### **Attachment**

# **Environmental Authority (EA) P-EA-100464322**

# **Proposed changes**

### 1. PL194 EA

Section	Changes Proposed	Reasoning  This administrative amendment updates the reference to a later version of the monitoring and sampling manual and updates the reference to the current edition of the Environment Protection Regulation.	
Schedule A – General Condition General 11 (a) & 11(c)	Existing:  (a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 – Environmental Protection (Water) Policy 2009 (c) for noise, the Environmental Protection Regulation 2008  Proposed:  (a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual Version 2, June 2018 – Environmental Protection (Water) Policy 2009  (c) for noise, the Environmental Protection Regulation 2019		
Schedule A – General Condition General 18	Existing:  General 18 The following infrastructure must be signed with a unique reference name or number in such a way that it is clearly observable:  (a) regulated dams and low consequence dams (b) exploration, appraisal, and development wells (c) water treatment facilities (d) brine encapsulation facilities (e) landfill cells (f) sewage treatment facilities	This amendment removes conditions no longer required under this EA, as the infrastructure types are no longer authorised.	



Section	Changes Proposed	Reasoning	
	<ul> <li>(g) specifically authorised discharge points to air and waters</li> <li>(h) any chemical storage facility associated with the environmentally relevant activity of chemical storage</li> <li>(i) field compressor stations</li> <li>(j) central compressor stations</li> <li>(k) gas processing facilities; and</li> <li>(l) pipeline compressor stations.</li> </ul>		
	<ul> <li>Proposed: Remove -</li> <li>Condition General 18 (d) brine encapsulation facilities</li> <li>Condition General 18 (e) landfill cells</li> <li>Condition General 18 (g) specifically authorised discharge points to air and waters</li> </ul>		
Schedule B – Water Condition Water 1	Existing:  Contaminants that will or may cause environmental harm must not be directly or indirectly released to any waters, except as authorised by condition (B15).	This amendment removes the reference to a condition no longer required in the EA.  This does not change the intention of the condition.	
Schedule B – Water	Proposed: Contaminants that will or may cause environmental harm must not be directly or indirectly released to any waters, except as authorised by this environmental authority.  Existing:	This administrative amendment	
Condition Water 9 (a)	A register must be kept of all <u>linear infrastructure</u> construction and maintenance activities in a <u>wetland of other environmental value</u> and <u>watercourses</u> , which must include:  (a) location of the activity (e.g. GPS coordinates ( <u>GDA94</u> ) and <u>watercourse</u> name)	updates the mapping to be used in the register of linear infrastructure and does not change the intent of the condition.	
	Proposed:  (a) location of the activity (e.g., GPS coordinates (GDA94, GDA2020 and watercourse name)		



Section	Changes Proposed	Reasoning
Schedule B – Water Condition Water 12	Existing:  A seepage monitoring program must be developed by a <u>suitably qualified person</u> which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for detection of any seepage of contaminants to groundwater as a result of storing contaminants by 1 August 2019.	This administrative amendment removes reference to a passed date which is no longer relevant.
	Proposed:	
	Water 12 A seepage monitoring program must be developed by a <u>suitably qualified person</u> which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for detection of any seepage of contaminants to groundwater as a result of storing contaminants in regulated structures.	
Schedule B – Water Condition B15 to B31	Remove (Conditions B15 to B31).	These conditions relate to the discharge of treated CSG water and monitoring requirements.
		This activity is no longer required to be authorised under this EA.
Schedule B, Table 2 – Treated CSG Water Release Point, Source and Receiving Waters	Remove (table).	This table relate to the discharge of treated CSG water and monitoring requirements.
		This activity is no longer required to be authorised under this EA.
Schedule B, Table 3 – Treated CSG Water Release Limits for Monitoring Point (M1) – Daily	Remove (table).	This table relate to the discharge of treated CSG water and monitoring requirements.
Monitoring		This activity is no longer required to be authorised under this EA.
Schedule B, Table 4 – Treated CSG Water Release Limits for Monitoring Point (M1) – Quarterly Monitoring	Remove (table).	This table relate to the discharge of treated CSG water and monitoring requirements.



