



Australian Government  
Department of Industry, Science,  
Energy and Resources

## National Radioactive Waste Management Facility

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## Site characterisation studies at Napandee completed

Napandee is located on the corner of Tola and Larwood Roads, Pinkawillinie. The total size of the nominated parcel of land is about 218 hectares. The facility will require 160 hectares of land – 40 for the facility footprint on an overall site of approximately 160ha.

The current phase of the site selection process involves a detailed technical assessment of each nominated site, which has now been completed, and in-depth community consultation to inform and gauge community sentiment, which included a community ballot.

**After completion of the technical assessments at Napandee, the Department of Industry, Science, Energy and Resources has been advised that with further assessment, any supporting infrastructure constraints and risks posed by environmental hazards such as seismic and flooding events, can be mitigated via design solutions.**

Information about the Napandee site and a summary of the key facts and findings of recent technical assessments are detailed in this factsheet.

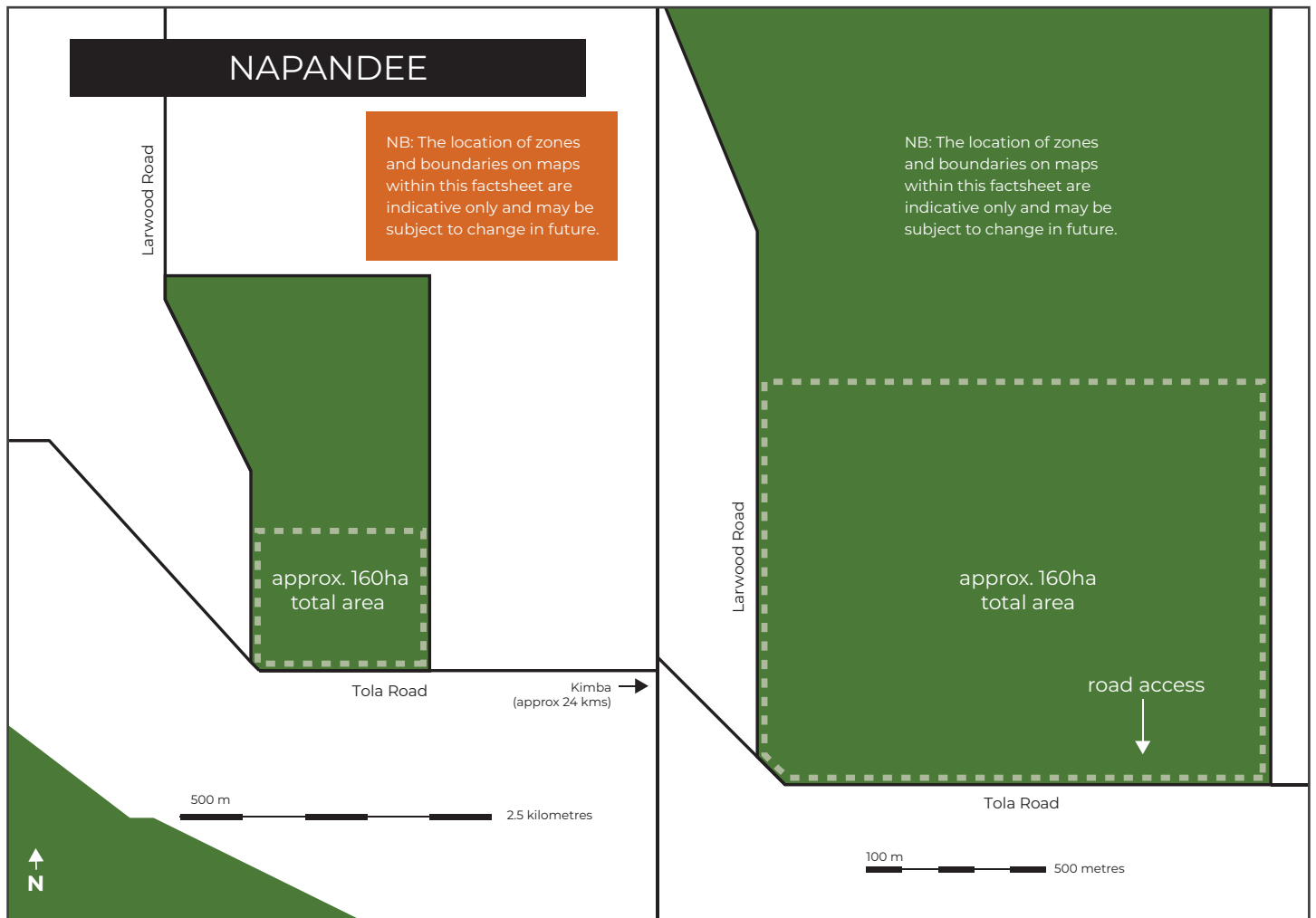
The full technical report for Napandee can be found at [www.radioactivewaste.gov.au](http://www.radioactivewaste.gov.au).

