

COMPLIANCE REPORT

JEMENA NORTHERN GAS PIPELINE (EPBC 2015/7569)


REPORTING PERIOD 20 MAY 2019 TO 19 MAY 2020

Revision Number: A

Revision Date: 26/05/2020

AUTHORISATION

Reviewed and Approved by

Name	Job Title	Signature	Date
Dean Lal	National Environment Manager		27/05/20

INTERNAL

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DECLARATION OF ACCURACY

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth - EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed



Full name Dean Lal
Position National Environment Manager
Organisation Jemena Northern Gas Pipeline Pty Ltd (ACN 607 928 790)
Date 27/05/2020

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ABBREVIATIONS

Cth	Commonwealth
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
KP	Kilometre point
NGP	Northern Gas Pipeline (EPBC 2015/7569)

1 INTRODUCTION

Jemena Northern Gas Pipeline Pty Ltd (referred to herein as *Jemena*) gained approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) as the approval holder to *Construction and operation of the Jemena Northern Gas Pipeline, Tennant Creek Northern Territory to Mt Isa, Queensland (EPBC 2015/7569)* on 9 March 2017. The Northern Gas Pipeline involved the construction of a new, underground, natural gas transmission pipeline, approximately 622 km in length and associated facilities.

Commencement of activities occurred on 20 May 2017 and are now completed. This Annual Compliance report will cover compliance against each of the EPBC conditions issued to Jemena between 20 May 2019 and 20 May 2020 that are still relevant following the completion of all works that were subject to the pipeline regulatory approval.

2 DESCRIPTION OF ACTIVITIES

2.1 EPBC APPROVAL KEY INFORMATION SUMMARY

EPBC Number	EPBC 2015/7569
Project Name	Jemena Northern Gas Pipeline
Approval holder and ACN	Jemena Northern Gas Pipeline Pty Ltd (607 928 790)
Approved action	To construct and operate a buried 622 km high-pressure gas pipeline from Tennant Creek (Northern Territory) to Mount Isa (Queensland)
Location of the project	Tennant Creek (Northern Territory) to Mt Isa (Queensland)
Project commencement date	20 May 2017
Person accepting responsibility for this report	Dean Lal
Dates for the reporting period of this report	20th May 2019 to 20th May 2020
Date of preparation of this report	25 th May 2020

2.2 ACTIVITIES UNDERTAKEN DURING REPORTING PERIOD

2.2.1 PIPELINE CONSTRUCTION ACTIVITIES

The following activities were completed over the past reporting periods for the pipeline:

- 143 km of pipeline stringing, welding and lowering was completed.
- 163 km of pipeline bulk reinstatement was completed.
- 219 km of pipeline hydrostatic pressure testing was completed.
- 622 km of pipeline commissioned.

All remaining construction activities for the pipeline were completed within this reporting period. The pipeline is now fully commissioned and operational.

2.2.2 FACILITIES CONSTRUCTION ACTIVITIES

All facility construction activities are now complete. Over the past reporting periods the following facilities were completed:

- Completion of the civil works for the Phillip Creek Compressor Station facility (Northern Territory) which includes the installation of concrete structures and pads for equipment installation.
- Completion of structural, mechanical and electrical installation work at the Phillip Creek Compressor Station facility (Northern Territory).
- Commissioning of the Phillip Creek Compressor Station (Northern Territory).
- Completion of the civil works for the Mount Isa Compressor Station facility (Queensland) which includes the installation of concrete structures and pads for equipment installation.
- Completion of structural, mechanical and electrical installation work at the Mount Isa Compressor Station facility (Queensland).
- Commissioning of the Mount Isa Compressor Station (Queensland).

All construction activities for the facilities are now complete.. The facilities have been commissioned and are now operational.

3 ADDITIONAL REPORTING REQUIREMENTS

Condition 9 of EPBC Decision 2015/7569 request the following to be included in the Annual Compliance Report:

*Within three (3) months of every 12 month anniversary of the **commencement** of the action, the approval holder must publish a report (the Annual Compliance Report) on its website describing compliance with each of the conditions of this approval, during the previous 12 months. The approval holder must also provide in this report:*

- a) a reconciliation of actual **disturbance** and **removal** of **suitable Plains Death Adder habitat** (in hectares) on the **project area** against the **disturbance** and **removal** limits specified in condition 2; and
- b) progress against the **rehabilitation acceptance criteria required** at condition 5.

