

Groundwater impact assessment criteria

This document lists the impact assessment criteria that are applied by DPE Water in undertaking impact assessment for permanent type groundwater dealing and approval applications.

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Summary of impact assessment criteria tables

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Table A: Impact assessment criteria for the Lower Lachlan groundwater source

Lo	Lower Lachlan Groundwater Source		
Im	pact on the water table (unconfined systems)	Impact on the semi-confined/confined systems	
1.	 Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.1 metre at any: a) groundwater-dependent ecosystem identified in the water sharing plan e.g. springs and wetlands. b) high priority culturally significant site. 	 Cumulative extraction must not cause the pumping water level (as metres below ground level) to drop below 40% of the <i>Relative Total</i> <i>Available Drawdown</i> at: a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence). 	
2.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 10% of the <i>Total Available Drawdown</i> to a maximum of 2 metres at:	 b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores). 	
	a) any 3rd or higher order connected surface water source.b) vegetation groundwater-dependent ecosystem identified in the water sharing plan.	 Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 2 metres at any 3rd party water supply works. 	
3.	Cumulative extraction over a ten-year period must not cause the recovered water level (metres below ground level) to drop below 25% (capped at 5 metres) of the <i>Relative Total Available</i> <i>Drawdown</i> at:		
	a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).		
	b) any other water supply work (e.g. at any basic landholder rights bores).		
4.	Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 2 metres at any 3 rd party water supply work.		

Table B: Impact assessment criteria for the Lower Murrumbidgee Deep and Lower Murray groundwater sources

Lower Murrumbidgee Deep and Lower Murray groundwater sources

Impact on the semi-confined/confined systems

- 1. Cumulative extraction over a ten-year period must not cause the pumping water level (metres below ground level) to drop below 70% of the *Total Available Drawdown* above the top of the productive aquifer at:
 - a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).
 - b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores).
- 2. Additional drawdown over a ten-year period cannot exceed 10% of the *Total Available Drawdown* to a maximum of 3 metres at any 3rd-party water supply work.

Table C: Impact assessment criteria for the Lower Murray Shallow Groundwater Source

Lower Murray Shallow Groundwater Source

Impact on the water table (unconfined systems)

- 1. Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.1 metre at any:
 - a) groundwater dependent ecosystem identified in the water sharing plan e.g. springs and wetlands.
 - b) high priority culturally significant site.
- 2. Cumulative extraction over a ten-year period must not cause drawdown to exceed 10% of the Total Available Drawdown to a maximum of 2 metres at any:
 - a) 3rd or higher order connected surface water source.
 - b) vegetation groundwater dependent ecosystem identified in the water sharing plan.
- 3. Cumulative extraction over a ten-year period must not cause the recovered water level to decline by more than 5 metres at:
 - a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).
 - b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores).
- 4. Additional drawdown over a ten-year period cannot exceed 2 metres at any 3rd-party water supply work.

Table D: Impact assessment criteria for the NSW Borders Rivers Upstream Keetah Bride and NSW Borders Rivers Downstream Keetah Bride groundwater sources

NSW Borders Rivers Upstream Keetah Bride and NSW Borders Rivers Downstream Keetah Bride	
Groundwater Sources	

Im	pact on the water table (unconfined systems)	Impact on the semi-confined/confined systems
1.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.1 metre at any: a) Groundwater-dependent ecosystem identified	These criteria apply to bores in NSW only, production bores in Queensland are assessed against a separate set of rules as per the current agreement between NSW and Queensland.
	in the water sharing plan e.g. springs and wetlands.	 Cumulative extraction over a ten-year period must not cause the pumping water level (as metres below ground level) to drop below 40% of
•	b) high priority culturally significant site.	the Relative Total Available Drawdown ¹ at:
2.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 10% of the Total Available Drawdown to a maximum of 2 metres at:	 a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).
	a) any 3rd or higher order connected surface water source.	b) any other water supply work including the applicant's bores (i.e. at any basic landholder
	b) vegetation groundwater-dependent	rights bores).
	ecosystem identified in the water sharing plan.	2. Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i>
3.	must not cause the recovered water level (metres	 Drawdown to a maximum of 3 metres at any 3rd-party water supply works. Note: If this criterion fails at any bores on the Queensland side of the border then the Queensland impact assessment rules apply.
	below ground level) to drop below 25% (capped at 5 metres) of the Relative <i>Total Available</i> <i>Drawdown</i> at:	
	a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).	
	b) any other water supply work (e.g. at any basic landholder rights bores).	
4.	Additional drawdown over a ten-year period cannot exceed 10% of the Total Available Drawdown to a maximum of 2 metres at any 3rd party water supply work.	

