

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information														Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main levels of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description		
Australia	Australia-wide	An assessment of groundwater management and monitoring costs in Australia	NWC and SKM	2012	Waterlines Report Series No 90	Technical	MDBA0017	Australia-wide	Several - regional plan	Australia-wide report	Not specified	groundwater monitoring of salinity trends	Not specified / unknown	Not applicable	Not specified / unknown	Limited definition	"ageing monitoring bore network throughout Australia" bore replacement/ refurbishment should be a risk-based priority	Yes, groundwater monitored periodically	GDEs not identified	N/A	N/A	no RCL to manage	Not specified / unknown	N/A	Not specified / unknown	N/A	N/A		
Australia	Australia-wide	Assessing the value of groundwater	NWC and Marsden Jacob Associates	2012	Waterlines Report Series No 89	Non-Technical	MDBA0040	Australia-wide	Several - regional plan	Australia-wide	Not specified	all uses considered	Not specified / unknown	Not applicable	Within Allocated Limit	Reasonably defined	varied - included salinity management	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	metering of extraction bores	Also, water quality indicators	Understanding of scientifically established relationships	N/A - several case studies assessed	Not specified / unknown	Degradation of groundwater quality	e.g. Shepparton Sub-Surface Drainage Program (SSDP) to manage saline groundwater.		
Australia	Australia-wide	Cost recovery for groundwater planning and management in Australia	NWC, Frontier Economics and SKM	2012	Waterlines Report Series No 88	Non-Technical	MDBA0041	Several	Several - regional plan	Several - regional plan	Not specified	Cultural, environmental, stock, domestic	Not specified / unknown	Not applicable	Not specified / unknown	Reasonably defined	Sustaining environmental flows, salinity, algae, water-dependent ecosystems	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	financial incentives to reduce extraction	Groundwater charges to influence incentives for efficient groundwater use, this will limit groundwater use activities that impose costs, the costs may be fixed or variable depending several factors.	Not specified / unknown	Not specified	Not specified / unknown	Hydrogeological integrity impact	Water availability, water quality	RCL not specified, derivation of mechanism not specified	
Australia	Australia-wide	Impacts of groundwater extraction on streamflow in selected catchments throughout Australia	NWC and SKM	2012	Waterlines Report Series No 84	Non-Technical	MDBA0042	Several	Several - regional plan	Several - regional plan	Not specified	Stock, domestic, irrigation, agricultural, industrial/commercial	Not specified / unknown	Connected	Not specified / unknown	Well defined (based on numeric model)	GW-SW interaction	Not specified / unknown	GDEs not identified	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Cease to pump rules based on trigger levels where GW-SW connectivity is high	Not specified / unknown	Not specified	Not specified / unknown	impact to river baseflows	Risk to streamflow depletion analysed by risk profiles for connectivity and significance of hydrogeological impacts	RCL not specified	
Australia	Australia-wide	Assessment of groundwater licensing, metering and extraction estimation arrangements and techniques in Australia	NWC and SKM	2012	Waterlines Report Series No 83	Non-Technical	MDBA0043	Several	Several - regional plan	Several - regional plan	Not specified	Stock, domestic, agricultural, irrigation, de-watering	Not specified / unknown	Not applicable	Not specified / unknown	Reasonably defined	Impacts associated with over-extraction, GDEs, groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	not specified		Not specified / unknown	Not specified	Not specified / unknown	Hydrogeological integrity impact	Used a traffic light assessment of the progress made in implementing systems in regions with priority aquifers	RCL not specified management mechanism not specified	
Australia	Australia-wide	Australian groundwater modelling guidelines	NWC, SKM, NCGRT	2012	Waterlines Report Series No 82	Technical	MDBA0044	Several	Several - regional plan	Several - regional plan	Not specified	Not specified	Not specified / unknown	Not specified / unknown	Not specified / unknown	Well defined (based on numeric model)	GW-SW interaction	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified		Detailed scientific study	Not specified				RCL not specified, groundwater use not specified, management mechanisms not specified	
Australia	Australia-wide	Guidance for groundwater storage utilisation in water planning	GHD, Ecosol, Vanessa O'Keefe, Hamstead Consulting, NWC	2012	Waterlines Report Series No 81	Non-Technical	MDBA0045	Several	Several - regional plan	Several - regional plan	Not specified	Stock, domestic, agricultural, industry	Not specified / unknown	Not specified / unknown	Not specified / unknown	Reasonably defined	GW-SW interaction, GDEs, wetlands, water quality	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	Groundwater access governed by predetermined triggers, salinity, groundwater levels	Not specified / unknown	Numerous	Understanding of scientifically established relationships	GDEs, SW-GW connectivity, GW quality degradation	Risk assessments, impacts on GW-SW interaction, GDEs		
Australia	Australia-wide	A national approach for investigating and managing poorly understood groundwater systems	RPS Aquaterra, NWC	2012	Waterlines Report Series No 78	Non-Technical	MDBA0047	Several	Several - regional plan	Several - regional plan	Not specified	Stock, domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Limited definition	GDEs, GW-SW connectivity, water quality	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	Trigger such as incremental development from low to high water entitlement, water quality triggers, water level triggers	Not specified / unknown	Not specified	Not specified / unknown	GDEs, SW-GW connectivity, GW quality degradation	Groundwater flow systems, confinement, surface water connectivity and recharge	RCL not specified, specific groundwater use not specified.	
Australia	Australia-wide	Progress in managed aquifer recharge in Australia	SKM, NWC and CSIRO	2012	Waterlines Report Series No 73	Technical	MDBA0048	Not specified	Not specified	Not specified	Not specified	Not specified	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Well defined (based on numeric model)	GDEs, salinity, sodicity, pathogens, chemicals, turbidity, radionuclides, pressure levels, contaminant migration, aquifer/aquard dissolution, well stability, greenhouse gases	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	Not specified	Not specified / unknown	GDEs, SW-GW connectivity, GW quality degradation	Risk assessments, evaluations	RCL not specified, groundwater use not specified, management mechanisms not specified	
Australia	Australia-wide	Ecological water requirements of groundwater systems: a knowledge and policy review	NWC, Moya Tomlinson	2011	Waterlines Report Series No 68	Non-Technical	MDBA0049	Not specified	Not specified	Not specified	Not specified	Not specified	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDEs, water quality, GW-SW interaction, baseflow, subsurface ecosystems, phreatophytic ecosystems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	distance rules for bores	Buffer zones around sensitive areas to reduce water table drawdown also may be according to water use and aquifer characteristics	Not specified / unknown	Not specified	Not specified / unknown	Understanding of scientifically established relationships	GDEs, SW-GW connectivity, GW quality degradation	Risk assessments, identify water uses, assign values and priorities	RCL not specified, groundwater use not specified
Australia	Australia-wide	Water allocation systems: exploring opportunities for reform	Barna Water Resources Pty Ltd, Arche Consulting, Vanessa O'Keefe, Bruce Fitzgerald, Paul Harding, Paul Wetten, Clarke Ballard, Derek Everson, Lin Crase	2011	Waterlines Report Series No 65	Non-Technical	MDBA0050	Not specified	Not specified	Not specified	Not specified	Urban, domestic, stock, industrial, mining, agricultural	Renewable (younger water, recharge occurring)	Not applicable	Not specified / unknown	Reasonably defined	GW-SW connectivity, dependent ecosystems, groundwater levels and quality	Not specified / unknown	GDEs not identified	Cultural flows incorporated in Plan	trigger levels / temporary reductions	Impacts on planned environmental water triggers	Not specified / unknown	Not specified	Not specified / unknown	Understanding of scientifically established relationships	GDEs, SW-GW connectivity, GW quality degradation	RCL not specified, mechanism derivation not specified, groundwater monitoring not specified.	
Australia	Australia-wide	Framework for assessing potential local and cumulative effects of mining on groundwater resources - project summary report	SKM, Sustainable Minerals Institute, Paul Howe, NWC	2011	Waterlines Report Series No 59	Non-Technical	MDBA0051	Not specified	Not specified	Not specified	Not specified	Mining, industry, utilities	Not specified / unknown	Not specified / unknown	Not specified / unknown	Limited definition	Not specified	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	Not specified	Not specified / unknown	Hydrogeological integrity impact	Cumulative Impact Assessment Tool (CIAT) assess risk on impact to groundwater and users	RCL not specified, management mechanisms not specified	
Australia	Australia-wide	National framework for integrated management of connected groundwater and surface water systems	SKM, NWC	2011	Waterlines Report Series No 57	Non-Technical	MDBA0052	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Reduced seasonal water allocation determinations or buy-out entitlements	Not specified / unknown	Not specified	Not specified / unknown	Understanding of scientifically established relationships	GDEs, SW-GW connectivity, GW quality degradation	RCL not specified, mechanism derivation not specified	
Australia	Australia-wide	A framework for managing and developing groundwater trading	GHD, Hamstead Consulting, Vanessa O'Keefe, NWC	2011	Waterlines Report Series No 52	Non-Technical	MDBA0053	Not specified	Not specified	Not specified	Not specified	Stock, domestic	Not specified / unknown	Not applicable	Not specified / unknown	Reasonably defined	GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	Based on a number of rules depending on system and states	Non-technical means (nominally adopted)	Not specified	Detailed scientific study	GDEs, SW-GW connectivity, GW quality degradation	RCL not specified, specific groundwater use not specified		
Australia	Australia-wide	Robust policy design for managed aquifer recharge	John Ward, Peter Dillon, NWC	2011	Waterlines Report Series No 38	Non-Technical	MDBA0054	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified / unknown	Not specified / unknown	Over Allocated	Reasonably defined	Environmental flows, baseflows	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	water trading (within the management area)	Transfer of recovery entitlements or allocations to invest in recharge as an alternative or in conjunction with reducing consumption	Non-technical means (nominally adopted)	Not specified	Not specified / unknown	Not specified / unknown	GDEs, SW-GW connectivity, GW quality degradation	RCL not specified, groundwater use not specified	
Australia	Australia-wide	Improving environmental sustainability in water planning	Mark Hamstead, Hamstead Consulting Pty Ltd, NWC	2009	Waterlines Report Series No 20	Non-Technical	MDBA0055	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified / unknown	Not specified / unknown	Over Allocated	Reasonably defined	Environmental assets, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	not specified	not specified	Not specified / unknown	Not specified	Not specified / unknown	Impact to GDEs	Mechanism not specified, RCL not specified, groundwater use not specified		
Australia	Australia-wide	Water allocation planning in Australia- Current practices and lessons learned	Mark Hamstead, Claudia Baldwin, Vanessa O'Keefe	2008	Waterlines Report Series No 6	Non-Technical	MDBA0056	Not specified	Not specified	Not specified	Not specified	Agriculture	Not specified / unknown	Not applicable	Not specified / unknown	Reasonably defined	GDEs, GW-SW connectivity, environmental flows	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	Local catchment management authorities engage in water trade and purchase on behalf of the environment	Not specified / unknown	Not specified	Detailed scientific study	GDEs, SW-GW connectivity, GW quality degradation	Risk assessment including traffic light assessment, sustainability assessment, FLOWs method, time series models	RCL not specified, mechanism derivation not specified	
Australia	Australia-wide	Effects of the changes in water availability on Indigenous people of the Murray-Darling Basin: a scoping study	Sue Jackson, Brad Moggridge and Cathy Robinson	2010		Non-Technical	MDBA0087	Murray Darling Basin	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Over Allocated	Well defined (based on numeric model)	protecting and restoring ecological values and water-dependent ecosystems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions		Detailed scientific study	Not specified/identified		The Authority has used a consistent approach across the Basin in assessing the risk of groundwater extraction.	Groundwater allocations are not covered in detail, only mentioned in passing that commercial licences to Aboriginal people would be of value		
Australia	Murray Darling Basin	The proposed Groundwater Baseline and Sustainable Diversion Limits: Methods report	MDBA	2012	MDBA publication no. 16/12	Non-Technical	MDBA0001	Murray Darling Basin	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, agriculture, stock, domestic, industrial, mining	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	protecting and restoring ecological values and water-dependent ecosystems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	<ul style="list-style-type: none"> <li>• aquifer integrity;</li> <li>• GDEs;</li> <li>• SW-GW connectivity;</li> <li>• GW salinity</li> </ul>	Detailed scientific study	not specified	Detailed scientific study	Not specified/identified	The Authority has used a consistent approach across the Basin in assessing the risk of groundwater extraction.		

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Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main levels of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Impacts	Risk Description	
Australia	Murray Darling Basin	The groundwater SDL methodology for the Murray-Darling Basin Plan	CSIRO and SKM	2011		Technical	MDBA0059	Murray Darling Basin	Several - regional plan	Several - regional plan	Not specified	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Well defined (based on numeric model)	GDEs, GW-SW connectivity, aquifer integrity (land subsidence and aquifer compaction), groundwater salinity	No program. Groundwater monitoring network in place	Yes; monitoring status unknown	Cultural flows not considered/mentioned	drawdown limits	resource condition indicator (RCI) that reflects key constraints and is of direct relevance to most impacts (GDEs, SW, subsidence)	Not specified / unknown	A number of RCL principles are explained on pg 13 of the document	Detailed scientific study	GDEs, SW-GW quality degradation	RRAM: Uses key environmental assets, specified ecosystem functions, productive base and environmental outcomes. Assigns a sustainability factor	groundwater monitoring not specified, specific use of groundwater is not known, derivation of mechanism not specified
Australia	Murray Darling Basin	Dryland diffuse groundwater recharge modelling across the Murray-Darling Basin	CSIRO	2010	1835-095X	Technical	MDBA0060	Murray Darling Basin	Several - regional plan	Several - regional plan	Not specified	Not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Well defined (based on numeric model)	GW-SW connectivity, vegetation, climate	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	Not specified / unknown	Not specified	Not specified / unknown	impact to river baseflows	Specific use of groundwater is not covered, RCL not specified, groundwater monitoring not specified, management mechanisms not identified, no specific risks mentioned	
Australia	Murray Darling Basin	Peer Review of the Lower Gwydir Numerical Groundwater Model	J.R. Hillier, W. Timms, and N.P. Merrick	2010	HC2010/18	Technical	MDBA0068	Murray Darling Basin	Alluvium (alluvial valley)	Narrabri Formation and Gunnedah Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Groundwater levels at all RCI sites must remain above confined aquifers, maintenance of current baseflow, stabilisation of groundwater levels, stabilisation of extraction	Detailed scientific study	24,000 ML/yr	Detailed scientific study	Hydrogeological integrity impact	Risk to dewatering confined aquifers, risk around uncertainty in the model	groundwater use not specified
Australia	Murray Darling Basin	Peer Review of the Lower Lachlan Numerical Groundwater Model	N.P. Merrick, D.R. Woolley and W. Timms	2010	HC2010/3	Technical	MDBA0069	Murray Darling Basin	Not specified	Lower Lachlan Aquifer system	Not specified	not specified	Non-renewable (fossil water. Usually confined or semi-confined)	Non-connected	Over Allocated	Well defined (based on numeric model)	sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels,	Detailed scientific study	35 GL/yr	Detailed scientific study	Hydrogeological integrity impact	Depletion to groundwater storages	groundwater use not specified
Australia	Murray Darling Basin	Peer Review of the Lower Macquarie Numerical Groundwater Model	J.R. Hillier, D.R. Woolley and N.P. Merrick	2010	HC2010/21	Technical	MDBA0070	Murray Darling Basin	Several - regional plan	Lower Macquarie model	Not specified	Stock, domestic, municipal	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, stabilisation of extraction, prevention of dewatering of confined aquifers, maintenance of current environmental flows	Detailed scientific study	28 GL/yr	Detailed scientific study	Hydrogeological integrity impact	Risk not specified	
Australia	Murray Darling Basin	Peer Review of the Lower Murrumbidgee Numerical Groundwater Model	N.P. Merrick, D.R. Woolley and W. Timms	2010	HC2010/24	Technical	MDBA0071	Murray Darling Basin	Several - regional plan	Shepparton, Calivil and Renmark Formation	Not specified	Stock, domestic, irrigation	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, stabilisation of extraction, prevention of dewatering of confined aquifers, maintenance of current environmental flows	Detailed scientific study	295 GL/yr	Detailed scientific study	Hydrogeological integrity impact	Groundwater salinisation, surface settlement due to groundwater extraction and consolidation of aquifers	
Australia	ACT	Water Resources (Water management areas) Determination 2007 (No 1)	ACT government	2007		Non-Technical	MDBA0002	all within ACT	Several - regional plan	Several - regional plan	Not specified	not specified	Not specified / unknown	Not applicable	Not specified / unknown	Not demonstrated	not specified	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		* Level of development not specified * RCL not specified	
Australia	ACT	Water Resources (Amounts of water reasonable for uses guidelines) Determination 2007 (No 1)	ACT government	2007	DI2007-194	Resource Management Plan	MDBA0003	all within ACT	Not specified	N/A	Not specified	not specified. Does not discern between surface and groundwater	Not specified / unknown	Not applicable	Not specified / unknown	Not demonstrated	minimise water wastage	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	document focuses on water wastage as a risk/driver.	* Level of development not specified * RCL not specified	
Australia	ACT	Water Resources (Water available from areas) Determination 2007 (No 1)	ACT government	2007	DI2007-191	Resource Management Plan	MDBA0004	all within ACT	Several - regional plan	Several - regional plan	Not specified	not specified	Not specified / unknown	Not specified / unknown	Below Allocated Limit	Not demonstrated	not specified	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	document simply provides a table showing "maximum GW and SW available for taking". Not clear whether these are RCLs or total volumes available.	* RCL not specified	
Australia	ACT	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - Australian Capital Territory	CSIRO and SKM	2010	1835-095X	Technical	MDBA0061	all within ACT	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Well below Allocated Limit	Well defined (based on numeric model)	No key environmental assets identified, high risk to ecosystem function (GW-SW connectivity)	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Detailed scientific study	impact to river baseflows	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes	* RCL not specified	
Australia	New South Wales	Water Sharing Plan for the NSW Murray Darling Basin Porous Rock Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0018	Murray Darling Basin	Porous rock	(a) Gunnedah - Oakey Basin MDB Groundwater Source, (b) Oaklands Basin Groundwater Source, (c) Sydney Basin MDB Groundwater Source, and (d) Western Murray Porous Rock Groundwater Source	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to an access licence, (b) 100 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights, (c) 200 metres from the boundary of the land, on which the water supply work is located, (d) 500 metres of a water supply work authorised to take water from the same groundwater source by a local water utility or a major utility, or (e) 200 metres of a NSW Office of Water observation or monitoring bore.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	* RCL derivation not specified; assumed	
Australia	New South Wales	Water Sharing Plan for the Intersecting Streams Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0019	Murray Darling Basin	Alluvium (alluvial valley)	Warrego Alluvial Groundwater Source, and Paroo Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to an access licence, (b) 200 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights, (c) 100 metres from the boundary of the land, on which the water supply work is located, (d) 500 metres of a water supply work authorised to take water from the same groundwater source by a local water utility or a major utility, or (e) 100 metres of a NSW Office of Water observation or monitoring bore.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned	* RCL derivation not specified; assumed
Australia	New South Wales	Water Sharing Plan for the Intersecting Streams Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0019	Murray Darling Basin	Alluvium (alluvial valley)	Warrego Alluvial Groundwater Source, and Paroo Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume, or (c) at a distance that is more than 500 metres from the plume associated with a contamination source listed in Schedule 5, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	* RCL derivation not specified; assumed	
Australia	New South Wales	Water Sharing Plan for the Intersecting Streams Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0019	Murray Darling Basin	Alluvium (alluvial valley)	Warrego Alluvial Groundwater Source, and Paroo Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	>2,000 metres of a high priority GDE	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	* RCL derivation not specified; assumed	
Australia	New South Wales	Water Sharing Plan for the Lower Murray-Darling Unregulated and Alluvial Water Sources 2012	NSW Government	2011		Resource Management Plan	MDBA0020	Murray Darling Basin	Alluvium (alluvial valley)	Lower Darling Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water quality indicators	limits on water take (mechanisms) to not exceed an extraction concentration level	Not specified / unknown	Electrical Conductivity = >3000 uS/cm	Understanding of scientifically established relationships	Degradation of groundwater quality	* RCL derivation not specified * groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0021	Murray Darling Basin	Alluvium (alluvial valley)	Upper Darling Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 m of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 200 m of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 100 m from the boundary of the landholding on which the water supply work is located (d) 500 m of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, or (e) 100 m of a Department observation or monitoring bore.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	* groundwater use not specified	

