



Report

Integrated Gas

BEETALOO BASIN GROUNDWATER MONITORING BORE INSTALLATION PROGRAM EP 98 AND EP 117 Annual Environment Performance Report

THE THREE WHATS

**What can go wrong?
What could cause it to go
wrong?
What can I do to prevent it?**

EP 98 and EP 117 Groundwater monitoring bore program – Annual Environment Performance Report


Document Details

Document title	Beetaloo Basin Groundwater Monitoring Bore Installation Program EP 98, EP 117 Annual Environmental Performance Report
EMPs covered	Beetaloo Basin Groundwater Monitoring Bore Installation Program, EP 98 Beetaloo Basin Groundwater Monitoring Bore Installation Program, EP 117
Exploration Permit (EP)	EP 98 and EP 117
Interest holder details	Origin Energy B2 Pty Ltd ABN 42 105 431 525 Level 28, 180 Ann Street, Brisbane QLD, 4000 Falcon Oil & Gas Australia Limited ABN 53 132 857 008
Operator details	Origin Energy B2 Pty Ltd ABN 42 105 431 525
Approved by	Matt Kernke Approvals Manager Beetaloo and Growth Assets
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Rev	Date	Reason for issue	Reviewer/s	Consolidator	Approver
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Signature and certification

I hereby declare that the information provided in this annual environment performance report and accompanying documents is to the best of my/our knowledge, true and correct.	
Signature	
Name	Matt Kernke
Position	Approvals Manager Beetaloo and Growth Assets
Date	22/02/2022

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1. Introduction

The Northern Territory (NT) Petroleum (Environment) Regulations 2016 (the Regulations) include a requirement¹ for the interest holder to provide a report to the Minister on an annual basis that outlines the environmental performance of regulated activities. The Annual Environment Performance Report (AEPR) must include sufficient information to allow the Minister to assess whether the interest holder has met the environmental outcomes and environmental performance standards included in the approved Environment Management Plan (EMP). The report is to consider information required to be recorded, monitored or reported under the Regulations and any other law in force in the NT related to conduct of the regulated activity.

This AEPR covers the regulated activities of Origin Energy B2 Pty Ltd (Origin) approved under the following EMP's:

- Beetaloo Basin Groundwater Monitoring Bore Installation Program EP 98 (NT-2050-15-MP-0014), approved 22/11/2018
- Beetaloo Basin Groundwater Monitoring Bore Installation Program Kyalla EP 117 (NT-2050-15-MP-0017), approved 10/12/2018:
 - monitoring bore lease pad modification, submitted 19/02/2019
 - gravel pit modification submitted 28/06/2019
 - gravel pit modification submitted 11/07//2019
 - gravel pit modification submitted 07/08/2020

The AEPR covers the following reporting periods:

- Beetaloo Basin Groundwater Monitoring Bore Installation Program EP 98: 22/11/2020 to 21/11/2021
- Beetaloo Basin Groundwater Monitoring Bore Installation Program Kyalla EP 117: 10/12/2020 to 09/12/2021

1.1 Acronyms and abbreviations

Table 1 Summary of acronyms and abbreviations

Acronym	Definition
AAPA	Aboriginal Area Protection Authority
COP	Code of Practice: Onshore Petroleum Activities in the Northern Territory
DEPWS	The Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
EMP	Environment Management Plan
EP	Exploration Permit
GIS	Global Information Systems
ha	hectare
HSE	Health, Safety & Environment
OCIS	Origins Collective Intelligence System used for managing incident data
NT	Northern Territory
Regulations	Petroleum (Environment) Regulations 2016

¹ Petroleum (Environment) Regulations 2016 (NT) sch 1, item 11.

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1.2 Background

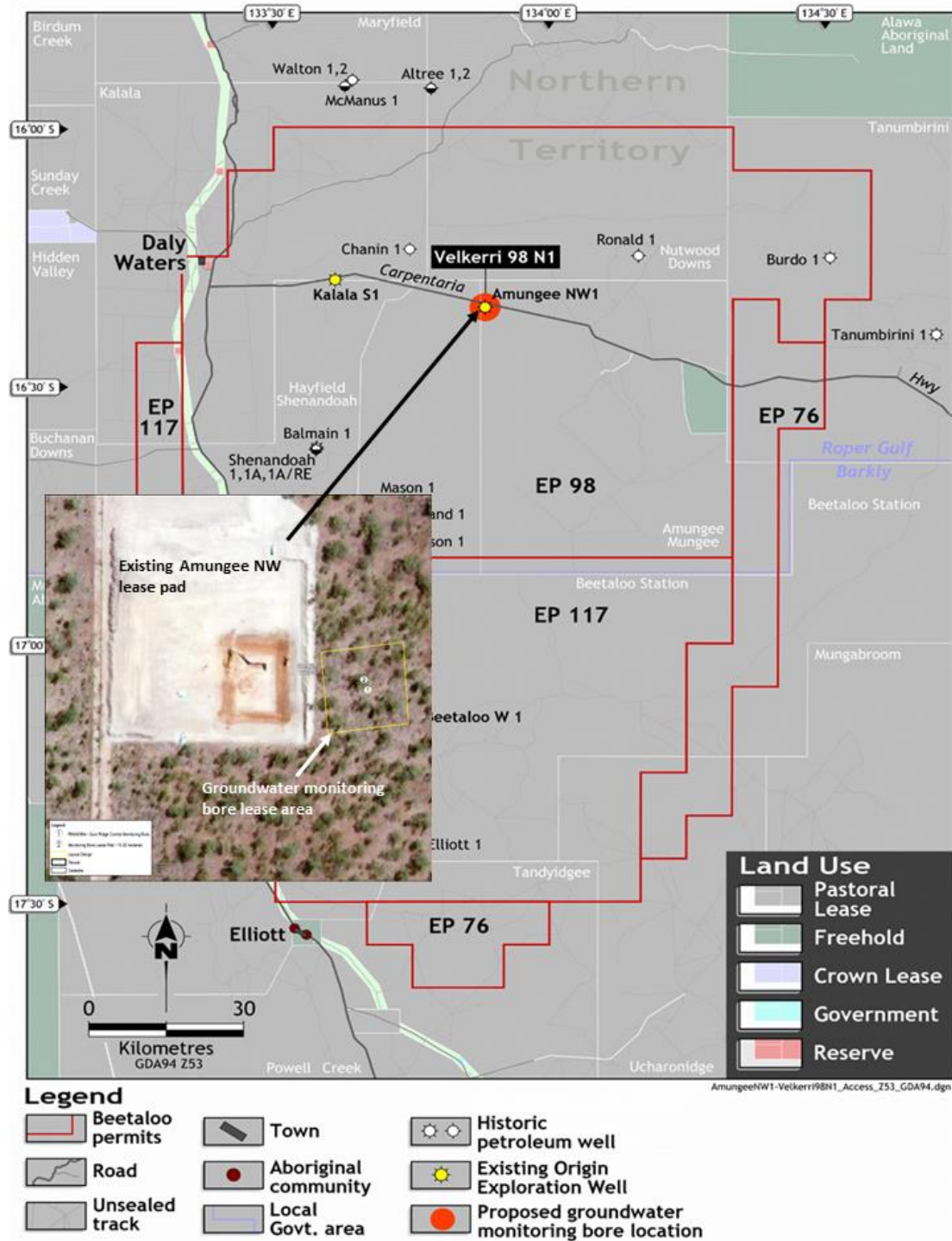
The regulated activities that have been undertaken during the reporting period and are assessed under this AEPR are as follows:

