

KIWEF Area 2 Closure Works

Independent Audit of EPBC Act Approval 2016/7670

Prepared for Hunter and Central Coastal Development Corporation

February 2023

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Independent Audit of EPBC Act Approval 2016/7670

Hunter and Central Coastal Development Corporation

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February 2023

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Draft	25 February 2023	Nathan Garvey, Brett McLennan	David Bone	HCCDC review
Final	28 February 2023	David Bone	Brett McLennan	HCCDC sign-off

Approved by



David Bone

Sector Lead – Construction

National Technical Leader – Construction Environmental Management

28 February 2023

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Newcastle NSW 2300

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Audit details

Project name

Kooragang Island Waste Emplacement Facility - Area 2 Closure Works, off Cormorant Road, Kooragang Island, Newcastle, NSW (EPBC 2016/7670) – herein referred to as the Area 2 Works.

Project approval holder

Crown in right of the State of NSW, acting through NSW Treasury.

Details of the approval to which the audit relates

To undertake closure works and the rehabilitation of Area 2 (K3 and KS and a small section of K7). Area 2 forms part of the Kooragang Island Waste Emplacement Facility (KIWEF) near Newcastle, NSW. Area 2 is approximately 36 hectares (ha) in size.

Scope of the audit

The audit assesses compliance with conditions of EPBC Act approval 2016/7670, targeting the construction, operation, and closure phases of the Area 2 Works. There are 22 conditions within EPBC Act approval 2016/7670. However, the conditions that form a focus for this audit are:

- Part A – conditions specific to the action, conditions 1 – 8
- Part B – standard administrative conditions, conditions 9 – 19.

Conditions 20 and 21 (in Part B) are not applicable to the audit as they have yet to be triggered and Condition 22 (in Part C) provides definitions for terms used in the approval. The definitions in Condition 22 were referenced and used where required.

Dates and locations of the audit

The audit was undertaken from 19 August 2022 to 25 February 2023. A site inspection was conducted of the Area 2 Works on 12 October 2022. Interviews were undertaken on 1 November 2022.

Audit methods

Compliance was assessed by a number of key activities:

- review of documentation provided by HCCDC and publicly available records
- site inspection of the area the subject of the audit
- interviews with key stakeholders including project managers, independent auditors and contract personnel.

Evidence reviewed

The documents reviewed by the audit team included the following record types:

- maps and figures of the area the subject of the audit
- Green and Golden Bell Frog (GGBF) clearance Inspection reports
- monthly audit reports
- GGBF annual monitoring data and reports
- imported material assessments
- revegetation seed mixes data
- site inspection reports, daily, weekly, monthly and six monthly
- ground water and surface water monitoring results and reports
- certified erosion and sediment control (CPESC) reports
- site inspection reports and plans
- GGBF pond water quality monitoring results
- contractor ISO certification
- construction induction and pre-start meeting records
- construction integrated project management plan
- contractor monthly summary reports
- internal contamination notifications of unexpected finds
- safe work method statement (SWMS) registers
- email notifications of incidents and actions
- Incident notifications.

A site inspection and interviews were also conducted and are reported in the body of this report.

Executive summary

EMM Consulting Pty Ltd (EMM Consulting) has been engaged by the Hunter and Central Coast Development Corporation (HCCDC) to undertake an independent environmental audit (IEA) of an approval granted by the then Commonwealth Department of the Environment and Energy (DEE) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC Act approval 2016/7670) for the Kooragang Island Waste Emplacement Facility (KIWEF) Area 2 Closure Works (herein referred to as the Area 2 Works).

The Area 2 Works were undertaken by HCCDC, acting as the agent of the NSW Government for the Area 2 Works. HCCDC contracted civil construction firm Daracon Contractors Pty Ltd (Daracon) to perform the Area 2 Works, which were undertaken between August 2019 and 10 July 2020.

Conditions within EPBC Act approval 2016/7670 require the approval holder to ensure that an IEA is undertaken “following the completion of onsite construction works and prior to the completion of the project works period”.

EMM Consulting’s engagement was approved by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) as delegate of the Commonwealth Minister for the Environment. The audit was conducted in accordance with the *Department of Environment and Energy 2019, Independent Audit and Audit Report Guidelines* (Audit Guidelines).

The audit scope was developed by the lead auditor, Mr David Bone, with the assistance of Mr Brett McLennan, and included a review of the EPBC Act approval 2016/7670 and all documentation relevant to the Area 2 Works.

The audit scope was approved by DCCEEW on 19 August 2022.

The audit's objective was to determine the project's compliance with the EPBC Act approval 2016/7670 and to assess the effectiveness of environmental management at the site of the Area 2 Works.

The audit involved a review of extensive information and documentation provided by HCCDC, a site inspection, and interviews.

Of the 22 conditions reviewed as part of the EPBC Act approval 2016/7670, all applicable conditions were found to be compliant, and three (3) were found to be not applicable. The not applicable conditions relate to two (2) conditions that have not yet been triggered and one (1) which provides the definitions for the approval. Three observations were also made in relation to the conditions.

Accordingly, the audit has found that there is full compliance (100%) with the relevant conditions of EPBC Act approval 2016/7670.

The observations identified in Section 3.5 relate to administrative recommendations, revegetation of stormwater infrastructure, and ongoing management of the site.

This audit provides assurance to stakeholders that the Area 2 Works have been completed in compliance with the required environmental standards and that the management of the site has been effective in, not only avoiding and mitigating impacts to the controlling provisions of EPBC Act 2016/7670 (predominantly the GGBF), but in creating additional effective breeding and foraging habitat outcomes for the GGBF.

The audit team would like to thank representatives from HCCDC and Daracon for providing access to the site, detailed knowledge of the works undertaken, and for the excellent record and data storage and recovery systems in use.

TABLE OF CONTENTS

Audit details	AD.1
Executive summary	ES.1
1 Introduction	1
1.1 Background	1
1.2 Audit team	2
1.3 Audit objectives	2
1.4 Audit scope	2
2 Audit methodology	5
2.1 Audit criteria	5
2.2 Selection and endorsement of audit team	5
2.3 Site inspection	5
2.4 Document review	5
2.5 Interviews	6
2.6 Compliance findings	6
3 Detailed audit findings	7
3.1 Documents audited	7
3.2 Previous areas of non-compliance	7
3.3 Compliance summary	7
3.4 Non-compliances	7
3.5 Observations	7
4 Conclusion	10

Appendices

Appendix A	Auditor's declaration of independence and audit team approval	A.1
Appendix B	Audit compliance matrix	B.1
Appendix C	Auditor's certification	C.1
Appendix D	Photos of site inspection	D.1

Figures

Figure 1.1	Area 2 Works site	4
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1 Introduction

1.1 Background

In December 2015, the then Hunter Development Corporation (HDC), now Hunter and Central Coast Development Corporation (HCCDC), submitted a referral on behalf of the Port of Newcastle Lessor Pty Ltd under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to undertake the Kooragang Island Waste Emplacement Facility (KIWEF) Area 2 Closure Works (herein referred to as the Area 2 Works) (EPBC Act referral 2016/7670).

KIWEF is located on the western portion of Kooragang Island, approximately 7 kilometers (km) north-west of the Newcastle city centre. The Area 2 Works involved the construction of an engineered cap over a 32 hectare (ha) portion of KIWEF, as shown on Figure 1.1. The site of the Area 2 Works is surrounded by Ramsar listed wetlands and provides habitat for the threatened Green and Golden Bell Frog (GGBF) and migratory wading birds that utilise the wetlands.

On 2 December 2016, the Area 2 Works were deemed by the Commonwealth Department of the Environment and Energy (DEE) to be a controlled action, therefore requiring assessment and approval under the EPBC Act before it can proceed. The controlling provisions related to:

- listed threatened species and communities (sections 18 and 18A)
- Ramsar wetland (section 16 and section 17B).

On 22 December 2016, DEE advised that the assessment approach was to be preliminary documentation.

In September 2018, the preliminary documentation was lodged with DEE for assessment.

In February 2019, the entity proposing to undertake the Area 2 Works (Port of Newcastle Lessor Pty Ltd) was transferred to 'the Crown in right of the State of NSW, acting through NSW Treasury' (the NSW Government).

On 22 March 2019, DEE issued approval (EPBC Act approval 2016/7670) for the Area 2 Works subject to 22 conditions.

The Area 2 Works were undertaken by HCCDC, acting as the agent of the NSW Government for the Area 2 Works. HCCDC contracted civil construction firm Daracon Contractors Pty Ltd (Daracon) to perform the Area 2 Works, which were undertaken between August 2019 and 10 July 2020. Since then, the site has been managed by HCCDC to conduct the required monitoring and maintenance including:

- establishment of vegetation
- removal of weeds or vegetative species that have the potential to damage the engineered cap
- monitoring of the GGBF.

Conditions 18 of EPBC Act approval 2016/7670 states that:

The approval holder must ensure that independent audits of compliance with the conditions are conducted:

- a. Following the completion of onsite construction works and prior to the completion of the project works period...

Condition 19 of the approval states:

For each independent audit, the approval holder must:

- a. provide the name and qualifications of the independent auditor and the draft audit criteria to the Department;
- b. only commence the independent audit once the audit criteria have been approved in writing by the Department; and
- c. submit an audit report to the Department within the timeframe specified in the approved audit criteria.

EMM Consulting Pty Ltd (EMM) was engaged by HCCDC on 18 May 2022 to undertake the independent environmental audit (IEA) of the Area 2 Works to satisfy the requirements of Condition 18 of EPBC Act approval 2016/7670.

EMM's nominated audit team and their qualifications, and the draft audit criteria, were submitted to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), formerly DEE, on 10 June 2022.

The audit team and audit scope were approved by DCCEEW on 19 August 2022. The letter stated that the audit report was to be submitted to DCCEEW by 28 January 2023. This date was subsequently changed to 28 February 2023 to allow time for EMM to consider additional monitoring data on the Green and Golden Bell Frog (GGBF) provided by the University of Newcastle (UoN) in January 2023.

1.2 Audit team

The audit was conducted by EMM Consulting, headed by the approved lead auditor, Mr David Bone. David has signed the independent audit declaration and was assisted by Mr Brett McLennan, Mr Nathan Garvey, and Ms Nena Lane-Kirwan. Support was provided by Ms Wendy Mason.

1.3 Audit objectives

The key objective of the audit is to determine the project's compliance with EPBC Act approval 2016/7670. It also determines compliance with the requirements of supporting documentation approved under the conditions, including, but not limited to, a *KIWEF Site Environmental Management Plan (EMP)* and the *GGBF Management Plan*.

Finally, the audit assesses the overall effectiveness of environmental management at the site of the Area 2 Works.

1.4 Audit scope

As stated above, the audit scope was approved by DCCEEW on 19 August 2022. The audit assesses the project's compliance with conditions as set out by EPBC Act approval 2016/7670, targeting the construction, operation, and closure phases of the Area 2 Works. There are 22 conditions within EPBC Act approval 2016/7670. However, the conditions that form a focus for this audit are:

- Part A – conditions specific to the action, conditions 1–8
- Part B – standard administrative conditions, conditions 9–19.

Conditions 20 and 21 (in Part B) are not applicable to the audit as they have yet to be triggered and Condition 22 (in Part C) provides definitions for terms used in the approval. The definitions in Condition 22 were referenced and used where required.

The audit also included assessment of post approval and compliance documentation prepared to satisfy the conditions of approval, particularly the key management and mitigation measures made in the management plans reference in the conditions outlined above, including:

- *GGBF Management Plan*
- *Revegetation Management Plan*
- *Water Quality Management Plan*
- *KIWEF Site EMP – also known as the Kooragang Island Waste Emplacement Facility Area 2 Closure, Construction Environmental Management Framework.*

The audit reviewed the environmental performance of the project via assessment of:

- actual impacts compared to predicted impacts documented in the environmental impact assessment
- the physical extent of the project in comparison with the approved boundary
- incidents, non-compliances, and complaints that occurred or were made during the audit period
- the performance of the Area 2 Works having regard to agency policy and any particular environmental issues identified through consultation carried out during the development of the audit scope.