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Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main levels of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0021	Murray Darling Basin	Alluvium (alluvial valley)	Upper Darling Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work that will be nominated by an access licence, or (c) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0021	Murray Darling Basin	Alluvium (alluvial valley)	Upper Darling Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5, or (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing for the Lower Murray Groundwater Source	NSW Government	2011		Resource Management Plan	MDBA0022	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	cl 41: application of local access rules (the mechanism) once piezometric level in key bores (the RCL) declines more than listed amounts	Understanding of scientifically established relationships	Groundwater level RCL: Year of Plan: Metres decline trigger level 1 = 5.4 m 2 = 6.1 m 3 = 6.7 m 4 = 7.3 m 5 = 7.8 m 6 = 8.3 m 7 = 8.7 m 8 = 9.1 m 9 = 9.5 m	Not specified / unknown	Impact to GDEs	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing for the Lower Murray Groundwater Source	NSW Government	2011		Resource Management Plan	MDBA0022	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	cl 41: application of local access rules (mechanism) based on salinity trigger levels	Understanding of scientifically established relationships	If salinity in a production bore (RCI) exceeds 650 EC or increases more than 20% or 500 EC.	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing for the Lower Murray Groundwater Source	NSW Government	2011		Resource Management Plan	MDBA0022	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	cl 43 application of local access rules if land subsidence identified	Understanding of scientifically established relationships	Evidence of land subsidence	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing for the Lower Murray Groundwater Source	NSW Government	2011		Resource Management Plan	MDBA0022	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Extraction not within 200m proximity of GDE or 20m of rivers	Understanding of scientifically established relationships	not specified	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Lower Murray Shallow Groundwater Source 2012	NSW Government	2012		Resource Management Plan	MDBA0023	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 2, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 2, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume, or (c) at a distance that is more than 500 metres from the plume associated with a contamination source listed in Schedule 2, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	
Australia	New South Wales	Water Sharing Plan for the Lower Murray Shallow Groundwater Source 2012	NSW Government	2012		Resource Management Plan	MDBA0023	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 3 in the case of a water supply work used solely to take water pursuant to basic landholder rights, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 3 in the case of a water supply work not used solely to take water pursuant to basic landholder rights, (c) at a distance that is more than 200 metres from a high priority groundwater dependent ecosystem listed in Schedule 3, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of any high priority groundwater dependent ecosystem listed in Schedule 3, or (d) within 100 metres of the top of the high bank of a river or stream.  (a) 100 metres of a groundwater dependent culturally significant site in the case of a water supply work used solely to take water pursuant to basic landholder rights, or (b) 200 metres of a groundwater dependent culturally significant site in the case of a water supply work not used solely to take water pursuant to basic landholder rights.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned	
Australia	New South Wales	Water Sharing Plan for the Lower Murray Shallow Groundwater Source 2012	NSW Government	2012		Resource Management Plan	MDBA0023	Murray Darling Basin	Alluvium (shallow)	All alluvial sediments to a depth of 12 metres	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work located on another landholding that is authorised to take water from the same groundwater source pursuant to an access licence, (b) 400 metres of a water supply work located on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights, (c) 200 metres from the boundary of the land on which the water supply work is located, unless the owner of the land adjoining the boundary has provided consent in writing, (d) 1,000 metres of a water supply work authorised to take water from the same groundwater source by a local water utility, unless the local water utility has provided consent in writing, (e) 200 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing, or (f) 100 metres of an irrigation channel, unless the rural water service provider has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned	
Australia	New South Wales	Water Sharing Plan for the Murray Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0024	Murray Darling Basin	Alluvium (shallow)	Upper Murray Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 3, (b) between 250 and 500 metres of that plume associated with a contamination source listed in Schedule 3, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume, or (c) at a distance that is more than 500 metres from the plume associated with a contamination source listed in Schedule 3, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	
Australia	New South Wales	Water Sharing Plan for the Murray Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0024	Murray Darling Basin	Alluvium (shallow)	Upper Murray Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 4 in the case of a water supply work used solely to take water pursuant to basic landholder rights, (b) at a distance that is more than 200 metres from a high priority groundwater dependent ecosystem listed in Schedule 4, in the case of a work used solely to take water pursuant to basic landholder rights, if a greater distance is determined by the Minister to be necessary to protect the high priority groundwater dependent ecosystem listed in Schedule 4, (c) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 4 in the case of a water supply work not used solely to take water pursuant to basic landholder rights, (d) at a distance that is more than 200 metres from a high priority groundwater dependent ecosystem listed in Schedule 4, in the case of a work not used solely to take water pursuant to basic landholder rights, if a greater distance is determined by the Minister to be necessary to protect the high priority groundwater dependent ecosystem listed in Schedule 4, or (e) within 40 metres of the top of the high bank of a river.  (a) 100 metres of a groundwater dependent culturally significant site, in the case of a water supply work used solely to take water pursuant to basic landholder rights, or (b) 200 metres of a groundwater dependent culturally significant site, in the case of a water supply work not used solely to take water pursuant to basic landholder rights.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned	

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information										Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions										
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Severity	Risk Description		
Australia	New South Wales	Water Sharing Plan for the Murray Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0024	Murray Darling Basin	Alluvium (shallow)	Upper Murray Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	distance rules for bores	(a) 1000 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to another access licence, (b) 400 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights, (c) 500 metres from the boundary of the land on which the water supply work is located, unless the owner of the land adjoining the boundary has provided consent in writing, (d) 1000 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing, or (e) 1000 metres of a Departmental observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned		
Australia	New South Wales	Water Sharing Plan for the Murrumbidgee Unregulated and Alluvial Water Sources 2012	NSW Government	2011		Resource Management Plan	MDBA0025	Murray Darling Basin	Alluvium (alluvial basin)	Murrumbidgee Alluvial Groundwater Sources, including (i) Billabong Creek Alluvial GW Source, (ii) Bungendore Alluvial GW Source, (iii) Gundagai Alluvial GW Source, (iv) Kyamba Alluvial GW Source, (v) Mid Murrumbidgee Zone 3 Alluvial GW Source (vi) Wagga Wagga Alluvial GW Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 6, or (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 6, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned		
Australia	New South Wales	Water Sharing Plan for the Murrumbidgee Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0025	Murray Darling Basin	Alluvium (alluvial basin)	Murrumbidgee Alluvial Groundwater Sources, including (i) Billabong Creek Alluvial GW Source, (ii) Bungendore Alluvial GW Source, (iii) Gundagai Alluvial GW Source, (iv) Kyamba Alluvial GW Source, (v) Mid Murrumbidgee Zone 3 Alluvial GW Source (vi) Wagga Wagga Alluvial GW Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 7 in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 7 in the case of a water supply work that will be nominated by an access licence, (c) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned		
Australia	New South Wales	Water Sharing Plan for the Murrumbidgee Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0025	Murray Darling Basin	Alluvium (alluvial basin)	Murrumbidgee Alluvial Groundwater Sources, including (i) Billabong Creek Alluvial GW Source, (ii) Bungendore Alluvial GW Source, (iii) Gundagai Alluvial GW Source, (iv) Kyamba Alluvial GW Source, (v) Mid Murrumbidgee Zone 3 Alluvial GW Source (vi) Wagga Wagga Alluvial GW Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 500 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 500 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 250 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 500 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing. (a) 750 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 750 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 200 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 750 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 400 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned		
Australia	New South Wales	Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0026	Murray Darling Basin	Alluvium (alluvial basin)	Lower Murrumbidgee Shallow Groundwater Source (Shepparton Formation); and the Lower Murrumbidgee Deep Groundwater Source (Calivil and Renmark Formations)	Deep groundwater (>200 m bgl)	not specified but includes stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, climate adjusted groundwater levels, degradation of groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	zonal limits on entitlements	Extraction not within 200m proximity of GDEs	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	* RCL derivation not specified * groundwater use not specified		
Australia	New South Wales	Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0026	Murray Darling Basin	Alluvium (alluvial basin)	Lower Murrumbidgee Shallow Groundwater Source (Shepparton Formation); and the Lower Murrumbidgee Deep Groundwater Source (Calivil and Renmark Formations)	Deep groundwater (>200 m bgl)	not specified but includes stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, climate adjusted groundwater levels, degradation of groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules if land subsidence identified	Not specified / unknown	Evidence of land subsidence	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* RCL derivation not detailed * local access rules not defined * groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0026	Murray Darling Basin	Alluvium (alluvial basin)	Lower Murrumbidgee Shallow Groundwater Source (Shepparton Formation); and the Lower Murrumbidgee Deep Groundwater Source (Calivil and Renmark Formations)	Deep groundwater (>200 m bgl)	not specified but includes stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, climate adjusted groundwater levels, degradation of groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules to protect water levels	Not specified / unknown	once contoured drawdown or recovery depths exceed trigger levels specified	Not specified / unknown	Not specified/identified	no specific risks mentioned	* RCL derivation not detailed * risks not identified * local access rules not defined * groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0026	Murray Darling Basin	Alluvium (alluvial basin)	Lower Murrumbidgee Shallow Groundwater Source (Shepparton Formation); and the Lower Murrumbidgee Deep Groundwater Source (Calivil and Renmark Formations)	Deep groundwater (>200 m bgl)	not specified but includes stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, climate adjusted groundwater levels, degradation of groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water quality indicators	local access rules to protect water quality	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* RCL not specified * local access rules not defined * groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Lower Murrumbidgee Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0026	Murray Darling Basin	Alluvium (alluvial basin)	Lower Murrumbidgee Shallow Groundwater Source (Shepparton Formation); and the Lower Murrumbidgee Deep Groundwater Source (Calivil and Renmark Formations)	Deep groundwater (>200 m bgl)	not specified but includes stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, climate adjusted groundwater levels, degradation of groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules for the temporary reduction of extraction limits	Not specified / unknown	3 year average extraction >5% of the extraction limit	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* RCL derivation not detailed * groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0027	Murray Darling Basin	Alluvium (alluvial valley)	Upper Lachlan Alluvial Groundwater Source, and the Belubula Valley Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, climate adjusted groundwater levels, degradation of groundwater quality	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 3, or (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 3, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of the plume associated with the contamination source.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* RCL derivation not detailed * groundwater use not specified	

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information												Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions							
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Impacts	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0027	Murray Darling Basin	Alluvium (alluvial valley)	Upper Lachlan Alluvial Groundwater Source, and the Belubula Valley Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, GW-SW connectivity, Aboriginal heritage values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 4 in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 4 in the case of a water supply work that will be nominated by an access licence, (c) within 100 metres of the edge of an escarpment, where the location of the water supply work is or is proposed to be above the escarpment, or (d) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned	* RCL derivation not detailed * groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0027	Murray Darling Basin	Alluvium (alluvial valley)	Upper Lachlan Alluvial Groundwater Source, and the Belubula Valley Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, GW-SW connectivity, Aboriginal heritage values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 600 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 400 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 200 metres from the boundary of the landholding on which the water supply work is located, unless the landholding adjoining the boundary has provided consent in writing, (d) 600 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 500 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned	* RCL derivation not detailed * groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Lower Lachlan Groundwater Source 2003	NSW Government	2008		Resource Management Plan	MDBA0028	Murray Darling Basin	Alluvium (alluvial valley)	Lower Lachlan unconsolidated alluvial aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water quality indicators	Local access rules to protect water quality	Not specified / unknown	Salinity thresholds of 800 uS/cm EC for raw water for drinking supplies class, and 1,500 uS/cm EC for agricultural water	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified * RCL derivation unknown
Australia	New South Wales	Water Sharing Plan for the Lower Lachlan Groundwater Source 2003	NSW Government	2008		Resource Management Plan	MDBA0028	Murray Darling Basin	Alluvium (alluvial valley)	Lower Lachlan unconsolidated alluvial aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules to protect water levels	Not specified / unknown	water level recovery to within 20% of total available drawdown	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Lower Lachlan Groundwater Source 2003	NSW Government	2008		Resource Management Plan	MDBA0028	Murray Darling Basin	Alluvium (alluvial valley)	Lower Lachlan unconsolidated alluvial aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules if land subsidence identified	Not specified / unknown	Evidence of land subsidence	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Lower Lachlan Groundwater Source 2003	NSW Government	2011		Resource Management Plan	MDBA0028	Murray Darling Basin	Alluvium (alluvial valley)	Lower Lachlan unconsolidated alluvial aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) for works nominated by an access licence, within 200 metres of high priority groundwater dependent ecosystems, or where impact may occur on Aboriginal cultural heritage values, (b) for those exercising basic landholder rights, within 100 metres of high priority groundwater dependent ecosystems, or where impact may occur on Aboriginal cultural heritage values, and (c) within 40 metres of any river for any works.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * RCL derivation unknown
Australia	New South Wales	Water Sharing Plan for the Lower Lachlan Groundwater Source 2003	NSW Government	2008		Resource Management Plan	MDBA0028	Murray Darling Basin	Alluvium (alluvial valley)	Lower Lachlan unconsolidated alluvial aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 1,000 metres of another water supply work (bore) nominated by an access licence authorised to extract up to, and including, 10 ML/day, (b) 2,000 metres of another water supply work nominated by an access licence authorised to extract greater than 10 ML/day, and up to and including 15 ML/day, and (c) 3,000 metres of another water supply work nominated by an access licence authorised to extract greater than 15 ML/day.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned	* groundwater use not specified * RCL derivation unknown
Australia	New South Wales	Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0029	Murray Darling Basin	Fractured rock	All aquifers within the NSW Murray Darling Basin Fractured Rock Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to an access licence, (b) 200 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights, (c) 200 metres from the boundary of the land, on which the water supply work is located, unless the owner of the land adjoining the boundary has provided consent in writing, or (d) 500 metres of a water supply work authorised to take water from the same groundwater source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing, or (e) 400 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned	* groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0029	Murray Darling Basin	Fractured rock	All aquifers within the NSW Murray Darling Basin Fractured Rock Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 2, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 2, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume, or (c) at a distance that is more than 500 metres from the plume associated with a contamination source listed in Schedule 2, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned
Australia	New South Wales	Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0029	Murray Darling Basin	Fractured rock	All aquifers within the NSW Murray Darling Basin Fractured Rock Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 3 in the case of a water supply work used solely to take water pursuant to basic landholder rights, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 3 in the case of a water supply work not used solely to take water pursuant to basic landholder rights, (c) at a distance that is more than 200 metres from a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 3, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of any high priority groundwater dependent ecosystem listed in clause 1 of Schedule 3, (d) within 500 metres of a high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 3, (e) within 500 metres from the edge of an escarpment, where the location of the water supply work is to be above the escarpment, or (f) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned
Australia	New South Wales	Water Sharing Plan for the Lower Macquarie Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0030	Murray Darling Basin	Several - regional plan	Lower Macquarie Groundwater Sources (unconsolidated alluvial aquifers and the sandstone aquifers of the Great Artesian Basin)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) 1,000 m of an existing bore nominated by an access licence, if the new water supply bore will extract >=10 ML/day, (b) 2,000 m of an existing bore nominated by an access licence, if the new bore will extract >10 ML/day and up to and including 20 ML/day, and (c) 3,000 m of an existing bore nominated by an access licence, if the new bore will extract > 20 ML/day.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	no specific risks mentioned	* Derivation of RCLs not specified * groundwater use not specified
Australia	New South Wales	Water Sharing Plan for the Lower Macquarie Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0030	Murray Darling Basin	Several - regional plan	Lower Macquarie Groundwater Sources (unconsolidated alluvial aquifers and the sandstone aquifers of the Great Artesian Basin)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules to minimise adverse groundwater level impacts	Not specified / unknown	water levels within 20% of total available drawdown	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* groundwater use not specified * Derivation of RCLs not defined * no specific risks mentioned
Australia	New South Wales	Water Sharing Plan for the Lower Macquarie Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0030	Murray Darling Basin	Several - regional plan	Lower Macquarie Groundwater Sources (unconsolidated alluvial aquifers and the sandstone aquifers of the Great Artesian Basin)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water quality indicators	Local access rules to protect water quality	Not specified / unknown	Salinity thresholds of 800 uS/cm EC for raw water for drinking supplies class, and 1,500 uS/cm EC for agricultural water	Not specified / unknown	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified * Derivation of RCLs not defined