- Groundwater Monitoring Bore Installation EP 98
 - No regulated activities. The site has been incorporated under the Amungee NW site and operated under the approved EMP ORI7-2.²
- Groundwater Monitoring Bore Installation Program EP 117
 - Maintenance of the existing access track between the Stuart Highway and Kyalla 117 N2-site.
 - Maintenance of approximately 500m access tracks connecting the site to the existing pastoralist access track and between the monitoring bore lease pads.
 - Ongoing operation of gravel pit A and gravel pit 3 to support access track maintenance.

The location of the regulated activities on Amungee EP 98 and Kyalla EP 117 is provided in Figure 1 and Figure 2, respectively.

² [Amungee NW-1H Exploration Permit \(EP\) 98 EMP, NT-2050-35-PH-0018 \(ORI7-2\), approved 15 July 2021.](#)

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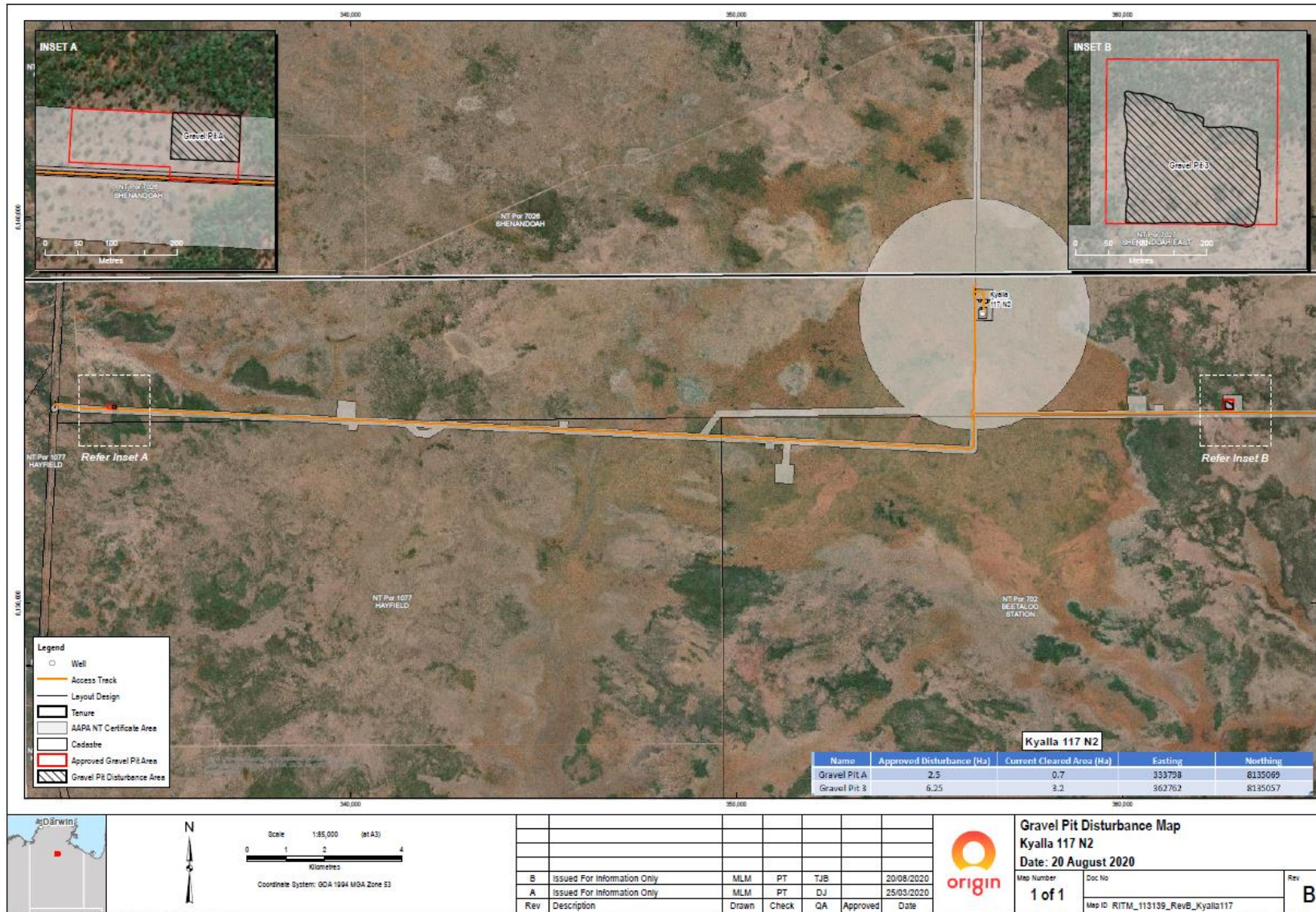