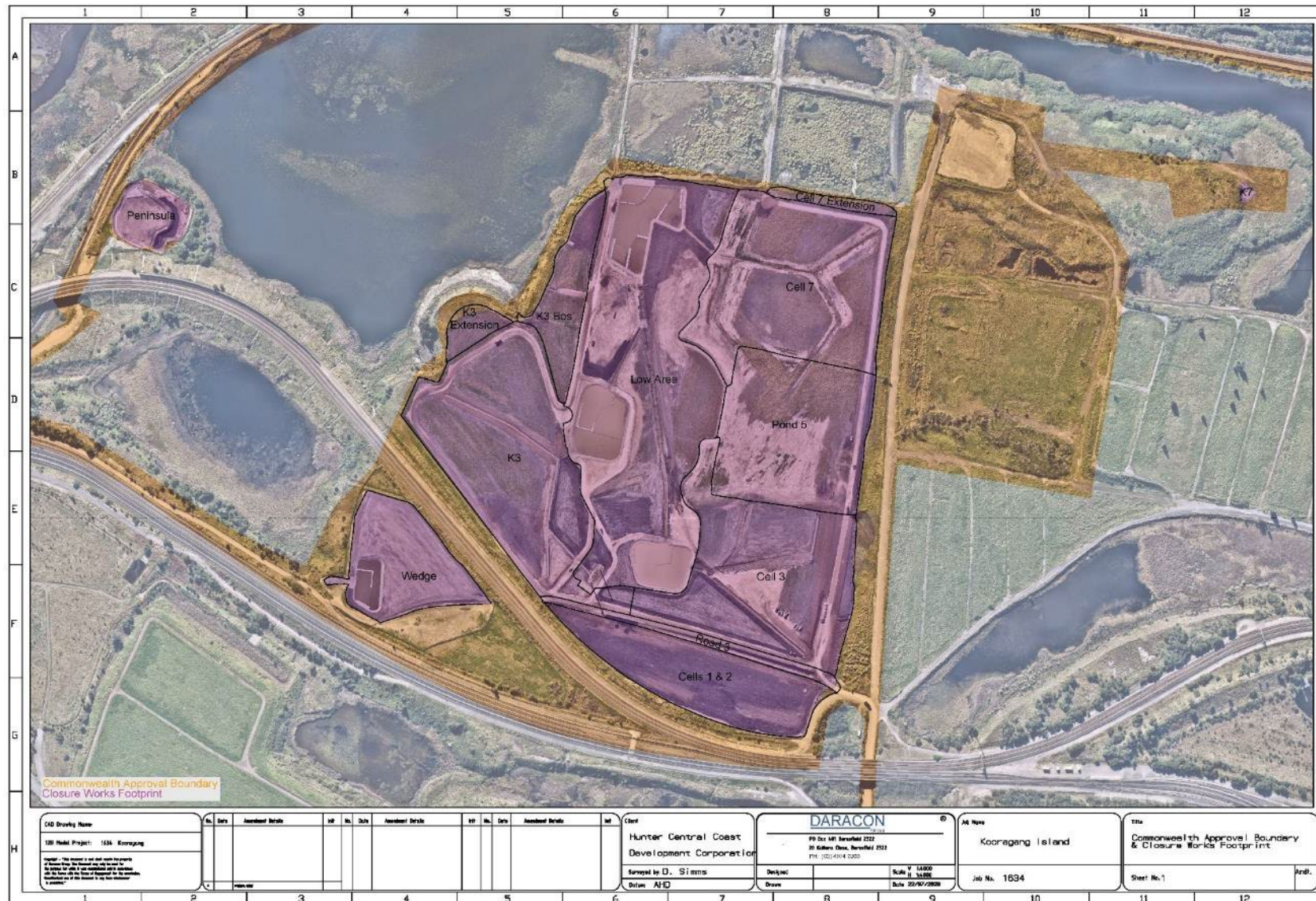


Figure 1.1 Area 2 Works site

Source – Daracon 2020 (Closure Works Footprint 20200722)

2 Audit methodology

2.1 Audit criteria

The audit was undertaken to address compliance with EPBC Act approval 2016/7670 and conducted in accordance with the *Department of Environment and Energy 2019, Independent Audit and Audit Report Guidelines* (Audit Guidelines).

The audit scope was developed by the lead auditor, David Bone, with the assistance of Brett McLennan, and included a review of the EPBC Act approval 2016/7670 and all documentation relevant to the Area 2 Works.

The audit scope was approved by DCCEEW on 19 August 2022.

2.2 Selection and endorsement of audit team

This is an IEA, meaning that the auditor(s) must be endorsed by the Commonwealth Minister for the Environment or delegate prior to conducting the audit in accordance with Condition 19. As such, the audit team's qualifications, and a statement on their independence from the site, were submitted and approval was obtained.

The audit team was approved by DCCEEW on 19 August 2022 as delegate of the Minister. The endorsement letter is contained in Appendix A.

2.3 Site inspection

On 12 October 2022, a site inspection was undertaken. The audit team was escorted by HCCDC representatives. Those involved in the site inspection comprised:

- David Bone (EMM Consulting)
- Brett McLennan (EMM Consulting)
- Nathan Garvey (EMM Consulting)
- Nena Lane-Kirwan (EMM Consulting)
- Grant Moylan (HCCDC).

Site inspection photos are provided in Appendix D.

2.4 Document review

A document library using the software SharePoint was set up to allow access to extensive documentation records for the Area 2 Works.

Following an initial review of documentation publicly available on DCCEEW and HCCDC's websites, a request for information (RFI) was prepared and additional information supplied by HCCDC.

Much of the information was provided prior to the site inspection to ensure as much information as possible could be reviewed before arriving on site, as well as to understand key elements of the Area 2 Works. Some additional information was provided after the site inspection.

All information requested by EMM as part of the RFI was made available by HCCDC.

2.5 Interviews

Interviews were held via videoconference on 1 November 2022. Interviews included the following participants:

- Grant Moylan (HCCDC) – site and videoconference
- Michael Bardsley (HCCDC) – videoconference
- Gary Woodham (Public Works Advisory) – videoconference
- Belinda Sinclair (Ramboll) – videoconference
- Brett McLennan (EMM Consulting) – videoconference
- David Bone (EMM Consulting) – videoconference.

A recording of the videoconference was made at the consent of all participants and was subsequently reviewed by Nathan Garvey and Nena Lane-Kirwan.

2.6 Compliance findings

The audit has been undertaken in consideration of the following compliance status descriptors, in accordance with the requirements as set out by section 6 of the Audit Guidelines:

- **Compliance (Y)** – the auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
- **Non-compliance (N)** – the auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
- **Not applicable (NA)** – A rating of ‘not applicable’ at the time of the audit is given when the condition or element of a condition falls outside the scope of the audit (e.g. if an activity has not yet commenced or a requirement has not been triggered).
- **Observation (O)** – An ‘observation’ may be made about issues relevant to the protection of a matter of national environmental significance when the issue is not strictly related to compliance or non-compliance with a condition or element of a condition.

3 Detailed audit findings

3.1 Documents audited

The following approval documents were reviewed to assess compliance against the conditions of EPBC Act approval 2016/7670 and the operational performance and effectiveness of environmental management measures implemented during the audit period:

- EPBC Act approval 2016/7670 – all conditions of approval
- *GGBF Management Plan*, required by Condition 2 of EPBC Act approval 2016/7670
- *Revegetation Management Plan*, required by Condition 5 of EPBC Act approval 2016/7670
- *Water Quality Management Plan*, required by Condition 6 of EPBC Act approval 2016/7670
- KIWEF Site EMP, also known as the *Kooragang Island Waste Emplacement Facility Area 2 Closure, Construction Environmental Management Framework*, required by Condition 8 of EPBC Act approval 2016/7670.

3.2 Previous areas of non-compliance

As this is the first IEA for this project, there were no previous areas of non-compliance to review.

3.3 Compliance summary

Of the 22 conditions reviewed as part of the EPBC Act approval 2016/7670, all applicable conditions were found to be compliant, and three (3) were found to be not applicable. The not applicable conditions relate to two (2) conditions that have not yet been triggered and one (1) which provides the definitions for the approval.

Three observations were also made in relation to the conditions, with detail provided in Section 3.5.

Accordingly, the audit has found that there is full compliance (100%) with the relevant conditions of EPBC Act approval 2016/7670.

The Audit compliance matrix is included in Appendix B.

The auditor's certification is provided in Appendix C.

3.4 Non-compliances

There were no non-compliances identified by the audit team.

3.5 Observations

Three (3) observations were identified by the audit team, as follows.

Observation 2016-7670 #1

Project footprint description in Condition 1 of EPBC Act approval 2016/7670

Condition 1 states that the action (Area 2 Works) must only be undertaken within the footprint. The footprint is defined in Condition 22 as the "areas enclosed by the red dashed line captioned 'Revised Referral Boundary' identified on Map 1 at Attachment A" of the approval.

Approval documentation contains a note under the 'Details' section in the action description that a variation under section 156B of the EPBC Act was accepted on 23 October 2018. This variation included a modification of the footprint. A correction notice for Map 1 in Attachment A of EPBC Act approval 2016/7670 was issued by DEE on 14 January. This correction notice states:

Map 1, titled 'The Proposed Action Footprint', in Attachment A attached to the approval does not show the correct project boundary.

The correct Map 1 which should be in Attachment A attached to the Approval decision, which shows the correct project boundary (designated as 'Revised Referral Boundary'), is attached to this correction notice.

For future reference, and to avoid confusion, it is recommended that the revised footprint be included in Attachment A of the publicly available approval decision.

Observation 2016-7670 #2

Revegetation Management Plan required by Condition 5 of EPBC Act approval 2016/7670

Revegetation of stormwater infrastructure has been found, by extensive monitoring undertaken as part of the approved *GGBF Management Plan*, to be favourable to the GGBF dispersal across the Area 2 Works.

Specific planting of species as seed mixes, or direct planting, was not undertaken in stormwater infrastructure, with the new drainage works allowed to re-colonise naturally after an initial hydroseeding of general grass cover used across the entire site. The latest UoN (2023) monitoring report and additional information provided to the audit team by Colin McHenry of UoN indicates that the GGBF population is readily moving around Kooragang Island along stormwater infrastructure as well as across rehabilitated areas of the Area 2 Works. The colonisation of constructed ponds created within the Area 2 Works identified that small trees (such as *Acacia*) and clumping ground plants (which can be native species such as *Lomandra* or introduced species such as pampas *Cortaderia*) provide suitable terrestrial habitat, both adjacent to wetlands and as habitat corridors connecting wetlands within a mosaic. In particular, GGBF have been detected on multiple occasions in *Acacia* some distance away from wetland habitats (Colin McHenry email 27/2/23). Recent monitoring in February 2023 has identified that significant GGBF chorusing has been noted from constructed ponds following recent rainfall. This indicates that the works have achieved one of the primary outcomes of the Area 2 Works, with GGBF dispersal evident and the naturally recolonised stormwater infrastructure currently not impeding movement of the GGBF.

No loss of habitat for the GGBF is evident from review of data provided and from site inspections and UoN monitoring. Conversely, overall, there has been a net increase in habitat through the creation of additional ponds and movement corridors for the species, with GGBF detected in these ponds.

Observation 2016-7670 #3

Revegetation Management Plan required by Condition 5 of EPBC Act approval 2016/7670

Portions of the site of the Area 2 Works were showing a dense regrowth of *Acacia* (*Acacia saligna*) following completion of revegetation works. There is some evidence of the GGBF using the "trees" with 3.5% of observations in 2019/20 season (UoN 2020, p.99) and 8% of observation in 2021/22 occurring within this microhabitat (UoN 2023, p. 20) (see Photograph 3.1). However, dense regrowth of trees adjacent to waterbodies, resulting in overshadowing of those waterbodies, is known to reduce the suitability of waterbodies as breeding habitat. This has not been observed in Area 2 to date.