Section	Changes Proposed	Reasoning
		This activity is no longer required to
		be authorised under this EA.
Schedule B, Table 5 –	Remove (table).	This table relate to the discharge of
Contaminant Release During		treated CSG water and monitoring
Flow Events		requirements.
		This activity is no longer required to
		be authorised under this EA.
Schedule B, Table 6 – Receiving	Remove (table).	This table relate to the discharge of
Water Upstream Background		treated CSG water and monitoring
Sites and Downstream Monitoring Points		requirements.
Worldoning Foliats		This activity is no longer required to
		be authorised under this EA.
Schedule BE – Coals Seam Gas	Remove (Conditions BE1 to BE22).	These conditions relate to the
Water Injection Trial		injection of treated CSG water and
Conditions BE 1 to BE 22		monitoring requirements.
		This activity is no longer required to
		be authorised under this EA.
Schedule BE, Table 1 – Details	Remove (table).	This table relate to the injection of
of Authorised Fluid Injection		treated CSG water and monitoring
		requirements.
		This activity is no longer required to
		be authorised under this EA.
Schedule BE, Table 2 – Specific	Remove (table).	This table relate to the injection of
Contaminant Limits for		treated CSG water and monitoring
Injection Fluid		requirements.
		This activity is no longer required to
		be authorised under this EA.



Section	Changes Proposed		Reasoning
Schedule BE, Table 3 – Monitoring Parameters and Frequencies for Injection Fluid	Remove (table).	This table relate to the injection of treated CSG water and monitoring requirements.	
	This activity is no longer required to be authorised under this EA.		
Schedule D – Land Condition Biodiversity 8B Schedule D, Table 2 – Maximum significant disturbance in	The petroleum activities authorised under condition (Biodiversity 8A) must not exceed the maximum footprint for the activities specified in <i>Schedule D, Table 2 – Maximum significant disturbance in environmentally sensitive areas and their protection zones</i> .		All disturbance areas in this table current record zero disturbance values. This contradicts with Schedule D, Table 1, which clearly provides for varying levels of
environmentally sensitive areas	Activity	Maximum Footprint	activities in these environmentally
and their protection zones.	Ground disturbance within a <u>Category B Environmentally Sensitive Area</u>	0 ha	sensitive areas and their protection
	Ground disturbance within a <u>protection zone</u> of a <u>Category B Environmentally Sensitive Area</u>	0 ha	zones.
	Ground disturbance within a Category C Environmentally Sensitive Area	0 ha	
	Ground disturbance within a <u>protection zone</u> of a <u>Category C Environmentally Sensitive Area</u>	0 ha	Schedule D, Table 1 directly reflects
	Change to:	Petroleum Activities (SMC). The SMC have been agreed between industry and regulatory authorities as	
	Activity	Maximum Footprint	providing adequate protection for
	Ground disturbance within a <u>Category C Environmentally Sensitive Area</u>	75 ha	ESAs.
			Arrow are proposing to amend the table to include authorisations in Category C ESA. Arrow has presented a rolled-up impact in Category C ESA with the break down of that make up in Attachment A. This proposed condition can then be read in conjunction with the proposed inclusion of Biodiversity 8C to provide the despite clause which authorises impacts in the ESA where they are in conflict with authorised activities in Schedule D, Table 1.



Section	Changes Proposed	Reasoning
Biodiversity 8C	Insert new proposed condition  Despite condition (Biodiversity 8A) and (Biodiversity 8B), essential petroleum activities are permitted in Category B and Category C ESAs where there is significant residual impact authorised in Schedule D, Table 2 – Significant residual impacts to prescribed environmental matters and where shapefiles (consistent with the DES Spatial Schema) of the impact can be provided to the administering authority upon request.	Proposed change is to provide a linkage to the authorised limit/ pool to be drawn down on through Table 2, and a despite clause to Schedule D, Table 1 – Authorised petroleum activities in environmentally sensitive areas and their protection zones (Table 1), to allow essential petroleum activities to occur in relevant ESA without the need to go through numerous EA amendments to authorise. These authorisations would also be linked to PEMs, offsets, and SRI assessments. The inclusion and linkage to the DES Spatial Schema is to include a loop back for DES compliance to check against the limits. i.e., by Arrow Energy providing spatial data consistent with Annual returns, ERC, and Plan of Operations. DES can then do periodic checks as to where disturbance has occurred in ESAs and have the limitations been set in Table 2 of the EA and PEMs complied



