Appendix A: Change notice – Regulation 22

Interest holder	Tamboran B2 Pty Ltd	**EMP Title**	Beetaloo Sub-basin Shenandoah South E&A Program EMP	**Unique EMP ID**	TAM1-3	**Mod #**	14	**Date**	19 August 2026
Brief Description	Relocation of Shenandoah South C well site to new location. It is noted that for this Regulation 22, the well site name will remain as SSC, however, will likely to be renamed in the future to BCD 4.								
Geospatial files included?	Attached.								

Does the proposed change result in a new, or increased, or potential or actual environmental impact or risk?	**If an INCREASE in the existing potential or actual environmental risk, is it provided for in the EMP?**	**Does the proposed change require additional mitigation measures to be included?**	**Has additional stakeholder engagement been conducted?**	**Does it require additional environmental performance standards and measurement criteria?**	**Does it affect compliances with Sacred Site Authority Certificates?**	**Does it affect current rehabilitation, weed fire, wastewater, erosion and sediment control, spill or emergency response plans?**	**Will the environmental outcome continue to be achieved, and will the impacts and risks be managed to ALARP and acceptable?**
There are no new or increased environmental impacts or risks. There is no change to the proposed vegetation clearing requirements for the well site with disturbance limit consistent with those described in TAM1-3: • well pad - 7.5 ha • camp – 1 ha • laydown – 2.5 ha • helipad – 0.5 ha • fenceline and firebreak – 4 ha • new access track –3.3 ha • Existing access track (construction and upgrade to Pastoral Track type 2 (e.g. 14 m wide)) **Total new disturbance = 18.8 ha**	No increased impact or risk with sufficient controls outlined in the EMP.	Existing mitigation measures are in place covering civil construction and operations, spill management and wastewater management.	Stakeholders identified in TAM1-3 EMP were consulted on the revised location, through following methods: • Stakeholder Engagement Packs provided to Shenandoah Station and Sturt Plains Station on 23 February 2026. • Provision of feedback on comments received on 10 March and 19 March 2026. • In final stages of negotiation for Land Access and Compensation Agreement associated with new area. • NLC and NTH/TO consultation through attendance during LCA/CHA scout, on-country meeting held in April and May 2026.	Environmental performance standards within the existing approved EMP are sufficient.	Activity covered under the existing AAPA certificates C2024-030 and C2024-031.	Minor edits have been made to the following plans with no change to the management strategies described in the plans: • Appendix A Bushfire Management Plan • Appendix F Erosion and Sediment Control Plan • Appendix L Rehabilitation Management Plan All other plans remain valid and appropriate.	Land clearing commitments are outlined in *Table 52: Environmental outcomes, performance standards and measurement criteria –terrestrial ecosystems*, will be met.
Additional contextual information	The relocation of the Shenandoah S C (SSC) well site provides TB2 a greater opportunity to appraise the gas resource and bring beneficial gas to the Northern Territory via the proposed Sturt Plateau Compression Facility (SPCF).						

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Executive Summary

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Activities proposed in this EMP include:

- **Civil construction of 4 new E&A locations – Shenandoah S2, Shenandoah S B, Shenandoah S C, Shenandoah N A:** Civil construction of up to 4 new E&A well sites and associated infrastructure (access tracks, camp pads, helipads, laydown yards, fence lines, firebreaks, water bore, and all other ancillary infrastructure). Includes the increasing of gravel pit SSGP1 from 2.5 ha to 7.5 ha.

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- **Construction of a gathering network connecting exploration sites** to allow for the transfer of wastewater (including raw water, flowback, completion and drilling wastewater) and hydrocarbons between Kyalla 117 N2 and Shenandoah S2 and Shenandoah S B and Shenandoah S C.

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Location of the regulated activities

The Shenandoah South E&A program is located on the Shenandoah and Hayfield Pastoral stations within EP 117 and EP 98. The location of the proposed activities is provided in Figure 1.

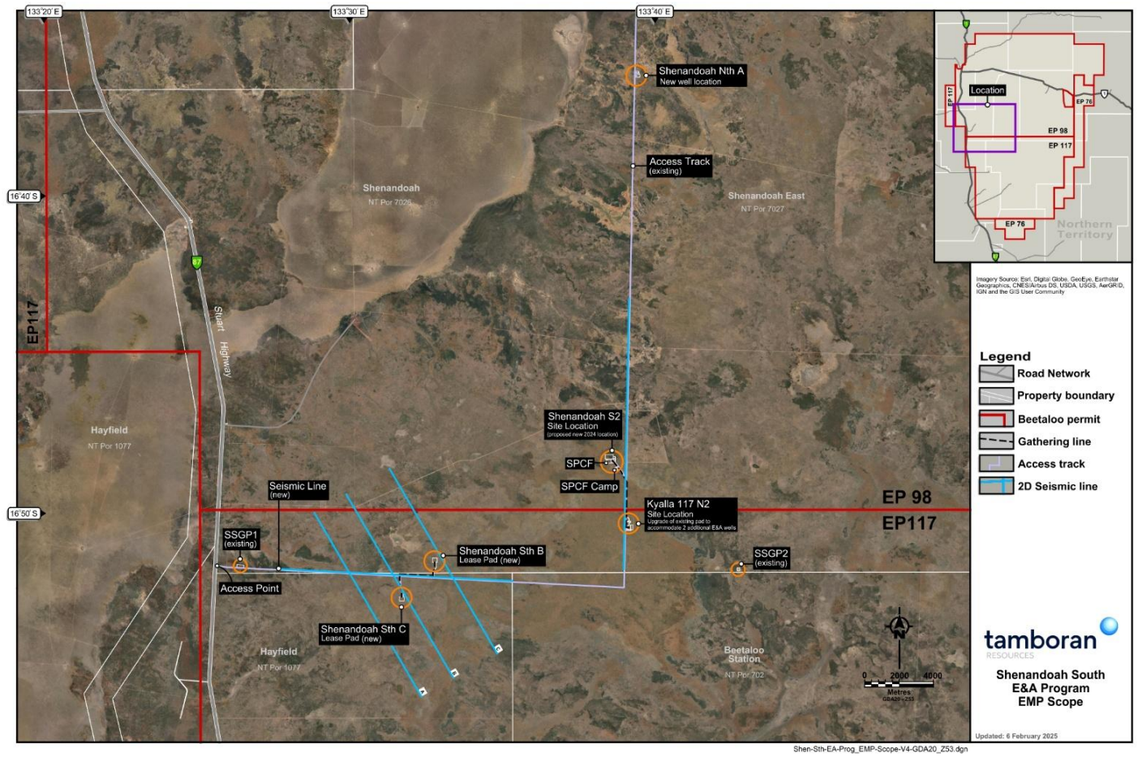

Figure 1: Location of new well pads, gravel pits, proposed seismic and existing Kyalla 117 N2 infrastructure

Amended EMP text

Executive Summary

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Activities proposed in this EMP include:

- **Civil construction of 4 new E&A locations – Shenandoah S2 (SS2), Shenandoah S B (SSB), Shenandoah S C (SSC), Shenandoah N A (SNA):** Civil construction of up to 4 new E&A well sites and associated infrastructure (access tracks, camp pads, helipads, laydown yards, fence lines, firebreaks, water bore, and all other ancillary infrastructure). Includes the increasing of gravel pit SSGP1 from 2.5 ha to 7.5 ha.

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- **Construction of a gathering network connecting exploration sites** to allow for the transfer of wastewater (including raw water, flowback, completion and drilling wastewater) and hydrocarbons between Kyalla 117 N2 and SS2 and SSB and SSC.

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Location of the regulated activities

The Shenandoah South E&A program is located on the Shenandoah, Sturt Plains and Gum Ridge Pastoral Stations within EP 117 and EP 98. The location of the proposed activities is provided in Figure 1.

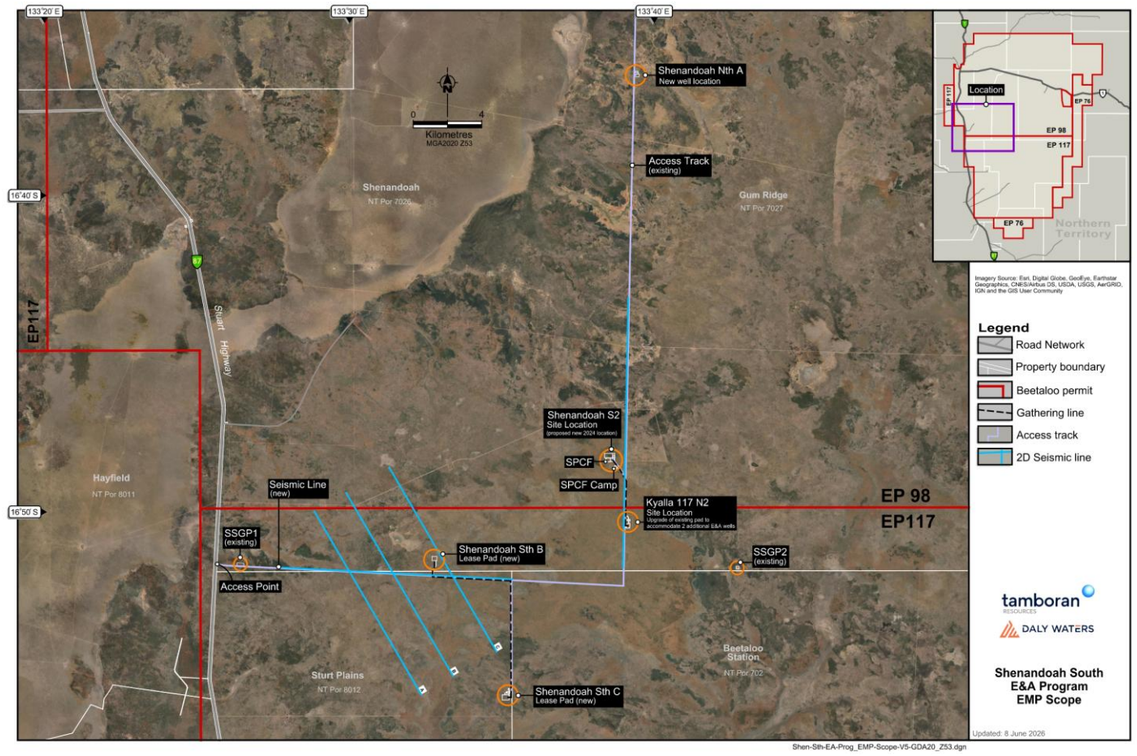

Figure 1: Location of new well pads, gravel pits, proposed seismic and existing Kyalla 117 N2 infrastructure

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Executive Summary

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Table 1: Description of the proposed new exploration and appraisal activities for the Shenandoah South E&A program, including 2D seismic acquisition

Activity	Parameter	Description
…..		
Exploration-on site civil construction	Construction and ongoing maintenance of 4 new E&A sites- 36.0 ha total disturbance	• Construction of 4 new E&A locations: • Shenandoah S2- (13.5 ha) • Shenandoah S B- (12.0 ha) • Shenandoah S C- (7.5 ha) • Shenandoah N A-(3.0 ha)
	Access tracks – ~20.1 ha total	• Construction/ upgrade of access tracks to pastoral track type 2 (e.g. 14 m wide): ….. • Construction of a new 1.5 km access track from the existing Kyalla N2 access track (including turn-ins, erosion and sediment controls, and passing bays) connecting Shenandoah S C– 3.3 ha. …..
	Camp pads: ~3.5 ha	• Construction of 1.0 x 1.0 ha camp pad each at SS2, SSB, SSC and SNA. The camp pads at these sites will only be constructed where the centralised camp at the existing Kyalla 117 N2 site is not used. …..
	37 new groundwater monitoring / extraction bores (total spread across all sites)	• Drilling of up to 10 new bores at each of the 3 proposed E&A sites in Shenandoah South. …..
	Laydown areas: ~5.00 ha total	• Construction of a 2.5 ha laydown area at Shenandoah S B and S C.
	Helipad -~1.50 ha total	….. • Construction of a helipad at Shenandoah S B and S C each (0.5 ha)
	~18.00 ha total	• Construction of a 20 m x 2 km fence line and firebreak around the Shenandoah S2, S B and S C sites (4.00 ha per site) …..
	~13.75 ha total	• Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP1 (2.5ha). Increase of SSGP1 from 2.5 ha to 7.5 ha

Amended EMP text

Executive Summary

…..

Table 1: Description of the proposed new exploration and appraisal activities for the Shenandoah South E&A program, including 2D seismic acquisition

Activity	Parameter	Description
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Exploration-on site civil construction	Construction and ongoing maintenance of 4 new E&A sites- 36.0 ha total disturbance	• Construction of 4 new E&A locations: • Shenandoah S2 (13.5 ha) • Shenandoah S B (12.0 ha) • Shenandoah S C (7.5 ha) • Shenandoah N A (3.0 ha)
	Access tracks – ~20.1 ha total	• Construction/ upgrade of access tracks to pastoral track type 2 (e.g. 14 m wide): ….. • Construction of a new 1.5 km access track from the existing Kyalla N2 access track (including turn-ins, erosion and sediment controls, and passing bays) connecting Shenandoah S C– 3.3 ha. …..
	Camp pads: ~3.5 ha	• Construction of 1.0 x 1.0 ha camp pad each at SS2, SS C and S N A. The camp pads at these sites will only be constructed where the centralised camp at the existing Kyalla 117 N2 site is not used. …..
	37 new groundwater monitoring / extraction bores (total spread across all sites)	• Drilling of up to 10 new bores at each of the 3 proposed E&A sites in Shenandoah South. …..
	Laydown areas: ~5.00 ha total	• Construction of a 2.5 ha laydown area at Shenandoah S B and S C.
	Helipad -~1.50 ha total	….. • Construction of a helipad at Shenandoah S B and S C each (0.5 ha)
	~18.00 ha total	• Construction of a 20 m x 2 km fence line and firebreak around the Shenandoah S2, S B and S C sites (4.00 ha per site) …..
	~13.75 ha total	• Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP1 (2.5ha). Increase of SSGP1 from 2.5 ha to 7.5 ha • Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP2 (6.25ha)

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

		• Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP2 (6.25ha)

Activity	Parameter	Description
Site set-up and mobilisation to support the E&A wells	Camps	….. • Where a centralised camp is not used, a temporary main camp will be located on the newly constructed camp pad at Shenandoah S2, Shenandoah S B and Shenandoah N A. • Each main camp will typically have a ~75-person capacity.
Camp operations	~75 person camp	• Operation of a main camp – either centralised (existing Kyalla 117 N2 site) and/or at Shenandoah S2, Shenandoah S B and Shenandoah N A. • Operation of drilling camp on each well pad during drilling.
…..		
Gathering lines	~8.61 km (8.61 ha)	• Construction and operation of gathering lines to a centralised water and wastewater treatment infrastructure areas between Kyalla 117 N2 to/from Shenandoah S2 and Shenandoah S B to/from Shenandoah S C (~12 m wide) (8.61 ha)
…..		
Total disturbance and rehabilitation (approx.)	139.66 ha	• Final rehabilitation activities to return all sites back to a safe, stable and non-polluting form consistent with pre-disturbed condition: • 119.26 ha new clearing across all sites, including seismic. • 20.40 ha approved clearing across Kyalla 117 N2site. • The existing pastoral access tracks used for the E&A activities will not be rehabilitated at completion. These will be returned to pastoralists for ongoing access.

Executive Summary
Description of the existing environment

The Shenandoah South E&A program is located on EP 117 and EP 98, which encompasses the Shenandoah, Shenandoah East, Hayfield and Beetaloo pastoral stations.

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Land condition assessments across the Kyalla 117 N2 site and Shenandoah South E&A program, include data from previous baseline assessments completed in 2004, 2006 (HLA, 2006; 2006c), 2010, 2014, 2016, 2018, 2021 and the most recent March-April 2023 survey (AECOM, 2011; 2014; 2016, 2018, 2021 and 2023). These assessments include a review of the physical, natural and cultural heritage environment.

…..
A description of the existing environment for the new sites (e.g. Shenandoah S2, Shenandoah S B, Shenandoah S C, and Shenandoah N A) is provided in section 4 and Appendix K. Figure 3 provides an overview of vegetation communities that occur along the seismic lines and within the disturbance areas of the Shenandoah S B and Shenandoah S C Shenandoah S2 and Shenandoah N A well pad areas.

Amended EMP text

Activity	Parameter	Description
Site set-up and mobilisation to support the E&A wells	Camps	….. • Where a centralised camp is not used, a temporary main camp will be located on the newly constructed camp pad at SS2, SS C and S N A. • Each main camp will typically have a ~75-person capacity.
Camp operations	~75 person camp	• Operation of a main camp – either centralised (existing Kyalla 117 N2 site) and/or at SS2, SS C and S N A. • Operation of drilling camp on each well pad during drilling.
…..		
Gathering lines	~8.61 km (8.61 ha)	• Construction and operation of gathering lines to a centralised water and wastewater treatment infrastructure areas between Kyalla 117 N2 to/from SS2 and SS B to/from SS C (~12 m wide) (8.61 ha).
…..		
Total disturbance and rehabilitation (approx.)	139.66 ha	• Final rehabilitation activities to return all sites back to a safe, stable and non-polluting form consistent with pre-disturbed condition: • 119.26 ha new clearing across all sites, including seismic. • 20.40 ha approved clearing across Kyalla 117 N2 site. • The existing pastoral access tracks used for the E&A activities will not be rehabilitated at completion. These will be returned to pastoralists for ongoing access.

Executive Summary
Description of the existing environment

The Shenandoah South E&A program is located on EP 117 and EP 98, which encompasses Shenandoah, Sturt Plains, Gum Ridge and Beetaloo pastoral stations.

…..

Land condition assessments across the Kyalla 117 N2 site and Shenandoah South E&A program, include data from previous baseline assessments completed in 2004, 2006 (HLA, 2006; 2006c), 2010, 2014, 2016, 2018, 2021 and the most recent March-April 2023 survey (AECOM, 2011; 2014; 2016, 2018, 2021 and 2023). These assessments include a review of the physical, natural and cultural heritage environment.

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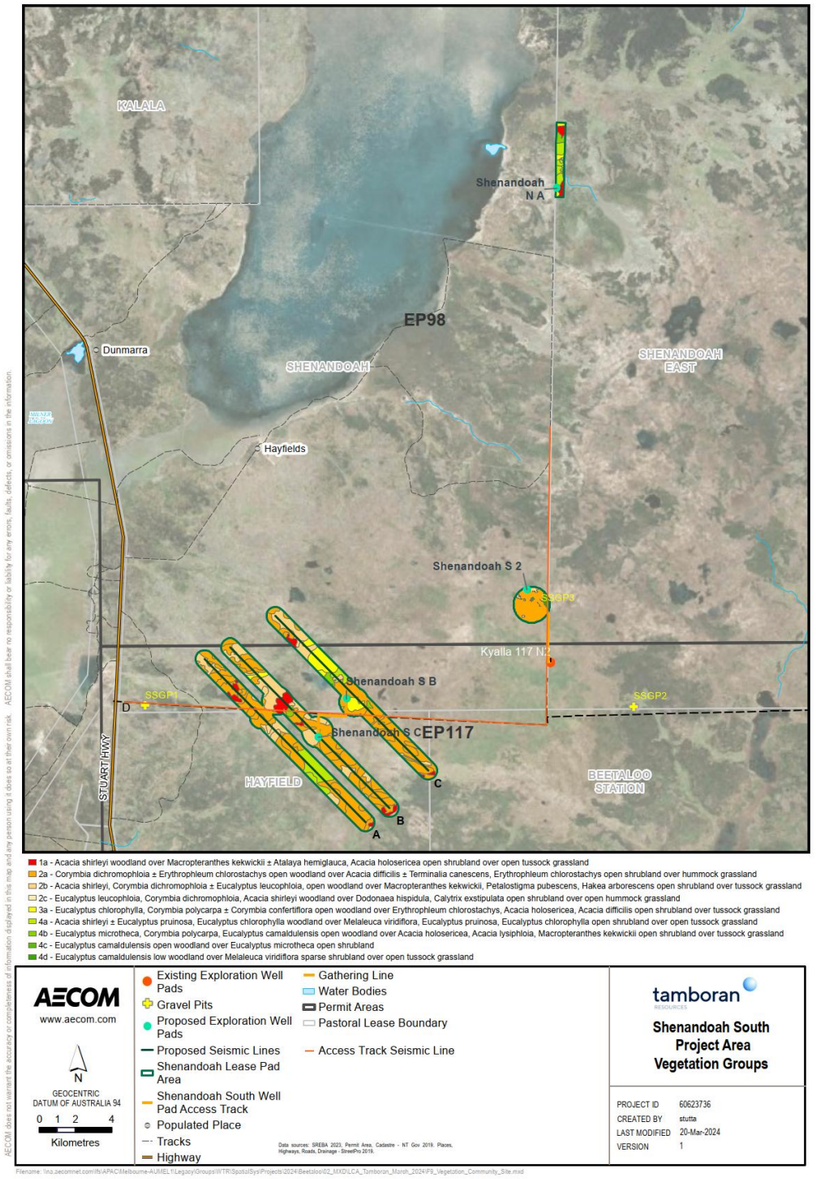
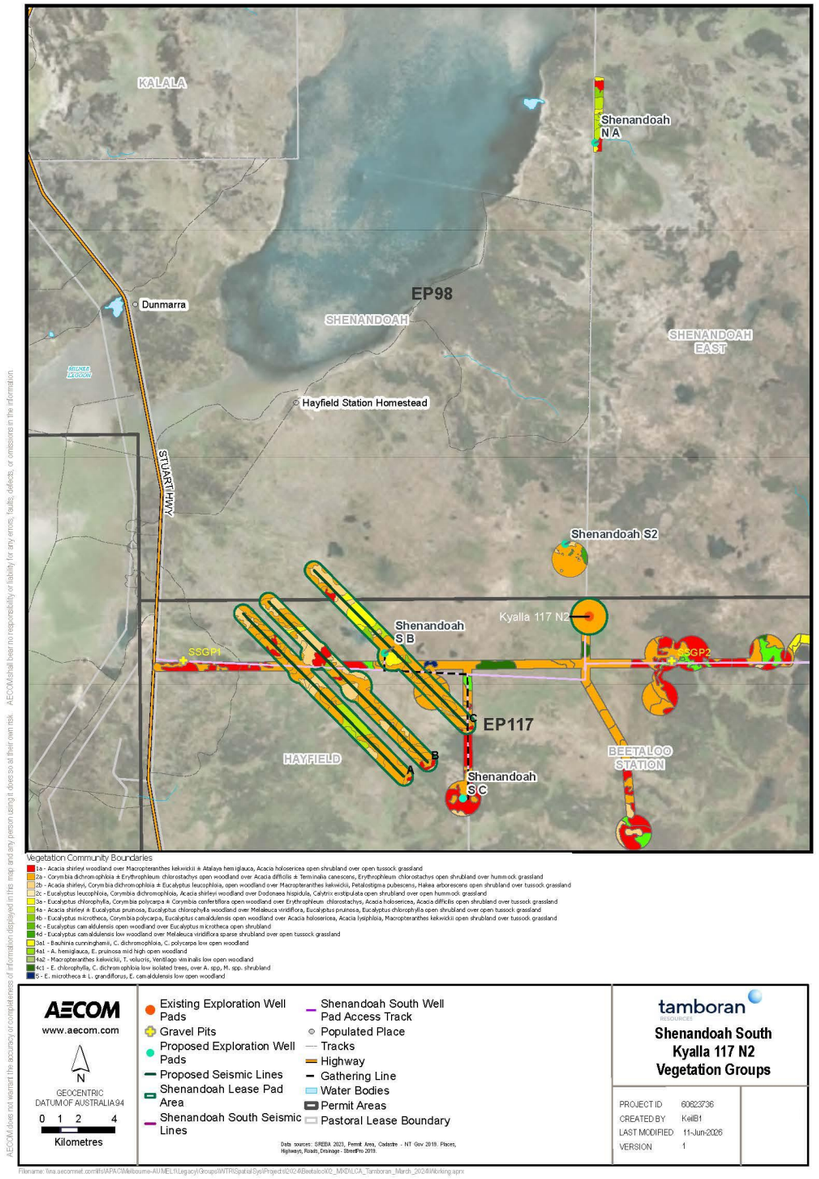
A description of the existing environment for the new sites (e.g. SS2, SSB, BCD 4, and SNA) is provided in section 4 and Appendix K. Figure 3 provides an overview of vegetation communities that occur along the seismic lines and within the disturbance areas of the SSB, SS2, SS C (survey site BCD 4) and S N A well pad areas.

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
A summary of the existing environment in which the 4 new well pads and 2D seismic acquisition will be located is provided in Table 2, Table 3, Table 4 and Table 5.	A summary of the existing environment in which the 4 new well pads and 2D seismic acquisition will be located is provided in Table 2, Table 3, Table 4 and Table 5.
 **Figure 3: Vegetation communities for new sites**	 **Figure 3: Vegetation communities for new sites**
…..	…..

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Table 4: Summary of existing environment and surrounds Shenandoah S C

Shenandoah S C		Survey photos of the vegetation/habitat of the surrounding environment
Location	GDA94, Zone 53, 343472E, 8133331N	
Landform and soil	Dark reddish brown silty clay loam in upper 0.3 m. Progressing to clay. No surface gravels. Well drained on a simple slope <1%.	
Vegetation community	**2b:** *Acacia shirleyi*, *Corymbia dichromophloia* ± *Eucalyptus leucophloia*, *C. polycarpa* mid-high open woodland	
Vegetation description	*Acacia shirleyi*, *Ventilago viminalis* mid high open woodland over *Macropteranthes kekwickii*, *Terminalia volucris*, *Eucalyptus chlorophylla* mid high open shrubland over *Sorghum intrans*, *Eulalia aurea*, *Chrysopogon fallax* mid high tussock grassland.	
Dominant flora species	*Acacia shirleyi*, *Ventilago viminalis* *Macropteranthes kekwickii*, *Terminalia volucris*, *Eucalyptus chlorophylla* *Sorghum intrans*, *Eulalia aurea*, *Chrysopogon fallax*	
Habitat condition	Moderate - Tree hollows, Mistletoe and leaf litter absent. Fallen logs and flowering plants common. Fire damage moderate > 2 years ago. No erosion. Minor cattle impacts. Termite mounds spares. Ground cover: 40% vegetation, 25% litter, 25% bare soil, 10% gravel.	
Weeds	No Weeds of National Significance present.	
Potential listed threatened species (SREBA 2023)	Northern Shrike-tit (*Falcunculus frontatus whitei*), Gouldian Finch (*Erythrura gouldiae*), Plains Death Adder (*Acanthophis hawkei*), Yellow Spotted Monitor (*Varanus panoptes*), Grey Falcon (*Falco hypoleucos*), Common Brushtail Possum (*Trichosurus vulpecula arnhemensis*), Mertens' Water Monitor (*Varanus mertensi*)	
Hydrogeology	Groundwater resources and use is primarily from the Cambrian Limestone Aquifers (the Anthony Lagoon Formation and Gum Ridge Formation) with the shallower undifferentiated Cretaceous or perched alluvium systems being unsaturated.	

Stakeholder engagement

Stakeholder engagement for Tamboran's E&A project has focused on the host traditional owners (facilitated by the NLC) and host pastoralists directly affected by the proposed activity. Contact details are as follows:

NLC 45 Mitchell Street Darwin NT 0801	Various	reception@nlc.org.au	(08) 8920 5100
Hayfield / Shenandoah Pastoral Station PMB 168 Katherine NT 0850	[redacted]	[redacted]	[redacted]
Beetaloo Station PMB, Elliott NT 0862	[redacted]	[redacted]	[redacted]

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Amended EMP text

Table 4: Summary of existing environment and surrounds Shenandoah S C

Shenandoah S C (Field Id BCD 4)		Survey photos of the vegetation/habitat of the surrounding environment
Location	GDA94, Zone 53, 349353E, 8127412N	
Landform and soil	Scoured gravelly level to gently undulating low rises and pediment slopes. Sandy loam to medium clay. Soil Profile:	
Vegetation community	*Comm* 1a – *Acacia shirleyi* ± *Macropteranthes kekwickii* mid high open forest, over *Acacia shirleyi*, *Macropteranthes kekwickii*, *Terminalia volucris* mid high open shrubland, over *Chrysopogon fallax*, *Mnesithea formosa*, *Triodia bitextura* mid high tussock grassland	
Habitat condition	Tree hollows absent, fallen logs abundant, flowering plants common, litter shallow. 15% canopy cover, Stand Basal Area – 3.3 m^2/ha Fire last year, moderate impact. Common termite mounds. Slope < 1% slope Vegetation: 30% | Litter: 10% | Bare: 60%	
Potential listed threatened species	Red Goshawk, Grey Falcon, Painted Honey Eater, Northern Brushtail Possum, Plains Death Adder, Northern Blue-tongue Skink, Yellow Spotted Monitor	
Weeds	No declared or environmental weeds detected at BCD4 survey area.	
Hydrogeology	Groundwater resource and use for the well site will be from the Cambrian Limestone Aquifer which comprises of the Gum Ridge Formation and the Anthony Lagoon Formation.	