Photograph 3.1 GGBFs utilising *Acacia saligna* tree (source UoN Colin McHenry)

Acacia was actively being removed by contractors to maintain the integrity of the capping layer during the site inspection, and HCCDC has advised (G. Moylan pers comms) that the vegetation removal program has now been completed under the supervision of ecologists.

It is recognised that some level of control is required in the future to prevent impacts to breeding habitat and will be included within post-closure management plans.

4 Conclusion

EMM Consulting has been engaged by HCCDC to undertake an IEA of EPBC Act approval 2016/7670. EMM Consulting's engagement was approved by DCCEEW as delegate of the Commonwealth Minister for the Environment. The audit was undertaken in accordance with the Audit Guidelines.

The audit scope was developed by the lead auditor, David Bone, with the assistance of Brett McLennan, and included a review of the EPBC Act approval 2016/7670 and all documentation relevant to the Area 2 Works.

The scope of the audit was approved by DCCEEW on 19 August 2022.

The audit's objective was to determine the project's compliance with the EPBC Act approval 2016/7670 and to assess the effectiveness of environmental management at the site of the Area 2 Works.

The audit involved a review of extensive information and documentation provided by HCCDC, a site inspection, and interviews.

Of the 22 conditions reviewed as part of the EPBC Act approval 2016/7670, all applicable conditions were found to be compliant, and three (3) were found to be not applicable. The not applicable conditions relate to two (2) conditions that have not yet been triggered and one (1) which provides the definitions for the approval.

Three observations were also made in relation to the conditions.

Accordingly, the audit has found that there is full compliance (100%) with the relevant conditions of EPBC Act approval 2016/7670.

The observations identified in Section 3.5 related to administrative recommendations, revegetation of stormwater infrastructure, and ongoing management of the site.

This audit provides assurance to stakeholders that the Area 2 Works have predominantly been completed in compliance with the required environmental standards and that the management of the site has been effective in, not only avoiding and mitigating impacts to the controlling provisions of EPBC Act 2016/7670 (predominantly the GGBF), but in creating additional effective breeding and foraging habitat for the GGBF.

The audit team would like to thank representatives from HCCDC and Daracon for providing access to the site, detailed knowledge of the works undertaken, and for the excellent record and data storage and recovery systems in use. The team would also like to thank the representatives from HCCDC, Public Works Advisory, and Ramboll for their availability and assistance during the interviews.

Appendix A

Auditor's declaration of independence and audit team approval

A.1 Auditor's declaration of independence

I, **David Bone of EMM Consulting Pty Ltd, Level 3, 175 Scott Street, Newcastle NSW 2300 (ABN: 28 141 736 558)**, declare that to the best of my knowledge and belief, I and my organisation do not have any conflicting or competing interests with the Auditee, **Hunter and Central Coastal Development Corporation, on behalf of the Crown in right of the State of NSW, acting through NSW Treasury**, the Auditee's staff or representatives or other persons associated with the Auditee, including any personal, financial, business or employment relationship, except to the extent detailed below.

The project to be audited is **the closure and rehabilitation of Area 2 (K3 and K5 and a small section of K7), of the Kooragang Island Waste Emplacement Facility (KIWEF) near Newcastle, NSW (EPBC 2016/7670)**.

I shall notify the Department of the Environment within seven days of any change in these circumstances or any other change that may affect my independent status. I shall at all times observe any professional code of conduct and/or ethics applicable to undertaking audits (i.e. – as prescribed by the agency with which I hold accreditation/membership). I take full responsibility for any factual inaccuracy or mistake made in giving this declaration, particularly to the extent that others rely upon the truth of this declaration. I acknowledge that the Department of the Environment may request further information to verify my independence at any time.

Details of any personal, financial, business or employment relationship with the Auditee, the Auditee's staff, representatives or associated persons. (This is in the context of both the person making the declaration and the organisation that they are employed by – specify 'nil' if none):

David Bone has undertaken work on KIWEF, but not for HCCDC. This work included:

- **KIWEF Eastern Ponds Action Plan water quality monitoring, CENVP independent peer review 2018 – 2020, on behalf of Hazmat Services, and**
- **KIWEF Waste Emplacement Facility Ground and Surface Water Annual Monitoring CENVP independent peer review 2018 – 2020, on behalf of Hazmat Services.**

Details of audit qualifications and professional accreditations/memberships. (Include copies of current audit qualifications and current professional accreditations/memberships):

David Bone is a registered environmental practitioner with the EIANZ (CENVP #137) and has undertaken the Lead Environmental Auditor course at the University of NSW.

In making this declaration, I am aware that section 491 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the regulations. The offence is punishable on conviction by imprisonment for not more than 1 year, a fine not more than 60 penalty units, or both. An extract of section 491 of the EPBC Act is attached.

Signed:



Full name:

David Bone

Organisation:

EMM Consulting Pty Ltd

Date:

__28__/_02__/_2023__

Footnote:

1. Where an organisation or a team of auditors is nominated to undertake the audit, each individual that is nominated is to complete a separate declaration.
2. The curriculum vitae of all audit team members are to be submitted with the declaration outlining their relevant experience and qualifications.

Appendix B

Audit compliance matrix

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Conditions of Approval

EPBC Act Approval Condition #	Criteria	Verification Method	Evidence	Documents Sighted	Determination	Compliance Finding
	PART A - Conditions specific to the action					
1	The action must only be undertaken within the footprint.	Site Inspection	No works outside of the footprint were sited during the site inspection.	Visual assessment during site inspection, including site tour. \\emmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\01. Project Footprint\Closure Works Footprint 20200722.pdf	Observation 2016-7670 #1 The approval documentation contains a note under the Details section in Action description that a variation under section 156B of the Act was accepted on 23 October 2018. This variation included a modification of the proposed action footprint. Attachment A of the referral does not include the revised boundary which is part of the approved management plan. For future reference and to avoid confusion it is suggested that the revised footprint be included in Attachment A of the publicly available approval decision.	Compliant
2	The person taking the action must implement the Green and Golden Bell Frog Management Plan to avoid and mitigate impacts on the Green and Golden Bell Frog (<i>Litoria aurea</i>) (GGBF) population.	Document Review	Documentary evidence clearly indicates that the GGBF Management Plan has been implemented to firstly avoid, and secondly mitigate impacts of the action on GGBFs. Known and potential GGBF habitat has been identified in the clearance inspection reports. Known aquatic habitat was outside of the works perimeter and the GGBF fence could therefore be installed at the extent of works boundary. Terrestrial habitat within the works area, had already been impacted by the initial grass fire and subsequent subterranean fire across large portions of Area 2. Fencing and GGBF protection measures were excluded during the emergency works to extinguish the subterranean fire duty to safety concerns. Following extinguishment, Daracon's first step was to install the GGBF fencing around the perimeter of extent of works, which acted as the delineation. Monthly inspections by the Independent Environmental Auditor (Ramboll) reviewed fences were installed around extent of works.	GGBF clearance reports are provided in Folder 2 GGBF Clearance Inspection Reports (taken from Area 2 Validation Report) Ramboll monthly reports in Folder 3 Ramboll Monthly Audit Reports folder. \\emmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\02. GGBF Clearance Inspection Reports \\emmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\03. Ramboll Monthly Audit Reports	The documents reviewed support the criteria.	Compliant
3	GGBF monitoring must be undertaken in accordance with the Green and Golden Bell Frog Management Plan within the KIWEF Site, including the temporary basins, aligned with NCIG Monitoring program.	Document Review	Annual monitoring has been undertaken in accordance with Condition 3. However, monitoring reporting of data on habitat condition and identification and monitoring of temporary basins is not clearly defined in the documents provided by HCCDC and sighted by the audit team. Notwithstanding this, data on habitat condition and monitoring results of temporary basins can be inferred from monitoring reports. The timing and extent of monitoring has exceeded the requirements of the condition with annual monitoring being undertaken from 2020 to present.	Condition 3 of the approval requires monitoring to be undertaken in accordance with the <i>Green and Golden Bell Frog Management Plan - Kooragang Island Waste Emplacement Facility Closure Works</i> (Golder Associates 2011). The management plan requires annual monitoring until 2020 then three-yearly until 2030. Annual monitoring has been ongoing since 2020 (see below) exceeding the requirements of the management plan. The results of annual monitoring undertaken by the University of Newcastle (UoN) are provided in Folder 5 - GGBF Annual Monitoring (\\emmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\05. GGBF Annual Monitoring). This includes monitoring for the 2019/20, 2020/21 and 2021/22 breeding seasons. No data was available for the 2022/23 breeding season. Data collected includes: - presence/absence of Green and Golden Bell Frog (and other frog species) at waterbodies across Kooragang Island, including KIWEF (from 2020/21) - GGBF distribution, population size and demographics - habitat utilisation - presence of Mosquito Fish (<i>Gambusia holbrooki</i>). It is worth noting that breeding ponds within the KIWEF (noted as K124-126 in UoN reports) were completed in late 2020 and surveyed from 2020/21.	While not clearly defined, data to support habitat condition monitoring is provided within monitoring report. This should be clearly defined and reported in future monitoring reports.	Compliant
4	GGBF monitoring must be analysed following each round of monitoring to identify any changes to the GGBF population, as compared to the baseline data described in the Green and Golden Bell Frog Management Plan. Should a decline in population be attributed to the action, response measures must be developed and implemented in accordance with the Green and Golden Bell Frog Management Plan.	Document Review	Monitoring data collected as a part of the annual monitoring indicates there has not been a decline in the Green and Golden Bell frog population against baseline data during the monitoring period.	Baseline monitoring reported in Golder Associates (2011) does not include population estimates for the GGBF, making detection of any changes in population impossible to detect. However, data collected by the University of Newcastle provides a useful comparison to detect population level changes. The results of annual monitoring undertaken by the University of Newcastle are provided in Folder 5 - GGBF Annual Monitoring (\\emmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\05. GGBF Annual Monitoring). This includes analysis of the GGBF population on Kooragang Island. The most recent draft annual report for 2022/23 indicates: - the Kooragang Island population of the GGBF grew from 2014/15 to 2016/17 - the population was relatively stable between 2016/17 and 2019/20 - there was a boom in the population in 2020/21 associated with a mass breeding event with juveniles making up a large portion of the population - in 2021/22 population numbers declined back to baseline levels " <i>consistent with the baseline population size before the 2020-21 'boom'</i> " (UoN 2023). GGBFs were detected in Area 2, in ponds created as a part of the closure works, during the 2020/21 (n=11 adults) and 2021/22 (n=49 adults) monitoring periods, (no data is currently available for the 2022/23 monitoring period). An adult GGBF was recorded in pond K124 during the site visit undertaken as a part of the audit.	The documents reviewed support the criteria.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Conditions of Approval