Section	Changes Proposed	Reasoning
		with. It then removes the need to provide GPS coordinates (which historically often only corner points), and an assessment where there are despite/exemptions provided for certain infrastructure as the EA provides for limitations in the ESA and PEMs table.
Protecting biodiversity values, Table 3 – Significant residual impacts to prescribed environmental matters	Changes: As per the following sections table Protecting biodiversity values, Table 3 – Significant residual impacts to prescribed environmental matters  REGULATED VEGETATION	These values represent updated predicted impacts based on the current infrastructure alignment, habitat mapping rules and ground-
Chivin Online Intal Matters	Remove:	truthed survey information.
	Endangered regional ecosystems RE 11.4.2	-
	Of Concern regional ecosystem (not within and urban area) RE 11.3.2, RE 11.3.4	Ecological assessment have included
	<ul> <li>Regional ecosystems (not within and urban area) that intersect a wetland on the on the vegetation management wetlands map RE 11.3.4, RE 11.3.2, RE11.3.25, RE11.4.12, RE 11.7.4.</li> </ul>	inspecting relevant data sources to identify threatened species (flora and fauna specially protected under
	Add:	the EPBC Act and NC Act 1992, which
	• Regional ecosystems (not within and urban area) that intersect a wetland on the on the vegetation management wetlands map RE 11.3.14 (0.6ha).	are known within and surrounding the SGP. 'Rules' were created to map



Section	Changes Proposed	Reasoning	
		habitat for these Matters of National	
	Change:	and State Environmental Significance	
	Regional ecosystems (not within and urban area) that intersect a wetland on the on the vegetation	(MNES and MSES) based on GIS data,	
	management wetlands map RE 11.3.18 (reduce from 0.43ha to 0.3ha), RE 11.5.1 (reduce from 0.72ha to	allowing the prediction of high value	
	0.5ha), RE 11.7.7 (increase from 0.14ha to 0.6ha).	habitat. These surveys and mapping	
		rules were also used to assess the	
	CONNECTIVITY AREAS	impacts and environmental values	
	Remove:	associated with PL194.	
	<ul> <li>Connectivity area that is a regional ecosystem (not in urban area) 6.7ha.</li> </ul>	Habitats were classed as 'core'	
	PROTECTED WILDLIFE HABITAT	habitat or 'general' habitat. Core	
	Remove:	habitat areas reflect those REs which	
	Habitat for an animal that is vulnerable wildlife:	are likely to be regularly inhabited	
	Jalmenus eubulus	by, or of 'high importance' to, the	
	- Juliicius Cubulus	species. Such areas include high	
	Add:	amenity habitat which could include	
	<ul> <li>Habitat for an animal that is vulnerable or endangered wildlife:</li> </ul>	important resources such as roosting	
	Petaurus australis (71.3ha)	and nesting sites or food resources.	
	Nyctophilus corbeni (71.9ha)	General habitats are 'those REs that	
	■ Stagonopleura guttata (72.2ha)	may be used less regularly by fauna'	
	■ Glyphodon (Furina) dunmalli (71.4ha)	(3DE and ESE 2011) and have lower	
	<ul><li>Adclardia cameroni (0.4ha)</li></ul>	amenity habitat. These definitions	
	<ul><li>Phascolarctos cinereus (145.7ha)</li></ul>	roughly match the definitions of	
	<ul><li>Petauroides volans (71.8ha)</li></ul>	'Core Habitat Possible' and 'General	
		Habitat Possible' in DES (2020),	
	Change:	which was not available in 2011. The	
	<ul> <li>Acanthophis antarcticus (increase from 53ha to 72.2 ha)</li> </ul>	mapping has been used to calculate	
	<ul><li>Calyptorhynchus lathami (increase from 16ha to 29.2ha)</li></ul>	predicted impacts (and subsequently	
	<ul> <li>Hemiaspis damelii (reduce from 36ha to 1.3ha)</li> </ul>	offset requirements) based on the	
		extent of Core Habitat Known and	
	FISH HABITAT AREAS	Core Habitat Possible.	
	Change:	Considerable field work has been	
	Fish passage (not in an urban area) – remove.	completed within and surrounding	
	Change Tatal numbers of Marines and state financial to the species to black along Co. 11. 11. 11.	the SGP area (which included the	
	<b>Change:</b> Total numbers of Maximum extent of impact to the ones in table below <i>Protecting biodiversity values,</i>	PL194 area) since this work was	
Ī	Table 3 – Significant residual impacts to prescribed environmental matters below:	1 LID T GICG SHICE THIS WOLK WGS	