3.1 PLAINS DEATH ADDER HABITAT DISTURBANCE AND REMOVAL

Table 1 below demonstrates the currently reconciled areas of suitable Plains Death Adder habitat disturbed and removed during the reporting period and since Project Commencement. To date, these are within the permitted thresholds of this EPBC decision.

Please note that the removal of Plains Death Adder habitat was associated with the construction for the following:

- one mainline valve; and
- three cathodic protection stations.

During this reporting period (20th May 2019 to 19th May 2020), there was no further Plains Death Adder habitat disturbed or removed.

Table 1: Plains Death Adder disturbed and removed habitat

	Maximum Permitted Quantity ¹	Previously Reported Reconciled Quantity	Additional Reconciled Quantity for Current Reporting Period	Total Reconciled Quantity Since Project Commencement
Plains Death Adder Habitat Area <u>Disturbed</u>	791 ha	692 ha	0 ha	692 ha
Plains Death Adder Habitat Area <u>Removed</u>	36 ha	4.8 ha	0 ha	4.8 ha

Note 1: Maximum limit as set out in EPBC Decision 2015/7569

3.2 PROGRESS OF REHABILITATION

In accordance with Condition 5, Jemena submitted its Rehabilitation Management Plan on 31 March and received EPBC approval on 19 April 2017. Rehabilitation activities have commenced during this current reporting period. Annual Northern Gas Pipeline Transitional Rehabilitation Monitoring Reports will be prepared to track process of rehabilitation works. A Rehabilitation Monitoring Report (Issued 14th Feb 2020) for this current reporting period has been prepared and available on the Jemena website.

NGP Transitional Rehabilitation Monitoring Report (issued Feb 14th 2020 Attachment B)

Currently bulk reinstatement activities have been carried in the project area. Figure 1 and Figure 2 show examples of the bulk reinstatement achieved in the construction area over the last 12 months.



Figure 1: Example of reinstated bank for watercourse crossing at KP431 (29 July 2018)



Figure 2. Photograph of the same crossing as above on 19/11/201

Conclusion of 2020 Monitoring Report for this current reporting period

Besides some minor slumping and erosion (now rectified), the disturbed areas of the NGP meet all the soil surface criteria for transitional rehabilitation. Importantly all watercourse banks are intact, with major rivers showing good vegetation growth on the banks. Vegetation growth across the disturbed areas is good on the majority of the disturbed areas.

It was noted that there has been significant rainfall events in the first few months of 2020. Any impact of those rainfall events in terms of erosion and scouring and subsequent rehabilitation works will be reflected in the 2021 Annual Monitoring Rehabilitation Report.

4 EPBC APPROVAL CONDITIONS COMPLIANCE TABLE

This section addresses compliance against each condition associated with EPBC 2015/7569. These are shown below in Table 2.

Table 2: Compliance with EPBC Conditions

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
1	The approval holder must only take the proposed action within the project area .	Compliant	<p>All Construction for this period has been within the designated project area as described in the final public environment report. This is inclusive of:</p> <ul style="list-style-type: none"> • 30 metre construction right-of-way; • work spaces; • camp sites; • operational facilities; • dams; and • access tracks. <p>All construction work subject to the final public environment report and regulatory approval are now complete.</p>
2	<p>To protect the EPBC Act listed Plains Death Adder (<i>Acanthopis hawkei</i>), the approval holder must not:</p> <ol style="list-style-type: none"> a) disturb more than 791 hectares of suitable Plains Death Adder habitat; and b) remove more than 36 hectares of suitable Plains Death Adder habitat. 	Compliant	<p>Since Commencement of Actions, the following occurred in relation to the Plains Death Adder (<i>Acanthopis hawkei</i>):</p> <ol style="list-style-type: none"> a) 692 hectares of suitable Plains Death Adder habitat has been disturbed; and b) 4.8 hectares of suitable Plains Death Adder habitat has been removed to allow for one (1) mainline valve and three (3) cathodic protection stations. <p>All construction work subject to the final public environment report and regulatory approval are now complete. No further disturbance or removal of Plains Death Adder habitat is proposed.</p>