EPBC Act Approval Condition #	Criteria	Verification Method	Evidence	Documents Sighted	Determination	Compliance Finding
5	The person taking the action must revegetate the area marked in yellow and identified as 'Area 2 Closure works' on Map 2 at Attachment A to restore Green and Golden Bell Frog habitat in accordance with the Revegetation Management Plan.	Document Review	Revegetation works, particularly pond design, was undertaken in consultation with GGBF experts from the UoN, Ecologists from Jacobs and engineers from SMEC (M. Bardsley, pers. comm.). This work has built on extensive knowledge gained during revegetation works and habitat creation across Kooragang Island. Aquatic vegetation has been allowed to naturally establish in ponds based on advice from UoN. These environments are being colonised by the GGBF. Riparian corridors/table drains/open stormwater infrastructure appear to have been revegetated with the general seed mix used across the majority of the capping area, rather than aquatic species favoured by the GGBF. This is contrary to the revegetation management plan which requires "open stormwater infrastructure across the KIWEF site may be planted with species known to be favoured by GGBF" and "stormwater infrastructure, will be vegetated with species known to be favourable to GGBFs." This requirement, to revegetate stormwater infrastructure with species favoured by the GGBF was also removed from the Kooragang Island Waste Emplacement Facility Area 2 Closure: Construction Environmental Management Framework (Jacobs 2019) where a revised Revegetation Management Plan is provided at Appendix E. This revised plan does not require revegetation of stormwater infrastructure with species favoured by the GGBF, with an updated requirement to "Allow terrestrial species to re-colonise Drainage culverts . . ." (p.37 of Appendix E).	The Revegetation Management Plan is provided in Appendix 8 of the EPBC Referral Preliminary Documentation Package: KIWEF Area 2 Closure Works (Ramboll 2018) accessed from https://www.hccdc.nsw.gov.au/sites/default/files/2019-05/06.%20KIWEF%20Area%202%20Closure%20Works%2C%20Preliminary%20Documentation%20PackageL_0.pdf	Observation 2016-7670 #2 Revegetation works have been undertaken in accordance with the Revegetation Management Plan is provided in Appendix 8 of the EPBC Referral Preliminary Documentation Package. Revegetation of stormwater infrastructure has been undertaken with species favourable to the Green and Golden Bell Frog. UoN (2023) indicates that the Green and Golden Bell Frog is moving around Kooragang Island, with colonisation of created ponds within Area 2. This would indicate that the species used to revegetate stormwater infrastructure is unlikely to have an impact on the movement of the species.	Compliant
		Interview	This was raised during the interviews and HCCDC responded that the revegetation works were informed by previous stages (e.g. K10 south, where mass breeding was observed). Other regeneration has occurred through self-seeding of some species, as per the revised Revegetation Management Plan. Portions of the site are now showing a dense regrowth of Acacia (<i>Acacia saligna</i>) following revegetation works. There is some evidence of the GGBF using "trees" with 3.5% of observations in 2019/20 season (UoN 2020, p.99) and 8% of observation in 2021/22 occurring within this microhabitat (UoN 2023, p. 20). However, dense regrowth and overshadowing trees is known to reduce the suitability of waterbodies as breeding habitat. It is likely that some control of Acacia will be required in the future to prevent this occurring. Some work to control Acacia has been undertaken (G. Moylan pers. comm.) and a post-closure management plan is being drafted. This will include ongoing management of weeds and vegetation across Area 2 with a focus on GGBF (M. Bardsley, pers. comm.).	Interviews Site Inspection	Observation 2016-7670 #3 During the site inspection undertaken as part of the audit, it was noted that there were dense areas of regrowth of Acacia. Some of this Acacia was being removed by contractors at the time, and HCCDC has advised (G. Moylan pers comms) that a removal program was put in place post the inspection. It is recognised that some level of control is required in the future to prevent impacts to breeding habitat and will be included within post-closure management plans.	
6	The person taking the action must undertake water quality monitoring for groundwater and surface water at the KIWEF Site in accordance with the Water Quality Management Plan.	Document Review	Water quality monitoring has been undertaken in accordance with the approved plans and requirements of the approval.	GW and SW monitoring reports, 2020 - 2022 GGBF pond Salinity monitoring, 2018-2022	The documents reviewed support the criteria	Compliant
7	At the completion of the project works, the approval holder must ensure: i) no increased distribution of Gambusia holbrooki due to the project works, within the area identified as 'Potential GGBF foraging or breeding habitat' as identified on Map 2 at Attachment A. and	Document Review	Data indicates there has not been an increase in the distribution of Mosquito Fish in ponds adjacent to the Referral Boundary, with a recorded reduction in distribution of the Mosquito Fish. Newly created ponds within Area 2 are free of Mosquito Fish.	Data on occupancy of waterbodies by Mosquito Fish is provided in the annual monitoring reports provided by UoN (\\lemmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\05. GGBF Annual Monitoring) Mosquito Fish was known to occur in all in all 'Potential GGBF foraging or breeding habitat' identified on Map 2 at Attachment A of the approval in 2016 (see Item 15 in the 2021/22 annual monitoring report). During subsequent monitoring periods a number of ponds identified as 'Potential GGBF foraging or breeding habitat' on Map 2 at Attachment A have been recorded as Mosquito Fish being absent, including Pond 11 (K29) and the newly created ponds within Area 2 (K124-126).	The documents reviewed support the criteria	Compliant
	ii) no net loss of GGBF foraging or breeding habitat as an impact of the project works.	Site Inspection	No loss of habitat for the GGBF is evident. Conversely, overall, there has been a net increase in habitat through the creation of additional ponds for the species, with GGBF detected in these ponds.	Data on GGBF habitat is provided in the annual monitoring reports provided by UoN (\\lemmsvr1\EMM2\2022\E220406 - KIWEF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\05. GGBF Annual Monitoring). No evidence of loss of foraging or breeding habitat for the GGBF was observed during the site audit. Conversely, evidence of creation of habitat was observed during the site audit, with three ponds created (K124-126).	The site inspection identified actions which support the criteria.	Compliant
8	The approval holder must implement the KIWEF Site EMP.	Site Inspection	The approved KIWEF EMP has been implemented during the works.	KIWEF GGBF Management Plan.	The site inspection identified actions which support the criteria.	Compliant
Part B - Standard administrative conditions						

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Conditions of Approval

EPBC Act Approval Condition #	Criteria	Verification Method	Evidence	Documents Sighted	Determination	Compliance Finding
	Notification of date of commencement of the proposed action	Document Review	Works commenced on the project on 21/8/19, following control of a major fire which started in mid January 2019. HCCDC notified DAWE of the commencement of the action under EPBC 2016/7670 via email on the 4/9/19. Within the email HCCDC also provided an update on Emergency Works underway related to the extinguishment of the subterranean fire (noting some of these works were ongoing). The email confirms that ground engaging works outside of the fire extinguishment zone started on 21/8/19.	Email of 4/9/19 M. Bardsley to K. Lowe. Ground Fire KIWEF Briefing Note DoEE.	The documents reviewed support the criteria.	Compliant
9	The approval holder must notify the Department in writing of the date of commencement of the action within 10 business days after the date of commencement of the action.	Document Review	Notification provided on 4/9/19.	Email of 4/9/19 M. Bardsley to K. Lowe.	The documents reviewed support the criteria.	Compliant
10	If the commencement of the action does not occur within 5 years from the date of this approval, then the approval holder must not commence the action without the prior written consent of the Minister.	Document Review	The action commenced on 21/8/19.	Email of 4/9/19 M. Bardsley to K. Lowe.	The documents reviewed support the criteria.	Compliant
Compliance records						
11	The approval holder must maintain accurate and complete compliance records.	Document Review	Comprehensive records retained as required and available to the audit team on request. Documents support full compliance with requirements of these conditions.	Consultant (Eco Logical) reports on GGBF fencing and survey inspections February 2019 to February 2020. Monthly consultant (Ramboll) audit reports September 2019 to June 2020. Civil contractor (Daracon) weekly inspections August 2019 to May 2020. Incident register, Site Induction and records, Annual Compliance reports 2019 to 2022. Civil contractor (Daracon) monthly reports September 2019 to June 2020 . GGBF Pond water monitoring data 2018 - 2022. GGBF annual Monitoring (UoN) 2019 - 2022. Ground and Surface Water Monitoring (Hazmat) 2020 - 2022. Soil Conservation reports (Rubicon Enviro) October 2019 - April 2020. Water quality data reports (RCA) 2018 - 2022. Induction and pre-start records, Waste management receipts, incident register. Consultant (Eco Logical) pre-clearance report October 2022	The documents reviewed support the criteria.	Compliant
12	If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	Interview	No request of this nature from the Department has been made to the approval holder in relation to EPBC 2016/7670.		The interview responses satisfied the criteria for this condition. No requests recorded in documents reviewed.	Compliant
	Note: Compliance records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the Department's website or through the general media.		Noted.			Not applicable.
Preparation and publication of plans						
13	The approval holder must:	Document Review	The website contains the required documents in accordance with this condition.	https://www.hccdc.nsw.gov.au/publications#projects	The documents reviewed support the criteria.	Compliant
	a. publish all plans associated with the action on the approval holder's website within 30 business days of the date of approval of the action;	Document Review	Detailed sensitive ecological data has been excluded from the website with information limited to the documents already publicly available from other sources.	https://www.hccdc.nsw.gov.au/publications#projects	The documents reviewed support the criteria.	Compliant
	b. exclude or redact sensitive ecological data from plans published on the website or provided to a member of the public, and	Document Review	The website information was up to date at the time of the audit.	https://www.hccdc.nsw.gov.au/publications#projects	The documents reviewed support the criteria.	Compliant
	c. keep plans published on the website and the end date of this approval.	Document Review				
14	The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps, and other spatial and metadata required under a plan, is prepared in accordance with the Department's Guidelines for biological survey and mapped data (2018) and submitted electronically to the Department in accordance with the requirements of the plan.	Document Review	Data gathered for the project was prepared in accordance with these guidelines and statements to this effect are included in monitoring plans and reports.		The documents reviewed support the criteria.	Compliant
Annual compliance reporting						
15	The approval holder must prepare a compliance report for each 12 month period following the date of the commencement of the proposed action, or as otherwise agreed to in writing by the Minister. The approval holder must:	Document Review	Date of commencement of the action is 21/8/19, 60 business days following the annual period is 13/11/20, 15/11/21 and 15/11/22. The 2019/20 Annual Compliance Report (ACR) was uploaded to the HCCDC website on 11/11/20, DAWE were notified via email on 13/11/20.	Email correspondence of data records compliance.	The documents reviewed support the criteria.	Compliant
	a) publish each compliance report on the website within 60 business days following the relevant 12 month period;	Document Review				
	b) notify the Department by email that a compliance report has been published on the website within five business days of the date of publication;	Document Review	Notifications provided for each report as required.	Email correspondence of compliance reports 19-20 and 20-21.	The documents reviewed support the criteria.	Compliant
	c) keep all compliance reports publicly available on the website until this approval expires;	Document Review	Reports available on the website at the time of the audit.	https://www.hccdc.nsw.gov.au/publications#projects	The documents reviewed support the criteria.	Compliant
	d) exclude or redact sensitive ecological data from compliance reports published on the website; and	Document Review	Detailed sensitive ecological data has been excluded from the website with information limited to the documents already publicly available from other sources.		The documents reviewed support the criteria.	Compliant
	e) where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within five business days of publication.	Document Review	Compliance reports submitted as required by this condition.	Email correspondence of compliance reports 19-20 and 20-21.	The documents reviewed support the criteria.	Compliant
	Note: The first compliance report may report a period less than 12 months so that it and subsequent compliance reports align with the similar requirement under state approval. Compliance reports may be published on the Department's website.		Noted.			Not Applicable
Reporting non-compliance						
16	The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must be given as soon as practicable, and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify: a) the condition which is or may be in breach; and	Document Review	During routine UoN nocturnal surveys for the Annual IWS on 7/4/20, ecologists identified a mass juvenile GGBF dispersion event that had breached the GGBF control measures (in particular the perimeter fencing) in place around the KIWEF and HCCDC considered there was a potential to harm the GGBF if no action was taken. Normal construction works in the area were stopped and only works in response to the dispersal event (capture/relocation/repairs) were allowed.	Environmental Incident KIWEF EPBC 2016/7670 [SEC=UNCLASSIFIED] - Detection of GGBF Within the Work Exclusion Area at The Peninsula Borrow Area, 7th April. EPBC 2016/7670 - Incident Report - Update June 2020. Juvenile GGBF Dispersal Event Rev 1.	The documents reviewed support the criteria.	Compliant
	b) a short description of the incident and/or non-compliance.		See 16a		The documents reviewed support the criteria.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Conditions of Approval