# Overview of Napandee

Located around 20 kilometres west of Kimba, the Napandee site is close to the local township that could provide an ongoing workforce, and which would benefit from the construction and operation of the facility.

The property comprises a number of cleared paddocks used for cereal cropping with some patches of native vegetation along road lines, paddock fences and sand ridges. There are no creek lines or lakes on the site or in the local area.

If the site was selected, the facility would sit within a 40 hectare area of the site, occupying a small portion of one of the existing cropping paddocks. The facility's footprint equates to less than 20 per cent of the size of the nominated Napandee site.



# Key facts and findings: Napandee



**No significant environmental hazards or enabling infrastructure constraints have been identified that would exclude a Facility being located at Napandee.**

## Climate



Napandee is characterised by hot summers and low annual rainfall, predominantly during the winter and spring months. A hotter and drier future climate is projected, with an increased intensity of infrequent / episodic heavy rainfall events.

Climate hazards can be addressed via the facility design. Climate change impacts have been considered in the assessment of bushfire and flood risks.

## Background radiation



Elevated background levels of radiation do not exist at the ground surface of the site and its surrounds. This would assist in effective future monitoring against the baseline conditions.

## Bushfire risk



The site is not impacted by bushfire hazards as large patches of native vegetation are distant from the site and small patches of vegetation on and around the site are unlikely to sustain a fully developed fire front.

Facility infrastructure can be protected if setback from native vegetation and protected by firefighting infrastructure.

## Underground (subsurface) water



The water table is more than 20 metres below the ground surface.

Groundwater in the water table and bedrock aquifers is highly saline, and therefore has no beneficial use.

## Local roads and access



The site can be accessed from the main highway by unsealed local roads that would require upgrades to accommodate vehicle movements needed for operation of the facility.

## Surface water (hydrology and flood risk)



There are no creeks on or in close proximity to the site.

There are indications of minor surface water flow paths, at the northern and southern ends of the site.

Design solutions can be developed to mitigate localised or catchment scale flood hazards at the site once a hydraulic modelling is undertaken. This is used to predict the behaviour and magnitude of floods that could occur, from a number of times in a persons lifetime to one or more times during a millennium.

## Flora and fauna



Only 7 per cent of the area contains native vegetation, in degraded condition along paddock fence lines, but in good condition along roadways.

Some State and Commonwealth threatened plant and animal species have the potential for occurrence in local area around the site. Further targeted surveys will be required to determine their presence or absence.

One conservation park, Pinkawillinie Conservation Park, is located approximately 2 kilometres south-west of the Napandee site. The site and the park are separated by drainage lines containing native vegetation.

## Land use



The site is well separated from development and sensitive land uses. The nearest dwelling is 1.8 kilometres to the east of the site.



## Soils and geology



The ground beneath the site is made up of sands, clays and weathered bedrock.

The ground conditions at the site do not present any unacceptable hazards or constraints to the facility infrastructure.