Stakeholder engagement

Stakeholder engagement for Tamboran's E&A project has focused on the host traditional owners (facilitated by the NLC) and host pastoralists directly affected by the proposed activity. Contact details are as follows:

NLC 45 Mitchell Street Darwin NT 0801	Various	reception@nlc.org.au	(08) 8920 5100
Shenandoah Pastoral Station PMB 168 Katherine NT 0850	[redacted]	[redacted]	[redacted]
Gum Ridge Pastoral Station PMB 168 Katherine NT 0850	[redacted]	[redacted]	[redacted]
Sturt Plains Pastoral Station PMB 168 Katherine NT 0850	[redacted]	[redacted]	[redacted]
Beetaloo Station4F4F8 PMB, Elliott NT 0862	[redacted]	[redacted]	[redacted]

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Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
Executive Summary **Key objectives of this EMP** The scope covered in this EMP is considered an important step in confirming the technical and commercial feasibility of the underlying shale resources. In other unconventional plays, such as Queensland Coal Seam Gas (CSG) fields, typically 5 well pilots are/were utilised at multiple locations within a field to demonstrate the commerciality of an area. This EMP anticipates 16 horizontal E&A wells will be used to achieve the appraisal objectives as follows: ● 2 E&A wells at Shenandoah S B ● 4 E&A wells at Shenandoah SC ● 6 E&A wells at Shenandoah S2 ● 4 approved E&A wells at Kyalla 117 N2 **…..**	**Executive Summary** **Key objectives of this EMP** The scope covered in this EMP is considered an important step in confirming the technical and commercial feasibility of the underlying shale resources. In other unconventional plays, such as Queensland Coal Seam Gas (CSG) fields, typically 5 well pilots are/were utilised at multiple locations within a field to demonstrate the commerciality of an area. This EMP anticipates a total 16 horizontal E&A wells will be used to achieve the appraisal objectives across SSB, SS C, SS2 and Kyalla 117 N2 well sites.
1. Introduction **1.1 Purpose** ….. Activities proposed in this EMP include: ● **Civil construction of 4 new E&A locations – Shenandoah S2, Shenandoah S B, Shenandoah S C, Shenandoah N A:** Civil construction of up to 4 new E&A well sites and associated infrastructure (access tracks, camp pads, helipads, laydown yards, fence lines, firebreaks, water bore, and all other ancillary infrastructure). Includes the increasing of gravel pit SSGP1 from 2.5 ha to 7.5 ha. ….. ● **Construction of a gathering network connecting exploration sites** to allow for the transfer of wastewater (including raw water, flowback, completion and drilling wastewater) and hydrocarbons between Kyalla 117 N2 and Shenandoah S2 and Shenandoah S B and Shenandoah S C. **…..**	**1. Introduction** **1.1 Purpose** ….. Activities proposed in this EMP include: ● **Civil construction of 4 new E&A locations – Shenandoah S2 (SS2), Shenandoah S B (SS B), Shenandoah S C (SS C), Shenandoah N A (S N A):** Civil construction of up to 4 new E&A well sites and associated infrastructure (access tracks, camp pads, helipads, laydown yards, fence lines, firebreaks, water bore, and all other ancillary infrastructure). Includes the increasing of gravel pit SSGP1 from 2.5 ha to 7.5 ha. **…..** ● **Construction of a gathering network connecting exploration sites** to allow for the transfer of wastewater (including raw water, flowback, completion and drilling wastewater) and hydrocarbons between Kyalla 117 N2 and SS2 and SS B and SS C. **…..**
3. Description of regulated activities This EMP covers the regulated activities required to enable Tamboran to complete a series of E&A activities within over 5 years, as summarised in Table 9. These activities include: • Drilling of up to 15 horizontal E&A wells at four (4) exploration locations, including the approved Shenandoah S 2H on the Kyalla 117 N2 location. • Hydraulic fracture stimulation (HFS) and well testing of up to 15 E&A wells at four (4) exploration locations, including the approved Shenandoah S 2H well on Kyalla 117 N2. • Drilling of a vertical stratigraphy well at Shenandoah N A. • Operation, maintenance and decommissioning of the existing Kyalla 117 N2 1H E&A well under the *Beetaloo Basin Kyalla drilling hydraulic fracture stimulation and well testing program EP117 N2 EMP (ORI3-2)*, approved 13 August 2019. • Operation, testing, maintenance and decommissioning of the existing Shenandoah S-1-1H E&A well, which was spudded at Kyalla 117 N2 on 1 August 2023, under the *Beetaloo Sub-basin Kyalla 117 N2 Multi-well Drilling, Hydraulic Fracturing and Well Testing Program EMP (ORI6-3)*, approved 22 February 2021. • Collection of approximately 84.06 km (19 ha disturbance) of 2D seismic survey on EP 98 and EP 117 to support the evaluation of the underlying shale resources in the vicinity of the proposed exploration sites (Figure 5).	**4. Description of regulated activities** This EMP covers the regulated activities required to enable Tamboran to complete a series of E&A activities within over 5 years, as summarised in Table 9. These activities include: • Drilling of up to 15 horizontal E&A wells at four (4) exploration locations, including the approved Shenandoah S 2H on the Kyalla 117 N2. • Hydraulic fracture stimulation (HFS) and well testing of up to 15 E&A wells at four (4) exploration locations, including the approved Shenandoah S 2H well on Kyalla 117 N2. • Drilling of a vertical stratigraphy well at SNA. • Operation, maintenance and decommissioning of the existing Kyalla 117 N2 1H E&A well under the *Beetaloo Basin Kyalla drilling hydraulic fracture stimulation and well testing program EP117 N2 EMP (ORI3-2)*, approved 13 August 2019. • Operation, testing, maintenance and decommissioning of the existing Shenandoah S-1-1H E&A well, which was spudded at Kyalla 117 N2 on 1 August 2023, under the *Beetaloo Sub-basin Kyalla 117 N2 Multi-well Drilling, Hydraulic Fracturing and Well Testing Program EMP (ORI6-3)*, approved 22 February 2021. • Collection of approximately 84.06 km (19 ha disturbance) of 2D seismic survey on EP 98 and EP 117 to support the evaluation of the underlying shale resources in the vicinity of the proposed exploration sites (Figure 5).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

3.1 Activity summary

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Table 9: Site activity summary

Activity	Parameter	Description
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Exploration-on site civil construction	Construction and ongoing maintenance of 4 new E&A sites- 36.0 ha total disturbance	• Construction of 4 new E&A locations: • Shenandoah S2- (13.5 ha) • Shenandoah S B- (12.0 ha) • Shenandoah S C- (7.5 ha) • Shenandoah N A-(3.0 ha)
	New access track disturbance - ~12 ha Existing pastoral access track disturbance – ~78.2 ha	• Construction/ upgrade of access tracks to pastoral track type 2 (e.g. 14 m wide): ….. • Construction of a new 1.5 km access track from the existing Kyalla N2 access track (including turn-ins, erosion and sediment controls, and passing bays) connecting Shenandoah S C– 3.3 ha. …..
	Camp pads: ~3.5 ha	• Construction of 1.0 x 1.0 ha camp pad each at SS2, SSB, SSC and SNA. The camp pads at these sites will only be constructed where the centralised camp at the existing Kyalla 117 N2 site is not used. …..
	37 new groundwater monitoring / extraction bores (total spread across all sites)	• Drilling of up to 10 new bores at each of the 3 proposed E&A sites in Shenandoah South. …..
	Laydown areas: ~5.00 ha total	• Construction of a 2.5 ha laydown area at Shenandoah S B and S C.
	Helipad -~1.50 ha total	….. • Construction of a helipad at Shenandoah S B and S C each (0.5 ha)
	~18.00 ha total	• Construction of a 20 m x 2 km fence line and firebreak around the Shenandoah S2, S B and S C sites (4.00 ha per site) …..
	~13.75 ha total	• Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP1 (2.5ha). Increase of SSGP1 from 2.5 ha to 7.5 ha • Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP2 (6.25ha)

Amended EMP text

3.1 Activity summary

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Table 9: Site activity summary

Activity	Parameter	Description
…..		
Exploration-on site civil construction	Construction and ongoing maintenance of 4 new E&A sites- 36.0 ha total disturbance	• Construction of 4 new E&A locations: • SS2 (13.5 ha) • SS B (12.0 ha) • SS C (7.5 ha) • S N A (3.0 ha)
	New access track disturbance - ~12 ha Existing pastoral access track disturbance – ~78.2 ha	• Construction/ upgrade of access tracks to pastoral track type 2 (e.g. 14 m wide): ….. • Construction of a new 1.5 km access track from the existing Kyalla N2 access track (including turn-ins, erosion and sediment controls, and passing bays) connecting Shenandoah S C– 3.3 ha. …..
	Camp pads: ~3.5 ha	• Construction of 1.0 x 1.0 ha camp pad each at SS2, SS C and S N A. The camp pads at these sites will only be constructed where the centralised camp at the existing Kyalla 117 N2 site is not used. …..
	37 new groundwater monitoring / extraction bores (total spread across all sites)	• Drilling of up to 10 new bores at each of the 3 proposed E&A sites in Shenandoah South. …..
	Laydown areas: ~5.00 ha total	• Construction of a 2.5 ha laydown area at SS B and SS C.
	Helipad -~1.50 ha total	….. • Construction of a helipad at SS B and SS C each (0.5 ha)
	~18.00 ha total	• Construction of a 20 m x 2 km fence line and firebreak around the Shenandoah S2, S B and S C sites (4.00 ha per site) …..
	~13.75 ha total	• Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP1 (2.5ha). Increase of SSGP1 from 2.5 ha to 7.5 ha • Operation and maintenance of the existing / approved Kyalla 117 N2 gravel pits SSGP2 (6.25ha)

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Activity	Parameter	Description
Site set-up and mobilisation to support the E&A wells	Camps	..... • Where a centralised camp is not used, a temporary main camp will be located on the newly constructed camp pad at Shenandoah S2, Shenandoah S B and Shenandoah N A. • Each main camp will typically have a ~75-person capacity. .....
Camp operations	~75 person camp	• Operation of a main camp – either centralised (existing Kyalla 117 N2 site) and/or at Shenandoah S2, Shenandoah S B and Shenandoah N A. • Operation of drilling camp on each well pad during drilling.
.....		
Gathering lines	~8.61 km	• Construction and operation of gathering lines to a centralised water and wastewater treatment infrastructure areas between Kyalla 117 N2 to/from Shenandoah S2 and Shenandoah S B to/from Shenandoah S C (~12 m wide) (8.61 ha)
.....		
Total disturbance and rehabilitation (approx.)	139.66 ha	Final rehabilitation activities to return all sites back to a safe, stable and non-polluting form consistent with pre-disturbed condition: • 119.26 ha new clearing across all sites, including seismic. • 20.40 ha approved clearing across Kyalla 117 N2 site. • The existing pastoral access tracks used for the E&A activities will not be rehabilitated at completion. These will be returned to pastoralists for ongoing access.

Amended EMP text

Activity	Parameter	Description
Site set-up and mobilisation to support the E&A wells	Camps	..... • Where a centralised camp is not used, a temporary main camp will be located on the newly constructed camp pad at SS2, SS C and S N A. • Each main camp will typically have a ~75-person capacity. .....
Camp operations	~75-person camp	• Operation of a main camp – either centralised (existing Kyalla 117 N2 site) and/or at SS2, SS C and S N A. • Operation of drilling camp on each well pad during drilling.
.....		
Gathering lines	~8.61 km	• Construction and operation of gathering lines to a centralised water and wastewater treatment infrastructure areas between Kyalla 117 N2 to/from Shenandoah S2 and Shenandoah S B to/from Shenandoah S C (~12 m wide) (8.61 ha)
.....		
Total disturbance and rehabilitation (approx.)	139.66 ha	Final rehabilitation activities to return all sites back to a safe, stable and non-polluting form consistent with pre-disturbed condition: • 119.26 ha new clearing across all sites, including seismic. • 20.40 ha approved clearing across Kyalla 117 N2 site. • The existing pastoral access tracks used for the E&A activities will not be rehabilitated at completion. These will be returned to pastoralists for ongoing access.

3.3 Site Settings
3.3.1 Site selection
.....
Approximate separation distances to the nearest environmental and community receptors from each site are shown in Figure 6 and summarised in the following sections.

3.3.2 Location and disturbance summary of activity
The Shenandoah South E&A program is located on the Shenandoah, Shenandoah East, Hayfield and Beetaloo pastoral stations, within EP 117 and EP 98. The location of the regulated activities are illustrated in Figure 5. The boundary of this EMP is defined as the area which may be affected by E&A regulated activities within the vicinity of the proposed Shenandoah South area as illustrated in Figure 5 and summarised in Table 10.

3 Site Settings
3.3.1 Site selection
.....
Approximate separation distances to the nearest environmental and community receptors from each site are shown in Figure 6 and summarised in the following sections.

3.3.2 Location and disturbance summary of activity
The Shenandoah South E&A program is located on the Shenandoah, Sturt Plains, Gum Ridge and Beetaloo pastoral pastoral stations, within EP 117 and EP 98. The location of the regulated activities are illustrated in Figure 5. The boundary of this EMP is defined as the area which may be affected by E&A regulated activities within the vicinity of the proposed Shenandoah South area as illustrated in Figure 5 and summarised in Table 10.

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

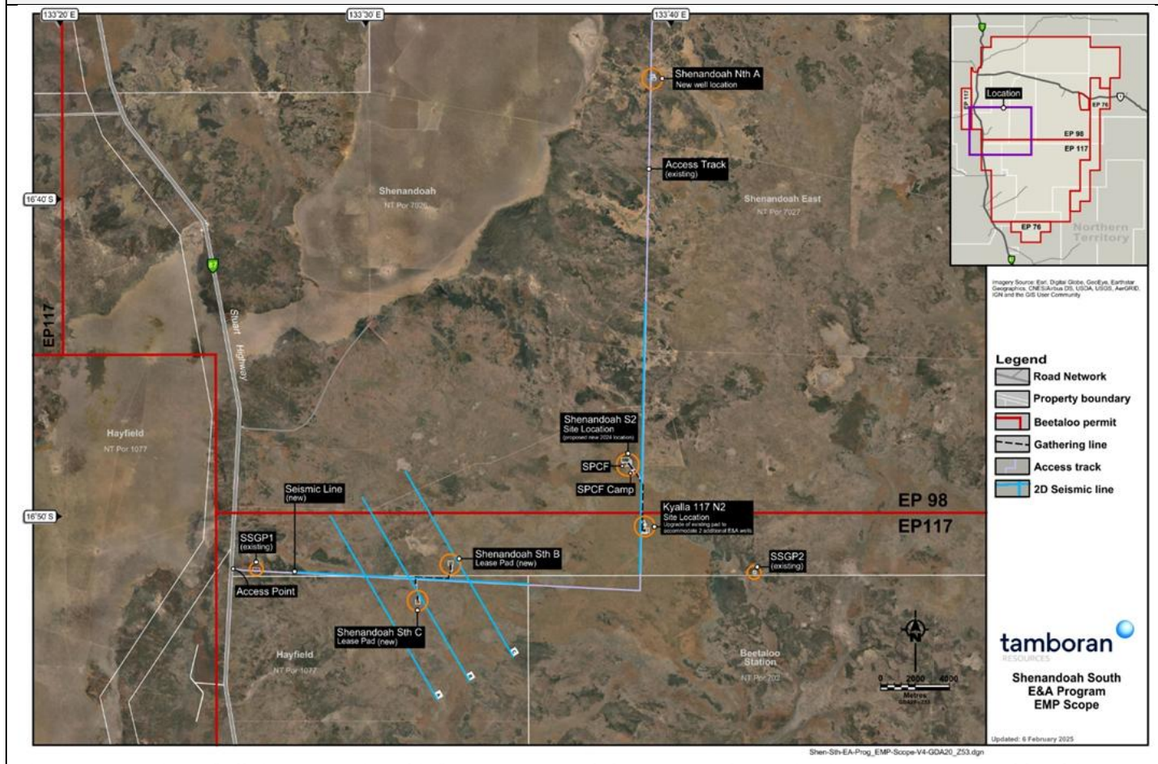

Figure 5: Location of all sites, associated infrastructure and the proposed 2D seismic program covered by this EMP

3.1 Location and disturbance summary of activity

…..

Table 10 Location and disturbance summary of infrastructure on EP 117 and EP 98

Infrastructure	EP	Zone*	Easting (approx.)	Northing (approx.)	Existing disturbance (ha)	New proposed disturbance (ha)	Total disturbance (ha)
Kyalla 117 N2: well pad, access track(s) and associated infrastructure12F12F21F	117	53	356379.72	8137498.48	11.65	4.30	15.95
Kyalla 117: gravel pit SSGP1 (former gravel pit A)	117	52	333877.96	8135080.04	2.50	5.0	7.50
Kyalla 117: gravel pit SSGP2 (former gravel pit 3)	117	53	362753.93	8135089.25	6.25	-	6.25
Shenandoah S2: well pad, access track and associated infrastructure	98	53	355291	8140676	-	29.50	29.50

Amended EMP text

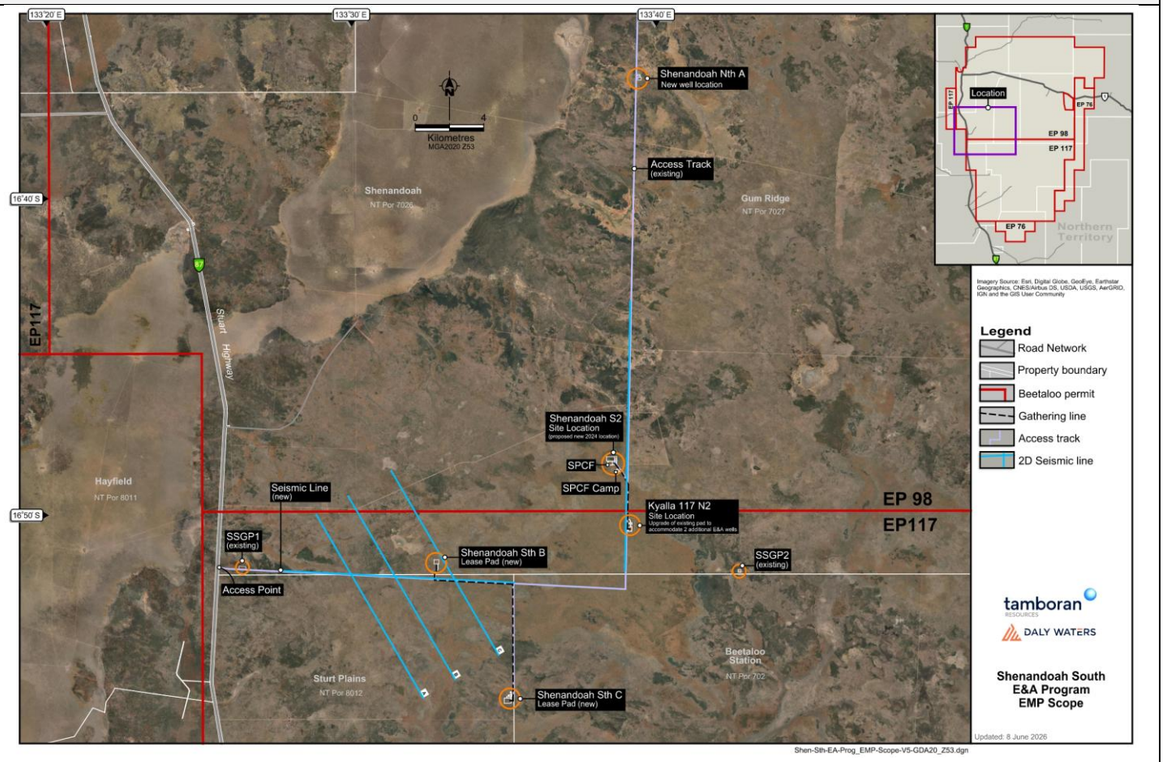

Figure 5: Location of all sites, associated infrastructure and the proposed 2D seismic program covered by this EMP

3.1 Location and disturbance summary of activity

…..

Table 10 Location and disturbance summary of infrastructure on EP 117 and EP 98

Infrastructure	EP	Zone*	Easting (approx.)	Northing (approx.)	Existing disturbance (ha)	New proposed disturbance (ha)	Total disturbance (ha)
Kyalla 117 N2: well pad, access track(s) and associated infrastructure12F12F21F	117	53	356379.72	8137498.48	11.65	4.30	15.95
Kyalla 117: gravel pit SSGP1 (former gravel pit A)	117	52	333877.96	8135080.04	2.50	5.0	7.50
Kyalla 117: gravel pit SSGP2 (former gravel pit 3)	117	53	362753.93	8135089.25	6.25	-	6.25
Shenandoah S2: well pad, access track and associated infrastructure	98	53	355291	8140676	-	29.50	29.50

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Shenandoah S B: well pad, access track(s), laydown and associated infrastructure	117	53	345035	8135464	-	23.30	23.30
Shenandoah S C: well pad, access track(s) and associated infrastructure	117	53	343471	8133330	-	17.30	17.30
Gathering line (12 m wide): Kyalla 117 N2 to/from Shenandoah S2 (start to end)	117 & 98	53	356274 355060	8137505 8140071	-	4.50	5.40
Gathering line (8 m wide): Shenandoah S B to / from Shenandoah S C (start to end)	117	53	345035 343442	8135461 8133331	-	4.11	3.21
Shenandoah N A: well pad, camp pad, access track(s) and associated infrastructure	98	53	356687	8163762	-	12.00	12.00
Seismic: Shenandoah South Line A (13.00 km)**	117	53	337174.05 346089.96	337174.05 8128616.75	-	6.50	6.50
Seismic: Shenandoah South Line B (12.50 km)**	98 & 117	53	341094.69 349560.21	341094.69 8131483.21	-	6.50	6.50
Seismic: Shenandoah South Line C (12.50 km)**	98 & 117	53	338588.93 347420.93	338588.93 8129410.23	-	6.25	6.25
Seismic: Shenandoah access track(s) seismic line(s) (39.00 km)**	98 & 117	53	332988 356365	332988 8150204	-	-	-
Total clearing (ha)					20.40	119.26	139.66

*Universal Transverse Mercator geographic coordinate system is Geocentric Datum of Australia 94.

**Footprint area for 2D seismic based on 5 m wide seismic lines.

3.3.3 Proximity to environmental and community receptors

3.3.3.1 Shenandoah S2, Shenandoah S B and Shenandoah S C

The Shenandoah S2, S B and S C sites are characterised as a mixture of eucalypt woodland, with extensive areas of Lancewood (Acacia shirleyi) / Bullwaddy (Macropteranthes kekwickii) vegetation (refer section Vegetation communities). Proximity of the proposed sites to environmental and community receptors and features of interest, including Tamboran's existing sites is provided in Figure 6 and Table 12. The closest receptors to these sites include: a pastoral bore (~9 km from Shenandoah S C), the Stuart Highway (~11 km from Shenandoah S B); and nearest major water course (i.e. stream order 3 or above), greater than 20 km from all three sites.

All three well pads are located outside the minimum riparian buffer requirement of 25 m (refer Table 19 of the NT Land Clearing Guidelines) (NTG, 2021). Surface water flows from the well pad areas will be low velocity sheet flows that only occur during rainfall events. The nearest drainage depression is located 1.5 km down gradient of the Shenandoah S B well pad to the south-east.

Amended EMP text

Shenandoah S B: well pad, access track(s), laydown and associated infrastructure	117	53	345035	8135464	-	22.30	22.30
Shenandoah S C: well pad, access track(s) and associated infrastructure	117	53	343471	8133330	-	18.80	18.80
Gathering line (12 m wide): Kyalla 117 N2 to/from Shenandoah S2 (start to end)	117 & 98	53	356274 355060	8137505 8140071	-	4.50	5.40
Gathering line (8 m wide): Shenandoah S B to / from Shenandoah S C (start to end)	117	53	345035 343442	8135461 8133331	-	4.11	3.21
Shenandoah N A: well pad, camp pad, access track(s) and associated infrastructure	98	53	356687	8163762	-	12.00	12.00
Seismic: Shenandoah South Line A (13.00 km)**	117	53	337174.05 346089.96	337174.05 8128616.75	-	6.50	6.50
Seismic: Shenandoah South Line B (12.50 km)**	98 & 117	53	341094.69 349560.21	341094.69 8131483.21	-	6.50	6.50
Seismic: Shenandoah South Line C (12.50 km)**	98 & 117	53	338588.93 347420.93	338588.93 8129410.23	-	6.25	6.25
Seismic: Shenandoah access track(s) seismic line(s) (39.00 km)**	98 & 117	53	332988 356365	332988 8150204	-	-	-
Total clearing (ha)					20.40	119.26	139.66

*Universal Transverse Mercator geographic coordinate system is Geocentric Datum of Australia 94.

**Footprint area for 2D seismic based on 5 m wide seismic lines.

3.3.3 Proximity to environmental and community receptors

3.3.3.1 Shenandoah S2, Shenandoah S B and Shenandoah S C

The Shenandoah S2 and S B sites are characterised as a mixture of eucalypt woodland, with extensive areas of Lancewood (Acacia shirleyi) / Bullwaddy (Macropteranthes kekwickii) vegetation (refer section Vegetation communities). The Shenandoah S C well site is more dominated by Lancewood/Bullwaddy. The proximity of the proposed sites to environmental and community receptors and features of interest, including Tamboran's existing sites is provided in Figure 6 and Table 12. The closest receptors to these sites include: the Stuart Highway (~11 km from Shenandoah S B), pastoral bores (greater than 16 km from the well sites); and nearest major water course (i.e. stream order 3 or above), greater than 20 km.

All three well pads are located outside the minimum riparian buffer requirement of 25 m (refer Table 19 of the NT Land Clearing Guidelines) (NTG, 2021). Surface water flows from the well pad areas will be low velocity sheet flows that only occur during rainfall events. The nearest drainage depression is located 1.5 km down gradient of the Shenandoah S B well pad to the south-east.

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Table 12: Environmental and community receptors – approximate separation distances (km)

Receptor	Kyalla 117 N2 (km)	Shenandoah S2 (km)	Shenandoah S B (km)	Shenandoah S C (km)	Shenandoah N A (km)	Seismic Lines A, B, C (km)
Nearest pastoral bore	16	16	19	9	12	11 – 38
Nearest homestead	21	17	15	16	22	18 – 43
Nearest community	31 Dunmarra	28 Dunmarra	24 Dunmarra	25 Dunmarra	27 Dunmarra	19 Dunmarra
Nearest indigenous community (Jingaloo)	31	35	29	27	58	37 – 53
Stuart Highway	20	22	11	14	32	28 – 35
Carpentaria Highway	62	57	62	64	35	62 – 64
Bullwaddy Conservation Reserve	71	63	82	85	63	81 - 87
Frew Ponds	28	32	21	18	49	16 – 21
Lake Woods	92	100	93	91	122	91 – 93
Nearest mapped water course	13	7	22	21	9*	10 - 15
Archaeological site	No archaeological sites recorded	No archaeological sites recorded	No archaeological sites recorded	No archaeological sites recorded	No archaeological sites recorded**	No archaeological sites recorded

* NB: The closest intermittent creek (stream order 1), is located 450 m east of the proposed site.

** One Restricted Work Area (RWA) is identified to the west of the Shenandoah N A site (RWA3), parallel to a portion of the north-south pastoral access track leading to the site. Sacred sites within the RWA are over 3 km away from the Shenandoah N A.

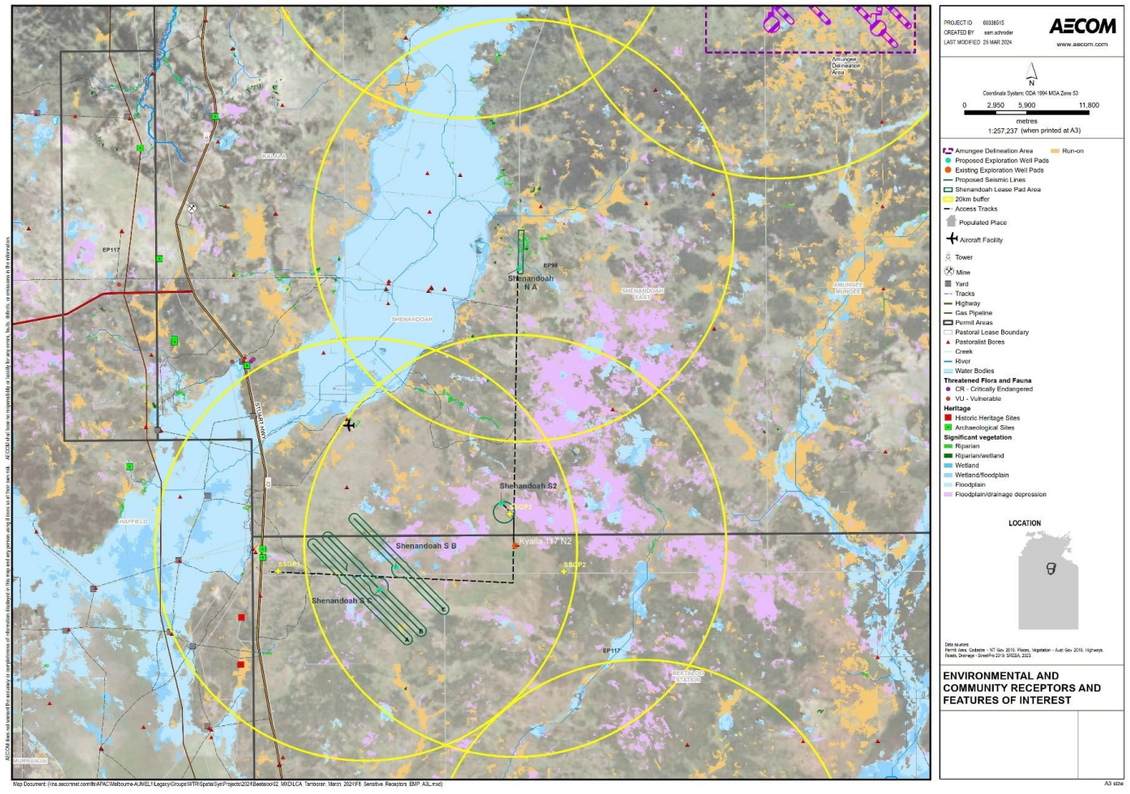

Figure 6: Proximity of environmental and community receptors and features of interest to all Tamboran's existing and proposed new exploration sites

Amended EMP text

Table 12: Environmental and community receptors – approximate separation distances (km)

Receptor	Kyalla 117 N2 (km)	Shenandoah S2 (km)	Shenandoah S B (km)	Shenandoah S C (km)	Shenandoah N A (km)	Seismic Lines A, B, C (km)
Nearest pastoral bore	16	16	19	16	12	11 – 38
Nearest homestead	21	17	15	23	22	18 – 43
Nearest community	31 Dunmarra	28 Dunmarra	24 Dunmarra	34 Dunmarra	27 Dunmarra	19 Dunmarra
Nearest indigenous community (Jingaloo)	31	35	29	19	58	37 – 53
Stuart Highway	20	22	11	56	32	28 – 35
Carpentaria Highway	62	57	62	71	35	62 – 64
Bullwaddy Conservation Reserve	71	63	82	81	63	81 - 87
Frew Ponds	28	32	21	23.5	49	16 – 21
Lake Woods	92	100	93	86	122	91 – 93
Nearest mapped water course	13	7	22	10	9*	10 - 15
Archaeological site	No archaeological sites recorded	No archaeological sites recorded	No archaeological sites recorded	1 archaeological site recorded, but will be avoided	No archaeological sites recorded**	No archaeological sites recorded

* NB: The closest intermittent creek (stream order 1), is located 450 m east of the proposed site.