EPBC Act Approval Condition #	Criteria	Verification Method	Evidence	Documents Sighted	Determination	Compliance Finding
17	The approval holder must provide to the Department the details of any incident or noncompliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: a) any corrective actions or investigation which the approval holder has already taken or	Document Review	HCCDC notified the Approval Holder (NSW Treasury) and DAWE of the incident the following day 8/4/20.	Environmental Incident KIWEF EPBC 2016/7670 [SEC=UNCLASSIFIED] - Detection of GGBF Within the Work Exclusion Area at The Peninsula Borrow Area, 7th April. EPBC 2016/7670 - Incident Report - Update June 2020. Juvenile GGBF Dispersal Event Rev 1.	The documents reviewed support the criteria.	Compliant
	b) the potential impacts of the incident or non-compliance; and	Document Review	Details required are contained in the documents reviewed.	Environmental Incident KIWEF EPBC 2016/7670 [SEC=UNCLASSIFIED] - Detection of GGBF Within the Work Exclusion Area at The Peninsula Borrow Area, 7th April. EPBC 2016/7670 - Incident Report - Update June 2020. Juvenile GGBF Dispersal Event Rev 1.	The documents reviewed support the criteria	Compliant
	c) the method and timing of any remedial action that will be undertaken by the approval holder.	Document Review	Updates on the actions taken were provided as required	Incident Report & updates (FW EPBC 20167670 - Incident Report - Update June 2020).	The documents reviewed support the criteria	Compliant
	Independent audit					
18	The approval holder must ensure that independent audits of compliance with the conditions are conducted: a) Following the completion of specific construction works and up to the completion of the	Document Review	This audit has been undertaken following completion of works as required.	This audit was commissioned and undertaken as required by the criteria of this condition.		Compliant
	ii) Within a 12month period from the completion of the action;	Document Review	This audit has been undertaken following completion of works as required.	This audit was commissioned and undertaken as required by the criteria of this condition.		Compliant
	iii) of as requested in writing by the Minister.		No requests received at the time of the audit.	This audit was commissioned and undertaken as required by the criteria of this condition		Compliant
19	For each independent audit , the approval holder must: a. provide the name and qualifications of the independent auditor and the draft audit criteria to the Department	Document Review	The audit team were approved by the department prior to the audit commencement.	Letter from HCCDC to the Department contained names and qualifications of audit team.	The documents reviewed support the criteria.	Compliant
	b. only commence the independent audit for once the audit criteria have been approved in	Document Review	The audit scope was approved by the department prior to the audit	ATTB 2016-7670 - approve independent auditot-criteria19AUG22.pdf.	The documents reviewed support the criteria.	Compliant
	c. submit an audit report to the Department within the timeframe specified in the approved		This report.			Compliant
20	The approval holder must publish the audit report on the website within 10 business days of receiving the Department's approval of the audit report and keep the audit report published on the website until the end date of this approval.		Noted.			Compliant
	Completion of the action					
22	Within 30 days after the completion of the action, the approval holder must notify the Department in writing and provide completion data.	Document Review	The action is not completed.			Not Applicable

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
	CEMP				
	Conditions of approval				
3.2	All contractor personnel and sub-contractor will undergo environmental training before commencing works on site. Training will be undertaken in the following forms: Project induction; and Regular (daily) pre-start discussions on environmental topics	Triggered	Project Induction (Daracon KIWEF) Induction records Pre-start briefings	Induction training and pre-start records reviewed	Compliant
3.2.1	Prior to working on site, the Contractor will ensure that all staff and sub-contractors working on site are appropriately inducted. The Contractors induction must communicate the environmental performance expectations of this CEMP and the specific mitigation measures to achieve these expectations as documented in the Contractors CEMP. Induction content is expected to include: · Legal and regulatory requirements including duty of care and potential consequences of infringements; · Environmental responsibilities with detailed training on the implementation of hygiene protocols and the importance of GGBF; · Identification of sensitive areas including threatened species habitat, waterways, asbestos impacted waste and other hazardous waste; · Identification of boundaries for vegetation clearing, washing, refueling and maintenance areas for vehicles, plant and equipment; · Environmental management techniques for noise, air, surface and ground water, waste generation, contaminated land etc.; · Emergency plans and incident management including the use of spill kits; · Reporting processes for environmental harm or environmental incidents; · Roles and responsibilities in achieving conformance with environmental policies and requirements, including emergency preparedness and response requirements; and · Identification and management of non-conformances.	Triggered	Project Induction (Daracon KIWEF) Induction records	Section 3 and 5 of the induction include relevant information for environmental/emergency response and implementation of the CEMP.	Compliant
Section 4.1	This Construction Environmental Management Plan (CEMP) and sub plans have been prepared to comply with the Minister for Planning and Infrastructure's Conditions of Approval for the project. The CEMP has been developed and adopted in accordance with Daracon's Certified Environmental Management System under ISO14001:2015, Project specifications, and the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004). This CEMP meets the requirements of the CoA and outlines the following at a minimum:	Triggered	KIWEF Area 2 Closure Works, Construction Environmental Management Framework_Final KIWEF - Construction Environmental Management CEMP Sub-Plan - Rev 3	CEMP approved for use on the project and implemented	Compliant
	• Project details including activities to be undertaken; • Specific mitigation measures and controls that can be applied onsite to avoid or minimise negative environmental impacts; • Specific mechanisms for compliance with applicable polices, approvals, licenses, permits, consultation agreements and legislation; • Environmental management related roles and responsibilities of personnel; • States objectives and targets for issues important to the environmental performance of the Project; and • Outlines monitoring processes to check the adequacy of controls as they are implemented during construction.	Triggered	KIWEF Area 2 Closure Works, Construction Environmental Management Framework_Final KIWEF - Construction Environmental Management CEMP Sub-Plan - Rev 3	CEMP outlines all of the following requirements.	Compliant
Section 4.3.1	Provide evidence that an on-site risk workshop was held within 21 days of the contract date for the project	Triggered	Daracon Internal Audit of IPMP on 2 Oct 19. Record of the audit is included within the Daracon Monthly report for October 2019, (s 2.6 and 6.6).	The contractor undertook an internal audit of the implementation of the IPMP on 2/10/19.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
Section 4.3.4	Provide work method statements for the following activities: •Site establishment •Clearing and grubbing •Topsoil strip and stockpile •General earthworks •Import and placement of capping material •Drainage works	Triggered	SWMS register provided	SWMS register contains the required documents	Compliant
Section 4.6	All staff working, including sub-contractors on this site are provided with the environmental training required to competently carry out their work.	Triggered	Induction register provided.	Details provided from May 2019 - December 2020	Compliant
Section 4.6	All site staff, contractors and sub-contractors are inducted before commencing work. Daracon site personnel will conduct an onsite induction prior to commencement A Training Register and Induction Register is kept on site.	Triggered	Induction register provided.	Details provided from May 2019 - December 2020	Compliant
Section 4.5	Daracon will ensure subcontractor compliance with duties including planning, implementing and monitoring environmental protection measures and for keeping environmental records by managing them in accordance with Daracon's IPMP and this CEMP. Daracon will retain the environmental protection for the duties for the following all subcontracted work. Daracon is responsible for the surveillance of all subcontractors environmental protection measures to monitor the effectiveness of these measures. The surveillance program includes formal bi-weekly activity surveillance and weekly environmental inspections. It also includes daily supervision and visual inspections.	Triggered	Monthly reports Weekly Reports Pre-Start meetings	Daracon monthly report - October 2019. Section 2.6 and 6.6 states an internal audit was conducted on 2 October 2019, noting the audit focused on the implementation of the Integrated Project Management Plan (IPMP).	Compliant
Section 4.8	Daracon will utilise its emergency response management plan to communicate environmental problems and incidents with site personnel, the client and relevant authorities and stake holders.	Triggered	Emergency Response Management Plan provided.	Implementation of plan identified in Induction, pre-starts and toolbox meeting records	Compliant
Section 4.8.1	A report will be prepared on each occasion the site is visited by EPA, and the Principal will be immediately notified. The Report will be provided to the Principal within 1 working day (24hrs) of the visit. If statutory notice is given to the EPA as required under the POEO Act, notification will be provided to the Secretary within 24hrs after the notification was given to the EPA.	Triggered	Noted	No reported inspections by EPA. Fire and rescue along with EPA were present at the site during the ground fire emergency. Reports were prepared for this activity.	Compliant
Section 4.9	Daracon will implement an emergency response management plan and all site personnel working on the project will be inducted into the requirements of the emergency response plan (IM-DDK-0323-005).	Triggered	Emergency Response Management Plan. Project Induction Induction records	The Daracon Emergency Response Plan is an Appendix of the Integrated Project Management Plan and includes details to respond to environmental emergencies. Requirements included in Induction	Compliant
Section 4.10	Environmental and ESC inspections are undertaken weekly on this project	Triggered	Daily/weekly environmental inspections provided - weekly reports include erosion and sediment control inspections. Monthly environmental reports provided. CPESC inspections reports provided for Area 2	Weekly Inspections were undertaken by Daracon to check the status of various environmental aspects, these weekly inspections also collated daily checks on targeted items (eg. amphibian hygiene stations). The Daracon inspections also included checks of ESC items. The Daracon monthly report would summarise these inspections and issues would also be raised during weekly meetings/inspections between Daracon and HCCDC. In addition, a CPESC conducted regular inspections to advise on the controls implemented and provide any recommendations. During the visit the CPESC would also prepare a Progressive Erosion & Sediment Control Plan (PESCP).	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
Section 4.10	Additional ESC inspections are done prior to adverse weather conditions and after more than 10mm of rain in a 24 hr period using IM-REP-0503-001.	Triggered	Regular CPESC inspections were conducted and copies provided. The reposts advise on controls implemented and provide any recommendations. Observations and recommendations are recorded in the reports. Water monitoring and rainfall data is provided in Coffey reports. Section 4.3.3 notes additional measures taken prior to predicted weather conditions.	Regular CPESC inspections were conducted to advise on the controls implemented and provide any recommendations. During the visit the CPESC would also prepare a Progressive Erosion & Sediment Control Plan (PESCP) to document observations and recommendations. Daracon's environmental consultant Coffey's undertook the Water Quality monitoring to demonstrate compliance with the CEMP. The results of the surface water monitoring following heavy rainfall are provided in the Coffey's Monthly Reports, which are submitted as a component of the Daracon Monthly Report.	Compliant
Section 4.11	All environmental non-conformances with project approvals, this CEMP or Daracon procedures is to be recorded as an incident, investigated and closed out in a timely manner. Close-out is required to include sign-off that corrective actions have been implemented or alternative solutions substituted. A summary of all non-conformances and associated corrective actions is to be provided to the client.	Triggered	Environmental Incident KIWEF EPBC 2016/7670 [SEC=UNCLASSIFIED] - Detection of GGBF Within the Work Exclusion Area at The Peninsula Borrow Area, 7th April; EPBC 2016/7670 - Incident Report - Update June 2020 Juvenile GGBF Dispersal Event Rev 1	During routine UoN nocturnal surveys for the Annual IWS on 7/4/20, ecologists identified a mass juvenile GGBF dispersion event that had breached the GGBF control measures (in particular the perimeter fencing) in place around the KIWEF and HCCDC considered there was a potential to harm the GGBF if no action was taken. Normal construction works in the area were stopped and only works in response to the dispersal event (capture/relocation/repairs) were allowed.	Compliant
Section 5.7.1	Plant and equipment brought on to site will be cleaned and free of deleterious material, mud and other material that may harbour weed seeds.	Triggered	Plant pre-start forms	Plant pre-start forms reviewed noting this requirement	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
Section 5.7.1	Any capping materials imported from outside the KIWEF facility will be sourced from an area that is assessed as having a low risk of containing Chytrid Fungus.	Triggered	S143 forms Assessment report of import material - 5196096_JH NIF Kangy Angy_K1 ENM Suitability_20022024_Combined	An example of imported material used during the Area 2 works is the K1 stockpile sourced from Kangy Angy, Fleet Maintenance Facility. The ENM waste classification assessment and referral to UoN amphibian specialists for review of chytrid risks within the material are provided. Another example the Cameron Park Mulch stockpile that was used as a topsoil layer. Representatives from HCCDC and UoN attended the site to assess potential for chytrid from importation and use of the material. UoN also provided a letter report documenting the low risk from use of the material. Other sources used were considered low risk, eg subgrade from M1 and Toukley road works, which the previous road subgrade materials were removed and imported to Area 2 (20+ years covered by hardstand = very low risk for chytrid). The Ramboll environmental auditor also conducted regular reviews of material sources and associated chytrid risk assessments as the materials were identified.	Compliant
	Topsoil to be used for surface layers will be sourced from within KIWEF to the extent possible and will otherwise be assessed as required.	Triggered	Cap inspection reports EF18_46502_08.2 Rev 0_KIWEF (2021_06) Area 2, Cap Inspection_V1	Cap inspection reports were reviewed and noted to contain an assessment of topsoil. Sources of material not noted in these reports	Compliant
Section 5.7.3	Establish any controls necessary to prevent works from occurring outside the referral boundary.	Triggered	Visual assessment fencing installation	Visual assessment during site inspection. No works outside of the footprint were sited during the site inspection.	Compliant
Section 5.7.3	Temporary frog exclusion fencing will surround the Closure Works site and ensure GGBF habitat protected from unauthorised access prior to works commencing in those works areas or their parts.	Triggered	Fencing was sighted during site visit Known and potential GGBF habitat has been identified in the clearance inspection reports. Ramboll monthly reports show the inspection of the fencing around the area of works.	GGBF clearance reports were reviewed known aquatic habitat was outside of the works perimeter and the GGBF fence could therefore be installed at the extent of works boundary. Terrestrial habitat within the works area, had already been impacted by the initial grass fire and subsequent subterranean fire across large portions of Area 2. Fencing and GGBF protection measures were excluded during the emergency works to extinguish the subterranean fire duty to safety concerns. Following extinguishment, Daracon's first step was to install the GGBF fencing around the perimeter of extent of works, which acted as the delineation. Monthly inspections by the Independent Environmental Auditor (Ramboll) reviewed fences were installed around extent of works	Compliant
Section 5.7.3	Establishment and use of chytrid hygiene procedures such that the Chytrid fungus is not brought to site or transferred between area's of the site,	Triggered	Daily environmental inspections of frog hygiene station is recorded in inspection checklist.	The monthly independent environmental audit report confirms frog hygiene stations were available and maintained throughout project.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
Section 5.7.3	Appropriate levels of GGBF pre-clearance/disturbance surveys and relocation to ensure to the extent possible that direct disturbance area's are free of GGBF on the commencement of works in each area,	Triggered	Pre-clearance surveys	Pre-clearance surveys contain appropriate information as required	Compliant
Section 5.7.3	Conduct pre-clearance surveys by a qualified ecologist in week prior to works commencing in works areas or their parts.	Triggered	Pre-clearance surveys	Pre-clearance surveys were completed by ecological Australia	Compliant
Section 5.7.3	Utilise an onsite ecologist during construction to relocate any native fauna which may be displaced	Triggered	Ecological Australia were engaged.	Reports on clearing were provided by the project ecologist as required	Compliant
Section 5.7.3	Show that suitable risk assessment has been undertaken by an appropriately qualified and experienced ecologist on all imported capping and revegetation materials to demonstrate that it contains a low risk of containing Chytrid.	Triggered	S143 forms Assessment report of import material - 5196096_JH NIF Kangy Angy_K1 ENM Suitability_20022024_Combined	An example of imported material used during the Area 2 works is the K1 stockpile sourced from Kangy Angy, Fleet Maintenance Facility. The ENM waste classification assessment and referral to UoN amphibian specialists for review of chytrid risks within the material are provided.	Compliant
	Green and Golden Bell Frog Management Plan				
	Project Approval				
Section 1.4	This GGBF Management Plan has been developed in order to partly address the KIWEF site's Approval Surrender of License Number 6437, dated 8 December 2010, Condition 5.b), which requires the following: b) The license shall prepare and submit a Green and Golden Bell Frog Management Plan to the EPA for approval by 13 April 2011. The plan shall encompass the entire premises occupied by the licensee and include, but not limited to:	Triggered	KIWEF GGBF Management Plan	This plan was approved and implemented for the works	Compliant
	i) Management measure to be undertaken to minimise the spread of the amphibian Chytrid fungus including: i. the training of project personnel in site hygiene management; and ii. site hygiene procedures for project personal, mobile plant and equipment, in accordance with the NPWS Hygiene Protocol for the Control of Disease in Frogs 2001; and	Triggered	KIWEF GGBF Management Plan Weekly inspections Monthly Audit Reports	The plans includes these requirements and has been implemented and audited monthly by the EMR	Compliant
	ii) Measures to maintain, restore and enhance Green and Golden Bell Frog habitat, including movement corridors across the site.	Triggered	KIWEF GGBF Management Plan Weekly inspections Monthly Audit Reports	The plans includes these requirements and has been implemented and audited monthly by the EMR	Compliant
	Additionally obligations exist under the DSWEPC's <i>Environmental Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) as to the protection of this nationally threatened species. These obligations are detailed in the PBC Act policy statement 3.19, as well as the significant impact criteria set out in the NSW <i>Threatened Species Conservation Act 1995</i> (TSC Act).	Triggered		Noted. These requirements are in the approved plans	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