## Stability of the landscape



The site is located on a relatively flat area. The local landscape is made up of sand dunes and ridges. One of these intersects the edge of the site with a relatively shallow depth of dune sand material.

Standard measures including vegetation cover should be maintained along sand dunes on the site and surrounds, to minimise wind and water erosion.

## Seismic events



The on-ground seismic survey of the site confirmed, with a high-level of confidence, the absence of faults within the foundation. No special design or mitigation measures are considered necessary.

## Power



The site is approximately 65 kilometres from the closest appropriate transmission substation and 50 kilometres from any transmission line. Options for connections to transmission infrastructure would need to be assessed.

Other options would include renewable energy generation on site, as well as supporting energy storage technologies such as batteries (short-term) and diesel (long-term), which could provide both commercial and power reliability benefits to the facility.

## Water



There is existing SA Water infrastructure that could be connected to within proximity of the site. A main of sufficient capacity for the facility, which could be connected to without impact to the community, is located approximately 2.6 kilometres from the site.

## Waste recycling and disposal



There is a waste transfer and recycling station operated in Kimba by the Kimba District Council. Certain ordinary waste types may need to be transported to other facilities in the region for recycling, treatment or disposal.

## Communications (mobile telephone and internet)



National Broadband Network (NBN)'s fixed wireless service is scheduled to be provided to Kimba in the near future and therefore could be extended to the site.

Communications towers for data communications and mobile coverage are also being considered. The potential to extend benefits of such infrastructure to the community are being considered within a separate, more detailed assessment.

## Other services



Wastewater will need to be collected and treated on site. Stormwater runoff will need to be managed on site (eg. through use of swales and detention basins).

## Technical assessments

Engineering firm AECOM undertook the technical assessments of the sites, which involved:

- characterising the above-ground (surface) environment including surveying and documenting the flora, fauna and conservation values, and describing any hazards associated with the climate, bushfire, background radiation, flooding, and nearby human activities and land uses;
- characterising the below-ground (subsurface) environment, including consideration of hazards associated with the long-term stability of the landscape and landforms, the soil, bedrock and underground water, and seismic (earthquake) activity; and
- a preliminary assessment of constraints and options for enabling (supporting) infrastructure that would be required for the facility such as roads, power, water and telecommunications.

The works were undertaken to determine whether there were any significant issues or constraints that may preclude siting the facility at any of the nominated parcels of land.

More information on what was involved in fieldwork can be found in the factsheet, *Site characterisation studies* and in the technical report available at [www.radioactivewaste.gov.au](http://www.radioactivewaste.gov.au).



▲ Rock core sampling on site



▲ Seismic survey



▲ Napandee crops



## Cultural heritage assessment

The Australian Government is assessing the nature of any cultural heritage values at Napandee, to ensure that Aboriginal culture and values are protected, preserved and promoted.

While Native Title on Napandee has been extinguished, an assessment has been commissioned to look at cultural heritage.

Expert heritage consultants from RPS were engaged by the Department of Industry, Science, Energy and Resources to conduct an independent desktop assessment of Aboriginal cultural heritage within Napandee. The assessment confirms there are no registered heritage sites within or surrounding the Napandee study site although unregistered heritage sites may exist.

Heritage assessment will continue at Napandee with the department and its heritage consultants working with the Traditional Owners to determine if there is unregistered heritage that could be impacted by a facility should the project proceed.

A preliminary heritage assessment report has been prepared to inform future stages of heritage assessment.

More information on cultural heritage assessment is available in the *Heritage at Kimba factsheet*, available at [www.radioactivewaste.gov.au](http://www.radioactivewaste.gov.au).

## Next steps

Further technical assessments will be conducted, and detailed design of the facility and the enabling infrastructure will be undertaken, in consultation with the community. The process to obtain construction approvals will involve independent regulators including the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and the Department of Agriculture, Water and Environment.

Typical natural vegetation on Napandee site ►



This document is part of a series of factsheets providing information on the process to site the National Radioactive Waste Management Facility.

For more information

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