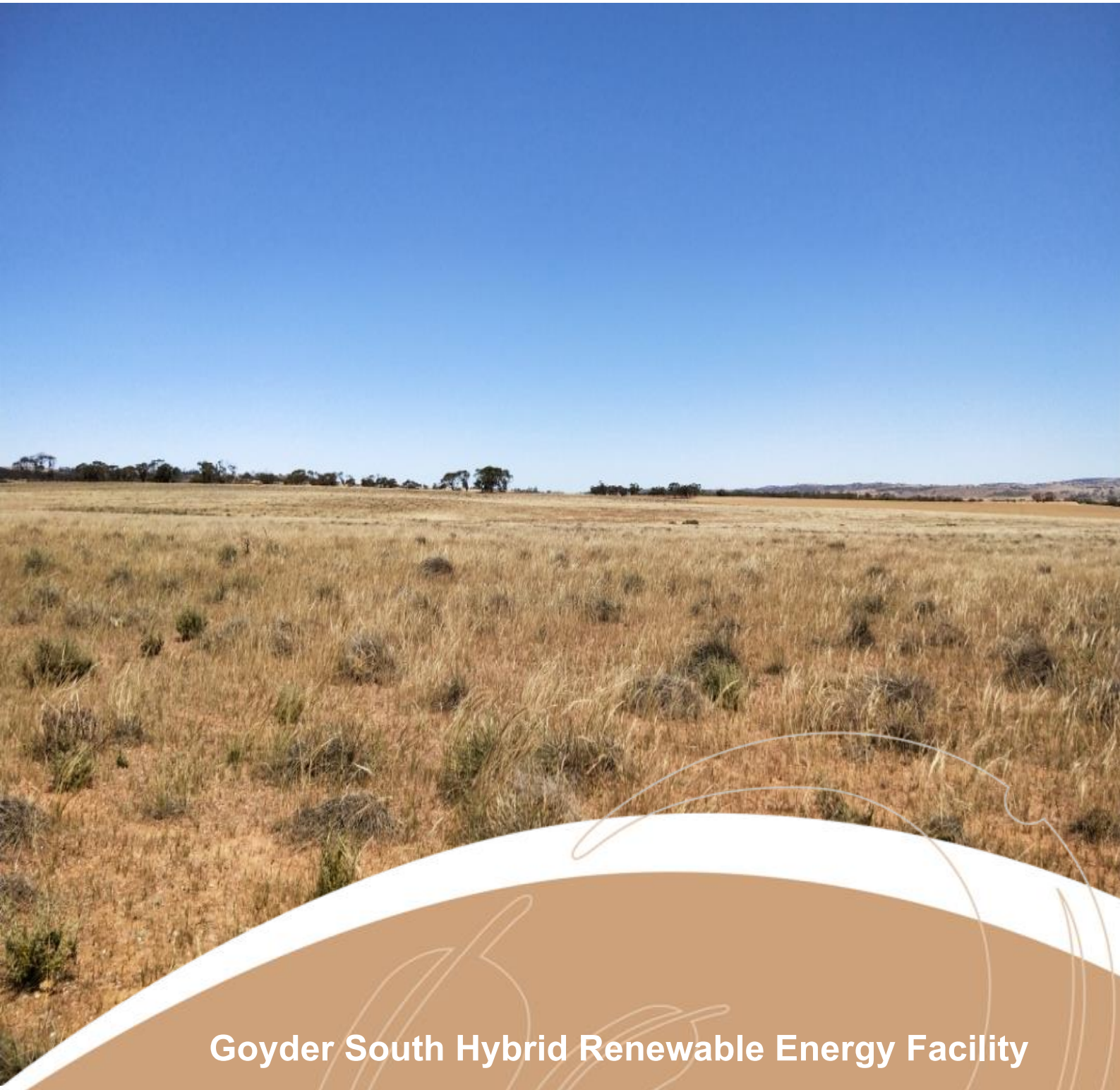

Goyder South Hybrid Renewable Energy Facility

INTG TEC Management Plan

Goyder South Hybrid Renewable Energy Facility INTG TEC Management Plan

28 June 2022

Version 3

Prepared by EBS Ecology for NEOEN Australia Pty Ltd

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Cover photograph: Iron-grass Natural Temperate Grassland witihn the Goyder South Project Area.

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DECLARATION OF ACCURACY

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulation 2000 (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this decision.

Signed: 

Full name: Louis de Sambucy
Position: Managing Director
Organisation: Neoen Australia Pty Ltd
EPBC Referral Number: 2021/8958; 20218959
Name of Action Management Plan this document and declaration refers to: Goyder South Hybrid Renewable Energy Facility INTG TEC Management Plan.
Date: 28 June 2022

GLOSSARY AND ABBREVIATION OF TERMS

AS	Australian Standard
CEMP	Construction Environmental Management Plan
Cth	Commonwealth
DAWE	Department for Agriculture, Water and the Environment
Declared weed	A plant that is regulated under the *Landscape South Australia Act 2019* due to its threat to primary industry, the natural environment and public safety.
DEW	Department for Environment and Water (South Australian Government)
DoE	Department of the Environment (Australian Government; now DAWE)
DotEE	Department of the Environment and Energy (Australian Government; now DAWE)
DSEWPC	Department of Sustainability, Environment, Water, Population and Communities (Australian Government; now DAWE)
EBS Ecology	Environment and Biodiversity Services Pty Ltd – trading as EBS Ecology
environmental offset	A measure that compensates for the residual adverse impacts of an action on the environment (DSEWPC 2012a).
EPA	Environment Protection Authority (South Australian)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESCP	Erosion and Sedimentation Control Plan
GLC	Green Light Corporation (the Construction Contractor)
Goyder South Project	Goyder South Hybrid Renewable Energy Facility
ha	hectare(s)
IECA	International Erosion Control Association
INTG TEC	Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community
Infrastructure footprint	The area in which all Project infrastructure (including, but not limited to, access tracks, WTGs, hardstands and electrical reticulation) is constructed and operated. • Note that the CEMP uses the term ‘Development Footprint’ for this. • Note that some areas within the infrastructure footprint which are impacted during construction will be rehabilitated post construction as outlined in the CEMP.

IUCN	International Union for Conservation of Nature
km	kilometre(s)
m	metre(s)
MNGWG	Mid North Grasslands Working Group
MSDS	Material Safety Data Sheet
MW	Megawatt
NEOEN	NEOEN Australia Pty Ltd
NPW Act	*National Parks and Wildlife Act 1972* (South Australian)
NVMU	Native Vegetation Management Unit
OMP	Offset Management Plan
PBTL	Pygmy Blue-tongue Lizard (*Tiliqua adelaidensis*)
Project	The Goyder South Project (incorporating Stage 1A, Stage 1B and the Overhead Transmission Line and Substation West)
Project Area	The area (or boundary) in which the Project will be located, as shown in mapping.
Project Owner	NEOEN Australia Pty Ltd
Proponent	NEOEN Australia Pty Ltd
residual impact	The remaining, unavoidable impacts (DSEWPC 2012a).
SA	South Australia / South Australian
SEB	Significant Environmental Benefit
Significant impact	As defined in Matters of National Environmental Significance: Significant impact guidelines 1.1 (DoE 2013).
sp.	species (singular)
spp.	species (plural)
SPRAT	Species Profile and Threats
WTG(s)	Wind Turbine Generator(s)

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1 INTRODUCTION

This *Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community Management Plan* (INTG TEC Management Plan) has been prepared for the for the Goyder South Hybrid Renewable Energy Facility (the Goyder South Project) to outline the likely direct and potential indirect impacts to INTG TEC during construction and operation, and the proposed management measures that will be implemented to avoid, minimise and/or mitigate them. It must be read and implemented in conjunction with the *Goyder South Wind Farm Construction Environmental Management Plan* (Succession Ecology, in prep), which is referred to as the CEMP, as well as the *Goyder South Hybrid Renewable Energy Facility INTG TEC Offset Proposal* (EBS Ecology 2021a).

1.1 Objectives

The objectives of this *INTG TEC Management Plan* are to:

- Provide profile information on the INTG TEC;
- Provide information on the location of INTG TEC within the Goyder South Project Area;
- Minimise impacts to INTG TEC during construction and operation phases of the Goyder South Project;
- Ensure that there is no exceedance of disturbance limits (13.75 ha of Class B INTG TEC); and
- Ensure that micro-siting does not result in additional disturbance to INTG TEC above the approved limits (13.75 ha of Class B INTG TEC).

1.2 Background

NEOEN is developing the Goyder South Project between Burra and Robertstown in the Mid North of South Australia (SA). The Project combines wind, solar and energy storage in one integrated project and will be capable of delivering a steady, reliable, dispatchable output of power throughout the day and night. The Goyder South Project will generate more than 4,800,000 MWh of power annually and is comprised of:

- A wind farm of up to 163 turbines with a capacity of up to 1200 Megawatts (MW), a maximum hub height of 121 metres (m), a maximum blade length of 78 m and an overall maximum height (tip height) of 199 m;
- A solar farm (across two sites) of up to 3000 hectares (ha) of solar panels with a capacity of up to 600 MW;
- An energy storage facility (lithium-ion battery) with a capacity of up to 900 MW / 1,800 MWh (2 hours);
- Associated infrastructure for connection to the electricity grid including three substations, access tracks, underground connection cabling and overhead transmission lines;
- Permanent operations and maintenance compounds;
- Temporary construction compounds for both wind and solar components, including concrete batching plants; and

- A number of meteorological masts (in addition to those already on the site) to record wind speed and other meteorological data, both pre- and post- construction.

As the Goyder South Project will total up to $3 billion in investment, NEOEN propose to implement the Project in stages, with each stage having its own legal entity, construction contracts and financing packages. An overview of each stage currently proposed for development is outlined in Table 1.

Table 1. Current proposed stages of the Goyder South Project.

