVEN™

0 250 500 1000 1500
Full Size 1:25 ; Half Reduction 1:50
SCALE (mm)

DETAILED DESIGN ISSUE
NOT FOR CONSTRUCTION

REVISION PANEL

REV	DATE	DRN	DETAILS	APR'D
B	14.06.2019	K.N	ISSUED FOR DA REVIEW	M.M.I
A	07.06.2019	K.N	ISSUED FOR DA APPROVAL	M.M.I

CURRENT REV CONTRACTOR: ENERVEN CURRENT REV PROJECT:

CURRENT REV JUNE 2019
AUTHORISED S.NORTON
SIGNATURE

DESIGN PANEL

DESIGNED	JUNE 2019	AUTHORISED	R.TIWARI
	J.B / G.C / P.C / A.R		
DRAWN	JUNE 2019	SIGNATURE	
	K.NGUYEN		
REVIEWED	JUNE 2019		
	P.C / A.R		

CONTRACTOR: ENERVEN

Government of South Australia
SA Water

WPS CONV 4 MORGAN_WHYALLA

CIVIL GENERAL (& ARRANGEMENTS)
CBX & TRACKER TRENCHING ARRANGEMENT

A1 SHT SIZE | TOTAL SHEETS: 1 | PROJECT No: A0047-0047 | B REVISION
MAXIMO ID: M03354
SUPERSEDES:
DRAWING NUMBER
M03354-06-00019__01

Appendix C Office of the Technical Regulator (OTR) Certificate

Government of South Australia
Department for Energy and Mining

Ref: 2017/01873.01 D18133459

Energy and Technical Regulation

Office of the Technical Regulator

Level 8, 11 Waymouth Street
Adelaide SA 5000

GPO Box 320
Adelaide SA 5001

Telephone: 08 8226 5500
Facsimile: 08 8226 5866

www.sa.gov.au/otr

15 October 2018

Paul Cooledge
SA Water
250 Victoria Square
Adelaide SA 5000
By email: paul.cooledge@sawater.com.au

Dear Michael,

RE: CERTIFICATE FOR DEVELOPMENT OF THE SA WATER ZERO COST ENERGY FUTURE PROJECT

The development of the SA Water Zero Cost Energy Future Project has been assessed by the Office of the Technical Regulator (OTR) under Section 37 of the Development Act 1993.

Regulation 70 of the *Development Regulations 2008* prescribes if the proposed development is for the purposes of the provision of electricity generating plant with a generating capacity of more than 5 MW that is to be connected to the State's power system – a certificate from the Technical Regulator is required, certifying that the proposed development complies with the requirements of the Technical Regulator in relation to the security and stability of the State's power system.

In making a decision on your application, our office has taken the following information into account:

- An initial meeting regarding the project between SA Water, Aurecon and the OTR on 14 August 2018;
- A follow up meeting between SA Water, Aurecon and the OTR on 20 September 2018;
- Your application emailed to the OTR on 5 October 2018.
- Further information regarding the project emailed by Aurecon to the OTR on 15 October 2018.

After assessing the information provided, I advise that approval is granted for the proposed project.

Government of South Australia
Department for Energy and Mining

I note SA Water's request to commission the Photo Voltaic (PV) Generation prior to commissioning the Battery Energy Storage System (BESS). I approve this request on the basis that the required Fast Frequency Response, as per the OTR's Generator Development Approval Procedure Version 1.1, is made available in full no later than six months after the commissioning of the PV Generation has occurred.

Should you have any questions regarding this matter, please do not hesitate to call David Bosnakis on (08) 8429 3323.

Yours sincerely

Rob Faunt
TECHNICAL REGULATOR

cc: John Hart – SA Water
Ashley Nicholls – SA Water
Paul Godden - Aurecon

Energy and Technical Regulations

Level 8, 11 Waymouth Street Adelaide SA 5000 | GPO Box 320 Adelaide SA 5001 | DX541
Tel (+61) 8 8226 5500 | Fax (+61) 8 8226 5866 | www.dpc.sa.gov.au | ABN 83 524 915 929

Appendix D – Previously approved DA 711/V026/18 (DNF and Stamped Plans)

CROWN DEVELOPMENT AND PUBLIC INFRASTRUCTURE AND ELECTRICITY INFRASTRUCTURE DEVELOPMENT DECISION NOTIFICATION FORM

Contact Officer: Janine Philbey
Telephone: 08 7109 7062
KNET Reference: 2018/231442/01

Development Number:
711/V026/18
Council Reference:
711/V026/18/MM

FOR DEVELOPMENT APPLICATION

DATED: 16 November 2018
REGISTERED ON: 30 November 2018

TO: SA Water Corporation
c/- Aurecon
Level 10/55 Grenfell Street
ADELAIDE SA 5000
EMAIL: lauren.nicholson@aurecongroup.com

LOCATION OF PROPOSED DEVELOPMENT:

Address	Title	Plan parcel
1764 RANDELL RD PALMER SA 5237	CT 6178/117	A77 D110976

NATURE OF PROPOSED DEVELOPMENT:
Installation of solar PV cells, single access tracking framework, seven power conversion stations within all-weather proof structure and battery energy storage system. Associated groundworks, levelling, lay down area for construction, surface upgrades to access tracks and upgrades to security fencing where required.

From: **MINISTER FOR PLANNING**

I hereby **APPROVE** the above-mentioned application under the Development Act 1993.

You may therefore proceed in accordance with your plans, as submitted, subject to conditions as shown on the attached sheet.

Building works may commence only when a Certificate of Compliance with Building Rules has been received from a Private Certifier, subject to any conditions imposed by the Minister for Planning (or his delegate) and the Certifier.

Robert Kleeman
Unit Manager Policy & Strategic Assessment
as delegate of the
MINISTER FOR PLANNING
Date of Decision: 5 July 2019
Pages: 3

DEVELOPMENT APPLICATION 711/V026/18

CONDITIONS OF APPROVAL

1. The development granted Development Approval shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below (if any).

2. The following information shall be submitted for approval by the Minister for Planning prior to the commencement of site works:

    a. The final design, specification, layout and elevations of all permanent components of the development including (but not limited to) the solar PV cells on single access tracking frameworks, power converter stations, battery energy storage systems, underground cabling, access tracks, fencing and associated site and civil works solar arrays;
    b. The final design, specification and layout of all temporary construction components of the development including (but not limited to) work compounds, site office, amenities, car parking areas, refuelling areas, and clean-down facilities.

3. An appropriate *Construction Environment Management Plan (CEMP)* which addresses the mitigation or minimisation of impacts during the construction phase shall be prepared and implemented. The CEMP must include a Dust Management Plan (DMP) that outlines strategies, practices and methods to control and minimise the generation of dust from the site – including the monitoring of impacts and adaptive management strategies (where necessary).

4. Prior to the commencement of site works, a Traffic Management Plan (TMP) shall be prepared for the construction phase of the development and be approved by the Minister for Planning. The TMP shall include but not be limited to the following:

    a. measures to protect and maintain private, Council and DPTI assets (e.g. roads, drains, culverts etc.);
    b. light, commercial ad heavy vehicle movements – including from oversize vehicles - where access to the site for construction vehicle traffic will occur; and
    c. details of any road or lane closures and crane operations.

5. Site development and construction machinery should not be generally operated outside the hours of 7 AM to 6 PM daily. No works should occur on public holidays.

6. All stormwater design and construction shall be in accordance with Australian Standards and recognised engineering best practices to ensure that stormwater does not adversely affect any adjoining property or public road.

7. Exposed and/or cleared ground surfaces (as a result of construction activities) shall be reinstated and/or reseeded with ground cover to limit wind and water borne erosion as soon as practicable.

8. At the cessation of the solar farm use, the renewable energy infrastructure approved herein (including all arrays, associated equipment and structures, cabling, fencing, footings etc.) shall be decommissioned and removed, with the land rehabilitated to its pre-development condition.

9. Solar PV cells and associated equipment (except underground cabling) must be setback a minimum distance of 10m from site boundaries, except along the shared boundary of the Reedy Creek Road residence, where the minimum setback shall be 15m from the allotment boundary.

10. All loading and unloading of vehicles must at all times be undertaken within the curtilage of the approved development site, unless otherwise agreed by the Minister for Planning.

