# **Model conditions**

**Environmental Protection Act 2994** 

# **ERA 63 - Sewage Treatment**

This document provides advice to potential environmental authority holders on the model conditions that may be applied to their environmental authority. It is relevant for environmentally relevant activity (ERA) 63 operations if a site-specific application is made

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# 1 Introduction

Introductory text is currently being drafted and will be included in the published document.

# 2 Model conditions

Schedule: General						
G1.0	This environmental authority authorises the activities listed in <i>Table X – Authorised activities</i> to the extent that they are carried out in accordance with:  (a) the activity's corresponding maximum scale; and  (b) figure < <i>INSERT</i> (reference) (optional)>  Table X – Authorised activities					
	Activity	Maximum scale				
	Sewage treatment plant  Note: For larger sewerage catchments where infiltration and ingress are likely to result in significant wet weather inflows, insert the following requirement	Daily inflows must not exceed daily peak design capacity of <insert x=""> times the Design Average Dry Weather Flow (DADWF) of <insert day="" ml="" xx=""> or <insert l="" s="" yy=""> on any day unless the standard treatment processes of the sewage treatment plant are bypassed.</insert></insert></insert>				
	Sewage treatment plant  Note: For smaller sewerage catchments where wet weather inflows are expected to be comparable with dry weather inflows	Daily inflows must not exceed <insert l="" xx=""> on any day.</insert>				
G2.0	An annual monitoring report (Annual Monitoring Report) must be prepared and submitted to the administering authority by 30 November each year.					
Schedule: A	ir					
A1.0	activity to cause a relevant act at a Note: This condition puts a line are based on the modelling provided w	not authorise odours or airborne contaminants generated by the a sensitive place or commercial place.  ound what is authorised by the authority. The release limits are with the application. If the modelling is incorrect and a relevant act recial place – this is not authorised.				
A2.0	Effluent spray or overspray must r	not move beyond the Effluent Disposal Area.				
A3.0	Optional: insert any specific requirements that are necessary to mitigate the risk of human pathogen contamination. This may include:  (a) <effluent <insert="" area="" as="" be="" disposal="" disposed="" drip="" effluent="" irrigation="" method="" must="" only="" or="" requirements="" subsurface="" such="" the="" to="" via="">; and</effluent>					
	(c) a <insert dimensions=""> specified in <insert app<="" th=""><th></th></insert></insert>					
	(e) buffer distance requirement	ased to land <insert requirements="" timing="">; and nts&gt;</insert>				

Schedule	Schedule: Noise					
N1.0	This environmental authority does not authorise noise generated by the activity to cause a relevant act at a sensitive place or commercial place.					
Schedule	e: Waste					
W1.0	All waste generated in carrying out the activity must be lawfully reused, recycled or lawfully removed to a facility that can lawfully accept the waste.					
W2.0	Dewatering and/or storing of any sludge generated by the activity must be undertaken in an area which provides an impervious barrier to land and waters.					

#### 3 Model conditions for specific situations

#### 3.1 When effluent is discharged to land

These conditions will apply, in addition to the conditions set out in section 2, only if effluent is discharged to an infiltration trench or through an irrigation scheme. This is where the application and running of the plant requires disposal to land as part of the treatment and disposal option.

#### Schedule: Land

- L1.0 Contaminants generated by the activity must only be released to the Effluent Disposal Area shown in Appendix 1 <*INSERT plan reference details: Title, date, revision*> and defined by the GPS coordinates below:
  - (a) <INSERT GPS point for a bound of the irrigation area>
  - (b) <INSERT GPS point for a bound of the irrigation area>
  - (c) <INSERT GPS point for a bound of the irrigation area>
  - (d) <INSERT GPS point for a bound of the irrigation area>
- L1.1 Contaminants generated by the activity must only be released to the Effluent Disposal Area where the following requirements are complied with:
  - (a) the release limits for each quality characteristic are complied with at the monitoring locations as specified in *Table X Contaminant limits for releases to land*; and
  - (b) releases are monitored at all monitoring locations and at the minimum monitoring frequency for each quality characteristic specified in *Table X Contaminant limits for releases to land.*

Table X - Contaminant limits for releases to land

		Release limits			
Monitoring location	Onitoring location Quality characteristic (units) Minimum Mean Maximum		Minimum monitoring frequency		
<insert site-<br="">specific locations&gt;</insert>	Irrigation volume (L/day)	-	<insert></insert>	<insert></insert>	Daily
GDA2020 MGA2020 Zone xx (Fastings and	Irrigation rate (mm/day)	-	<insert></insert>	<insert></insert>	
Zone xx (Eastings and Northings)	Total Nitrogen TN (mg/L as N)	-	<insert></insert>	<insert></insert>	<insert></insert>
Note: Decimal degrees to be provided to a	Total Phosphorus TP (mg/L as P)	-	<insert></insert>	<insert></insert>	<insert></insert>
minimum of 3 decimal places.	pH (pH units)	<insert></insert>	-	<insert></insert>	<insert></insert>
	Escherichia coli (E.coli) cfu/100mL)	-	-	<insert></insert>	<insert></insert>
	Electrical Conductivity (EC) (µS/cm)	-	-	<insert></insert>	<insert></insert>
<insert site-<br="">specific locations for other irrigation areas&gt;</insert>	<insert other<br="">site-specific characteristics e.g sodium adsorption ratio&gt;</insert>	<insert></insert>	<insert></insert>	<insert></insert>	<insert></insert>