Project stage	Legal entity
Stage 1A (38 WTGs and associated infrastructure)	Goyder Wind Farm 1A Pty Ltd
Stage 1B (37 WTGs and associated infrastructure)	Goyder Wind Farm 1B Pty Ltd
Overhead Transmission Line and Substation West	Goyder Wind Farm Common Asset Pty Ltd
Battery	NEOEN Australia Pty Ltd

Other components of the Goyder South Project, including the remaining wind farm areas, the two solar farms, overhead transmission lines and substations are considered to be potential future stages as they are not currently commercially viable and there is currently no immediate prospect of these components/stages proceeding to construction.

1.2.1 EPBC Referral and Controlled Action Determination

NEOEN is seeking approval in accordance with the EPBC Act for each currently proposed stage of the Goyder South Project and has submitted separate EPBC Referrals to the Department of Agriculture, Water and the Environment (DAWE), as outlined in Table 2.

Table 2. EPBC Referrals for the Goyder South Project.

Project Stage / Proposed Action	Legal Entity	Referral Reference	Referral Decision	Assessment Process
Stage 1A (38 WTGs and associated infrastructure)	Goyder Wind Farm 1A Pty Ltd	2021/8958	Controlled Action	Preliminary Documentation
Stage 1B (37 WTGs and associated infrastructure)	Goyder Wind Farm 1B Pty Ltd	2021/8957	Controlled Action	Preliminary Documentation
Overhead Transmission Line and Substation West	Goyder Wind Farm Common Asset Pty Ltd	2021/8959	Controlled Action	Preliminary Documentation
Battery	NEOEN Australia Pty Ltd	2021/8960	Not a Controlled Action	N/A

As outlined in Table 2, Stage 1A, Stage 1B and the Overhead Transmission Line and Substation West have been determined by DAWE to be Controlled Actions to be assessed via Preliminary Documentation. DAWE has advised of the additional information required for assessment on preliminary documentation

for each Controlled Action. As such, the following documentation has been prepared to provide the additional information requested by DAWE:

- Goyder South Hybrid Renewable Energy Facility: Stage 1A Preliminary Documentation (EPBC 2021/8958) (EBS Ecology 2021b);
- Goyder South Hybrid Renewable Energy Facility: Stage 1B Preliminary Documentation (EPBC 2021/8957) (EBS Ecology 2021c); and
- Goyder South Hybrid Renewable Energy Facility: Overhead Transmission Line and Substation West Preliminary Documentation (EPBC 2021/8959) (EBS Ecology 2021d).

2 COMPLIANCE

This *INTG TEC Management Plan* has been prepared by EBS Ecology in accordance with the following relevant pieces of legislation, policies and guidelines:

- **Commonwealth**
    - *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
    - National Recovery Plan for the Iron-grass Natural Temperate Grassland of South Australia ecological community (Turner 2012; the INTG TEC Recovery Plan).
    - Approved Conservation Advice for Iron Grass Natural Temperate Grassland of South Australia (DEWHA 2008).
    - EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron Grass Natural Temperate Grassland of South Australia (DEWR 2007).
    - Environmental Management Plan Guidelines, Commonwealth of Australia (DotE 2014)
- **State**
    - *Planning, Development and Infrastructure Act 2016* (PDI Act)
    - Development Approval granted for application ID: 5332; Application number: 422/V009/20 on 3 March 2021.
    - *Native Vegetation Act 1991* and associated *Native Vegetation Regulations 2017*.
    - Native Vegetation Clearance Approval – The Native Vegetation Council:
        - grants consent to the clearance of 132.99 ha of native vegetation associated with Stage 1A (Decision Notification for Application Number:2021/3219/422 in accordance with Native Vegetation Regulation 12, Schedule 1; Clause 34 of the *Native Vegetation Regulations 2017* and Section 25A of the *Native Vegetation Act 1991*).
        - grants consent to the clearance of 116.60 ha of native vegetation associated with the OTL (Decision Notification for Application Number: 2021/3231/422 in accordance with Native Vegetation Regulation 12, Schedule 1; Clause 34 of the *Native Vegetation Regulations 2017* and Section 25A of the *Native Vegetation Act 1991*).
    - *National Parks and Wildlife Act 1972* (NPW Act)
    - *Animal Welfare Act 1985*
- **Local**
    - There are no relevant local policies, legislation, guidelines and approval conditions as of November 2021.

Furthermore, the Goyder South Project is currently undergoing assessment in accordance with the EPBC Act and if EPBC approval is obtained, it is likely to be associated with specific conditions, some of which are likely to be related to INTG TEC. As such, this document will require updating to address EPBC Act approval conditions related to INTG TEC. The following table is proposed to contain the EPBC approval conditions.

Table 3. Conditions of EPBC approval reference table.

EPBC approval condition	Comment / Reference

3 INTG TEC PROFILE

3.1 Conservation status

The INTG TEC (Figure 1) is listed as Critically Endangered under the EPBC Act and Endangered under the South Australian *National Parks and Wildlife Act 1972* (NPW Act). These classifications are consistent with the International Union for Conservation of Nature (IUCN) (2001) criteria for listing species on the IUCN Red List System.

Figure 1. Class B Lomandra Grassland in the Northern and Yorke Landscape Management Region (photo by EBS Ecology).

3.2 Ecology and biology

3.2.1 Description

INTG TEC (Figure 1) is a natural grassland dominated by Iron-grass (*Lomandra effusa* or *Lomandra multiflora* ssp. *dura*) and tussock forming perennial grasses. A range of herbaceous species also occur in the ground layer, with trees and tall shrubs generally absent or sparse (<10% cover) (DEWR 2007). Cool season C3 grasses (Spear grass or wallaby grasses) are actively growing in spring, whilst C4 grasses are summer active (Kangaroo grass, Windmill grass, Queensland blue grass, Panic and Brush-wire Grass). Diverse grasslands may include winter and summer growing plant species, grasses and broadleaf plants. Both annual and perennial plants are important components of the community (MNGWG 2019).

3.2.2 Habitat

Remaining remnants of Lomandra grassland generally occur on gentle slopes of low hills approximately 380 m above sea level and predominantly on loams to clay-loams with an estimated clay content of 30–35 % (DEWR 2007). Pygmy Blue-tongue Lizards (PBTLs) are known to occupy native grassland habitats, including, sometimes, highly degraded grasslands (dominated by exotic species), provided that the area is unploughed and the soil structure remains intact (DEWR 2007).

3.2.3 Distribution in South Australia

The Iron-grass Natural Temperate Grassland of South Australia threatened ecological community occurs only in South Australia and tussock Grasslands dominated by *Lomandra effusa* and/or *Lomandra multiflora* subsp. *dura* occur predominantly in the Northern and Yorke Landscape Management Region, with smaller occurrences in the Murraylands and Riverland Landscape Management Region. Lomandra Grassland is most widespread in the Flinders-Lofty Block Bioregion (Neagle 2008 in Turner 2012), with smaller occurrences in the Kanmantoo, Eyre-Yorke Block and Murray Darling Depression Bioregions (Department for Environment and Heritage 2005 in Turner 2012).

The area of Iron-grass Natural Temperate Grassland at the time of European settlement has been estimated at between 750,000 to 1,000,000 hectares (ha) (Specht 1972; Hyde 1995 in Turner 2012). At the time of listing under the EPBC Act in 2007, the remaining area of Iron-grass Natural Temperate Grassland of any condition, including highly degraded remnants, was thought to be less than 50,000 ha (Department for Transport, Urban Planning and the Arts 2000 in Turner 2012), whilst the area meeting the criteria for the listed threatened ecological community is likely to be substantially less and may be less than 5,000 ha (Hyde 1995; TSSC 2007 in Turner 2012).

3.2.4 Condition Class

The Iron-grass listing criteria (DEWR 2007) facilitates classification of Iron-grass Natural Temperate Grassland into condition classes based on native plant species diversity, composition and native perennial tussock density. Three Condition Class categories have been defined, representing high quality remnants (Class A), moderate quality remnants (Class B) and degraded remnants with potential for restoration (Class C). An overview of the listing criteria for each Class is provided in Table 4.

Table 4. Condition classes for INTG TEC (DEWR 2007).

Condition Class	Minimum size	Diversity of native plant species[1]	No. of broad-leaved herbaceous species[1] in addition to identified disturbance resistant species[2]	No. of native perennial grass species[1]	Tussock count[3]
Listed ecological community (protected by the EPBC Act)					
A	≥ 0.1	> 30	≥ 10	≥ 5	≥ 1/m
B	≥ 0.25	> 15	≥ 3	≥ 4	≥ 1/m
Degraded patches amenable to rehabilitation (not protected by the EPBC Act)					
C		> 5	No minimum	≥ 1	No minimum

1: As measured in a 50 m x 50 m quadrat (or equivalent).
2: The following species are identified as disturbance resistant species: Ptilotus spathulatus forma spathulatus; Sida corrugata; Oxalis perennans; Convolvulus augustissimus; Euphorbia drummondii; and Maireana enchylaenoides.
3: As measured along a 50m transect.

Class A and Class B are listed and protected under the EPBC Act, while Class C is not listed or protected under the EPBC Act, but considered 'amenable to rehabilitation'.

3.3 Known and/or potential threats

The INTG TEC Recovery Plan (Turner 2012) documents known and potential threats to INTG TEC, along with known and/or potential impacts, which are summarised in Table 5. Note that not all threats documented in the INTG TEC Recovery Plan are necessarily relevant to the Goyder South Project.

Table 5. Known and potential threats to INTG and associated impacts (adapted from Turner 2012).