11. All Council, utility or state-agency maintained infrastructure (i.e. roads, kerbs, drains, crossovers, footpaths etc.) that is demolished, altered, removed or damaged during the construction of the development shall be reinstated to Council, utility or state agency specifications. All costs associated with these works shall be met by the proponent.

12. All external lighting shall be designed and constructed to conform with Australian Standards and must be located, directed and shielded and of such limited intensity that no demonstrable nuisance or loss of amenity is caused to any person beyond the site.

13. Any imported substrate or engineered fill shall be free of weeds and pathogens.

14. A Waste Management Plan (WMP) shall be developed and implemented to ensure that waste materials – with particular reference to solar PV and equipment packaging – are appropriately managed (i.e. collected, sorted, and recycled) to minimise environmental impacts.

15. Prior to the commencement of site works, a detailed landscape plan shall be submitted to the reasonable satisfaction of the Minister for Planning. The landscape plan must:

    a. include a schedule of all proposed trees, shrubs and ground cover, which will include the location, number and size at maturity of all plants, the names of such plants and the location of all areas to be covered by grass, lawn or other surface materials as specified;
    b. demonstrate that the species selected, spacing of plantings and the maturity of plantings are appropriate to provide visual screening;
    c. demonstrate that the landscaping buffer to be a minimum of 5 metres in width; and
    d. include details of: soil preparation techniques; a landscape maintenance period of five years; a watering schedule; and irrigation infrastructure (where applicable).

16. Landscaping shown on the approved plans shall be established within six months of the operation of the development and shall be maintained and nurtured at all times with any diseased or dying plants being replaced in accordance with the approved plan.

17. The development shall be located/designed to ensure that transport modes are not unduly impacted by glare. Prior to the commissioning of the solar field, a glare analysis shall be undertaken (and a copy provided to DPTI-Planning and Land Use Services) to demonstrate that no undue impact will result to the operation of the arterial road network. Any identified glare issues shall be appropriately mitigated to the reasonable satisfaction of the Minister for Planning.

DEVELOPMENT ACT 1993 AND DEVELOPMENT REGULATIONS 2008: REQUIREMENTS

i. Pursuant to Section 49(14) of the *Development Act 1993* before any building work is undertaken, the building work is to be certified by a private certifier, or by some person determined by the Minister for the purposes of this provision, as complying with the provisions of the Building Rules (or the Building Rules as modified according to criteria prescribed by the Regulations).

ii. The development must be substantially commenced within 12 months of the date of this Notification, unless this period has been extended by the Minister for Planning.

iii. You are also advised that any act or work authorised or required by this Notification must be completed within 3 years of the date of the Notification unless this period is extended by Minister for Planning. You will require a fresh consent before commencing or continuing the development if you are unable to satisfy these requirements.

ADVISORY NOTES

a. A current list of Registered Private Certifiers in South Australia is available here: http://www.sa.gov.au/topics/property-and-land/land-and-property-development/engaging-building-industry-professionals/private-certifiers

b. At completion of the project all certified documents should be retained by the responsible agency for the life of the asset.

c. For additional information relating to certification of government building projects, contact Infrastructure Delivery, Department of Planning, Transport and Infrastructure (telephone 8343 2511) Level 1, 77 Grenfell Street, Adelaide, 5000.

d. Prior to the time period specified above, any request for an extension of time must be lodged with Planning and Land Use Services, Department of Planning, Transport and Infrastructure, GPO Box 1815 Adelaide SA 5001.

Commissioner for Highways

e. In the event that Restricted Access Vehicles (including oversize and overmass components) are proposed to be utilised, the applicant must ensure that all necessary approvals/permits are obtained from the National Heavy Vehicle Regulator (refer link: https://www.nhvr.gov.au/).

FEATURE 1

AREA 4
~1.5 ha

AREA 2
~2.3 ha

FEATURE 2

AREA 3
~1.8 ha

AREA 1
~18.3 ha

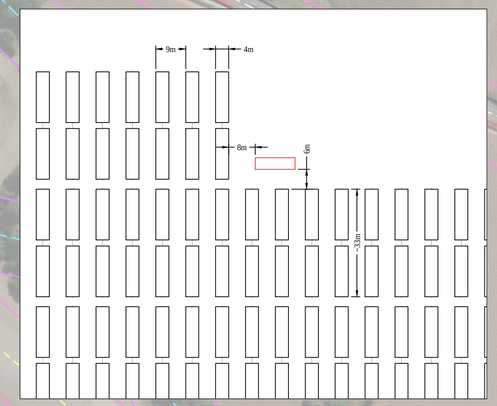
LEGEND

- PROPERTY BOUNDARIES
- KEY ROADS
- DEVELOPMENT AREA INCLUDING 10m SETBACK
- HV OVERHEAD LINE
- TRANSMISSION LINE
- TRANSMISSION LINE AND OVERHEAD LINE 30m SETBACK
- KEY WATER WAY
- WATER WAY 30m SETBACK
- PLANTING EXCLUSION ZONE
- TRACKING SOLAR PV TABLE WITH PV MODULES
- POWER CONVERSION STATION (PCS)
- NEW 132kV SUBSTATION

NOTES

1. FEATURE 1: 30m SETBACK APPLIED TO EXISTING TRANSMISSION AND OVERHEAD LINES.
2. FEATURE 2: 30m SETBACK APPLIED TO KEY WATERWAYS.

INDICATIVE LAYOUT DIMENSIONS



SCALE: NTS

25 0 50 100m
SCALE 1:2500

aurecon
www.aurecongroup.com

REVISION PANEL				
REV	DATE	DRN	DETAILS	APR'D
A	2018.10.17	AF	DRAFT SINGLE-AXIS TRACKING LAYOUT	

CURRENT REVISION CONTRACTOR:

CURRENT REV AUTHORISED

SIGNATURE

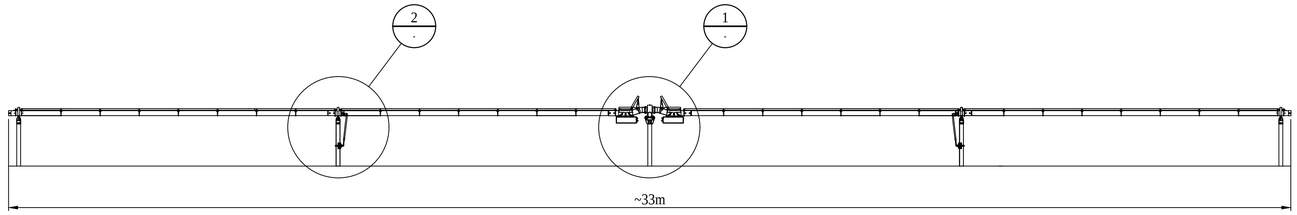
DESIGN PANEL	
DESIGNED: A.FIRFIREY	AUTHORISED
DRAWN: A.FIRFIREY	SIGNATURE
REVIEWED	

CONTRACTOR:

Government of South Australia
SA Water

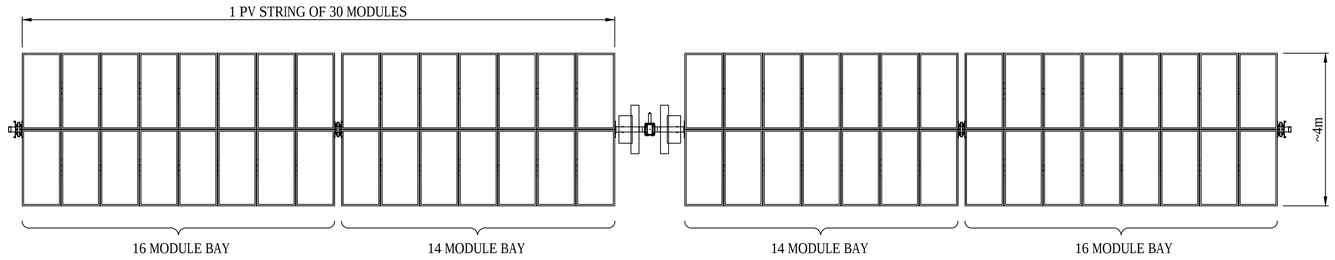
Government of South Australia
SECTION 49 DEVELOPMENT APPROVAL
DA: 711/V026/18
MINISTER FOR PLANNING