Figure 2 Beetaloo Basin groundwater monitoring bore Installation program Kyalla EP 117

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1.3 Contents of Performance Report

This AEPR describes the environmental performance of Origin by evaluation of the following:

1. compliance with Ministerial approval conditions, for each EMP
2. compliance with each environmental outcome and environmental performance standard within the approved EMPs
3. compliance with reporting requirements in accordance with the COP and Regulations
4. all recordable and reportable incidents, including root cause analysis and related corrective actions to prevent re-occurrence
5. findings of all regulatory inspections and audits and related actions to address any findings.

1.4 Assessment of compliance

Table 2 shows the compliance status indicators used in this AEPR.

Table 2 Performance descriptors

Indicator	Description
Compliant	Compliant with requirement for entire 12-month reporting period
Not Compliant	Interest holder did not comply with the requirement fully or at all during the reporting period
Not Applicable	Requirement not applicable during the reporting period

1.5 Evidence of compliance

The following sources of evidence are used to demonstrate compliance:

1. internal tracking of compliance by Origin through:
 - internal assurance audits, observations and incident reporting
 - Routine inspections, as committed to in the EMPs, as follows:
 - i. Pre and post wet season weed inspections completed over May 2021 and October/November 2021
 - ii. Pre and post site stability inspections (completed during routine construction superintendent inspections) with maintenance actioned as required
 - iii. Monthly inspections by Origin staff or nominated contractors
 - ~50 internal audits of compliance of environmental aspects across Origin’s activities (including at the Amungee NW and Kyalla 117 N2 location)
2. outcomes from regulatory inspection(s) conducted by DEPWS, Petroleum Operations
3. recordable and reportable incident reports submitted to DEPWS Petroleum Operations
4. reports provided to DEPWS, the Department of Industry Tourism and Trade (DITT) and other government agencies.

2. Demonstration of Compliance

2.1 Ministerial Condition compliance

Table 3 demonstrates Origin’s compliance with Ministerial EMP approval conditions.

Table 3 Ministerial condition summary table

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No	Ministerial condition	Compliance Status	Evidence
Beetaloo Basin Groundwater Monitoring Bore Installation Program EP 98			
2a	Water monitoring bores will be drilled and constructed by a water bore driller licensed under the Water Act and in accordance with the current version of the Minimum Construction Requirements for Water bores in Australia	Not Applicable	No groundwater monitoring bores were drilled during the reporting period.
2b	The groundwater bore installation must be completed within 12 months from the date of this approval.	Compliant	All bores were completed in 2018 as evidenced by the statement of bore submitted to the NT Water Resources division of DEPWS by Allwell drilling upon completion of the bore.
Beetaloo Basin Groundwater Monitoring Bore Installation Program Kyalla 117			
2a	Water monitoring bores will be drilled and constructed by a water bore driller licensed under the Water Act and in accordance with the current version of the Minimum Construction Requirements for Water bores in Australia	Not Applicable	No groundwater monitoring bores were drilled during the reporting period.
2b	The groundwater bore installation must be completed within 12 months from the date of this approval.	Compliant	All bores were completed by November 2019, as evidenced by the statement of bore submitted to the NT Water Resources division of DEPWS by Allwell drilling upon completion of the bore.

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2.2 Environmental outcomes and performance standards

Table 4 provides a systematic overview of Origin’s compliance with the environmental outcomes and environmental performance standards within the approved EMPs.

Table 4 Environmental outcome and performance standard compliance summary

Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
Beetaloo Basin Groundwater Monitoring Bore Installation Program EP 98				
1	<ul style="list-style-type: none"> Minimise disturbance to land and land use (including soils and terrain, flora and fauna). Protection of waterways. Avoid site contamination and remediate land areas disturbed by water bore drilling activities, including contaminated land. Optimise (in order of most to least preferable) waste avoidance, reduction, reuse, recycling, treatment and disposal and remove and disposal of regulated waste as soon as practicable to a licensed waste disposal facility or recycling facility. 	<ul style="list-style-type: none"> Land disturbance restricted to approved, scouted area. 	Compliant	<ul style="list-style-type: none"> No additional clearing undertaken during reporting period. Approved clearance area of 0.31 ha, with site inspection confirming approximate aerial extent complies with limits. The disturbance area is within the scouted area covered by the land condition assessment and within the AAPA approved area. This has been confirmed through site inspections.
2	<ul style="list-style-type: none"> Minimise impacts to groundwater and maintain surface and groundwater values. Minimise erosion and sedimentation of waters as a result of water bore drilling activities. 	<ul style="list-style-type: none"> Areas left uncontaminated, safe, stable and non-polluting 	Compliant	<ul style="list-style-type: none"> Contracts are in place to perform monthly inspection and maintenance, with email correspondence / billing and periodic site visits by Origin staff to confirm maintenance is occurring. No incidents raised regarding erosion causing offsite sediment releases.
3	<ul style="list-style-type: none"> Minimise impacts to groundwater and maintain surface and groundwater values. Minimise erosion and sedimentation of waters as a result of water bore drilling activities. 	<ul style="list-style-type: none"> No unacceptable risk or long-lasting change to surface and/or groundwater resources (quantity and quality). 	Compliant	<ul style="list-style-type: none"> Groundwater monitoring results collected from monitoring bores and submitted to DEPWS 6 monthly. Monitoring bore results confirm the water quality is consistent with the