Known and/or potential threat	Known and/or potential impact
Lack of awareness	Lack of specific knowledge about the Iron-grass Natural Temperate Grassland ecological community, its appearance, significance and ecological values.
	Lack of awareness/knowledge of appropriate Iron-grass Natural Temperate Grassland management.
	View of native grasslands as low productivity, low value agricultural land requiring 'improvement'.
Changes in land use (including altered grazing regimes).	Incompatible grazing levels and disturbance by stock.
	Change of livestock species/breeds and stocking rates resulting in inappropriate grazing levels and disturbance.
	Complete removal of grazing may lead to increased weed growth and/or a reduction in inter-tussock spaces, which may impact foraging and basking opportunities.
	Intensification of activities (cropping in new areas, pasture improvement, handfeeding or establishment of feed-lots, new water supply/dams for irrigation).
	New industries displacing the ecological community (horticulture, agroforestry, apiary, carbon sequestration programs, revegetation).
	Inappropriate chemical application (herbicides, fertilizers, soil ameliorants).
Weed invasion	Competition for resources (space, nutrient, water).
	Increased dominance of existing weeds species.
	Introduction of new weed species.
	Incompatible weed control techniques (cultivation, chemical, off-target damage).
	Inappropriate choice of species composition and density for revegetation.
Exotic animals and overabundant native species	Overgrazing of grassland flora by exotic and native herbivores.
	Predation of grassland fauna by exotic carnivores (foxes, cats).
	Spread of exotic weeds by animal vectors (foxes, starling).
	Soil disturbance and poisoning of native fauna from inappropriate exotic animal control (rabbit warren destruction, spraying of locust/grassland plague).
New infrastructure and developments	Infrastructure for energy and water supplies (buildings, wind generator networks, transmission line poles, underground power cables, pipelines, dams, bores).
	New roads or upgrading of existing roads (widening, re-surfacing).
	Infrastructure development in non-arable areas (sheds, roads, storage facilities).

Known and/or potential threat	Known and/or potential impact
Inappropriate fire regimes	Inappropriate or altered fire regimes.
	Lack of investigation/knowledge about grassland species response to fire.
	Inappropriate biomass management for fire prevention (slashing too frequently or too low to maintain and protect biodiversity assets).
	Damage to vegetation and soils from fire suppression activities (grading of fire breaks, vehicle access through remnants, application of chemical foam).
Ongoing ecological stresses due to past clearance, fragmentation and management changes	Incremental clearance and decline in condition of remnants.
	Isolation of remnant populations (barriers to dispersal, inbreeding, edge effects).
	Increased competition in remnant population (resources, mortality, loss of pollinators, loss of host plants or animals, disruption of critical life stages, vulnerability to stochastic events).
	Competition with new and existing weeds (see Appendix 8).
	Over-harvesting of native seeds from grassland remnants due to increased demands.
Climate change	Potential reduction in biomass production.
	Possible escalation of species stresses associated with a drying climate (increased competition for water and other resources, increased mortality, disruption to critical life stages, loss of pollinators, loss of host plants or animals).
	Social impacts on agricultural enterprises in lower rainfall areas (reduced management effort in INTG remnants to cut costs).
	Increased grazing intensity from failure to adapt 'best practice' grazing management strategy.

All INTG TEC patches are considered to be potentially at risk from all of the threats summarised in Table 5 (Turner 2012).

3.4 Occurrence within the Project Area

Fifteen patches of Lomandra grassland, which have the potential to be the INTG TEC, were identified within the Goyder South Project Area during the autumn and spring 2019 surveys as part of the *Goyder South Hybrid Renewable Energy Facility Flora and Fauna Assessment* (*EBS Ecology 2020*) and were recorded and mapped as Vegetation Association 2. Seven of these patches of Lomandra grassland were previously assessed against the criteria outlined in the *EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities, Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron-grass Natural Temperate Grassland of South Australia* (DEWR 2007), during a field survey in October 2012 for Stony Gap, with one of the patches qualifying as Class B.

However, during the autumn and spring 2019 surveys for Goyder South, all 15 patches were observed to be in poor to very poor condition, with low native species diversity and low to moderate tussock density, most likely due to drought conditions and grazing pressure. As such, assessment against the criteria was not warranted as it was highly unlikely that any patches would have qualified as Class C. However, given the poor conditions during the autumn and spring 2019 surveys, it was recommended that the patches be re-assessed in more favourable conditions to determine their condition class, as during a good year, it is

expected that enough native species and grasses would be present to qualify as Class B (and therefore constitute a TEC).

As such, additional survey of the 15 patches of Lomandra grassland was undertaken in December 2020, to determine if any constitute a TEC. During this survey an additional eight patches of Lomandra grassland were identified in areas that had not been surveyed in the autumn and spring 2019 surveys, as access to the land was not available at the time of those surveys. These eight patches were also assessed to determine if any of them constitute a TEC. Out of the 23 patches of Lomandra grassland, which have the potential to be the INTG TEC, 12 patches qualify as Class B INTG TEC, while 11 patches are meet the requirements of Class C INTG. Refer to the *Goyder South Hybrid Renewable Energy Facility Flora and Fauna Assessment Addendum* (EBS Ecology 2021e) for more information.

Four patches of Class B INTG TEC and one patch of Class C INTG, occur within the Stage 1A Project Area, while one patch of Class B INTG TEC and one patch of Class C INTG occur within the Overhead Transmission Line (OTL) and Substation West Project Area as summarised in Table 6.

No INTG TEC occurs within the Stage 1B Project Area. Refer to Figure 2 for the location of all INTG TEC patches within the broader Goyder South Project Area, Figure 3 for the location of INTG within Stage 1A and Figure 4 for the location of INTG within the OTL Project Area.

Table 6. Summary of INTG TEC located within Stage 1A and the OTL and Substation West Project Areas.

INTG TEC Class	Stage 1A (2021/8958)		OTL & Substation West 2021/8959	
	Area (ha)	# of patches	Area (ha)	# of patches
Class B	355.88	4	19.2	1
Class C	9.72	1	28.4	1

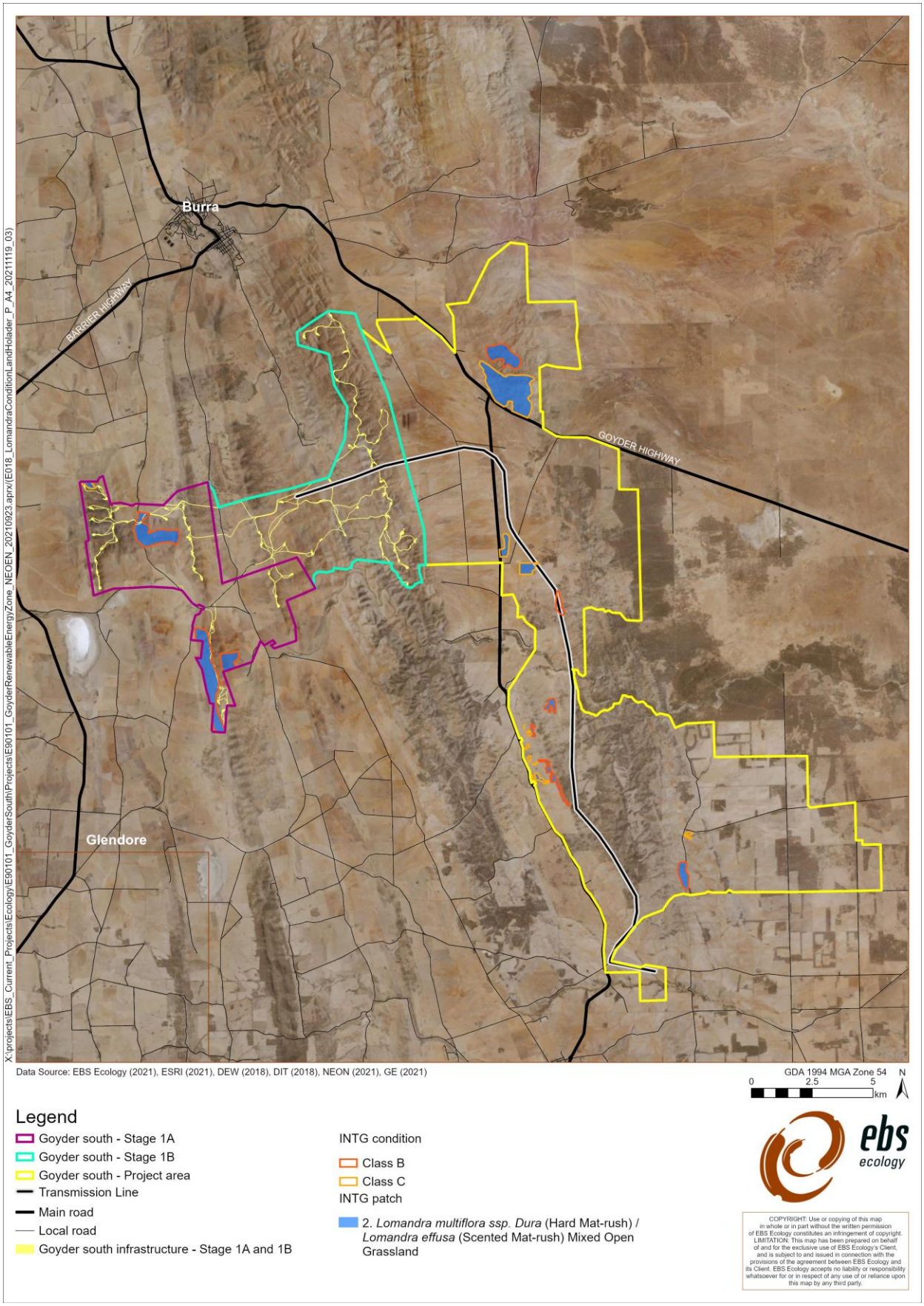

Figure 2. Location of INTG TEC within the Goyder South Project Area.