A1 SHT SIZE	MAXIMO ID:	A REVISION
	PROJECT No: 503097	
TOTAL SHEETS: 1	DISCIPLINE: GA	
SUPERSEDES:		
DRAWING NUMBER 2018 – MAN2 – 003 YEAR NUMBER SHEET		



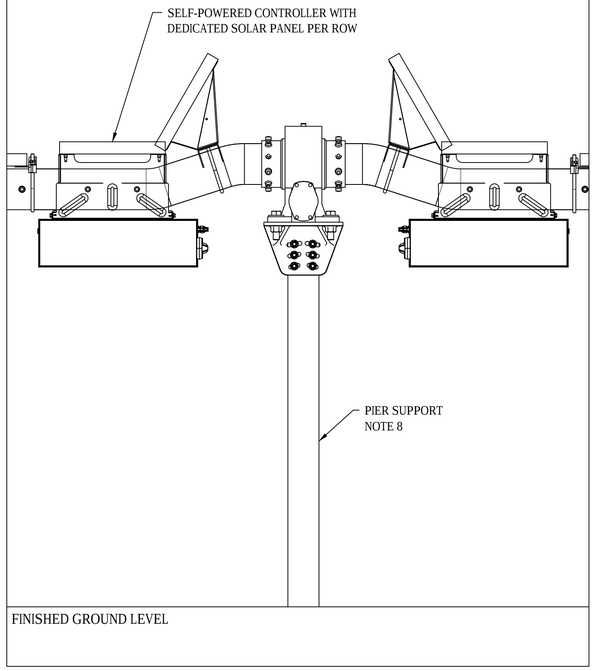
SINGLE AXIS TRACKER - ELEVATION VIEW

N.T.S.



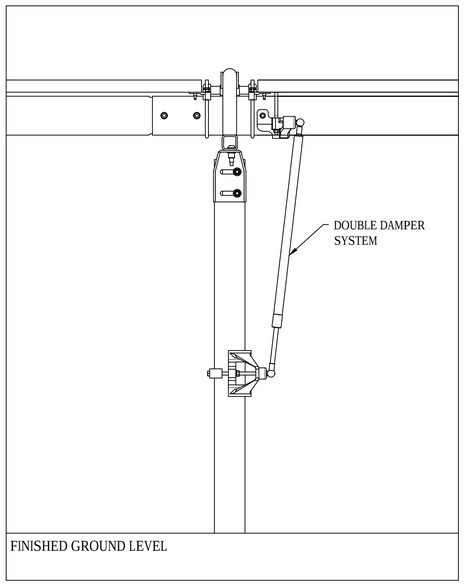
SINGLE AXIS TRACKER - PLAN VIEW

N.T.S.



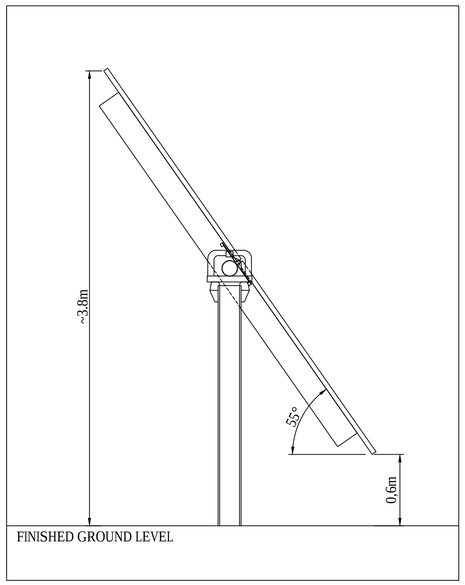
DETAIL 1 (.)

N.T.S.



DETAIL 2 (.)

N.T.S.



SIDE ELEVATION VIEW

N.T.S.

NOTES

1. THIS DRAWING HAS BEEN PROVIDED FOR INFORMATION PURPOSES ONLY.
2. THIS DRAWING INDICATES THE PROPOSED TRACKER TECHNOLOGY FOR THE ZERO COST ENERGY FUTURE PV PLANT LOCATED AT MANNUM ADELAIDE PUMPING STATION NO.2.
3. THIS DRAWING HAS BEEN ADAPTED FROM VARIOUS MANUFACTURER'S CAD DRAWINGS AND DATA SHEETS.
4. THE DIMENSIONS AND CONFIGURATION HAVE BEEN OBTAINED AND ADAPTED FROM VARIOUS MANUFACTURER'S CAD DRAWINGS AND DATASHEETS.
5. THE TRACKER HAS A TRACKING RANGE OF ±55°.
6. THE SYSTEM IS DRIVEN BY A SLEW GEAR, 24 VDC MOTOR SELF-POWERED CONTROLLER WITH A DEDICATED SOLAR PANEL PER ROW.
7. EACH PV TABLE HAS 2 ROWS OF PV MODULES WITH A MAXIMUM ROW LENGTH OF 30 PV MODULES.
8. THE FINAL HEIGHT OF THE PIER ABOVE GROUND LEVEL WILL DEPEND ON THE SURVEYOR'S REQUIREMENTS AND TRACKER TOLERANCES.

REFERENCES

VARIOUS MANUFACTURER'S DRAWINGS AND DATASHEETS

aurecon
www.aurecongroup.com

REVISION PANEL

REV	DATE	DRN	DETAILS	APR'D
A	2018.10.17	AF	INDICATIVE SINGLE AXIS TRACKER DETAILS	

CURRENT REVISION CONTRACTOR:

CURRENT REV AUTHORISED

SIGNATURE

DESIGN PANEL

DESIGNED A.FIRFIREY

DRAWN A.FIRFIREY

REVIEWED

CONTRACTOR:

AUTHORISED

SIGNATURE

Government of South Australia

SA Water

Government of South Australia

SECTION 49 DEVELOPMENT APPROVAL
DA: 711/V026/18
MINISTER FOR PLANNING

A1 SHT SIZE | MAXIMO ID: | PROJECT No: 503097 | A REVISION

TOTAL SHEETS: 1 | DISCIPLINE: GA

SUPERSEDES:

DRAWING NUMBER
2018 - MAN2 - 101
YEAR NUMBER SHEET

Appendix E – ZCEF Construction Environmental Management Plan (CEMP)

SA Water: Project ZCEF

Attachment 7:

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

000000-EEI-10-PLN-00001

CS8772

29 July 2019

DOCUMENT CONTROL

For the duration of the project, all personnel shall implement the requirements of this plan. Revisions to the Construction Environmental Management Plan shall be made when:

- The plan no longer reflects the actual work practices of Enerven or its contractors
- The plan does not adequately reflect the requirements of the contract
- A non-conformance is detected in the plan
- To incorporate agreed improvement to the plan

DOCUMENT HISTORY AND STATUS

Rev	Reviewed	Date	Authorised by
1	Draft issued for internal review	24 August 2018	J Balogh
2	Issued to SA Water	7 September 2018	J Balogh
3	Final issue	6 December 2018	J Balogh
4	Draft issued to SA Water	5 March 2019	V Nair
5	Update Fre Management to incorporate CFS requirements	21 March 2019	J Balogh
6	Project Director update	29 July 2019	J Balogh

Signatories

This Construction Environmental Management Plan is reviewed by:

Enerven Environment Consultant
Name: Julianna Balogh

Signature: ..... Date: 29 / 07 / 2019
Authorised by:

Enerven Project Director
Name: Leon Cocchiaro

Signature: ..... Date: 29 / 07 / 2019

Contents

1. Introduction

The CEMP describes the environmental management processes and controls that Enerven will apply for the duration of SA Water's Zero Cost Energy Future (ZCEF).

The purpose of the CEMP is to provide a structured approach for the management of environmental risks during each phase of the project. Implementing this CEMP will ensure that Enerven meets the clients' minimum environmental requirements in addition to relevant legislative and policy obligations in a systematic manner.

The CEMP has been developed in line with SA Power Networks* Environmental Management System (EMS) and is consistent with AS/NZS ISO14001.

* Enerven is a group of SA Power Networks and therefore EMS documentation, including the Environment Policy, is referenced as SA Power Networks.