Table E: Impact assessment criteria for all other alluvial groundwater sources not already covered

All alluvial groundwater sources excluding:

Lower Lachlan, Lower Murrumbidgee Deep, Lower Murray, Lower Murray Shallow, NSW Border Rivers Upstream Keetah Bridge and NSW Border Rivers Downstream Keetah Bridge groundwater source

Impact on the water table (unconfined systems)			pact on the semi-confined/confined systems		
1.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.1 metre at any:	1.	Cumulative extraction must not cause the pumping water level (as metres below ground level) to drop below 40% of the <i>Relative Total</i> <i>Available Drawdown</i> at:		
	a) groundwater-dependent ecosystem identified in the water sharing plan e.g. springs and wetlands				 a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an
	b) high priority culturally significant site.		access licence)		
2.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 10% of the <i>Total Available Drawdown</i> to a maximum of 2		 b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores). 		
	metres at:	2.	Additional drawdown over a ten-year period		
	a) any 3rd or higher order connected surface water source	Draw party	cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 3 metres at any 3 rd		
	 b) vegetation groundwater-dependent ecosystem identified in the water sharing plan. 		party water supply works.		
3.	Cumulative extraction over a ten-year period must not cause the recovered water level (metres below ground level) to drop below 25% (capped at 5 metres) of the <i>Relative Total Available</i> <i>Drawdown</i> at:		;		
	a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence)				
	b) any other water supply work (e.g. at any basic landholder rights bores).				
3.	Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 2 metres at any 3 rd party water supply work.				

Table F: Impact assessment criteria for all coastal sand groundwater sources

Сс	Coastal sand groundwater sources				
Im	pact on the water table (unconfined systems)	Impact on the semi-confined/confined systems			
1.	 Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.1 metres at any: a) groundwater dependent ecosystem identified in the water sharing plan e.g. National Parks, 	 Cumulative extraction must not cause the pumping water level (as metres below ground level) to drop below 40% of the <i>Relative Total</i> <i>Available Drawdown</i> at: a distance of 200 metres from any production 			
	wetlands, State Emergency Planning Policy areas.	water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).			
	b) high priority culturally significant site.	b) any other water supply work including the			
2.	must not cause drawdown to exceed 10% of the	applicant's bores (i.e. at any basic landholder rights bores).			
	<i>Total Available Drawdown</i> to a maximum of 2 metres at any:	Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i>			
	a) 3rd or higher order connected ¹ surface water source.	<i>Drawdown</i> to a maximum of 2 metres at any 3 rd party water supply works.			
	 b) vegetation groundwater dependent ecosystem identified in the water sharing plan. 				
inc	Cumulative extraction over a ten-year period must not result in the predicted impact exceeding 0.5 metres at any seawater body/saline water body. cluding but not limited to beaches, estuaries, wetlands, drains ers or creeks.				
4.	Cumulative extraction over a ten-year period must not cause the recovered water level (metres below ground level) to drop below 25% (capped at 5 metres) of the <i>Relative Total Available</i> <i>Drawdown</i> at:				
	a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).				
	b) any other water supply work (e.g. at any basic landholder rights bores).				
5.	Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 2 metres at any 3 rd - party water supply work.				