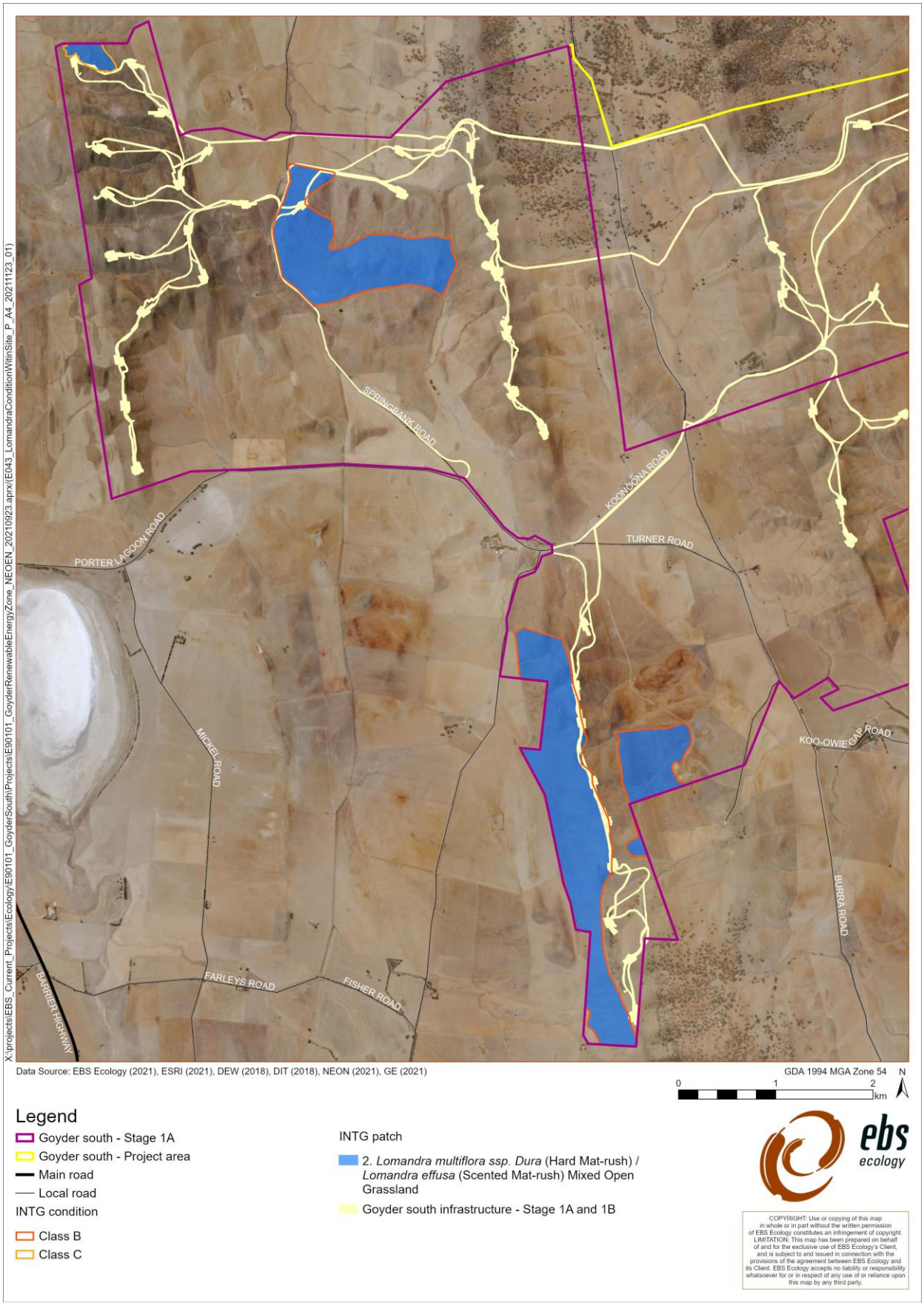

Figure 3. INTG TEC within Stage 1A.

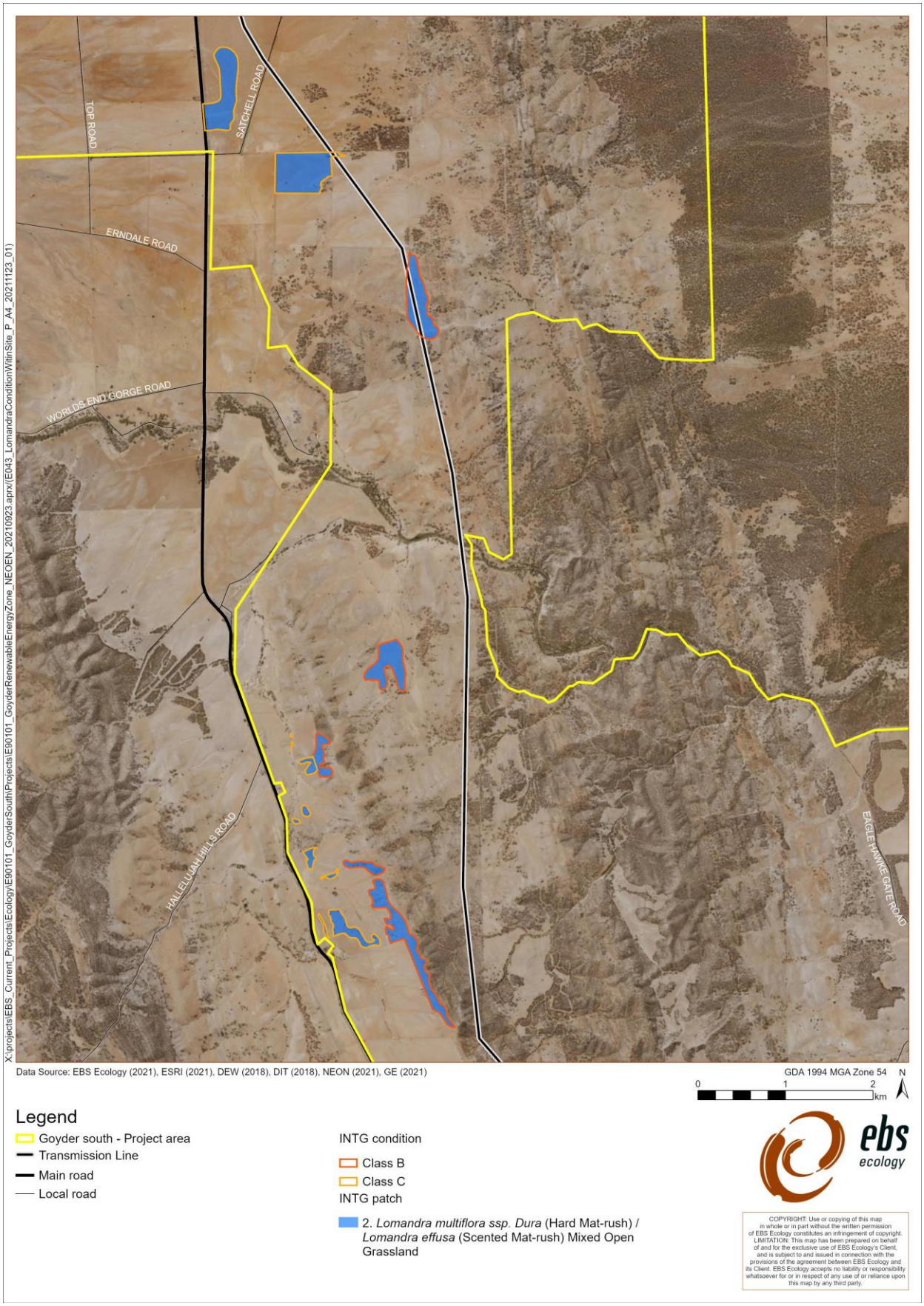

Figure 4. INTG TEC within and/or adjacent to the OTL.

4 IMPACTS TO INTG TEC

Assessment of Project design information (infrastructure footprint) has determined that Stage 1A and the OTL and Substation West Project Areas have the potential to directly impact approximately 13.75 ha of Class B INTG and 0.12 ha of Class C INTG, as summarised in Table 7 and shown in Figure 3 and Figure 4.

Table 7. Summary of likely impact to INTG TEC.

	Stage 1A (2021/8958)		OTL & Substation West 2021/8959		Total	
	Area impacted (ha)	# of patches	Area impacted (ha)	# of patches	Area (ha)	# of patches
Class B	12.67	4	1.08	1	13.75	5
Class C	0.09	1	0.03	1	0.12	2

Likely direct impacts and potential indirect impacts to INTG TEC associated with development (i.e. construction) and/or operation of the Goyder South Project, are presented in Table 8.

Table 8. Likely direct impacts and potential indirect impacts to INTG TEC during construction and operation of the Goyder South Project.

During construction	During operation	Comment
Likely direct impacts		
Direct loss of up to 13.75 ha of Class B and 0.12 ha of Class C INTG TEC through vegetation clearance for construction purposes.		Unavoidable.
Potential indirect impacts		
Clearance of INTG TEC outside the approved clearance area.	Clearance of INTG TEC outside the approved clearance area (i.e. via maintenance of existing infrastructure).	Avoidable through specific controls and management measures.
Loss of topsoil and subsequent erosion.		Avoidable through specific controls and management measures.
Sedimentation of INTG TEC from construction run-off (soil).		Avoidable through specific controls and management measures.
Altered hydrology (due to altering of drainage lines through excessive runoff).		Avoidable through specific controls and management measures.
Dust emissions smothering flora and supressing photosynthesis.		Short term impact during construction only, which can be minimised through specific controls and management measures.
Altered grazing regimes (increased grazing, preferential grazing, reduction or loss of grazing, altered grazing times).	Altered grazing regimes (increased grazing, preferential grazing (e.g. under turbine shade), reduction or loss of grazing, altered grazing times).	Difficult to predict likelihood and/or level of occurrence and likely consequence. During construction, any potential impact is expected to be short-term in nature and temporary. Furthermore, NEOEN will not have any direct control over grazing regimes as it is controlled by land holders / land managers. However, potential impacts will be identified during monitoring and corrective action undertaken if required.
Introduction of new weeds to the Project Area, or increase in weeds, through use of contaminated construction material, machinery and vehicles, leading to loss of vegetation condition.	Introduction of new weeds to the Project Area, or increase in weeds, through foot-traffic, light vehicles and other machinery that may be required during the operational phase (limited/minimal) leading to loss of vegetation condition.	Avoidable through specific controls and management measures.

During construction	During operation	Comment
Stockpiling of equipment and materials and introduction of rubbish and waste materials causing degradation to the integrity of the grassland.		Avoidable through specific controls and management measures.
Chemical spills (e.g. fuel/diesel) leading to loss of vegetation condition	Chemical spills (e.g. fuel/diesel) leading to loss of vegetation condition.	Avoidable through specific controls and management measures.
Vehicles and/or machinery driving on INTG TEC outside of approved clearance areas and tracks.	Vehicles and/or machinery driving on INTG TEC outside of approved clearance areas and tracks.	Avoidable through specific controls and management measures.