L1.2	Monitoring required by condition L1.1 must be undertaken when effluent is being disposed, unless effluent disposal has ceased for longer than the relevant parameters specified minimum frequency (e.g., if pH was only required to be monitored once a week, then a pH sample would not be required after the first week following cessation of the release).
L1.3	The irrigation rate monitoring required by condition L1.1 must be calculated based on the total area irrigated on that day, and the actual volume of effluent irrigated on that same day.
L1.4	Mean calculations required by condition L1.1 must be taken as a Long-Term Rolling Limit, meaning a limit applied to consecutive samples taken over a 6-month period < OR INSERT another period> (on a rolling basis for limit calculations) where consecutive samples are taken at the minimum frequency specified in Table X - Contaminant limits for releases to land.
L1.5	Volume monitoring required by condition L1.1 must be undertaken using a flow meter.
L1.6	The Effluent Disposal Area must have a minimum surface area of <insert area="">.</insert>
L1.7	When soil in the Effluent Disposal Area is saturated, effluent must not be released to land.
L2.0	All organic material removed from vegetation growing in the Effluent Disposal Area must be transported and disposed of in an area other than in the Effluent Disposal Area.
L3.0	Wet weather storage, with a minimum volume of <insert volume=""> must be installed and maintained on the site for the storage of effluent.</insert>
L4.0	Ponding of contaminants within the Effluent Disposal Area must not occur after irrigation has ceased.
L5.0	Contaminants must not run off to areas beyond the Effluent Disposal Area.
L6.0	Soil structure must not be degraded as a result of the activity.
L7.0	The build-up of nutrients, salinity, sodicity and heavy metals in the soil and subsoil must be minimised.
L8.0	The Effluent Disposal Area must be maintained with an appropriate crop in a viable state.  INSERT specific crop depending on the risk of nutrient leaching or harvest sustainability>
L9.0	This environmental authority does not authorise the release of contaminants to land in a way that causes a relevant act outside of an Effluent Disposal Area.

# 3.2 When effluent is provided to a person

These conditions will apply, in addition to the conditions set out in section 2 and 3.1, only if treated effluent is proposed to be supplied as a temporary use option to a third party, or offsite to supplement vegetation. In certain circumstances, a Recycled Water Management Plan may be required by the Department of Regional Development, Manufacturing and Water. More information can be found at Business Queensland – water management plan for recycled water providers.

These conditions are not appropriate for sites where the disposal of effluent through a third-party agreement or offsite is integral to the ongoing operation of the facility.

Schedul	Schedule: Land					
L10.0	Effluent may be removed from the site and provided to a person with the written consent of that person.					
L10.1	Records of treated effluent removed from the site and supplied to a person must be made and include the following:  (a) the person the effluent was supplied to; and (b) the Escherichia coli (E.coli) (cfu/100mL) concentration of the effluent supplied; and (c) the volume of effluent supplied; and (d) the date the effluent was supplied.					
L10.2	Immediately upon the request of the administering authority, you must cease providing effluent to a person.					

# 3.3 Land Monitoring Program conditions

These conditions will apply, in addition to the conditions set out in section 2 and 3.1, only if effluent is discharged to land and the risk of adverse impacts to land requires additional monitoring of the receiving environment. Please see the department's Disposal of effluent using irrigation, Technical Guideline for further information regarding land monitoring.

monitoring	•	sing imgation, recrinical Guid	deline for further information regarding fan				
Schedul	e: Land						
L11.0	By <insert authority="" dat="" specified="" the=""> a land monitoring p</insert>		om take effect date of this environmental				
	(a) designed by an appro and	priately qualified person to m	nonitor the effects of the activity on land;				
		(b) reviewed annually by an appropriately qualified person and certified as being appropriate to monitor the effects of the activity on land.					
L11.1	The LMP required must includ	e:					
	<ul> <li>(a) taking soil samples at a soil depth range of 0-30cm and 30-60cm <insert appropriate="" depths="" site="" specific="" where=""> from monitoring locations specified in Table X – Land Monitoring Plan; and</insert></li> <li>(b) monitoring at the monitoring location, and at the minimum monitoring frequency, and for the quality characteristics specified in Table X – Land Monitoring Plan.</li> <li>Table X – Land Monitoring Plan</li> </ul>						
	Monitoring locations	Quality characteristic (units)	Minimum monitoring frequency				
	At least one reference site, and representative locations within the Effluent Disposal Area.	Soil texture class	Within 20 business days after this environmental authority takes effect				
	<or></or>						
	<insert location="" site-specific=""></insert>						
	(Name; GDA2020 MGA2020 Zone xx	Emerson aggregate stability test	Within 20 business days after this environmental authority takes effect, and every 3 years thereafter				
	(Eastings and Northings)  * Decimal degrees to be	pH (pH units)	<pre><or another="" frequency="" insert="" site-specific=""></or></pre>				

Nitrogen adsorption

Phosphorus adsorption capacity (mg/kg)

Total kjeldahl nitrogen

Colwell phosphorus

Electrical Conductivity (EC)

(mg/kg)

(mg/kg)

(µS/cm)

capacity (mg/kg)

provided to a minimum of 3

decimal places.