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
3	For the protection of the EPBC Act listed Plains Death Adder, Carpentarian Antechinus (<i>Pseudantechinus mimulus</i>) and Greater Bilby (<i>Macrotis lagotis</i>), the approval holder must undertake open trench inspection activities in accordance with the Trench Inspection Procedure (Procedure) .	Compliant	<p>All open trench inspections have been in accordance with the Trench Inspection Procedure (version 2) as provided to the Department on 23 February 2017.</p> <p>This version of the Trench Inspection Procedure is available on Jemena's Northern Gas Pipeline Website: http://jemena.com.au/industry/pipelines/northern-gas-pipeline</p> <p>All construction work subject to the final public environment report and regulatory approval are now complete. No further disturbance or removal of Plains Death Adder habitat is proposed.</p>
4	Within five (5) years of the completion of construction , the approval holder must rehabilitate no less than 791 hectares of suitable Plains Death Adder habitat .	Compliant (ongoing)	<p>Completion of construction occurred during the last reporting period (2018 - 2019). Progress of the rehabilitation will be provided in subsequent compliance reports including the current 2019 - 2020 Report.</p> <p>A Rehabilitation Monitoring Report (Issued 14th Feb 2020) has been prepared and is attached to this Compliance Report.</p>

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
5	<p>The approval holder must submit a Rehabilitation Management Plan for the Minister's approval in writing. The Rehabilitation Management Plan must include:</p> <ul style="list-style-type: none"> a) rehabilitation acceptance criteria; b) procedures, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria; and c) a monitoring program to determine the success of rehabilitation procedures implemented by the approval holder over the duration of the approval. 	Compliant	<p>The Rehabilitation Management Plan was issued to the Minister for approval on 31 March 2017.</p> <p>This document is confirmed to contain:</p> <ul style="list-style-type: none"> a) rehabilitation acceptance criteria; b) procedures, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria; and c) a monitoring program to determine the success of rehabilitation procedures implemented by the approval holder over the duration of the approval. <p>A Rehabilitation Monitoring Report (Issued 14th Feb 2020) has been prepared and is attached to this Compliance Report.</p>
6	<p>The approval holder must not commence the action until the Rehabilitation Management Plan has been approved by the Minister in writing. The approved Rehabilitation Management Plan must be implemented by the approval holder.</p>	Compliant	<p>The Rehabilitation Management Plan was approved on behalf of the Minister on 19 April 2017. This is the most current version of the plan and has been implemented.</p> <p>The Rehabilitation Management Plan is available on Jemena's Northern Gas Pipeline Website: http://jemena.com.au/industry/pipelines/northern-gas-pipeline</p> <p><u>This Condition is no longer relevant to the ongoing Compliance Reports and will not be included in future Compliance Reports.</u></p>

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
7	Within 10 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement .	Compliant	Date of commencement was 20 May 2017. This was communicated to the Department on 29 May 2017. Refer to Attachment A of this compliance report. This Condition is no longer relevant to the ongoing Compliance Reports and will not be included in future Compliance Reports.
8	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the Procedure and management plan required by this approval, and make them available upon request to the Department . Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act , or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	All records have been accurately maintained and may be made available to the Department should there be any request to do so. This includes the current 2019-2020 Northern Gas Pipeline Transitional Rehabilitation Monitoring Report that is the basis for this EPBC Annual Report.

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
9	<p>Within three (3) months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report (the Annual Compliance Report) on its website describing compliance with each of the conditions of this approval, during the previous 12 months. The approval holder must also provide in this report:</p> <ul style="list-style-type: none"> c) a reconciliation of actual disturbance and removal of suitable Plains Death Adder habitat (in hectares) on the project area against the disturbance and removal limits specified in condition 2; and d) progress against the rehabilitation acceptance criteria required at condition 5. <p>Documentary evidence providing proof of the date of the publication must be provided to the Department at the same time as the Annual Compliance Report is published. The approval holder must continue to publish the Annual Compliance Report each year until such time as agreed to in writing by the Minister.</p>	Compliant	<p>The Annual Compliance Report. This report contains specific information addressing:</p> <ul style="list-style-type: none"> a) a reconciliation of actual disturbance and removal of suitable Plains Death Adder habitat (in hectares) on the project area against the disturbance and removal limits specified in condition 2; and b) progress against the rehabilitation acceptance criteria required at condition 5. <p>The Annual Compliance Report is available on Jemena's Northern Gas Pipeline Website: http://jemena.com.au/industry/pipelines/northern-gas-pipeline</p> <p>A Rehabilitation Monitoring Report (Issued 14th Feb 2020) has been prepared and is attached to this Compliance Report.</p>
10	<p>The approval holder must report any potential or actual contravention of the conditions of this approval to the Department in writing within two (2) days of the approval holder becoming aware of a contravention.</p>	Not applicable	This did not occur during the reporting period.