4.1 Mitigation measures to avoid and/or minimise potential direct and indirect impacts to INTG TEC associated with the Project

Project infrastructure has specifically been designed and/or located to avoid direct impact to INTG TEC as much as possible. In addition, the location of infrastructure, including, but not limited to, vehicle access tracks, WTGs and underground electrical reticulation (installed via trenching), will be micro-sited away from INTG TEC, wherever possible, during pre-construction surveys to avoid and/or minimise direct impacts to INTG TEC as much as possible.

Furthermore, while the Project has the potential to cause indirect impacts to INTG TEC, such as, but not limited to, erosion, sedimentation, dust and weeds, these indirect impacts will be avoided and/or minimised during construction and operation of the Project via implementation of specific controls contained within this *INTG TEC Management Plan* (Section 10 and 11). As such, the potential indirect impacts associated with erosion, sedimentation, dust and weeds are not expected to cause a significant impact on INTG TEC.

4.2 Estimated residual impact to INTG TEC within the Project Area

While Project infrastructure has specifically been designed and/or located to avoid impact to INTG TEC as much as possible, assessment of Project design information, specifically the infrastructure footprint, has determined that the Project will directly impact (clear) up to 13.75 ha of Class B INTG TEC (as summarised previously in Table 7), based on the infrastructure footprint (Figure 2; Figure 3; Figure 4). As this impact is considered a residual impact, an EPBC Offset is required.

Refer to the *Goyder South Hybrid Renewable Energy Facility INTG TEC Offset Proposal* (EBS Ecology 2021a) for more detail.

5 RISK ASSESSMENT OF POTENTIAL IMPACTS

A risk assessment of potential impacts during construction as well as operation is provided in Table 9 and Table 10, respectively. Each potential impact has been given a rating in terms of likelihood and consequence, which are then combined to generate a risk rating. The likelihood and consequence ratings have been assessed prior to consideration of any control measures.

Implementation of specific construction management measures and operation management measures outlined in Section 10 and Section 11 (respectively) is expected to avoid and/or minimise the potential impacts to INTG TEC from occurring, and as such, reduce the risk rating. Therefore, a residual risk rating is also provided and is the risk after implementation of control measures.

Refer to Appendix 1 for the likelihood and consequence criteria and risk rating matrix.

Table 9. Risk assessment of potential impacts during construction.

Potential impact	Likelihood	Consequence	Risk Rating	Residual risk rating (after controls implemented)
Clearance of INTG TEC outside the approved clearance area	Possible	Moderate	Medium	Low
Loss of topsoil and subsequent erosion	Possible	Moderate	Medium	Low
Sedimentation of INTG TEC from construction run-off (soil)	Likely	Minor	Low	Low
Altered hydrology (due to altering of drainage lines through excessive runoff)	Possible	Moderate	Medium	Low
Dust emissions smothering flora and supressing photosynthesis	Likely	Moderate	Medium	Low
Altered grazing regimes (increased grazing, preferential grazing, reduction or loss of grazing, altered grazing times)	Possible	Minor	Low	Low
Introduction of new weeds to the Project Area, or increase in weeds, through use of contaminated construction material, machinery and vehicles, leading to loss of vegetation condition	Likely	Moderate	Medium	Low
Stockpiling of equipment and materials and introduction of rubbish and waste materials causing degradation to the integrity of the grassland	Likely	Moderate	Medium	Low
Chemical spills (e.g. fuel/diesel) leading to loss of vegetation condition	Possible	Minor	Low	Low
Vehicles and/or machinery driving on INTG TEC outside of approved clearance areas and tracks	Likely	Moderate	Medium	Low

Table 10. Risk assessment of potential impacts during operation.

Potential impact	Likelihood	Consequence	Risk Rating	Residual risk rating (after controls implemented)
Clearance of INTG TEC outside the approved clearance area (including for future installation of infrastructure or maintenance of existing infrastructure)	Possible	Moderate	Medium	Low
Altered grazing regimes (increased grazing, preferential grazing (e.g. under turbine shade), reduction or loss of grazing, altered grazing times)	Possible	Minor	Low	Low
Introduction of new weeds to the Project Area, or increase in weeds, through foot-traffic, light vehicles and other machinery that may be required during the operational phase	Possible	Moderate	Medium	Low
Chemical spills (e.g. fuel/diesel) leading to loss of vegetation condition	Rare	Minor	Low	Low
Vehicles and/or machinery driving on INTG TEC outside of approved clearance areas and tracks	Possible	Moderate	Medium	Low

6 MANAGEMENT TARGETS, PERFORMANCE INDICATORS AND TRIGGERS

Table 11. Management targets, performance indicators and triggers.

Targets	Performance Indicators	Triggers
All infrastructure is micro-sited to avoid or minimise impact to INTG TEC (where practicable).	All infrastructure is micro-sited where practicable.	Any impact to retained INTG TEC outside of the approved clearance area and/or the Infrastructure footprint.
Construction and operation do not result in clearance of more than 13.75 ha of Class B INTG TEC.	No more than 13.75 ha of Class B INTG TEC cleared.	Clearance of Class B INTG TEC outside of the approved Infrastructure footprint.
No erosion or sedimentation within retained INTG TEC.	No erosion or sedimentation observed within retained INTG TEC.	Any visible erosion or sediment within retained INTG TEC.
No excessive dust deposition within retained INTG TEC.	No excessive dust deposition observed within retained INTG TEC.	Excessive dust deposition within retained INTG TEC.
Construction and operation do not result in a significant alteration to grazing regime.	No significant alteration to grazing regime due to construction or operation.	Significant alteration to grazing regime (e.g. increased grazing, preferential grazing etc).
No introduction of new weed species or increase in weeds within retained INTG TEC.	No introduction of new weed species or increase in weeds observed within retained INTG TEC.	New weed species or an increase in weeds observed within retained INTG TEC.
No rubbish, waste materials or stockpiles within retained INTG TEC.	No rubbish, waste materials or stockpiles observed within retained INTG TEC.	Rubbish, waste materials or stockpiles observed within retained INTG TEC.
No hazardous chemicals or dangerous goods within retained INTG TEC.	No hazardous chemicals or dangerous goods observed within retained INTG TEC.	Hazardous chemicals or dangerous goods observed within retained INTG TEC.
No vehicle, machinery or equipment impacts within retained INTG TEC.	No vehicle, machinery or equipment impacts observed within retained INTG TEC.	Vehicle, machinery or equipment impacts observed within retained INTG TEC.

7 RESPONSE MEASURES AND CORRECTIVE ACTIONS

If a trigger value occurs (Table 11), it will be reported as an environmental incident and an environmental incident investigation will be undertaken to determine the extent and cause and prevent it from occurring again.

Direct impact

If clearance outside of the approved clearance footprint occurs appropriate mitigation strategies must be implemented immediately. Note the following conditions of approval for native vegetation clearance:

> *1. The applicant must ensure that only native vegetation approved for removal in accordance with this decision is removed. Prior to clearance commencing, the applicant must advise all persons undertaking the vegetation removal or working on site, of all relevant conditions of approval and associated statutory requirements.*
>
> *2. If there is any change to the clearance requirement for the development, NEOEN is to confirm the final clearance area and SEB offset requirement on finalising the detailed design of the Project prior to undertaking clearance that varies from this decision.*

As such NEOEN must be notified of any clearance outside of the approved clearance footprint so that the Native Vegetation Management Unit (NVMU) within DEW can be notified.

Indirect Impact

If an indirect impact trigger occurs (e.g. erosion and/or sedimentation, excessive dust, new weed species or increase in weeds, and others outlined in Table 8 and Table 11), it must be investigated to determine the extent and cause and appropriate mitigation measures implemented to prevent it from occurring again. Remediation and/or rehabilitation should also be undertaken, provided that it does not cause any further adverse impact (such as undesirable soil disturbance).

8 PERMITS, LICENCES AND APPROVALS

The following permits, licences and approvals are required during construction and operation phases of the Goyder South Project):

Construction

Clearance approval: Approval to clear native vegetation was granted in accordance with Regulation 12, Schedule 1; Clause 34 of the *Native Vegetation Regulations 2017* and Section 25A of the *Native Vegetation Act 1991* (Ref. 2021/3219/422 and 2021/3231/422).

There are specific conditions associated with the approval which should also be understood (refer to the approvals for details).

Operation

Clearance approval: Maintenance of the existing clearance footprint can be continued in accordance with Regulation 8(2) – *Maintenance of infrastructure*. Refer to the *Native Vegetation Regulations 2017* for specific requirements.

Further clearance such as additional infrastructure, additional tracks or other new clearance will require assessment under a new clearance pathway under the *Native Vegetation Regulations 2017* and *Native Vegetation Act 1991* and may require clearance notification and/or additional approval.

9 IMPLEMENTATION OF INTG TEC MANAGEMENT PLAN

This INTG TEC Management Plan is proposed to be implemented as a sub-plan of the CEMP prepared by Succession Ecology for Green Light Corporation (GLC, the construction contractor). The CEMP will be implemented during the construction phase of Stage 1A, Stage 1B and the OTL & Substation West components of the Goyder South Project to reduce any associated adverse environmental impacts and satisfy regulatory requirements.

Refer to the CEMP for information on the following aspects:

- Work stages (schedule of works)
- Environmental Management System
- Project commitments and regulatory requirements
- Roles and responsibilities
- Implementation
    - Induction
    - Meeting and communication
    - Monitoring, inspections and auditing
    - Reporting
    - Review
    - Permit System (also outlined below)
    - Incident reporting and non-compliance
    - Complaints procedure
    - Management of Sub-contractors
    - Records distribution and control
- Management and mitigation measures
- Management sub-plans

9.1 Permit System

The CEMP includes implementation of a Permit System as follows (Succession Ecology, *in prep*):

> *Site inspections will be used to control work activities on site. In order to proceed with work in an undisturbed area an inspection will be required, and this will need to be signed off by the Project, Construction or Environmental Manger for works to proceed. Following the same process an inspection can bring about a stop work when signed off by the Project, Construction or Environment Manager.*

This Permit System will be used in conjunction with the pre-construction micro-siting survey procedure presented in Section 10.1 to ensure that work (such as, but not limited to, clearing and grubbing, and excavation) in an undisturbed area of INTG TEC (Class B and Class C) will not commence until micro-siting to avoid and/or minimise impacts to INTG TEC, has been completed and approval provided for works to commence.