Г					
		changeable sodium rcentage (%)			
	Sal	linity leaching fraction			
		tion exchange capacity eg/100g)			
		osphorus Buffering lex (PBI)			
	spe	NSERT other site- ecific characteristics e.g avy metals>	<insert frequency="" site-specific=""></insert>		
L11.2	The LMP required by condition L1 are taken, that record the extent to		tions recorded at the time soil samples of:		
	<ul><li>(a) effluent disposal induced s</li><li>Area; and</li><li>(b) surface ponding of effluent</li></ul>	_	o areas outside the Effluent Disposal		
L11.3	The LMP required by condition L1	1.0 must include:			
	<ul> <li>(a) the development of trigger values; and</li> <li>(b) the development of management actions to mitigate any adverse impacts caused, or likely to be caused, by the activity; and</li> <li>(c) the implementation of the management actions if an LMP trigger value is reached.</li> </ul>				
L11.4	The LMP required by condition L1 and within a timeframe (which must authority.		the administering authority upon request, day) specified by the administering		
L11.5	Any comments made by the administering authority on the LMP must be addressed to the reasonable satisfaction of, and within a timeframe (which must be at least 5 business days) specified by the administering authority.				
L11.6			must be prepared by an appropriately y with the Annual Monitoring Report as		
L11.7	The LMP Report required by condi	ition L11.6 must include:			
	(a) a summary of the monitoring	ng data obtained under th	e LMP in the relevant financial year; and		
			e LMP, and include graphical and a comparison of data trends against		
			vironmental risk in response to information where trigger values in the LMP were		
	(d) the results of those manag	gement actions.			
L11.8	The LMP Report required by condi results by an appropriately qualifie		analysis and interpretation of monitoring:		
		including but not limited t	to sustainably receive contaminant of the capacity of the Effluent Disposal activity; and		

	(b) whether the Effluent Disposal Area is sufficient in size for the volume of effluent disposed of to land; and
	(c) whether contaminants generated by the activity have migrated beyond the Effluent Disposal Area; and
	(d) how the soil in the Effluent Disposal Area has been impacted by the activity.
L11.9	The LMP Report required by condition L11.6 must include recommended action(s) to mitigate any adverse impacts caused, or likely to be caused, by the activity in respect of contaminant releases to land.
L11.10	Any action(s) recommended under condition L11.9 in the LMP Report must be undertaken:
	(a) as soon as practicable, but no later than 10 business days after receiving the LMP Report; or
	(b) another period agreed to in writing by the administering authority.

# 3.4 Vegetation Monitoring Program conditions

These conditions will apply, in addition to the conditions set out in section 2 and 3.1, only if effluent is discharged to land and the risk of adverse impacts to vegetation requires additional monitoring of the receiving environment.

Schedule	and
L12.0	y <insert 3="" date="" effect="" environmental="" from="" longer="" months="" no="" of="" specified="" take="" than="" the="" this="" uthority=""> a Vegetation Monitoring Program (VMP) must be:</insert>
	<ul> <li>(a) designed by an appropriately qualified person to monitor the effects of the activity on the vegetation within the effluent disposal area; and</li> </ul>
	(b) reviewed annually <or another="" frequency="" insert=""> by an appropriately qualified person(s) and certified as being appropriate to monitor the effects of the activity on the vegetation within the effluent disposal area.</or>
L12.1	he VMP must include quarterly monitoring that includes:
	(a) visual monitoring of vegetation within the Effluent Disposal Area; and
	(b) representative photographs of vegetation within the Effluent Disposal Area; and
	(c) a calculation of the total percentage of vegetation cover in a viable state over the Effluent Disposal Area; and
	<ul><li>(d) a comparison of results of the monitoring undertaken with previous monitoring, including (photo)graphical representations showing relevant limits, and trends.</li></ul>
L12.2	a calculation made under the VMP demonstrates that the percentage of vegetation cover in viable state within the Effluent Disposal Area is below 85%:
	(a) within 10 business days of that calculation being made, recommended action to restore at least 85% of the vegetation cover to a viable state in the Effluent Disposal Area must be prepared by an appropriately qualified person; and
	(b) Within 20 business days of receiving those recommended action, measures must be taken to implement the recommended action, or a different timeframe for taking such action agreed to in writing by the administering authority.
L12.3	he VMP must be submitted to the administering authority upon request and within a timeframe pecified (which must not be less than 1 business day) by the administering authority.
L12.4	ny comments made by the administering authority on the VMP must be addressed to the easonable satisfaction and within a timeframe (which must not be less than 5 business days) pecified by the administering authority.
L12.5	report summarising the results of the VMP (VMP Report) must be prepared by an appropriately ualified person and submitted to the administering authority with the Annual Monitoring Report as equired under condition G2.0.
L12.6	he VMP Report required by L12.5 must include:
	<ul> <li>(a) a summary of the previous 12 months monitoring data obtained under the VMP; and</li> <li>(b) an evaluation of all relevant data obtained under the VMP, including all relevant historical data and any data trends; and</li> <li>(c) a description of all actions taken to improve the viable state of vegetation in the Effluent</li> </ul>
	Disposal Area in response to a requirement under condition L12.2.