Section	Changes Proposed	Changes Proposed				
	Add: Schedule D to the table title (see below).  Schedule D, Protecting biodiversity values, Table 3 – Signatters	gnificant residual impacts to pres	cribed environmental	completed our local knowledge has increased substantially. In a few cases, this has identified ways in which the mapping rules could be modified and improved for greater		
	Prescribed environmental matter	Prescribed environmental matter  Location of extent of impact impact				
	REGULATE	D VEGETATION		original work was completed.		
	Endangered regional ecosystem			These new additional species had		
	RE 11.4.2	PL194	<del>2 ha</del>	not been previously assessed (given their latest change in status) but		
	Of concern regional ecosystem (not within an urban area)	Of concern regional ecosystem (not within an urban area)				
	RE 11.3.2	PL194 4 ha		have been included in this assessment as an abundance of		
	RE 11.3.4	PL194	3 ha	caution based on likelihood of		
	Regional ecosystems (not within an urban area) within the watercourse on the vegetation management watercourse	banks of a relevant	occurrence assessment and suitability of habitat within the survey corridor for the PL194 area			
	RE 11.3.2 (BVG 17a)	PL194	0.14 ha	utilising the aforementioned ecology		
	11.3.4 (BVG 16c)	PL194	<del>0.72 ha</del>	surveys, survey data and mapping rules.		
	11.3.18 (BVG 17a)	PL194	<del>0.43 ha</del> 0.3ha			
	<del>11.3.25 (BVG 16a; 22c)</del>	PL194	<del>2.14 ha</del>	The changes in this table also		
	<del>11.4.12 (BVG 17a)</del>	PL194	0.14 ha	represent reduced disturbance		
	11.5.1 (BVG 17a; 18b)	PL194	<del>0.72 ha</del> 0.5 ha	through refinements to		
	11.7.4 (BVG 12a)	PL194	0.07 ha	infrastructure layout.		
	11.7.7 (BVG 12a)	PL194	<del>0.14 ha</del> 0.6			
	11.3.14 (BVG 18a)	PL194	0.6			
	CONNECT	CONNECTIVITY AREAS				
	Connectivity area that is a regional ecosystem (not in urba	Connectivity area that is a <u>regional ecosystem</u> (not in urban area)				
	PL194	PL194	6.7 ha			
	Essential habitat (not in an url		1			
	Phascolarctos cinereus <b>(Koala)</b>	PL194	8.7			