10 CONSTRUCTION MANAGEMENT MEASURES

Management measures to be implemented during construction are outlined in the tables on the following pages within this section.

10.1 General construction management measures

Table 12. General management measures.

Construction Management Measures	Location	Timing	Frequency	Responsibility
Pre-construction micro-siting survey Prior to commencing construction work (such as, but not limited to, clearing and grubbing, and excavation) within Class B and Class C INTG TEC, the head construction contractor will work with specialist advisors (i.e. ecologists) to undertake a micro-siting process to micro-site (shift) infrastructure to avoid and/or minimise impacts to Class B and Class C INTG TEC, where possible. No construction works will commence until approval has been provided in accordance with the Permit System outlined in Section 9.1 and the CEMP.	Within Class B and Class C INTG TEC within the Infrastructure footprint.	Pre construction	Once	Site Supervisor / HSE Manager
All staff and contractors will complete a detailed, site specific induction which provides an overview of INTG TEC and potential impacts to INTG TEC as well as management measures associated with protection of INTG TEC.	Site office (or anywhere else suitable).	Prior to commencing any work on site.	Once.	Site Supervisor / HSE Manager
Display a fact sheet on INTG TEC (include images of INTG TEC and mapping showing the location of Class B and Class C INTG TEC within the Project Area).	On site notice boards and in lunch rooms.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Provide clear maps indicating clearance footprints, tracks, approved turn around areas, car parks, equipment laydown areas and materials storage areas.	Provide to those involved in earthworks.	Prior to commencing any work on site.	Once (ongoing).	Site Supervisor / HSE Manager
Hold tool box meetings to assist in identification and highlight the importance of INTG TEC. During the meetings, highlight INTG TEC included in the clearance footprint; as well as INTG TEC outside of the clearance footprint, including Class B and Class C and ensure that all staff and contractors are aware of the control measures to avoid, minimise and mitigate impacts to INTG TEC.	Site Office.	Prior to commencing any works within or adjacent to INTG TEC.	As required.	Site Supervisor / HSE Manager
Install signage and exclusion barriers/bunting (noting that *ALL* native vegetation is protected and must be avoided outside of the approved clearance areas).	Around the outside of all INTG TEC.	Prior to commencing any works in, or within 200 m of INTG TEC.	Once (ongoing).	Supervisor / HSE Manager

Construction Management Measures	Location	Timing	Frequency	Responsibility
Clearly delineate on site (for example via pegs or paint) INTG TEC that is included in the approved clearance footprint.	Infrastructure footprint.	Prior to clearing any INTG TEC.	Once (ongoing).	Site Supervisor / HSE Manager
Ensure all earthmoving equipment is clean and free of soil material.	As appropriate prior to entering areas of INTG TEC.	Prior to commencing earthworks within or near INTG TEC.	As required.	Site Supervisor / HSE Manager
Construct windrows (small soil berms) or install flagging and signage to delineate the boundary and prevent vehicles and construction equipment driving on and damaging INTG TEC.	On the edge of the Infrastructure footprint within INTG TEC.	As soon as possible during construction works.	Once (ongoing).	Site Supervisor
Apart from initial earthworks to construct access tracks and hardstand areas, ensure all vehicles and construction equipment always utilise dedicated access tracks and hardstands and do not travel outside of these areas.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Ensure the construction methodology used to string (install) the transmission line cables will not impact (disturb or damage) INTG TEC located within the OTL Project Area (Figure 4).	INTG TEC within the OTL Project Area.	During construction.	Ongoing.	Site Supervisor / HSE Manager
If a significant alteration of grazing regime (for example increased grazing or preferential grazing in particular areas) is observed (as part of monitoring) and considered to be potentially impacting INTG TEC, then it will need to be investigated by a suitably qualified ecologist and mitigation measures (such as new water points) implemented where possible.	INTG TEC adjacent to the infrastructure footprint.	During construction.	As required.	Site Supervisor / HSE Manager

10.2 Weed and pest management measures

Table 13. Weed and Pest Management.

Construction Management Measures	Location	Timing	Frequency	Responsibility
Undertake a weed survey to understand existing weed conditions and potential impacts (e.g. spread) during construction.	Infrastructure footprint.	Prior to commencing any construction works.	Once.	HSE Manager
Ensure that adequate signage is displayed to advise all employees, agents and contractors (and any other persons for whom the EPC Contractor is responsible) of the need for vigilant weed and pest control protocol and the need to recognise declared biosecurity protocols.	Site Entrance and Compound.	Prior to commencing any construction works.	Ongoing.	Site Supervisor
Remove or destroy all Declared and/or environmental weeds.	Within the Infrastructure footprint.	Prior to commencing any construction works.	Once.	Site Supervisor / HSE Manager
Ensure that any weed control uses a method which is in accordance with minimum disturbance techniques and does not have a significant adverse impact on INTG TEC.	Within INTG TEC.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Display a fact sheet on Declared and environmental weeds known to occur within the Infrastructure footprint, on site notice boards and in lunch rooms.	Site Office.	Prior to commencing any work on site.	Once.	HSE Manager
Install a designated wash-down bay to clean vehicles and construction equipment during construction works and prior to leaving site.	Site Compound.	Prior to commencing and during construction works.	Once	Site Supervisor
Ensure all vehicles and construction equipment are clean and free of soil material containing weed seed or propagules, prior to arriving on site. If vegetative material or earth is present, ensure that the equipment is washed down at an appropriate facility to prevent vegetative material or earth potentially containing weed seeds being brought in to the site.	Site entrance.	Prior to arriving on site.	Once (per vehicle / construction equipment).	Site Supervisor / All site personnel
Ensure all fill materials (e.g. sand, aggregate) imported to site are sourced from weed and pathogen free sites. The EPC Contractor is to keep all certificates and receipts from suppliers that specifies clean material.	Infrastructure footprint.	Every time fill materials are imported to site.	Ongoing.	Site Supervisor

Construction Management Measures	Location	Timing	Frequency	Responsibility
If soil or fill material stockpiles become infested with weeds, undertake weed control (spray with herbicide). Ensure that any weed control uses a method which is in accordance with minimum disturbance techniques and does not have a significant adverse impact on INTG TEC. Ensure weed control methods within *'Likely'* or *'Potential'* PBTL habitat are in accordance with requirements of the PBTL Recovery Plan described in the *Goyder South Hybrid Renewable Energy Facility PBTL Management Plan* (EBS Ecology 2021f).	Infrastructure footprint.	As soon as practicable and at least 10 – 14 days prior to moving material.	As required.	Site Supervisor / HSE Manager
Store construction vehicles and equipment on constructed hardstands, away from areas of weed infestation.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Rehabilitate exposed and disturbed soils as soon as possible.	Infrastructure footprint.	As soon as possible during construction.	Ongoing.	Site Supervisor
Undertake weed control such as (but not limited to) slashing, spraying, or physical removal, prior to the weeds setting seed. Ensure that any weed control uses a method which is in accordance with minimum disturbance techniques and does not have a significant adverse impact on INTG TEC. Ensure weed control methods within *'Likely'* or *'Potential'* PBTL habitat are in accordance with requirements of the PBTL Recovery Plan described in the *Goyder South Hybrid Renewable Energy Facility PBTL Management Plan* (EBS Ecology 2021f).	Throughout the Infrastructure footprint.	As required during construction.	Ongoing.	HSE Manager
Ensure construction compounds are kept neat and tidy at all times, to prevent pest animals from inhabiting the area.	Site Compounds.	During construction.	Ongoing.	Site Supervisor
Ensure food waste is placed in enclosed / covered bins, to prevent pest animals from accessing it.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Report and record rabbit / fox / feral cat sightings.	Infrastructure footprint.	During construction.	Ongoing.	HSE Manager
Rip or fill-in rabbit warrens.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager

Construction Management Measures	Location	Timing	Frequency	Responsibility
Control pest animal species (particularly rabbits, foxes and feral cats) that may proliferate as a result of site activities. Ensure rabbit control is in accordance with the *Threat abatement plan for competition and land degradation by rabbits* (DotEE 2016) that includes management of rabbits through one of the following techniques: ○ Poison baiting; ○ Biological control agents; ○ Warren ripping and fumigation; ○ Fencing; ○ Harbour removal; and ○ Shooting.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager

10.3 Soil erosion and drainage management measures

Table 14. Soil erosion and drainage management.