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Section 3.1	Provide evidence that prior to works commencing, known and potential GGBF habitat was clearly identified on the ground (with appropriate signage)	Triggered	GGBG habitat was in daily/weekly inspections. Refer to Daracon daily/weekly environmental inspections of frog and sediment fences. Pre-clearance surveys for GGBF were completed through out the works	Mapping and delineation of frog habitat areas was clearly identified. Site inspections noted signage in place as well as controls and fencing to restrict access where required.	Compliant
Section 3.1	Provide evidence that communications to personnel undertaking works included obligations to maintain and protect known and potential GGBF habitat	Triggered	Training package provided,	Daracon's ecologists (ELA) prepared a GGBF training package, summarising key information and documents in relation to GGBF. Daracon included this information within their onsite induction and posted signage within lunch rooms, site office. Training package provided, includes: environmental site induction identification photos Fact sheet Similar species identification Hygiene protocol	Compliant
Section 3.3	All HDC personnel, contractors and sub-contractors will undergo environmental induction and training before commencing work on-site. As it pertains to the Green and Golden Bell Frog, information addressed during this training will include (NCIG, 2007): - Green and Golden Bell Frog profile and identification; - Identification of Green and Golden Bell Frog habitat areas. Project personnel will be prohibited from entering Green and Golden Bell Frog habitat areas located outside defined works areas - Site hygiene management in accordance with the Hygiene Protocol (Section 3.4) - Procedures to be followed in the event Green and Golden Bell Fogs are found (Section 3.6)	Triggered	Training package provided, all elements included	A copy of the Contractors induction is provided. Section 3 and 5 of the induction include relevant information for environmental/emergency response and implementation of the CEMP.	Compliant
Section 3.4.1	To reduce the likelihood of spreading FCF, all HDC employees and contractors involved in activities in areas of known habitat for the Green and Golden Bell Frog (and other amphibian species) will be trained in site hygiene management in accordance with the hygiene protocol (Appendix X). This will be part of the environmental induction and training (Section 3.3).	Triggered	Training pack provided includes hygiene training	Inductions include training and details on the hygiene protocols for the site. Hygiene protocols implemented during site inspection phase of the audit.	Compliant
Section 3.4.2	Any mobile plant entering and leaving KIWEF site during the closure and capping activities will be routinely disinfected as a matter of routine, following the methods outlined in the Hygiene Protocol (Appendix A). Inspection and disinfection of mobile plant, and affected PPE, will be undertaken at a designated, concrete bunded disinfection area at the entrance of the KIWEF site. The location of this area, and the disinfection procedure will be incorporated into the site induction and training program (Section 3.3).	Triggered	Daily environmental inspections of frog hygiene stations are included in inspection. Ramboll independent environmental audits (monthly) confirmed frog hygiene stations were available and maintained throughout project.	Wheel Wash in use at the time of the inspection in the Eastern Ponds area. Site vehicles disinfected prior to entry during site inspection due to entering via an areas without a wheel wash.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
Section 3.5	Pre-work surveys will include targeted active searches of potential Green and Golden Bell Frog habitat located within proposed disturbance areas. These surveys will be undertaken by a suitably qualified and licensed ecologist.	Triggered	Pre-clearance reports	Pre-clearance surveys were completed by Ecological Australia and provided (including nocturnal surveys)	Compliant
	Green and Golden Bell Frog Monitoring program The NCIG monitoring will be conducted annually until 2020 and then three-yearly till 2030. HDC propose to annually review the NCIG data to ensure it meets HDC's requirements. The overall objective of HDC's review of the Green and Golden Bell Frog monitoring program is to monitor the dynamics of the Green and Golden Bell Frog populations supported within known and potential habitat areas within the KIWEF site. The intention of the review program will be to ascertain if the landfill closure works have an effect on the population. Monitoring parameters that will be used for comparison will include, yet not to be limited to: a) GGBF presence/absence, distribution, habitat utilisation, behaviour and abnormalities b) observations of other frog species distribution, relative abundance and abnormalities c) habitat condition d) date e) time of day f) rainfall (mm) g) site location (GPS coordinated and map location) h) survey method utilised i) sampling effort j) habitats surveyed k) weather conditions (including temperature) l) number of observations m) photographs taken	Triggered	2019-20, 2020-21, 2021-2022 reports provided	Reports reviewed as part of the audit contained the required data from the monitoring program. Data on GGBF monitoring from 2019 - 2022 contains information on habitats in use and by default identifies suitable habitat areas .	Compliant
Section 5.1	The boundaries of all Green and Golden Bell Frog habitat will be clearly identified on the ground	Triggered	Site Inspection	Habitat areas clearly identified by signage	Compliant
Section 5.1	Appropriate erosion and sediment control structures will be installed at least 30m upslope of all such habitat areas. These erosion and sediment control structures will be regularly inspected and maintained, particularly after significant rainfall events.	Triggered	Site Inspection CPESC (Rubicon Enviro) Reports	Monthly inspection reports with actions prepared. Actions closed in following reports, PESCP's endorsed by CPESC	Compliant
Section 5.1	All plant entering and leaving the KIWEF site will be, as a matter of routine, disinfected via a wash bay. The location and procedures involved at this wash bay will form part of the site induction and training (see section 3.3). Records will be kept.	Triggered	Daily environmental inspections of frog hygiene stations are included in inspection. Ramboll independent environmental audits (monthly) confirmed frog hygiene stations were available and maintained throughout project.	Wheel Wash in use at the time of the inspection in the Eastern Ponds area. Site vehicles disinfected prior to entry during site inspection due to entering via an areas without a wheel wash.	Compliant
Section 5.1	Similarly, all HDC employees and contractors involved in activities in areas of known habitat for the Green and Gold Bell Frog (and other amphibian species) will be trained in site hygiene management in accordance with the hygiene protocol (Appendix A). This will be part of the Environmental induction and training (Section 3.3). Records will be kept.	Triggered	Training pack provided includes hygiene training	Induction records show training in this requirement. Implementation confirmed during site inspection	Compliant
Section 5.1	All PPE in contact with soil, particularly boots, of HDC employees and contractors entering and leave the site will be disinfected as a matter of routine, following the methods outlined in the Hygiene Protocol (Appendix A).	Triggered	Boots sprayed during site visit	Implementation confirmed during site inspection	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