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information											Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions								
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Impacts	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Lower Macquarie Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0030	Murray Darling Basin	Several - regional plan	Lower Macquarie Groundwater Sources (unconsolidated alluvial aquifers and the sandstone aquifers of the Great Artesian Basin)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 m of high priority groundwater dependent ecosystems for water supply works (bores) exercising basic rights, (b) within 200 m of high priority groundwater dependent ecosystems for water supply works (bores) nominated by an access licence, and (c) within 40 m of any river for any works.	Not specified / unknown	not specified	Impact to GDEs	no specific risks mentioned	* groundwater use not specified * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Lower Macquarie Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0030	Murray Darling Basin	Several - regional plan	Lower Macquarie Groundwater Sources (unconsolidated alluvial aquifers and the sandstone aquifers of the Great Artesian Basin)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems, groundwater quality protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	cl 40 application of local access rules if land subsidence identified	Understanding of scientifically established relationships	Evidence of land subsidence	Not specified / unknown	Hydrogeological integrity impact	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0031	Murray Darling Basin	Alluvium (alluvial basin)	(i) Bell Alluvial Groundwater Source, (ii) Cudgong Alluvial Groundwater Source, (iii) Talbragar Alluvial Groundwater Source, and (iv) Upper Macquarie Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 100 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 100 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Interference impacts to existing users	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0031	Murray Darling Basin	Alluvium (alluvial basin)	(i) Bell Alluvial Groundwater Source, (ii) Cudgong Alluvial Groundwater Source, (iii) Talbragar Alluvial Groundwater Source, and (iv) Upper Macquarie Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5 excluding the contamination source specified in paragraph (c), (b) between 250 metres and 500 metres from the plume associated with a contamination source listed in Schedule 5, excluding the contamination source specified in paragraph (c), unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume, or (c) within 500 metres of the plume associated with the site declared to be a remediation site by the Environment Protection Authority under Declaration Number 21107 made under the Contaminated Land Management Act 1997.	Not specified / unknown	not specified	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0031	Murray Darling Basin	Alluvium (alluvial basin)	(i) Bell Alluvial Groundwater Source, (ii) Cudgong Alluvial Groundwater Source, (iii) Talbragar Alluvial Groundwater Source, and (iv) Upper Macquarie Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work that will be nominated by an access licence, (c) within 500 metres of a high priority karst environment groundwater dependent ecosystem listed in Schedule 6, or (d) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Impact to GDEs	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Castlereagh (below Binnaway) Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0032	Murray Darling Basin	Alluvium (alluvial basin)	Castlereagh Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding, (b) 200 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding, (c) 100 metres from the boundary of the land on which the water supply work is located, unless the landholder of the land adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing, or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Interference impacts to existing users	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Castlereagh (below Binnaway) Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0032	Murray Darling Basin	Alluvium (alluvial basin)	Castlereagh Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 4, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 4, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of the plume associated with the contamination source, or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 4, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Degradation of groundwater quality	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Castlereagh (below Binnaway) Unregulated and Alluvial Water Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0032	Murray Darling Basin	Alluvium (alluvial basin)	Castlereagh Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 5 in the case of a water supply work used solely to take water pursuant to basic landholder rights, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 5 in the case of a water supply work not used solely to take water pursuant to basic landholder rights, (c) within 500 metres of a high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 5, (d) at a distance specified by the Minister that is more than 200 metres from a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 5, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of that high priority groundwater dependent ecosystem, (e) at a distance specified by the Minister that is more than 500 metres from high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 5, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of that high priority karst environment groundwater dependent ecosystem, (f) within 40 metres of the top of the high bank of a river, or (g) 100 metres from the edge of an escarpment, where the location of the water supply work is to be above the escarpment.	Not specified / unknown	not specified	Impact to GDEs	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Shallow Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0033	Murray Darling Basin	Alluvium (alluvial basin)	(a) GAB Central Shallow Groundwater Source, (b) GAB Surat Shallow Groundwater Source, and (c) GAB Warrego Shallow Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to an access licence, if the new water supply work is authorised to take more than 20ML/year, (b) 200 metres of a water supply work authorised to take water from the same groundwater source pursuant to an access licence, if the new water supply work is authorised to take less than or equal to 20ML/year, (c) 200 metres of a water supply work on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights, (d) 100 metres from the boundary of the land on which the water supply work is located, unless the owner of the land adjoining the boundary has provided consent in writing, (e) 1,000 metres of a water supply work authorised to take water from the same groundwater source by a local water utility, unless the local water utility has provided consent in writing, or (f) 400 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Interference impacts to existing users	no specific risks mentioned	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined	

**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information		Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Shallow Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0033	Murray Darling Basin	Alluvium (alluvial basin)	(a) GAB Central Shallow Groundwater Source, (b) GAB Surat Shallow Groundwater Source, and (c) GAB Warrego Shallow Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 2, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 2, unless the Minister is satisfied that no draw down of water will occur within 250 metres of that plume, or (c) at a distance that is more than 500 metres from the plume associated with a contamination source listed in Schedule 2, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Shallow Groundwater Sources 2011	NSW Government	2011		Resource Management Plan	MDBA0033	Murray Darling Basin	Alluvium (alluvial basin)	(a) GAB Central Shallow Groundwater Source, (b) GAB Surat Shallow Groundwater Source, and (c) GAB Warrego Shallow Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 500 metres of a high priority groundwater dependent ecosystem listed in Schedule 3, or (b) at a distance that is more than 500 metres from a high priority groundwater dependent ecosystem listed in Schedule 3, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of any high priority groundwater dependent ecosystem listed in Schedule 3, or (c) within 40 metres of the top of the high bank of any stream.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Namoi Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0034	Murray Darling Basin	Alluvium (alluvial basin)	The Namoi Alluvial Groundwater Sources, comprising: (i) Manilla Alluvial Groundwater Source, (ii) Currumbulla Alluvial Groundwater Source, (iii) Oupolly Alluvial Groundwater Source, and (iv) Quiindri Alluvial Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of a water supply work located on another landholding that is authorised to take water from the same groundwater source and is nominated by another access licence, (b) 100 metres of a water supply work located on another landholding that is authorised to take water from the same groundwater source pursuant to basic landholder rights only, (c) 100 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 100 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Namoi Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0034	Murray Darling Basin	Alluvium (alluvial basin)	The Namoi Alluvial Groundwater Sources, comprising: (i) Manilla Alluvial Groundwater Source, (ii) Currumbulla Alluvial Groundwater Source, (iii) Oupolly Alluvial Groundwater Source, and (iv) Quiindri Alluvial Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5, or (b) between 250 metres and 500 metres from the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	establish environmental water rules	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Namoi Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0034	Murray Darling Basin	Alluvium (alluvial basin)	The Namoi Alluvial Groundwater Sources, comprising: (i) Manilla Alluvial Groundwater Source, (ii) Currumbulla Alluvial Groundwater Source, (iii) Oupolly Alluvial Groundwater Source, and (iv) Quiindri Alluvial Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work that will be nominated by an access licence, or (c) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	establish environmental water rules	* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0035	Murray Darling Basin	Alluvium (alluvial valley)	Upper and Lower Namoi Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 500 metres of a bore nominated by a local water utility access licence, (b) 400 metres of a Departmental monitoring bore, (c) 400 metres of a bore extracting from the Great Artesian Basin, (d) 500 metres of a wetland, or (e) 200 metres of a river.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0035	Murray Darling Basin	Alluvium (alluvial valley)	Upper and Lower Namoi Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules to minimise adverse groundwater level impacts	Not specified / unknown	Not specified	Not specified / unknown	Hydrogeological integrity impact		* no RCL specified * groundwater use not specified * no specific risks mentioned
Australia	New South Wales	Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0035	Murray Darling Basin	Alluvium (alluvial valley)	Upper and Lower Namoi Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water quality indicators	Local access rules to protect water quality	Not specified / unknown	Thresholds based on beneficial uses of groundwater based on ANZECC 2001 and NHMRC Drinking Water Guidelines 1996.	Not specified / unknown	Degradation of groundwater quality		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0035	Murray Darling Basin	Alluvium (alluvial valley)	Upper and Lower Namoi Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules if land subsidence identified	Not specified / unknown	Evidence of land subsidence	Not specified / unknown	Hydrogeological integrity impact		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003	NSW Government	2006		Resource Management Plan	MDBA0035	Murray Darling Basin	Alluvium (alluvial valley)	Upper and Lower Namoi Groundwater Sources	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Distance rules to minimise impact to GDEs	Not specified / unknown	Groundwater extraction >100m of high priority GDE, creek, river or cultural heritage values	Not specified / unknown	Impact to GDEs		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Peel Valley Regulated, Unregulated, Alluvium and Fractured Rock Water Sources 2010	NSW Government	2010		Resource Management Plan	MDBA0036	Murray Darling Basin	Several - regional plan	the Peel Alluvium Water Source, and the Peel Fractured Rock Water Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) 200 metres of a water supply work authorised to take water from the water source that is nominated by another access licence on another landholding, (b) 200 metres of a water supply work authorised to take water from the water source pursuant to basic landholder rights on another landholding, (c) 100 metres from the boundary of the land on which the work is located, unless the landholder of the land adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work authorised to take water from the water source by a local water utility or a major utility, or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the NSW Office of Water has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined
Australia	New South Wales	Water Sharing Plan for the Peel Valley Regulated, Unregulated, Alluvium and Fractured Rock Water Sources 2010	NSW Government	2010		Resource Management Plan	MDBA0036	Murray Darling Basin	Several - regional plan	the Peel Alluvium Water Source, and the Peel Fractured Rock Water Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) 100 metres of a contamination source listed in Schedule 3; (b) between 100 metres and 500 metres of a contamination source listed in Schedule 3, unless the Minister is satisfied that no draw down of water will occur within 100 metres of the contamination source; or (c) a distance greater than 500 metres if determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality		* groundwater use not specified * no specific risks mentioned * Derivation of RCLs not defined

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Peel Valley Regulated, Unregulated, Alluvium and Fractured Rock Water Sources 2010	NSW Government	2010		Resource Management Plan	MDBA0036	Murray Darling Basin	Several - regional plan	the Peel Alluvium Water Source and the Peel Fractured Rock Water Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 4 in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (b) 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 4 for water supply works not used solely to take water pursuant to basic landholder rights; or (c) a distance greater than 200 metres, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of any groundwater dependent ecosystem listed in Schedule 4; or (d) 40 metres of the top of the high bank of a river.	Not specified / unknown	Not specified / unknown	Impact to GDEs		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Gwydir Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0037	Murray Darling Basin	Alluvium (alluvial valley)	Upper Gwydir Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 100 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 100 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	Not specified / unknown	Interference impacts to existing users		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Gwydir Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0037	Murray Darling Basin	Alluvium (alluvial valley)	Upper Gwydir Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) within 250 metres of the plume associated with a contamination source listed in Schedule 6, or (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 6, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume.	Not specified / unknown	Not specified / unknown	Degradation of groundwater quality		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Gwydir Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0037	Murray Darling Basin	Alluvium (alluvial valley)	Upper Gwydir Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 7 in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 7 in the case of a water supply work that will be nominated by an access licence, or (c) within 40 metres of the top of the high bank of a river.	Not specified / unknown	Not specified / unknown	Impact to GDEs		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Lower Gwydir Groundwater Source 2003	NSW Government	2006		Resource Management Plan	MDBA0038	Murray Darling Basin	Alluvium (alluvial valley)	Lower Gwydir Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	>200 m of existing bore if proposed water supply bore is authorised to extract >=20 ML/year	Not specified / unknown	Not specified / unknown	Interference impacts to existing users		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Lower Gwydir Groundwater Source 2003	NSW Government	2006		Resource Management Plan	MDBA0038	Murray Darling Basin	Alluvium (alluvial valley)	Lower Gwydir Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules to minimise adverse groundwater level impacts	Not specified / unknown	Not specified / unknown	Hydrogeological integrity impact		* groundwater use not specified * no specific risks mentioned * RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Lower Gwydir Groundwater Source 2003	NSW Government	2006	1/10/2006	Resource Management Plan	MDBA0038	Murray Darling Basin	Alluvium (alluvial valley)	Lower Gwydir Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water quality indicators	Local access rules to protect water quality	Not specified / unknown	Thresholds based on beneficial uses of groundwater based on raw drinking water and agricultural use, as defined by ANZECC 2001 and NHMRC Drinking Water Guidelines 1996.	Degradation of groundwater quality		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Lower Gwydir Groundwater Source 2003	NSW Government	2006	1/10/2006	Resource Management Plan	MDBA0038	Murray Darling Basin	Alluvium (alluvial valley)	Lower Gwydir Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules if land subsidence identified	Not specified / unknown	Evidence of land subsidence	Hydrogeological integrity impact		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the Lower Gwydir Groundwater Source 2003	NSW Government	2006	1/10/2006	Resource Management Plan	MDBA0038	Murray Darling Basin	Alluvium (alluvial valley)	Lower Gwydir Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Distance rules to minimise impact to GDEs	Not specified / unknown	Groundwater extraction >100m of high priority GDE, creek, river or cultural heritage values	Impact to GDEs		* groundwater use not specified * no specific risks mentioned * Deviation of RCLs not defined	
Australia	New South Wales	Water Sharing Plan for the NSW Border Rivers Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0039	Murray Darling Basin	Alluvium (alluvial basin)	the NSW Border Rivers Alluvial Groundwater Sources, comprised of: (i) Macintyre Alluvial Groundwater Source, (ii) NSW Border Rivers Upstream Keelah Bridge Alluvial Groundwater Source, (iii) NSW Border Rivers Downstream Keelah Bridge Alluvial Groundwater Source, and (iv) Orlaya Creek Alluvial Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 100 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 100 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	Not specified / unknown	Interference impacts to existing users		* groundwater use not specified * no specific risks mentioned	