Construction Management Measures	Location	Timing	Frequency	Responsibility
Develop a detailed Erosion and Sedimentation Control Plan (ESCP) for the overall site prior to disturbing any soil on site. Ensure the ESCP shows the type and location of all erosion and sediment controls and that they are implemented during construction as well as reviewed and updated regularly.	For the Project Area.	Prior to disturbing any soil.	Develop it once. Review and update it regularly.	Site Supervisor / HSE Manager
Control measures, such as soil berms, cut-off drains, rock rip-rap, sediment fences, mulch berms and sediment traps, will be installed to: ○ Reduce stormwater runoff velocity to prevent erosion; and ○ Capture and remove sediment from stormwater runoff to prevent sedimentation of downstream habitats, drainage lines or watercourses. Control measures will be installed in accordance with *Best Practice Erosion and Sediment Control* (IECA 2008).	Infrastructure footprint.	Immediately upon commencement of disturbing soil.	Ongoing.	Site Supervisor
Ensure the weather forecast, particularly rainfall, is checked regularly and communicated to all staff and contractors during daily pre-start meetings.	Project Area.	During construction.	Checked regularly and communicated during daily pre-start meetings.	Site Supervisor
Limit vegetation clearing to the minimum required for construction works and safety, and where possible, retain established trees, native shrub understoreys and native grasslands.	Infrastructure footprint.	During construction.	Ongoing.	HSE Manager
Ensure that the area of disturbance and the length of time that areas are left exposed is minimised as much as possible through appropriate scheduling of activities.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Rehabilitate (for example rip and seed) exposed areas as soon as practicable.	Infrastructure footprint.	As soon as practicable.	Ongoing.	Site Supervisor
Utilise existing access tracks as much as possible and apart from initial earthworks to construct access tracks and hardstand areas, ensure all vehicles and construction equipment always utilise dedicated access tracks and hardstands within the wind farm and do not travel outside of these areas.	Project Area.	During construction.	Ongoing.	Site Supervisor

Construction Management Measures	Location	Timing	Frequency	Responsibility
Construct windrows (small soil berms) to direct stormwater into controls and prevent uncontrolled, and/or sediment laden, stormwater leaving the Infrastructure footprint and entering natural drainage lines.	As required adjacent to access tracks and hardstands.	Immediately upon commencement of constructing access tracks and hardstands.	Ongoing.	Site Supervisor
Stockpiles will be managed in accordance with the EPA *Guideline for stockpile management: Waste and waste derived products for recycling and reuse* (2019) and *Stormwater Pollution Prevention, Code of Practice for the Building and Construction Industry*.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
All spoil material (e.g. from trenches and pits) will be stockpiled on the uphill side of any exposed trench and sediment control, if required.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Rumble grids will be implemented to prevent vehicles exiting the site from dragging out sediment onto local roads. If required, vehicles will be washed down prior to leaving and wastewaters will be managed to prevent offsite impacts.	Site entrance/exit.	Prior to disturbing any soil.	Ongoing.	Site Supervisor
Ensure all erosion and sediment controls are checked for effective operation and maintained, repaired or improved.	Infrastructure footprint.	During construction.	Regularly (weekly as a minimum), particularly immediately prior to and after any significant rainfall event.	Site Supervisor / HSE Manager
All natural drainage lines immediately downstream of the Infrastructure footprint will also be checked for signs of erosion and or sedimentation.	Immediately downstream of the Infrastructure footprint.	During construction.	Regularly, particularly after any significant rainfall event.	Site Supervisor / HSE Manager
All washing out of concrete to be captured within lined non-permeable bund or skip and disposed of within construction and demolition waste.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager

10.4 Dust management measures

Table 15. Dust management.

Construction Management Measures	Location	Timing	Frequency	Responsibility
Limit vegetation clearing to the minimum required for construction works and safety and retain as much vegetation as possible.	Infrastructure footprint.	During construction.	Ongoing.	HSE Manager
Limit bare earth exposure to the minimum possible and use vegetation cover, mulch covers or other suitable methods where possible.	Infrastructure footprint.	During construction.	Ongoing.	HSE Manager
Use a water cart to spray access tracks, stockpiles and any other exposed soils.	Infrastructure footprint.	During construction.	As required.	Site Supervisor
Rehabilitate (revegetate) or allow natural regeneration of bare soils as soon as the area is no longer needed for construction.	Infrastructure footprint.	As soon as the area is no longer needed for construction.	Ongoing.	Site Supervisor
Minimise the height of stockpiles and avoid placing stockpiles in high wind areas (on the top of hills).	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Maintain stockpiles, for example stripped topsoil, in a condition which prevents windblown dust generation, especially during dry or windy conditions. This will include watering or covering of stockpiles with an appropriate erosion and sediment control solution.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Ensure vehicle loads that contain material likely to generate dust are covered, where practicable.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Ensure trucks and trailers are brushed down to remove loose soil and/or gravel prior to leaving site.	At site exit point(s).	Prior to leaving site.	As required.	Site Supervisor
Avoid activities that are likely to generate large amounts of dust, such as earthworks and loading soil and/or gravel materials into trucks, during high wind conditions, where possible.	Infrastructure footprint.	During high wind conditions.	As required.	Site Supervisor
Enforce a maximum speed limit of 40km/hr on sealed and unsealed access tracks, 10km/hr where access tracks are in construction and past landowner dwellings, past livestock and stationary work crew, where practicable.	Project Area.	During construction.	Ongoing.	Site Supervisor

10.5 Waste management measures.

Table 16. Waste management.

Construction Management Measures	Location	Timing	Frequency	Responsibility
Plan concrete works carefully to minimise generation of excess concrete and associated residues.	Infrastructure footprint.	Prior to any concrete works.	As required.	Site Supervisor
Ensure waste concrete is directed to suitable washout pits and allowed to dry and taken to a licensed waste depot or where permitted by the EPA, crushed and reused on site (for example within road-base or turbine excavation backfill).	Infrastructure footprint.	During concrete works.	As required.	Site Supervisor
Capture sheeting, screens or similar are in place to capture waste materials during construction activities so as to not cause pollution or environmental nuisance.	Infrastructure footprint.	During concrete works.	As required.	Site Supervisor
Ensure all waste is stored on-site in such a manner so as to prevent any materials from entering a waterway or being blown away by the wind and no waste is buried on the site. Small items of waste should be kept in covered bins.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Ensure all solid and/or liquid waste is transported by an appropriately qualified waste contractor and transferred to a waste depot licensed to receive it and that all waste volumes/weights are recorded in the project waste register.	Infrastructure footprint and off-site.	During construction.	Ongoing.	HSE Manager
Lidded bins for office / food waste to minimise odours and attraction of pests and native animals or birds.	Infrastructure footprint.	During construction.	Ongoing.	HSE Manager
Ensure that ablutions waste is managed appropriately and tanks are regularly emptied by a licenced contractor.	Infrastructure footprint.	During construction.	Ongoing.	HSE Manager

10.6 Hazardous materials and dangerous goods management

Table 17. Hazardous materials and dangerous goods management.

Construction Management Measures	Location	Timing	Frequency	Responsibility
Develop a spill contingency plan on which to base an emergency response in case of a spill or accident involving chemicals. Any such spill may result in possible surface or ground water contamination.	Site office / Infrastructure footprint.	Prior to construction works commencing.	Develop once and update as required.	HSE Manager
Regularly discuss hazardous materials and dangerous goods control measures during pre-start or toolbox meetings.	Site office.	During pre-start or toolbox meetings.	Regularly (weekly as a minimum).	Site Supervisor / HSE Manager
All washing out of concrete to be captured within lined non-permeable bund or skip and disposed of within construction and demolition waste.	Infrastructure footprint.	During concrete works.	As required.	Site Supervisor / HSE Manager
All hazardous materials and hydrocarbons will be appropriately transported, stored and handled during construction in accordance with relevant guidelines and regulations, to avoid release or impact to the environment. These guidelines primarily include the *Australian Code for the Transport of Dangerous Goods by Road and Rail* 7th Ed, AS 1940 and AS 3833.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Where these portable or freestanding chemical bunds are exposed to the weather, the bunds would be covered or otherwise monitored and drained to ensure the availability of bund capacity in the event of an uncontrolled release.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
The physical position of the chemical storage units, bunds and fuel storage containers that may be utilised will be subject to the requirements of the relevant supporting legislation. Broadly the placement will be in a location where impacts on the environment, including from the physical release of chemicals or odour, will be minimised.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Make provision for the spill catchment capacity to be at least the larger of 110% of the volume of the largest bulk container or 25% of the total capacity of all containers stored in a bunded area. All bunded areas are to have an impervious lining.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Drain bunded areas when necessary and test and dispose of accordingly, which may include using a licenced waste operator.	Infrastructure footprint.	During construction.	As required.	Site Supervisor

Construction Management Measures	Location	Timing	Frequency	Responsibility
Material Safety Data Sheets (MSDS) will be required for all hazardous materials kept on site. Procedures for mitigating specific impacts from materials will be governed by the appropriate MSDS.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
All hazardous materials and dangerous goods containers and storage areas will be clearly identified with labelling and signage.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Portable metal or plastic fuel containers of normal capacities up to and including 25 litres must comply with the requirements under AS/NZS 2906:2001 *Fuel containers - portable-plastic and metal*. Containers covered by this Australian Standard are suitable for use with leaded, unleaded and super grades of petrol, two-stroke engine fuel, and kerosene and distillate (diesel fuels).	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Minor storage quantities as per AS 1940 on open land will adhere to the following: • liquid will be kept at least 1.0 metre from any boundary, workshop, dwelling or protected place, body of water, watercourse or environmentally sensitive area; • the ground around the store will be kept clear of combustible vegetation or refuse for a distance of at least 3.0 m; and • any potential flow or spillage will be prevented from reaching a protected place, watercourse or property boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Adequately supplied spill kits will be kept within the vicinity of the worksite where such hazardous materials are used and stored (i.e the batching plant site).	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Workers who transport, handle or use hazardous materials will be trained or have an appropriate level of experience relevant to the task and will be aware of emergency response procedures for spill events.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor / HSE Manager
Refuelling infrastructure to be bunded and covered.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Refuel/lube machines are to be in bunded areas and are to be situated at least 40 m away from any waterway.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor
Undertake machinery maintenance on a sealed surface or suitable ground covering to capture spills.	Infrastructure footprint.	During construction.	As required.	Site Supervisor

Construction Management Measures	Location	Timing	Frequency	Responsibility
Empty hazardous substance containers will be identified and stored within a storage area designated for “empty containers” only. An “empty container” is a container that has had the material removed. These empty containers must be handled in accordance with the manufacturer’s instructions.	Infrastructure footprint.	During construction.	Ongoing.	Site Supervisor

11 OPERATIONAL MANAGEMENT MEASURES

Management measures to be implemented during operation are outlined in the tables on the following pages within this section.

11.1 General operational management measures

Table 18. General operational management measures.