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
				expected Gum Ridge Formation water quality.
4		<ul style="list-style-type: none"> No release of site stormwater or wastewater exceeding baseline surface water quality 	Compliant	<ul style="list-style-type: none"> Site has been stabilised, with erosion and sediment controls enacted, these are primarily earthen berms, use of fallen vegetation to dampen water velocity and natural vegetation of the site. Stormwater retained onsite as the monitoring bore lease is surrounded by topsoil stockpiles minimising stormwater release. No incidents relating to releases of contaminants to surface water recorded in Origin's incident management system. No wastewater stored onsite.
5		<ul style="list-style-type: none"> No long-lasting change in soil and surface water quality from base line conditions. 	Compliant	<ul style="list-style-type: none"> No incidents of soil contamination or releases to surface water recorded in Origin's incident management system.
6		<ul style="list-style-type: none"> Stream and creek crossings disturbance minimised. 	Not Applicable	<ul style="list-style-type: none"> No clearing has occurred during the reporting period.
7	<ul style="list-style-type: none"> Minimise disturbance to flora and fauna. Minimise disturbance to sensitive areas. 	<ul style="list-style-type: none"> Monitoring bore lease located to minimise impacts to fauna habitat and sensitive vegetation. 	Compliant	<ul style="list-style-type: none"> Disturbance located in approved area adjacent to existing/within lease pad.
8		<ul style="list-style-type: none"> No native fauna impacts (injury or fatality) reported in OCIS during civil and water bore drilling related activities 	Not applicable	<ul style="list-style-type: none"> No civil construction or water bore drilling activities undertaken during the reporting period.
9		<ul style="list-style-type: none"> Security bond maintained until such time DITT is satisfied remediation of site. 	Compliant	<ul style="list-style-type: none"> Security bond submitted to DITT and approved on 19/11/2018.

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
10		<ul style="list-style-type: none"> No loss of sensitive vegetation resulting from Origin's activities. 	Not Applicable	<ul style="list-style-type: none"> No clearing in waterways has occurred. Disturbance located in approved area adjacent to existing lease pad.
11	<ul style="list-style-type: none"> Avoid the introduction of weeds Avoid the spread of existing weeds 	<ul style="list-style-type: none"> No introduction or spread of declared weeds resulting from Origins activities. 	Compliant	<ul style="list-style-type: none"> 6 monthly weed inspections completed in consultation with DEPWS on May 2021 and November 2021. No weeds identified in constructed water monitoring lease area. Annual weed report submitted to DEPWS Weeds branch 23/03/2021.
12	<ul style="list-style-type: none"> To minimise impacts on soil, surface water, groundwater, sensitive habitat and air quality. 	<ul style="list-style-type: none"> Waste registers maintained for the duration of the project. 	Compliant	<ul style="list-style-type: none"> Limited operations, with no waste generated.
13	<ul style="list-style-type: none"> To minimise creation of food sources or habitat for pest species. To minimise waste generation through reduce, reuse, recycle programs. 	<ul style="list-style-type: none"> Pest species not encouraged to the site. 	Not Applicable	<ul style="list-style-type: none"> Not applicable, no camp or waste storage activities undertaken during the reporting period.
14		<ul style="list-style-type: none"> The absence of wastes remaining on site at completion of operations (i.e., general rubbish, waste chemicals, workshop wastes including oily rags, containers etc.). 	Compliant	<ul style="list-style-type: none"> Area inspected by Origin staff post activity close out confirming all waste removed and erosion and sediment controls in place. Task observations completed by site supervisors.
15	<ul style="list-style-type: none"> Minimise environmental nuisance due to dust for sensitive receptors resulting from Origin's activities. Minimise greenhouse gas emissions. 	<ul style="list-style-type: none"> Minimal complaints regarding dust/air quality. 	Not Applicable	<ul style="list-style-type: none"> No construction activities undertaken during the reporting period.
16		<ul style="list-style-type: none"> Amicable resolution of complaints 	Not Applicable	<ul style="list-style-type: none"> No pastoralist complaints recorded during activity recorded in Origin's incident management system.

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
17	<ul style="list-style-type: none"> Minimise the environmental nuisance for sensitive receivers as a result of civil and water bore activities, including Tourist visual amenity. 	<ul style="list-style-type: none"> Minimal nuisance-related complaints received from sensitive receptors, including landowners 	Compliant	<ul style="list-style-type: none"> No pastoralist complaints recorded during activity recorded in Origin's incident management system.
18		<ul style="list-style-type: none"> Amicable resolution of complaints. 	Not Applicable	<ul style="list-style-type: none"> No pastoralist complaints recorded during activity recorded in Origin's incident management system.
19	<ul style="list-style-type: none"> Minimise the risk of causing bushfires from Origin's activities. To minimise impacts on environmental habitat and fauna, soil erosion, impacts on stakeholders, impacts on culturally significant sites, public infrastructure and community lands. To ensure proper health and safety plan for activities. To prevent accidental fire risk and ensure safe storage of chemicals to prevent fire damage 	<ul style="list-style-type: none"> Successful fire management will be indicated by having no uncontrolled fires occurring as a result of civil works and water bore drilling activities. 	Not Applicable	<ul style="list-style-type: none"> No civil construction or water bore drilling completed during the report period.
20	<ul style="list-style-type: none"> To avoid disturbance of or damage to Aboriginal or cultural heritage artefacts or Sacred Sites. To minimise impacts upon or disruption to activities of Indigenous stakeholders in culturally significant areas. To ensure adequate background information and training is provided to employees and contractors working in culturally significant areas. To ensure that the health and safety of exploration workers and the community is not compromised through management of cultural and environmental awareness. 	<ul style="list-style-type: none"> No incidences of disturbance of archaeological sites or sites of cultural significance, or if disturbance is required, an application to disturb is submitted and approved prior to disturbance 	Compliant	<ul style="list-style-type: none"> Disturbance located within AAPA approved area adjacent to existing lease pad.