Section	Changes Proposed	Changes Proposed				
	PROTECTED WILDLIF	PROTECTED WILDLIFE HABITAT  Habitat for an animal that is vulnerable wildlife				
	Habitat for an animal that is vulnerable wildlife					
	Acanthophis antarcticus (Common Death Adder)	PL194 53 ha 72.2 h				
	Petaurus australis (Yellow-bellied Glider)	PL194	71.3 ha			
	Nyctophilus corbeni (South-eastern Long-eared Bat)	PL194	71.9 ha			
	Glyphodon (Furina) dunmalli (Dunmall's Snake)	PL194	71.4 ha			
	Stagonopleura guttata (Diamond Firetail)	PL194	72.2 ha			
	Calyptorhynchus lathami (Glossy Black Cockatoo)	PL194	<del>16</del> 29.2 ha			
	Adclarkia cameroni (Brigalow Woodland Snail)	PL194	0.4 ha			
	Jalmenus eubulus (Pale Imperial Hairstreak)	PL194	3 ha			
	Tachyglossus aculeatus (Echidna) PL194		<del>10 ha</del>			
	Habitat for an animal that is endangered wildlife					
	Hemiaspis damelii (Grey Snake)	PL194	<del>36 ha</del> 1.3 ha			
	Phascolarctos cinereus (Koala)	PL194 PL194	145.7 71.8			
	Petauroides Volans (Greater Glider)					
	Habitat for an animal that is Special Least Concern					
	<del>Tachyglossus aculeatus (<b>Echidna</b>)</del>	PL194	<del>11.21 ha</del>			
	FISH HABITAT A	AREAS				
	Fish passage (not in an urban area)	PL194	<del>1 0.25</del>			
Schedule D – Land Condition D17 to D22	Remove (Conditions D17 to D22).  These conditions relate to:					
	<ul> <li>Daandine Brine Dam 2</li> <li>release of treated CSG water to Wilke Creek</li> <li>disturbance areas for water release outlets, Tipton Treat</li> <li>Longswamp 31 monitoring bore</li> </ul>	<ul> <li>Daandine Brine Dam 2</li> <li>release of treated CSG water to Wilke Creek</li> <li>disturbance areas for water release outlets, Tipton Treated Water Pipeline</li> </ul>				



Section	Changes Proposed	Reasoning
Schedule D, table 4 – Coordinates Enclosing the Disturbance Area for Daandine	Remove (table).	This activity is no longer required to be authorised in this EA.
Brine Dam 2  Schedule D, Table 5 –  Coordinates Enclosing the  Disturbance Area for the Water  Release Outlet and Pipeline	Remove (table).	This activity is no longer required to be authorised in this EA.
Schedule D, Table 6 – Coordinates Enclosing the Disturbance Area for Tipton Treated Water Pipeline	Remove (table).	This activity is no longer required to be authorised in this EA.
Schedule D, Table 7 – Authorised footprint for disturbance to environmentally sensitive areas	Remove (table).	This activity is no longer required to be authorised in this EA.
Schedule E – Acoustic Condition E10 and E11	Remove (Conditions E10 and E11).	These conditions relate to the Tipton expansion project which is no longer required to be authorised under this EA.
Schedule E, Table 3 – Tipton Expansion Project units	Remove (table).	This table relates to the Tipton expansion project which is no longer required to be authorised under this EA.
Schedule F, Table 1 – Authorised Point Sources	Remove (table).	This table relate to activities no longer required to be authorised under this EA.
Schedule F, Table 2 – Annual Air Quality Monitoring	Remove (table).	This table relate to activities no longer required to be authorised under this EA.



#### Tables for PL194 EA.

### Attachment A:

Schedule D, Table 2 – Authorised footprint for disturbance to environmentally sensitive areas and PPZ

Regional Ecosystem (ground-verified)	Area (ha)	VMA	BD (ESA)	Cat B ESA (ERE)	Cat C ESA (OCRE)	Cat C ESA (Essential Habitat)	Cat C ESA (State Forest)
11.3.14	0.554	LC	NCAP			0.167	0.428
11.3.18	0.408	LC	NCAP			0.216	0.216
11.3.25	0.303	LC	OC		0.303		
11.5.1	50.701	LC	NCAP			6.352	31.256
11.7.4	5.958	LC	NCAP			0.625	2.724
11.7.7	13.453	LC	NCAP			1.398	13.123
Regrowth (11.5.1)	49.608	LC	NCAP			7.213	6.058
Regrowth (11.7.4)	23.172	LC	NCAP			1.341	
Total	199.559	To	otals	0.000	0.303	17.313	56.964