Table G: Impact assessment criteria for the Eastern Recharge and Southern Recharge groundwater sources of the GAB

Ea	Eastern Recharge and Southern Recharge groundwater sources of the Great Artesian Basin				
Impact on the water table (unconfined systems)			Impact on the semi-confined/confined systems		
1.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.1 metres at any:	1.	Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.2 metres, at any:		
	a) groundwater dependent ecosystem identified in the water sharing plan e.g. springs.		a) groundwater dependent ecosystem identified in the water sharing plan e.g.		
	b) high priority culturally significant site.		springs.		
2.	Cumulative extraction over a ten-year period		b) high priority culturally significant site.		
	must not cause drawdown to exceed 10% of the <i>Total Available Drawdown</i> to a maximum of 2 metres at any:	2.	Additional drawdown at the state border* over a ten-year period must not cause the potentiometric surface to:		
	a) 3rd or higher order connected surface water		a) decline by more than 1 metre.		
	source.		b) fall below ground level.		
3	 b) vegetation groundwater dependent ecosystem identified in the water sharing plan. Cumulative extraction over a ten-year period 	3.	Cumulative extraction over a ten-year period must not cause the pumping water level (as metres below ground level) to drop below 40% of the Relative Total Available Drawdown at:		
0.	must not cause the recovered water level to decline more than 25% of the <i>Relative Total</i> <i>Available Drawdown</i> (capped at 5 metres) at:		a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval		
	a) a distance of 200 metres from any production		linked to an access licence).		
	water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).		 b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores). 		
	 b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores). 	4.	Additional drawdown at a flowing bore over a ten-year period cannot:		
4.	Additional drawdown over a ten-year period		a) cause the bore to cease flowing.		
	cannot exceed 10% of the Total Available		b) drop by more than 1 metre.		
	<i>Drawdown</i> to a maximum of 2 metres at any 3 rd - party water supply works.	5.	Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 3 metres at any non- flowing 3 rd -party water supply works.		

Table H: Impact assessment criteria for the GAB Central, Surat and Warrego groundwater sources

GAB Central, Surat and Warrego groundwater sources

Impact on the semi-confined/confined systems

- 1. Cumulative extraction over a ten-year period must not cause drawdown to exceed 0.2 metres, from the current recovered water level, at any:
 - a) groundwater dependent ecosystem identified in the water sharing plan e.g. springs.
 - b) high priority culturally significant site.
- 2. Additional drawdown at the state border over a ten-year period must not cause the potentiometric surface to:
 - a) decline by more than 1 metre.
 - b) fall below ground level.
- 3. Cumulative extraction over a ten-year period must not cause the potentiometric surface to decline more than 30 metres from the 2018 potentiometric surface at:
 - a) a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence).
 - b) any other water supply work (i.e. at any basic landholder rights bores).
- 4. Additional drawdown at a flowing bore over a ten-year period cannot:
 - a) cause the bore to cease flowing.
 - b) drop by more than 1 metre.
- 5. Additional drawdown over a ten-year period cannot exceed 3 metres at any non-flowing 3rd-party water supply works.

Table I: Impact assessment criteria for porous and fractured rock groundwater sources

Im	pact on the water table (unconfined systems)	Impact on the semi-confined/confined systems
1.	 Cumulative drawdown over a ten-year period must not cause drawdown to exceed 0.1 metres from the current recovered water level, at any: a) groundwater dependent ecosystem identified in the water sharing plan e.g. hanging swamps, springs, wetlands. b) high priority culturally significant site. Cumulative extraction over a ten-year period must not cause drawdown to exceed 10% of the <i>Total Available Drawdown</i> to a maximum of 2 metres at any: a) 3rd or higher order connected surface water source. b) vegetation groundwater dependent ecosystem identified in the water sharing plan. 	 Cumulative extraction over a ten-year period must not cause the recovered water level (metres below ground level) to drop below 259 of the <i>Relative Total Available Drawdown</i> at: a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence). any other water supply work (i.e. at any basic landholder rights bores). Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 3 metres at any 3^r party water supply works.
3.	Cumulative extraction over a ten-year period must not cause the recovered water level (metres below ground level) to drop below 25% of the <i>Relative Total Available Drawdown</i> at:	
	 a distance of 200 metres from any production water supply works including the applicant's bores (e.g. bores on an approval linked to an access licence). 	
	 b) any other water supply work including the applicant's bores (i.e. at any basic landholder rights bores). 	
4.	Additional drawdown over a ten-year period cannot exceed 10% of the <i>Total Available</i> <i>Drawdown</i> to a maximum of 2 metres at any 3 rd - party water supply works.	