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
11	Upon the written direction of the Minister , the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister . The approval holder must not commence the audit until the Minister approves the independent auditor and audit criteria in writing. The audit report must address the criteria to the satisfaction of the Minister .	Not applicable	This did not occur during the reporting period.
12	<p>The approval holder may choose to revise the Procedure or management plan approved by the Minister under conditions 3 and 5 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised Procedure or management plan would not be likely to have a new or increased impact. If the approval holder makes this choice they must:</p> <p>a) notify the Department in writing that the approved Procedure or management plan has been revised and provide the Department, at least four weeks before implementing the revised Procedure or management plan, with:</p> <ol style="list-style-type: none"> i. an electronic copy of the revised Procedure or management plan; ii. an explanation of the differences between the revised Procedure or management plan and the approved Procedure or management plan; and iii. the reasons the approval holder considers that the taking of the action in accordance with the revised Procedure 	Not applicable	This did not occur during the reporting period.

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
	or management plan would not be likely to have a new or increased impact .		
12A	The approval holder may revoke its choice under condition 12 at any time by notice to the Department . If the approval holder revokes the choice to implement the revised Procedure or management plan, without approval under section 143A of the EPBC Act , the Procedure or management plan approved by the Minister must be implemented.	Not applicable	This did not occur during the reporting period.
12B	<p>If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised Procedure or management plan would be likely to have a new or increased impact, then:</p> <ul style="list-style-type: none"> a) condition 12 does not apply, or ceases to apply, in relation to the revised Procedure or management plan; and b) the approval holder must implement the Procedure or management plan approved by the Minister. <p>To avoid any doubt, this condition does not affect any operation of conditions 12 and 12A in the period before the day the notice is given.</p> <p>At the time of giving the notice, the Minister may also notify the approval holder that for a specified period of time that condition 12 does not apply for the Procedure or management plan required under the approval.</p>	Not applicable	This did not occur during the reporting period.
13	Conditions 12, 12A and 128 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised	Not applicable	This did not occur during the reporting period.

Condition Number	Condition	Is the project compliant with this condition?	Evidence/Comments
	Procedure or management plan to the Minister for approval.		
14	If, at any time after five (5) years from the date of this approval, the approval holder has not commenced the action, then the approval holder must not commence the action without the written agreement of the Minister .	Not applicable	Commencement has occurred within 5 years of the approval. Date of commencement was 20 May 2017. This Condition is no longer relevant to the ongoing Compliance Reports and will not be included in future Compliance Reports.
15	Unless otherwise agreed to in writing by the Minister , the approval holder must publish the Procedure and Rehabilitation Management Plan on its website. The Procedure and Rehabilitation Management Plan must be published on the website within one (1) month of being approved by the Minister or being submitted under condition 12. The published Procedure and Rehabilitation Management Plan must remain on the website for the lifetime of the approval unless otherwise agreed to in writing by the Minister .	Compliant	The approved rehabilitation management plan has been published on Jemena's Northern Gas Pipeline Website: http://jemena.com.au/industry/pipelines/northern-gas-pipeline

ATTACHMENT A – NOTIFICATION OF COMMENCEMENT

Marc Rullo

From: Marc Rullo
Sent: Monday, 29 May 2017 3:12 PM
To: EPBCMonitoring@environment.gov.au
Cc: Russell Brooks; Jeff.richardson@ecoz.com.au; Cox, Vaughn
Subject: Notification of Commencement | Jemena Northern Gas Pipeline (EPBC 2015/7569)

Dear Sir or Madam,

In accordance with Condition 7 of EPBC Decision 2015/7569 (Jemena Northern Gas Pipeline), Please be advised the commencement of actions was **20 May 2017**.

Please acknowledge receipt of this email. If you require further information, do not hesitate to contact me using the details below.

Thank you and kind regards,


Marc Rullo
Project Engineer – Northern Gas Pipeline
Jemena
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ATTACHMENT B – TRANSITIONAL REHABILITATION MONITORING REPORT



Document Cover Sheet

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	Issue Date:	14-FEBRUARY-20
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Northern Gas Pipeline Transitional Rehabilitation Monitoring Report

Jemena



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1 INTRODUCTION

The Northern Gas Pipeline (NGP) is a 622 km buried gas pipeline linking existing gas pipelines in the Northern Territory (NT) and Queensland (Qld). Construction of the pipeline commenced on 20 May 2017, Jemena took over the site from the construction contractors in June 2018, and the pipeline became operational on 3rd January 2019. At the time of writing – January 2020 – the project area is being assessed for defects to land surface such as erosion.

Approval for the NGP was dependent on the development and implementation of a Rehabilitation Management Plan (RMP) that incorporated the requirements of the three interested jurisdictions – NT, Qld and Commonwealth. Of particular interest to the Commonwealth was the restoration of habitat for the threatened Plains Death Adder found between approximately KP 355 and KP 561.