**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	New South Wales	Water Sharing Plan for the NSW Border Rivers Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0039	Murray Darling Basin	Alluvium (alluvial basin)	the NSW Border Rivers Alluvial Groundwater Sources, comprised of: (i) Macintyre Alluvial Groundwater Source, (ii) NSW Border Rivers Upstream Keelah Bridge Alluvial Groundwater Source, (iii) NSW Border Rivers Downstream Keelah Bridge Alluvial Groundwater Source, and (iv) Otleys Creek Alluvial Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	(a) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 200 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 100 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 100 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.  (a) 400 metres of a water supply work located on another landholding that is authorised to take water from the same water source and is nominated by another access licence, (b) 400 metres of a water supply work located on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights only, (c) 200 metres from the boundary of the landholding on which the water supply work is located, unless the owner of the landholding adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work that is authorised to take water from the same water source and is nominated by a local water utility access licence or a major utility access licence, unless the licence holder has provided consent in writing, or (e) 400 metres of a Department observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	* groundwater use not specified * no specific risks mentioned	
Australia	New South Wales	Water Sharing Plan for the NSW Border Rivers Unregulated and Alluvial Water Sources 2012	NSW Government	2012		Resource Management Plan	MDBA0039	Murray Darling Basin	Alluvium (alluvial basin)	the NSW Border Rivers Alluvial Groundwater Sources, comprised of: (i) Macintyre Alluvial Groundwater Source, (ii) NSW Border Rivers Upstream Keelah Bridge Alluvial Groundwater Source, (iii) NSW Border Rivers Downstream Keelah Bridge Alluvial Groundwater Source, and (iv) Otleys Creek Alluvial Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 8, in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 8, in the case of a water supply work that will be nominated by an access licence, (c) at a distance specified by the Minister that is more than 200 metres from a high priority groundwater dependent ecosystem listed in Schedule 8, if such a distance is determined to be necessary to prevent more than minimal drawdown at the perimeter of any high priority groundwater dependent ecosystem listed in Schedule 8. This paragraph does not apply to water supply works that will be authorised to take water pursuant to basic landholder rights only, or (d) within 40 metres of the top of the high bank of a river.  (a) 100 metres of a groundwater dependent culturally significant site, in the case of a water supply work that will be authorised to take water pursuant to basic landholder rights only, or (b) 200 metres of a groundwater dependent culturally significant site, in the case of a water supply work that will be nominated by an access licence.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	* groundwater use not specified * no specific risks mentioned	
Australia	New South Wales	Sustainable management of coastal groundwater resources and opportunities for further development: executive summary	Jay F. Purnhakey, Don Woolley, NWC	2012	Waterlines Report Series No 79	Technical	MDBA0046	Not specified	Sands (coastal, aeolian)	Macleay Coastal Sands aquifer	Not specified	Potable water, urban	Renewable (younger water; recharge occurring)	Not specified / unknown	Not specified / unknown	Well defined (based on numeric model)	GDEs	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Predetermined triggers based on models	Detailed scientific study	Not specified / unknown	Not specified	Impact to GDEs	RCL not specified.	
Australia	New South Wales	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - New South Wales (part 1)	CSIRO and SKM	2010	1835-095X	Technical	MDBA0065	all within NSW	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Well defined (based on numeric model)	GDEs, GW-SW interaction	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	Not specified / unknown	Not specified	Not specified / unknown	Impact to GDEs	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes. Groundwater extraction reduces baseflow to streams	Specific groundwater use not specified, groundwater monitoring not specified, management mechanism not specified	
Australia	New South Wales	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - New South Wales (part 2)	CSIRO and SKM	2010	1835-095X	Technical	MDBA0066	all within NSW	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	Not specified / unknown	Not specified	Not specified / unknown	Impact to GDEs	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes. Groundwater extraction reduces baseflow to streams	Specific groundwater use not specified, management mechanisms not specified	
Australia	New South Wales	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - New South Wales (part 3)	CSIRO and SKM	2010	1835-095X	Technical	MDBA0067	all within NSW	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	GDEs, GW-surface water connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	not specified	Not specified / unknown	Not specified	Not specified / unknown	Impact to GDEs	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes. Groundwater extraction reduces baseflow to streams	Specific groundwater use not specified, management mechanisms not specified	
Australia	New South Wales	Peer Review of the Lower Namoi Alluvium Numerical Groundwater Model	N.P. Merrick, D.R. Woolley and W. Timms	2010	HC2010/6	Technical	MDBA0072	Murray Darling Basin	Alluvium (alluvial valley)	Lower Namoi aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, town supply	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable groundwater use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	predicted groundwater levels at all RCI sites must remain above the top of a confined aquifer. To meet this sustainability criterion groundwater levels must have stabilised or be rising at the completion of the scenario model run at the Resource Condition Limit sites.	Detailed scientific study	not specified	Detailed scientific study	N/A		
Australia	New South Wales	Peer Review of the Mid Murrumbidgee Numerical Groundwater Model	N.P. Merrick, D.R. Woolley and W. Timms	2010	HC2010/23	Technical	MDBA0073	Murray Darling Basin	Alluvium (alluvial basin)	Several - regional model	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, stock and domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, Stabilisation of extraction, Prevention of dewatering confined aquifers, Maintenance of current stream baseflows.	Detailed scientific study	not specified	Detailed scientific study	Hydrogeological integrity impact		
Australia	New South Wales	Peer Review of the Southern Riverine Plains Numerical Groundwater Model	J.R. Hillier, D.R. Woolley and N.P. Merrick	2010	HC2010/25	Technical	MDBA0074	Murray Darling Basin	Several - regional plan	Aquifers within the southern Riverine Plains groundwater model	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, stock and domestic	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable groundwater use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, Stabilisation of extraction, Prevention of dewatering confined aquifers, Maintenance of current stream baseflows.	Detailed scientific study	not specified	Detailed scientific study	Hydrogeological integrity impact		
Australia	New South Wales	Peer Review of the Upper Lachlan Alluvium Numerical Groundwater Model	D.R. Woolley, W. Timms and J. Hillier	2010	HC2010/22	Technical	MDBA0076	Murray Darling Basin	Alluvium (alluvial valley)	Lachlan alluvial aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable groundwater use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, Stabilisation of extraction, Prevention of dewatering confined aquifers, Maintenance of current stream baseflows.	Detailed scientific study	not specified	Detailed scientific study	Hydrogeological integrity impact		
Australia	New South Wales	Peer Review of the Upper Macquarie Alluvium Numerical Groundwater Model	D.R. Woolley, W. Timms and J. Hillier	2010	HC2010/20	Technical	MDBA0077	Murray Darling Basin	Alluvium (alluvial valley)	Upper Macquarie Groundwater Model	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, stock and domestic, industrial	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, Stabilisation of extraction, Prevention of dewatering confined aquifers, Maintenance of current stream baseflows.	Detailed scientific study	not specified	Detailed scientific study	Hydrogeological integrity impact		
Australia	New South Wales	Peer Review of the Upper Namoi Alluvium Numerical Groundwater Model	J.R. Hillier, W. Timms, and N.P. Merrick	2010	HC2010/19	Technical	MDBA0078	Murray Darling Basin	Alluvium (alluvial valley)	Upper Namoi groundwater model	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, Stabilisation of extraction, Prevention of dewatering confined aquifers, Maintenance of current stream baseflows.	Detailed scientific study	not specified	Detailed scientific study	Hydrogeological integrity impact		

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Bega and Brogo Rivers Area Regulated, Unregulated and Alluvial Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0133	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding. (b) 100 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding. (c) 50 metres from the boundary of the land on which the work is located, unless the landholder of the land adjoining the boundary has provided consent in writing. (d) 500 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing; or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Bega and Brogo Rivers Area Regulated, Unregulated and Alluvial Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0133	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5; (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of the plume associated with the contamination source; or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 5, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Bega and Brogo Rivers Area Regulated, Unregulated and Alluvial Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0133	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work used solely to take water pursuant to basic landholder rights; (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 for water supply works not used solely to take water pursuant to basic landholder rights, unless paragraph (c) applies; (c) at a distance specified by the Minister that is more than 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of any groundwater dependent ecosystem listed in Schedule 6; or (d) within 40 metres of the top of the high bank of a river.  (a) 100 metres of a groundwater dependent culturally significant site in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (b) 200 metres of a groundwater dependent culturally significant site in the case of a water supply work not used solely to take water pursuant to basic landholder rights.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Bellingen River Area Unregulated and Alluvial Water Sources 2008	New South Wales Government	2008		Resource Management Plan	MDBA0134	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of an approved water supply work (bore) nominated by another access licence, (b) 200 metres of an approved water supply work (bore) from which basic landholder rights water is being extracted, (c) 100 metres from the property boundary, unless negotiated with a neighbour for a lesser distance, (d) 500 metres from an approved water supply works (bore) from local water utility/major utility, and (e) 100 metres from a Department's observation or monitoring bore, unless negotiated with the Department of Water and Energy for a lesser distance.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanism derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Bellingen River Area Unregulated and Alluvial Water Sources 2008	New South Wales Government	2008		Resource Management Plan	MDBA0134	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) 100 metres of a contamination source as listed in Schedule 4, unless the proponent can demonstrate to the Minister's satisfaction that a lesser distance will result in no more than minimal harm to the water source, and that extraction will not impact on the environment or cause a threat to public health as advised by the Minister for Health, or (b) a greater distance than in sub-clause (a) that the Minister nominates in order to ensure that no more than minimal harm will occur to the groundwater source, and that extraction will not impact on the environment or cause a threat to public health as advised by the Minister for Health. (7) Extraction of groundwater from a new water supply work (bore) for any purpose between 100 metres and 500 metres of a contamination source as listed in Schedule 4, will require: (a) an application to the Minister by the licence holder providing evidence that no drawdown of the groundwater within 100 metres of a contamination source will occur, (b) the Minister to assess the application as adequate, and (c) the Minister to approve the application.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanism derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Bellingen River Area Unregulated and Alluvial Water Sources 2008	New South Wales Government	2008		Resource Management Plan	MDBA0134	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) for basic landholders rights only, within 100 metres of a high priority groundwater dependent ecosystems, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 5, or (b) from an access licence, within 200 metres of a high priority groundwater dependent ecosystems, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 5, or (c) within 500 metres of a high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 5, or (d) within 40 metres of the top of the high bank of any third order or above stream, or lagoon, or (e) within 40 metres of first and second order stream, unless the water supply work (bore) is drilled into the underlying parent material, and the slotted intervals of the works commences deeper than 30 metres.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanism derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Coffs Harbour Area Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0135	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of a water supply work being constructed or used to take water from the alluvial sediments in these water sources nominated by another access licence, (b) 200 metres of a water supply work being constructed or used to take water from the alluvial sediments in these water sources for basic landholder rights, (c) 100 metres from the property boundary, (d) 500 metres from a water supply work being constructed or used to take water from alluvial sediments in these water sources by a local water utility or a major utility, or (e) 400 metres of a Departmental observation or monitoring bore.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanism derivation not specified	

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Coffs Harbour Area Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0135	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) 100 metres of a contamination source as listed in Schedule 3, unless the applicant can demonstrate to the Minister's satisfaction, that: (i) a lesser distance will result in no more than minimal harm to the water source, and (ii) the taking of water will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health, or (b) a greater distance than in subclause (a), as determined by the Minister, to ensure that no more than minimal harm will occur to the water source, and that extraction will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health; (2) A water supply work approval shall not be granted for a new water supply work to be constructed or used to take water from the alluvial sediments in these water sources for any purpose, except basic landholder rights, which is between 100 metres and 500 metres of a contamination source listed in Schedule 3, unless the applicant provides evidence, to the Minister's satisfaction, that no drawdown of groundwater (a) 100 metres of a contamination source as listed in Schedule 3, unless the applicant can demonstrate to the Minister's satisfaction, that: (i) a lesser distance will result in no more than minimal harm to the water source, and (ii) the taking of water will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health, or (b) a greater distance than in subclause (a), as determined by the Minister, to ensure that no more than minimal harm will occur to the water source, and that extraction will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health; (2) A water supply work approval shall not be granted for a new water supply work to be constructed or used to take water from the alluvial sediments in these water sources for any purpose, except basic landholder rights, which is between 100 metres and 500 metres of a contamination source listed in Schedule 3, unless the applicant provides evidence, to the Minister's satisfaction, that no drawdown of groundwater	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Coffs Harbour Area Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0135	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a high priority groundwater dependent ecosystems, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4, for basic landholders rights only, or (b) 200 metres of a high priority groundwater dependent ecosystems, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4, for water supply works nominated by an access licence, or (c) 500 metres of a high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4, or (d) 40 metres of the top of the high bank of any third order or above stream, or lagoon, or (e) 40 metres of first and second order stream, unless the water supply work to be constructed or used to take water from the alluvial sediments in these water sources is drilled into the underlying parent material, and the slotted intervals of the works commences deeper than 30 metres	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, groundwater use not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Great Metropolitan Region Groundwater Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0136	Sydney Basin	Several - regional plan	Botany Sands Groundwater Source; Coxs River Fractured Rock Groundwater Source; Goulburn Fractured Rock Groundwater Source; Hawkesbury Alluvium Groundwater Source; Maroota Tertiary Sands Groundwater Source; Metropolitan Coastal Sands Groundwater Source; Sydney Basin Blue Mountains Groundwater Source; Sydney Basin Central Groundwater Source; Sydney Basin Coxs River Groundwater Source; Sydney Basin Nepean Groundwater Source; Sydney Basin North Groundwater Source; Sydney Basin Richmond Groundwater Source; and Sydney Basin South Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock, domestic, local utility	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Specific distance restrictions based on groundwater source. Refer to Table A for details.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Great Metropolitan Region Groundwater Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0136	Sydney Basin	Several - regional plan	Botany Sands Groundwater Source; Coxs River Fractured Rock Groundwater Source; Goulburn Fractured Rock Groundwater Source; Hawkesbury Alluvium Groundwater Source; Maroota Tertiary Sands Groundwater Source; Metropolitan Coastal Sands Groundwater Source; Sydney Basin Blue Mountains Groundwater Source; Sydney Basin Central Groundwater Source; Sydney Basin Coxs River Groundwater Source; Sydney Basin Nepean Groundwater Source; Sydney Basin North Groundwater Source; Sydney Basin Richmond Groundwater Source; and Sydney Basin South Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock, domestic, local utility	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 3; (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 3, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of the plume associated with the contamination source; or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 3, if a greater distance is determined by the Minister to be necessary to protect a water source, the environment or public health or safety	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Great Metropolitan Region Groundwater Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0136	Sydney Basin	Several - regional plan	Botany Sands Groundwater Source; Coxs River Fractured Rock Groundwater Source; Goulburn Fractured Rock Groundwater Source; Hawkesbury Alluvium Groundwater Source; Maroota Tertiary Sands Groundwater Source; Metropolitan Coastal Sands Groundwater Source; Sydney Basin Blue Mountains Groundwater Source; Sydney Basin Central Groundwater Source; Sydney Basin Coxs River Groundwater Source; Sydney Basin Nepean Groundwater Source; Sydney Basin North Groundwater Source; Sydney Basin Richmond Groundwater Source; and Sydney Basin South Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock, domestic, local utility	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 4 in the case of a water supply work solely for basic landholder rights; (b) within 200 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 4 in the case of a water supply work not solely for basic landholder rights; (c) at a distance specified by the Minister that is more than 200 metres from a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 4, excluding a water supply work solely for basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of that groundwater dependent ecosystem; (d) within 500 metres of a high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 4; (e) at a distance specified by the Minister that is more than 500 metres from a high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 4; (f) within 40 metres of the top of the high bank of a lagoon or any third order or higher order stream; (g) within 40 metres of a first or second order stream, unless: (i) the water supply work is drilled into the underlying parent material and the slotted intervals of the work commence deeper than 30 metres; or (ii) the Minister is satisfied that a hydrogeological study, submitted by the applicant and assessed as adequate by the Minister, demonstrates that the water supply work will have no more than minimal impact on base flows in the river; or (h) within 100 metres from the top of an escarpment. (a) 100 metres of a groundwater dependent culturally significant site in the case of a water supply work solely for basic landholder rights; or (b) 200 metres of a groundwater dependent culturally significant site in the case of a water supply work not solely for basic landholder rights.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information				Contextual Information											Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour?	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Great Metropolitan Region Groundwater Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0136	Sydney Basin	Several - regional plan	Botany Sands Groundwater Source; Cox's River Fractured Rock Groundwater Source; Goulburn Fractured Rock Groundwater Source; Hawkesbury Alluvium Groundwater Source; Maroota Tertiary Sands Groundwater Source; Metropolitan Coastal Sands Groundwater Source; Sydney Basin Blue Mountains Groundwater Source; Sydney Basin Central Groundwater Source; Sydney Basin Cox's River Groundwater Source; Sydney Basin Nepean Groundwater Source; Sydney Basin North Groundwater Source; Sydney Basin Richmond Groundwater Source; and Sydney Basin South Groundwater Source.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	stock, domestic, local utility	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	cl 47 application of local access rules if land subsidence identified	Understanding of scientifically established relationships	Evidence of land subsidence	Not specified / unknown	Hydrogeological integrity impact		RCL derivation not specified, risks not specified
Australia	New South Wales	Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0137	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work being constructed or used to take water from the alluvial sediments in these water sources nominated by another access licence. (b) 200 metres of a water supply work being constructed or used to take water from the alluvial sediments in these water sources for basic landholder rights. (c) 50 metres from the property boundary. (d) 500 metres from a water supply works being constructed or used to take water from alluvial sediments in these water sources by a local water utility or a major utility, or (e) 400 metres of a Departmental observation or monitoring bore.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified, groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0137	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) 100 metres of a contamination source as listed in Schedule 3, unless the applicant can demonstrate to the Minister's satisfaction, that: (i) a lesser distance will result in no more than minimal harm to the water source, and (ii) the taking of water will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health, or (b) a greater distance than in subclause (a), as determined by the Minister, to ensure that no more than minimal harm will occur to the water source, and that extraction will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified, groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0137	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a high priority groundwater dependent ecosystem, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4, for basic landholders rights only, or (b) 200 metres of a high priority groundwater dependent ecosystem, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4 for water supply works nominated by an access licence, or (c) 500 metres of a high priority karst environment groundwater dependent ecosystem, listed in and shown on the maps in Schedule 4	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified, groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Intersecting Streams Unregulated and Alluvial Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0138	not specified	Alluvium (alluvial valley)	Warrego Alluvial Groundwater Source and Paroo Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of a water supply work on another landholding that is authorised to take water from the same water source pursuant to an access licence, (b) 200 metres of a water supply work on another landholding that is authorised to take water from the same water source pursuant to basic landholder rights, (c) 100 metres from the boundary of the land on which the water supply work is located, unless the owner of the land adjoining the boundary has provided consent in writing, (d) 500 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing, or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Intersecting Streams Unregulated and Alluvial Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0138	not specified	Alluvium (alluvial valley)	Warrego Alluvial Groundwater Source and Paroo Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of that plume, or (c) at a distance that is more than 500 metres from the plume associated with a contamination source listed in Schedule 5, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Intersecting Streams Unregulated and Alluvial Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0138	not specified	Alluvium (alluvial valley)	Warrego Alluvial Groundwater Source and Paroo Alluvial Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 2,000 metres of a high priority groundwater dependent ecosystem listed in Schedule 6, (b) at a distance that is more than 2,000 metres from a high priority groundwater dependent ecosystem listed in Schedule 6, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of any high priority groundwater dependent ecosystem listed in Schedule 6, or (c) within 40 metres of the top of the high bank of a river. (a) 100 metres of a groundwater dependent culturally significant site in the case of a water supply work used solely to take water pursuant to basic landholder rights, or (b) 200 metres of a groundwater dependent culturally significant site in the case of a water supply work not used solely to take water pursuant to basic landholder rights.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Lower North Coast Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0139	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 200 metres of a water supply work being constructed or used to take water from the alluvial sediments in these water sources nominated by another access licence. (b) 200 metres of a water supply work being constructed or used to take water from the alluvial sediments in these water sources for basic landholder rights. (c) 300 metres from the property boundary. (d) 100 metres from a water supply works being constructed or used to take water from alluvial sediments in these water sources by a local water utility or a major utility, or (e) 400 metres of a Departmental observation or monitoring bore.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Lower North Coast Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0139	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) 100 metres of a contamination source as listed in Schedule 3, unless the applicant can demonstrate to the Minister's satisfaction, that: (i) a lesser distance will result in no more than minimal harm to the water source, and (ii) the taking of water will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health, or (b) a greater distance than in subclause (a), as determined by the Minister, to ensure that no more than minimal harm will occur to the water source, and that extraction will not impact on the environment or cause a threat to public health as confirmed by the Minister for Health. (2) A water supply work approval shall not be granted for a new water supply work to be constructed or used to take water from the alluvial sediments in these water sources for any purpose, except basic landholder rights, which is between 100 metres and 500 metres of a contamination source listed in Schedule 3, unless the applicant provides evidence, to the Minister's satisfaction, that no drawdown of groundwater within 100 metres of the respective contamination source will occur.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	