# 3.5 When effluent is discharged to water

These conditions will apply, in addition to the conditions set out in section 2, if the activity will release to water. Please note that the administering authority must refuse to grant an application in certain circumstances where the authority considers that the activity will have a residual impact on water quality in Great Barrier Reef catchment waters. Further information is available in the Reef discharge standards for industrial activities guideline accessible via Reef discharge standards for industrial activities Guideline.

#### Schedule: Water

# WT1.0 Contaminants generated by the activity must only be released to waters via a discharge location specified in *Table X – Contaminant limits for releases to water* where the following requirements are complied with:

- (a) the contaminants being released comply with the release limits for each quality characteristic specified in *Table X Contaminant limits for releases to water*; and
- (b) the contaminants being released are monitored at their minimum monitoring frequency for each quality characteristic specified in *Table X Contaminant limits for releases to water.*

Table X - Contaminant limits for releases to water

Monitoring location	Discharge location	Quality Characteristic		Minimum monitoring			
iocation		(units)	Minimum	Median	Maximum	frequency	
<insert site-<="" td=""><td><insert site-<="" td=""><td>BOD<sub>5</sub> (mg/L)</td><td>-</td><td>-</td><td><insert></insert></td><td><insert></insert></td></insert></td></insert>	<insert site-<="" td=""><td>BOD<sub>5</sub> (mg/L)</td><td>-</td><td>-</td><td><insert></insert></td><td><insert></insert></td></insert>	BOD <sub>5</sub> (mg/L)	-	-	<insert></insert>	<insert></insert>	
specific locations>	specific locations>	Daily volume (L/day)	-	<insert></insert>	<insert></insert>	Daily	
(Name; GDA2020 MGA2020 Zone xx	(Name; GDA2020 MGA2020 Zone xx (Eastings and Northings) Note: Decimal degrees to be provided to a minimum of 3 decimal places.	Total Chlorine (mg/L) <remove chlorine<br="" if="">is not used&gt;</remove>	-	-	<insert></insert>	<insert></insert>	
(Eastings and Northings)		Total Nitrogen TN (mg/L)	-	<insert></insert>	<insert></insert>	<insert></insert>	
Decimal degrees to be provided		Oxides of nitrogen (NOx)	-	-	-	<insert></insert>	
to a minimum of 3 decimal		provided to a minimum	Total Suspended Solids (mg/L)	-	-	<insert></insert>	<insert></insert>
places.		Ammonia (mg/L as N)	-	-	<insert></insert>	<insert></insert>	
		Total Phosphorus TP (mg/L)	-	<insert></insert>	<insert></insert>	<insert></insert>	
		Filterable reactive phosphorus (FRP)	-	-	-	<insert></insert>	
		pH (pH units)	<insert></insert>	-	<insert></insert>	<insert></insert>	
		Dissolved Oxygen (mg/L)	2 mg/L	-	-	<insert></insert>	
		Enterococci (organisms/100mL)	-	<insert></insert>	<insert></insert>	<insert></insert>	
		Total Phosphorus Annual Mass Load	-	-	<insert></insert>	<insert></insert>	