The RMP defined three phases to rehabilitation:

- **Reinstatement:** The process of bulk earthworks and structural replacement of pre-existing conditions of a site (i.e. backfilling of trench, reinstating soil surface topography including scouring or ripping, watercourse lines, culverts, fences and gates and other landscape features). It also includes placing cleared vegetation across disturbed areas. Reinstatement occurs during the construction phase and is the responsibility of the Construction Contractor.
- **Transitional rehabilitation:** The process of returning disturbed areas to a stable, non-polluting landform, the return of native species and the control of weed species. It differs from the reinstatement phase in that it generally does not involve bulk earthworks, but instead monitors the progress of rehabilitation ensuring that it is transitioning towards final rehabilitation, where an issue is found it is to be rectified. Transitional rehabilitation monitoring will focus on areas where failure risk is high. These include erosion at watercourse crossings; weeds at construction weed hygiene locations, and preventing any weed incursion.
- **Rehabilitation:** The process of returning a site's structural habitat complexity, and ecosystem processes and services to that of the pre-existing conditions at the site or an analogue site.

With reinstatement now complete, the NGP project is in the transitional rehabilitation phase. Meeting the transitional rehabilitation criteria is the responsibility of Jemena. As part of the approval conditions, monitoring of transitional rehabilitation in the project area will be first conducted following the wet season after the completion of construction activities. Monitoring will be conducted annually for the first five years following completion of construction (or until the transitional rehabilitation criteria are met).

The scope of this report is to assess the status of transitional rehabilitation across the NGP project area. In this first year of assessment, the focus is on soil stability and vegetation growth.

2 RAINFALL PRIOR TO ASSESSMENT

The NGP project area is in an arid climate characterised by a small (< 250 mm/year on average) and highly variable rainfall. Rainfall affects rehabilitation through plant recruitment and erosional processes. The rainfall pattern across the project area is driven by monsoonal or cyclonic events to the north resulting in higher rainfalls in summer. Over the 2018/2019 summer, rainfall at Tennant Creek (the western end of the project area) was lower than average, Camooweal (towards the middle of the project area) and Mt. Isa (at the eastern end of the project) had about average and above average rainfall, respectively (Figure 1).