** One Restricted Work Area (RWA) is identified to the west of the Shenandoah N A site (RWA3), parallel to a portion of the north-south pastoral access track leading to the site. Sacred sites within the RWA are over 3 km away from the Shenandoah N A.

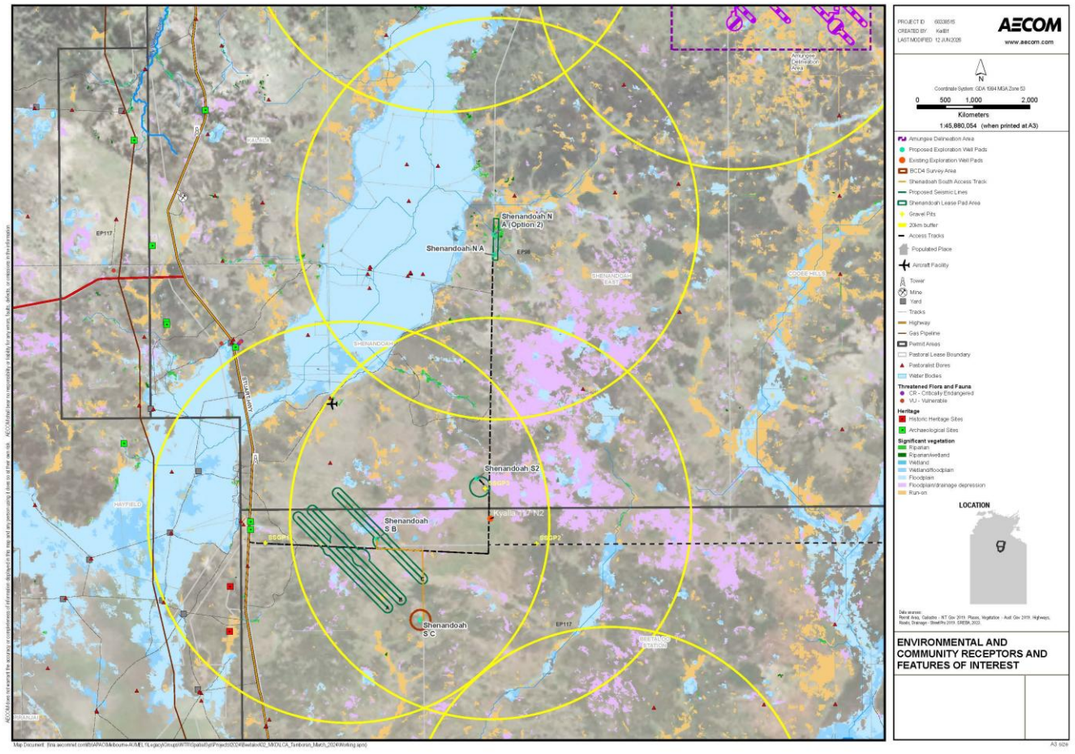

Figure 6: Proximity of environmental and community receptors and features of interest to all Tamboran's existing and proposed new exploration sites

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

3.6 Civil construction and maintenance

…..

Table 15: Summary of civil construction activities at all sites (ha)

Infrastructure	Existing (ha)	New (ha)
Kyalla 117 N2		
….		
Subtotal	**~20.40**	**14.70**
Shenandoah S2		
…..		
Subtotal	**-**	**29.50**
Shenandoah S B		
…..		
Camp pad	-	1.0
…..		
Subtotal		**26.51**
Shenandoah S C		
Well pad	-	7.50
Camp pad	-	-
Helipad	-	0.50
Access track, including turn ins and passing bays	-	3.30
Laydown/ storage/ contingent	-	2.50
Fence line and firebreak	-	4.00
Gathering lines: Shenandoah S B to / from Shenandoah S C	Included under Shenandoah S B totals	
Gravel pit(s)	-	-
Subtotal		**17.80**
Shenandoah N A		
…..		
Subtotal	**-**	**12.00**
TOTAL	**20.40**	**100.51**

3.6.6 Gathering network construction and abandonment

Gathering lines will be constructed as required to facilitate the transfer of high volumes of fluid and produced hydrocarbons safely and efficiently between well pads to a centralised storage area to enable centralised management and fluid recycling (Figure 15).

…..

Amended EMP text

3.6 Civil construction and maintenance

…..

Table 15: Summary of civil construction activities at all sites (ha)

Infrastructure	Existing (ha)	New (ha)
Kyalla 117 N2		
….		
Subtotal	**~20.40**	**14.70**
Shenandoah S2		
…..		
Subtotal	**-**	**29.50**
Shenandoah S B		
…..		
Camp pad	-	-
…..		
Subtotal	**-**	**25.51**
Shenandoah S C		
Well pad	-	7.5
Camp pad	-	1.0
Helipad	-	0.5
Access track, including turn ins and passing bays (0.35 km)	-	3.3
Laydown/ storage/ contingent	-	2.5
Fence line and firebreak	-	4.0
Gravel pit(s) (use of existing gravel sources)	-	-
Gathering lines	Included under Shenandoah S B totals	
Subtotal	**-**	**18.80**
Shenandoah N A		
…..		
Subtotal	**-**	**12.00**
TOTAL	**20.40**	**100.51**

3.6.6 Gathering network construction and abandonment

Gathering lines will be constructed as required to facilitate the transfer of high volumes of fluid and produced hydrocarbons safely and efficiently between well pads to a centralised storage area to enable centralised management and fluid recycling (Figure 15).

…..

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

3.7.2 Site Preparation

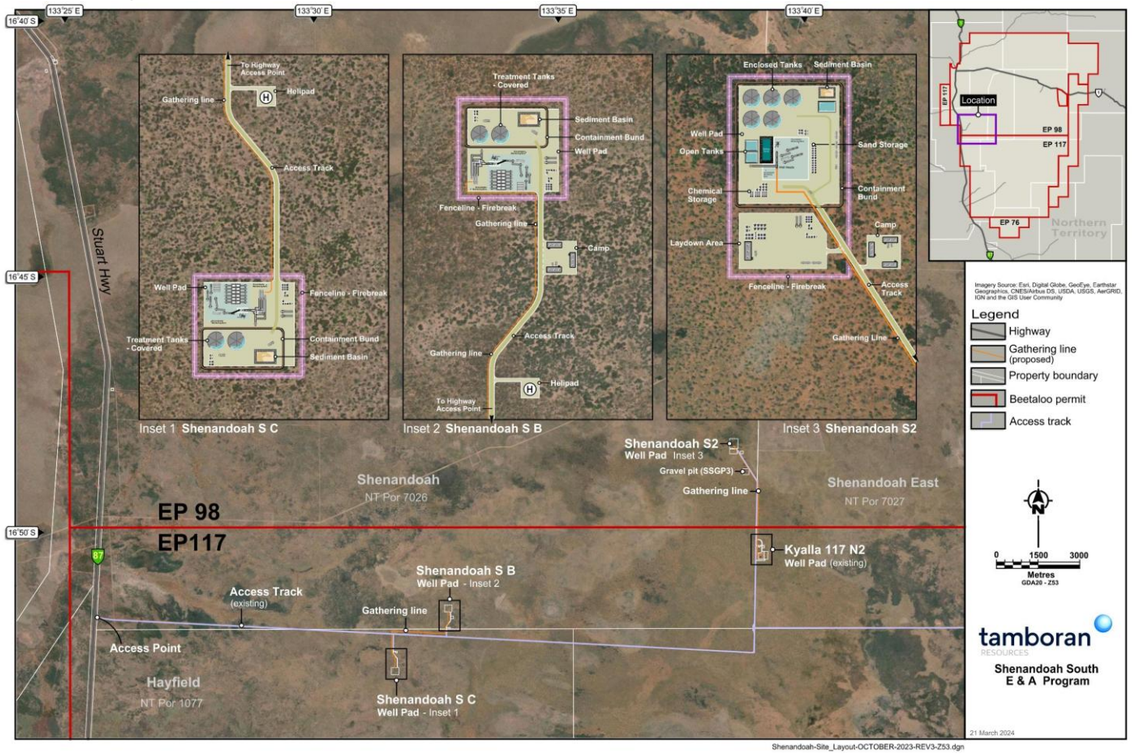

Figure 23: General site layout for new E&A well pads – Shenandoah S2, S B and S C

3.11 Water supply and use

Water sourced for the EMP activities will be extracted from new and existing Gum Ridge Formation bores at each of the proposed sites. It is estimated that up to 375 ML/year of water will be extracted from the Gum Ridge Formation across the Shenandoah South to support the proposed E&A activities (Table 21). A water balance for the activities is provided in Figure 32, noting that all estimates are subject to operational changes. The groundwater take for the proposed exploration activities consists of the following breakdown per activity:

- 2.5 ML per E&A well for drilling and completions
- 72.0 ML per well for stimulation
- 5.0 ML for camp activities per site
- 20.0 ML civil construction, groundwater bore drilling, dust suppression and general activities per site
- 0.5 ML seismic –for dust suppression and shot installation

Any new bores constructed to support exploration activities will be registered and added to the WEL.

Table 21: Predicted water take

Amended EMP text

3.7.2 Site Preparation

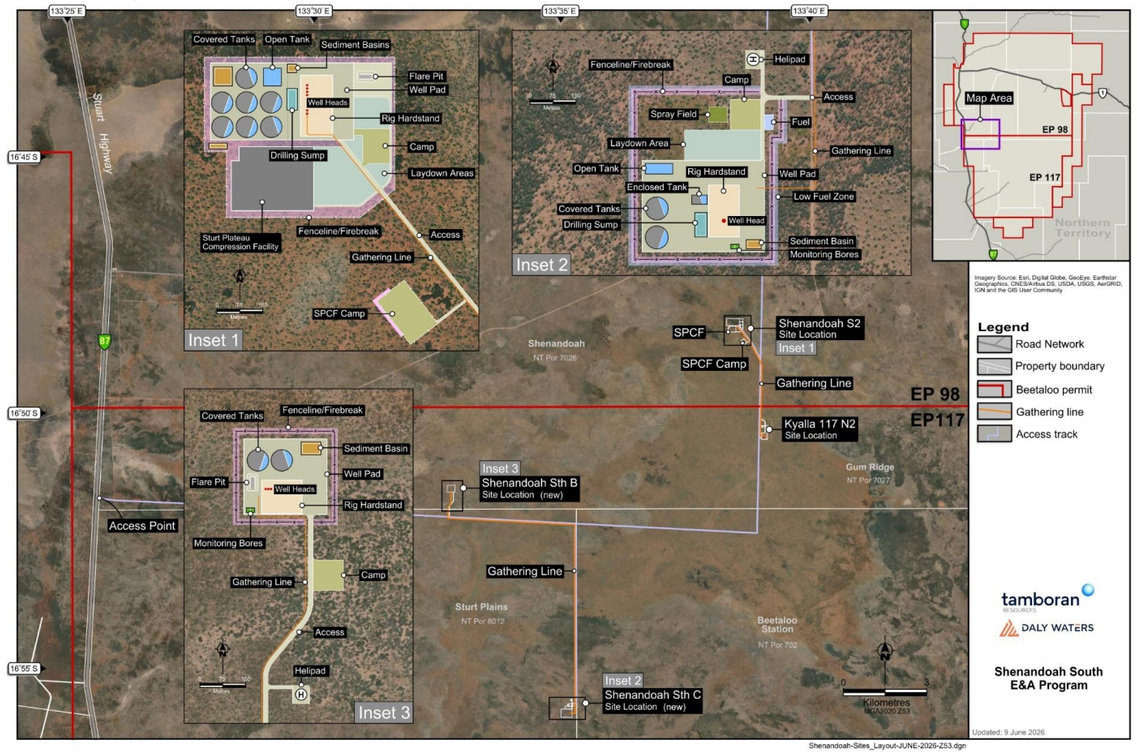

Figure 23: General site layout for new E&A well pads – Shenandoah S2, S B and S C

3.12 Water supply and use

Water sourced for the EMP activities will be extracted from new and existing Gum Ridge Formation bores and Anthony Lagoon Formation bores at each of the proposed sites. It is estimated that up to 375 ML/year of water will be extracted across the Shenandoah South to support the proposed E&A activities (Table 21). A water balance for the activities is provided in Figure 32, noting that all estimates are subject to operational changes. The groundwater take for the proposed exploration activities consists of the following breakdown per activity:

- 2.5 ML per E&A well for drilling and completions
- 72.0 ML per well for stimulation
- 5.0 ML for camp activities per site
- 20.0 ML civil construction, groundwater bore drilling, dust suppression and general activities per site
- 0.5 ML seismic –for dust suppression and shot installation.

Any new bores constructed to support exploration activities will be registered and added to the WEL.

Table 21: Predicted water take

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Site	Predicted water use per year (estimated ML)					
	2023	2024	2025	2026	2027	2028
Kyalla 117 N2	12.5	80.4	1.5	127.9	-	-
Shenandoah S2	-	-	240.7	6.1	202.0	61.0
Shenandoah S B	-	-	8.2	132.6	-	-
Shenandoah S C	-	-	-	86.7	75.4	75.4
Shenandoah N A	-	-	-	-	-	3.4
Seismic	-	-	-	-	-	-
Total	**12.5**	**80.4**	**250.4**	**353.3**	**338.4**	**139.3**

4.1.7 Flood risk assessment

The extent of inundation within the permit area depends on the severity of the wet season and can range from remaining completely dry to widespread flooding during the wet season. As a part of the Land Condition Assessment (Appendix K), AECOM assessed the 1% Annual Exceedance Probability (AEP) flood depths and levels to determine the risk of flood inundation during the 100-year flood event from a local or regional flooding for each of the Shenandoah South exploration well sites (Table 38).

Table 38: 1% AEP Results for each new well pad

Well pad	SRTM ground elevation (m AHD)[1]	Maximum water depth (m)	Flood level at nearest channel (m AHD)
Shenandoah S2	267.5	-	267.3
Shenandoah S B	258.8	-	254.6
Shenandoah S C	263.4	-	262.4
Shenandoah N A	240.5	-	238.0
Kyalla 117 N2 (previously assessed)	272.3	-	272.5

[1] AHD – Australian Height Datum

The greatest risk of flooding to the new exploration well sites is from local catchment sheet-flow (rainfall immediately over the area draining to the site). The site bund is typically ~0.5 m in height, meaning all sites should be protected from widespread inundation. The local catchment runoff from major storm events will be the considering factor for the establishment of well pad finish levels and the well pad designs will take this into consideration for the final placement in the landscape. It should be noted that given the lack of topography within the Sturt Plateau, that high velocity flood waters outside regional and local flow paths are considered unlikely. Anecdotal evidence confirms that flooding is generally slow moving standing water which represents a lower risk of impacting site stability or the integrity of infrastructure.

The hydraulic assessment of the well pads indicates the following:

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- Shenandoah S C (Figure 47c): The well pad is currently positioned on a ridge and demonstrates a low risk of inundation in the 1% AEP flood event from local and regional catchment flooding. The position of the well

Amended EMP text

Site	Predicted water use per year (estimated ML)					
	2023	2024	2025	2026	2027	2028
Kyalla 117 N2	12.5	80.4	1.5	127.9	-	-
Shenandoah S2	-	-	240.7	6.1	202.0	61.0
Shenandoah S B	-	-	8.2	132.6	-	-
Shenandoah S C	-	-	-	86.7	75.4	75.4
Shenandoah N A	-	-	-	-	-	3.4
Seismic	-	-	-	-	-	-
Total	**12.5**	**80.4**	**250.4**	**353.3**	**338.4**	**139.3**

4.1.7 Flood risk assessment

The extent of inundation within the permit area depends on the severity of the wet season and can range from remaining completely dry to widespread flooding during the wet season. As a part of the Land Condition Assessment (Appendix K), AECOM assessed the 1% Annual Exceedance Probability (AEP) flood depths and levels to determine the risk of flood inundation during the 100-year flood event from a local or regional flooding for each of the Shenandoah South exploration well sites (Table 38).

Table 38: 1% AEP Results for each new well pad

Well pad	SRTM ground elevation (m AHD)[1]	Maximum water depth (m)	Flood level at nearest channel (m AHD)
Shenandoah S2	267.5	-	267.3
Shenandoah S B	258.8	-	254.6
Shenandoah S C (field id BCD 4)	256.37	-	256.29
Shenandoah N A	240.5	-	238.0
Kyalla 117 N2 (previously assessed)	272.3	-	272.5

[1] AHD – Australian Height Datum

The greatest risk of flooding to the new exploration well sites is from local catchment sheet-flow (rainfall immediately over the area draining to the site). The site bund is typically ~0.5 m in height, meaning all sites should be protected from widespread inundation. The local catchment runoff from major storm events will be the considering factor for the establishment of well pad finish levels and the well pad designs will take this into consideration for the final placement in the landscape. It should be noted that given the lack of topography within the Sturt Plateau, that high velocity flood waters outside regional and local flow paths are considered unlikely. Anecdotal evidence confirms that flooding is generally slow moving standing water which represents a lower risk of impacting site stability or the integrity of infrastructure.

The hydraulic assessment of the well pads indicates the following:

.....

- Shenandoah S C (Figure 48c): BCD4 well site indicates low risk of flooding to the well site during the 1% AEP flood event from flows within the largest nearby flow path. The site remains susceptible to shallow sheet flow generated during runoff from higher-elevation areas to the north. Well site level will be raised above natural

Current EMP text

pad also means that diversion drainage works around the perimeter of the well pad are not required. Potential access via the ridgeline will minimise drainage works along the access track.

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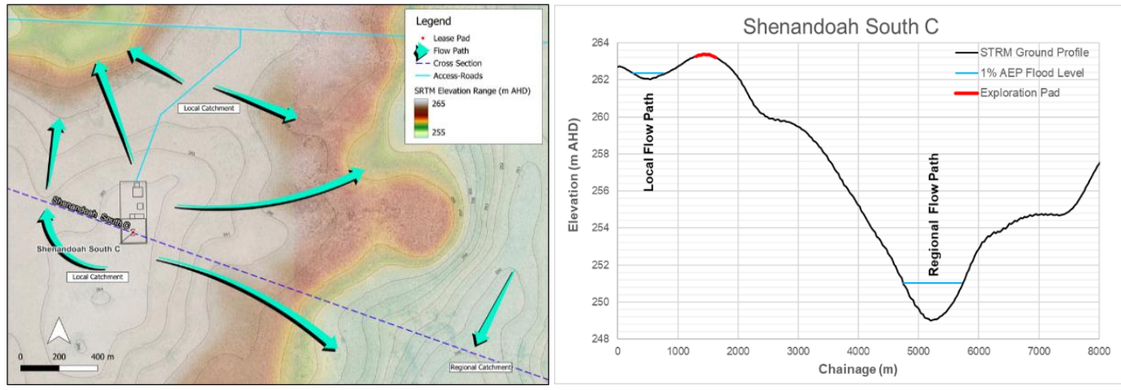

c) Shenandoah S C

Figure 48: Hydraulic assessment for new well pads – a) Shenandoah S2; b) Shenandoah S B; c) Shenandoah S C; and d) Shenandoah N A

4.2 Biological environment

4.2.2 Vegetation communities

Surveys of the vegetation communities of the proposed activity locations within the Shenandoah South E&A program were completed in March-April 2023 by AECOM. Data has also been used from previous baseline assessments completed in 2004, 2006 (HLA, 2006; 2006c), 2010, 2014, 2016 ,2018 and 2021 (AECOM, 2011; 2014; 2016; 2018; and 2021).

The proposed activity locations (e.g. well sites, seismic lines and associated infrastructure detailed in section 3) of the Shenandoah South E&A program have been evaluated through detailed habitat assessments. Assessments included identification of vegetation community, dominant flora species at each strata, habitat condition, disturbance factors (fire, weeds, erosion, feral fauna species), and fauna attributes (e.g. tree hollows, logs, grass cover, mistletoe abundance).

The SREBA (2022), Terrestrial Ecosystems Baseline Report identified 51 vegetation communities and 21 broad vegetation groups comprising the final vegetation classification for the study area (Young et al, 2022). Within the Shenandoah South E&A program, 21 vegetation communities are noted (Figure 49).

Significant vegetation communities identified by the SREBA Baseline Report were also identified in the Shenandoah E&A Program. These include wetland, floodplains/drainage depressions and run-on areas. The planned well pads are shown to be outside these areas (Figure 50), with only minor interaction associated with the seismic lines on floodplains, drainage depressions and run-on areas.

Based on the SREBA definition of significant vegetation (DEWPS 2022), it is considered that the floodplains and drainage depressions within the Shenandoah South E&A Program area are not classified as high value wetlands, however they do have important ecological values for the local flora and fauna. The floodplains, drainage depressions and run-on areas are generally not considered sensitive to impacts from adjacent land use due to the relatively large spatial extent (DEPWS 2022). Seismic exploration activities can be conducted to minimise the extent and duration of any disturbances on the significant vegetation communities. This can be achieved by minimising clearing impacts to the greatest extent practicable on the key habitat features that contribute to their importance in the region (i.e. large habitat trees with hollows).

Amended EMP text

ground level, along with the implementation of diversion works to redirect upstream flows away from the site.

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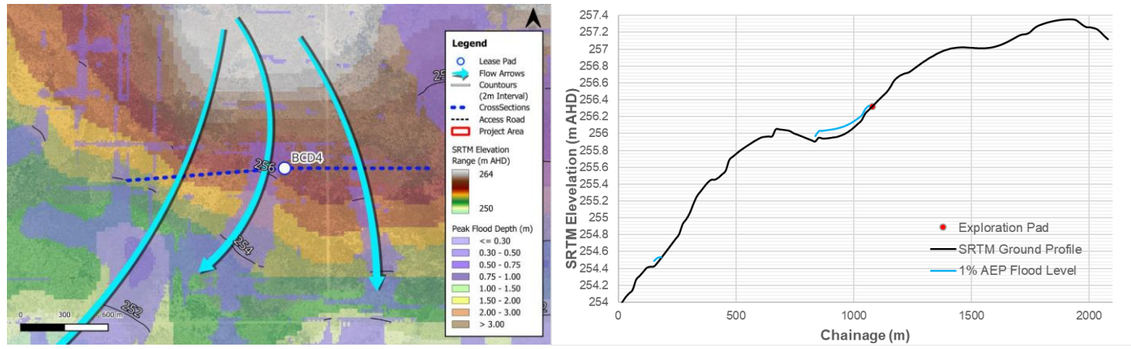


c) Shenandoah S C

Figure 48: Hydraulic assessment for new well pads – a) Shenandoah S2; b) Shenandoah S B; c) Shenandoah S C; and d) Shenandoah N A

4.2 Biological environment

4.2.2 Vegetation communities

Surveys of the vegetation communities of the proposed activity locations within the Shenandoah South E&A program were completed in March-April 2023 by AECOM and in August 2025 and February 2026. Data has also been used from previous baseline assessments completed in 2004, 2006 (HLA, 2006; 2006c), 2010, 2014, 2016 ,2018 and 2021 (AECOM, 2011; 2014; 2016; 2018; 2021).

The proposed activity locations (e.g. well sites, seismic lines and associated infrastructure detailed in section 3) of the Shenandoah South E&A program have been evaluated through detailed habitat assessments. Assessments included identification of vegetation community, dominant flora species at each strata, habitat condition, disturbance factors (fire, weeds, erosion, feral fauna species), and fauna attributes (e.g. tree hollows, logs, grass cover, mistletoe abundance).

The SREBA (2022), Terrestrial Ecosystems Baseline Report identified 51 vegetation communities and 21 broad vegetation groups comprising the final vegetation classification for the study area (Young et al, 2022). Within the Shenandoah South E&A program, 21 vegetation communities are noted (Figure 49).

Significant vegetation communities identified by the SREBA Baseline Report were also identified in the Shenandoah E&A Program. These include wetland, floodplains/drainage depressions and run-on areas. The planned well pads are shown to be outside these areas (Figure 50), with only minor interaction associated with the seismic lines on floodplains, drainage depressions and run-on areas.

Based on the SREBA definition of significant vegetation (DEWPS 2022), it is considered that the floodplains and drainage depressions within the Shenandoah South E&A Program area are not classified as high value wetlands, however they do have important ecological values for the local flora and fauna. The floodplains, drainage depressions and run-on areas are generally not considered sensitive to impacts from adjacent land use due to the relatively large spatial extent (DEPWS 2022). Seismic exploration activities can be conducted to minimise the extent and duration of any disturbances on the significant vegetation communities. This can be achieved by minimising clearing impacts to the greatest extent practicable on the key habitat features that contribute to their importance in the region (i.e. large habitat trees with hollows).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
In accordance with the NT Water Act 1992 to interfere with a waterway, it is considered that the seismic program would either not cause a material change or alteration to the waterway or occur generally in a lower tier stream order (i.e. Stream Order 1). Permits to interfere with a waterway can be obtained through DEPWS Water Resources Branch. A summary of the land condition assessment (LCA) for the Shenandoah South E&A program is provided in Table 41 to Table 44. The main vegetation communities that will be disturbed at the new sites within the Shenandoah South E&A program are summarised in Table 45 based on area and percentage cover, and discussed further in section 4.2.2.1. Community 2a, which is the most widespread vegetation community within the Shenandoah E&A Program will result in <3% of that vegetation being disturbed in the immediate area (worst case).	In accordance with the NT Water Act 1992 to interfere with a waterway, it is considered that the seismic program would either not cause a material change or alteration to the waterway or occur generally in a lower tier stream order (i.e. Stream Order 1). Permits to interfere with a waterway can be obtained through DEPWS Water Resources Branch. A summary of the land condition assessment (LCA) for the Shenandoah South E&A program is provided in Table 41 to Table 44. The main vegetation communities that will be disturbed at the new sites within the Shenandoah South E&A program are summarised in Table 45 based on area and percentage cover and discussed further in section 4.2.2.1. Community 2a, which is the most widespread vegetation community within the Shenandoah E&A Program will result in <3% of that vegetation being disturbed in the immediate area (worst case).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

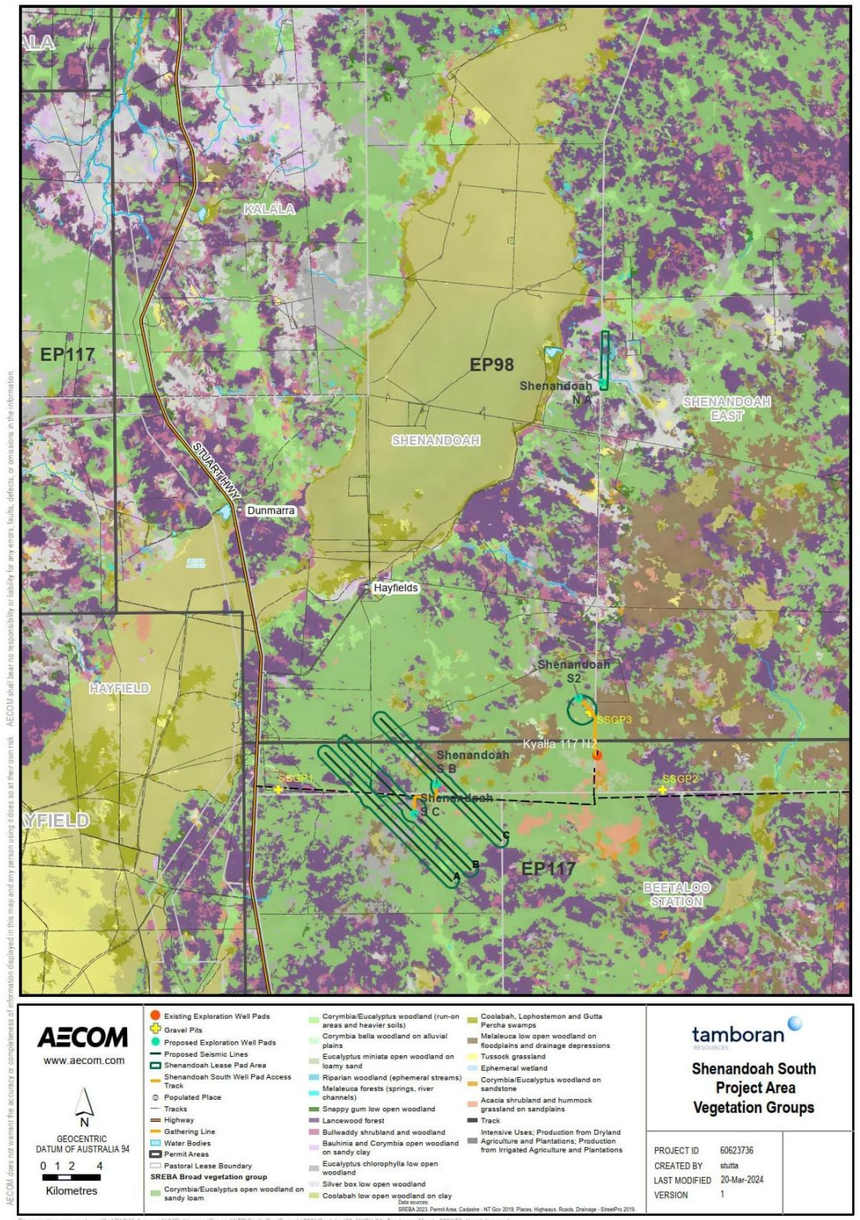


Figure 50: Shenandoah South E&A program SREBA vegetation community boundaries.