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
21	<ul style="list-style-type: none"> Minimise impacts upon environmental values of the local community. Minimise impacts on cultural heritage. Minimise safety risks to the public and other third parties. Maintain and enhance partnerships with the local community, including using local contractors. 	<ul style="list-style-type: none"> No unresolved reasonable complaints. - An overall social and economic benefit as compared to perceived adverse impacts as derived from consultations with community advisory groups 	Compliant	<ul style="list-style-type: none"> No complaints received from the determined Traditional Owners. recorded in Origin's incident management system. Local Aboriginal contractors used for ongoing site inspections and maintenance.
22		<ul style="list-style-type: none"> High level of satisfaction with complaint outcomes and complaint resolution processes. 	Not Applicable	<ul style="list-style-type: none"> Not applicable- No complaints received from the host Traditional Owners recorded in Origin's incident management system.
23		<ul style="list-style-type: none"> Where suitable, include Aboriginal employment in the proposed program. 	Compliant	<ul style="list-style-type: none"> Local Aboriginal contractors used for ongoing site inspections and maintenance.
Beetaloo Basin Groundwater Monitoring Bore Installation Program Kyalla EP 117				
1	<ul style="list-style-type: none"> Minimise disturbance to land and land use (including soils and terrain, flora and fauna). Protection of waterways. Avoid site contamination and remediate land areas disturbed by water bore drilling activities, including contaminated land. Optimise (in order of most to least preferable) waste avoidance, reduction, reuse, recycling, treatment and disposal and remove and disposal of regulated waste as soon as practicable to a licensed waste disposal facility or recycling facility. Return disturbed areas to a stable condition such that they are returned to a condition as close as practicable to the 	<ul style="list-style-type: none"> Land disturbance equal to or less than planned. 	Compliant	<ul style="list-style-type: none"> Approved clearing levels were increased from 6.86 ha to 9.86 ha via modifications under regulation 22 to accommodate additional lease pad disturbance and gravel pit disturbance. Total clearing levels for the Kyalla 117 N2 site were estimated at 5.05 ha lower than approved limit of 9.86 ha. This was confirmed through survey program completed May 2020.
2		<ul style="list-style-type: none"> Minimum incidences of erosion and sedimentation occurring. 	Compliant	<ul style="list-style-type: none"> No material incidents of erosion and sediment control identified or recorded in Origin's incident management system. Task observations completed by site supervisors identifying erosion and sediment hazards and controls

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
	surrounding area (or pre-disturbance state) within an acceptable time frame.			<ul style="list-style-type: none"> Observation data available identifying maintenance required for minor erosion works. Contractor maintenance requests confirm maintenance of site completed
3		<ul style="list-style-type: none"> Areas left safe, stable and non-polluting 	Compliant	<ul style="list-style-type: none"> Area is currently operational and has been incorporated into the main Kyalla 117 N2 lease pad with no material incidents of erosion identified beyond normal operations.
4	<ul style="list-style-type: none"> Minimise impacts to groundwater and maintain surface and groundwater values. Minimise erosion and sedimentation of waters as a result of water bore drilling activities 	<ul style="list-style-type: none"> No unacceptable risk or long-lasting change to surface and/or groundwater resources (quantity and quality). 	Compliant	<ul style="list-style-type: none"> Water quality data is provided to DEPWS quarterly. Water quality data does not indicate any material changes in water quality or level from water monitoring bore installation activities.
5		<ul style="list-style-type: none"> No release of site stormwater or wastewater exceeding baseline surface water quality 	Not applicable	<ul style="list-style-type: none"> The Kyalla EP 117 monitoring bore lease pad has been integrated into the broader Kyalla 117 N2 site. The larger site is fully bonded with offsite releases monitored and recorded as per the Drilling, stimulation and well testing EMP.
6		<ul style="list-style-type: none"> No long-lasting change in soil and surface water quality from base line conditions. 	Compliant	<ul style="list-style-type: none"> No incidents of spills or soil contamination or releases to surface water resulting from water bore drilling activities recorded in Origin's incident management system.
7		<ul style="list-style-type: none"> Stream and creek crossings disturbance minimised. 	Non applicable	<ul style="list-style-type: none"> No construction in stream crossings.

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
8	<ul style="list-style-type: none"> Minimise disturbance to flora and fauna. Minimise disturbance to sensitive areas. 	<ul style="list-style-type: none"> Monitoring bore lease located to minimise impacts to fauna habitat and sensitive vegetation 	Compliant	<ul style="list-style-type: none"> Monitoring bores located within scouted areas covered under the Land Condition Assessment. The surrounding vegetation communities are regionally extensive (open Corymbia Eucalypt woodland) with no impacts to sensitive flora or fauna recorded.
9		<ul style="list-style-type: none"> No native fauna impacts (injury or fatality) reported in OCIS during civil and water bore drilling related activities. 	Compliant	<ul style="list-style-type: none"> No incidents of fauna mortality associated with limited activities completed.
10		<ul style="list-style-type: none"> Security bond maintained until such time DITT is satisfied remediation of site. 	Compliant	<ul style="list-style-type: none"> Security bond submitted to DITT 19/11/2018. Security bond is in place.
11		<ul style="list-style-type: none"> No loss of sensitive vegetation resulting from Origin's activities. 	Compliant	<ul style="list-style-type: none"> All activities located within scouted areas covered under the Land Condition Assessment. The surrounding vegetation communities are regionally extensive (open Corymbia Eucalypt woodland) with no impacts to sensitive flora or fauna recorded.
12	<ul style="list-style-type: none"> Avoid the introduction of weeds Avoid the spread of existing weeds 	<ul style="list-style-type: none"> No introduction or spread of declared weeds resulting from Origins activities 	Compliant	<ul style="list-style-type: none"> 6 monthly weed surveys completed in May 2021 and October / November 2021. The Kyalla 117 N2 site is free of weeds. Annual weed monitoring report provided to DEPWS weed branch 23/03/2021, with the new report due in March 2022.
13	<ul style="list-style-type: none"> To minimise impacts on soil, surface water, groundwater, sensitive habitat and air quality. 	<ul style="list-style-type: none"> The absence of wastes remaining on site at completion of operations (i.e., general rubbish, waste chemicals, workshop 	Compliant	<ul style="list-style-type: none"> All rubbish from the site has been removed, with the site incorporated into the larger Kyalla 117 N2 lease. The Kyalla 117 N2 site is now an operational site.