MDBA: Rules and Resource Condition Limits  
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Location Information				Contextual Information										Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions							
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Lower North Coast Unregulated and Alluvial Water Sources 2009	New South Wales Government	2009		Resource Management Plan	MDBA0139	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a high priority groundwater dependent ecosystem, excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4, for basic landholders rights only, or (b) 200 metres of a high priority groundwater dependent ecosystems excluding high priority karst environment groundwater dependent ecosystems, listed in and shown on the maps in Schedule 4, for water supply works nominated by an access licence, or (c) 500 metres of a high priority karst environment groundwater dependent ecosystem, listed in and shown on the maps in Schedule 4, or (d) 40 metres of the top of the high bank of any third order or above stream, or lagoon, or (e) 40 metres of first and second order stream, unless the water supply work to be constructed or used to take water from the alluvial sediments in these water sources is drilled into the underlying parent material, and the slotted intervals of the works commences deeper than 30 metres.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Murrumbidgee and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0140	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding; (b) 100 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding; (c) 50 metres from the boundary of the land on which the work is located, unless the landholder of the land adjoining the boundary has provided consent in writing; (d) 500 metres from a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing; or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified, groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Murrumbidgee and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0140	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5; (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no draw down of water will occur within 250 metres of the plume associated with the contamination source; or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 5, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified, groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the Murrumbidgee and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0140	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 for water supply works not used solely to take water pursuant to basic landholder rights; or (c) at a distance specified by the Minister that is more than 200 metres, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of any groundwater dependent ecosystem listed in Schedule 6; or (d) within 40 metres of the top of the high bank of a river. (e) 100 metres of a groundwater dependent culturally significant site in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (f) 200 metres of a groundwater dependent culturally significant site in the case of a water supply work that is not used solely to take water pursuant to basic landholder rights.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified, groundwater use not specified	
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Groundwater Sources	New South Wales Government	2008		Resource Management Plan	MDBA0141	Great Artesian Basin	Several - regional plan	Eastern Recharge Groundwater Source, Southern Recharge Groundwater Source, Surat Groundwater Source, Warrego Groundwater Source and the Central Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Industry, domestic, stock, agriculture, water supply, recreation	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(b) 5 km of high priority groundwater dependent ecosystems listed in Schedule 4 in the Eastern Recharge and Southern Recharge Groundwater Sources, and (c) 50 km of high priority groundwater dependent ecosystems listed in Schedule 4 in the Surat, the Warrego and the Central Groundwater Sources. (a) 50 kilometres of any high priority groundwater dependent ecosystem listed in Schedule 4 in the Surat, Warrego or Central Groundwater Sources, or (b) 5 kilometres of any high priority groundwater dependent ecosystem listed in Schedule 4 in the Eastern or Southern Recharge Groundwater Sources for a water bore which may extract more than 20 ML/year under basic landholder rights, a supplementary water access licence or an access licence in total, or (c) 1 kilometre of any high priority groundwater dependent ecosystem listed in Schedule 4 in the Eastern or Southern Recharge Groundwater Sources for a water bore which may not extract more than 20 ML/year under basic landholder rights, a supplementary water access licence or an access licence in total, or (d) 200 metres from a 3rd order or higher watercourse in the Eastern or Southern Recharge Groundwater Sources, or (e) 500 metres of an approved water supply work for a water bore which may extract more than 20 ML/year under basic landholder rights, a supplementary water access licence or an access licence in total, or (f) 100 metres of an approved water supply work for a water bore which may not extract more than 20 ML/year under basic landholder rights or access licence or an access licence in total, or (g) 200 metres of the applicant's landholding boundary	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Groundwater Sources	New South Wales Government	2008		Resource Management Plan	MDBA0141	Great Artesian Basin	Several - regional plan	Eastern Recharge Groundwater Source, Southern Recharge Groundwater Source, Surat Groundwater Source, Warrego Groundwater Source and the Central Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Industry, domestic, stock, agriculture, water supply, recreation	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(b) 5 km of high priority groundwater dependent ecosystems listed in Schedule 4 in the Eastern Recharge and Southern Recharge Groundwater Sources, and (c) 50 km of high priority groundwater dependent ecosystems listed in Schedule 4 in the Surat, the Warrego and the Central Groundwater Sources. (a) 50 kilometres of any high priority groundwater dependent ecosystem listed in Schedule 4 in the Surat, Warrego or Central Groundwater Sources, or (b) 5 kilometres of any high priority groundwater dependent ecosystem listed in Schedule 4 in the Eastern or Southern Recharge Groundwater Sources for a water bore which may extract more than 20 ML/year under basic landholder rights, a supplementary water access licence or an access licence in total, or (c) 1 kilometre of any high priority groundwater dependent ecosystem listed in Schedule 4 in the Eastern or Southern Recharge Groundwater Sources for a water bore which may not extract more than 20 ML/year under basic landholder rights, a supplementary water access licence or an access licence in total, or (d) 200 metres from a 3rd order or higher watercourse in the Eastern or Southern Recharge Groundwater Sources, or (e) 500 metres of an approved water supply work for a water bore which may extract more than 20 ML/year under basic landholder rights, a supplementary water access licence or an access licence in total, or (f) 100 metres of an approved water supply work for a water bore which may not extract more than 20 ML/year under basic landholder rights or access licence or an access licence in total, or (g) 200 metres of the applicant's landholding boundary.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Groundwater Sources	New South Wales Government	2008		Resource Management Plan	MDBA0141	Great Artesian Basin	Several - regional plan	Eastern Recharge Groundwater Source, Southern Recharge Groundwater Source, Surat Groundwater Source, Warrego Groundwater Source and the Central Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Industry, domestic, stock, agriculture, water supply, recreation	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: 500 m of a contamination source	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	

**MDBA: Rules and Resource Condition Limits**  
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Location Information				Contextual Information										Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions							
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the NSW Great Artesian Basin Groundwater Sources	New South Wales Government	2008		Resource Management Plan	MDBA0141	Great Artesian Basin	Several - regional plan	Eastern Recharge Groundwater Source, Southern Recharge Groundwater Source, Surat Groundwater Source, Warrego Groundwater Source and the Central Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Industry, domestic, stock, agriculture, water supply, recreation	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	drawdown limits	Drawdown rule to minimise impact on water supply works	Not specified / unknown	Cumulative drawdown limit of 10% of the potentiometric surface at the start of the plan	Not specified / unknown	Hydrogeological integrity impact		RCL derivation not specified, risks not specified, management mechanisms derivation not specified
Australia	New South Wales	Water Sharing Plan for the North Western Unregulated and Fractured Rock Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0142	not specified	Fractured rock	Kamranto Fold Belt North Western Groundwater Source, Adelaide Fold Belt North Western Groundwater Source and the Lachlan Fold Belt North Western Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	distance rules for bores	(a) 400 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding. (b) 200 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding. (c) 100 metres from the boundary of the land on which the water supply work is located, unless the landholder of the land adjoining the boundary has provided consent in writing. (d) 500 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing, or (e) 400 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Interference impacts to existing users		RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the North Western Unregulated and Fractured Rock Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0142	not specified	Fractured rock	Kamranto Fold Belt North Western Groundwater Source, Adelaide Fold Belt North Western Groundwater Source and the Lachlan Fold Belt North Western Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 3, (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 3, unless the Minister is satisfied that no drawdown of water will occur within 250 metres of the plume associated with the contamination source, or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source to protect the water source, the environment or public health and safety.	Not specified / unknown	not specified	Degradation of groundwater quality		RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the North Western Unregulated and Fractured Rock Water Sources 2011	New South Wales Government	2011		Resource Management Plan	MDBA0142	not specified	Fractured rock	Kamranto Fold Belt North Western Groundwater Source, Adelaide Fold Belt North Western Groundwater Source and the Lachlan Fold Belt North Western Groundwater Source	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	distance rules for bores	(a) within 2,000 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 4 in the case of a water supply work used solely to take water pursuant to basic landholder rights, (b) within 2,000 metres of a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 4 in the case of a water supply work not used solely to take water pursuant to basic landholder rights, (c) at a distance specified by the Minister that is more than 2,000 metres from a high priority groundwater dependent ecosystem listed in clause 1 of Schedule 4, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of any groundwater dependent ecosystem listed in clause 1 of Schedule 4, (d) within 500 metres of any high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 4 for water supply work used solely to take water pursuant to basic landholder rights, (e) within 500 metres of any high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 4 for water supply work not used solely to take water pursuant to basic landholder rights, (f) at a distance specified by the Minister that is more than 500 metres from any high priority karst environment groundwater dependent ecosystem listed in clause 2 of Schedule 4, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause more than minimal drawdown at the perimeter of any groundwater dependent ecosystem listed in clause 2 of Schedule 4, (g) within 40 metres of the top of the high bank of any 3rd order or higher river or stream, or (h) within 100 metres from the edge of an escarpment, where the location of the water supply work is to be above the escarpment.	Not specified / unknown	not specified	Impact to GDEs		RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Richmond River Area Unregulated, Regulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0143	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding; (b) 200 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding; (c) 100 metres from the boundary of the land on which the work is located, unless the landholder of the land adjoining the boundary has provided consent in writing; (d) 500 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing; or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Interference impacts to existing users		RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Richmond River Area Unregulated, Regulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0143	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 5; (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 5, unless the Minister is satisfied that no draw down of water will occur within 250 metres of the plume associated with the contamination source; or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 5, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Degradation of groundwater quality		RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Richmond River Area Unregulated, Regulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0143	not specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 6 in the case of a water supply work not used solely to take water pursuant to basic landholder rights; or (c) at a distance specified by the Minister that is more than 200 metres, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of any groundwater dependent ecosystem listed in Schedule 6; or (d) within 40 metres of the top of the high bank of a river.  (a) 100 metres of a groundwater dependent culturally significant site in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (b) 200 metres of a groundwater dependent culturally significant site in the case of a water supply work not used solely to take water pursuant to basic landholder rights.	Not specified / unknown	not specified	Impact to GDEs		RCL derivation not specified, risks not specified, management mechanisms derivation not specified	

MDBA: Rules and Resource Condition Limits  
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Location Information				Contextual Information										Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions							
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Tawamba River Unregulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0144	Not Specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 100 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding; (b) 100 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding; (c) 50 metres from the boundary of the land on which the work is located, unless the landholder of the land adjoining the boundary has provided consent in writing; (d) 500 metres from a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing; or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Tawamba River Unregulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0144	Not Specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 4; (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 4, unless the Minister is satisfied that no draw down of water will occur within 250 metres of the plume associated with the contamination source; or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 4, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Tawamba River Unregulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0144	Not Specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 5 in the case of a water supply work that is not used solely to take water pursuant to basic landholder rights; or (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 5 in the case of a water supply work that is not used solely to take water pursuant to basic landholder rights; or (c) at a distance specified by the Minister that is more than 200 metres, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of any groundwater dependent ecosystem listed in Schedule 5; or (d) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Tweed River Area Unregulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0145	Not Specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a water supply work authorised to take water from the same water source that is nominated by another access licence on another landholding; (b) 200 metres of a water supply work authorised to take water from the same water source pursuant to basic landholder rights on another landholding; (c) 100 metres from the boundary of the land on which the work is located, unless the landholder of the land adjoining the boundary has provided consent in writing; (d) 500 metres of a water supply work authorised to take water from the same water source by a local water utility or a major utility, unless the local water utility or major utility has provided consent in writing; or (e) 100 metres of a NSW Office of Water observation or monitoring bore, unless the Minister has provided consent in writing.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Tweed River Area Unregulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0145	Not Specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Restrictions of new water supply works: (a) within 250 metres of the plume associated with a contamination source listed in Schedule 4; (b) between 250 metres and 500 metres of the plume associated with a contamination source listed in Schedule 4, unless the Minister is satisfied that no draw down of water will occur within 250 metres of the plume associated with the contamination source; or (c) at a distance specified by the Minister that is more than 500 metres from the plume associated with a contamination source listed in Schedule 4, if a greater distance is determined by the Minister to be necessary to protect the water source, the environment or public health or safety.	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Tweed River Area Unregulated and Alluvial Water Sources 2010	New South Wales Government	2010		Resource Management Plan	MDBA0145	Not Specified	Several - regional plan	Not Specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Domestic and Stock	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) within 100 metres of a high priority groundwater dependent ecosystem listed in Schedule 5 in the case of a water supply work used solely to take water pursuant to basic landholder rights; or (b) within 200 metres of a high priority groundwater dependent ecosystem listed in Schedule 5 in the case of a water supply work not used solely to take water pursuant to basic landholder rights; or (c) at a distance specified by the Minister that is more than 200 metres, excluding water supply works used solely to take water pursuant to basic landholder rights, if the Minister is satisfied that the water supply work is likely to cause drawdown at the perimeter of any groundwater dependent ecosystem listed in Schedule 5; or (d) within 40 metres of the top of the high bank of a river.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Alstonville Plateau Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0146	Not Specified	Fractured rock	Alstonville Plateau Basalt Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Local Utility, domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 400 metres of a Department of Land and Water Conservation monitoring bore, or an approved water supply work (bore) nominated by another access licence, authorised to extract greater than 20 ML/yr; (b) 500 metres of an approved water supply work (bore) nominated by a local water utility access licence; or (c) 200 metres of an approved water supply work (bore) from which basic landholder rights water is being extracted, or a water supply work nominated by an access licence, authorised to extract less than 20 ML/yr.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Alstonville Plateau Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0146	Not Specified	Fractured rock	Alstonville Plateau Basalt Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Local Utility, domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Access licences to restrict extent and time required to reinstate water levels to a degree to mitigate or avoid any adverse impact	Not specified / unknown	Decline in groundwater levels over 3 successive years, a significant drop in groundwater levels in a single year or a minimum sustainable groundwater level is reached. See s.37	Not specified / unknown	Hydrogeological integrity impact	Risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Alstonville Plateau Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0146	Not Specified	Fractured rock	Alstonville Plateau Basalt Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Local Utility, domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Distance rules to minimise contamination	Not specified / unknown	Construction of new water supply works not permitted within 250m of a contamination source	Not specified / unknown	Degradation of groundwater quality	Risks not specified, management mechanisms derivation not specified	

**MDBA: Rules and Resource Condition Limits**  
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Location Information				Contextual Information										Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions							
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Category	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Alstonville Plateau Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0146	Not Specified	Fractured rock	Alstonville Plateau Basalt Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Local Utility, domestic and Stock	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(4) Extraction of groundwater from a new or replacement water supply work (bore) of greater than 20ML/yr is excluded within 100 metres of high priority groundwater dependent ecosystems listed in Schedule 5, or 40 metres of any river, unless the water supply work (bore) has an impermeable seal, as specified by the Minister, constructed within the bore to isolate aquifers preventing water ingress from the restricted aquifer.  (5) Construction of a new or replacement water supply work (bore) authorised to extract greater than 20ML/yr is excluded within 100 metres to 200 metres of high priority groundwater dependent ecosystems, unless the approval holder demonstrates that there will be no drawdown resulting from groundwater extraction at the groundwater dependent ecosystem boundary.  (6) Extraction of groundwater from a new or replacement water supply work (bore) of less than 20ML/yr, or pursuant to a basic landholder right, is excluded within 40 metres of high priority groundwater dependent ecosystems listed in Schedule 5, and any river, unless the water supply work (bore) has an impermeable seal, as specified by the Minister, constructed within the bore to isolate aquifers preventing water ingress from the restricted aquifer.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Dorrigo Plateau Surface Water Source and the Dorrigo Basalt Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0147	Not Specified	Fractured rock	Dorrigo Basalt Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Construction of new water supply works not permitted within 250m of a contamination source	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Dorrigo Plateau Surface Water Source and the Dorrigo Basalt Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0147	Not Specified	Fractured rock	Dorrigo Basalt Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(1) Extraction of groundwater of greater than 20 ML/yr will not be permitted from a water supply work (bore) within 100 metres of a high priority groundwater dependent ecosystem. (2) Extraction of groundwater greater than 20 ML/yr shall only be permitted from a water supply work (bore) 100 metres to 200 metres from a high priority groundwater dependent ecosystem, if there is no drawdown outside the natural variation at the margin of the groundwater dependent ecosystem. (3) Extraction of groundwater of less than 20 ML/yr from a water supply work (bore) nominated by an access licence, and pursuant to basic landholder rights, will not be permitted within 40 m from high priority groundwater dependent ecosystems.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Dorrigo Plateau Surface Water Source and the Dorrigo Basalt Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0147	Not Specified	Fractured rock	Dorrigo Basalt Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Extraction of greater than 20ML/yr from a water supply work within 400m of an approved water supply work nominated by another licence	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Kulluna Mangrove Mountain Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0148	Not Specified	Porous rock	Hawkesbury sandstone aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) extraction from a new or replacement water supply work (bore) for the extraction of basic landholder rights will not be permitted within: (i) 50 metres of the property boundary, or (ii) 100 metres of an approved water supply work (bore) from which basic landholder rights water may be extracted. (b) extraction from a new or replacement water supply work (bore) nominated by an access licence will not be permitted within: (i) 400 metres of an approved water supply work (bore) nominated by another access licence, (ii) 200 metres of an approved water supply work (bore) from which basic landholder rights water may be extracted, or (iii) 50 metres of the property boundary.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Kulluna Mangrove Mountain Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0148	Not Specified	Porous rock	Hawkesbury sandstone aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Trigger levels to protect groundwater levels through local access rules	Not specified / unknown	Water level restrictions set out in s. 37 a,b,c & d for access licences and f,g & h for local water utility access licence	Not specified / unknown	Hydrogeological integrity impact	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Kulluna Mangrove Mountain Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0148	Not Specified	Porous rock	Hawkesbury sandstone aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Construction of new water supply works not permitted within 100 metres of a contamination source, unless the proponent can demonstrate to the Minister's satisfaction that a lesser distance will result in no more than minimal harm to these groundwater sources, and that extraction will not impact on the environment or cause a threat to public health as advised by the Minister for Health	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Kulluna Mangrove Mountain Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0148	Not Specified	Porous rock	Hawkesbury sandstone aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Extraction of groundwater from a water supply work is excluded within 100m of GDEs, rivers, culturally significant sites	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Kulluna Mangrove Mountain Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0148	Not Specified	Porous rock	Hawkesbury sandstone aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Application of local access rules if any evidence of land subsidence or aquifer compaction s.40	Understanding of scientifically established relationships	Land subsidence or aquifer compaction	Not specified / unknown	Hydrogeological integrity impact	RCL derivation not specified, risks not specified	
Australia	New South Wales	Water Sharing Plan for the Stuarts Point Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0149	Not Specified	Sands (coastal, aeolian)	Pleistocene age sand formations	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Extraction of greater than 20ML/yr from a water supply work within 400m of an approved water supply work authorised to extract 20 ML/yr under another licence	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Stuarts Point Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0149	Not Specified	Sands (coastal, aeolian)	Pleistocene age sand formations	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Application of local access rules if any evidence of water level decline that would have an adverse impact s.37	Not specified / unknown	Water levels within groundwater source	Not specified / unknown	Interference impacts to existing users	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Stuarts Point Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0149	Not Specified	Sands (coastal, aeolian)	Pleistocene age sand formations	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	within 100 metres of a contamination source	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	
Australia	New South Wales	Water Sharing Plan for the Stuarts Point Groundwater Source 2003	New South Wales Government	2004		Resource Management Plan	MDBA0149	Not Specified	Sands (coastal, aeolian)	Pleistocene age sand formations	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	(a) 40 metres of high priority groundwater dependent ecosystems depicted in Schedule 2 and listed in Schedule 5, for those exercising basic landholder rights, or (b) 100 metres of high priority groundwater dependent ecosystems shown in Schedule 2 and listed in Schedule 5, for all other access licences.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms derivation not specified	