			(dry weather)				
			Total Nitrogen Annual Mass Load (dry weather) (kg)	-	-	<insert></insert>	<insert></insert>
			Annual volume (L/year)	-	-	<insert></insert>	<insert></insert>
	<insert additional="" locations="" site-="" specific=""></insert>	<insert additional site- specific locations&gt;</insert 	<insert site-<br="">specific characteristics&gt;</insert>	<insert></insert>	<insert></insert>	<insert></insert>	<insert></insert>
	Bypass <remove if<br="">no bypass is permitted&gt;</remove>	<insert site- specific locations&gt;</insert 	-	-	-	-	-
WT1.1			ices INSERT> indition WT1.0 for Total	Nitrogen and	Total Phosph	orus must be	taken as grab
		quired by cor	nces INSERT> adition WT1.0 for Total	Nitrogen and <sup>-</sup>	Total Phosph	orus must be	taken as
WT1.2	<insert (long-term)="" (short-term),="" (start="" 52-week="" 6="" a="" as="" authority="" be="" blocks="" by="" calculated="" calculated.="" calendar="" commencement="" date)="" dates,="" defined="" designated="" environmental="" example,="" financial="" for="" in="" is="" it="" median="" might="" of="" or="" over="" rolling="" such="" the="" timeframes="" to="" weekly="" weeks="" which="" year,="">.</insert>						
WT1.3	Annual Mass Load and Volume monitoring required by condition WT1.0 must be calculated on a rolling <x> weekly basis.</x>						
WT1.4	Water samples required by condition WT1.0 must be representative of the general condition of the discharge.						
WT1.5	The limit of re	eporting for al	I monitoring tests requi	red by condition	on WT1.0 mu	st be less tha	n the release
WT1.6	Ammonia, oxides of Nitrogen (NOx) and filterable reactive phosphorus (FRP) must be measured when total nitrogen and total phosphorus are monitored.						
WT1.7	Volume monitoring required by condition WT1.0 must be undertaken using a flow meter.						
WT2.0	Releases to surface waters must not cause:						
	<ul><li>(a) erosion of the bed and banks of the receiving waters; or</li><li>(b) disturbance to vegetation; or</li><li>(c) a build-up of sediment.</li></ul>						
WT3.0	<insert if="" relevant=""> Bypass releases must be screened prior to being released.</insert>						
WT4.0	The administering authority must be notified within 24 hours of any bypass release commencing and ceasing.						
<u> </u>							

WT5.0	The following details must be recorded in relation to each bypass release and included in the notification required by condition WT4.0:		
	<ul> <li>(a) the start time, date and duration of the release; and</li> <li>(b) the estimated volume of the bypass release; and</li> <li>(c) the level of treatment at the sewage treatment plant prior to discharge; and</li> <li>(d) the reason the release needed to occur; and</li> <li>(e) any monitoring of the effluent quality released.</li> </ul>		
WT6.0	Releases to surface waters must not produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter.		
WT7.0	Contaminants from the activity must not be released to groundwater.		
WT8.0	The information recorded under condition WT1.0 must be submitted to the administering authority upon request in the specified electronic format via WaTERS.		

# 3.6 Water Receiving Environment Monitoring Program conditions

These conditions will apply, in addition to the conditions set out in section 2 and 3.5, only if effluent is discharged to water and the risk of adverse impacts to water requires additional monitoring of the receiving environment.

Schedule:	Water				
WT9.0	By <insert 3="" authority="" date="" effect="" environmental="" from="" longer="" months="" no="" of="" specified="" take="" than="" the="" this=""> a water receiving environment monitoring program (WREMP) must be:</insert>				
	<ul> <li>(a) designed by an appropriately qualified person with experience and qualifications in water monitoring, to monitor the effects of the activity on waters; and</li> <li>(b) reviewed annually <i>OR INSERT another frequency&gt;</i> by an appropriately qualified person and certified as being appropriate to monitor the effects of the activity on waters.</li> </ul>				
WT9.1	2 11 1				
WT9.2	The WREMP required by o	ondition WT9.0 must include:			
	<ul> <li>(a) monitoring of the receiving environment at the monitoring location(s), and at the minimum monitoring frequency, and for the quality characteristics specified in <i>Table X – Water Receiving Environment Monitoring Program</i>.</li> <li>Table X– Water Receiving Environment Monitoring Program</li> </ul>				
			Minimum monitoring		
	Monitoring locations	Quality characteristic (units)	frequency		
		BOD₅ (mg/L)			
	<insert site-specific<="" td=""><td>Total Suspended Solids (mg/L)</td><td></td></insert>	Total Suspended Solids (mg/L)			
	locations for the reference site(s) and	Total Phosphorus TP (mg/L)			
	downstream sites>	Total Nitrogen TN (mg/L)	Monthly		
	(Name; GDA2020 MGA2020 Zone xx (Eastings and Northings)	pH (pH units)	<pre><or frequency="" insert="" site-="" specific=""></or></pre>		
	Note: Decimal degrees to be provided to a	Dissolved Oxygen (mg/L)			
	minimum of 3 decimal places.	Chlorophyll a			
		<insert characteristics<br="" site-specific="">e.g daily stream flow&gt;</insert>			
WT9.3	The WREMP required by condition WT9.0 must be designed to monitor the effects of the activity on the receiving environment and while effluent is being discharged from the site that includes:				
	referable environm (b) monitoring at test I receiving waters a	ol locations that are suitable for establishing tental value for the receiving waters; and ocations that are suitable for determining the, or are potentially, being impacted by the occur in periods where the receiving water	the extent to which the e activity; and		