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
	<ul style="list-style-type: none"> To minimise creation of food sources or habitat for pest species. 	wastes including oily rags, containers etc.).		<ul style="list-style-type: none"> No material listed waste produced during ongoing maintenance work
14	<ul style="list-style-type: none"> To minimise waste generation through reduce, reuse, recycle programs. 	<ul style="list-style-type: none"> Waste registers maintained for the duration of the project 	Compliant	<ul style="list-style-type: none"> Waste data reported to Origin in monthly HSE reports. No material listed waste produced during ongoing access track maintenance works.
15		<ul style="list-style-type: none"> Pest species not encouraged to the site. 	Compliant	<ul style="list-style-type: none"> No increase in pest species has been observed.
16	<ul style="list-style-type: none"> Minimise environmental nuisance due to dust for sensitive receptors resulting from Origin's activities. Minimise greenhouse gas emissions 	<ul style="list-style-type: none"> Minimal complaints regarding dust/air quality. 	Compliant	<ul style="list-style-type: none"> Task observations completed by site supervisors identifying erosion and sediment hazards and controls No complaints received regarding dust/air quality from this activity recorded in Origin's incident management system.
17		<ul style="list-style-type: none"> Amicable resolution of complaints 	Not Applicable	<ul style="list-style-type: none"> No complaints received regarding dust/air quality from this activity recorded in Origin's incident management system.
18	<ul style="list-style-type: none"> Minimise the environmental nuisance for sensitive receivers as a result of civil and water bore activities, including Tourist visual amenity 	<ul style="list-style-type: none"> Minimal nuisance-related complaints received from sensitive receptors, including landowners 	Compliant	<ul style="list-style-type: none"> Task observations completed by site supervisors identifying erosion and sediment hazards and controls No complaints received regarding dust/air quality from this activity recorded in Origin's incident management system.
19		<ul style="list-style-type: none"> Amicable resolution of complaints 	Not Applicable	<ul style="list-style-type: none"> No complaints received regarding dust/air quality from this activity recorded in Origin's incident management system.
20	<ul style="list-style-type: none"> Minimise the risk of causing bushfires from Origin's activities. 	<ul style="list-style-type: none"> Successful fire management will be indicated by having no 	Compliant	<ul style="list-style-type: none"> No incidents of fire resulting from groundwater monitoring bore

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
	<ul style="list-style-type: none"> To minimise impacts on environmental habitat and fauna, soil erosion, impacts on stakeholders, impacts on culturally significant sites, public infrastructure and community lands. To ensure proper health and safety plan for activities. To prevent accidental fire risk and ensure safe storage of chemicals to prevent fire damage. 	<ul style="list-style-type: none"> uncontrolled fires occurring as a result of civil works and water bore drilling activities. 		<ul style="list-style-type: none"> installation recorded in Origin's incident management system.
21	<ul style="list-style-type: none"> To avoid disturbance of or damage to Aboriginal or cultural heritage artefacts or Sacred Sites. To minimise impacts upon or disruption to activities of Indigenous stakeholders in culturally significant areas. To ensure adequate background information and training is provided to employees and contractors working in culturally significant areas. To ensure that the health and safety of exploration workers and the community is not compromised through management of cultural and environmental awareness. 	<ul style="list-style-type: none"> No incidences of disturbance of archaeological sites or sites of cultural significance, or if disturbance is required, an application to disturb is submitted and approved prior to disturbance 	Compliant	<ul style="list-style-type: none"> All activities undertaken within AAPA approved areas.
22	<ul style="list-style-type: none"> Minimise impacts upon environmental values of the local community. Minimise impacts on cultural heritage. Minimise safety risks to the public and other third parties. 	<ul style="list-style-type: none"> An absence of issues arising, which have the potential to affect the work program, is a good indication of successful communications 	Compliant	<ul style="list-style-type: none"> No complaints received from local community or determined Traditional Owners recorded in Origin's incident management system.
23		<ul style="list-style-type: none"> No unresolved reasonable complaints 	Not Applicable	<ul style="list-style-type: none"> No complaints received from local community or determined Traditional Owners recorded in

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Number	Environmental outcomes	Environmental Performance Standard	Performance Status	Evidence
	<ul style="list-style-type: none"> Maintain and enhance partnerships with the local community, including using local contractors 			Origin's incident management system.
24		<ul style="list-style-type: none"> An overall social and economic benefit as compared to perceived adverse impacts as derived from consultations with community advisory groups 	Compliant	<ul style="list-style-type: none"> All civil maintenance activities completed by local NT companies. Weed inspection activities completed by local indigenous contractors
25		<ul style="list-style-type: none"> High level of satisfaction with complaint outcomes and complaint resolution processes. 	Not Applicable	<ul style="list-style-type: none"> No complaints received from local community or determined Traditional Owners recorded in Origin's incident management system.
26		<ul style="list-style-type: none"> Where suitable, include Aboriginal employment in the proposed program. 	Compliant	<ul style="list-style-type: none"> Local aboriginal contractors with 100% Aboriginal employees are used for all weed inspections, general site inspections and ongoing maintenance.