2. Abbreviations

Abbreviation	Description
ACM	Asbestos Containing Material
AS	Australian Standard
CEMP	Construction Environmental Management Plan
Cwlth	Commonwealth
EMS	Environmental Management System
Environmental Incident	An incident that causes harm and/or damage, or the potential to, the environment eg oil and chemical spills, vegetation clearance without approval, damage to Aboriginal heritage sites, air, water or noise pollution
EPA	Environment Protection Authority
Hazard (environmental)	An object or situation that has the potential to cause harm and/or damage to the environment
KPI	Key Performance Indicator
Near miss (environmental)	An incident that could have resulted in damage to the environment
PM	Project Manager
Regs	Regulations
SDS	Safety Data Sheet
SF6	Sulfur hexafluoride
SQE	Safety, Quality and Environment
WI	Work Instruction

3. Project Description

1.1 Locations

Various SA Water sites across South Australia.

1.2 Construction / Operation Activities

Construction activities involve the following tasks:

- Earth works
- Site preparation
- Vegetation management
- Piling
- Trenching
- Concreting
- Foundation works
- Piling
- Fencing
- Drainage management
- Hauling

4. Roles and Responsibilities

The Environment Consultant is responsible for:

Responsibilities	Timing
Providing management advice to Enerven with respect to technical content of this CEMP and associated environmental procedures or work instructions	Ongoing
Reviewing for currency and updating this CEMP when changes occur to work practices, when it does not reflect the requirements of the contract or to incorporate improvements	As required
Review and participate as required in environmental incident investigation and corrective measures that arise from incidents in relation to the project	On occurrence as required
Ensuring periodic audits are undertaken to determine compliance with the implementation of this CEMP	As per environmental audit schedule

The Environmental Representative is responsible for:

Responsibilities	Timing
Undertake a risk assessment and ensure all environmental controls identified in the planning process are understood and communicated to field employees and contractors and implemented on site	Commencement of the project and ongoing
Ensuring all employees, contractors and visitors are provided with a site induction inclusive of any environmental controls prior to commencing any work activities	Prior to commencing work for the first time and ongoing
Communicating any site controls with respect to this CEMP to field staff and contractors during weekly toolbox meetings	Weekly
Ensuring any environmental incidents or near misses with respect to the project are reported in a timely manner and recorded in the SA Power Networks online reporting system	On incident or near miss
Ensuring regular environment inspections/observations are undertaken to monitor compliance with this CEMP	Fortnightly
Maintaining relevant environmental records on site	Ongoing

The Environmental Representative will be the SQE Advisor allocated to this project. If the Environmental Representative cannot be on site at any given time, the delegate will be the Construction Supervisor at the relevant project site.

5. Training and Site Induction

Relevant Enerven personnel, including contractors and subcontractors, will be required to attend a kick-off meeting prior to site works which will include an environmental component. This will cover key environmental issues, mitigation measures for their control, specific environmental management requirements and roles and responsibilities.

A site induction will be delivered to contractors and subcontractors by the Site Supervisor, or delegate, to inform personnel and contractors of critical environmental protection measures (eg vegetation management, weed hygiene procedures, oil containment, waste soil management) and general environmental obligations. A record of this will form the training register which will include name, contact number, date of induction, and any other relevant information.

In addition, pre-start meetings and toolbox talks will be used throughout the duration of the project to raise awareness and educate personnel on site specific environmental issues.

6. Inspections and Auditing

The Site Supervisor, or delegate, will undertake inspections of the work site on a regular basis to evaluate the effectiveness of environmental controls. These will occur fortnightly or on an as needs basis, depending on the complexity of the work and anticipated environmental risks. Findings will be recorded on a Site Environmental Checklist (see Appendix 4 for a copy of the template), including any actions required.

In addition to inspections, environmental audits will be undertaken by Enerven's Environment Consultant, or the Environmental Representative, to verify compliance with the following:

- The CEMP
- Any client environmental requirements
- Any relevant legal and other requirements (eg approvals, agreements, licenses, permits)

The frequency of audits will be bimonthly (ie every 2 months) and an audit schedule will be prepared and maintained to reflect this.

If any non-conformances are identified during site inspections or audits, they will be investigated to determine the cause and to ascertain the necessary corrective actions. Non-conformances will be verbally reported to the client within 4 hours of occurrence.

7. Incidents and Emergencies

In the event of an environmental incident, near miss or hazard, these will be managed in accordance with SA Power Networks EMS 4.2 Environment Incident Response Procedure, a copy of which will be held at each site. The procedure provides information on emergency incident response including:

- Classification of environmental incidents
- Process for responding to and managing environmental incidents
- Roles and responsibilities
- Regulatory requirements

Specific response actions will depend on the type and location of the environmental incident, near miss or hazard. General response measures may include:

- Control/contain
- Stabilise and neutralise
- Clean up
- Remediate
- Notification
- Investigation
- Reporting

With regards to notification, the relevant authorities will be contacted if necessary, depending on the type of incident, near miss or hazard. A list of emergency contact numbers is provided below. In addition, and in consultation with the client, the EPA may be notified in accordance with the *Environment Protection Act 1993*.

As part of Enerven's reporting obligations, the client will be verbally notified within 4 hours of occurrence.

1.3 Emergency Contacts

Contact	Role(s)	Name (if applicable)	Phone
Emergency Response Personnel	Available 24/7, also has authority to stop or direct works		
Environment Protection Authority (EPA)	Pollution, licensing, site contamination		08 8204 2004
Police, Fire, Ambulance	Life threatening emergencies		000
Metropolitan Fire Service	General enquiries during business hours		8204 3600
RSPCA	24/7 hotline for the rescue/advice for sick or injured animals		1300 4 777 22
Fauna Rescue	24/7 hotline for the rescue/advice for sick or injured native wildlife		08 8289 0896
Koala Hotline	24/7 hotline for the rescue/advice for sick or injured koalas		1300 562 527
Bats Hotline	24/7 hotline for the rescue/advice for sick or injured bats		0475 132 093
National Parks SA	Information on native plants, weeds, water affecting activities		8204 1910
SA Ambulance Service	General enquiries and ambulance service information		1300 136 272
SA Water Program Manager	Project related enquiries	John Hart	0436 682 042
Enerven Program Director	Project related enquiries	Paul Farnworth	0447 057 829

Contact	Role(s)	Name (if applicable)	Phone
SA Water Senior Environmental Impact Assessment Officer	Environment related enquiries	Jackie Griggs	0448 379 303
Enerven Environment Consultant	Environment related enquiries	Julianna Balogh	0419 877 627

8. Environment Control Measures

For each environmental aspect below, the following controls will be undertaken if applicable:

Water Quality	
Objective(s)	• Prevent or minimise adverse effects on surface water and groundwater quality, flows and drainage
Management Strategy	• Works in, around or on waterways must be managed to eliminate or minimise impacts on water quality • If any works are proposed within 10m of the top of a bank or in the bed of a watercourse, a Water Affecting Activity permit is required from the Natural Resources Management Board • Generally, works in or alongside drains, directional drilling under a watercourse or works that extend 10m beyond the top of a bank do not require a permit
Controls	• Review construction area to minimise potential for surface runoff to enter the site and to identify controls for runoff leaving the site. • Review project activities that will require protection and installation of controls. • Identify designated stockpile/laydown areas away from drainage lines. • Schedule works that will occur in watercourses /drainage lines for periods of favourable weather (eg dry periods) or implement construct techniques that reduce construction footprint (eg directional drilling). • No discharge to a watercourse (including stormwater system) without approval from the site superintendent. • Install erosion and sediment control devices prior to works commencing (eg silt fences, silt socks, hay bales diversion drains, geotextile fabric) and ensure they are maintained (eg remove debris from sediment control items regularly) • Ensure stockpiles have erosion control devices installed, particularly downslope of stockpile • Monitor weather forecasts to identify rain events and ensure control measures in place • Inspect and maintain/clean sediment control items regularly • Clearly define access tracks and routes • Compact, backfill and resurface disturbed or unsealed areas as soon as possible

	• No onsite refuelling, service, maintenance or cleaning in areas where runoff/wastewater may enter stormwater system or waterbodies. • All equipment wash-down to be undertaken within an identified wash-down area, and no discharge of wash-down water to stormwater or watercourse. • Turbid water from concrete cutting etc. not to be directed to stormwater or watercourses.
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No uncontrolled release of contaminated stormwater to drains or waterways
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Erosion and sediment controls will be inspected to ensure they are effective and maintained
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• EMS 5.10 Water Quality Management Procedure • EPA Handbook for Pollution Avoidance on Commercial and Residential Building Sites • EPA Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry
Legislation	• *Environment Protection Act 1993*