	flow level.		
WT9.4	The WREMP required by condition WT9.0 must include:		
	<ul> <li>(b) the development of trigger values for the receiving waters; and</li> <li>(c) procedures to determine when trigger values are reached; and</li> <li>(d) the development of management actions to mitigate any adverse impacts caused, or likely to be caused, the activity; and</li> <li>(e) the implementation of the management actions if a WREMP trigger value is reached.</li> </ul>		
WT9.5	The WREMP required by condition WT9.0 must be submitted to the administering authority upon request and within a timeframe (which must be at least 1 business day) specified by the administering authority.		
WT9.6	Any comments made by the administering authority on the WREMP must be addressed to the reasonable satisfaction and within a timeframe (which must be at least 5 business days) specified by the administering authority		
WT9.7	A report summarising the results of the WREMP (WREMP Report) must be prepared by an appropriately qualified person and submitted to the administering authority with the Annual Monitoring Report as required under condition G2.0.		
WT9.8	The WREMP Report required by condition WT9.7 must include:		
	(a) a summary of the previous 12 months monitoring data obtained under the WREMP in the relevant financial year; and		
	<ul> <li>(b) an evaluation of all relevant data obtained under the WREMP, including graphical representations showing all historical data and a comparison of data trends against WREMP trigger values; and</li> </ul>		
	<ul> <li>a description of all actions taken to minimise the environmental risk in response to data or other information obtained during from the WREMP, including actions taken where WREMP trigger values were reached; and</li> </ul>		
	(d) the results of those management actions.		
WT9.9	The WREMP Report required by condition WT9.7 must include analysis and interpretation of the data and other information obtained through the implementation of the WREMP that determines:		
	<ul> <li>(a) the ongoing capacity of the receiving waters to sustainably receive contaminant releases from the activity, including by not limited to the capacity of the receiving waters to sustainably assimilate nutrient loads from the activity; and</li> </ul>		
	(b) how the receiving waters have been impacted by the activity.		
WT9.10	The WREMP Report required by condition WT9.7 must include recommended action(s) to mitigate any adverse impacts caused, or likely to be caused, by the activity in respect of contaminant releases to surface waters.		
WT9.11	The action(s) required under condition WT9.10 in the WREMP Report must be undertaken:		
	<ul><li>(a) as soon as practicable, but no more than 10 business days after receiving the WREMP monitoring report; or</li><li>(b) another period agreed to in writing by the administering authority.</li></ul>		

# 3.7 Groundwater Monitoring Program conditions

These conditions will apply, in addition to the conditions set out in section 2 and 3.5, only if effluent is discharged to land and the risk of adverse impacts to groundwater requires additional monitoring of the receiving environment.

Schedule:	Schedule: Water				
WT10.0	By <insert 3="" authority="" date="" effect="" environmental="" from="" longer="" months="" no="" of="" specified="" take="" than="" the="" this=""> a groundwater monitoring program (GWMP) must be:</insert>			ironmental	
	<ul> <li>(a) designed by an appropriately qualified person(s) with experience and qualifications in groundwater monitoring, to monitor the effects of the activity on groundwaters; and</li> <li>(b) reviewed annually by an appropriately qualified person(s) and certified as being appropriate to monitor the effects of the activity on groundwaters.</li> </ul>				
WT10.1	The GWMP require	ed by condition WT10.0 must include:			
	<ul> <li>(a) clearly stated aims and objectives; and</li> <li>(b) a monitoring program that is developed using the latest version of the administering authority's guideline <i>Using monitoring data to assess groundwater quality and potential environmental impacts</i>, and that specifies: <ol> <li>(i) groundwater flow characteristics for the groundwater that could be impacted by the activity (potentially impacted GW), including a <i><insert details="" e.g="" flow="" gradient,="" groundwater="" hydraulic="" rates="" site-specific=""></insert></i>; and</li> <li>(ii) surface waters that could interact with potentially impacted GW (potentially impacted SW); and</li> <li>(iii) the environmental values of the potentially impacted GW and the potentially impacted SW; and</li> <li>(iv) cumulative impacts on the potentially impacted GW; and</li> <li>(v) the spatial extent of the monitoring program, including the location of monitoring bores required under condition WT10.2; and</li> <li>(vi) the temporal context of the monitoring program, including timing and frequency of sampling.</li> </ol> </li></ul>				
WT10.2	An appropriately qualified person(s) must install groundwater monitoring bores that enable monitoring from:  (a) the uppermost aquifer; and (b) control location(s) that are suitable for establishing a background or other referable environmental value for the potentially impacted GW; and (c) test location(s) that are suitable for determining the extent to which the potentially impacted GW are, or are potentially, being impacted by the activity; and (d) for potentially impacted GW, hydraulically up-gradient bore(s) and hydraulically downgradient bore(s) of the activity.				
WT10.3	Monitoring under the GWMP, must include:  (a) monitoring of the receiving environment at the monitoring location(s), and at the minimum monitoring frequency, and for the quality characteristics specified in <i>Table X – Groundwater Monitoring Program</i> .  Table X – Groundwater Monitoring Program			e minimum	
	Monitoring locations	Quality characteristic (units)	Minimum monitoring frequency		
	<insert site-<br="">specific locations&gt;</insert>	pH	Quarterly OR		
	(Name; GDA2020	Electrical Conductivity (μS/cm)	<insert site-<="" td=""><td></td></insert>		