Amended EMP text

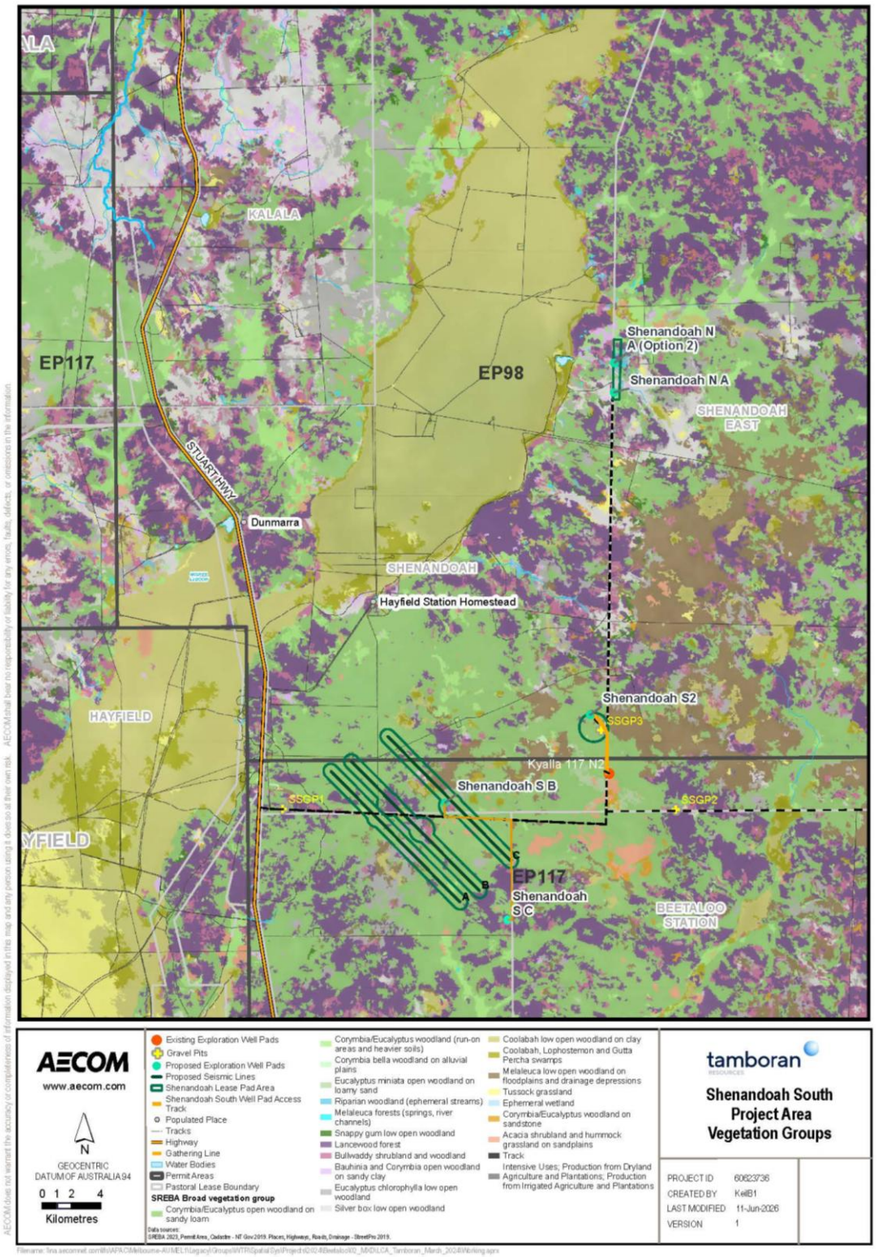
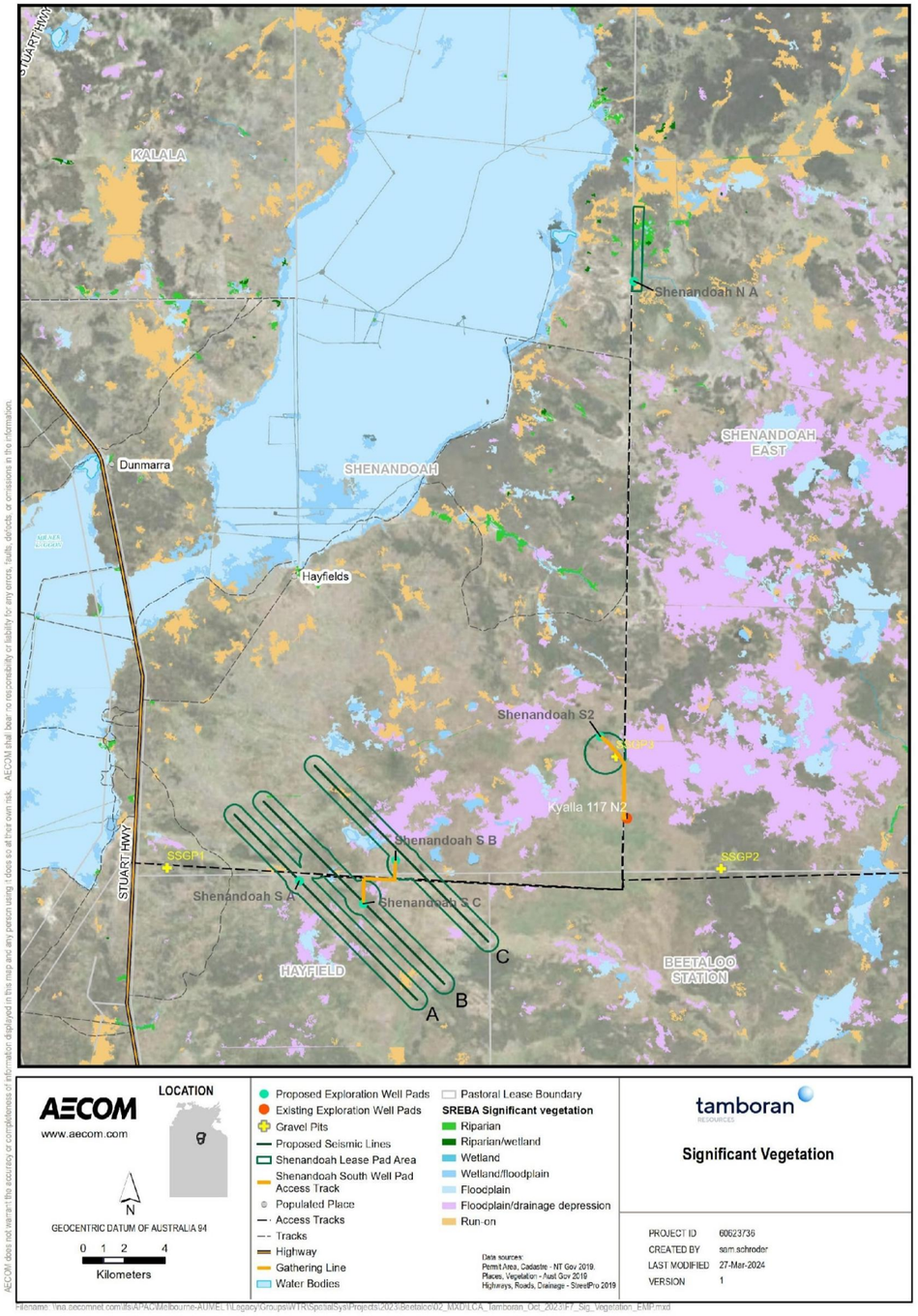


Figure 50: Shenandoah South E&A program SREBA vegetation community boundaries.

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text



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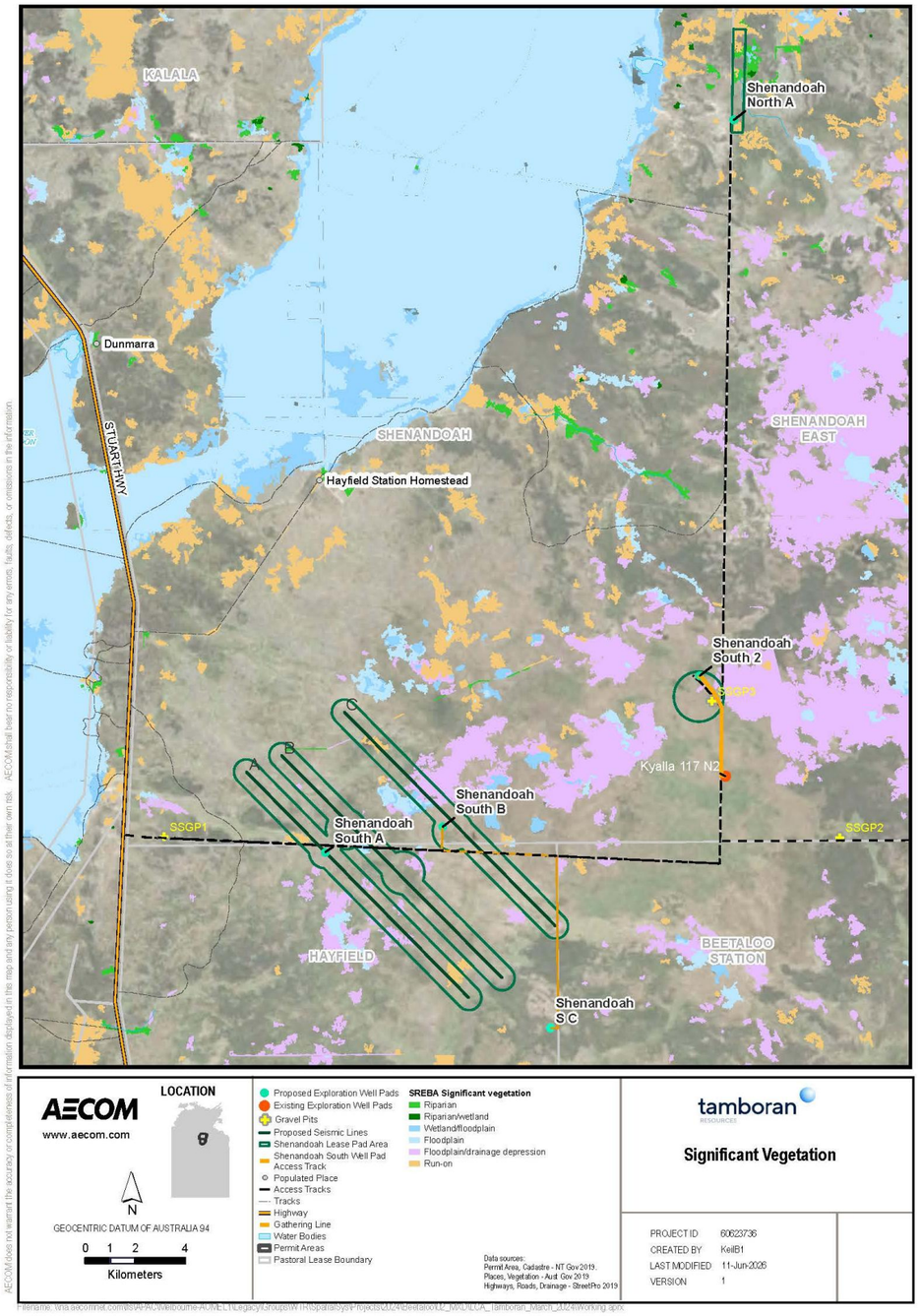


Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

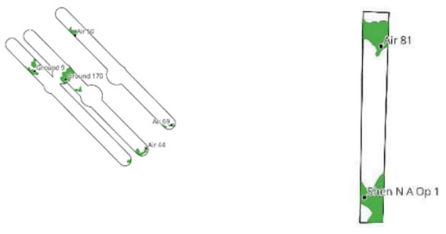
Current EMP text

Figure 51: Shenandoah E&A program area significant vegetation communities

Table 43: Summary of existing environment and surrounds – Shenandoah S C

Shenandoah S C		Survey photos of the vegetation/habitat of the surrounding environment
Location	GDA94, Zone 53, 343472E, 8133331N	
Landform and soil	Dark reddish brown silty clay loam in upper 0.3 m. Progressing to clay. No surface gravels. Well drained on a simple slope <1%.	
Vegetation community	**2b:** *Acacia shirleyi*, *Corymbia dichromophloia* ± *Eucalyptus leucophloia*, *C. polycarpa* mid-high open woodland	
Vegetation description	*Acacia shirleyi*, *Ventilago viminalis* mid high open woodland over *Macropteranthes kekwickii*, *Terminalia volucris*, *Eucalyptus chlorophylla* mid high open shrubland over *Sorghum intrans*, *Eulalia aurea*, *Chrysopogon fallax* mid high tussock grassland.	
Dominant flora species	*Acacia shirleyi*, *Ventilago viminalis* *Macropteranthes kekwickii*, *Terminalia volucris*, *Eucalyptus chlorophylla* *Sorghum intrans*, *Eulalia aurea*, *Chrysopogon fallax*	
Habitat condition	Moderate - Tree hollows, Mistletoe and leaf litter absent. Fallen logs and flowering plants common. Fire damage moderate > 2 years ago. No erosion. Minor cattle impacts. Termite mounds spares. Ground cover: 40% vegetation, 25% litter, 25% bare soil, 10% gravel.	
Weeds	No Weeds of National Significance present.	
Potential listed threatened species (SREBA 2023)	Northern Shrike-tit (*Falcunculus frontatus whitei*), Gouldian Finch (*Erythrura gouldiae*), Plains Death Adder (*Acanthophis hawkei*), Yellow Spotted Monitor (*Varanus panoptes*), Grey Falcon (*Falco hypoleucos*), Common Brushtail Possum (*Trichosurus vulpecula arnhemensis*), Mertens' Water Monitor (*Varanus mertensi*)	
Hydrogeology	Groundwater resources and use is primarily from the Cambrian Limestone Aquifers (the Anthony Lagoon Formation and Gum Ridge Formation) with the shallower undifferentiated Cretaceous or perched alluvium systems being unsaturated.	

Table 1: Area and percentage of vegetation community within the Shenandoah South E&A Program – Shenandoah S2, S B, S C and N A (adapted from Appendix K)

Vegetation community		Area (ha)	% of vegetation community within Shenandoah South E&A program
Lateritic plains and rises with sandy loam kandosol soils			
	Community 1a: *Acacia shirleyi* woodland over *Macropteranthes kekwickii*, *Terminalia volucris* ± *Acacia difficilis* shrubland, over open tussock grassland	199	6.02

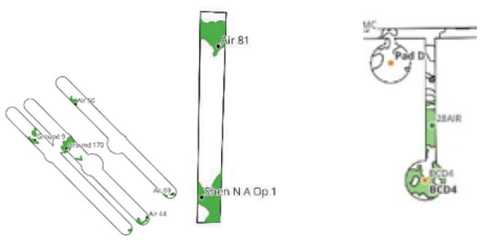
Amended EMP text

Figure 51: Shenandoah E&A program area significant vegetation communities

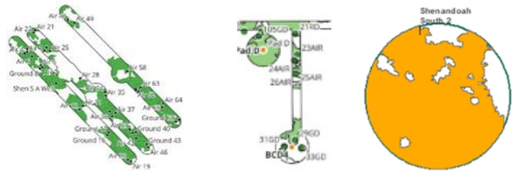
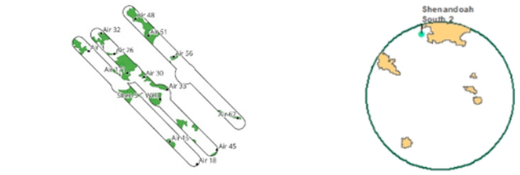
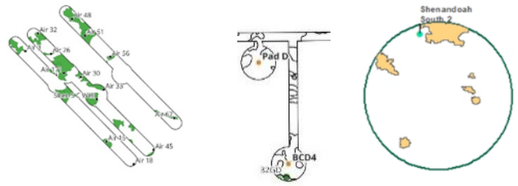
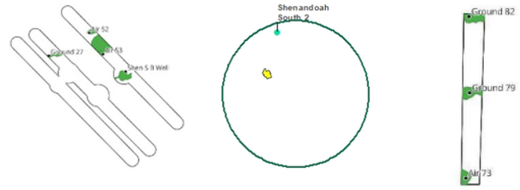
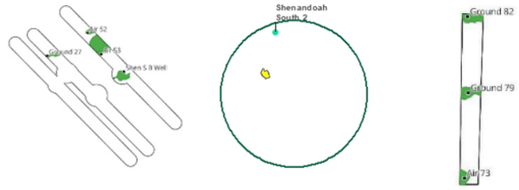
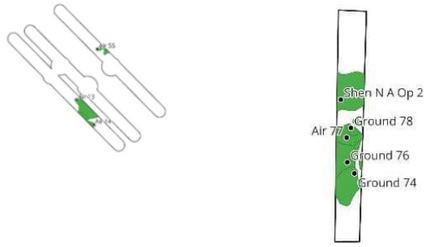
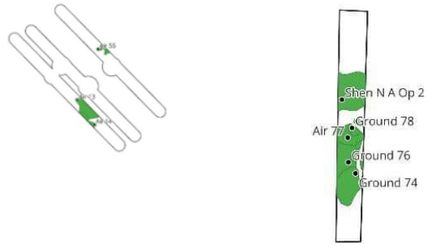
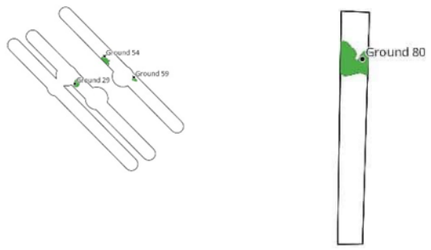
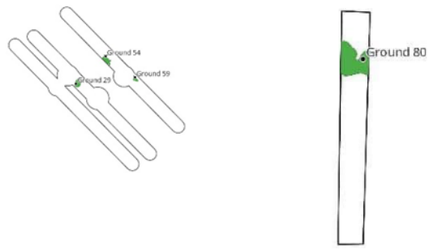
Table 43: Summary of existing environment and surrounds – Shenandoah S C

Shenandoah S C (Field Id BCD 4)		Survey photos of the vegetation/habitat of the surrounding environment
Location	GDA94, Zone 53, 349353E, 8127412N	
Landform and soil	Scoured gravelly level to gently undulating low rises and pediment slopes. Sandy loam to medium clay. Soil Profile: 	
Vegetation community	*Comm* 1a – *Acacia shirleyi* ± *Macropteranthes kekwickii* mid high open forest, over *Acacia shirleyi*, *Macropteranthes kekwickii*, *Terminalia volucris* mid high open shrubland, over *Chrysopogon fallax*, *Mnesithea formosa*, *Triodia bitextura* mid high tussock grassland	
Habitat condition	Tree hollows absent, fallen logs abundant, flowering plants common, litter shallow. 15% canopy cover, Stand Basal Area – 3.3 m²/ha Fire last year, moderate impact. Common termite mounds. Slope < 1% slope Vegetation: 30% | Litter: 10% | Bare: 60%	
Potential listed threatened species	Red Goshawk, Grey Falcon, Painted Honey Eater, Northern Brushtail Possum, Plains Death Adder, Northern Blue-tongue Skink, Yellow Spotted Monitor	
Weeds	No declared or environmental weeds detected at BCD4 survey area.	
Hydrogeology	Groundwater resource and use for the well site will be from the Cambrian Limestone Aquifer which comprises of the Gum Ridge Formation and the Anthony Lagoon Formation.	

Table 2: Area and percentage of vegetation community within the Shenandoah South E&A Program – Shenandoah S2, S B, N A and Shenandoah S C (adapted from Appendix K)

Vegetation community		Area (ha)	% of vegetation community within Shenandoah South E&A program
Lateritic plains and rises with sandy loam kandosol soils			
	Community 1a: *Acacia shirleyi* woodland over *Macropteranthes kekwickii*, *Terminalia volucris* ± *Acacia difficilis* shrubland, over open tussock grassland	199	6.02

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text				Amended EMP text			
	Community 2a: *Corymbia dichromophloia* ± *Erythrophleum chlorostachys* open woodland, over *Acacia difficilis* ± *Terminalia canescens*, *Erythrophleum chlorostachys* open shrubland, over hummock grassland	1,895	57.19		Community 2a: *Corymbia dichromophloia* ± *Erythrophleum chlorostachys* open woodland, over *Acacia difficilis* ± *Terminalia canescens*, *Erythrophleum chlorostachys* open shrubland, over hummock grassland	1,895	57.19
	Community 2b: *Acacia shirleyi*, *Corymbia dichromophloia* ± *Eucalyptus leucophloia*, *Corymbia polycarpa* open woodland, over *Macropteranthes kekwickii*, *Petalostigma pubescens*, *Hakea arborescens* open shrubland, over tussock grassland	697	21.04		Community 2b: *Acacia shirleyi*, *Corymbia dichromophloia* ± *Eucalyptus leucophloia*, *Corymbia polycarpa* open woodland, over *Macropteranthes kekwickii*, *Petalostigma pubescens*, *Hakea arborescens* open shrubland, over tussock grassland	697	21.04
	Community 3a: *Corymbia polycarpa*, *Eucalyptus chlorophylla*, *Acacia shirleyi* open woodland, over *Acacia difficilis*, *Macropteranthes kekwickii*, *Erythrophleum chlorostachys* open shrubland, over open tussock grassland	360	5.79		Community 3a: *Corymbia polycarpa*, *Eucalyptus chlorophylla*, *Acacia shirleyi* open woodland, over *Acacia difficilis*, *Macropteranthes kekwickii*, *Erythrophleum chlorostachys* open shrubland, over open tussock grassland	360	5.79
Drainage floors and relic drainages with clay and alluvial soils				**Drainage floors and relic drainages with clay and alluvial soils**			
	Community 4a: *Acacia shirleyi* ± *Eucalyptus pruinosa*, *Eucalyptus chlorophylla* woodland, over *Melaleuca viridiflora*, *Eucalyptus pruinosa*, *Eucalyptus chlorophylla* open shrubland, over open tussock grassland	126	3.82		Community 4a: *Acacia shirleyi* ± *Eucalyptus pruinosa*, *Eucalyptus chlorophylla* woodland, over *Melaleuca viridiflora*, *Eucalyptus pruinosa*, *Eucalyptus chlorophylla* open shrubland, over open tussock grassland	126	3.82
	Community 4b: *Corymbia polycarpa*, *Eucalyptus microtheca* low open woodland, over *Melaleuca nervosa*, *Hakea arborescens*, *Melaleuca viridiflora* open shrubland, over tussock grassland	76	2.30		Community 4b: *Corymbia polycarpa*, *Eucalyptus microtheca* low open woodland, over *Melaleuca nervosa*, *Hakea arborescens*, *Melaleuca viridiflora* open shrubland, over tussock grassland	76	2.30
Riparian creek lines with sandy and alluvial soils				Riparian creek lines with sandy and alluvial soils			

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	Community 4d: *Eucalyptus camaldulensis* low woodland over *Melaleuca viridiflora* sparse shrubland over open tussock grassland	32	0.98

Note: Approximately 47% of vegetation communities identified during the survey do not occur on the proposed sites, which is equal to ~2914 ha of a total area of ~6228 ha.

Potential risks and impacts to the environment have been identified based on environmental conditions observed during the field survey. The overall disturbance footprint for the Shenandoah South E&A program (including the existing Kyalla 117 N2) is ~139.41 ha. However with the development of mitigation measures to minimise impacts to the environment (e.g. avoidance of large trees and, environmental and community receptors; use of existing pastoral access tracks), Tamboran could reduce disturbance, especially during seismic acquisition.

During the LCA the infrastructure sites, including proposed seismic lines were assessed to be in generally good condition with no evidence of weeds, and minor evidence of erosion and disturbance from cattle.

The 7 vegetation communities identified from 66 vegetation sites recorded within the Shenandoah South E&A program (adapted from Appendix K) are shown in Figure 51 and summarised in Table 46 to Table 52. These data provide an overview of the vegetation communities associated with the proposed exploration well sites and 2D seismic lines.

The vegetation communities are considered regionally extensive and not subjected to extensive clearing. Further detail regarding the individual sites assessed within the Shenandoah South E&A program is provide in the LCA, Appendix K.

Amended EMP text

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Note: Approximately 47% of vegetation communities identified during the survey do not occur on the proposed sites, which is equal to ~2914 ha of a total area of ~6228 ha. Shenandoah S C new has field id of BCD 4.

Potential risks and impacts to the environment have been identified based on environmental conditions observed during the field survey. The overall disturbance footprint for the Shenandoah South E&A program (including the existing Kyalla 117 N2) is ~139.41 ha. However, with the development of mitigation measures to minimise impacts to the environment (e.g. avoidance of large trees and, environmental and community receptors; use of existing pastoral access tracks), Tamboran could reduce disturbance, especially during seismic acquisition.

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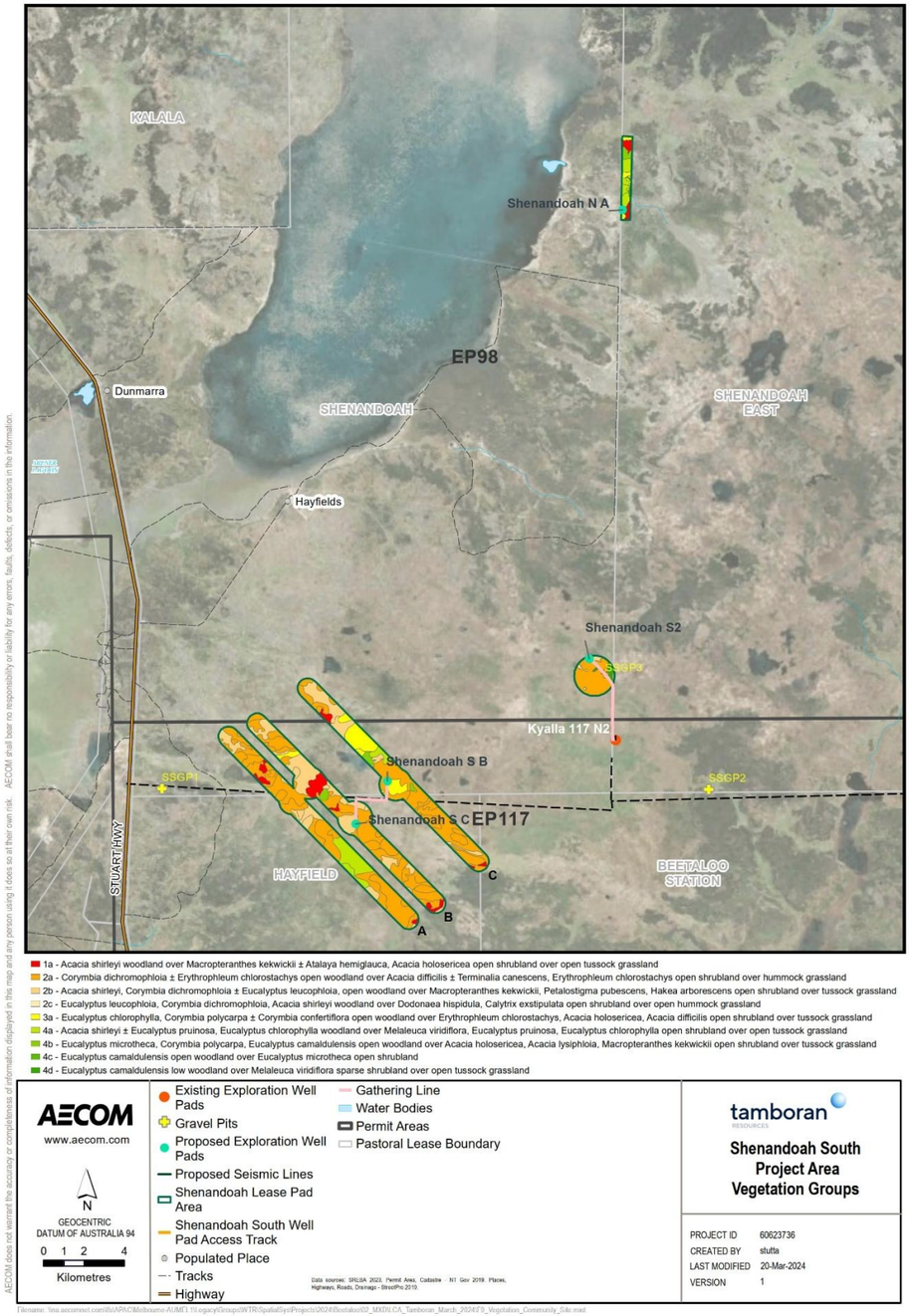


Figure 52: Vegetation communities and scouting locations within the proposed exploration sites within the Shenandoah South site.

Amended EMP text

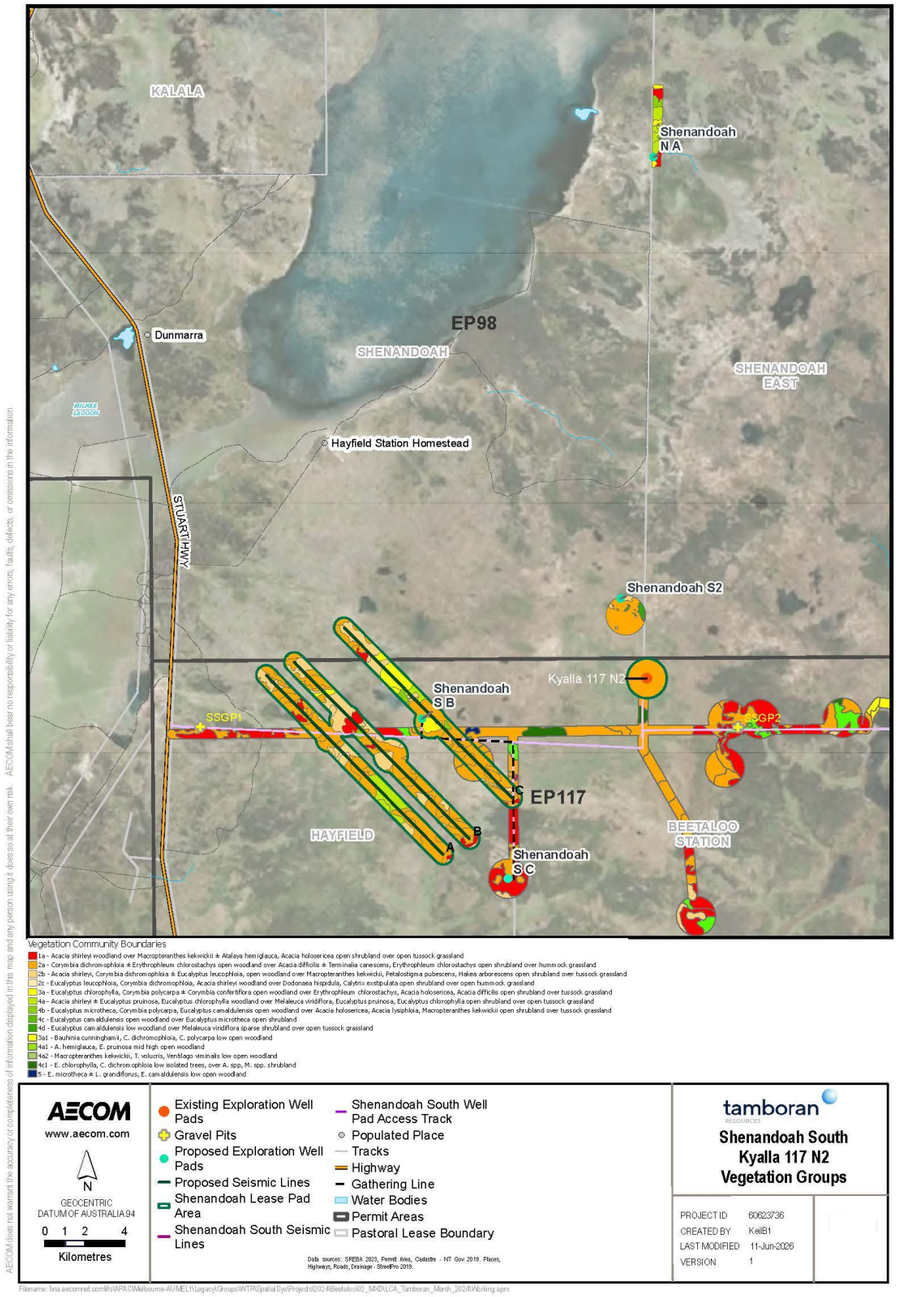


Figure 52: Vegetation communities and scouting locations within the proposed exploration sites within the Shenandoah South site.