2.3 Mandatory reporting requirements

Table 5 demonstrates Origin's compliance with reporting requirements under the Code and Regulations Schedule 1, item 11(2), which requires the EMP to include all information required to be recorded, monitored or reported has been provided. Where relevant, Origin confirms that all records, monitoring or required reporting under these standards has been provided to DEPWS or the relevant NT Government agency. This table summarises compliance for the two Origin EMPs covered under this AEPR.

Table 5 Summary of Code of Practice (COP) mandatory reporting requirements

No#	Reference	Requirement	Performance Status	Evidence
1	COP A.3.5	Geospatial information depicting areas cleared is to be provided to the Minister.	Compliant	<ul style="list-style-type: none"> GIS surveyed data of disturbance submitted to DEPWS 07/09/2020, within the previous AEPR period.

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No#	Reference	Requirement	Performance Status	Evidence
2	COP A.3.6 (b)	Weed management plan developed as part of the EMP must provide for ongoing weed monitoring.	Compliant	<ul style="list-style-type: none"> Weed management plan developed, with 6 monthly weed monitoring completed. Weed management plan submitted to DEPWS 15/11/2018. Annual weed monitoring report submitted to DEPWS on 31/03/2021.
3	COP A.3.7(a)vi	The fire management plan developed as part of the EMP must provide for annual fire mapping to monitor changes to fire frequency in the relevant areas.	Compliant	<ul style="list-style-type: none"> Bushfire management plan implemented. Annual fire mapping has been provided to DEPWS on 17/12/2021 – i.e. the next AEPR reporting period.
4	COP A.3.9(c) COP A.3.9(e)	The rehabilitation plan developed as part of the EMP requires progressive rehabilitation of significantly disturbed land which is required to commence no longer than 12 months following the cessation of activities on the land. It also requires regular maintenance and annual monitoring of rehabilitated areas.	Compliant	<ul style="list-style-type: none"> Rehabilitation management plan developed and submitted to DEPWS 17/04/2020 for Kyalla 117 N2 Rehabilitation management plan developed and submitted to DEPWS 19/04/2021, as a part of the Amungee NW 1H EMP.
5	COP B.4.13.2(c)	<p>As a minimum, the following must be recorded and reported for each stage (where a stage in this context means all fluids pumped at a particular depth interval):</p> <p>a) total volume of hydraulic fracturing fluid pumped,</p> <p>b) quality of water used (tested for analytes in section C.8 of this Code. Analyses do not need to be repeated if the same water source is used for multiple stages) and</p> <p>typical and maximum concentrations of chemicals or other substances used.</p>	Not Applicable	The EMP does not cover hydraulic fracturing.

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No#	Reference	Requirement	Performance Status	Evidence
6	COP B.4.13.2(k)iv	Where venting is the only technically feasible option for managing produced gas, the technical considerations preventing the use of the recovered gas must be recorded and included in the operator's annual report.	Not Applicable	The EMP does not cover exploration wells or activities anticipated to result in venting.
7	COP B.4.14.2(c)	All new barriers or new well operating envelopes must be verified and clearly documented and reported by submission of an updated well barrier integrity validation (WBIV) report to DITT.	Not Applicable	The EMP does not cover exploration well drilling or construction.
8	COP B.4.15.2(j)	Complete and accurate records of the entire decommissioning procedure must be kept, with these records submitted as part of the legislative reporting requirements for the decommissioning of petroleum wells.	Not Applicable	The EMP does not cover exploration well drilling or construction.
9	COP B.4.17.2(d)	Any guidelines published by the Northern Territory Government from time to time relating to reporting and data submission, and groundwater monitoring data standards must be followed.	Compliant	<ul style="list-style-type: none"> • All water monitoring bore completion reports have been submitted to DEPWS, including initial water quality data post completion. • Groundwater monitoring has been completed in accordance with the Preliminary guidelines for groundwater monitoring bore for exploration petroleum wells in the Beetaloo sub-basin • Groundwater monitoring data provided to DEPWS on: <ul style="list-style-type: none"> ○ 12/01/2021 ○ 12/02/2021 ○ 16/04/2021 ○ 17/05/2021 ○ 06/08/2021 ○ 22/10/2021
10	COP C.3(e)	The components of the wastewater management framework, include Monitor, manage and report in accordance with the	Not Applicable	No wastewater generated from activity.

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No#	Reference	Requirement	Performance Status	Evidence
		Wastewater Management Plan and Spill Management Plan.		
11	COP C.6.1(d)	Wastewater tracking documentation must be reported to the Minister at least annually in accordance with the framework provided in the EMP.	Not Applicable	No wastewater generated from activity.
12	COP C.7.1(d)ii	Wastewater Management Plan must include a program for monitoring and reporting against the effectiveness of the measures for the mitigation of interaction with wildlife, stock and human receptors with wastewater.	Not Applicable	No wastewater produced or stored associated with the activity.
13	COP D.4.3.2(f)	A written report detailing the levels of methane measured, the duration of the unusual readings and the results of the investigation (including remedial actions) must be submitted within one month of the significantly higher-level methane event being detected.	Not Applicable	This condition is associated with production and not exploration.
14	COP D.5.9.2(c)	Emissions from exploration, well construction (including during flowback) and workovers must be measured and reports submitted.	Not Applicable	No exploration well drilling, stimulation or testing proposed.
15	COP D.5.9.3(a)	Where natural gas is vented or flared at a gas processing or other downstream facility, emissions must be estimated and reported.	Not Applicable	No exploration well drilling, stimulation or testing proposed.
17	COP D.6.2(a)	Reports of baseline assessments must be submitted at the conclusion of each field campaign.	Not Applicable	CSIRO completed baseline assessments through DITT.
18	COP D.6.2(b)	Emissions reporting must be in accordance with Section D.5.6. Emissions associated with venting and flaring as described in Section D.5.9 must be provided separately to the Northern	Compliant	Beetaloo emissions report submitted to DEPWS on 30 September 2021 with any emissions (predominantly diesel usage) captured under this report.