	• *Environment Protection (Water Quality) Policy 2015*

Flora and Fauna	
Objective(s)	• Minimise impacts on flora and fauna • Retain and enhance existing flora and fauna habitat wherever possible
Management Strategy	• Effective management and protection of ecological habitats is essential for the survival of native flora and fauna within and surrounding project sites • Management of these habitats extends beyond minimising direct impacts on flora and fauna and includes protection of vegetation, management of weed species, locating hazardous material storage away from environmentally sensitive areas and managing bushfire risk by minimising potential sources of fuel

Controls	• Areas to be retained and adjacent habitats will be cordoned off, or in the case of vegetation, clearly marked with pink tape, prior to works to prevent damage or accidental clearing
	• This information will be relayed to each contractor and/or subcontractor undertaking the work, so they are clear about what to retain
	• If vegetation clearance is required during the course of works, the relevant approvals will be sought in consultation with the client
	• Prior to any vegetation clearance, a pre-clearing inspection will be undertaken which will include
	  ○ A check for the presence of fauna and if located, engage a suitably qualified person to remove and relocate
	  ○ Salvage potential fauna habitat (eg hollow logs) from clearing where possible and reinstate in appropriate locations
	  ○ Completion of any pre-clearing requirements by the client or as outlined in relevant approvals, agreements, licenses or permits
	• Vehicle movements will be kept to marked areas and defined access tracks
	• No stockpiling of materials or parking of machinery/vehicles, in the drip line of trees
	• Minimise trap hazards for fauna by covering trenches, open pits and excavations, which will be regularly inspected in the event fauna are located

	• If required, barriers will be installed to prevent the movement of livestock and other animals onto the work site • Any injury or death of native wildlife caused by construction activity will be reported to the site superintendent. • Ensure all disturbed areas caused by construction and maintenance activities are restored as close as practicable to their original or agreed condition
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No damage or injury to protected flora and fauna
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • The site will be regularly checked for the presence of fauna
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• EMS 5.5 Flora and Fauna Management Procedure
Legislation	• *Environment Protection and Biodiversity Conservation Act 1999* • *National Parks and Wildlife Act 1972* • *Native Vegetation Act 1991*

Pest Plants and Diseases	
Objective(s)	• Prevent the introduction and establishment of new pest plants and diseases • Minimise the spread of pest plants and diseases
Management Strategy	• Project sites must be kept free of pest plants for the duration of works, including the reinstatement and/or revegetation period • Controls will be put in place to prevent the establishment of new pest plant and diseases, restrict their spread around the project site and surrounds, and to effectively manage them in accordance with legislation
Controls	• Vehicles, machinery and equipment will be risk assessed to determine the necessary level of inspection and wash down • Where deemed necessary to reduce the spread of weeds or through property owner specified requirements, either a temporary wash down bay will be established, or a mobile wash trailer or pressure spray utilised to ensure vehicles, machinery and equipment are thoroughly washed prior to leaving the area or moving to adjacent properties • Undertake periodic cleaning of excess soil and organic matter from vehicles, machinery and equipment as required in designated area • Where possible, site entry and exit point will be established away from pest plant or disease infected areas • Vehicles will be kept to public roads, designated access tracks or within work areas where practicable • Locate stockpiles away from pest plant infected areas where possible • Any imported soil materials will be sourced from licensed facilities to ensure there is no introduction of weeds or diseases to the site • For ongoing maintenance, weed control measures will be undertaken utilising products which are appropriate for areas with sensitive receptors (ie waterways, native vegetation, ecological habitats, etc.)
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No evidence of new pest plants on site

Pest Plants and Diseases	
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • The site will be monitored for the presence of pest plants
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• *EMS 5.2 Biosecurity - Pest Plant Animal Disease Management* • *EMS 5.2.1 WI-Weed Spread Prevention* • *EMS 5.2.2 WI-Phytophthora Spread Prevention*
Legislation	• *Natural Resources Management Act 2004*

Soil Erosion and Drainage Management	
Objective(s)	• Prevent pollution of surface water through appropriate erosion and sediment control
Management Strategy	• Ground cover provides the most effective means of preventing erosion • Sediment run-off and dust controls depend on retaining existing vegetation or revegetating and mulching disturbed areas as soon as possible
Controls	• Assess the site and proposed works for risks of erosion and sedimentation, considering slope, soil type, exposed surfaces, proximity to environmentally sensitive areas (eg waterway, fauna habitat, cultural heritage site)

Soil Erosion and Drainage Management	

	• Control erosion of stockpiles, batters and disturbed areas by control devices (eg straw bales, geotextile sediment fences, silt socks) and keep stockpiles away from drainage lines
	• Always check the worksite prior to and during rain or when leaving the site for several days to ensure erosion control measures are effective
	• Maintain erosion and sediment control structures and clean out and replace as needed
	• Prevent sediment loads and wastewaters (generated by activities such as concreting) from entering drainage lines and surrounding waterways
	• Construct wash down bays in appropriate sites (eg not near drains)
	  • Line with durable plastic liner
	  • Use bay specifically for concrete waste only
	  • Decommission bay when works complete at site

Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No uncontrolled release of contaminated stormwater to drains or waterways
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Erosion and sediment controls will be inspected to ensure they are effective and maintained
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff

Soil Erosion and Drainage Management	
	• Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• EMS 5.10 Water Quality Management Procedure • EPA Handbook for Pollution Avoidance on Commercial and Residential Building Sites • EPA Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry
Legislation	• *Environment Protection Act 1993* • *Environment Protection (Water Quality) Policy 2015*

Air Quality	
Objective(s)	• Minimise pollutant emissions from construction and maintenance activities as far as feasible and reasonable • Identify and control potential dust and air pollutant sources
Management Strategy	• Management of the ambient air near construction works, noting the protection of workers on site • Use of improved equipment where economically feasible to replace those less efficient
Controls	• Weather conditions will be monitored, and appropriate responses will be organised and undertaken periodically (eg excavations will be minimised or ceased on extremely windy days) • Regular visual monitoring of dust generation from work zones • Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes • Dust suppression measures (eg water carts, covers, dust barriers) will be used if required for excavation works, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce windblown dust emissions • Sediment will be swept or removed regularly from paved or sealed areas

Air Quality	
	• Traffic movement and vehicle speeds will be restricted over undisturbed areas and unsealed roads • Minimise the extent of exposed and stripped surface areas within the project area • Stockpiles to be managed to reduce dust (manage height, cover, water down as required)
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • Number of complaints from residents or businesses related to dust
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Dust control measures will be inspected to ensure they are in place and implemented
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Legislation	• *Environment Protection Act 1993* • *Environment Protection (Air Quality) Policy 2016* • *Local Nuisance and Litter Control Act 2016* • *National Environment Protection (Ambient Air Quality) Measure 2003* • *National Environment Protection (Diesel Vehicle Emissions) Measure 2001* • *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*

Noise, Vibration and Visual Amenity	
Objective(s)	• To ensure any works causing noise or vibration do not affect nearby structures, heritage items or sensitive receptors • Maintain amenity in adjoining areas
Management Strategy	• Plan activities and engage affected stakeholders to minimise noise and vibration impacts • Implement noise and vibration mitigation measures • Conduct monitoring and ensure compliance with SA EPA legislation • Reduce visual impact of construction to surrounding community

Controls	• Turn off or throttle down machinery when not in operation
	• Restrict construction noise to applicable hours as per EPA guidelines
	  • Between the hours of 7am and 7pm Monday to Saturday
	  • Any other time to avoid impacts such as unreasonable interruption to vehicle or pedestrian traffic movement – this must be authorised by the Site Superintendent (SA Water's Program Manager)
	• If works must occur outside of EPA guideline hours, notify SA Water and nearby residents/landholders before commencement, at least 3 days prior
	• Where possible, schedule noisy activities from mid-morning to early afternoon
	• Use equipment with noise control features where available and ensure it is properly maintained
	• Arrange the work site to take advantage of natural barriers (eg hills, trees) and structures (eg fences, stockpiles) to reduce their line of sight with sensitive receptors
	• Site lighting must be designed and used so as to minimise impacts on surrounding land uses, and must not illuminate/project onto areas of conservation including wetlands, waterways and ecological habitats
	• The work site will be regularly maintained and be kept tidy and free of rubbish

Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents

	• No non-conformances • Number of complaints from residents or businesses related to noise, vibration or visual amenity
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Noise or vibration monitoring if required by SA Water, local council or in response to complaints
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• EMS 5.13 Noise Guideline • SA EPA Guideline: Construction noise • SA EPA Guideline: General environmental noise
Legislation	• *Environment Protection Act 1993* • *Environment Protection (Noise) Policy 2007* • *Local Nuisance and Litter Control Act 2016*

Hazardous Materials	
Objective(s)	• Ensure awareness of risks of hazardous materials and their correct storage, transport, use and disposal • Prevent pollution arising from leakage or spillage of hazardous materials

Management Strategy	• The purchase, handling, storage and disposal of chemicals used on the project site will be managed appropriately to have negligible impact on the environment and do not pose a threat to the health or safety of workers
Controls	• Safety Data Sheets (SDS) for substances and materials will be readily available on site (eg hard copy, tablet) for personnel when required • Refuel plant and equipment off site where possible • If required, store and dispense fuels, oils and chemicals within sealed and bunded areas where spills can be contained and safely cleaned up and removed • Ensure bunds are regularly cleared of stormwater, and oily water mixtures are disposed of by a licensed waste contractor • Secure equipment, containers and drums during transport • Spill containment equipment (eg spill kit) will be made available around the construction site • In the event of a minor spill (eg diesel), the affected soil will be excavated and disposed of at an appropriately licensed landfill • In the event of a major fuel or chemical spill, immediately notify the SA Water Site Superintendent of the spill and if known, any associated details (eg type of spill, source, time of incident) • Any hazardous materials will be stored, handled and transported in accordance with the Dangerous Substances Act 1979
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No uncontrolled spills of hazardous materials
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Bunds to be checked that they are the appropriate size and functioning

Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• AS 1940-2004: The storage and handling of flammable and combustible liquids • SA EPA Guideline: Bunding and spill management • SA EPA Guideline: Waste transport certificate
Legislation	• *Dangerous Substances Act 1979* • *Environment Protection Act 1993*

Soil Contamination	
Objective(s)	• To ensure compliance with regulatory requirements associated with the management of waste soil, including stockpiling, sampling, transport and disposal
Management Strategy	• Ensure that sites with soil contamination do not pose a risk to the health and wellbeing of workers or residents and businesses in the vicinity • Provide a clear and transparent process that enables a coordinated approach to the assessment and management of contaminated soil
Controls	• If any contaminated soil is encountered which has not previously been identified, manage accordingly in consultation with SA Water • Ensure controls are in place to prevent the spread of any contaminated soil • Contaminated material must be handled and managed in accordance with EPA requirements (licenced waste transporter and to an EPA licenced facility) • Retain copies of Waste Transport Certificates (WTC) on site and ensure this is recorded on the WTC Register • Where possible, utilise suitable waste soil for beneficial reuse

Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No environmental notices from SA EPA
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Contaminated material is managed in accordance with legislation
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• *EMS 5.3 Waste Soil Management Procedure* • *EPA Standard for the Production and Use of Waste Derived Fill*
Legislation	• Environment Protection Act 1993

Heritage	
Objective(s)	• Minimise impacts on items or places of heritage significance • Avoid accidental impacts on heritage items
Management Strategy	• Ensure places with identified heritage values are conserved and managed as required by legislation • Maintain and exceed compliance with all statutory requirements

Heritage	
Controls	• Check with the client to determine if any heritage sites exist in or near the work area prior to commencement • If any heritage sites are identified these will be cordoned off, or clearly marked, as no go zones • No go zones will be checked throughout the duration of the project to ensure disturbance does not occur • If any sites or items believed to be of Aboriginal or non-Aboriginal origin are discovered or unearthed, work will stop immediately, and SA Water's Aboriginal Heritage Discovery Procedure will be followed (see Appendix 5)
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • Immediate reporting of archaeological remains if discovered
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor • Engagement of Aboriginal monitors during earthworks as required
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• EMS 5.7 Cultural and European Heritage Procedure • EMS 5.7.1-WI-Aboriginal Heritage Management
Legislation	• *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

Heritage	
	• *Aboriginal Heritage Act 1988* • *Environment Protection and Biodiversity Conservation Act 1999* • *Heritage Places Act 1993*

Fire Management	
Objective(s)	• Minimise the risk of adverse impact from fire on life, property and the environment
Management Strategy	• Ensure measures are in place to appropriately respond quickly and effectively in the event of a fire • Ensure measures are in place to allow the Country Fire Service (CFS) to access and safely circulate through the site in the event of an emergency
Controls	• Ensure spark-arrestors are fitted on vehicles and plant powered by internal combustion engines • Where possible, utilise diesel powered vehicles and plant • Hot work permits required for 'hot works' on total fire ban days, no works on catastrophic fire rating days unless approved by SA Water's Site Superintendent • Any welding activities to be undertaken in a controlled manner that minimises fire risk • The work site will be regularly inspected to ensure no build-up of flammable materials, particularly in high fire risk seasons • There will be access to firefighting equipment (eg fire extinguisher, portable water spray) at each work site • No burning off or burning of waste • Cigarette butts will be disposed of in designated containers • Locked gates to work areas must be secured with a CFS standard issue lock that can be opened by CFS personnel in the event of an emergency incident when the site is unoccupied • Access ways around and through the site shall always be kept clear of vegetation, machinery, plant, equipment and materials to enable movement by CFS and other emergency services vehicles in a continuous forward motion

Fire Management	
	• A minimum of 6.0 metres around the perimeter of the solar panels shall be maintained clear of vegetation and be generally trafficable by CFS and other emergency services vehicles
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• Bushfire Risk Management Manual No. 8
Legislation	• *Fire and Emergency Services Act 2005*

Waste Management	
Objective(s)	• Minimise the production of wastes • Maximise the reuse and recycling of materials used on site • Dispose of wastes in an environmentally responsible manner, and in accordance with legislation
Management Strategy	• Adopt the principles of the waste management hierarchy by maximising the reuse, recycling and recovery of materials

Waste Management	
	• Organise regular waste collections to avoid excessive on-site storage
Controls	• Separate recyclable waste and materials from general waste for recycling or reuse and clearly mark bins to avoid cross contamination • Cover and store wastes in a designated area to prevent it being blown or washed away • Dispose of hazardous materials (eg asbestos waste, contaminated materials) to an EPA licensed facility, using EPA's Waste Tracker system for the Waste Transport Certificate (WTC) when required • Copies of all WTCs will be kept on site, and recorded on the WTC Register (see Appendix 6 for a template of the register)
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • No complaints from residents or businesses related to waste • Presence of onsite waste containers for segregation of waste
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• EMS 5.4 Waste Disposal and Recycling Procedure

Waste Management	
Legislation	• *Environment Protection Act 1993* • *Environment Protection (Waste to Resources) Policy 2010* • *Local Nuisance and Litter Control Act 2016*

Asbestos Management	
Objective(s)	• Minimise any potential hazards posed by asbestos containing material (ACM)
Management Strategy	• Eliminate exposure to asbestos through the identification and removal of asbestos where safe to do so • Where elimination is not possible, exposure is to be minimised as far as reasonably practicable
Controls	• Reasonable steps will be taken to identify all possible locations of ACM • In consultation with the client, if ACM is identified or presumed, the material will be tested and treated accordingly • Dispose of any ACM at an EPA licensed facility, accompanied by a Waste Transport Certificate (a copy to be supplied to the client)
Performance Indicators	• No environmental prosecutions brought against the project • No reportable environmental incidents • No non-conformances • Number of safety audits performed
Monitoring	• Regular monitoring for environmental non-conformances will be undertaken by the SQE Advisor on site • The Environment Consultant will be advised of any non-conformances identified through monitoring by the SQE Advisor
Reporting	• Any reports on environmental incidents, environmental non-conformances or complaints will be maintained by the Enerven Consultant and made available to the client

Asbestos Management	
Corrective Actions	• For each non-conformance identified, the corrective action(s) will be implemented in consultation with the relevant construction staff • Improvement opportunities may also result in the implementation of corrective actions
Reference(s)	• Asbestos.sa.gov.au • Safe Working with Asbestos
Legislation	• *Environment Protection Act 1993* • *Work Health and Safety Act 2012* • *Work Health and Safety Regulations 2012*

9. Environment Control Maps

An Environment Control Map will be developed for each project site, identifying the location of environmental features and hazards (eg vegetation, heritage sites, water bodies, protected areas, etc) to assist in the planning and delivery of works. The maps will be prepared prior to commencement of construction and updated regularly if the work site or activity changes. They will be placed in locations for reference by all site staff and contractors.