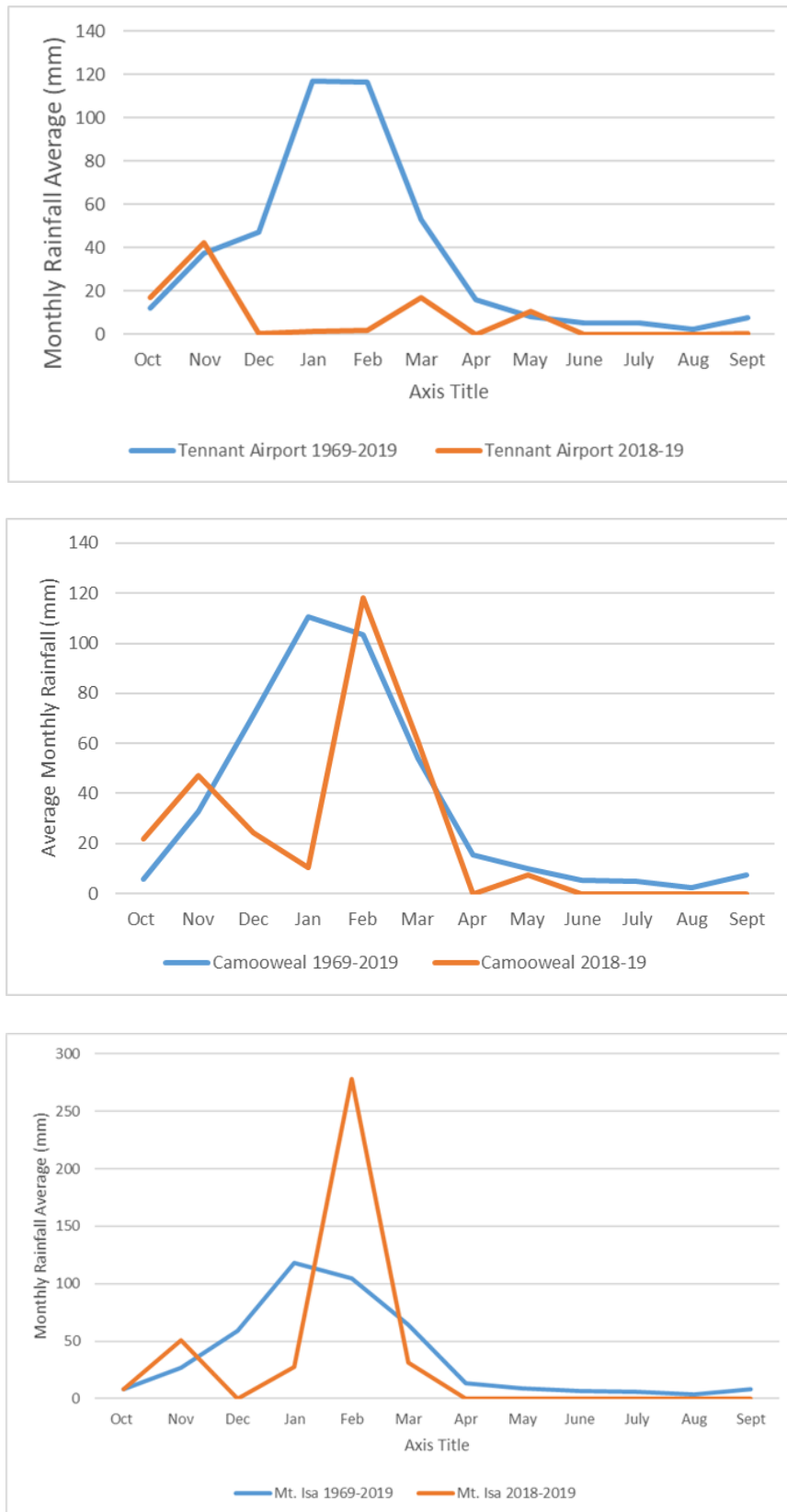


Figure 1. Tennant Creek, Camooweal and Mt. Isa rainfall average and 2018-2019 records

3 ASSESSMENT OF TRANSITIONAL COMPLETION CRITERIA

Before Jemena took possession of the project area (Figure 2) from the Construction Contractors, a defect assessment was undertaken between January and April 2019, focusing on soil erosion and soil surface slumping. Defects were photographed, added to the Defect Register and submitted to the Construction Contractors to remedy. The Construction Contractors subsequently repaired all defects and updated the Defect Register accordingly. The Defect Register and photographs taken between January and April 2019 were reviewed for this report.

The criteria below from the RMP were used to assess the transitional rehabilitation status of disturbed areas.

Significantly disturbed areas that are no longer required for operational purposes, must be transitionally rehabilitated within 12 months (unless exceptional circumstance in the area to be rehabilitated (e.g. flood event) prevents this timeframe being met) and be maintained to meet the following acceptance criteria:

- a) *Disturbed areas are:*
 - (i) *a stable landform*
 - (ii) *re-profiled to contours consistent with the surrounding landform*
- b) *surface drainage lines are re-established*
- c) *top soil is reinstated in disturbed areas; and*
- d) *either*
 - (i) *groundcover, that is not a declared pest species, is growing in disturbed areas; or*
 - (ii) *an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained in disturbed areas.*

Table 1 summarises the results of the assessment of each transitional rehabilitation criteria; the subsequent sections provide supporting evidence and elaborate on the conclusions given in the table. The location where each explanatory photograph was taken is shown in Figure 2.

Table 1. Status of the transitional rehabilitation criteria

Criteria	Conclusion/recommendations
Disturbed areas are a stable landform within 12 months	Complete, with a few exceptions of slumping and minor erosion (see Section 3.1). An assessment after a major flooding event is required to ensure that waterway banks retain stability, particularly in the western end of the project area that received below average rainfall last wet season.
Disturbed areas are re-profiled to contours consistent with the surrounding landform	Complete. No exceptions noted – see Section 3.2.
Surface drainage lines are re-established within 12 months	Re-establishment completed during the projects' reinstatement phase – see Section 3.3. This criteria has been met, with no exceptions noted.
Top soil is reinstated in disturbed areas within 12 months	This was completed during the projects' reinstatement phase. This criteria has been met, with no exceptions noted.
Native groundcover is growing in disturbed areas, or an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained within 12 months	Vegetation is growing in most disturbed areas – see Section 3.4. It is recommended that weeds are assessed after the 2019/2020 wet season.
	Erosion controls are established at key locations after construction and were updated after inspection (particularly where soil erodibility is high).