Operational Management Measures	Location	Timing	Frequency	Responsibility
All staff and contractors will complete a detailed, site specific induction which provides an overview of INTG TEC and potential impacts to INTG TEC as well as management measures associated with protection of INTG TEC.	Site Office.	Prior to commencing any work on site.	Once.	Site Supervisor / HSE Manager
Display a fact sheet on INTG TEC (include images of INTG TEC and mapping showing the location of Class B and Class C INTG TEC within the Project Area).	On site notice boards and in lunch rooms.	During operation.	Ongoing.	Site Supervisor / HSE Manager
Ensure all vehicles and construction equipment always utilise dedicated access tracks and hardstands and do not travel outside of these areas.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor / HSE Manager
Hold tool box meetings to assist in identification and highlight the importance of INTG TEC. During the meeting(s), highlight INTG TEC throughout the Project Area, including Class B and Class C and ensure that all staff and contractors are aware of the control measures to avoid, minimise and mitigate impacts to INTG TEC.	Site office.	Prior to commencing any works within or adjacent to INTG TEC.	As required.	Site Supervisor / HSE Manager
Ensure that any weed control uses a method which is in accordance with minimum disturbance techniques and does not have a significant adverse impact on INTG TEC.	Within INTG TEC.	During operation.	Ongoing.	Site Supervisor / HSE Manager
If a significant alteration of grazing regime (for example increased grazing or preferential grazing in particular areas) is observed (as part of monitoring) and considered to be potentially impacting INTG TEC, then it will need to be investigated by a suitably qualified ecologist and mitigation measures (such as new water points) implemented where possible.	Within INTG TEC.	During operation.	As required.	Site Supervisor / HSE Manager
Where any operation and/or maintenance works that require ground disturbing activities are required (which will or may have the potential to impact INTG TEC), they will need to be assessed and, where required, approvals will need to be sought.	Within INTG TEC.	During operation.	As required.	Site Supervisor / HSE Manager

11.2 Weed and pest management measures

Table 19. Weed and pest management measures.

Operational Management Measures	Location	Timing	Frequency	Responsibility
Implement standard hygiene practices (wash down vehicles) when bringing equipment, vehicles and other materials onto the site (e.g. for maintenance purposes) and by practicing minimal disturbance methods.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor
Conduct an annual survey to identify and monitor the location, extent and abundance of weed species, particularly Declared weed species within access tracks and hardstand areas.	Infrastructure footprint.	Annually (preferably at the same time of year each time).	Annually during operation of the Project.	Site Supervisor
Undertake weed control such as (but not limited to) slashing, spraying, or physical removal, prior to the weeds setting seed. Ensure that any weed control uses a method which is in accordance with minimum disturbance techniques and does not have a significant adverse impact on INTG TEC. Ensure weed control methods within *'Likely'* or *'Potential'* PBTL habitat are in accordance with requirements of the PBTL Recovery Plan described in the *Goyder South Hybrid Renewable Energy Facility PBTL Management Plan* (EBS Ecology 2021f).	Infrastructure footprint.	Prior to weeds setting seed.	As required.	Site Supervisor
Control pest animal species (especially rabbits, foxes and feral cats) that may proliferate as a result of site activities. Ensure rabbit control is in accordance with the *Threat abatement plan for competition and land degradation by rabbits* (DotEE 2016) that includes management of rabbits through one of the following techniques: ○ Poison baiting; ○ Biological control agents; ○ Warren ripping and fumigation; ○ Fencing; ○ Harbour removal; and ○ Shooting.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor
Ensure waste is unable to be accessed by pest animals.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor

11.3 Soil erosion and drainage management measures

Table 20. Soil erosion and drainage management.

Operational Management Measures	Location	Timing	Frequency	Responsibility
Ensure all erosion and sediment controls are checked for effective operation and maintained, repaired or improved.	Infrastructure footprint.	During operation.	Regularly (weekly as a minimum), particularly prior to any significant rainfall event.	Site Supervisor / HSE Manager
All natural drainage lines immediately downstream of the Infrastructure footprint will also be checked for signs of erosion and or sedimentation.	Infrastructure footprint.	During operation.	Regularly, particularly after any significant rainfall event.	Site Supervisor / HSE Manager
Minimise disturbance of soil and vegetation during all activities undertaken throughout the operational phase (including vehicle access, general infrastructure and site maintenance, weed control, fire management, grazing and fauna surveys) within the Project Area, by: • only driving on designated vehicle access tracks; • minimising driving (walk where possible); • not driving on waterlogged vehicle access tracks (this will only be considered in circumstances that threaten the safety of personnel or windfarm assets, and by approval of the Site Manager); • ensuring that all designated vehicle access tracks and site stormwater drainage is well maintained to prevent erosion and sedimentation from occurring; and • minimising digging and soil disturbance to only that which is required to implement the approved action, including ripping of rabbit warrens to control rabbits.	Infrastructure footprint.	During operation.	During all activities.	Site Supervisor

11.4 Dust management measures

Table 21. Dust management.

Operational Management Measures	Location	Timing	Frequency	Responsibility
Enforce a maximum speed limit of 40km/hr on sealed and unsealed access tracks and 10km/hr past landowner dwellings, livestock and stationary work crew, where practicable.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor

11.5 Waste management measures

Table 22. Waste management.

Operational Management Measures	Location	Timing	Frequency	Responsibility
Ensure all waste is stored on-site in such a manner so as to prevent any materials from entering a waterway or being blown away by the wind and no waste is buried on the site. Small items of waste should be kept in covered bins.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor / HSE Manager
Ensure all solid and/or liquid waste is transported by an appropriately qualified waste contractor and transferred to a waste depot licensed to receive it and that all waste volumes/weights are recorded in the project waste register.	Infrastructure footprint.	During operation.	Ongoing.	HSE Manager
Lidded bins for office / food waste to minimise odours and attraction of pests and native animals or birds.	Infrastructure footprint.	During operation.	Ongoing.	HSE Manager
Ensure that ablutions waste is managed appropriately and tanks are regularly emptied by a licenced contractor.	Infrastructure footprint.	During operation.	Ongoing.	HSE Manager
Concrete washout to be carried out in bunded wash bay within the on-site batch plant. On site batch plant to include a water re-use plan.	Infrastructure footprint.	During operation.	Ongoing.	HSE Manager

11.6 Hazardous materials and dangerous goods management measures

Table 23. Hazardous materials and dangerous goods management.

Operational Management Measures	Location	Timing	Frequency	Responsibility
Material Safety Data Sheets (MSDS) will be required for all hazardous materials kept on site. Procedures for mitigating specific impacts from materials will be governed by the appropriate MSDS.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor / HSE Manager
All hazardous materials and dangerous goods containers and storage areas will be clearly identified with labelling and signage.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor
Portable metal or plastic fuel containers of normal capacities up to and including 25 litres must comply with the requirements under AS/NZS 2906:2001 *Fuel containers - portable-plastic and metal*. Containers covered by this Australian Standard are suitable for use with leaded, unleaded and super grades of petrol, two-stroke engine fuel, and kerosene and distillate (diesel fuels).	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor
Minor storage quantities as per AS 1940 on open land will adhere to the following: • liquid will be kept at least 1.0 metre from any boundary, workshop, dwelling or protected place, body of water, watercourse or environmentally sensitive area; • the ground around the store will be kept clear of combustible vegetation or refuse for a distance of at least 3.0 m; and • any potential flow or spillage will be prevented from reaching a protected place, watercourse or property boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor / HSE Manager
Adequately supplied spill kits will be kept within the vicinity of the worksite where such hazardous materials are used and stored.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor / HSE Manager
Workers who transport, handle or use hazardous materials will be trained or have an appropriate level of experience relevant to the task and will be aware of emergency response procedures for spill events.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor / HSE Manager
Refuelling infrastructure to be bunded and covered.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor
Refuel/lube machines are to be in bunded areas and are to be situated at least 40 m away from any waterways.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor

Operational Management Measures	Location	Timing	Frequency	Responsibility
Undertake machinery maintenance on a sealed surface or suitable ground covering to capture spills.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor
Empty hazardous substance containers will be identified and stored within a storage area designated for “empty containers” only. An “empty container” is a container that has had the material removed. These empty containers must be handled in accordance with the manufacturer’s instructions.	Infrastructure footprint.	During operation.	Ongoing.	Site Supervisor

12 IMPORTANT CONTACTS

Table 24. Important contact for INTG TEC.

Contact	Email	Phone
Native Vegetation Management Unit within DEW (delegate to Native Vegetation Assessment Panel and Native Vegetation Council).	nvc@sa.gov.au	(08) 8204 1910

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14 APPENDICES

Appendix 1. Risk assessment criteria and associated matrix.

Table 25. Likelihood of risk occurring.

Likelihood	Description
Highly likely	Expected to occur in most circumstances
Likely	Will probably occur in most circumstances
Possible	Might occur occasionally
Unlikely	Could occur at some time but unlikely
Rare	May occur only in exceptional circumstances

Source: DotE 2014

Table 26. Consequence of risk occurring.

Consequence	Description
Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive efforts
Major	Major loss of environmental amenity and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

Source: DotE 2014

Table 27. Risk assessment matrix.

		Consequence				
		Minor	**Moderate**	**High**	**Major**	**Critical**
Likelihood	**Highly Likely**	Medium	High	High	Severe	Severe
	Likely	Low	Medium	High	High	Severe
	Possible	Low	Medium	Medium	High	Severe
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	High

Source: DotE 2014

Table 28. Management actions required for each risk rating.

Risk rating	Management actions required
Low	Acceptable risk level with infrequent review. Standard control and monitoring measures to be identified and implemented. Monitor and review locally as necessary. Report to local manager(s).
Medium	Acceptable risk level but must be reviewed regularly. Specific control and monitoring measures to be identified and implemented. Measures and risk level to be reviewed and improved as further information becomes available.
High	Undesirable risk level – consultation with manager(s) prior to activity. Specific control and monitoring measures to be identified and implemented. Measures and risk level to be reviewed and improved as further information becomes available.
Severe	Unacceptable risk level. Do not proceed with activity. Requires immediate attention and consideration. Detailed risk assessment and management plan to be prepared by relevant senior manager(s) or suitably qualified consultant. Strict control and monitoring measures to be identified and implemented. Any action that has, will have, or is likely to have a significant impact on matters of national environmental significance requires referral under the EPBC Act.

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