An example of an Environment Control Map is provided in Appendix 3.

10. Appendix 1 – Environment Policy

Environmental Policy

Purpose

SA Power Networks is committed to conducting its electricity distribution operations and business activities in a manner that prevents or minimises pollution and other adverse impacts on the environment.

Principles

To fulfil this commitment, SA Power Networks will:

- comply with all environmental legislation, formal agreements, and relevant industry standards;
- measure and continually improve our environmental performance and environmental management system;
- ensure environmental impacts are considered in the planning, design, construction, decommissioning and operation of our work;
- recognise the biodiversity of areas under its operational control, and avoid unnecessary disturbance to cultural and natural sites of significance;
- respond openly and constructively to the reasonable expectations of the community on environmental matters;
- promote an attitude of care and responsibility and a sense of stewardship for the environment by employees through environmental education and training;
- use resources efficiently, minimise waste and where practicable reuse or recycle materials generated by our operations; and
- inform agents, advisers, contractors and consultants of the Environmental Policy.

Policy Area	Customers & Community
Policy Number	5.1
Approved by Board	21/07/2006

Definitions

In this policy statement:

- **environment** means the surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation;
- **Environmental Management System** means an organisation's structure of responsibilities policies, practices, procedures, processes and resources for protecting the environment and managing environmental issues; and
- **biodiversity** means the variety of ecosystems and plant and animal life that can be found in the environment.

Explanations

Responsible management of our resources and our environment will contribute to the well being of the SA community.

Ensuring that environmental considerations are incorporated into all SA Power Networks' business activities as a fundamental part of sound management practice.

The identification of environmental risk and implementation of environmental improvement plans to address the risk will ensure continual improvement in our environmental management.

Robust environmental incident response procedures will reduce pollution and environmental impacts, regulatory risk and business costs.

The integration of the Environmental Management System, based on sustainable development principles, into the existing business system will ensure that SA Power Networks is acting in a diligent manner.

This will:
- protect the environment;
- enhance relationships with shareholders and the community; and
- reduce the risk of litigation, related to environmental incidents, for SA Power Networks Board and personnel.

Responsibilities

The SA Power Networks Board is responsible for this Policy and monitoring compliance with the Policy.

The Chief Executive Officer is responsible for ensuring that all reasonable and practical steps are taken to:
- monitor the effectiveness of the environmental performance of SA Power Networks; and
- hold management responsible for the effective implementation of, and compliance with, the Environmental Management Policy.

General Managers are responsible for:
- ensuring that the operations under their control comply with this Policy;
- establishing and monitoring achievement of agreed environmental performance objectives; and
- actively promulgating the Policy.

Managers and Leaders are responsible for:
- ensuring that legal and environmental standards are met;
- ensuring that the environmental management systems and procedures are developed and applied in the workplace to prevent or minimise environmental risks;
- providing and documenting environmental training;
- ensuring environmental improvement plans and programs are developed, implemented, monitored and reviewed;
- ensuring environmental incident response procedures are implemented, maintained and incidents reported and investigated; and
- ensuring environmental performance is monitored and reported to their General Managers.

All SA Power Networks personnel are responsible for:
- being involved in, and committed to, sound environmental management practices in the workplace;
- complying with all environmental legislation, systems and procedures in their workplace;
- conducting their duties in a manner that prevents or minimises environmental damage or nuisance; and
- reporting any incident or threatened incident to their manager or leader.

General Manager People & Culture is the custodian of the Environmental Policy.

The Manager Environment & Property Services is responsible for:

- coordinating the review process every year for relevance to business requirements and consistency with legislation and government directives;
- reviewing and recommending updates to the Policy;
- monitoring the implementation of the Policy;
- developing, coordinating implementation, monitoring and reporting performance of SA Power Networks environmental management system; and
- providing advice on legislation and other environmental issues.

Controlled Document ID	A-42
Policy Area	Customers & Community
Policy Number	5.1
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Custodians	General Manager People & Culture
Major Version	5
Commencement Date	21/07/2006
Review Date	29/08/2017
Next Review	29/08/2018

11. Appendix 2 – Legislation Register

SA and Commonwealth (Cwlth) Environmental Legislation (refer to **ENVIROLAW** for detailed legislative obligations and updates)	Air quality - Dust/Odour/ Pollutants	Native Fauna (animals)	Native Vegetation (eg approval for vegetation removal)	Toxic and Hazardous Materials (PCBs, SF6, CFC, Fuels,)	Heritage (Natural, European)	Aboriginal Heritage and Native Title	Noise and Vibration	Water Quality -Erosion and Sediment Control and Pollution	Soil Management (eg waste transport certificates)	Waste Management (liquid and solid)	Water Resource Use/ Restrictions etc)	Pest and Disease Management (plants and animals)
Aboriginal Heritage Act, 1988(SA) /Aboriginal and Torres Strait Islander Heritage Protection Act, 1984 **(Cwlth)**			✓			✓						
Dangerous Substances Act, 1979 (Regs 2008)				✓					✓	✓		
Development Act, 1993 (Regs 2008)			✓									
Electricity Act 1996 (Regs 2010)			✓									
Environment Protection Act, 1993 (various Regs etc)	✓			✓			✓	✓	✓	✓	✓	
Environment Protection and Biodiversity Conservation Act (1999) **(Cwlth)**		✓	✓		✓							
Fire and Emergency Services Act 2005	✓		✓									
Fruit and Plant Act 1992												✓

SA and Commonwealth (Cwlth) Environmental Legislation (refer to **ENVIROLAW** for detailed legislative obligations and updates)	Air quality - Dust/Odour/ Pollutants	Native Fauna (animals)	Native Vegetation (eg approval for vegetation removal)	Toxic and Hazardous Materials (PCBs, SF6, CFC, Fuels,)	Heritage (Natural, European)	Aboriginal Heritage and Native Title	Noise and Vibration	Water Quality -Erosion and Sediment Control and Pollution	Soil Management (eg waste transport certificates)	Waste Management (liquid and solid)	Water Resource Use/ Restrictions etc)	Pest and Disease Management (plants and animals)
Heritage Places Act, 1993(SA) / Australian Heritage Council Act 2003 **(Cwlth)**					✓							
Local Government Act, 1999							✓	✓	✓	✓	✓	
Local Nuisance and Litter Control Act 2016	✓						✓			✓		
National Environment Protection Act 1994 and **(Cwlth)**	✓			✓			✓	✓	✓	✓	✓	
National Parks and Wildlife Act, 1972 (Regs 2001)		✓	✓									
National Trust of South Australia Act, 1955		✓	✓		✓							
Native Vegetation Act, 1991 (Regs 2017)			✓									
Natural Resources Management Act, 2004		✓	✓					✓	✓			✓
Work Health and Safety Act 2012										✓		

SA and Commonwealth (Cwlth) Environmental Legislation (refer to **ENVIROLAW** for detailed legislative obligations and updates)	Air quality - Dust/Odour/ Pollutants	Native Fauna (animals)	Native Vegetation (eg approval for vegetation removal)	Toxic and Hazardous Materials (PCBs, SF6, CFC, Fuels,)	Heritage (Natural, European)	Aboriginal Heritage and Native Title	Noise and Vibration	Water Quality -Erosion and Sediment Control and Pollution	Soil Management (eg waste transport certificates)	Waste Management (liquid and solid)	Water Resource Use/ Restrictions etc)	Pest and Disease Management (plants and animals)
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989	✓											
Zero Waste SA Act 2004										✓		

12. Appendix 3 – Environment Control Map Example

13. Appendix 4 – Site Environmental Checklist

Site Environmental Checklist
ENV-F-001

Area: Environmental
Contact Person (s):

Inspections will be conducted by Enerven's Safety, Quality and Environment (SQE) Advisor or delegate to ensure implementation of Enerven's Safety and Environmental Management Plan by Enerven personnel and contractors. All inspection reports and checklists will be kept by Enerven's SQE Advisors and copies sent to Enerven's Construction Manager and Environment Consultant.