Current EMP text

Table 46: Community 1a

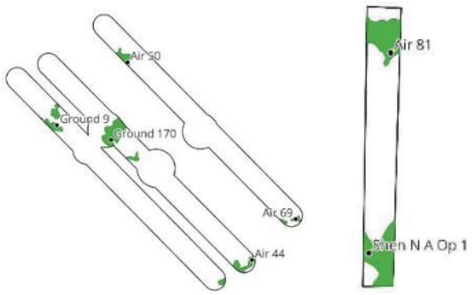
Community 1a - *Acacia shirleyi* mid high woodland over *Macropteranthes kekwickii, Terminalia volucris* ± *Acacia difficilis* mid high shrubland, over *Panicum trichoides*, *Panicum mindanaense*, *Bulbostylis barbata* mid high open tussock grassland
Upper 1: Mid high woodland dominated by *Acacia shirleyi*
Mid 1: Mid high shrubland dominated by *Macropteranthes kekwickii, Terminalia volucris* ± *Acacia difficilis* mid
Ground 1: Mid high open tussock grassland dominated by *Panicum trichoides, Panicum mindanaense, Bulbostylis barbata*

No. of sites: (6) Ground 9, Ground 170, Air 44, Air 50, Air 69; Shenandoah N A & Air 81
Other common species
Upper stratum (U1): -
Mid stratum (M1): -
Ground stratum (G1): Shenandoah South sites: *Bidens bipinnata, Waltheria indica, Hibiscus sturtii var. campylochlamys*; Shenandoah North sites: -
Landform: Lateritic Plains and Rises -associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils
Soil: Brown sandy loam kandosol soils.

Table 47: Community 2a

Community 2a - *Corymbia dichromophloia* ± *Erythrophleum chlorostachys* mid high open woodland, over *Acacia difficilis* ± *Terminalia canescens*, *Erythrophleum chlorostachys* mid high open shrubland, over *Triodia bitextura*, *Aristida hygrometrica*, *Chrysopogon fallax* mid high hummock grassland
Upper 1: Mid high open woodland dominated by *Corymbia dichromophloia* ± *Erythrophleum chlorostachys*
Mid 1: Mid high open shrubland dominated by *Acacia difficilis* ± *Terminalia canescens, Erythrophleum*
Ground 1: Mid high hummock grassland dominated by *Triodia bitextura*, *Aristida hygrometrica*, *Chrysopogon fallax*

Amended EMP text

Table 46: Community 1a

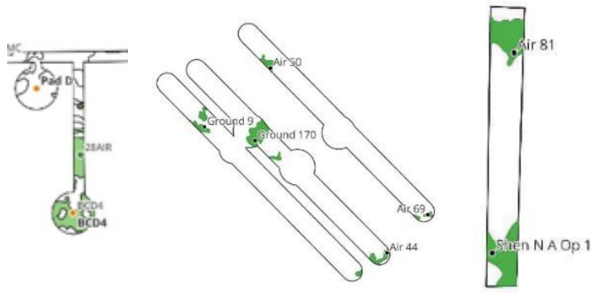
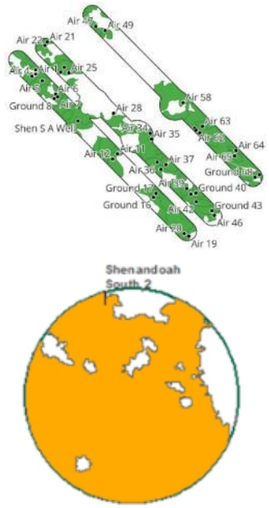
Community 1a - *Acacia shirleyi* mid high woodland over *Macropteranthes kekwickii, Terminalia volucris* ± *Acacia difficilis* mid high shrubland, over *Panicum trichoides*, *Panicum mindanaense*, *Bulbostylis barbata* mid high open tussock grassland
Upper 1: Mid high woodland dominated by *Acacia shirleyi*
Mid 1: Mid high shrubland dominated by *Macropteranthes kekwickii, Terminalia volucris* ± *Acacia difficilis* mid
Ground 1: Mid high open tussock grassland dominated by *Eriachne sp.1 (15%), Digitaria brownii (5%), Triodia bitextura (5%)*

No. of sites: 2023 - (6) Ground 9, Ground 170, Air 44, Air 50, Air 69; Shenandoah N A & Air 81 2025/2026 – (28) Pad A, Pad B, BCD3-MC, SS C (field id BCD4), 5MC, 7RD, 10RD, 15RD, 18MC, 28AIR, 45AIR, 47AIR, 50GD, 53GD, 57RD, 58MC, 61RD, 67AIR, 75AIR, 85AIR, 91AIR, 92AIR, 93AIR, 94AIR, 102GD, 111GD, 117AIR, 119GD
Other common species
Upper stratum (U1): -
Mid stratum (M1): -
Ground stratum (G1): Shenandoah South sites: *Bidens bipinnata, Waltheria indica, Hibiscus sturtii var. campylochlamys*; Shenandoah North sites: -
Landform: Lateritic Plains and Rises -associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils
Soil: Brown sandy loam kandosol soils.

Table 47: Community 2a

Community 2a - *Corymbia dichromophloia* ± *Erythrophleum chlorostachys* mid high open woodland, over *Acacia difficilis* ± *Terminalia canescens*, *Erythrophleum chlorostachys* mid high open shrubland, over *Triodia bitextura*, *Aristida hygrometrica*, *Chrysopogon fallax* mid high hummock grassland
Upper 1: Mid high open woodland dominated by *Corymbia dichromophloia* ± *Erythrophleum chlorostachys*
Mid 1: Mid high open shrubland dominated by *Acacia difficilis* ± *Terminalia canescens, Erythrophleum*
Ground 1: Mid high hummock grassland dominated by *Triodia bitextura*, *Aristida hygrometrica*, *Chrysopogon fallax*

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text



No. of sites: (43) Shen S A, Ground 8, Ground 16, Ground 17, ground 24, Ground 40, Ground 41, Ground 43, Ground 60, Ground 61, Ground 66, Ground 68, Air 1, Air 2, Air 4, Air 5, Air 6, Air 7, Air 11, Air 12, Air 19, Air 20, Air 21, Air 22, Air 23, Air 25, Air 28, Air 34, Air 35, Air 36, Air 37, Air 38, Air 39, Air 42, Air 46, Air 47, Air 49, Air 58, Air 62, Air 63, Air 64, Air 65, Shen S 2

Other common species

Upper stratum (U1): *Acacia shirleyi, Eucalyptus chlorophylla*

Mid stratum (M1): *Grevillea parallela, Dodonaea hispidula, Ehretia saligna, Acacia drepanocarpa subsp. latifolia, Acacia thomsonii, Acacia gonoclada, Brachychiton diversifolius, Brachychiton paradoxus, Grewia savannicola, Macropteranthes kekwickii, Persoonia falcata, Petalostigma pubescens, Wrightia saligna*

Ground stratum (G1): *Aristida inaequiglumis, Setaria surgens, Corchorus sidoides, Eriachne ciliata, Mnesithea formosa*

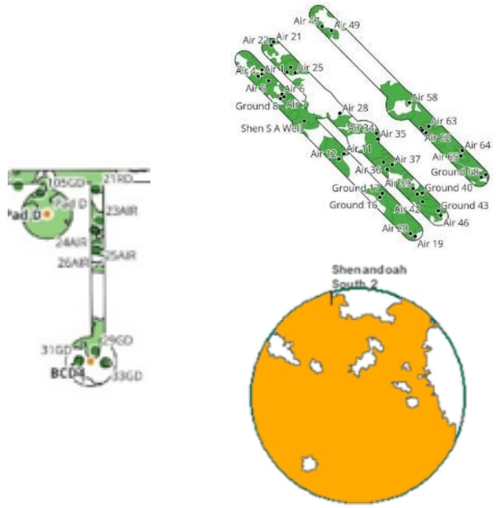
Landform: Lateritic Plains and Rises -associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils

Soil: Brown sandy loam kandosol soils.

Table 48: Community 2b

Community 2b - *Acacia shirleyi, Corymbia dichromophloia ± Eucalyptus leucophloia, Corymbia polycarpa* mid high open woodland, over M*acropteranthes kekwickii, Petalostigma pubescens, Hakea arborescens* mid high open shrubland, over *Chrysopogon fallax, Mnesithea formosa, Eriachne ciliata* mid high tussock grassland
Upper 1: Mid high open woodland dominated by *Acacia shirleyi, Corymbia dichromophloia ± Eucalyptus leucophloia, Corymbia polycarpa*
Mid 1: Mid high open shrubland dominated by *Macropteranthes kekwickii, Petalostigma pubescens, Hakea arborescens*
Ground 1: Mid high tussock grassland dominated by *Chrysopogon fallax, Mnesithea formosa, Eriachne ciliata*

Amended EMP text



No. of sites: 2023 - (43) Shen S A, Ground 8, Ground 16, Ground 17, ground 24, Ground 40, Ground 41, Ground 43, Ground 60, Ground 61, Ground 66, Ground 68, Air 1, Air 2, Air 4, Air 5, Air 6, Air 7, Air 11, Air 12, Air 19, Air 20, Air 21, Air 22, Air 23, Air 25, Air 28, Air 34, Air 35, Air 36, Air 37, Air 38, Air 39, Air 42, Air 46, Air 47, Air 49, Air 58, Air 62, Air 63, Air 64, Air 65, Shen S 2

2025/2026 – (51) Pad C, Pad D, BCD2, 2MC, 4MC, 6RD, 8RD, 9RD, 11RD, 12MC, 13RD, 17RD, 19RD, 21RD, 36RD, 23AIR, 24AIR, 25AIR, 26AIR, 29GD, 31GD, 33GD, 35RD 37AIR, 38AIR, 40AIR, 41AIR, 42AIR, 43AIR, 44AIR, 46AIR, 48AIR, 56RD, 60MC, 62GD, 66GD, 68AIR, 77GD, 80AIR, 81AIR, 84AIR, 96AIR, 98AIR, 105GD, 106GD, 114AIR, 115AIR, 116AIR, 120GD, 122GD

Other common species

Upper stratum (U1): *Acacia shirleyi, Eucalyptus chlorophylla*

Mid stratum (M1): *Grevillea parallela, Dodonaea hispidula, Ehretia saligna, Acacia drepanocarpa subsp. latifolia, Acacia thomsonii, Acacia gonoclada, Brachychiton diversifolius, Brachychiton paradoxus, Grewia savannicola, Macropteranthes kekwickii, Persoonia falcata, Petalostigma pubescens, Wrightia saligna*

Ground stratum (G1): *Aristida inaequiglumis, Setaria surgens, Corchorus sidoides, Eriachne ciliata, Mnesithea formosa*

Landform: Lateritic Plains and Rises -associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils

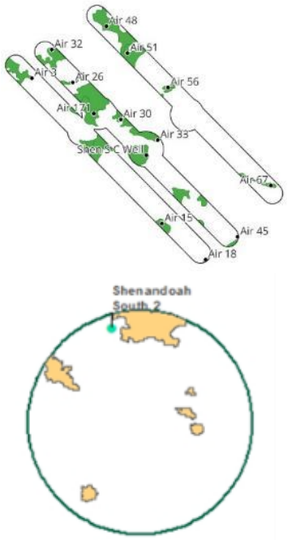
Soil: Brown sandy loam kandosol soils.

Table 48: Community 2b

Community 2b - *Acacia shirleyi, Corymbia dichromophloia ± Eucalyptus leucophloia, Corymbia polycarpa* mid high open woodland, over M*acropteranthes kekwickii, Petalostigma pubescens, Hakea arborescens* mid high open shrubland, over *Chrysopogon fallax, Mnesithea formosa, Eriachne ciliata* mid high tussock grassland
Upper 1: Mid high open woodland dominated by *Acacia shirleyi, Corymbia dichromophloia ± Eucalyptus leucophloia, Corymbia polycarpa*
Mid 1: Mid high open shrubland dominated by *Macropteranthes kekwickii, Petalostigma pubescens, Hakea arborescens*
Ground 1: Mid high tussock grassland dominated by *Chrysopogon fallax, Mnesithea formosa, Eriachne ciliata*

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text



No. of sites: (14) Shen S C Well, Air 3, Air 15, Air 18, Air 26, Air 30, Air 32, Air 33, Air 45, Air 48, Air 51, Air 56, Air 67, Air 171 (incorporated veg description from Shenandoah North)

Other common species

Upper stratum (U1): *Ventilago viminalis*

Mid stratum (M1): *Calytrix exstipulata, Eucalyptus chlorophylla, Terminalia volucris*

Ground stratum (G1): *Sorghum intrans, Eulalia aurea*

Landform: Lateritic Plains and Rises -associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils

Soil: Brown sandy loam kandosol soils.

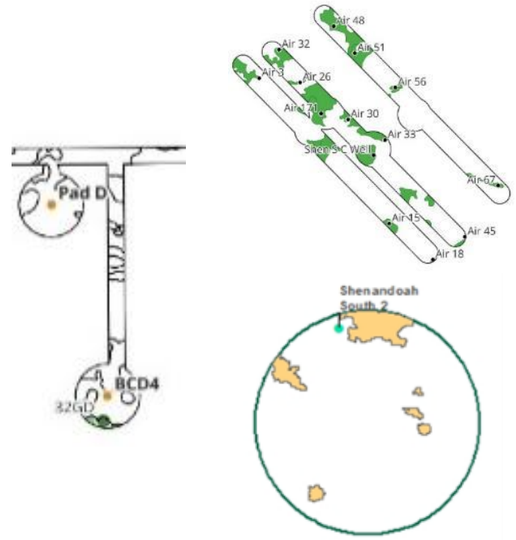
4.2.2.1 Flora

A search of the DCCEEW Protected Matters database of nationally significant fauna (PMST) and the NT Government flora atlas database was undertaken for the exploration area, with a 10 km buffer applied. No threatened vegetation communities are listed as likely to occur within the Shenandoah South E&A program, which is supported by the SREBA (2022) surveys that indicate no threatened plant species were known to occur, or considered likely to occur within the Beetaloo Sub-basin.[2]

Overall, the SREBA (2022) surveys contributed 15,419 new plant records within the SREBA study area. A total of 1,818 plant species have been recorded within the Beetaloo exploration area (SREBA 2022). The SREBA (2022) survey indicates that disturbance was prevalent across all broad vegetation groups, despite efforts to select "best on offer" vegetation sites. Primary contributors to disturbance include fire, cattle, pigs and weeds.

The field survey undertaken during April 2023 recorded 1,372 individual flora species. The survey focused on recording dominant species to describe vegetation communities rather than undertake a comprehensive floristic assessment. No threatened flora were identified during the LCA.

Amended EMP text



No. of sites: 2023 - (14) Shen S C Well, Air 3, Air 15, Air 18, Air 26, Air 30, Air 32, Air 33, Air 45, Air 48, Air 51, Air 56, Air 67, Air 171 (incorporated veg description from Shenandoah North)
2025/2026 – (6) BCD5, 32GD, 49AIR, 52GD, 63GD, 78GD

Other common species

Upper stratum (U1): *Ventilago viminalis*

Mid stratum (M1): *Calytrix exstipulata, Eucalyptus chlorophylla, Terminalia volucris*

Ground stratum (G1): *Sorghum intrans, Eulalia aurea*

Landform: Lateritic Plains and Rises -associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils

Soil: Brown sandy loam kandosol soils.

4.2.2.1 Flora

A search of the DCCEEW Protected Matters database of nationally significant fauna (PMST) and the NT Government flora atlas database was undertaken for the exploration area, with a 10 km buffer applied. No threatened vegetation communities are listed as likely to occur within the Shenandoah South E&A program, which is supported by the SREBA (2022) surveys that indicate no threatened plant species were known to occur, or considered likely to occur within the Beetaloo Sub-basin.

Overall, the SREBA (2022) surveys contributed 15,419 new plant records within the SREBA study area. A total of 1,818 plant species have been recorded within the Beetaloo exploration area (SREBA 2022). The SREBA (2022) survey indicates that disturbance was prevalent across all broad vegetation groups, despite efforts to select "best on offer" vegetation sites. Primary contributors to disturbance include fire, cattle, pigs and weeds.

The field survey undertaken during April 2023 recorded 1,372 individual flora species, while the field survey undertaken during August 2025 and February 2026 recorded 97 individual flora species. The surveys focused on recording dominant species to describe vegetation communities rather than undertake a comprehensive floristic assessment. No threatened flora were identified during the LCA.

[2] Noting that *Carex fascicularis* a densely-tufted perennial sedge (Vulnerable; TPWC Act) and *Spermacoce reticulata* an annual herb (restricted range species) were both recorded on the Hayfield Station (SREBA 2022) approximately 30 – 34 km south-west of the proposed regulated activities. *Carex fascicularis* was recorded near a flowing creek (HAY18); *Spermacoce reticulata* was recorded in a Lancewood low open forest (HAY01).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

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4.2.2.3 Weeds

Baseline weed surveys completed during the land condition assessments, and annual surveys within the Tamboran EPs have recorded a low number and density of weed species, indicating that the overall land condition is generally good. Three declared weed species, Calotropis procera (Rubber bush), Parkinsonia aculeata (Parkinsonia) and Mesosphaerum suaveolens (Hyptis), have been recorded during previous Kyalla baseline surveys.

No weeds were detected within the Shenandoah South E&A program during the December 2022 and March – April 2023 field surveys. The areas traversed during field surveys are displayed in Figure 52.

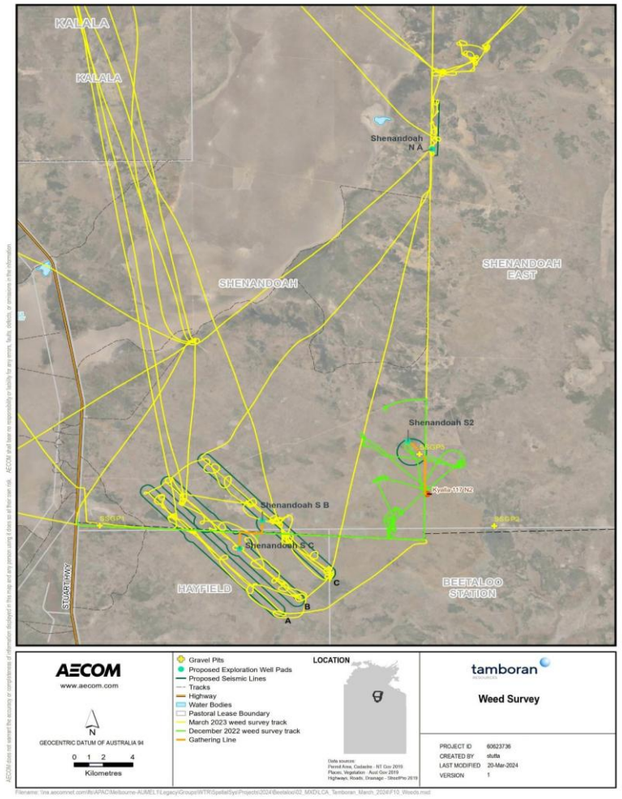


Figure 53: March 2023 weed survey track

Amended EMP text

4.2.2.3 Weeds

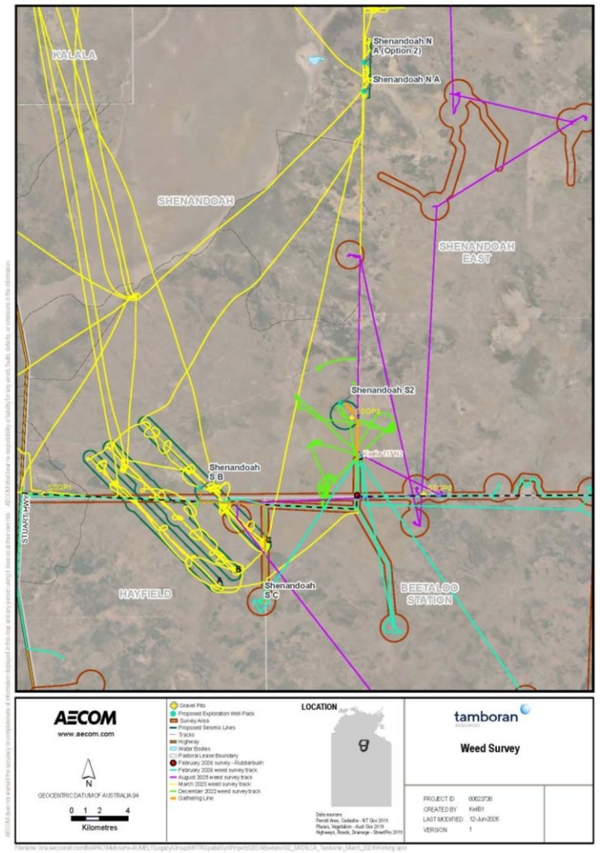
Baseline weed surveys completed during the land condition assessments, and annual surveys within the Tamboran EPs have recorded a low number and density of weed species, indicating that the overall land condition is generally good.

Weeds that have been recorded in generally low numbers include:

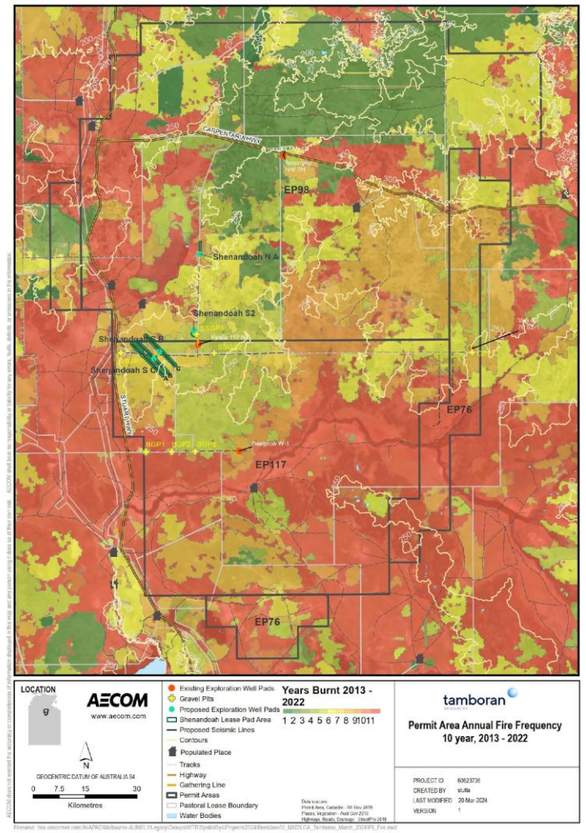
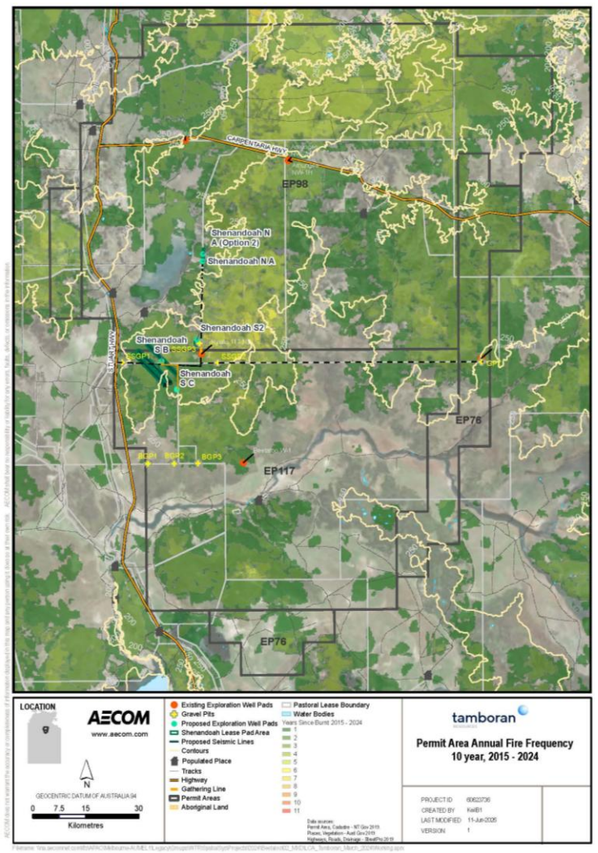
- Hyptis (*Mesosphaerum suaveolens*) (Class B and C)
- Sida (*Sida acuta*) – Class B and C
- Annual Mission grass (*Cenchrus pedicellatus*) - Environmental weed of concern
- Calotropis procera (Rubber Bush) (Class B and C - south of 16°30' S latitude)
- Parkinsonia aculeata (Parkinsonia) (Class B and C, WoNS).

No weeds were detected within the Shenandoah South E&A program during the December 2022 and March – April 2023 field surveys. The August 2025 and February 2026 survey also did not record any weeds. One juvenile Rubber Bush was encountered within the project area on the corner of Kyalla access track, 3 km south of the Kyalla camp. As part of the Beetaloo JV ongoing weed monitoring and treatment program this weed was treated and confirmed removed in March 2026.

The areas traversed during field surveys are displayed in Figure 52.



Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
	Figure 53: March 2023 weed survey track
4.2.4 Fire regime Fire is a natural occurrence in most Australian ecosystems and plays an important role in their ecology. Fire management practices by the Pastoralists, generally exclude fire from the Mitchell grasslands (dominated by Astrebla spp.) to maintain forage throughout the dry season (HLA, 2005). Mitchell grasslands are located west of the Shenandoah South E&A program in the floodplain area. Fires are more frequent in the Sturt Plateau in the eucalypt/corymbia and acacia woodlands where Shenandoah South E&A program is located. Historically most high intensity fires within EP 98 and 117 occur during the dry season (HLA, 2005). Wet season fires have occurred within the EPs; however these fires are likely to be patchy and of lower intensity, depending on the state of curing of the fuel load. Land condition assessments of the Shenandoah South E&A program indicate low intensity fire events >2 years ago at Shenandoah S2 and S B, and moderate intensity fire >2 years ago at Shenandoah S C. Fire frequency was highest in areas of woodland and less frequent in areas of dense Lancewood and Bullwaddy shrubland (AECOM, 2022). Figure 53 shows the fire frequency within the exploration areas over the past 10 years (2011 to 2021). Fire has occurred generally 4 to 8 times at each area within the last 10 years. Site BMPs have been developed to manage bushfire risks associated with the proposed regulated activities within the Shenandoah South E&A program (Appendix B). These plans provide the hazard reduction strategies, resources and response to bushfire emergencies.  **Figure 55: Fire frequency map**	**4.2.4 Fire regime** Fire is a natural occurrence in most Australian ecosystems and plays an important role in their ecology. Fire management practices by the Pastoralists, generally exclude fire from the Mitchell grasslands (dominated by Astrebla spp.) to maintain forage throughout the dry season (HLA, 2005). Mitchell grasslands are located west of the Shenandoah South E&A program in the floodplain area. Fires are more frequent in the Sturt Plateau in the eucalypt/corymbia and acacia woodlands where Shenandoah South E&A program is located. Historically most high intensity fires within EP 98 and 117 occur during the dry season (HLA, 2005). Wet season fires have occurred within the EPs; however, these fires are likely to be patchy and of lower intensity, depending on the state of curing of the fuel load. Land condition assessments of the Shenandoah South E&A program indicate low intensity fire events >2 years ago at Shenandoah S2 and S B, and moderate intensity fire 1 year ago at SSC well site. Fire frequency was highest in areas of woodland and less frequent in areas of dense Lancewood and Bullwaddy shrubland (AECOM, 2022). Figure 53 shows the fire frequency within the exploration areas over the past 10 years (2015 to 2024). Fire has occurred generally 1 to 3 times at each area within the last 10 years. Site BMPs have been developed to manage bushfire risks associated with the proposed regulated activities within the Shenandoah South E&A program (Appendix B). These plans provide the hazard reduction strategies, resources and response to bushfire emergencies.  **Figure 55: Fire frequency map**

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
4.2.5 Fauna A review of the SREBA (2022) reveals that a total of 354 vertebrate species were recorded from all surveys and incidental observations during the SREBA and GBA studies in the Beetaloo Sub-basin, indicating relatively high total vertebrate species richness but no species endemism within the SREBA study area. Species consisted of 202 bird, 99 reptiles, 39 mammals and 14 amphibians. The Shenandoah South E&A program primarily comprises open woodland consisting of mixed Eucalyptus/ Corymbia species with a mixed tussock grass understorey. Often, scattered stands of Bullwaddy/ Lancewood communities occur across the proposed sites and individuals of both species are dispersed throughout. In the wider landscape, including proposed access tracks and seismic lines, additional vegetation types include those associated with drainage lines, grasslands/floodplains and Acacia sp. shrublands. Eucalyptus/Corymbia sp. woodland provides habitat for a range of species. The proposed disturbance areas had high native grass cover and included numerous species suitable for granivorous birds (seed eaters). Dense leaf litter and numerous logs provide suitable refuge and foraging sites for fauna such as reptiles. Although most of the species found in this vegetation type are widespread in the tropical savannas of the Northern Territory, some such as the threatened Northern Shrike-tit (Falcunculus frontatus whitei) are rare and known to utilise this habitat (Ward, 2008). Many of the sites have a high density of hollow-bearing trees that provide important habitat for many fauna species. Avoiding clearing large hollow-bearing trees will reduce the impact to native wildlife within the EPs. The Lancewood/Bullwaddy vegetation community provides shady habitat for fauna within a hot arid landscape, including species as the Spectacled Hare-Wallaby (Lagorchestes conspicillatus leichardtii) and the Northern Nailtail Wallaby (Onychogalea unguifera) (PWCNT, 2005). No fauna sightings to enable identification were recorded within the Shenandoah South E&A program during the April 2023 field survey.	**4.2.5 Fauna** A review of the SREBA (2022) reveals that a total of 354 vertebrate species were recorded from all surveys and incidental observations during the SREBA and GBA studies in the Beetaloo Sub-basin, indicating relatively high total vertebrate species richness but no species endemism within the SREBA study area. Species consisted of 202 bird, 99 reptiles, 39 mammals and 14 amphibians. A search of the Department of Lands, Planning and Environment (DLPE) Natural Resource Maps database reveals that a total of 127 fauna species have been recorded within 5 km of the Shenandoah South E&A program area comprising 97 species of bird, 25 reptiles and five mammals. The Shenandoah South E&A program primarily comprises open woodland consisting of mixed Eucalyptus/ Corymbia species with a mixed tussock grass understorey. Often, scattered stands of Bullwaddy/ Lancewood communities occur across the proposed sites and individuals of both species are dispersed throughout. In the wider landscape, including proposed access tracks and seismic lines, additional vegetation types include those associated with drainage lines, grasslands/floodplains and Acacia sp. shrublands. Eucalyptus/Corymbia sp. woodland provides habitat for a range of species. The proposed disturbance areas had high native grass cover and included numerous species suitable for granivorous birds (seed eaters). Dense leaf litter and numerous logs provide suitable refuge and foraging sites for fauna such as reptiles. Although most of the species found in this vegetation type are widespread in the tropical savannas of the Northern Territory, some such as the threatened Northern Shrike-tit (Falcunculus frontatus whitei) are rare and known to utilise this habitat (Ward, 2008). Many of the sites have a high density of hollow-bearing trees that provide important habitat for many fauna species. Avoiding clearing large hollow-bearing trees will reduce the impact to native wildlife within the EPs. The bird species targeted during the field surveys, primarily Northern Shrike-tit and the Gouldian Finch, were not detected at any of the survey locations. The Lancewood/Bullwaddy vegetation community provides shady habitat for fauna within a hot arid landscape, including species as the Spectacled Hare-Wallaby (*Lagorchestes conspicillatus leichardtii*) and the Northern Nailtail Wallaby (*Onychogalea unguifera*) (PWCNT, 2005). No fauna sightings to enable identification were recorded within the Shenandoah South E&A program during the April 2023 field survey. Incidental fauna sightings were recorded during August 2025 and February 2026 field surveys. No fauna sightings to enable identification were recorded in the April 2023 filed survey, whereas, a total of 38 species of birds were recorded during the August 2025 and February 2026 surveys.
4.2.5.1 Threatened fauna A search of the DCCEEW Protected Matters database of nationally significant fauna (PMST) and records from the NT Government Fauna Atlas database (NR Maps) was undertaken at 10 km and 50 km of the proposed well sites and access tracks. The search results indicate the potential presence of 18 fauna species listed as threatened under the EPBC Act and/or the Territory Parks and Wildlife Conservation Act (TPWC Act). These included ten birds, five mammals, two reptiles and one shark. The likelihood of occurrence assessment is based on the availability of suitable habitat within the permit area, records in the vicinity and distributional data. Therefore, many of the threatened and migratory fauna species indicated in databases as 'occurring' or 'likely to occur' have been assessed as unlikely to occur within the project area. As some areas in the proposed well pad area have not been subject to intensive survey and some species are very cryptic, a conservative approach has been taken to assess species presence. A full description of each species, their distribution and habitat associations are provided in Table 52. No habitat that can be classified as critical for the survival of threatened fauna was identified within the Shenandoah South E&A area. However, some species may occur and are known to occur in the wider landscape. Threatened species that potentially occur include: • Gouldian Finch *Erythrura gouldiae* (Endangered EPBC Act, Vulnerable TPWC Act) • Grey Falcon Falco hypoleucos (Vulnerable EPBC Act and TPWC Act) • Northern Shrike-tit Falcunculus whitei (Vulnerable EPBC Act)	**4.2.5.1 Threatened fauna** A search of the DCCEEW Protected Matters database of nationally significant fauna (PMST) and records from the NT Government Fauna Atlas database (NR Maps) was undertaken at 10 km and 50 km of the proposed well sites and access tracks. The search results indicate the potential presence of 26 fauna species listed as threatened under the EPBC Act and/or the Territory Parks and Wildlife Conservation Act (TPWC Act). These included 12 birds, six mammals, seven reptiles and one shark. The likelihood of occurrence assessment is based on the availability of suitable habitat within the permit area, records in the vicinity and distributional data. Therefore, many of the threatened and migratory fauna species indicated in databases as 'occurring' or 'likely to occur' have been assessed as unlikely to occur within the project area. As some areas in the proposed well pad area have not been subject to intensive survey and some species are very cryptic, a conservative approach has been taken to assess species presence. A full description of each species, their distribution and habitat associations are provided in Table 52. No habitat that can be classified as critical for the survival of threatened fauna was identified within the Shenandoah South E&A area. However, some species may occur and are known to occur in the wider landscape. Threatened species that potentially occur include: • Gouldian Finch *Erythrura gouldiae* (Endangered EPBC Act, Vulnerable TPWC Act) • Red Goshawk *Erythrotriochis radiatus* (Endangered EPBC Act, Vulnerable TPWC Act) • Grey Falcon *Falco hypoleucos* (Vulnerable EPBC Act and TPWC Act)

Current EMP text

- Painted Honeyeater Grantiella picta (Vulnerable EPBC Act and TPWC Act)
- Pale Field-rat Rattus tunneyi (Vulnerable TPWC Act)
- Common Brushtail Possum (northern) Trichosurus vulpecula arnhemensis (Vulnerable EPBC Act)
- Plains Death Adder Acanthopsis hawkei (Vulnerable EPBC ACT and TPWC Act)
- Northern Blue-tongue Skink Tiliqua scincoides intermedia (Critically Endangered EPBC Act)
- Yellow-spotted Monitor Varanus panoptes (Vulnerable TPWC Act).

As records of species may be limited in remote areas the precautionary principle has been applied during the assessment. There are some species that have been assessed as possibly occurring even though their primary habitat is not found within the proposed sites or access tracks. These include species that are associated with ephemeral wetlands, low lying areas that may be seasonally inundated and creeks. During the wet and early dry season these areas may sustain threatened species such as wetland birds (including migratory species).

Gouldian Finch

Research has shown that critical components of suitable habitat for the Gouldian Finch include suitable nesting trees during the breeding season (particularly *Eucalyptus tintinnans*, *E. brevifolia* or *E. leucophloia*), a water source and a diverse range of favoured annual and perennial grasses (Dostine & Franklin, 2002).

No nesting habitat was recorded during the surveys, and it is unlikely this species breeds in close vicinity to the exploration well sites within the Shenandoah South E&A Program. During the wet season, Gouldian Finches move from breeding habitat on hillsides with suitable trees down to lower lying areas where they forage on perennial grasses such as *Triodia* sp., *Alloteropsis semialata*, and *Chrysopogon fallax* (Palmer et al. 2012). Some of the perennial grasses were recorded during recent surveys so potential foraging habitat is present; however, there are limited records in the vicinity.

The proposed exploration well pad areas, seismic lines, gravel pits and vegetation sites were surveyed for Gouldian Finch, congruent with the Northern Shrike-tit surveys. Call playback was not undertaken for Gouldian Finch. Primary nesting trees such as *Eucalyptus brevifolia*, *Eucalyptus leucophloia* and *Eucalyptus tintinnans* were not observed in the area. Corymbia and Eucalyptus trees that are potentially suitable for nesting and perennial grasses suitable for feeding were observed at several sites. Habitat in the Shenandoah South E&A Program area is moderately suitable for Gouldian Finch, but critical habitat was absent. No Gouldian Finch were observed during the bird surveys (Figure 55).

The SREBA species distribution model for Gouldian Finch indicates a low probability of the species occurring throughout most of the project area, as displayed below inset (Young *et al*, 2022).

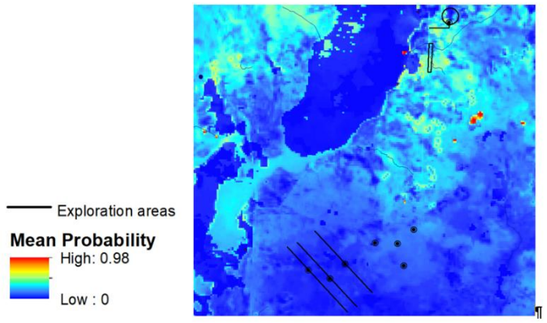


Figure 56: Mean probability of presence of Gouldian Finch within the exploration areas (Young et al., 2022)

Amended EMP text

- Northern Shrike-tit *Falcunculus whitei* (Vulnerable EPBC Act)
- Painted Honeyeater *Grantiella picta* (Vulnerable EPBC Act and TPWC Act)
- Pale Field-rat Rattus tunneyi (Vulnerable TPWC Act)
- Common Brushtail Possum (northern) *Trichosurus vulpecula arnhemensis* (Vulnerable EPBC Act)
- Plains Death Adder *Acanthopsis hawkei* (Vulnerable EPBC ACT and TPWC Act)
- Northern Blue-tongue Skink *Tiliqua scincoides intermedia* (Critically Endangered EPBC Act)
- Yellow-spotted Monitor *Varanus panoptes* (Vulnerable TPWC Act).

As records of species may be limited in remote areas the precautionary principle has been applied during the assessment. There are some species that have been assessed as possibly occurring even though their primary habitat is not found within the proposed sites or access tracks. These include species that are associated with ephemeral wetlands, low lying areas that may be seasonally inundated and creeks. During the wet and early dry season these areas may sustain threatened species such as wetland birds (including migratory species).

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The SREBA species distribution model for Gouldian Finch indicates a low probability of the species occurring throughout most of the project area, as displayed below inset (Young *et al*, 2022).

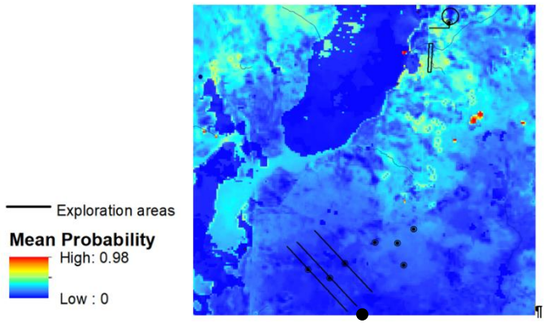

Figure 56: Mean probability of presence of Gouldian Finch within the exploration areas (Young et al., 2022)

Red Goshawk

The Red Goshawk has a large home range of up to 200 km2 (Aumann & Baker-Gabb 1991), and recent satellite tracking of individuals has shown them to travel distances of over 1,500 km outside of the breeding season (MacColl et al. 2021).

The closest known breeding records of the species occur close to Mataranka and along the Roper River, more than 200 km north of the Shenandoah South E&A program area. The species is unlikely to breed more than 50 km south of Mataranka due to a lack of suitable habitat, including a lack of suitably sized trees and insufficient abundance of medium sized avian prey.

According to the recent conservation advice for the species (DAWE, 2023), foraging habitat critical to the survival of the species includes:

Current EMP text	Amended EMP text
Grey Falcon The Grey Falcon (*Falco hypoleucos*) is a widespread species listed as Vulnerable in the NT and considered possibly present in the study area. The species occurs in low densities throughout arid and semi-arid areas of Australia (DEPWS, 2021a). The species is known to nest on repeater towers in the region, including one site located approximately 100 km south-west of the Shenandoah South E&A program area where the species bred in 2014 (Jonny Schoenjahn, personal communication, 2022). The species is also known to nest in the tallest trees along watercourses, such as Red River Gums (Eucalyptus camaldulensis) (TSSC, 2020). Grey Falcon may forage within the Shenandoah South E&A Program but is unlikely to be impacted by project activities because it is unlikely suitable nesting trees would be cleared. One repeater tower located within the Tamboran's EPs next to the Carpentaria Highway was surveyed for Grey Falcon. The species was not detected. While the risks to Gouldian Finch are low, impacts can be reduced by avoiding impacts to large hollow bearing trees with a trunk diameter greater than 25 cm at 1.3 m above the ground (NT Land Clearing Guideline). **Northern Shrike-tit** The Northern Shrike-tit lives in dry Eucalypt forests and woodlands where it feeds on insects from the canopy and under bark. It has been recorded in wet Melaleuca open woodlands and woodlands dominated by Nutwood (*Terminalia arostrata*) and Bloodwoods with flaky bark and ironwood (Ward, 2008). In the NT, nesting has been recorded from September through to January and nests are built in terminal branches at the top of trees (Ward *et al*., 2009). The stronghold of this species is north of the Shenandoah E&A area, with NR Maps showing only four records south of -16.25° latitude. Targeted surveys by the NT Government in the Beetaloo Basin failed to detect the species south of -16.0° latitude despite significant survey effort (>30 call playback surveys) (Young et al., 2022). Although it is possible the Northern Shrike-tit may be present in the area, it is unlikely to represent an important area for this species. During the May 2022 and April 2023 field survey call-playback was undertaken for Northern Shrike-tit. Call-playback was undertaken for approximately 5 minutes at all the proposed exploration well pad areas. Following 5 minutes of call playback the area was surveyed for approximately 10 minutes with binoculars. The search area was within 50 m of where call playback was undertaken, covering an approximate 0.8 ha search area. No Northern Shrike-tits have been observed during these surveys. The targeted call-playback surveys failed to detect the bird at the exploration well pads or the vegetation assessment sites. **Painted Honeyeater** The Painted Honeyeater (*Grantiella picta*) has been known to occur in region, however, given it does not breed in the NT it would only be present intermittently for foraging. Suitable habitat for the species potentially occurs within the Shenandoah South E&A program area. The area proposed for clearance is relatively small compared to available suitable habitat within the region. **Pale Field-rat** The Pale Field-rat occurs in a wide range of habitats, including tall grasslands and woodlands (Cole & Woinarski, 2002). There are no recent records of the species within the region; however, this may reflect a lack of survey effort. Suitable habitat for the species occurs within the Shenandoah South E&A program. The proposed area of impact is relatively small compared to available suitable habitat within the region. **Common Brushtail Possum** Recent surveys have detected Common Brushtail Possum (Trichosurus vulpecula arnhemensis) on Kalala Station (NTG Flora & Fauna, personal communication, 2022). Suitable woodland habitat is contiguous through the landscape; therefore the species potentially occurs within the Shenandoah South E&A Program. Given the large amount of suitable habitat within the region comparative to the project footprint the risk to regional populations of the species is small. **Plains Death Adder** Suitable habitat for the Plains Death Adder consists of flat, treeless, cracking-soil riverine floodplains (Cogger, 2000). A population of the species occur in the Barkly Tableland from the Northern Territory to central-western Queensland. In the Beetaloo Basin Records of the species occur	• coastal and subcoastal tall open forests and woodlands • tropical savannas traversed by wooded or forested creeks and rivers, • freshwater wetlands and their margins; and • edges of rainforest. Habitat within the Shenandoah South E&A program area does not fall within these classifications. The woodlands cannot be classified as tall, while the creeks within the region are mostly ephemeral and are lightly wooded at best. The habitat can be described as marginally suitable for a Red Goshawk dispersing from its home breeding territory, or a dispersing juvenile. **Grey Falcon** The Grey Falcon (*Falco hypoleucos*) is a widespread species listed as Vulnerable in the NT and considered possibly present in the study area. The species occurs in low densities throughout arid and semi-arid areas of Australia (DEPWS, 2021a). The species is known to nest on repeater towers in the region, including one site located approximately 100 km south-west of the Shenandoah South E&A program area where the species bred in 2014 (Jonny Schoenjahn, personal communication, 2022). The species is also known to nest in the tallest trees along watercourses, such as Red River Gums (Eucalyptus camaldulensis) (TSSC, 2020). Grey Falcon may forage within the Shenandoah South E&A Program but is unlikely to be impacted by project activities because it is unlikely suitable nesting trees would be cleared. One repeater tower located within the Tamboran's EPs next to the Carpentaria Highway was surveyed for Grey Falcon. The species was not detected. While the risks to Gouldian Finch are low, impacts can be reduced by avoiding impacts to large hollow bearing trees with a trunk diameter greater than 25 cm at 1.3 m above the ground (NT Land Clearing Guideline). **Northern Shrike-tit** The Northern Shrike-tit lives in dry Eucalypt forests and woodlands where it feeds on insects from the canopy and under bark. It has been recorded in wet Melaleuca open woodlands and woodlands dominated by Nutwood (*Terminalia arostrata*) and Bloodwoods with flaky bark and ironwood (Ward, 2008). In the NT, nesting has been recorded from September through to January and nests are built in terminal branches at the top of trees (Ward *et al*., 2009). The stronghold of this species is north of the Shenandoah E&A area, with NR Maps showing only four records south of -16.25° latitude. 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The targeted call-playback surveys failed to detect the bird at the exploration well pads or the vegetation assessment sites. **Painted Honeyeater** The Painted Honeyeater (*Grantiella picta*) has been known to occur in region, however, given it does not breed in the NT it would only be present intermittently for foraging. Suitable habitat for the species potentially occurs within the Shenandoah South E&A program area. The area proposed for clearance is relatively small compared to available suitable habitat within the region. **Pale Field-rat** The Pale Field-rat occurs in a wide range of habitats, including tall grasslands and woodlands (Cole & Woinarski, 2002). There are no recent records of the species within the region; however, this may reflect a lack of survey effort. Suitable habitat for the species occurs within the Shenandoah South E&A program. The proposed area of impact is relatively small compared to available suitable habitat within the region. **Common Brushtail Possum** Recent surveys have detected Common Brushtail Possum (Trichosurus vulpecula arnhemensis) on Kalala Station (NTG Flora & Fauna, personal communication, 2022). Suitable woodland habitat is contiguous through the landscape; therefore the species potentially occurs within the Shenandoah South E&A Program. Given the large amount of suitable habitat within the region comparative to the project footprint the risk to regional populations of the species is small. **Plains Death Adder** Suitable habitat for the Plains Death Adder consists of flat, treeless, cracking-soil riverine floodplains (Cogger, 2000). A population of the species occur in the Barkly Tableland from the Northern Territory to central-western Queensland. In the Beetaloo Basin Records of the species occur

Current EMP text

close to Lake Woods, Lake Sylvester and Lake Tarrabool. The species may occur within the project area, particularly following heavy wet season rainfall.

Northern Blue-tongue Skink

The Northern Blue-tongue Skink occurs in a wide variety of vegetation communities, eucalypt woodland and savanna, sparse and dense shrubland, and spinifex and tussock grassland. Areas of dense vegetation that provide cool and moist conditions within hot, dry, and flammable landscapes are critical habitat for the survival of the species, as such habitat provides the Northern Blue-tongue Skink with food, water and protection from environmental exposure and predation. Examples of such habitat includes rainforest and vine thicket, riparian forests, well-vegetated creeks and drainage lines, well-vegetated swamps and springs, and dense thickets within floodplains, grasslands, shrublands, savannas and woodlands (DCCEEW, 2023).

Several recent (2020-2022) records of the species occur within 100 km, and suitable habitat occurs within the project area. The Northern Blue-tongue Skink was recently listed as Critically Endangered under the EPBC Act in December 2023, therefore the species has not been assessed under the SREBA assessments.

Yellow-spotted Monitor

The Yellow-spotted Monitor (*Varanus panoptes*) occurs across northern Australia where it occupies a variety of habitats, including grasslands and woodlands (Ward et al., 2012). Most records of this species are from the Top End, though it has been recorded in the Barkly Tablelands. The species likely occurs close to wetlands and riparian habitats within the permit areas; however, such habitat won't be impacted by proposed activities.

The SREBA Terrestrial Ecosystem Report developed a species distribution for Yellow-spotted Monitor that indicated low-high probability for the species throughout the north of the project area, while the probability is low in most parts of the south of the project area, as displayed in Figure 56 (Young et al, 2022).

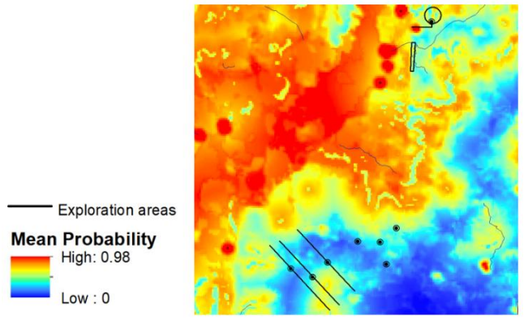

Figure 57: Mean probability of presence of Yellow-spotted Monitor within the exploration areas (Young et al., 2022)

As records of species may be limited in remote areas the precautionary principle has been applied. There are some species that have been assessed as possibly occurring even though their primary habitat is not found within the proposed sites or access tracks. These include species that are associated with ephemeral wetlands, low lying areas that may be seasonally inundated and creeks. During the wet and early dry season these areas may sustain threatened species such as wetland birds (including migratory species).

4.3 Environmental and cultural sensitivities

4.3.1 Native Title

Three native title determinations have been finalised across the Shenandoah South E&A program with the most relevant being NTD21/2010 and NTD26/2010 (Table 57).

Table 57: Native title and IULA agreements current for the permit areas

Type	Site	Name	Summary
Native Title	Shenandoah South E&A program	NTD21/2010 Shenandoah Pastoral Lease	Native title exists in parts of the determination area and is held by the Kinbininggu and Bamarrngganja groups

Amended EMP text

close to Lake Woods, Lake Sylvester and Lake Tarrabool. The species may occur within the project area, particularly following heavy wet season rainfall.

Northern Blue-tongue Skink

The Northern Blue-tongue Skink occurs in a wide variety of vegetation communities, eucalypt woodland and savanna, sparse and dense shrubland, and spinifex and tussock grassland. Areas of dense vegetation that provide cool and moist conditions within hot, dry, and flammable landscapes are critical habitat for the survival of the species, as such habitat provides the Northern Blue-tongue Skink with food, water and protection from environmental exposure and predation. Examples of such habitat includes rainforest and vine thicket, riparian forests, well-vegetated creeks and drainage lines, well-vegetated swamps and springs, and dense thickets within floodplains, grasslands, shrublands, savannas and woodlands (DCCEEW, 2023).

Several recent (2020-2022) records of the species occur within 100 km, and suitable habitat occurs within the project area. The Northern Blue-tongue Skink was recently listed as Critically Endangered under the EPBC Act in December 2023, therefore the species has not been assessed under the SREBA assessments.

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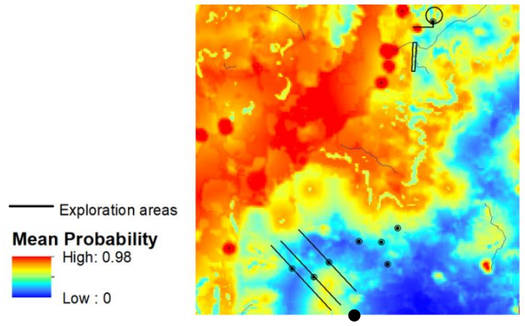

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Type	Site	Name	Summary
Native Title	Shenandoah South E&A program	NTD21/2010 Shenandoah (Station) Pastoral Lease	Native title exists in parts of the determination area and is held by the Kinbininggu group and the Bamarrnganja group and, subject to the rights and interests of the estate group members, other Aboriginal people being members of estate groups

Current EMP text

		NTD26/2010 Hayfield pastoral lease	Native title exists in parts of the determination area and is held by the Kinbininggu, Warranangku and Marlinja groups
		NTD27/2010 Beetaloo pastoral lease	Native title exists in parts of the determination area and is held by the Karranjinji, Bamarrnganja, Warranangku, Pinda (OT Downs) and Liga/Muwartpi groups

The Native Title Petroleum Exploration Agreement between Tamboran and the NLC includes clauses for the protection of sacred sites, objects and sensitive areas related to Aboriginal activities in the area, including cultural, hunting and foraging activities. Site clearance will occur prior to any on ground activities. The Native Title Agreement also includes clauses for the protection of the environment and site rehabilitation.

4.3.2 Archaeology assessment

Archaeological assessments were completed by AECOM in April 2023 for the proposed sites within the Shenandoah South E&A program. The assessment involved a desktop review of existing heritage data from the Australian Heritage Database, the NT Heritage Branch and the AAPA, previous archaeological survey reports prepared for the local area, as well as consultation with traditional owners of the study area and field inspection. The survey was designed around the archaeological predictive model that was initially established in 2007 and has been continually refined over the last 17 years through on ground (pedestrian) and aerial surveys (Appendix L).

The field surveys were conducted by an AECOM archaeologist and traditional custodians to identify sensitive landforms that may have cultural significance. The archaeological surveys involved aerial surveys of the proposed seismic lines and E&A sites, and vehicle and pedestrian surveys of all sites within the Shenandoah South E&A program apart from Shenandoah SA seismic line. On ground surveys / inspections on Shenandoah SA seismic line was unable to be completed because the area could not be accessed safely by helicopter due to dense vegetation cover. Based on the predictive model, the only sensitive feature identified along the proposed Shenandoah SA seismic line was Lancewood-Bullwaddy Woodland stands bordering seasonal water plains; however these were not identified as a “high priority” areas during the surveys by the archaeologist and traditional owners. Implementation of the unexpected find protocol procedure gives added protection, should a heritage find be identified during any land clearing / disturbance activities. Cultural managers are also proposed to be utilised for all line access and disturbance.

During the on ground surveys / inspections, notes were taken on landform, ground surface visibility and areas of exposure. The aim of the inspection was to identify any surface expressions of Aboriginal archaeological and cultural heritage values within the proposal area. Photographic records were taken at each proposed disturbance location. The archaeological assessment is provided in Appendix L.

The inspection results indicated that apart from the high priority areas identified along the Shenandoah S C and Shenandoah S B seismic lines, no other sensitive areas of high priority were identified. No artefacts or sensitive landforms of cultural significance within the activity areas for the Shenandoah South E&A program were identified. A large, medium density artefact scatter (TAM_23_AS_01) lies approximately 500 m to the south-east of the proposed Shenandoah N A well pad (Figure 57). The site of the artefact scatter is located within and around an identified sensitive landform zone, adjacent to a linear, seasonal water source and will be avoided (see Appendix L).

Amended EMP text

		Note: Station name now known as Shanandoah/Gum Ridge Stations	from neighbouring estates and spouses of the estate group members.
		NTD26/2010 Hayfield (Station) Pastoral Lease Note: Station name change to Hayfield/Sturt Plains Station	Native title exists in parts of the determination area and is held by the Kinbininggu group, the Warranangku group and the Marlinja group and, subject to the rights and interests of the estate group members, other Aboriginal people being members of estate groups from neighbouring estates and spouses of the estate group members.
		NTD27/2010 Beetaloo (Station) Pastoral Lease	Native title exists in parts of the determination area and is held by the Karranjini group, the Bamarrnganja group, the Warranangku group, the Pinda (OT Downs) group and the Lija/Muwartpi group and, subject to the rights and interests of the estate group members, other Aboriginal people being members of estate groups from neighbouring estates and spouses of the estate group members.

The Native Title Petroleum Exploration Agreement between Tamboran and the NLC includes clauses for the protection of sacred sites, objects and sensitive areas related to Aboriginal activities in the area, including cultural, hunting and foraging activities. Site clearance will occur prior to any on ground activities. The Native Title Agreement also includes clauses for the protection of the environment and site rehabilitation.

4.3.2 Archaeology assessment

Archaeological assessments were completed by AECOM in April 2023 and again in February 2026 for the proposed sites within the Shenandoah South E&A program. The assessment involved a desktop review of existing heritage data from the Australian Heritage Database, the NT Heritage Branch and the AAPA, previous archaeological survey reports prepared for the local area, as well as consultation with traditional owners of the study area and field inspection. The survey was designed around the archaeological predictive model that was initially established in 2007 and has been continually refined over the last 17 years through on ground (pedestrian) and aerial surveys (Appendix L).

The field surveys were conducted by an AECOM archaeologist and traditional custodians to identify sensitive landforms that may have cultural significance. The archaeological surveys involved aerial surveys of the proposed seismic lines and E&A sites, and vehicle and pedestrian surveys of all sites within the Shenandoah South E&A program apart from Shenandoah SA seismic line. On ground surveys / inspections on Shenandoah SA seismic line was unable to be completed because the area could not be accessed safely by helicopter due to dense vegetation cover. Based on the predictive model, the only sensitive feature identified along the proposed Shenandoah SA seismic line was Lancewood-Bullwaddy Woodland stands bordering seasonal water plains; however, these were not identified as a “high priority” areas during the surveys by the archaeologist and traditional owners. Implementation of the unexpected find protocol procedure gives added protection, should a heritage find be identified during any land clearing / disturbance activities. Cultural managers are also proposed to be utilised for all line access and disturbance.

During the 2023 on ground surveys / inspections, notes were taken on landform, ground surface visibility and areas of exposure. The aim of the inspection was to identify any surface expressions of Aboriginal archaeological and cultural heritage values within the proposal area. Photographic records were taken at each proposed disturbance location. The archaeological assessment is provided in Appendix L.

The inspection results indicated that apart from the high priority areas identified along the Shenandoah S C and Shenandoah S B seismic lines, no other sensitive areas of high priority were identified. No artefacts or sensitive landforms of cultural significance within the activity areas for the Shenandoah South E&A program were identified. A large, medium density artefact scatter (TAM_23_AS_01) lies approximately 500 m to the south-east of the proposed Shenandoah N A well pad (Figure 57). The site of the artefact scatter is located within and around an identified sensitive landform zone, adjacent to a linear, seasonal water source and will be avoided (see Appendix L).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

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An unexpected finds procedure has been developed to respond to any potential additional artifact or sacred site finds during Tamboran's activities, which is appended to the archaeological assessment (Appendix L).