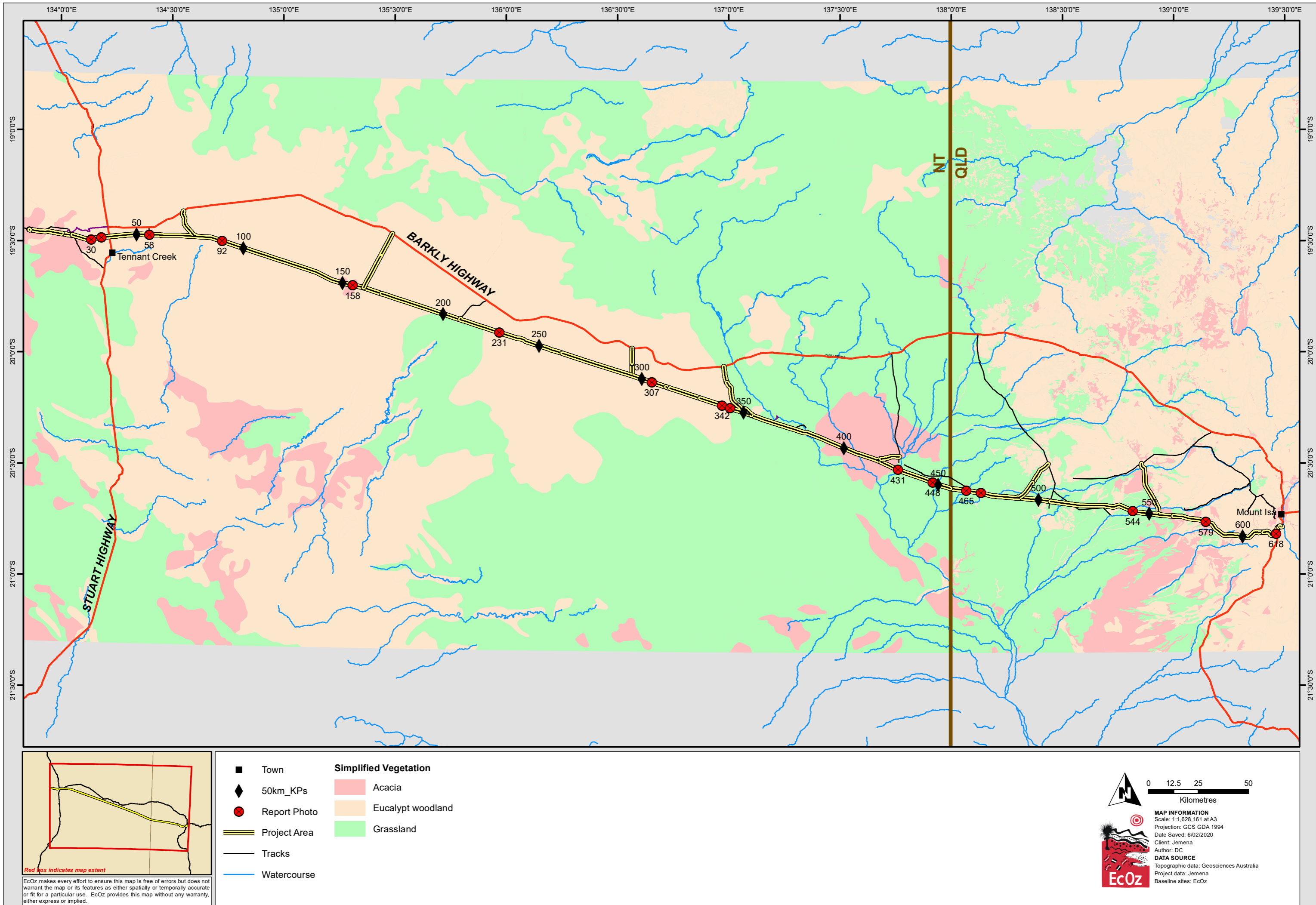


Figure 2. Map of NGP disturbance area

3.1 Disturbed areas are a stable landform

Disturbed areas were stable, with some occurrences of minor water erosion (Figure 3) and slumping (Figure 4). Where these were detected they were repaired. All erosion was modest and was most likely on the track along the ROW. Figure 3 shows some erosion along the track within the ROW, note the vegetation on the ROW on the photo's left-hand-side. Importantly, there was no erosion seen on river banks, with vegetation clearly re-establishing on the banks of major rivers. Figure 5 shows the Georgina River during construction; Figure 6 shows the same location during the defect assessment – note the lack of erosion and the vegetation stabilising the banks.