1. PROJECT DETAILS

Project Name:	
Project Number:	
Date:	

2. SITE ACTIVITIES AND CONTRACTORS

List all contractors present at time of inspection and activities being undertaken.

Enerven / Contractor	Work Activities

3. CHECKLIST

	Environmental Item	YES	NO	N/A	Comment
1	**General**				
1.1	A copy of the relevant Environment Control Map or Construction Environment Management Plan (CEMP) is kept on site?	☐	☐	☐	
2	**Flora and Fauna Management**				
2.1	Have any native animals been trapped on site?	☐	☐	☐	
2.2	Has vegetation clearance been undertaken?	☐	☐	☐	
2.3	If yes, has vegetation clearance approvals been obtained?	☐	☐	☐	
3	**Pest and Weed Management**				
3.1	Any pest plants on site?	☐	☐	☐	
3.2	Are vehicles, plant and machinery entering site clean of loose mud and weed matter e.g. burrs etc?	☐	☐	☐	
3.3	Has this been recorded in the SMP, under 'Mobile Plant and Equipment Site Inspection Register?	☐	☐	☐	

	Environmental Item	YES	NO	N/A	Comment
4	**Soil Erosion and Drainage Management**				
4.1	Are required erosion control devices (eg silt traps/fences) in place and working?	☐	☐	☐	
4.2	Are soil stockpiles bunded and stabilised to prevent sediment wash off and dust?	☐	☐	☐	
4.3	Is the site stable to prevent stormwater runoff erosion or dust?	☐	☐	☐	
5	**Hazardous Materials**				
5.1	Are all oil/chemicals stored in portable or temporary bunds or sealed shipping containers and maintained in line with the EPA guidelines?	☐	☐	☐	
5.2	Are fully maintained chemical spill kits on site?	☐	☐	☐	
5.3	Were there any oil or chemical spills during preceding week?	☐	☐	☐	
5.4	If yes, was it cleaned up and reported in line with SA Power Networks environmental incident response procedure?	☐	☐	☐	
5.5	Are relevant SDS's for chemicals located on site?	☐	☐	☐	
5.6	Have chemical waste been disposed of in line with SDS's?	☐	☐	☐	
6	**Noise**				
6.1	Have construction activities been limited to between 7am and 7pm?	☐	☐	☐	
6.2	If no, was out of hours work approved.	☐	☐	☐	
6.3	Has the daily site activity log been completed for any noise compliant and an investigation completed?	☐	☐	☐	
7	**Aboriginal Heritage**				
7.1	Any items of cultural heritage located during work activities?	☐	☐	☐	
7.2	If yes, were the controls in the CEMP under 'Heritage' applied?	☐	☐	☐	
8	**Waste Management**				
8.1	Is the construction site clean?	☐	☐	☐	
8.2	Have waste materials been separated into appropriately labelled bins or returned to a works depot for segregation?	☐	☐	☐	
8.3	Has concrete agitator/equipment waste been washed off site or in an on site sealed pit?	☐	☐	☐	
8.4	Has sewerage waste been collected by a licensed waste contractor?	☐	☐	☐	
8.5	For any waste oil removed from site, have Waste Transport Certificates (WTC) been received from the contractor?	☐	☐	☐	
9	**Waste Soil**				
9.1	Has any excess soil or contaminated soil been removed to an EPA licensed landfill for disposal?	☐	☐	☐	
9.2	If yes: ▪ Has the soil been tested prior to removal or tested at the landfill? ▪ WTCs have been retained in project files/folders on site and recorded on the WTC Register?	☐ ☐	☐ ☐	☐ ☐	
9.3	Has any imported soil been verified as "Waste Fill" and documents retained in the project file?	☐	☐	☐	

	Environmental Item	YES	NO	N/A	Comment
9.4	Have the requirements of Enerven's Waste Soil Management Procedure been met?	☐	☐	☐	
10	**Air Quality**				
10.1	Are vehicle loads covered when leaving or entering site to prevent loss of materials during transport?	☐	☐	☐	
10.2	Are vehicle and equipment turned off when not needed?	☐	☐	☐	
11	**Ground Water Management**				
11.1	Has any excess contaminated groundwater from dewatering cable trenches or earth stakes been removed by an EPA licensed contractor?	☐	☐	☐	
11.2	If yes, has waste disposal documentation been received and retained on site?	☐	☐	☐	
12	**Traffic management**				
12.1	Are all vehicles following designated access route and parking in designated parking areas?	☐	☐	☐	
13	**Bushfire Management**				
13.1	Are bushfire control mitigation measures installed and implemented?	☐	☐	☐	
14	**Complaint Management**				
14.1	Were any complaints received in the preceding week regarding construction activities?	☐	☐	☐	
14.2	If yes, was this recorded and the client informed?	☐	☐	☐	

OUTSTANDING ACTIONS REQUIRING COMPLETION

The Responsible Person must notify the Enerven person (above) that the agreed actions have been completed

Item	Agreed actions to be completed	Responsible person	Due Date	Completed Date

Environmental inspection conducted by:

Name:		**Title:**		**Signature:**	
Date:		**Time:**			

14. Appendix 5 – SA Water's Aboriginal Heritage Discovery Procedure and Example Pictures

Have you found a site, object or skeletal remains that may be Aboriginal Heritage?

See example pictures on next page.

STOP

Do not disturb/remove/touch or displace the site, object or skeletal remains.

It is an offence to disturb or interfere with Aboriginal heritage or skeletal remains.

PROTECT

Restrict access. Site supervisor to take note of:

Location in relation to site works (pref. GPS).
Any immediate threats to heritage eg construction activities, vandalism, water level.
Name and contact details of the person who made the discovery.

NOTIFY

Site Supervisor to immediately notify:

SA Water representative: Charmaine Noack 08 7424 3619 or 0404 836 567
Local Police or 131 444. If suspected human remains have been discovered.

MANAGE

The SA Water EHS Team will appropriately manage the incident with appropriate guidance from:

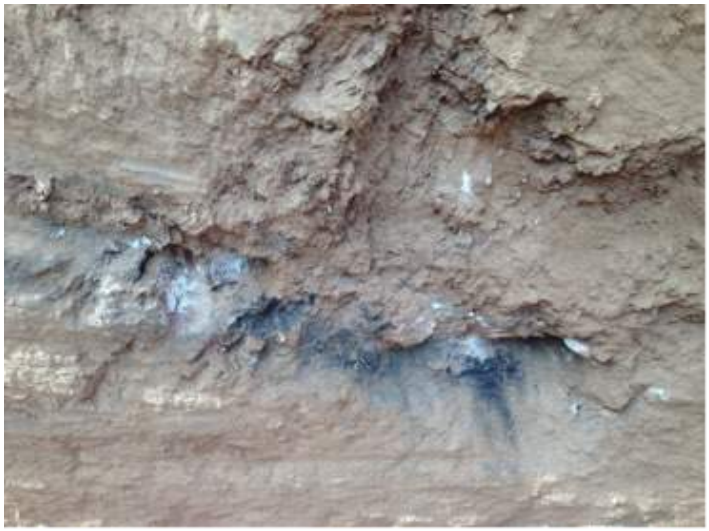
Local Police (where skeletal remains have been discovered).
Aboriginal Affairs and Reconciliation.
The local Aboriginal community.
An Archaeologist may also be consulted.

RESUME

The SA Water Project Manager will notify the contractor when works can resume.

This decision will be made in partnership between the PM and EHS team.
There may be conditions that need to be followed to allow work to resume.

Examples Pictures



15. Appendix 6 – Waste Transport Certificate Register

WASTE TRANSPORT CERTIFICATE REGISTER

ENERVEN™

Point of Generation	Date	Waste Type	WTC Number	Contractor
e.g. MAPS 1	*12/12/2017*	*Oil*	*5T00112411*	*McMahon Services*

1 Station Place,
Hindmarsh SA 5007

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