4.3.3 Areas of cultural significance

Sacred sites in the study area are primarily associated with drainage lines; natural landform features and stock routes, but there are also concentrations of sites nearby to old homesteads. The distribution of these sites may reflect historical patterns of Indigenous movements along drainage lines and subsequent development of stock routes on old Indigenous walking trails, or they may merely be indicative of the site clearance work undertaken along roads and tracks in the area. It is suspected that there will be a range of other sites also within the area, either not yet recorded, or known but not reported for cultural reasons. The proposed activities at the Shenandoah S2, B, C, Shenandoah N A and Kyalla 117 N2 sites, including 2D seismic will occur within the subject land area which has been approved by the native title holders and the NLC and is currently under assessment by AAPA. Existing activities at Kyalla 117 N2 were approved under AAPA certificates: C2019/014, C2019/039 and C2023/049. One RWA is identified within the vicinity of the Shenandoah N A site (RWA3), which occurs west of, and parallel to a portion of the north-south pastoral access track leading to the site. No other RWAs were recorded within the Shenandoah South sites or the Kyalla 117 N2 site.

4.4 Social environment

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4.4.2 Pastoral Activity

The proposed 2D seismic and Shenandoah S2, S B and S C well pads are located on the Hayfield / Shenandoah East Stations. The existing Kyalla 117 N2 well pad is located on the Shenandoah East Station. Within the Tamboran's Beetaloo exploration permit area there are nine pastoral properties (Table 55). All the land within the permit area is leasehold land.

Table 58: Pastoral properties in the permit area

Pastoral property	Permit areas			Contacts
	EP 76	EP 98	EP 117	
Amungee Mungee	✓	✓	✓	N/A
Hayfield / Shenandoah		✓	✓	[redacted] PMB 168 Katherine, NT, 0850 [redacted]
Kalala		✓	✓	N/A
Tanumbirini	✓	✓		
Beetaloo25F25F40F[3]	✓		ü	[redacted]
Ucharonidge	✓		✓	N/A

Amended EMP text

During the 2025 survey, on artefact location was identified. The artefacts were surface artefact scatter (TAM_26_AS_01) with a recommended 20 m buffer established around. The Shenandoah S C well site will be designed to avoid the artefacts. Should this change, the artefacts will be translocated with approval sought by the NT Heritage branch (under the NT Heritage Act via permit) and Traditional custodians (via the NLC in alignment with the Exploration Agreement).

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An unexpected finds procedure has been developed to respond to any potential additional artifact, or sacred site finds during Tamboran's activities, which is appended to the archaeological assessment (Appendix L).

4.3.3 Areas of cultural significance

Sacred sites in the study area are primarily associated with drainage lines; natural landform features and stock routes, but there are also concentrations of sites nearby to old homesteads. The distribution of these sites may reflect historical patterns of Indigenous movements along drainage lines and subsequent development of stock routes on old Indigenous walking trails, or they may merely be indicative of the site clearance work undertaken along roads and tracks in the area. It is suspected that there will be a range of other sites also within the area, either not yet recorded, or known but not reported for cultural reasons. The proposed activities at the Shenandoah S2, B, C, Shenandoah N A and Kyalla 117 N2 sites, including 2D seismic will occur within the subject land area which has been approved by the native title holders and the NLC and has a current AAPA clearance certificate C2025/092. Existing activities at Kyalla 117 N2 were approved under AAPA certificates: C2019/014, C2019/039 and C2023/049. One RWA is identified within the vicinity of the Shenandoah N A site (RWA3), which occurs west of, and parallel to a portion of the north-south pastoral access track leading to the site. No other RWAs were recorded within the Shenandoah South sites or the Kyalla 117 N2 site.

4.4 Social environment

…..

4.4.2 Pastoral Activity

The proposed 2D seismic and Shenandoah S2, S B and S C well pads are located on the Shenandoah, Sturt Plains and Gum Ridge Stations. The existing Kyalla 117 N2 well pad is located on the Gum Ridge Station. Within the Tamboran's Beetaloo exploration permit area there are ten pastoral properties (Table 55). All the land within the permit area is leasehold land.

Table 58: Pastoral properties in the permit area

Pastoral property	Permit areas			Contacts
	EP 76	EP 98	EP 117	
Cooee Hills (previously Amungee Mungee)	✓	✓	✓	N/A
Shenandoah (previously Hayfield/Shenandoah)		✓	✓	[redacted]
Sturt Plains (previously Hayfield)			✓	[redacted]
Gum Ridge (previously Shenandoah East)		✓	✓	[redacted]
Kalala		✓	✓	N/A
Tanumbirini	✓	✓		

Current EMP text

Tandyidgee	✓	✓		
Nutwood Downs		✓		
Newcastle Waters			✓	

Amended EMP text

Beetaloo	✓		✓	[redacted]
Ucharonidge	✓		✓	N/A
Tandyidgee	✓	✓		
Nutwood Downs		✓		
Newcastle Waters			✓	

5 Stakeholder engagement

5.3 Pastoral stakeholder engagement

Tamboran has engaged with the pastoral stakeholders identified previously (Table 58) on an ongoing basis, including engagement with the leaseholders and/or representatives of the Hayfield / Shenandoah East Station, regarding the full range of exploration activities outlined in this EMP. Key engagement efforts Tamboran has undertaken include:

- Ongoing regular engagement with pastoralist about Tamboran's general activities.
- Providing the landholder with copies of a stakeholder engagement pack covering exploration activities and providing opportunity for the landholder to comment

The Stakeholder Engagement Logs Part A and Part B (Appendix N) summarise Tamboran's engagement with the leaseholders of Hayfield / Shenandoah East Station as a relevant stakeholder and provide information in accordance with section 7(2)(a) of the Regulations.

Appendix N.1.1 provides the detailed records of communication between Tamboran and the pastoralist regarding the proposed activities.

6 Stakeholder engagement

5.3 Pastoral stakeholder engagement

Tamboran has engaged with the pastoral stakeholders identified previously (Table 58) on an ongoing basis, including engagement with the leaseholders and/or representatives of the Hayfield / Shenandoah East Station, regarding the full range of exploration activities outlined in this EMP. Key engagement efforts Tamboran has undertaken include:

- Ongoing regular engagement with pastoralist about Tamboran's general activities.
- Providing the landholder with copies of a stakeholder engagement pack covering exploration activities and providing opportunity for the landholder to comment

The Stakeholder Engagement Logs Part A and Part B (Appendix N) summarise Tamboran's engagement with the leaseholders of the relevant station stakeholder and provide information in accordance with section 7(2)(a) of the Regulations.

Appendix N.1.1 provides the detailed records of communication between Tamboran and the pastoralist regarding the proposed activities.

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
Appendix List for Current EMP	**Appendices List Updated**
Appendix A – Transfer of Regulated Activities	**Appendix A – Transfer of Regulated Activities – No change**
Appendix B – Bushfire Management Plan	**Appendix B – Bushfire Management Plan – Update to Shenandoah S C (below and attached)**
Appendix C – Weed Management Plan	**Appendix C – Weed Management Plan – No change**
Appendix D – Engineer Drawings	**Appendix D – Engineer Drawings – No major change**
Appendix E – Chemical Risk Assessment	**Appendix E – Chemical Risk Assessment – No change**
Appendix F – Spill Management Plan	**Appendix F – Spill Management Plan – No change**
Appendix G – Wastewater Management Plan	**Appendix G – Wastewater Management Plan – No change**
Appendix H – Erosion and Sediment Control Plan	**Appendix H – Erosion and Sediment Control Plan – Minor change as per below**
Appendix I – Methane Emission Management Plan	**Appendix I – Methane Emission Management Plan – No change**
Appendix J – Water Monitoring Suite	**Appendix J – Water Monitoring Suite – No change**
Appendix K – Land Condition Assessment	**Appendix K – Land Condition Assessment (2 x LCA reports)**
Appendix L – Cultural Heritage Assessment	**Appendix K.1 LCA (AECOM 2024)**
Appendix M – Risk Assessment	**Appendix K.2 LCA (AECOM 2026) (attached)**
Appendix N – Stakeholder Engagement	**Appendix L – Cultural Heritage Assessment**
Appendix N Stakeholder engagement log A & B	**Appendix L.1 CHA (AECOM 2024)**
Appendix N.1.1 Pastoral Stakeholder Engagement	**Appendix L.2 CHA (AECOM 2026) (attached)**
Appendix N.1.2 NLC Stakeholder Engagement	**Appendix M – Risk Assessment – No change**
Appendix N.1.3 Historic Engagement	**Appendix N – Stakeholder Engagement – updated refer attached**
Appendix O – Rehabilitation Management Plan	**Appendix N Stakeholder engagement log A & B - update**
Appendix P – Commitments Register	**Appendix N.1.1 Pastoral Stakeholder Engagement - update**
Appendix Q – Emergency Response Plan	**Appendix N.1.2 NLC Stakeholder Engagement - update**
	Appendix N.1.3 Historic Engagement – no change
	Appendix O – Rehabilitation Management Plan - Update to Shenandoah S C (below and attached)
	Appendix P – Commitments Register – no change
	Appendix Q – Emergency Response Plan – no change

The following provides overview of changes to the relevant Appendices for the Regulation 22 Modification of TAM1-3

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Amended EMP text

Appendix B Bushfire Management Plan

Current EMP text

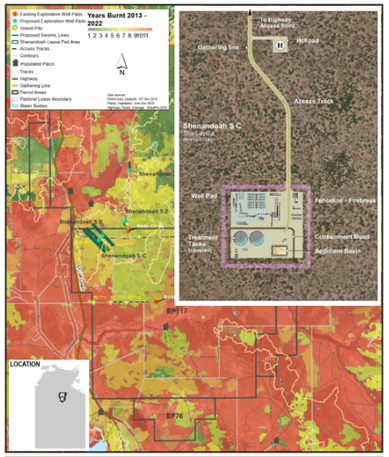
tamboran RESOURCES

Exploration Permit 117
Bushfire Management Plan
2025 onwards
Shenandoah South C (Rev 2, Oct-2025)

Location of Shenandoah South C	
Property and land uses	Gas exploration, cattle grazing, and native title rights and interests recognised by the native title determinations over the land and waters.
Site fire management aim	To reduce the occurrence of, and minimise the impact of bushfires, thereby reducing the threat to life, property, cultural values and the environment.
Site fire management objectives	Mitigate the potential impact of unplanned fires on Tamboran's people, assets and operations and neighbouring land uses.
Fire History (10 years) (NAFI 2024)	Fire scar mapping (2013-2022) indicates the exploration area burns approximately every 4 to 8 years (refer Figure below). Field observations in April 2023 indicated a moderate intensity fire when last burnt.

Fire Management Risks

- Ignitions (humans and lightening) on or off site resulting in harm to workers and loss of equipment.
- Altered landscape fire regimes as result of regulated activities leading to conflict i.e. more or less fire, change in pattern and timing. Noting Shenandoah S C last burnt over 4 to 8 years ago.
- Bullwaddy and Lancewood vegetation communities occur in areas across the permit and are fire sensitive. Hot fires can reduce habitat quality for flora and fauna species that use these vegetation communities.
- Spread of high fuel load grassy weeds could increase fire intensity, e.g. gamba, grader and buffel grass, adjacent infrastructure areas and access tracks.



The BMP should be read in conjunction with the overarching Environment Management Plan and Emergency Response Plan for Tamboran's operations in the Beetaloo Basin.

Bushfire Officers	Contact Details	
	Ian Beck Mobile: 0429 399 030 Satellite Phone: 0147 612 733 Email: ian.beck@tamboran.com	John Glover Mobile: 0419 031 814 Satellite Phone: 0147 612 733 Email: john.glover@tamboran.com

Neighbours	Contact Details		Name
Beetaloo Station	(08) 89 644 613 Office (08) 89 644 711	UHF 16/VHF 123850	Scotty & Jane Armstrong
Hayfield/Shenandoah Station	(08) 8975 9920 Hayfield	UHF 17 / VHF 123900	Justin Dyer & Sally Dyer

Stakeholders	Contact Details
Emergency	000 or 112 mobile
Bushfire NT Katherine office (Savanna)	(08) 8973 8871 / BushfiresNT.Katherine@nt.gov.au
Bushfire NT Alice Springs & Tennant Creek office (Barkly)	(08) 8951 9266
NAFI North	https://www.firenorth.org.au/nafi3/
Secure NT (Fire Bans and Alerts)	https://securent.nt.gov.au/alerts
Fire incident map	https://www.pfes.nt.gov.au/incidentmap/

Bushfire Management Actions

Well pad	• Remove and or maintain vegetation within the well pad area and implement erosion and sediment control plan. • Treat emerging vegetation with herbicide. • Hot works are not permitted on total fire ban days without written approval from a fire control officer or fire warden. • When the site is suspended, the well pad can be sufficient to satisfy APZ requirements depending on the level of infrastructure/ assets present.
Fire management break	• A 10 m wide cleared perimeter around well pads and tank pads during operations. • An additional 10 m wide bare earth fire break incorporating a 4 m wide fire access trail during operations.
Fire access trails	• Create and maintain 4 m wide access trail by grading or spraying.
Asset protection zones (APZ)	• Site manager to assess fuel load prior to camp establishment and again at end of wet season if infrastructure is still in place (refer to Fuel Load Criteria). • Establish a 20 m low fuel zone around well pads and well pads during operations (i.e. an area low in combustible material and obstructions). • Monitor for grassy weeds and control where appropriate. • If deemed necessary, conduct controlled burns where other controls are not effective and in consultation with neighbouring properties. • Ensure 4 m wide fire access trail around the perimeter of the asset protection zone is trafficable by firefighting appliances.
Neighbouring property fire management zone	• Fire management planning meeting with neighbouring properties prior to commencing activities and reviewed annually. • Neighbour to advise proponent of planned burns. • Working with pastoralist to assist in responding to fire where it is safe and practicable.

Bushfire Preparedness and Planning

Mandatory for all Severe, Extreme and Catastrophic FDI days
The following must be reviewed daily. If fire alerts are active or presenting with a known fire risk, personnel must execute their contingency plans which need to encompass the following:
- ☐ Procedure on identifying and notifying of a bushfire.
- ☐ Critical equipment to be removed / isolated/ shut down.
- ☐ Safe evacuation routes from site and muster points.
- ☐ Communication methods:
  - ✓ Team channels and / or phone numbers
  - ✓ Area channels and/or phone numbers
- ☐ Closest safe havens.

Monitoring

- ☐ Provide timely advice on changes in level of fire risk as available.
- ☐ Monitor team and area common channels for bushfire early warning.
- ☐ Update changes in work location.

Bushfire First Responder Checklist

The following sequence must be followed by the first person responding to a fire:
1. **Danger –** Remove yourself and others from danger is safe to do so.
2. **Alarm –** Raise the alarm either on common radio channel or other agreed process.
3. **Gather Information –**
   - ☐ Location – Direction from known reference points, (e.g. roads and Tamboran's infrastructure such as well pad location).
   - ☐ Impacts (actual and potential) – Life, property and the environment.
   - ☐ Fire characteristics – Grass or woodlands, flame height, fire front and direction of travel.
   - ☐ Weather – Wind strength and direction.
   - ☐ Response in progress – What response is underway and by who (Tamboran contractors, pastoralist or Emergency Services).
   - ☐ Response required – Tamboran contractors and / or pastoralist and / or Emergency Services.
   - ☐ Access – Safe access and egress routes.
4. **Notify Tamboran** – Fire Officer/Supervisor
5. **Notify Pastoralists** – Refer to property contacts
6. **Notify Emergency Services**—Call 000 or 112 if Tamboran and pastoralist unable to manage situation
7. **Respond and Monitor** —If safe to do so in consultation with pastoralist and Emergency Services.

CSIRO Fuel Load Criteria

- ☐ Fuel quantity (tonnes of fuel per ha).
- ☐ Assess vegetation type i.e. grassland, shrubland, scrub, woodland or forest.
- ☐ Fuel size and shape e.g. fine fuel such as grass that burns quick vs course fuel (thick branches/trunks) that burn slowly.
- ☐ Fuel arrangement (i.e. separation of understory to canopy, dense or light understory).
- ☐ Moisture content (strong winds, high temperatures and low humidity will decrease moisture content).

Annual Works Calendar

Month	Bushfire risk	Action	Month	Bushfire risk	Action
Jan – Feb	No rating	• No fire management activity.	Jul	Extreme / catastrophic	• Manage vegetation onsite including weeds. • Manage fire break and fire access trail. • Monitor NAFI, fire danger rating and fire weather warnings (daily or as required), and visually check horizon for smoke. • Liaise with neighbour regarding bushfires.
Mar	No rating	• Weed survey. • Planning meeting with neighbour. • Annual fire mapping to monitor changes to fire frequency in the relevant area.	Aug – Oct	Extreme / catastrophic	• Monitor NAFI, fire danger rating and fire weather warnings (daily or as required), and visually check horizon for smoke. • Liaise with neighbour regarding bushfires.
Apr	Moderate	• No fire management activity.			
May	Moderate	• No fire management activity. • Review the preparedness planning requirements.	November	High	• Monitor NAFI, fire danger rating and fire weather warnings (daily or as required), and visually check horizon for smoke. • Liaise with neighbour regarding bushfires.
Jun	High	• Manage vegetation onsite including weeds. • Manage fire break and fire access trail. • Monitor NAFI, fire danger rating and fire weather warnings. • Liaise with neighbour regarding bushfires.	December	No rating	• No fire management activity. • Review the preparedness planning requirements.

Amended EMP text

tamboran RESOURCES

Beetaloo Central Development
Exploration Permit 117
Bushfire Management Plan 2026 onwards
Shenandoah S C Well Site
(Rev 3, June-2026)

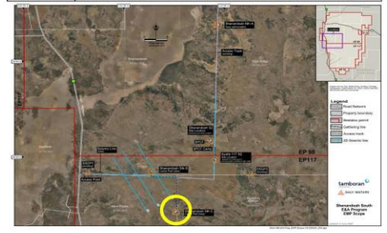
Location of Shenandoah S C	
Property and land uses	Gas exploration, cattle grazing, and native title rights and interests recognised by the native title determinations over the land and waters.
Site fire management aim	To reduce the occurrence of, and minimise the impact of bushfires, thereby reducing the threat to life, property, cultural values and the environment.
Site fire management objectives	Mitigate the potential impact of unplanned fires on DWE's people, assets and operations and neighbouring land uses.
Fire history (10 years) NAFI, 2025)	Fire scar mapping (2015-2024) indicates the exploration area has burnt once in the past 10 years (refer Fire Frequency Figure below). Field observations at Shenandoah S C well site indicates fire damage in past 12 months.

Fire management risks

- Ignitions (humans and lightening) on or off site resulting in harm to workers and loss of equipment.
- Fire scar mapping indicates the exploration area burns approximately every 3 to 5 years.
- Bullwaddy and Lancewood vegetation communities occur in areas across the permit and are fire sensitive. Hot fires can reduce habitat quality for both flora and fauna species which use these vegetation communities.
- Spread of high fuel load grassy weeds could increase fire intensity, e.g. gamba, grader and buffel grass, adjacent infrastructure areas and access tracks.

Bushfire Management Actions

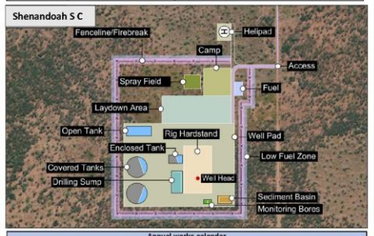
Well pads and tank pads	• Remove and or maintain vegetation, including weeds, within the well pad area and implement erosion and sediment control plan. • Treat emerging vegetation and weeds with herbicide. • Hot works are not permitted on total fire ban days without written approval from a fire control officer or fire warden.
Fire break	• 10 m wide cleared perimeter around well pads and tank pads. • An additional 10 m wide bare earth fire break incorporating a 4 m wide access track.
Fire access tracks	• Construct and maintain a 4 m wide access track by grading or spraying.
Asset protection zone (APZ)	• Site manager to assess fuel load prior to camp establishment and again at end of wet season if infrastructure is still in place. • Establish a 20 m low fuel zone around well pads and well pads. • Monitor for grassy weeds and control where appropriate. • If deemed necessary, conduct controlled burns where other controls are not effective and in consultation with neighbouring properties. • Ensure 4 m wide fire access track around the perimeter of the APZ is trafficable by firefighting appliances.
Neighbouring property fire management zone	• Fire management planning meeting with neighbouring properties prior to commencing activities and reviewed annually. • Neighbour to advise proponent of planned burns. • Work with pastoralist to assist in responding to fire where it is safe and practicable.



Bushfire officers	Contact details	
	Ian Beck Mobile: 0429 399 030 Satellite Phone: 0147 612 733 Email: ian.beck@tamboran.com	John Glover Mobile: 0419 031 814 Satellite Phone: 0147 612 733 Email: john.glover@tamboran.com

Properties	Contact details		Name
Beetaloo Station	(08) 89 644 613 Office 0448434506 (Jeremy)	UHF 16 VHF 123600	Jeremy Scott (CPC)
Gum Ridge Station	+61 484 352 622 (Nick)	UHF 17 VHF 123900	Nick & Cathy Dyer Justin Dyer
Sturt Plains	+61 429 806 477 (Brad) +61 417 086 423 (Lisa)	-	Brad & Lisa Dyer

Properties	Contact details
Emergency	000 or 112 mobile
NT Bushfires – Katherine office (Savanna)	(08) 8973 8871
NT Bushfires – Alice Springs office (Barkly)	(08) 8952 3066
NAFI North	https://www.firenorth.org.au/nafi3/
Secure NT (Fire Bans)	https://securent.nt.gov.au/alerts
Fire incident map	https://www.pfes.nt.gov.au/incidentmap/



Annual works calendar

Month	Bushfire risk	Action
Jan	No rating	• No fire management activity.
Feb	No rating	• No fire management activity.
Mar	No rating	• Weed survey • Planning meeting with neighbour. • Annual fire mapping to monitor changes to fire frequency in the area.
Apr	Moderate	• No fire management activity.
May	Moderate	• No fire management activity. • Review the preparedness planning requirements.
Jun	High	• Manage vegetation onsite including weeds. • Manage fire break and fire access track. • Monitor NAFI, fire danger rating and fire weather warnings. • Liaise with neighbour regarding bushfires.
Jul	Extreme / catastrophic	• Manage vegetation onsite including weeds. • Manage fire break and fire access track. • Monitor NAFI, fire danger rating and fire weather warnings. • Liaise with neighbour regarding bushfires.
Aug – Oct	Extreme / catastrophic	• Manage fire break and fire access track • Monitor NAFI, fire danger rating and fire weather warnings. • Liaise with neighbour regarding bushfires.
Nov	High	• Manage vegetation onsite including weeds. • Manage fire break and fire access track. • Monitor NAFI, fire danger rating and fire weather warnings. • Liaise with neighbour regarding bushfires.
Dec	No rating	• No fire management activity.

The BMP should be read in conjunction with the overarching Environment Management Plan and Emergency Response Plan for DWE's operations in the Beetaloo Basin.

Bushfire Preparedness and Planning

Mandatory for all High, Extreme and Catastrophic Fire Danger Rating System (FDRS) days
The following must be reviewed daily. If fire alerts are active or presenting with a known risk (fire in the area), personnel must execute their contingency plans which need to encompass the following:
- ☐ Procedure on identifying and notifying of a bushfire.
- ☐ Critical equipment to be removed / isolated/ shut down.
- ☐ Safe evacuation routes from site and muster points.
- ☐ Communication methods:
  - ✓ Team channels and / or phone numbers
  - ✓ Area channels and/or phone numbers
- ☐ Closest 'safe havens'.

Monitoring

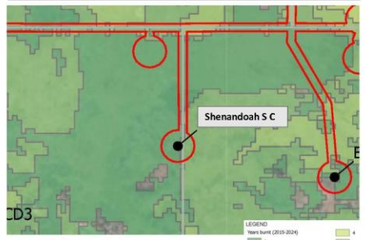
- ☐ Provide timely advice on changes in level of fire risk as available.
- ☐ Monitor team and area common channels for bushfire early warning.
- ☐ Update changes in work location.

Bushfire First Responder Checklist

The following sequence must be followed by the first person responding to a fire:
1. **Danger –** Remove yourself and others from danger is safe to do so.
2. **Alarm –** Raise the alarm either on common radio channel or other agreed process.
3. **Gather Information –**
   - ☐ Location – Direction from known reference points, (e.g. roads and DWE's infrastructure such as well pad location).
   - ☐ Impacts (actual and potential) – Life, property and the environment.
   - ☐ Fire characteristics – Grass or woodlands, flame height, fire front and direction of travel.
   - ☐ Weather – Wind strength and direction.
   - ☐ Response in progress – What response is underway and by who (DWE contractors, pastoralist or emergency services).
   - ☐ Response required – DWE contractors and / or pastoralist and / or emergency services.
   - ☐ Access – Safe access and egress routes.
4. **Notify DWE –** Fire Officer/Supervisor
5. **Notify Pastoralists –** Refer to property contacts.
6. **Notify Emergency Services—**Call 000 or 112 if DWE and pastoralist unable to manage situation
7. **Respond and Monitor—**If safe to do so in consultation with pastoralist

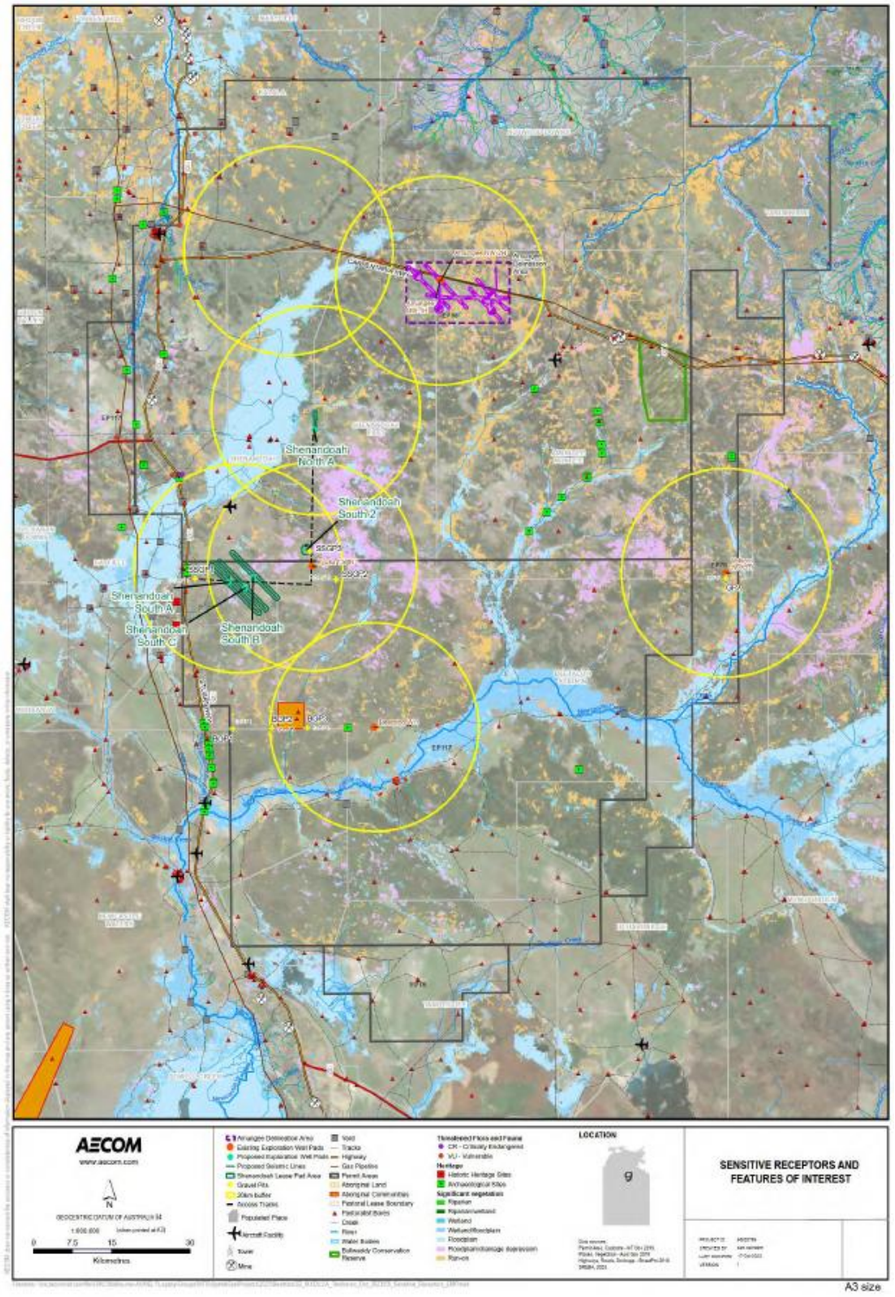
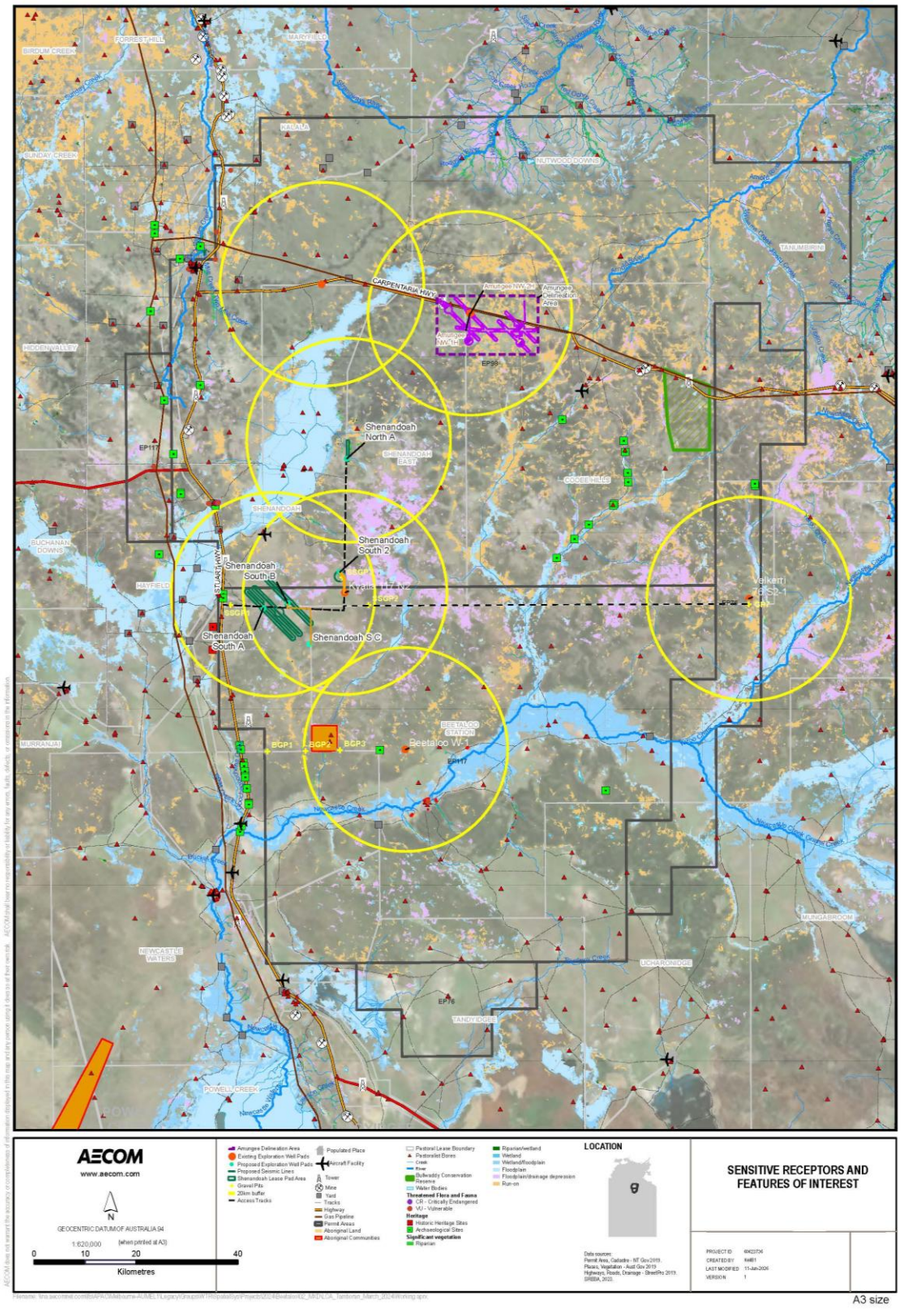
CSIRO Fuel Load Assessment

- Fuel quantity (tonnes of fuel per ha)
- Assess vegetation type i.e. grassland, shrubland, scrub, woodland or forest
- Fuel size and shape e.g. fine fuel such as grass that burns quick vs course fuel (thick branches/trunks) that burn slowly.
- Fuel arrangement (i.e. separation of understory to canopy, dense or light understory).
- Moisture content (strong winds, high temperatures and low humidity will decrease moisture content).