	MGA2020 Zone xx (Eastings and Northings)  Note: Decimal degrees to be provided to a minimum of 3 decimal places.	Total Nitrogen TN (mg/L)	specific frequency>
		Total Phosphorus TP (mg/L)	
		Calcium, Chloride, Potassium, Magnesium, Sodium, Sulphate, Bicarbonate, and Carbonate (mg/L)	
		Standing groundwater level (m)	
		<insert characteristics="" site-specific=""></insert>	
WT10.4	The GWMP require	ed by condition WT10.0 must include:	
	(b) the development of trigger values for the potentially impacted GW; and		
	(c) procedures	s to determine when trigger values are reached	d; and
	<ul><li>(d) the development of management actions to mitigate any adverse impacts caused, or likely be caused, by the activity; and</li></ul>		
	(e) the implementation of the management actions if an GWMP trigger value is reached.		
WT10.5	The GWMP required by condition WT10.0 must be submitted to the administering authority upon request and within a timeframe (which must be at least 1 business day) specified by the administering authority.		
WT10.6	Any comments made by the administering authority on the GWMP must be addressed to the reasonable satisfaction and within a timeframe (which must be at least 5 business days) specified by the administering authority.		
WT10.7	A report summarising the results of the GWMP (GWMP Report) must be prepared by an appropriately qualified person(s) and submitted to the administering authority with the Annual Monitoring Report as required under condition G2.0.		
WT10.8	The GWMP Report required by condition WT10.7 must include:		
	(a) a summary of the monitoring data obtained under the GWMP in the relevant financial year; and		
	<ul> <li>(b) an evaluation of all relevant data obtained under the GWMP, including graphical representations showing all relevant historical data and a comparison of data trends against the GWMP trigger values; and</li> </ul>		
	<ul><li>(f) a description of all actions taken to minimise the environmental risk in response to data or other information obtained during the GWMP, including actions taken where GMPW trigger values were reached; and</li><li>(g) the results of those management actions.</li></ul>		
WT10.9	The GWMP Report required by condition WT10.7 must include analysis and interpretation of monitoring results by an appropriately qualified person that determines:		
	(a) whether an and	y deep drainage of contaminants from the act	ivity into groundwater has occurred;
	(b) how the groundwater has been impacted by the activity.		
WT10.10	The GWMP Report required by condition WT10.7 must include recommended action(s) to mitigate any adverse impacts caused, or likely to be caused, by the activity in respect of potentially impacted GW.		
WT10.11	Any action(s) recommended by the GWMP Report must be undertaken:		

- (a) as soon as practicable, and no more than 10 business days after receiving the GWMP monitoring report; or
  (b) another period agreed to in writing by the administering authority.

#### 3.8 Point source water quality offset conditions

These conditions will apply, in addition to the conditions set out in section 2 and 7, if a nutrient offset is proposed. Nutrient offsets are especially relevant to address section 41AA of the Environmental Protection Regulation 2019, where the applicant is proposing to discharge fine sediment or dissolved inorganic nitrogen to the Great Barrier Reef catchment waters. The Point Source Water Quality Offsets Policy 2019 describes how to offset water quality impacts, accessible via Point Source Water Quality Offsets Policy 2019 (des.qld.gov.au). The Draft Point Source Water Quality Offsets Guideline 2019 provides high level guidance to support the policy, accessible via Draft Point Source Water Quality Offsets Guideline 2019 (des.qld.gov.au). The Reef discharge standards for industrial activities guideline provides guidance regarding the section 41AA requirements.

Water quality offset conditions will be developed on a site-specific basis and model conditions may be developed in the future.

#### 4 Schedule: Definitions

**Note:** these definitions are specific to the sewage treatment model conditions. The definitions in the common model conditions will also apply.

Where a word or phrase in this document is defined in this Schedule or within the document, it has its corresponding meaning. Where a word or phrase in this document is not defined in this Schedule, it has the meaning given to it in (in order of priority):

- (a) the Environmental Protection Act 1994, its regulations or its environmental protection policies;
- (b) Environmental Offsets Act 2014;
- (c) Regional Planning Interests Act 2014;
- (d) Waste Reduction and Recycling Act 2011;
- (e) The Acts Interpretation Act 1954;
- (f) the Macquarie Dictionary (taking account of the context in which the word or phrase is used in this document).

For example, environmental value, environmental harm, environmental nuisance, material environmental harm, serious environmental harm and relevant act are defined in the EP Act and groundwater is defined in the Environmental Protection Regulation 2019.

Defined words or phrases in the singular include the plural and vice versa.

#### Annual mass load is calculated as follows:

- (a) Annual mass load total nitrogen (kg) = yearly sum of daily release volume (ML) x yearly long term median total nitrogen concentration (mg/L); and
- (b) Annual mass load total phosphorus (kg) = yearly sum of daily release volume (ML) x yearly long term median total phosphorus concentration (mg/L).