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Section 5.1	All disinfection processes will be monitored and controlled at the KIEWF site's entry and exit point. The location of these disinfection, will be communicated during the site induction and training (Section 3.3.)	Triggered	Included in training pack provided, Weekly inspections EMR monthly reports	Implementation confirmed during site inspection	Compliant
Section 5.1	All water required for dust suppression will be drawn from ponds established for the purpose. No water for dust suppression will be drawn from current ponds on the site. The establishment of dedicated dust suppression ponds will be undertaken to prevent the potential spread of Plague Minnow into ponds currently free of this species. The location and procedure for those dedicated dust suppression ponds will be communicated during the site induction and training (Section 3.3).	Triggered	Weekly Reports	Water source identified as 'standpipe' in reports. Location of standpipe noted to be offsite and not drawn from ponds or onsite water sources	Compliant
Section 5.1	Stormwater diversion measures, if required, will be put in place to maintain the current hydrological regime for the site	Triggered	Site Inspection CPESC (Rubicon Enviro) Reports	Monthly inspection reports with actions prepared. Actions closed in following reports, PESCP's endorsed by CPESC	Compliant
Section 5.1	If practicable, the capping and grading activities will be schedule to occur outside the core Green and Golden Bell Frog breeding period (that is, September to March), especially in areas adjacent to known and potential breeding habitat.	Triggered	Environmental Incident KIEWF EPBC 2016/7670 [SEC=UNCLASSIFIED] - Detection of GGBF Within the Work Exclusion Area at The Peninsula Borrow Area, 7th April; EPBC 2016/7670 - Incident Report - Update June 2020 Juvenile GGBF Dispersal Event Rev 1	In general works were undertaken in accordance with this requirement. One incident was recorded where works were undertaken outside these requirements. During routine UoN nocturnal surveys for the Annual IWS on 7/4/20, ecologists identified a mass juvenile GGBF dispersion event that had breached the GGBF control measures (in particular the perimeter fencing) in place around the KIEWF and HCCDC considered there was a potential to harm the GGBF if no action was taken. Normal construction works in the area were stopped and only works in response to the dispersal event (capture/relocation/repairs) were allowed.	Compliant
5.2	In an attempt to limit the potential for Green and Golden Bell Frigs to enter the disturbance footprint and if practicable, a frog-proof barrier will be erected around the disturbance footprint	Triggered	Ecological Australia GGBF reports are provided: \\emmsvr1\EMM2\2022\E220406 - KIEWF Area 2 - Independent EPBC Audit\Background information\HCCDC_RFI response_EPBC 2016_7670\02. GGBF Clearance Inspection Reports	Frog Fence in place as required at the time of the audit	Compliant
Monitoring program					
Water quality management plan					

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)																																																																																																																								
	The licensee shall undertake the groundwater monitoring program outlined in Table 1, 2 and 3 of the Surrender Notice. Monitoring locations are those groundwater bores identified in both the fill and natural aquifers as shown on the map attached to the Surrender Notice Table 1 – Deep Estuarine Wells being K5/5S, K5/6S, K7/2N, K9/2E, K9/3N, K9/4W, K11/1S, K11/2W, K11/3W, K12/1E, K12/3N, K12/4N, K12/7E, K12/9E and K12/10 <table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Ammonia</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Phenols¹</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Cyanide (Total, WAD and free)</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Chromium (hexavalent)</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Molybdenum (dissolved)²</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Lead (dissolved)³</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Total 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Monitoring program outlined in Table 1-3 of the surrender notices has been undertaken for each year.	Compliant	Compliant	Compliant
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Conductivity	mg/L	Every 12 months	Grab sample																																																																																																																										
pH	pH	Every 12 months	Grab sample																																																																																																																										

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)																																								
	Table 4– Surface Water Monitoring at Locations KS2/1, KS1/3, K10/1, KS7/1, KS12/6 <table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Ammonia</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Phenols</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Cyanide (Total, WAD and free)</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Chromium (hexavalent)</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Molybdenum (dissolved)</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Lead (dissolved)</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Total PAHs</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>Conductivity</td><td>mg/L</td><td>Every 12 months</td><td>Grab sample</td></tr><tr><td>pH</td><td>pH</td><td>Every 12 months</td><td>Grab sample</td></tr></table>	Pollutant	Units of Measure	Frequency	Sampling Method	Ammonia	mg/L	Every 12 months	Grab sample	Phenols	mg/L	Every 12 months	Grab sample	Cyanide (Total, WAD and free)	mg/L	Every 12 months	Grab sample	Chromium (hexavalent)	mg/L	Every 12 months	Grab sample	Molybdenum (dissolved)	mg/L	Every 12 months	Grab sample	Lead (dissolved)	mg/L	Every 12 months	Grab sample	Total PAHs	mg/L	Every 12 months	Grab sample	Conductivity	mg/L	Every 12 months	Grab sample	pH	pH	Every 12 months	Grab sample	Triggered			Compliant
Pollutant	Units of Measure	Frequency	Sampling Method																																										
Ammonia	mg/L	Every 12 months	Grab sample																																										
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pH	pH	Every 12 months	Grab sample																																										
	If any samples collected from monitoring locations listed in Condition 5c) and 5d) show an increase in pollutant concentration at the boundary of the lands to which the Surrender License applies, HDC must commence capping works within 2 months of receiving the data. Capping works are to commence regardless of the progress of the T4 project unless otherwise agreed in writing by the EPA. The key methods, locations, frequency, and duration of the monitoring program, investigation triggers, contingency measures and corrective actions are described in Section B1 of this Water Quality Management Plan.	Triggered		NA	Compliant																																								
	That appropriate erosion and sediment control structures will be installed at least 30 metres upslope of known and potential GGBF habitat. These erosion and sediment control structures will be regularly inspected and maintained, particularly after significant rainfall events. This is also required under Section 5.1 of GGBF Management Plan.	Triggered	Site Inspection CPESC (Rubicon Enviro) Reports	Monthly inspection reports with actions prepared. Actions closed in following reports, PESCP's endorsed by CPESC	Compliant																																								
	The establishment of erosion and sedimentation controls and construction of sedimentation basins as required.	Triggered	Site Inspection CPESC (Rubicon Enviro) Reports	Monthly inspection reports with actions prepared. Actions closed in following reports, PESCP's endorsed by CPESC	Compliant																																								
	Progressive erosion and sediment control plans (ESCPs) will be developed and implemented prior to the commencement of topsoil stripping and earthworks.	Triggered	Site Inspection CPESC (Rubicon Enviro) Reports	Monthly inspection reports with actions prepared. Actions closed in following reports, PESCP's endorsed by CPESC	Compliant																																								
	Toolbox talks will be conducted for employees and subcontractors on the requirements of the Erosion and Sediment Control Plan.	Triggered	Pre-start meeting examples	A selection of Pre-start meetings were reviewed and noted to contain this element	Compliant																																								
	Erosion and Sediment Control Plan is to be maintained and up to date for the current site conditions.	Triggered	Site Inspection CPESC (Rubicon Enviro) Reports	Monthly inspection reports with actions prepared. Actions closed in following reports, PESCP's endorsed by CPESC	Compliant																																								
	The installation of hydro-salinity monitoring devises has been undertaken and will be monitored throughout the duration of capping with any identified significant changes in pond hydro-salinity attributable to the proposed activity to be investigated and mitigation measures explored	Triggered	Records of continuous monitoring results provided	Monitoring results were reviewed during the audit in relation to this aspect	Compliant																																								
	An adaptive response approach will be undertaken for GGBF habitat should salinity measure outside the range of comparison limits. Primarily when an impact to the population is observed a further detailed investigation will be undertaken aimed to fully understand reasons for the change.	Triggered	Records of continuous monitoring results provided EMR monthly reports	Monitoring results were reviewed during the audit in relation to this aspect. EMR monthly reports showed regular review of this information and actions taken where required.	Compliant																																								
	Water monitoring at the KIWEF is undertaken consistently with the requirements of the Surrender Notice, which will be undertaken annually until the Surrender Notice is relinquished or as directed by the EPA. There are 50 monitoring wells and five surface water monitoring locations listed under the Surrender Notice	Triggered	2020, 2021 and 2022 Groundwater and surface annual water monitoring	plans and reports provided and the auditors note that monitoring has been completed as per requirements of the Surrender Notice	Compliant																																								