Shenandoah S C well site
Annual Fire Frequency 2015-2024

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
Appendix F Spill Management Plan	
 :igure 2: Location of activities and potential receptors and features of interest[1]	 Figure 2: Location of activities and potential receptors and features of interest

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text

Appendix H ESCP

2 Project Context

This plan covers all civil, seismic acquisition, well drilling, stimulating, rehabilitation and routine maintenance/monitoring activities undertaken by Tamboran, its subsidiaries and their contractors within permit EP76, EP98 and EP117 as detailed in Table 1 and shown in Figure 2 – Figure 4.

Table 1: Coordinates of centroid 2D seismic and exploration well sites

Well site, access track and gravel pit references	Well pads		
	Zone	Easting	Northing
…..			
Shenandoah S C	53	343471	8133330
…..			

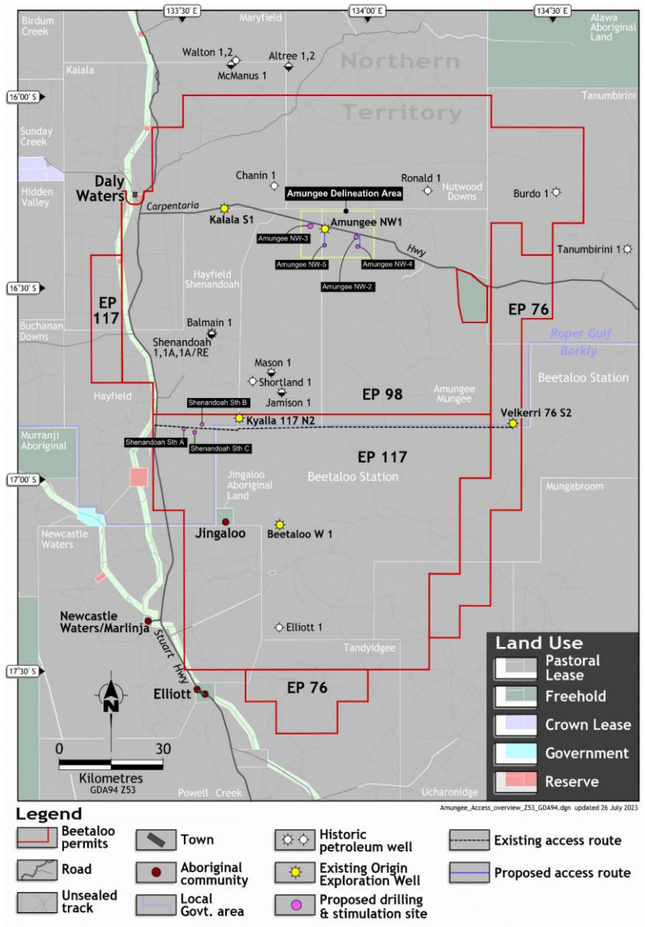


Figure 2: Location of Tamboran's exploration well sites and existing infrastructure

Amended EMP text

2 Project Context

This plan covers all civil, seismic acquisition, well drilling, stimulating, rehabilitation and routine maintenance/monitoring activities undertaken by Tamboran, its subsidiaries and their contractors within permit EP76, EP98 and EP117 as detailed in Table 1 and shown in Figure 2 – Figure 4.

Table 1: Coordinates of centroid 2D seismic and exploration well sites

Well site, access track and gravel pit references	Well pads		
	Zone	Easting	Northing
…..			
Shenandoah S C	53	349368	8127407
…..			

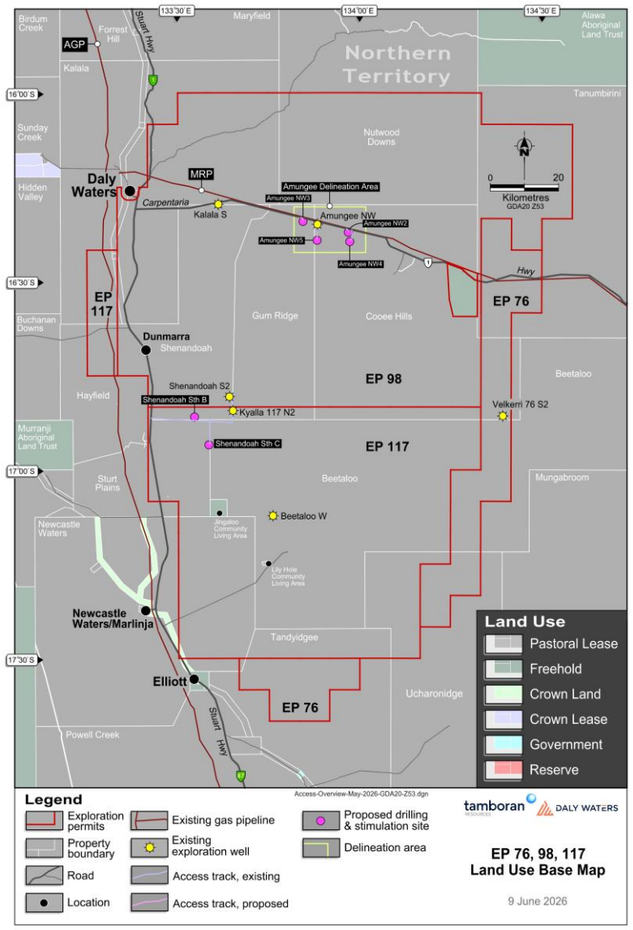


Figure 2: Location of Tamboran's exploration well sites and existing infrastructure

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text
Appendix L Cultural Heritage Assessment	
Cultural Heritage Assessment – Amungee North-West, Shenandoah North, Shenandoah South and Kyalla (AECOM, 2024)	***Appendix L.1** Cultural Heritage Assessment – Amungee North-West, Shenandoah North, Shenandoah South and Kyalla (AECOM, 2024)* **Appendix L.2 Cultural Heritage Assessment – Beetaloo Central Development Area (AECOM, 2026)**
Appendix N Stakeholder Engagement	
Appendix N Stakeholder Engagement logs A & B **Appendix N.1.1 Pastoral Stakeholder Engagement** **Appendix N.1.2 NLC Stakeholder Engagement** **Appendix N.1.3 Historic Engagement**	**Appendix N Stakeholder Engagement logs A & B** **Appendix N.1.1 Pastoral Stakeholder Engagement** **Appendix N.1.2 NLC Stakeholder Engagement** **Appendix N.1.3 Historic Engagement**
Appendix 0 Rehabilitation Management Plan	

Current EMP text

tamboran RESOURCES

Exploration Permit 117
Rehabilitation Management Plan 2023 onwards
Shenandoah South C
Rev 2, March-2024 page 1 of 2

Location of Shenandoah South C	
Property and land uses	Gas exploration, cattle grazing, and native title rights and interests recognised by the native title determinations over the land and waters.
Climate	The permit area is described as arid to semi-arid. Climate is influenced by the monsoon and there is a distinct wet and dry season. Most rainfall (90%) occurs during the summer months, between October and March. Annual rainfall varies across the permit area is around 680 mm, with rainfall totals show moderate variability and drought conditions are known to occur every 10 years.
Pre-disturbance land condition summary	The Shenandoah South C location (GDA94, Zone 53, 343472.00mE, 8133331.00mN) is on EP 117. The natural vegetation community is *Acacia shirleyi, Ventilago viminalis* mid high open woodland over *Macropteranthes kekwickii, Terminalia volucris, Eucalyptus chlorophylla* mid high open shrubland over *Sorghum intrans, Eulalia aurea, Chrysopogon fallax* mid high tussock grassland. The landform at Shenandoah South C is characterised by lateritic plains and rises associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils. Habitat surrounding the site is in moderate condition. The habitat contained refuge opportunities for small birds and reptiles in the form of large woody debris and flowering plants. A likelihood of occurrence assessment identified nine fauna and one flora species that are listed under the EPBC Act 1999 and/or Territory Parks and Wildlife Conservation Act 1976. Impacts on listed species assessed can be mitigated through measures identified in the EMP.

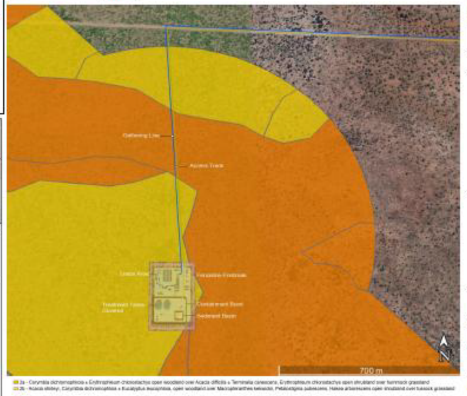
Rehabilitation aims and objectives	
Site management aim	The aim is to rehabilitate any part of the land affected by the regulated activity to its pre-disturbed condition in accordance with Section A.3.9(d) of the Code.
Rehabilitation objectives	The rehabilitation objective is to provide a stable landform, which supports a) the rights and interests of the Native Title Holders in the land and water, and b) a resilient self-sustaining vegetation community that can withstand impacts including fire and cattle grazing and is safe to humans and wildlife.

Soil and general environmental condition (April 2023)

The RMP should be read in conjunction with the overarching Environment Management Plan and Emergency Response Plans for Tamboran's operations in the Beetaloo Basin. Prepared by AECOM Australia Pty Ltd, 20 March 2024 on behalf of Tamboran B2 Pty Ltd

Name	Contact details
[redacted] Beetaloo Field Manager	Mobile: [redacted] Satellite Phone: [redacted] Email: [redacted]

Rehabilitation zones			
Infrastructure	Size (ha)	Soil type / slope	Vegetation community / dominant species
Lease pad	7.50	Lateritic plains and rises associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils. <1% slope.	Comm 2a-*Corymbia dichromophloia* ± *Erythrophleum chlorostachys* open woodland, over *Acacia difficilis* ± *Terminalia canescens, Erythrophleum chlorostachys* open shrubland, over hummock grassland
Laydown	-		
Access tracks / gathering line	3.30		
Helipad	-		*Comm 2b- Acacia shirleyi, Corymbia dichromophloia* ± *Eucalyptus leucophloia, C. polycarpa mid high open woodland*
Camp	1.00		
Fencing & firebreaks	4.00		
Disturbance	17.30		



Rehabilitation risk	
Key Risks	Controls
Drought - impacting the establishment of rehabilitated vegetation	• Time rehabilitation actions to coincide with the beginning of the wet season, to ensure access to the site and maximise the establishment period of vegetation over the wet season. • Re-spread topsoil across the site to utilise the local seed bank. • Ongoing monitoring to identify if further seed inputs are required. • Collection of seed from the local area to ensure seed stock is suited to the climatic conditions of the site.
Fire - impacting revegetation	• Establish a mix of perennial and annual grass species. • Establish a mix of resprouting (e.g., *Eucalyptus* spp. and *Corymbia* spp.) and reseeding species (e.g., *Acacia* spp.). • Ongoing monitoring to determine fire impacts on revegetation. • Ongoing monitoring to determine if further seed inputs are required.
Grazing - impacting revegetation	• Establish a mix of perennial and annual grass species. • Re-spread timber with topsoil. • Ongoing monitoring to determine grazing impacts on revegetation. • Ongoing monitoring to determine if further seed inputs are required. • Ongoing monitoring to determine if fencing is required.
Exposed ground - leading to an increase in weed establishment and/or erosion	• Remove windrows and topsoils. • Respread of topsoil and vegetated matter across the site. • Annual weed surveys of rehabilitated area once rehabilitation is established. • Control of any weed incursions.

Pre-disturbance photos of vegetation community

Rehabilitation strategy		
Parameter	Methods	Objective
Vegetation	• Rehabilitation will be implemented for disturbance areas following completion of the individual activity within 12 months. • Disturbed areas to be allowed to naturally regenerate or revegetate on completion of the regulated activity. • All compacted areas to be ripped and scarified to promote regeneration of vegetation, this may require assistance through spread of native seed stock. Where possible, native seed stock would be supplied by local indigenous suppliers.	• Establish vegetation trending toward the target vegetation community for the area disturbed (i.e. species richness, %cover and structure) and in accordance with the Code (Clause A.3.9(d)). • Reinstate disturbance area to its pre-disturbed condition. • The type of ground cover applied to completed earthworks is to be compatible with the anticipated long-term land use, environmental risk, and site rehabilitation measures.
Ground cover	• Previously removed vegetation and topsoil will be uniformly respread over disturbed area. This will assist with the rehabilitation process by increasing infiltration and returning seed-bearing topsoil, as well as reducing erosion. • After first 12 months, additional input of native seed mix may be required from the area to assist rehabilitation process.	
Landform stability	• All windrows are to be removed post construction and at completion of the activities.	

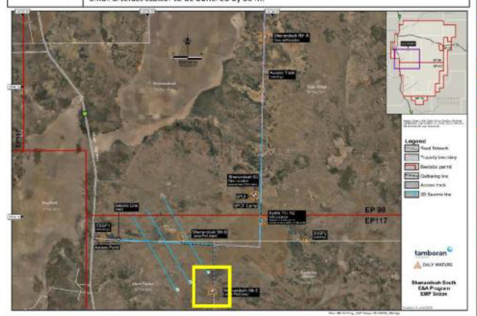
Final success criteria	
Area to be rehabilitated	• Total area of approved surface disturbance is 17.30 ha. • Total area required for rehabilitation 17.30 ha.
Vegetation composition	• Vegetation composition (i.e. type, density) trending towards the target vegetation community and self-sustaining. • Vegetation is sustainable for long term with the only required maintenance consistent with the final land use. • Sign of woody vegetation regrowth (i.e. Acacia, Eucalypt and Bullwaddy) following rehabilitation and within 12-18 months. • Ground foliage cover consistent with the target vegetation community where disturbance occurred. • Achieve minimum of 30% diversity within the first 12 months and maintained for at least 3 years following rehabilitation consistent with analogue sample site. • Final success based on the following attributes - % canopy and ground cover, stratum 3 species richness, woody species diversity.
Watercourse crossings	• No water crossings associated with Shenandoah S C well pad and access track areas.
Erosion	• Site stabilisation to occur and all erosion and sediment control infrastructure removed. • Less than 5 % erosion should be evident after the first 12 months and no subsidence or erosion should be evident for at least 5 years after completion.
Weeds	• No establishment of weed species declared under the NT *Weeds Management Act*.
Hazardous materials and waste	• All hazardous material and waste removed from site upon completion of works to licensed landfill facilities or recycling facilities. • No residual soil contamination that poses a threat of environmental harm.
Safety for humans and wildlife	• Rehabilitation of disturbance areas should be similar in landform to the surrounding area. No steep slopes or barriers to remain on site that endanger wildlife, livestock or humans. • Windrows removed. • Water bores and exploration wells to be sealed and isolated (as required). • Removal of all surface facilities including fencing (star pickets / fencing wire).

Amended EMP text

tamboran RESOURCES

Exploration Permit 117
Rehabilitation Management Plan 2026 onwards
Shenandoah S C well site
Rev 3, June 2026 page 1 of 2

Location of Shenandoah S C well site	
Property and land uses	Gas exploration, cattle grazing, and native title rights and interests recognised by the native title determinations over the land and waters.
Climate	The permit area is described as arid to semi-arid. Climate is influenced by the monsoon and there is a distinct wet and dry season. Most rainfall (90%) occurs during the summer months, between October and March. Annual rainfall varies across the permit area is around 680 mm, with rainfall totals show moderate variability and drought conditions are known to occur every 10 years.
Pre-disturbance land condition summary	The Shenandoah S C well site location (GDA20, zone 53, 349353E; 8127412N). The natural vegetation community is *Acacia shirleyi ± Macropteranthes kekwickii mid high open forest, over Acacia shirleyi, Macropteranthes kekwickii, Terminalia volucris mid high open shrubland, over Chrysopogon fallax, Mnesithea formosa, Triodia bitextura mid high tussock grassland.* The landform at Shenandoah S C is characterised by Scoured gravelly level to gently undulating low rises and pediment slopes. Sandy loam to medium clay. Habitat surrounding the site is in good condition. The habitat consisted of no tree hollows, fallen logs abundant, flowering plants common, litter shallow. 30% canopy cover, Stand Basal Area – 3.3 m²/ha. Small artefact scatter to be buffered by 50 m.



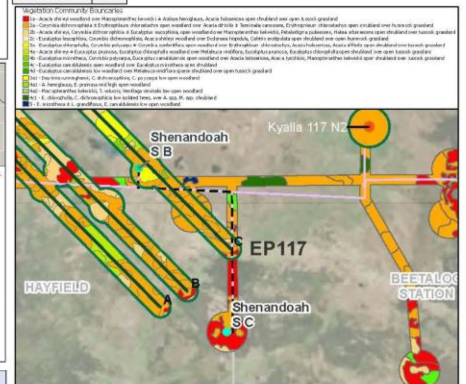
Rehabilitation aims and objectives	
Site management aim	The aim is to rehabilitate any part of the land affected by the regulated activity to a safe condition consistent with industry standards, the Code and in consultation with the landholder.
Rehabilitation objectives	The rehabilitation objective is to provide a stable landform, which supports a) the rights and interests of the Native Title Holders in the land and water, and b) a resilient self-sustaining vegetation community that can withstand impacts including fire and cattle grazing and is safe to humans and wildlife.

Soil and general environmental condition (Feb 2026)

The RMP should be read in conjunction with the overarching Environment Management Plan and Emergency Response Plans for Tamboran's operations in the Beetaloo Basin. Prepared by Tamboran B2 Pty Ltd.

Contact details	Contact details
[redacted] Mobile: [redacted] Satellite Phone: [redacted] Email: [redacted]	[redacted] Mobile: [redacted] Satellite Phone: [redacted] Email: [redacted]

Rehabilitation zones			
Infrastructure	Size (ha)	Soil type / slope canopy / ground cover	Vegetation community / dominant species
Well pad (incl flare pit)	7.5	Lateritic plains and rises associated with deeply weathered profiles (laterite) including sand sheets and other depositional products, sandy and earth soils	Comm 1a - *Acacia shirleyi ± Macropteranthes kekwickii* mid high open forest, over *Acacia shirleyi, Macropteranthes kekwickii, Terminalia volucris* mid high open shrubland, over *Chrysopogon fallax, Mnesithea formosa, Triodia bitextura* mid high tussock grassland
Laydown	2.5		
Helipad	0.5		
Camp	1.0		
Fencing & firebreaks	4.00		
Access track & gathering line	3.3		
Disturbance	18.8		



Rehabilitation risk	
Key Risks	Controls
Drought - impacting the establishment of rehabilitated vegetation	• Time rehabilitation actions to coincide with the beginning of the wet season, to ensure access to the site and maximise the establishment period of vegetation over the wet season. • Re-spread topsoil across the site to utilise the local seed bank. • Ongoing monitoring to identify if further seed inputs are required. • Collection of seed from the local area to ensure seed stock is suited to the climatic conditions of the site.
Fire - impacting revegetation	• Establish a mix of perennial and annual grass species. • Establish a mix of resprouting (e.g., *Eucalyptus* spp. and *Corymbia* spp.) and reseeding species (e.g., *Acacia* spp.). • Ongoing monitoring to determine fire impacts on revegetation. • Ongoing monitoring to determine if further seed inputs are required.
Grazing - impacting revegetation	• Establish a mix of perennial and annual grass species. • Re-spread timber with topsoil. • Ongoing monitoring to determine grazing impacts on revegetation. • Ongoing monitoring to determine if further seed inputs are required. • Ongoing monitoring to determine if fencing is required.
Exposed ground - leading to an increase in weed establishment and/or erosion	• Remove windrows and topsoils. • Respread of topsoil and vegetated matter across the site. • Annual weed surveys of rehabilitated area once rehabilitation is established. • Control of any weed incursions.

Pre-disturbance photos of vegetation community

Rehabilitation strategy		
Parameter	Methods	Objective
Vegetation	• Rehabilitation will be implemented for disturbance areas following completion of the individual activity within 12 months. • Disturbed areas to be allowed to naturally regenerate or revegetate on completion of the regulated activity. • All compacted areas to be ripped and scarified to promote regeneration of vegetation, this may require assistance through spread of native seed stock. Where possible, native seed stock would be supplied by local indigenous suppliers.	• Establish vegetation trending toward the target vegetation community for the area disturbed (i.e. species richness, %cover and structure) and in accordance with the Code (Clause A.3.9(d)). • Reinstate disturbance area to its pre-disturbed condition. • The type of ground cover applied to completed earthworks is to be compatible with the anticipated long-term land use, environmental risk, and site rehabilitation measures.
Ground cover	• Previously removed vegetation and topsoil will be uniformly respread over disturbed area. This will assist with the rehabilitation process by increasing infiltration and returning seed-bearing topsoil, as well as reducing erosion. • After first 12 months, additional input of native seed mix may be required from the area to assist rehabilitation process.	
Landform stability	• All windrows are to be removed post construction and at completion of the activities.	

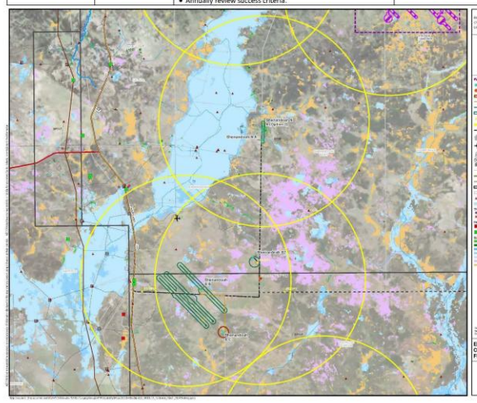
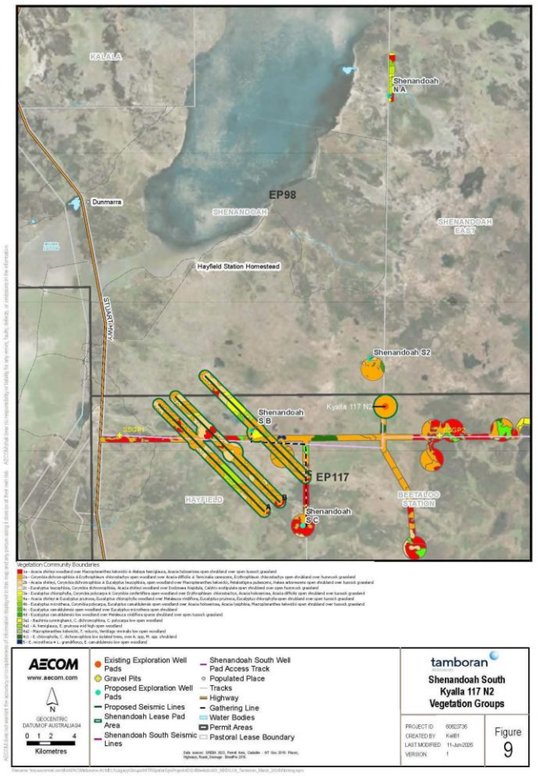
Final success criteria	
Area to be rehabilitated	• Total area of approved surface disturbance is 18.8 ha. • Total area required for rehabilitation 18.8 ha.
Vegetation composition	• Vegetation composition (i.e. type, density) trending towards the target vegetation community and self-sustaining. • Vegetation is sustainable for long term with the only required maintenance consistent with the final land use. • Sign of woody vegetation regrowth (i.e. Acacia, Eucalypt and Bullwaddy) following rehabilitation and within 12-18 months. • Ground foliage cover consistent with the target vegetation community where disturbance occurred. • Achieve minimum of 30% diversity within the first 12 months and maintained for at least 3 years following rehabilitation consistent with analogue sample site. • Final success based on the following attributes - % canopy and ground cover, stratum 3 species richness, woody species diversity.
Watercourse crossings	• All stream crossings, where intersected, to be reinstated to the original topography. • No evidence of erosion as result of activity present within first 12 months.
Erosion	• Site stabilisation to occur and all erosion and sediment control infrastructure removed. • Less than 5 % erosion should be evident after the first 12 months, and no subsidence or erosion should be evident for at least 5 years after completion.
Weeds	• No establishment of weed species declared under the NT *Weeds Management Act*.
Hazardous materials and waste	• All hazardous material and waste removed from site upon completion of works to licensed landfill facilities or recycling facilities. • No residual soil contamination that poses a threat of environmental harm.
Safety for humans and wildlife	• Rehabilitation of disturbance areas should be similar in landform to the surrounding area. No steep slopes or barriers to remain on site that endanger wildlife, livestock or humans. • Windrows removed. • Water bores and exploration wells to be sealed and isolated (as required). • Removal of all surface facilities including fencing (star pickets / fencing wire).

Interest holder	Tamboran B2 Pty Ltd	EMP Title	Beetaloo Sub-basin Shenandoah South E&A Program EMP	Unique EMP ID	TAM1-3	Mod #	14	Date	19 August 2026

Current EMP text	Amended EMP text

tamboran RESOURCES

Exploration Permit 117
Rehabilitation Management Plan 2026 onwards
Shenandoah S C well site
Rev 3, June 2026 page 2 of 2

Monitoring program and schedule

Stage	Timing	Method	Measurable attributes
Progressive rehabilitation	Within 6-12 weeks of completion of activities	• Topsoil, windrows and cleared vegetation stockpiled are to be respread following the works. • Refer to detail in Tamboran's Erosion and Sediment Control Plan	• All disturbed areas must be considered suitably stabilised as per IECA Table in the Tamboran Erosion and Sediment Control Plan.
Preliminary assessment	Post rehabilitation, end of wet season survey (February to June) within 12 months.	• Analogue sites will be established for the two vegetation communities identified in the baseline Land Condition Assessment (AECOM 2026) at adjacent undisturbed sites. • Permanent 100 m x 4 m transects (one per vegetation community), will be established at disturbed and analogue sites including photo monitoring point(s). • Collect 1 x 1 m ground cover quadrats every 10 m along each 100 m transect. • Transects to be positioned <20 m from pastoral and gas infrastructure assets (i.e. access tracks, fence lines, well pads, water troughs) to reduce edge effects.	Following measurable attributes will be compared with analogue sites: • Seedling/sapling density of dominant species respective to each vegetation community. • Percentage of ground cover respective to bare land and vegetation. • Number of species at canopy, mid and ground strata. • Evidence of erosion (type of erosion, approximate area of erosion). • Weed presence/absence (species and density). • Disturbance (fire frequency and intensity, evidence of feral animal/ cattle) • Incidental observations.
Early rehabilitation	Years 1, 2 and 3 post rehabilitation, end of wet season survey (February to June).	• Monitoring to be undertaken using permanent transects at analogue and disturbed sites. • Collect data as per preliminary methods. • Compare results from monitoring sites with analogue sites and previous year's assessment to determine if require additional management inputs (i.e. seeding, stabilisation). • Implement reseeding if species richness does not show a trajectory to achieving pre-disturbance conditions 5 years post disturbance. • Species which fail to naturally recover from soil seed bank will be selected for reseeding.	• Early assessment of rehabilitation will determine attributes of woody plants in each 100 m x 4 m transect. • Including assessment of species, DBH (>1.5 cm) and height (>2 m), in addition to parameters described within the preliminary assessment.
Long-term rehabilitation	Annually until final success criteria has been met, end of wet season survey (February to June).	• Annually review success criteria.	• Long-term assessment to determine establishment, recruitment, and growth rate attributes of plant species, in addition to parameters described during early rehabilitation stage.