**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	New South Wales	Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0150	Not Specified	Sands (coastal, aeolian)	Tomago, Tomaree and Stockton Sand Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Distance rules apply to minimise interference between water supply works. Several distance rules (in metres) are set in s.35 for siting water supply works with respect to existing water supply works	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		RCL derivation not specified, risks not specified, management mechanisms derivation not specified
Australia	New South Wales	Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0150	Not Specified	Sands (coastal, aeolian)	Tomago, Tomaree and Stockton Sand Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	Application of local access rules if any evidence of water level decline that would have an adverse impact s.36	Not specified / unknown	Percentage threshold (80% to 95%) of groundwater level recovery	Not specified / unknown	Hydrogeological integrity impact		RCL derivation not specified, risks not specified, management mechanisms derivation not specified
Australia	New South Wales	Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0150	Not Specified	Sands (coastal, aeolian)	Tomago, Tomaree and Stockton Sand Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	distance rules for bores	Distance rules to minimise contamination. Distance rule (in metres) is set in s.37 for siting water supply works with respect to identified contamination sources	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality		RCL derivation not specified, risks not specified, management mechanisms derivation not specified
Australia	New South Wales	Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003	New South Wales Government	2004		Resource Management Plan	MDBA0150	Not Specified	Sands (coastal, aeolian)	Tomago, Tomaree and Stockton Sand Aquifers	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock and domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	protecting groundwater dependent ecosystems, water quality and culturally significant sites	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Distance rules to minimise impact to GDEs. Several distance rules (in metres) are set in s.38 for siting water supply works with respect to identified GDEs.	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs		RCL derivation not specified, risks not specified, management mechanisms derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Alluvium (alluvial basin)	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If more than 10% cumulative variation in the water table, will need to demonstrate to the Minister's satisfaction that the variation will not prevent the long-term viability of the GDE or significant site	Not specified / unknown	Less than or equal to a 10% cumulative variation in the water table, allowing for typical climatic "post-water sharing plan"(2) variations, 40m from any: (a) high priority groundwater dependent ecosystem; or (b) high priority culturally significant site; listed in the schedule of the relevant water sharing plan; or A maximum of a 2m decline cumulatively at any water supply work.	Not specified / unknown	Impact to GDEs		RCL derivation and management mechanism derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Alluvium (alluvial basin)	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If condition 1.(a) is not met then appropriate studies will need to demonstrate to the Minister's satisfaction that the change in groundwater quality will not prevent the long-term viability of the dependent ecosystem, significant site or affected water supply works	Not specified / unknown	1. (a) Any change in the groundwater quality should not lower the beneficial use category of the groundwater source beyond 40m from the activity; and (b) No increase of more than 1% per activity in long-term average salinity in a highly connected surface water source at the nearest point to the activity. Redesign of a highly connected surface water source that is defined as a "reliable water supply"(4) is not an appropriate mitigation measure to meet considerations 1.(a) and 1.(b) above.	Not specified / unknown	Degradation of groundwater quality		RCL derivation and management mechanism derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Sands (coastal, aeolian)	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If more than 10% cumulative variation in the water table, will need to demonstrate to the Minister's satisfaction that the variation will not prevent the long-term viability of the GDE or significant site	Not specified / unknown	Less than or equal to a 10% cumulative variation in the water table, allowing for typical climatic "post-water sharing plan"(2) variations, 40m from any: (a) high priority groundwater dependent ecosystem; or (b) high priority culturally significant site; listed in the schedule of the relevant water sharing plan; or A maximum of a 2m decline cumulatively at any water supply work.	Not specified / unknown	Degradation of groundwater quality		RCL derivation and management mechanism derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Porous rock	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If more than 10% cumulative variation in the water table, will need to demonstrate to the Minister's satisfaction that the variation will not prevent the long-term viability of the GDE or significant site	Not specified / unknown	Less than or equal to 10% cumulative variation in the water table, allowing for typical climatic "post-water sharing plan" variations, 40m from any (a) high priority groundwater dependent ecosystem, or (b) high priority culturally significant site, listed in the schedule of the relevant water sharing plan. A maximum of a 2m decline cumulatively at any water supply work.	Not specified / unknown	Impact to GDEs		RCL derivation and management mechanism derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Porous rock	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If more than 10% cumulative variation in the water table, will need to demonstrate to the Minister's satisfaction that the variation will not prevent the long-term viability of the water supply works	Not specified / unknown	Any change in the groundwater quality should not lower the beneficial use category of the groundwater source beyond 40m from the activity	Not specified / unknown	Degradation of groundwater quality		RCL derivation and management mechanism derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Fractured rock	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If more than 10% cumulative variation in the water table, will need to demonstrate to the Minister's satisfaction that the variation will not prevent the long-term viability of the GDE or significant site	Not specified / unknown	Less than or equal to 10% cumulative variation in the water table, allowing for typical climatic "post-water sharing plan" variations, 40m from any (a) high priority groundwater dependent ecosystem, or (b) high priority culturally significant site, listed in the schedule of the relevant water sharing plan. A maximum of a 2m decline cumulatively at any water supply work.	Not specified / unknown	Impact to GDEs		RCL derivation and management mechanism derivation not specified
Australia	New South Wales	NSW Aquifer Interference Policy	New South Wales Government	2012	11445	Resource Management Plan	MDBA0161	Statewide	Fractured rock	Statewide	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	undertake technical investigations	If more than 10% cumulative variation in the water table, will need to demonstrate to the Minister's satisfaction that the variation will not prevent the long-term viability of the water supply works	Not specified / unknown	Any change in the groundwater quality should not lower the beneficial use category of the groundwater source beyond 40m from the activity	Not specified / unknown	Degradation of groundwater quality		RCL derivation and management mechanism derivation not specified
Australia	Northern Territory	Water Allocation Plan for the Tindall Limestone Aquifer, Katherine	DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENT, THE ARTS AND SPORT	2009		Resource Management Plan	MDBA0121	Daly Basin	Conduit aquifers (cavernous limestone, basalt caves, etc.)	Tindall Limestone Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agricultural, industrial, town supply, irrigation, stock and domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater allocation and management	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local rules for allocation limits based on river flow, to protect GW-SW interactions. designated extraction limits based on Katherine River flow prior to commencement of the water accounting year.	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	Tindall Limestone aquifer provides nearly all flow in the Katherine River during dry season.	* RCL derivation not specified
Australia	Northern Territory	Water Allocation Plan for the Tindall Limestone Aquifer, Katherine	DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENT, THE ARTS AND SPORT	2009		Resource Management Plan	MDBA0121	Daly Basin	Conduit aquifers (cavernous limestone, basalt caves, etc.)	Tindall Limestone Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agricultural, industrial, town supply, irrigation, stock and domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater allocation and management	Not specified / unknown	Yes; monitoring status unknown	Cultural flows mentioned in Plan	distance rules for bores	minimum bore distance of 100 m of operational bores, for new bores proposing extraction of 20 L/sec	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	Tindall Limestone aquifer provides nearly all flow in the Katherine River during dry season.	* RCL derivation not specified
Australia	Northern Territory	Ti Tree Region Water Allocation Plan 2009	DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENT, THE ARTS AND SPORT	2009	03/2009A	Resource Management Plan	MDBA0122	Ti Tree Basin	Sands (coastal, aeolian)	Ti Tree Groundwater Basin Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agriculture, urban supply, domestic and stock	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater use and GDE protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows incorporated in Plan	not specified	not specified	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	* That environmental and cultural values will not be preserved	* RCL and mechanisms not specified
Australia	Northern Territory	Ti Tree Region Water Allocation Plan 2009	DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENT, THE ARTS AND SPORT	2009	03/2009A	Resource Management Plan	MDBA0122	Ti Tree Basin	Sands (coastal, aeolian)	Ti Tree Groundwater Basin Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agriculture, urban supply, domestic and stock	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater use and GDE protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows incorporated in Plan	not specified	not specified	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact	* That climate change is not adequately incorporated into the definition of sustainable yield	* RCL and mechanisms not specified

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information														Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions					
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Impacts	Risk Description	RCL and mechanisms not specified
Australia	Northern Territory	Ti Tree Region Water Allocation Plan 2009	DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENT, THE ARTS AND SPORT	2009	03/2009A	Resource Management Plan	MDBA0122	Ti Tree Basin	Sands (coastal, aeolian)	Ti Tree Groundwater Basin Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agriculture, urban supply, domestic and stock	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable groundwater use and GDE protection	Not specified / unknown	Yes; monitoring status unknown	Cultural flows incorporated in Plan	not specified	not specified	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	*water quality degradation	* RCL and mechanisms not specified
Australia	Northern Territory	Water Allocation Plan Western Davenport Water Control District 2011-2021	Department of Natural Resources, Environment, the Arts and Sport	2011	09/2011A	Resource Management Plan	MDBA0123	Georgina / Wiso Basin	Fractured rock	sandstones and siltstones	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	horticulture, urban supply, commercial	Renewable (younger water; recharge occurring)	Non-connected	Below Allocated Limit	Limited definition	sustainable groundwater use	Not specified / unknown	Yes; but not monitored	Cultural flows mentioned in Plan	not specified	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	not specified	* RCLs, risks and mechanisms not specified
Australia	Northern Territory	DRAFT Alice Springs Water Allocation Plan 2013-2018	Water Resources Branch Department of Land Resource Management	2013		Resource Management Plan	MDBA0124	Amadeus Basin	Fractured rock	Alice Springs Alluvial Aquifers and the Amadeus Basin Aquifers (which includes the Mereenie and Hermannsburg Sandstones, Picoota Sandstone, Shannon and Goyder Formations)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	urban supply, irrigation, stock, domestic, commercial	Non-renewable (fossil water; Usually confined or semi-confined)	Not specified / unknown	Below Allocated Limit	Reasonably defined	sustainable groundwater use	Yes; groundwater monitored periodically	GDEs not identified	Cultural flows incorporated in Plan	not specified	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	not specified	* RCLs, risks and mechanisms not specified
Australia	Queensland	Water Resource Allocation and Planning Diversion Limit Area	Water Resources Branch Department of Natural Resources and Mines	2012		Resource Management Plan	MDBA0016	Murray Darling Basin	Alluvium (alluvial valley)	Upper Condamine Alluvium	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, town water supply	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Not demonstrated	sustainable groundwater use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Under section 25 of the Water Act, the chief executive may publish a notice that limits the take and interference of water by limiting: *take or interference under a water licence *take under a water permit *take under a water allocation not managed under a resource operations plan *take under a constructing authority.	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	not specified	*RCL not identified *Risks to RCL not specified *Mechanisms to manage risk to RCL not specified
Australia	Queensland	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - Queensland	CSIRO and SKM	2010	1835-095X	Technical	MDBA0063	all within QLD	Several - regional plan	Several - regional plan	Not specified	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Well defined (based on numeric model)	GW-SW connectivity, GDEs (low risk)	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes	Specific use of groundwater is not covered, groundwater monitoring not specified, management mechanisms not identified	
Australia	Queensland	Peer Review of the Upper Condamine Numerical Groundwater Model	J.R. Hillier, W. Timms, and N.P. Merrick	2010	HC2010/6	Technical	MDBA0075	Murray Darling Basin	Several - regional plan	Upper Condamine groundwater model	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, stock and domestic	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable groundwater use	Yes; groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Stabilisation of groundwater levels, Stabilisation of extraction, Prevention of dewatering confined aquifers, Maintenance of current stream baseflows.	Detailed scientific study	not specified	Not specified / unknown	Hydrogeological integrity impact		
Australia	Queensland	Water Resource (Great Artesian Basin) Plan 2006	Queensland Government	2009		Resource Management Plan	MDBA0090	Great Artesian Basin	Several - regional plan	several - spatially varied	Not specified	not specified	Not specified / unknown	Non-connected	Not specified / unknown	Not demonstrated	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	* RCLs, mechanisms and risks not specified		
Australia	Queensland	Water Resource (Fitzroy Basin) Plan 2011	Queensland Government	2011		Resource Management Plan	MDBA0129	Fitzroy Basin	Several - regional plan	Callide Groundwater Unit 1 and Callide Groundwater Unit 2	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	mining, irrigation, town supply, stock, domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	sustainable groundwater use	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	drawdown limits	Drawdown is the indicator to assess groundwater levels to support the relevant groundwater-dependent ecosystems	Not specified / unknown	unspecified drawdown durations	Not specified / unknown	Impact to GDEs	Specific risks, RCL derivation and management mechanism derivation	
Australia	Queensland	Water Resource (Burdekin Basin) Plan 2007	Queensland Government	2011		Resource Management Plan	MDBA0131	Burdekin Basin	Not specified	not specified	Not specified	not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	Sustainable water use, GW-SW connectivity, cultural values	Yes; groundwater monitored periodically	GDEs not identified	Cultural flows incorporated in Plan	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified / unknown	Risks not specified, RCL not specified, management mechanisms not specified		
Australia	Queensland	Water Resources (Burnett Basin) Plan 2000	Queensland Government	2011		Resource Management Plan	MDBA0157	Burnett Basin	Several - regional plan	Coastal Burnett groundwater management area: Elliot Formation and Fairymead Beds Aquifers	Not specified	Stock and domestic	Not specified / unknown	Connected	Not specified / unknown	Well defined (based on numeric model)	Water quality, sustainable water use, GDEs	Yes; groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	not specified	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms not specified		
Australia	Queensland	Water Resources (Mary Basin) Plan 2006	Queensland Government	2009		Resource Management Plan	MDBA0158	Mary Basin	Not specified	Coooloa Sandmass sub artesian area	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic and town water supply purposes	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	Sustainable water use, groundwater quality, GDEs	Yes; groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	not specified	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	RCL derivation not specified, risks not specified, management mechanisms not specified		
Australia	Queensland	Water Resource (Logan Basin) Plan 2007	Queensland Government	2009		Resource Management Plan	MDBA0159	Logan Basin	Not specified	not specified	Not specified	not specified	Not specified / unknown	Not specified / unknown	Not specified / unknown	Reasonably defined	Sustainable water use	Yes; groundwater monitored periodically	GDEs not identified	Cultural flows incorporated in Plan	not specified	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact	RCL derivation not specified, risks not specified, management mechanisms not specified, groundwater use not specified		
Australia	Queensland	Water Resource (Baffle Creek Basin) Plan 2010	Queensland Government	2010		Resource Management Plan	MDBA0160	Baffle Creek Basin	Not specified	not specified	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Sustainable water use, GW-SW connectivity, cultural values	Not specified / unknown	GDEs not identified	Cultural flows incorporated in Plan	not specified	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact	RCL derivation not specified, risks not specified, management mechanisms not specified, groundwater use not specified		
Australia	Queensland	Coastal Burnett groundwater management area water sharing rules and seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0173	not specified	Several - regional plan	Elliot Formation and Fairymead Bed	Not specified	Stock, domestic, irrigation, industrial and urban	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	sustainable water use, groundwater quality	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.9; Section 15 of the Water Regulation 2002). E.g. seasonal water assignment is not allowed where the water level trigger is exceeded	Not specified / unknown	Trigger level: water levels must be 0.25, above the minimum operating levels if the trend shows a decline	Not specified / unknown	Degradation of groundwater quality	Risk to aquifer from saltwater intrusion	No RCL specified
Australia	Queensland	Coastal Burnett Groundwater Management Area Dewatering Rules	Department of Environment and Resource Management	2007		Resource Management Plan	MDBA0174	not specified	Several - regional plan	Elliot Formation and Fairymead Bed	Not specified	Dewatering	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	waterlogging	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Dewatering rules (pg.5) apply to salt water intrusion and water levels	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	Risk to aquifer from saltwater intrusion	No RCL specified
Australia	Queensland	Border Rivers Groundwater Management Area water sharing rules and seasonal water assignment rules	Department of Environment and Resource Management	2010		Resource Management Plan	MDBA0175	not specified	Alluvium (alluvial valley)	Not specific regional plan	Not specified	Stock, domestic, town water supply, urban	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	Seasonal water assignment rules (pg.15; Section 15 of the Water Regulation 2002); seasonal water assignment is only allowed in particular sub-areas	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	No RCL specified	
Australia	Queensland	Border Rivers Groundwater Management Area water sharing rules and seasonal water assignment rules	Department of Environment and Resource Management	2010		Resource Management Plan	MDBA0175	not specified	Alluvium (alluvial valley)	Not specific regional plan	Not specified	Stock, domestic, town water supply, urban	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.15; Section 15 of the Water Regulation 2002) and Forward drawing rules (pg.14); e.g. seasonal assignment won't be approved if there is an adverse affect on other users (including water quality) or the environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	No RCL specified	
Australia	Queensland	Central Condamine Alluvium Groundwater Management Area water sharing rules, seasonal water assignment rules and water licence transfer rules	Department of Natural Resources and Mines	2013		Resource Management Plan	MDBA0176	not specified	Alluvium (alluvial valley)	Central Condamine Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	Rules for "Group S" water sharing licences (pg. 6)	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	No RCL specified	
Australia	Queensland	Central Condamine Alluvium Groundwater Management Area water sharing rules, seasonal water assignment rules and water licence transfer rules	Department of Natural Resources and Mines	2013		Resource Management Plan	MDBA0176	not specified	Alluvium (alluvial valley)	Central Condamine Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.8; Section 15 of the Water Regulation 2002); eg not allowed if there is adverse impact to other users	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	No RCL specified	
Australia	Queensland	Central Condamine Alluvium Groundwater Management Area water sharing rules, seasonal water assignment rules and water licence transfer rules	Department of Natural Resources and Mines	2013		Resource Management Plan	MDBA0176	not specified	Alluvium (alluvial valley)	Central Condamine Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	Water licence transfer rules (pg.10); e.g. transfer only permitted if licence states nominal entitlements, licence activity is in the same sub-area as original licence, no increase to the total nominal entitlement volume and no change to licence conditions, and new works have to be 400m from the existing works.	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	No RCL specified	
Australia	Queensland	Dalrymple Creek Alluvium groundwater management area water sharing and seasonal water assignment rules	Department of Natural Resources and Mines	2011		Resource Management Plan	MDBA0177	not specified	Alluvium (alluvial valley)	Dalrymple Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.7; Section 15 of the Water Regulation 2002); e.g. water assignment not allowed if there is adverse impacts to other users or environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	No RCL specified	
Australia	Queensland	Oakey Creek Groundwater Management Area water sharing and seasonal water assignment rules	Department of Natural Resources and Mines	2005		Resource Management Plan	MDBA0178	not specified	Alluvium (alluvial valley)	Oakey Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	Seasonal water assignment rules (pg.13); water assignment has limits on certain sub-areas	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	No RCL specified, no specific risks	