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No#	Reference	Requirement	Performance Status	Evidence
		Territory Government in accordance with this Code.		
19	PER Reg 14	A current EMP remains in force until the interest holder notifies the Minister the activity is no longer being carried out and all of the environmental outcomes and obligations under the plan have been met, and the Minister advises the interest holder the notice is accepted and the plan ceases to be in force.	Compliant	All EMP's are still in force and have approximately 2 years remaining before the next review.
20	PER Reg 33	DEPWS is notified of reportable incidents within 2 hours of the interest holder becoming aware of the incident, or within 2 hours of the incident occurring. A written report must be provided within 24 hours if the initial report was made orally.	Not Applicable	No reportable incidents have been recorded.
21	PER Reg 34	Reports on reportable incidents are to be provided to DEPWS as soon as practicable and within 72 hours of the event occurring. A final report must be provided to DEPWS within 30 days after remediation/clean-up of the affected area.	Not Applicable	No reportable incidents have been recorded.
22	PER Reg 35	A written report of all recordable incidents must be provided to DEPWS not later than 15 days after the 90-day reporting period (unless otherwise agreed).	Compliant	Quarterly recordable incidents reports were provided as follows: <ul style="list-style-type: none"> • Q4 2020 report provided 14/12/2020 • Q1 2021 report provided 14/04/2021 • Q2 2021 report provided 01/07/2021
23	PER Reg 37A	A report about flowback fluid from hydraulic fracturing must be provided to the Minister within 6 months of the flowback occurring.	Not Applicable	Not Applicable to the scope of the EMP's as no exploration well drilling or hydraulic fracture stimulation activities completed.

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No#	Reference	Requirement	Performance Status	Evidence
24	PER Reg 37B	A report about produced water from hydraulic fracturing must be provided to the Minister within 6 months of the produced water being extracted.	Not Applicable	Not Applicable to the scope of the EMP's as no exploration well drilling or hydraulic fracture stimulation activities completed.
25	PER Schedule 1, item 9(2)	Interest holders are required to conduct future engagement with stakeholders, in accordance with the description in the EMP.	Compliant	<ul style="list-style-type: none"> Land access agreements are in place covering all current and future activities. Engagement with each stakeholder is undertaken on a monthly basis, or at a higher/lower frequency depending on the level of activity being completed onsite.
26	Schedule 1, item 12	Interest holder must notify the Minister, occupier of the land and owner of the land on which the activity is to be carried out before commencement of construction, drilling or seismic surveys.	Compliant	<p>The regulated activity commenced on:</p> <ul style="list-style-type: none"> Beetaloo Basin Groundwater Monitoring Bore Installation Program EP 98: 23/11/2018 Beetaloo Basin Groundwater Monitoring Bore Installation Program Kyalla EP 117: 11/12/2018 <p>Persons were notified as follows:</p> <ul style="list-style-type: none"> Minister – verbal via weekly DITT meeting 23/11/2018 (Origin was also in direct conversation with DITT, daily) Pastoralist – Amungee: 08/11/2018 via email. Pastoralist- Hayfield: 06/11/2018 via email and telephone
27	Environment Protection Act 2019 (NT) div 8	Duty to notify the NT EPA as soon as practicable but within 24 hours of any incident which occurs which causes or threatens to cause material or significant environmental harm	Not Applicable	No incidents which could cause or threaten to cause material or significant environmental harm occurred during reporting period.
28	Waste Management and Pollution Control Act	Duty to notify the NT EPA as soon as practicable but within 24 hours of any incident which occurs which causes or threatens to cause pollution resulting in material or significant environmental harm	Not Applicable	No incidents which could cause or threaten to cause material or significant environmental harm occurred during reporting period.

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No#	Reference	Requirement	Performance Status	Evidence
	1998 (NT) s 14			

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3. Summary of Compliance

3.1 Overview of Compliance

Table 6 and Table 7 provide a summary of the results of the compliance assessment against each of the EMP compliance requirements.

Table 6 Compliance summary groundwater monitoring bore installation program EP 98

Compliance Indicator	Number	Percentage
Compliant	25	100%
Not Compliant	0	0%
Not Applicable	27	

Table 7 Compliance summary Groundwater monitoring bore installation program EP 117

Compliance Indicator	Number	Percentage
Compliant	31	100%
Not Compliant	0	0%
Not Applicable	24	

3.2 Overview of items found not compliant or partially compliant

The following sections describe:

- the specific compliance requirements not met for the reporting period
- an analysis of the possible potential environmental harm or impact to environmental values resulting from non-compliance or partial compliance, using multiple lines of evidence
- a summary of the corrective actions already implemented, and further actions still required, as applicable, to ensure compliance is fully achieved in the future.

3.2.1 Ministerial Approval conditions

No non-compliances with Ministerial conditions were recorded during the reporting period.

3.2.2 Environmental Performance Standards

No non-compliances with environmental performance standards identified during reporting periods.

3.2.3 Regulatory Reporting

No non-compliances with regulatory reporting requirements were identified during the reporting period.

3.3 Application of Lessons Learned Across Origin's Onshore Interests

Due to the limited scope and nature of activities covered under the EMPs, no material lessons learnt have resulted from the activity.