<u>Note:</u> calculations should be undertaken on a rolling basis based on nutrient sampling <u>OR</u> can be calculated as the sum of the Annual Mass Load minus a nutrient offset approved by the administering authority.

**BOD**<sub>5</sub> means the 5-day biochemical oxygen demand determined using standard tests (e.g. those used by NATA laboratories). This test is not inhibited for nitrification, otherwise would be referred to as "carbonaceous" BOD.

**Bypass(ed)** means when the standard treatment processes of the sewage treatment plant, excluding screening, do not occur:

- (a) as a result of wet weather and inflows that are in excess of the daily peak design capacity for inflow of the sewage treatment plant; and
- (b) the release of untreated, or partially treated, effluent from the sewage treatment plant to the environment occurs.

**Composite samples** means taking one sub sample of equal volume every *<INSERT number of hours <three hours for high-risk and eight hours for low-risk>* over 24 hours in a day to make a single sample.

Note: composite sampling includes the use of an automatic sampler as well as a portable sampler.

**Commercial place** means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

Day means any 24-hour period of a calendar day.

**Design Average Dry Weather Flow** (DADWF) means the average dry weather flow of the maximum design capacity of the sewage treatment plant.

#### Dry weather day:

- (a) means a day which less than <INSERT> mm of rainfall is recorded at:
  - (i) any rainfall measuring station recognised by the Commonwealth Bureau of Meteorology within the sewered area connected to the sewage treatment plant; or
  - (ii) if no such measuring station exists, at the nearest such station to where the relevant part of the activity is being carried out; and
- (b) excludes days during which recorded rainfall over the *<INSERT>* preceding days exceeds a cumulative rainfall of *<INSERT>* mm [INSERT values based on catchment characteristics].

**Effluent** means the liquid fraction of treated sewage.

Limit of reporting means the lowest level of a substance that can be detected by a method.

**Median** means the middle value of data from monitoring events undertaken over the past *<INSERT 12 months* or other value>, on a rolling basis, where half the data are smaller and half the data are larger. If the number of samples is even, the median is the arithmetic average of the two middle values

**Monitor, monitored and monitoring** means monitoring the impact of an activity on the receiving environment and includes analysing, assessing, examining, inspecting, measuring, modelling or reporting any of the following matters—

- (a) the quantity, quality, characteristics, timing and variability of the release of any contaminant; and
- (b) the effectiveness of any control measure; and
- (c) the characteristics of, and impact on, the receiving environment; and
- (d) the effectiveness of remedial or rehabilitation measures (if applicable to the relevant monitoring requirement).

**Nutrient offset** means projects in accordance with the *Flexible options for managing point source water emissions: A voluntary market-based mechanism for nutrient management* or more recent additions or supplements to the document that become available, as agreed to with the administering authority.

**Saturated** means the soil moisture level is greater than the soil field capacity. **Field capacity means** the amount of water retained in soil when the soil has been allowed to drain for 24hrs under normal gravity conditions.

Sludge means any residual, semi-solid material that is produced as a by-product from the activity.

**Total Nitrogen (TN)** means the sum of Organic Nitrogen, Ammonia Nitrogen, Nitrite plus Nitrate Nitrogen, expressed as mg/L as Nitrogen. This includes both the inorganic and organic fraction of nitrogen.

**Total Phosphorus (TP)** means the sum of the reactive phosphorus, acid-hydrolysable phosphorus and organic phosphorus, as mg/L of Phosphorus. This includes both the inorganic and organic fraction of phosphorus.

**Trigger values** are physicochemical, biological, or other parameter-specific measurement values used to indicate where an environmental value is at risk of environmental harm.

**Up-gradient bore** means a bore, in a location hydraulically up gradient from those aspects of the activity that may affect groundwater quality.

Viable state means able to live and grow.

**WaTERS** is the Water Tracking and Electronic Reporting System database formally known as the Point Source Database.

wet weather Day means a day which is not a dry weather day.	wet weather day means a day which is not a dry weather day.		

# Version history

Version	Date	Description of changes
1.00	21 May 2014	Original version.
1.01	05 June 2014	Page number correction and error in wording of condition G5 corrected
2.00	24 November 2015	Updated corporate style
2.01	01 July 2016	Added policy register reference
2.02	3 July 2017	Updated reference from Sustainable Planning Act 2009 to Planning Act 2016
3.00	07 September 2017	Condition numbers updated to reflect the DES condition library numbering (Connect conditions). Minor amendments made to some conditions for consistency with other model conditions.
3.01	29 September 2017	Minor formatting changes.
3.02	12 October 2017	Correction made to 'How to comply' section of condition PMG013.
3.03	25 June 2018	Document rebranded to align with machinery of government changes.
3.04	08 October 2019	Updated to reflect the Environmental Protection Regulation 2019 remake
3.05	02 December 2019	Updated to fix minor page numbering error
4.00	XX XX 2021	Major review for enforceability, consistency and to check that the conditions are contemporary, streamlined and proportionate to risk.