**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information				Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions					
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour?	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Not Described		
Australia	Queensland	Upper Hodgson Creek groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0179	not specified	Fractured rock	Basalt formation of the Main Range Volcanics	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.14; Section 15 of the Water Regulation 2002); limits on the volume of water assigned, only allowed within respective sub-areas	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL specified, no specific risks	
Australia	Queensland	Upper Hodgson Creek groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0179	not specified	Fractured rock	Basalt formation of the Main Range Volcanics	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	Seasonal water assignment rules (pg.14; Section 15 of the Water Regulation 2002); seasonal water assignment only allowed within respective sub-areas	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL specified, no specific risks	
Australia	Queensland	Toowoomba City Basalts groundwater management area seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0180	not specified	Fractured rock	Toowoomba City Basalts GMA	Not specified	Stock, domestic, urban and town supply	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.5; Section 15 of the Water Regulation 2002); seasonal assignment not granted if there is potentially an adverse affect on other users, town supply or the environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		No RCL specified	
Australia	Queensland	Toowoomba City Basalts groundwater management area seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0180	not specified	Fractured rock	Toowoomba City Basalts GMA	Not specified	Stock, domestic, urban and town supply	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.5; Section 15 of the Water Regulation 2002); seasonal assignment may be approved if there is no other suitable water supply and requires water for safety or hazard reduction purposes, to maintain a significant asset or maintain enterprise to avoid significant hardship	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL, no specific risks	
Australia	Queensland	Bowen groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2011		Resource Management Plan	MDBA0181	not specified	Several - regional plan	Don River Alluvium, Euri Creek Alluvium, Grant, Toon Common Alluvium	Not specified	Stock, domestic, irrigation, industrial and urban	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.9; Section 15 of the Water Regulation 2002); limits on the volume of water assigned within zones of the Bowen groundwater management area	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL, no specific risks	
Australia	Queensland	Bowen groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2011		Resource Management Plan	MDBA0181	not specified	Several - regional plan	Don River Alluvium, Euri Creek Alluvium, Grant, Toon Common Alluvium	Not specified	Stock, domestic, irrigation, industrial and urban	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	Seasonal water assignment rules (pg.9; Section 15 of the Water Regulation 2002); seasonal water assignment will not be granted if there is potential to adversely affect other water users or the environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		No RCL specified	
Australia	Queensland	Callide Valley groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0182	not specified	Alluvium (alluvial valley)	Callide Creek Alluvium, Kariboe Creek Alluvium, Grevillea Creek Alluvium, Prospect Creek Alluvium, Kroombit Creek Alluvium, Bell Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.10; Section 15 of the Water Regulation 2002); seasonal water assignment will not be granted if there is potential to adversely affect other users or the environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		No RCL specified	
Australia	Queensland	Callide Valley groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2009		Resource Management Plan	MDBA0182	not specified	Alluvium (alluvial valley)	Callide Creek Alluvium, Kariboe Creek Alluvium, Grevillea Creek Alluvium, Prospect Creek Alluvium, Kroombit Creek Alluvium, Bell Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.10; Section 15 of the Water Regulation 2002); limits on the volume of water allowed to be used	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL, no specific risks	
Australia	Queensland	Don River, Dee River and Alma Creek groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2012		Resource Management Plan	MDBA0183	not specified	Alluvium (alluvial valley)	Don River Alluvium, Dee River Alluvium, Alma Creek Alluvium, Callide Creek Alluvium, Pocket Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.8; Section 15 of the Water Regulation 2002); limits on the volume of water allowed to be used	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL, no specific risks	
Australia	Queensland	Don River, Dee River and Alma Creek groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2012		Resource Management Plan	MDBA0183	not specified	Alluvium (alluvial valley)	Don River Alluvium, Dee River Alluvium, Alma Creek Alluvium, Callide Creek Alluvium, Pocket Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	Seasonal water assignment rules (pg.8; Section 15 of the Water Regulation 2002); seasonal water assignment is only allowed in certain groundwater management areas and is not allowed between sub-areas other than those specified in the document	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL, no specific risks	
Australia	Queensland	Don River, Dee River and Alma Creek groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2012		Resource Management Plan	MDBA0183	not specified	Alluvium (alluvial valley)	Don River Alluvium, Dee River Alluvium, Alma Creek Alluvium, Callide Creek Alluvium, Pocket Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.8; Section 15 of the Water Regulation 2002); seasonal water assignment will not be granted if there is potential to adversely affect other water users (includes groundwater quality) or the environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		No RCL specified	
Australia	Queensland	Don River, Dee River and Alma Creek groundwater management area water sharing and seasonal water assignment rules	Department of Environment and Resource Management	2012		Resource Management Plan	MDBA0183	not specified	Alluvium (alluvial valley)	Don River Alluvium, Dee River Alluvium, Alma Creek Alluvium, Callide Creek Alluvium, Pocket Creek Alluvium	Not specified	Stock and domestic	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.8; Section 15 of the Water Regulation 2002); seasonal water assignment will not be granted if there is potential to adversely affect other water users (includes groundwater quality) or the environment	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality		No RCL specified	
Australia	Queensland	Pioneer Groundwater Management Area Water Sharing and Seasonal Water Assignment Rules	Department of Natural Resources and Mines	2012		Resource Management Plan	MDBA0184	not specified	Several - regional plan	Pioneer River Alluvium, Bakers Creek Alluvium, Alligator Creek Alluvium, Sandringham Creek Alluvium, Camilla Beds, Campwyn Beds, Urannah Complex	Not specified	Stock, domestic, irrigation	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.13; Section 15 of the Water Regulation 2002); seasonal water assignment not allowed if the EC trigger is exceeded or a rising trend	Not specified / unknown	EC > 1500 uS/cm or a trend of rising salinity levels	Not specified / unknown	Degradation of groundwater quality		No RCL specified, no risks specified	
Australia	Queensland	Pioneer Groundwater Management Area Water Sharing and Seasonal Water Assignment Rules	Department of Natural Resources and Mines	2012		Resource Management Plan	MDBA0184	not specified	Several - regional plan	Pioneer River Alluvium, Bakers Creek Alluvium, Alligator Creek Alluvium, Sandringham Creek Alluvium, Camilla Beds, Campwyn Beds, Urannah Complex	Not specified	Stock, domestic, irrigation	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	Seasonal water assignment rules (pg.13; Section 15 of the Water Regulation 2002); seasonal water assignment is only allowed between or within certain water sharing groups	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL specified, no risks specified	
Australia	Queensland	Pioneer Groundwater Management Area Water Sharing and Seasonal Water Assignment Rules	Department of Natural Resources and Mines	2012		Resource Management Plan	MDBA0184	not specified	Several - regional plan	Pioneer River Alluvium, Bakers Creek Alluvium, Alligator Creek Alluvium, Sandringham Creek Alluvium, Camilla Beds, Campwyn Beds, Urannah Complex	Not specified	Stock, domestic, irrigation	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.13; Section 15 of the Water Regulation 2002); limit on the volume of water allowed to be used for seasonal water assignment	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL specified, no risks specified	
Australia	Queensland	Pioneer Groundwater Management Area Water Sharing and Seasonal Water Assignment Rules	Department of Natural Resources and Mines	2012		Resource Management Plan	MDBA0184	not specified	Several - regional plan	Pioneer River Alluvium, Bakers Creek Alluvium, Alligator Creek Alluvium, Sandringham Creek Alluvium, Camilla Beds, Campwyn Beds, Urannah Complex	Not specified	Stock, domestic, irrigation	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.13; Section 15 of the Water Regulation 2002); seasonal water assignment will not be granted if there is potential to adversely affect other water users (includes groundwater quality) or the environment	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		No RCL specified	
Australia	Queensland	Pioneer Groundwater Management Area Water Sharing and Seasonal Water Assignment Rules	Department of Natural Resources and Mines	2012		Resource Management Plan	MDBA0184	not specified	Several - regional plan	Pioneer River Alluvium, Bakers Creek Alluvium, Alligator Creek Alluvium, Sandringham Creek Alluvium, Camilla Beds, Campwyn Beds, Urannah Complex	Not specified	Stock, domestic, irrigation	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Seasonal water assignment rules (pg.13; Section 15 of the Water Regulation 2002); seasonal water assignment will not be granted if there is potential to adversely affect other water users (includes groundwater quality) or the environment	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality		No RCL specified	
Australia	Queensland	Burdekin groundwater management area water sharing rules	Department of Environment and Resource Management	2010		Resource Management Plan	MDBA0185	not specified	Alluvium (alluvial valley)	Burdekin River Alluvium, Baratta Creek Alluvium and Houghton River Alluviums	Not specified	Stock, domestic, irrigation	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	sustainable water use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	Irrigation water permit rules (pg.7); specific rules for application of permits to take water	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		No RCL specified, no risks specified, type of management mechanism not specified	
Australia	South Australia	The Water Allocation Plan for the Mallee Prescribed Wells Area	South Australia Murray-Darling Basin Natural Resources Management Board	2012		Resource Management Plan	MDBA0009	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer	Deep groundwater (>200 m bgl)	irrigation, industrial, stock, domestic, town supply, recreational.	Renewable (younger water, recharge occurring)	Non-connected	Within Allocated Limit	Reasonably defined	not specified	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	Minimum distance between licensed wells	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	the potential to significantly interfere with the quality and quantity of water from existing wells		* RCL not specified
Australia	South Australia	The Water Allocation Plan for the Mallee Prescribed Wells Area	South Australia Murray-Darling Basin Natural Resources Management Board	2012		Resource Management Plan	MDBA0009	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer	Deep groundwater (>200 m bgl)	irrigation, industrial, stock, domestic, town supply, recreational.	Renewable (younger water, recharge occurring)	Non-connected	Within Allocated Limit	Reasonably defined	not specified	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows mentioned but not incorporated in Plan	water trading (within the management area)	Restrictions on inter-zone water trading enforced	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		* RCL not specified * Risks not identified	
Australia	South Australia	The Water Allocation Plan for the Mallee Prescribed Wells Area	South Australia Murray-Darling Basin Natural Resources Management Board	2012		Resource Management Plan	MDBA0009	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer	Deep groundwater (>200 m bgl)	irrigation, industrial, stock, domestic, town supply, recreational.	Renewable (younger water, recharge occurring)	Non-connected	Within Allocated Limit	Reasonably defined	not specified	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows mentioned but not incorporated in Plan	water quality indicators	Salinity targets	Not specified / unknown	Salinity increase of 2% or more per year for five consecutive years above the baseline for more than 50% of the monitoring bores in the management area will trigger investigative action as described in section 8.6 of this Plan	Not specified / unknown	Degradation of groundwater quality		* RCL derivation not specified	
Australia	South Australia	The Water Allocation Plan for the Mallee Prescribed Wells Area	South Australia Murray-Darling Basin Natural Resources Management Board	2012		Resource Management Plan	MDBA0009	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer	Deep groundwater (>200 m bgl)	irrigation, industrial, stock, domestic, town supply, recreational.	Renewable (younger water, recharge occurring)	Non-connected	Within Allocated Limit	Reasonably defined	not specified	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	water level indicators	Understanding of scientifically established relationships	Water level recovery targets in 'designated areas'. E.g. to within 65 cm of previous year (Border Sub-zone 9A North and Zone 11A), 50 cm of the previous year (Border Zone 10A)	Not specified / unknown	Not specified/identified		* RCL not specified * Risks not identified	
Australia	South Australia	The Water Allocation Plan for the Noora Prescribed Wells Area	River Murray Water Management Board	2001		Resource Management Plan	MDBA0010	Murray Darling Basin	Several - regional plan	Parilla Sand, Murray Group Limestone Aquifer, Renmark Group.	Deep groundwater (>200 m bgl)	primarily stock, but also mining, industrial, irrigation.	Renewable (younger water, recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	GDEs	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows mentioned but not incorporated in Plan	distance rules for bores	proposed extraction must be greater than 3 km from existing licensed bores within the Mallee PWA or Victoria	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	potential interference with the Mallee Prescribed Wells Area.		* RCL not specified * Management mechanism derivation not defined