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
	The KIWEF Annual Water Monitoring Program will be undertaken annually until the Surrender Notice is relinquished or as directed by the EPA. The Continuous Monitoring of Pond Water Quality Parameters will continue for 2 years post-construction. The Post Construction monitoring and maintenance will continue (on a biannual basis) in accordance with the requirements of the Surrender Notice (or as superseded by new instruments directed by the EPA).	Triggered	2020, 2021 and 2022 Groundwater and surface annual water monitoring	plans and reports provided and the auditors note that monitoring has been completed as per requirements of the Surrender Notice	Compliant
	The results of the KIWEF Annual Water Monitoring program are compared against historical analytical results, national groundwater investigation levels (NEPM and ANZECC). Discussion of the actions and contingency measures under this program is included in Section B1 of this Water Quality Management Plan.	Triggered	2020, 2021 and 2022 Groundwater and surface annual water monitoring	plans and reports provided and the auditors note that monitoring has been completed as per requirements of the Surrender Notice	Compliant
	Data collected during the Continuous Monitoring of Pond Water Quality Parameters (temperature, water level and salinity concentration), are compared to established salinity threshold for chytrid protection. Discussion of the actions and contingency measures under this program is included in Section B2 of this Water Quality Management Plan.	Triggered	Records of continuous monitoring results provided EMR monthly reports	Monitoring results were reviewed during the audit in relation to this aspect. EMR monthly reports showed regular review of this information and actions taken where required. Threshold requirements are clearly identified in Table 1 of the reports	Compliant
	Biannual cap inspections will be undertaken following the construction maintenance period in accordance with the Surrender Notice (or as superseded by new instruments directed by the EPA), to ensure the cap surface remains stable. This will include inspection of any water quality features to determine whether they are functioning correctly, or if any rectification works are necessary.	Triggered	EF18_46502_08.2 Rev 0_KIWEF (2021_12) Area 2, Cap Inspection_V1	Cap inspections undertaken on a 6 mthly basis, actions required are noted in the reports	Compliant
KIWEF Construction Environmental Management Framework					
3.1	The Contractor is required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2015.	Triggered	Daracon ISO14001	Certification in place as required	Compliant
3.2.1	Prior to working on site, the Contractor will ensure that all staff and sub-contractors working on site are appropriately inducted. The Contractors induction must communicate the environmental performance expectations of this CEMF and the specific mitigation measures to achieve these expectations as documented in the Contractors CEMP. Induction content is expected to include: · Legal and regulatory requirements including duty of care and potential consequences of infringements; · Environmental responsibilities with detailed training on the implementation of hygiene protocols and the importance of GGBF; · Identification of sensitive areas including threatened species habitat, waterways, asbestos impacted waste and other hazardous waste; · Identification of boundaries for vegetation clearing, washing, refueling and maintenance areas for vehicles, plant and equipment; · Environmental management techniques for noise, air, surface and ground water, waste generation, contaminated land etc.; · Emergency plans and incident management including the use of spill kits; · Reporting processes for environmental harm or environmental incidents; · Roles and responsibilities in achieving conformance with environmental policies and requirements, including emergency preparedness and response requirements; and · Identification and management of non-conformances.	Triggered	Induction and records	The induction contains these requirements	Compliant
3.2.2	Pre-start talks will help to ensure that timely and relevant information is communicated to the workforce and that feedback can be provided on issues of interest or concern. Pre-start talks should address weather forecasts with implications for daily site environmental management (dust or rainfall response requirements) as a minimum, and where necessary, should be used to provide refresher information on the environmental induction topics and associated environmental procedures.	Triggered	Pre start talks	Pre-start talks conducted daily. Talks reviewed and noted to cover a range of relevant environmental topics for this site	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
3.3	An emergency response plan would be prepared and implemented during the Project by the Contractor. The emergency response plan should document the contractor's approach to managing potential hazards and risks, incidents and emergencies	Triggered	Daracon Emergency Response Plan Integrated Project Mgt Plan. Daracon Site Supervisor (Dan Majer) Training Certificate and copies of Prestart talks	Plan prepared and implemented as required	Compliant
4.1	In preparing the Contractor's Construction Environmental Management Plan, the Contractor is required to undertake any additional risk assessment they deem necessary to manage environmental risks, such that the performance expectations of the CEMF are achieved when implementing their nominated construction methodology.	Triggered	Daracon Internal Audit of IPMP on 2 Oct 19. Record of the audit is included within the Daracon Monthly report for October 2019, (s 2.6 and 6.6).	CEMP in place and implemented as required. Audits conducted on project and EMR monthly reports cover implementation of plans	Compliant
4.3	The project Environmental Control Map is to be updated to include: · The worksite layout and boundary, including entry/exit points and internal roads and clearing limits; · Location of adjoining land-use and nearest noise sensitive receivers; · Location and type of sediment and erosion control measures, including size / capacity of detention basins and wheel wash facilities; · Location and type of fauna exclusion fences; · Location of site offices; · Location of spill containment and clean-up equipment; · Location of worksite waste management facilities; · Hours of work applicable to the worksite (including specific time windows for deliveries and any restrictions on high noise generating activities). · Location of environmentally sensitive areas (e.g. threatened species, critical habitat, known contaminated areas, etc.) · Vegetation and trees to be protected; · Location of stormwater drainage and watercourses leading to / from the worksite; and · Summary of specific environmental management requirements from licenses, approvals or permit conditions. The provisions of this plan apply in addition to any erosion and sediment control plans or other documentation that specify the location of environmental controls on site.	Triggered	Project Footprint Ramboll Monthly Audit Reports Daracon Daily/Weekly Enviro Inspections Area 2 CPESC Reports, refer to PESCP for endorsed plans showing changes to ESC measures implemented. Offsite Disposal dockets & certifications(taken from Validation Report)	Documents reviewed showed that a range of maps and diagrams were in use and site inspections noted these plans and diagrams to be readily available and relevant areas were clearly identified, cordoned off or fenced as required.	Compliant
4.4	The Environmental Schedules set out below represent the records likely to be required to be kept during the Project. · Weekly and post rainfall site inspection checklist; · Daily materials tracking forms; · Level 2 and Level 3 notification forms; · Notified materials tracking register; · Water quality monitoring results register; · Dewatering form; · Waste Register; · Induction record; · Internal Audit Register; · Non-Conformance Register; · Complaint Form; and · Complaint Register. The form and content of the Environmental Schedules is to be provided by the Contractor in accordance with their Environmental Management System.	Triggered	Level 2 notifications are available within Folder 16 Level 2 Notifications. Folder 15 Daracon Monthly Reports Folder 17 NCR's (Engineering)	Records of a selection of these items were reviewed by the audit team. Interviews with staff were also conducted to ensure that the requirements of the plans and records was understood.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
5.1	As part of the overall environmental management of the site, during the landfill closure works, the Contractor is to conduct at least weekly inspections of all mitigation measures. The results of these inspections will be recorded on a weekly environmental inspection record. Should non-conformances be identified, the Contractor is required to undertake corrective action to address the issue	Triggered	Daracon Daily/Weekly Enviro Inspections Daracon Monthly Reports Area 2 CPESC Reports		Compliant
	The following construction monitoring is required: · Daily prestart checks on amphibian-disease hygiene station functioning and supplies, and weather forecast noting predicted wind and rain; · Real-time classification of materials to nominated thresholds in accordance with the Materials Management Plan decision matrix; · Post rainfall checks of sediment dam water level and water quality, and erosion and sediment control functioning; · Inspection covering sediment dam water levels and water quality, erosion and sediment control structures, frog fences, fuel and chemical storage, stockpile bunding and covers; · Sediment basin discharge or dewatering water quality sampling and analysis suitable to demonstrate pollution of water has/will not occur; · noise monitoring of any out of hours construction works in accordance with Interim Construction Noise Guidelines; · visual observations of visible dust levels to confirm no off site dust impacts; and · post capping defects and liabilities monitoring including revegetation success monitoring. Where recommended actions are suggested, priorities should be set against these actions for site implementation. The list of actions should be distributed to the responsible personnel. A close out system must be included. The defects and liabilities period is linked to a demonstration of performance against parameters to be negotiated with the HCCDC. These are likely to include revegetation success and surface water quality. In accordance with notice of determination condition 11 and 12, accurate and complete compliance records are required to be maintained and provided to the Department of Environment and Energy on request.	Triggered		Weekly inspections undertaken as required. Actions noted for closeout in these reports	Compliant
5.1.1	The closure works are required to comply with the general duty not to pollute waters under section 120 of the POEO Act. The contractor will be required to take adequate precautions to ensure either that discharge/or dewatering is not required, or otherwise undertake sampling and analysis to demonstrate that pollution of water has or will not occur associated with water releases from sediment basins. In the absence of an EPL, to avoid causing pollution and breaches of section 120, any water discharged from site must be of the same quality, or better, than the quality of the receiving waters (at the time of discharge) or able to be demonstrated to not have caused water pollution. A summary of water quality monitoring including sample results is required to be submitted to the HCCDC following any dewatering or discharge event demonstrating that the Contractor has complied with the above obligations.	Triggered	Area 2 CPESC Reports Daracon Monthly Reports, refer to Coffeys reporting, section on Water Monitoring (Note at the start of the project, there was a very dry period, rainfall did not start until Feb/March 2020).	Water monitoring is undertaken across the site as part of the EPL surrender notice. Annual reports are produced and contain information on the compliance with conditions of the EPL and POEO Act.	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
5.1.2	Internal and external environmental audits should be undertaken throughout the construction process to ensure that the project environmental requirements and Contractors CEMP are implemented appropriately. The auditing process should be designed to identify any non-conformances, providing an opportunity to apply corrective and / or preventative action where appropriate. The Audit schedule is to include: · Internal environmental audit by the Contractor's Environmental Manager on a three monthly basis during construction; · Regular attendance at the site by the KIWEF Area 2 Closure Works Independent Auditor; and · Independent audit of compliance with the notice of determination conditions following the completion of onsite construction works and prior to completion of the project works period.	Triggered	The Coffeys monthly environmental report is included as an Appendix to the Daracon monthly reports, available in Daracon Monthly Reports. Ramboll monthly reports in Ramboll Monthly Audit Reports.	Monthly Independent EMR inspections were undertaken throughout the project, HCCDCD 6 monthly inspections were undertaken for Capping and UoN GGBF monitoring is also undertaken. This audit is also an independent audit of the works as part of the EPBC approval.	Compliant
5.2.1	The daily record of material management is required to summarise material interaction for the day and include: · Description of earthworks activity undertaken; · Description of cut to fill or cut to stockpile activities including locations; · Notification of HCCDC of suspected contaminated or otherwise hazardous material encountered and description of handling, current location, further assessment required; and · Summary of any handling of previously notified material including update on current location. All notifications are also to be tracked through a notifications register to record final disposal location.	Triggered	Daracon Daily Tracking (Appendix B, Daily Tracking Sheets) Coffey Daily Fieldsheets (Appendix I Validation Report) Level 2 notifications are available within Folder 16 Level 2 Notifications.	Records of the materials management on the site is carefully tracked by the site team. A selection of records were reviewed which identified that a through process is in place. Interviews confirmed that site management was well aware of the tracking of materials across the site during works.	Compliant
5.2.2	Monthly Progress Reporting is to include details of the implementation environmental management requirements including: · Update on any environmental risks and opportunities, and significant environmental impacts associated with the work; · Progress against environmental objectives, targets and measures of performance; and · Management actions, including environmental controls, training, inspections and testing. Specifically, the environmental monthly reporting is to include such items as: · Characterisation, site management and fate of contaminated material, collated materials tracking information; · Quality assurance on placed material; · Non-compliances and corrective actions; · Environmental monitoring requirements; and · Monthly logs and photographs and other records of the progressive compilation of information that will be integrated into the Validation Report on completion.	Triggered	Daracon Monthly Reports	Monthly reports are prepared and contain these requirements	Compliant

EPBC 2016-7670 Kooragang Island Waste Emplacement Facility Compliance Table - Conditions of Approval

REF#	Requirement	Triggered for audit cycle	Evidence collected	Audit findings and recommendations	Compliance Status (Compliant/Non compliant/ Not triggered)
5.2.3	The Validation Report is required to satisfy Condition 4h of the Surrender Notice which requires that there is written confirmation that the cap was established in accordance with relevant specifications as follows: “Within three months of completion of the installation of the final cap, the licensee must provide the EPA with a written Validation Report that includes: i) Advice that the final cap has been installed; ii) Advice from a suitably qualified and experienced person as to whether or not the cap was installed in accordance with Chapter 7 of the Landform and Capping Strategy and relevant conditions of this Notice, or future variations to this Notice; iii) Provision of the results of all relevant test results to validate that the permeability of the final capping layer is less than or equal to $K = 1 \times 10^{-7} \text{m/s}$. Permeability testing must be taken of the sealing layer material at a rate of not less than 1 per 2000T (or 1250m3); iv) Provision of information that establishes the thickness of the installed sealing and revegetation layers in the format of either: (i) As constructed drawings, including cross sections, of the surfaces of the coal washery reject layer; and (ii) The results of surveys undertaken for each capping layer by a registered surveyor”. The Contractor is to allow for all effort necessary to assemble adequate validation evidence throughout the implementation of the Closure Works and for the preparation of the validation report. For the avoidance of doubt, the Contractor is required to validate that the Closure works have been delivered in accordance with the design and Tender Specification in relation to capping parameters and the Materials Management Plan in relation to materials handling and tracking. The environmental performance expectations within this CEMF must be achieved as part of the Contract but are not required to be incorporated into the Validation Report. Evidence of compliance is to be available on request by HCCDC.	Triggered	Daracon Monthly Reports, Coffey Monthly reports, Validation report	The validation report has been prepared as required and bi-annual survey of the capping activities was undertaken by HCCDC and monthly reports by engineering consultants (Coffey).	Compliant
5.2.4	During the performance of the contract, and as a condition of satisfaction of the care and maintenance obligations, the Contractor will be responsible for the preparation of an annual compliance report against the conditions of the notice of determination.	Triggered	Website	Compliance Reports are available on the HCCDC website.	Compliant
5.3	All environmental non-conformances with project approvals, this EMP or Contractor procedures is to be recorded as an incident, investigated and closed out by the Contractor. Close-out is required to include Construction supervisor sign-off that corrective actions have been implemented or alternative solutions substituted. A summary of all non-conformances and associated corrective actions is to be provided to the HCCDC. The POEO Act requires incidents causing or threatening material harm to the environment to immediately notify the relevant authorities, which include: · the EPA; · Newcastle Council; · the Ministry of Health; · the WorkCover Authority; and · Fire and Rescue NSW. The POEO Act outlines responsibilities down to an individual level to notify incidents threatening material harm to the environment immediately. In general terms all individuals are responsible for reporting such incidents to the Construction Project Manager who in turn will inform HCCDC. HCCDC would then notify relevant authorities. It also requires that an individual notify the incident where they cannot make contact with their employer. Relevant authority contact details are included in the table below and should be displayed where all site workers can access them easily in the event of a notifiable incident occurring.	Triggered	Email: Ground Fire Emergency at KIWEF Area 2	A ground fire was identified burning in the Stage 2 area, this was reported and became an emergency and was managed by NSW Fire and Rescue. Reporting and updates were provided for this emergency although it was not considered an NCR as it was not related to construction activities.	Compliant

Appendix C

Auditor's certification

C.1 Auditor's certification

David Bone
Sector Lead – Construction
National Technical Leader – Construction Environmental Management
Associate Director

Registered environmental practitioner with the EIANZ (CENVP #137)

Lead Environmental Auditor course at the University of NSW

Auditor's declaration:

I, **David Bone**, certify that, to the best of my knowledge, all information provided in the audit report attached to this audit certification statement is true, correct and complete.

I am aware that section 491 of the EPBC Act makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the regulations. The offence is punishable on conviction by imprisonment for not more than 1 year, a fine not more than 60 penalty units, or both.

Signature:  _____

Date: __28__/_02__/_2023__

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Appendix D

Photos of site inspection

D.1 Photos from site inspection 12 October 2022



GGBF habitat areas K7 area



GGBF in Constructed Pond in K5 Area



Typical GGBF fencing arrangements





Constructed ponds in the Wedge area



Habitat areas K2 North Area



Frog habitat area signage

Australia

SYDNEY

Ground floor 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA

Suite 2.04 Level 2
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Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 8.03 Level 8
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Melbourne VIC 3000
T 03 9993 1900

PERTH

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109 St Georges Terrace
Perth WA 6000
T 08 6430 4800

Canada

TORONTO

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T 647 467 1605

VANCOUVER

60 W 6th Ave
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