Figure 3. Photograph of erosion at KP 306



Figure 4. Photograph of slumping at KP 347

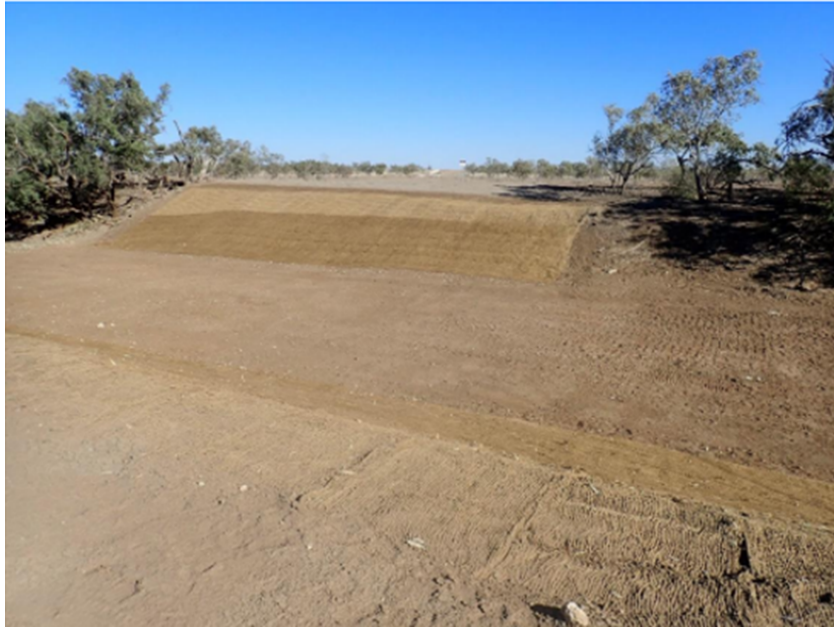


Figure 5. Photograph of Georgina River crossing KP 431 during construction (July 2018)



Figure 6. Photograph of the same crossing as above on 19/11/2019

3.2 Disturbed areas are re-profiled

No discrepancies were noted of the disturbed areas being inconsistent with the surrounding landscape. Windrows have been removed. This is most easily seen in Figure 7 – a photo taken from a pastoral track showing the ROW heading into the distance – and Figure 8 take at the eastern end of the ROW.



Figure 7. Photograph of KP 468.4 showing re-profiling



Figure 8. Photograph of KP 618 showing re-profiling on hillside

3.3 Surface drainage lines are re-established

Both small and large drainage lines have been re-established. An example of a re-established small drainage line is shown in Figure 9. Figure 10 shows a larger river system, Templeton River, showing intact banks and reinstatement (note cattle track in foreground).



Figure 9. Photograph of a small drainage line at KP 464.9 showing re-establishment



Figure 10. Photograph of the reinstatement of the Templeton River at KP 544.8

3.4 Ground cover or alternative soil stabilisation

Notwithstanding the poor wet season in some parts of the NGP project area (Section 2), the ground cover recruitment is quite high across the NGP area. There is variation influenced by rainfall and substrate. At KP 29 there was little vegetation growth on gravelly soils (Figure 11); however, three kilometres away at KP 32 on more loamy soils, there was evidence of ground cover recovering (Figure 12), this was at the drier eastern end of the project area (Section 2). Further east at KP 57.6, growth was much more vigorous (Figure 13) with shrubs well established.

What follows is suite of photographs showing natural revegetation across the major vegetation communities.



Figure 11. Photograph of ROW at KP 29.2



Figure 12. Photograph of ROW (to the right of the access track) showing little vegetation growth (KP 32)



Figure 13. Photograph of ROW at KP 57.6



Figure 14. Photograph of ROW at KP 91



Figure 15. Photograph of KP 158



Figure 16. Photograph of KP 232



Figure 17. Photograph of KP 342



Figure 18. Photograph of KP 448



Figure 19. Photograph of KP 468 black soil plains showing tussock grasses returning



Figure 20. Photograph of KP 581

4 SUMMARY AND CONCLUSION

Besides some minor slumping and erosion (now rectified), the disturbed areas of the NGP meet all the soil surface criteria for transitional rehabilitation. Importantly all watercourse banks are intact, with major rivers showing good vegetation growth on the banks. Vegetation growth across the disturbed areas is good on the majority of the disturbed areas.

After the 2019/2020 wet season, weed occurrence in high risk areas (watercourses, construction phase weed hygiene locations and other known weed occurrences) should be assessed, as well as the stability of banks of major watercourses, to ensure that they remained stable after another wet season. A determination can then be made if the project area has met transitional completion criteria and has entered rehabilitation phase.



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