**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information				Contextual Information													Management Mechanisms		Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Impacts	Risk Description		
Australia	South Australia	Water Allocation Plan for the Noora Prescribed Wells Area	River Murray Catchment Water Management Board	2001		Resource Management Plan	MDBA0010	Murray Darling Basin	Several - regional plan	Parilla Sand, Murray Group Limestone Aquifer, Renmark Group.	Deep groundwater (>200 m bgl)	primarily stock, but also mining, industrial, irrigation.	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	GDEs	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows mentioned but not incorporated in Plan	zonal limits on entitlements	* Zoned management areas established, with the Murray Group Limestone also managed through the Groundwater (Border Agreement) Act 1985, conjunctively by SA and Vic.	Non-technical means (nominally adopted)	not specified	Not specified / unknown	Interference impacts to existing users	potential interference with the Malles Prescribed Wells Area.	RCL not specified	
Australia	South Australia	Water Allocation Plan for the Noora Prescribed Wells Area	River Murray Catchment Water Management Board	2001		Resource Management Plan	MDBA0010	Murray Darling Basin	Several - regional plan	Parilla Sand, Murray Group Limestone Aquifer, Renmark Group.	Deep groundwater (>200 m bgl)	primarily stock, but also mining, industrial, irrigation.	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	GDEs	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Irrigation water use efficiency of >70%	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	potential interference with the Malles Prescribed Wells Area.	RCL derivation not specified * mechanism derivation not specified	
Australia	South Australia	The Water Allocation Plan for the Marne Saunders Prescribed Water Resources Area	Murray-Darling Basin Natural Resources Management Board	2010		Resource Management Plan	MDBA0011	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	domestic, stock, irrigation, industrial and recreational	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	environmental water reserves	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	zonal limits on entitlements	200 m radius buffer zone established (based on pump test results) that restricts new bore installations for extraction	Understanding of scientifically established relationships	not specified	Not specified / unknown	Interference impacts to existing users	manage interference between users		
Australia	South Australia	The Water Allocation Plan for the Marne Saunders Prescribed Water Resources Area	Murray-Darling Basin Natural Resources Management Board	2010		Resource Management Plan	MDBA0011	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	domestic, stock, irrigation, industrial and recreational	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	environmental water reserves	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	zonal limits on entitlements	200 m radius buffer zone established (based on pump test results) that restricts new bore installations for extraction	Understanding of scientifically established relationships	not specified	Not specified / unknown	Degradation of groundwater quality	salinising fresher groundwater by drawing in adjacent saltier groundwater		
Australia	South Australia	Water Allocation Plan for the Peake, Roby and Sherlock Prescribed Wells Area	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0012	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer, Buccleuch Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, agriculture, stock and town water supply purposes	Renewable (younger water; recharge occurring)	Not specified / unknown	Below Allocated Limit	Reasonably defined	maintaining aquifer integrity	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows incorporated in Plan	zonal limits on entitlements	Restrictions on inter-zone water trading enforced	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact	* RCL not specified * GW-SW connectivity not mentioned		
Australia	South Australia	Water Allocation Plan for the Peake, Roby and Sherlock Prescribed Wells Area	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0012	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer, Buccleuch Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, agriculture, stock and town water supply purposes	Renewable (younger water; recharge occurring)	Not specified / unknown	Below Allocated Limit	Reasonably defined	maintaining aquifer integrity	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows incorporated in Plan	distance rules for bores	* Water shall not be allocated within 1km of a GDE	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	* RCL derivation not specified * GW-SW connectivity not mentioned		
Australia	South Australia	Draft Water Allocation Plan for the Eastern Mount Lofty Ranges Prescribed Water Resources Area Part 1	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0013	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer, Permian Sands Aquifer, Quaternary Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industrial use, intensive animal production, environmental, stock and recreational use	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystem protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	Buffer zones around sensitive areas to reduce water table drawdown. Defined radii for well and environmental buffer zones (in metres) for underground water management zones.	Understanding of scientifically established relationships	not specified - inferred to be groundwater level indicators	Understanding of scientifically established relationships	Impact to GDEs	* Level of development not specified		
Australia	South Australia	Draft Water Allocation Plan for the Eastern Mount Lofty Ranges Prescribed Water Resources Area Part 1	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0013	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer, Permian Sands Aquifer, Quaternary Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industrial use, intensive animal production, environmental, stock and recreational use	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystem protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	Selected allocation restrictions in high intensity use zones	Understanding of scientifically established relationships	where the total volume allocated in the area exceeds four times the mean annual recharge rate for the area, pursuant to the following formula: AV > RRMZ x 4 x 1.13	Detailed scientific study	Hydrogeological integrity impact	* Level of development not specified		
Australia	South Australia	Draft Water Allocation Plan for the Eastern Mount Lofty Ranges Prescribed Water Resources Area Part 1	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0013	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer, Permian Sands Aquifer, Quaternary Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industrial use, intensive animal production, environmental, stock and recreational use	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystem protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	zonal limits on entitlements	sub-zone management based on varying aquifers throughout the region.	Understanding of scientifically established relationships	managing the locations where transferred allocation can be taken or where new wells can be constructed, to minimise impacts to neighbouring water users and the environment.	Understanding of scientifically established relationships	Interference impacts to existing users	* Level of development not specified		
Australia	South Australia	Draft Water Allocation Plan for the Eastern Mount Lofty Ranges Prescribed Water Resources Area Part 2	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0014	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer, Permian Sands Aquifer, Quaternary Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industrial use, intensive animal production, environmental, stock and recreational use	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystem protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	buffers assigned to existing bores and environmental assets and in high intensity use zones	Non-technical means (nominally adopted)	not specified	Not specified / unknown	Interference impacts to existing users	* Level of development not specified		
Australia	South Australia	Draft Water Allocation Plan for the Eastern Mount Lofty Ranges Prescribed Water Resources Area Part 2	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0014	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer, Permian Sands Aquifer, Quaternary Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industrial use, intensive animal production, environmental, stock and recreational use	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystem protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	buffers assigned to existing bores and environmental assets and in high intensity use zones	Non-technical means (nominally adopted)	not specified	Not specified / unknown	Impact to GDEs	* Level of development not specified		
Australia	South Australia	Draft Water Allocation Plan for the Eastern Mount Lofty Ranges Prescribed Water Resources Area Part 2	South Australia Murray-Darling Basin Natural Resources Management Board	2011		Resource Management Plan	MDBA0014	Murray Darling Basin	Several - regional plan	Fractured Rock and Murray Group Limestone Aquifer, Permian Sands Aquifer, Quaternary Aquifer	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industrial use, intensive animal production, environmental, stock and recreational use	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystem protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	restrictions on water trading based on salinity thresholds	Not specified / unknown	water of >1600 mg/L to wells with water of <1400 mg/L	Understanding of scientifically established relationships	Degradation of groundwater quality	* Level of development not specified		
Australia	South Australia	Water Allocation Plan for the Angas Bremer Prescribed Wells Area	River Murray Catchment Water Management Board	2001		Resource Management Plan	MDBA0015	Murray Darling Basin	Several - regional plan	* a shallower, unconfined aquifer; and * a deeper, confined aquifer.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, town water supply, stock and domestic, recreational, industrial	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	sustainable groundwater use	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Irrigation water available to crop divided by Water received at the field inlets = >85% for allocation for irrigation	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	* RCL derivation not specified * Risks not specified		
Australia	South Australia	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - South Australia	CSIRO and SKM	2010	1835-095X	Technical	MDBA0062	all within SA	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	GDEs, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes	Specific use of groundwater is not covered, groundwater monitoring not specified, management mechanisms not identified	
Australia	South Australia	Water Allocation Plan for the Tininara Coonnapyn Prescribed Wells Area	South East Natural Resources Management Board	2011		Resource Management Plan	MDBA0086	Murray Darling Basin	Several - regional plan	Murray Group Limestone, Padthaway Formation, Bridgewater Formation, Buccleuch Formation, and Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Not specified / unknown	Connected	Below Allocated Limit	Reasonably defined	GDEs, protecting groundwater quality, maintaining soaks and rock holes for indigenous peoples	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	local access rules to protect water quality during Managed Aquifer Recharge	Not specified / unknown	TDS <1500 mg/L	Non-technical means (nominally adopted)	Degradation of groundwater quality	* RCL determination not defined			
Australia	South Australia	Water Allocation Plan for the Tininara Coonnapyn Prescribed Wells Area	South East Natural Resources Management Board	2011		Resource Management Plan	MDBA0086	Murray Darling Basin	Several - regional plan	Murray Group Limestone, Padthaway Formation, Bridgewater Formation, Buccleuch Formation, and Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Not specified / unknown	Connected	Below Allocated Limit	Reasonably defined	GDEs, protecting groundwater quality, maintaining soaks and rock holes for indigenous peoples	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	local access rules to protect water levels in the confined aquifer	Not specified / unknown	* a mean increase in the unconfined water table of greater than 0.2 metres per year * a mean increase in the salinity of the confined aquifer greater than 2% based on spatial location * peak drawdown thresholds (b/w 2 m and 10 m)	Not specified / unknown	Not specified/identified	* RCL determination not defined * risk not specified			
Australia	South Australia	Water Allocation Plan for the Tininara Coonnapyn Prescribed Wells Area	South East Natural Resources Management Board	2011		Resource Management Plan	MDBA0086	Murray Darling Basin	Several - regional plan	Murray Group Limestone, Padthaway Formation, Bridgewater Formation, Buccleuch Formation, and Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Not specified / unknown	Connected	Below Allocated Limit	Reasonably defined	GDEs, protecting groundwater quality, maintaining soaks and rock holes for indigenous peoples	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	local access rules for protecting GDEs	Not specified / unknown	0.05 metres/year groundwater level decline in an observation bore within 16km <sup>2</sup> of the GDE.	Not specified / unknown	Impact to GDEs	Depletion of GDE and groundwater-surface water interactions for cultural and environmental values	* RCL determination not defined		
Australia	Queensland	Water Resource (Border Rivers) Plan 2003	Queensland Government	2011		Resource Management Plan	MDBA0125																						
Australia	Queensland	Water Resource (Moonie) Plan 2003	Queensland Government	2011		Resource Management Plan	MDBA0126																						
Australia	Queensland	Water Resource (Warrego, Paroo, Bulloo and Nebine) Plan 2003	Queensland Government			Resource Management Plan	MDBA0127																						
Australia	Queensland	Water Resource (Condamine and Balonne) Plan 2004	Queensland Government			Resource Management Plan	MDBA0128																						

**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information				Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions					
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour?	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description		
Australia	South Australia	Water Allocation Plan for the Tintinara Coonabyn Prescribed Wells Area	South East Natural Resources Management Board	2011		Resource Management Plan	MDBA0086	Murray Darling Basin	Several - regional plan	Murray Group Limestone, Pathway Formation, Bridgewater Formation, Buckleuch Formation, and Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Not specified / unknown	Connected	Below Allocated Limit	Reasonably defined	GDEs, protecting groundwater quality, maintaining soaks and rock holes for indigenous peoples	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water quality indicators	local access rules for protecting water quality	Not specified / unknown	>1% or 2% mean increase in groundwater salinity per year in a representative observation bore within a 16 km <sup>2</sup> circle	Not specified / unknown	Degradation of groundwater quality		* RCL determination not defined		
Australia	South Australia	Water Resource (Cooper Creek) Plan 2011	Queensland Government			Resource Management Plan	MDBA0130																						
Australia	South Australia	Water Allocation Plan for the Tintinara Coonabyn Prescribed Wells Area	South East Natural Resources Management Board	2011		Resource Management Plan	MDBA0086	Murray Darling Basin	Several - regional plan	Murray Group Limestone, Pathway Formation, Bridgewater Formation, Buckleuch Formation, and Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Not specified / unknown	Connected	Below Allocated Limit	Reasonably defined	GDEs, protecting groundwater quality, maintaining soaks and rock holes for indigenous peoples	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	local access rules for protecting water quality, rules against water trading from the confined aquifer to the confined aquifer	Not specified / unknown	Not specified	Not specified / unknown	Degradation of groundwater quality		* RCL determination not defined		
Australia	Queensland	Water Resource (Georgina and Diamantina) Plan 2004	Queensland Government	2011		Resource Management Plan	MDBA0132	not specified	Not specified	not specified	Not specified	Not specified	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Not demonstrated	Sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows incorporated in Plan	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified / unknown	Risks not specified, RCL not specified, management mechanisms not specified			
Australia	South Australia	Water Allocation Plan for the Tatiara Prescribed Wells Area	South East Natural Resources Management Board	2012		Resource Management Plan	MDBA0091	Murray Darling Basin	Several - regional plan	Murray Limestone group, Coomandook, Bridgewater, Pathway Formation and the Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation, vineyard	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	GW-SW connectivity, Salinity, GDEs, influence between aquifer systems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	local access rules for protecting GDEs	Not specified / unknown	>0.05 metres/year groundwater level decline in an observation bore within 16km <sup>2</sup> of the GDE.	Not specified / unknown	Impact to GDEs	Depletion of GDE and groundwater-surface water interactions for cultural and environmental values		
Australia	South Australia	Water Allocation Plan for the Tatiara Prescribed Wells Area	South East Natural Resources Management Board	2012		Resource Management Plan	MDBA0091	Murray Darling Basin	Several - regional plan	Murray Limestone group, Coomandook, Bridgewater, Pathway Formation and the Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation, vineyard	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	GW-SW connectivity, Salinity, GDEs, influence between aquifer systems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	water quality indicators	local access rules for protecting water quality	Not specified / unknown	>1% or 2% mean increase in groundwater salinity per year in a representative observation bore within a 16 km <sup>2</sup> circle	Not specified / unknown	Degradation of groundwater quality			
Australia	South Australia	Water Allocation Plan for the Tatiara Prescribed Wells Area	South East Natural Resources Management Board	2012		Resource Management Plan	MDBA0091	Murray Darling Basin	Several - regional plan	Murray Limestone group, Coomandook, Bridgewater, Pathway Formation and the Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation, vineyard	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	GW-SW connectivity, Salinity, GDEs, influence between aquifer systems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	water quality indicators	limits on granting of new water allocations (mechanisms) to not exceed an extraction concentration level in any 16km <sup>2</sup> circle (RCI)	Understanding of scientifically established relationships	Volumetric extraction threshold of 1.25 x annual average vertical recharge	Understanding of scientifically established relationships	Degradation of groundwater quality			
Australia	South Australia	Water Allocation Plan for the Tatiara Prescribed Wells Area	South East Natural Resources Management Board	2012		Resource Management Plan	MDBA0091	Murray Darling Basin	Several - regional plan	Murray Limestone group, Coomandook, Bridgewater, Pathway Formation and the Renmark Group	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation, vineyard	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	GW-SW connectivity, Salinity, GDEs, influence between aquifer systems	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	local access rules to protect aquifer integrity	Not specified / unknown	identified adverse effect on aquifer structural integrity	Not specified / unknown	Hydrogeological integrity impact			
Australia	South Australia	Water Allocation Plan for the Pathway Prescribed Wells Area	South East Natural Resources Management Board, SA	2005		Resource Management Plan	MDBA0095	Otway Basin	Porous rock	Pathway Formation and the Bridgewater Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industry, recreational use and public water supply, stock and domestic, industrial	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	GDE protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	setback distance from GDEs for new bores calculated using 'DE equation' (p10)	Understanding of scientifically established relationships	water level decline at the GDE should not exceed 0.05m	Understanding of scientifically established relationships	Impact to GDEs			
Australia	South Australia	Water Allocation Plan for the Pathway Prescribed Wells Area	South East Natural Resources Management Board, SA	2005		Resource Management Plan	MDBA0095	Otway Basin	Porous rock	Pathway Formation and the Bridgewater Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, industry, recreational use and public water supply, stock and domestic, industrial	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	GDE protection	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water quality indicators	limits on granting of new water allocations (mechanisms) to not exceed an extraction concentration level in any 16km <sup>2</sup> circle (RCI)	Understanding of scientifically established relationships	Concentration limit of 1.25 x annual average vertical recharge	Understanding of scientifically established relationships	Degradation of groundwater quality			
Australia	South Australia	Morambro Creek Water Allocation Plan	South East Natural Resources Management Board	2006		Resource Management Plan	MDBA0100	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, stock, domestic	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	water dependent ecosystems, GW-SW connectivity, sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	no specific risks identified, RCL not specified			
Australia	South Australia	Barossa Prescribed Water Resources Area Water Allocation Plan	The Adelaide and Mount Lofty Ranges Natural Resources Management Board	2009		Resource Management Plan	MDBA0101	not specified	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation, stock, domestic, industrial	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	GDEs, GW-SW connectivity, Groundwater quality, sustainable water use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	no specific risks identified, RCL not specified			
Australia	South Australia	Water Allocation Plan Northern Adelaide Plains Prescribed Wells Area	Northern Adelaide and Barossa Catchment Water Management Board	2000		Resource Management Plan	MDBA0102	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, stock, domestic	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	Water allocated based on salinity threshold	Not specified / unknown	Groundwater salinity in Quaternary Aquifers greater than 3000 mg/L TDS	Not specified / unknown	Not specified/identified	no specific risks identified, RCL derivation not specified, management mechanism not specified		
Australia	South Australia	Water Allocation Plan McLaren Vale Prescribed Wells Area	The Adelaide and Mount Lofty Ranges Natural Resources Management Board	2007		Resource Management Plan	MDBA0103	not specified	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation, stock, domestic	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	water trading (within the management area)	Conditions for transfer of water allocations. Water allocations shall not be transferred to a point of taking which is 300m or less from a well used for draining or 500m where the area is sensitive (water level has fallen 500mm or more over 3 years or salinity has increased by 50 mg/L if more over three years)	Not specified / unknown	Not specified	Not specified / unknown	Not specified/identified	Management mechanisms derivation not specified, specific risks not specified, RCL derivation not specified		
Australia	South Australia	Water Allocation Plan for the Clare Valley Prescribed Water Resource Area	Northern Yorke Water Resources Management Board	2009	978-0-9806143-1-2	Resource Management Plan	MDBA0104	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, stock, domestic, town water	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	not specified	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	RCL not specified, risks not specified, management mechanism not specified			
Australia	South Australia	Water Allocation Plan Southern Basins Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2000		Resource Management Plan	MDBA0105	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Reticulated public water supply, stock, domestic, irrigation, mining/industry	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Cease to allocation of water that will cause or likely to cause a negative change in salinity	Not specified / unknown	If salinity at point of extraction exceeds baseline salinity by more than 100 mg/L	Not specified / unknown	Degradation of groundwater quality	specific risks not specified		
Australia	South Australia	Water Allocation Plan Southern Basins Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2000		Resource Management Plan	MDBA0105	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Reticulated public water supply, stock, domestic, irrigation, mining/industry	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Cease to allocation of water that will cause or likely to cause a reduction in aquifer thickness	Not specified / unknown	If saturated thickness of the aquifer reduces at proposed point of extraction by 10% or more within 12 months	Not specified / unknown	Hydrogeological integrity impact	specific risks not specified		
Australia	South Australia	Water Allocation Plan Southern Basins Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2000		Resource Management Plan	MDBA0105	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Reticulated public water supply, stock, domestic, irrigation, mining/industry	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Cease to allocation of water that will cause or likely to cause a reduction in aquifer thickness within radial extent of extraction point	Not specified / unknown	Cease to allocation of water that will cause or likely to cause a reduction in aquifer thickness within radial extent of extraction point	Not specified / unknown	Hydrogeological integrity impact	specific risks not specified		
Australia	South Australia	Water Allocation Plan Southern Basins Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2000		Resource Management Plan	MDBA0105	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Reticulated public water supply, stock, domestic, irrigation, mining/industry	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	water trading (within the management area)	Restrictions on inter-zone trading	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	specific risks not specified, RCL not specified		
Australia	South Australia	Water Allocation Plan for the Musgrave Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2001		Resource Management Plan	MDBA0106	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Reticulated public water supply, stock, domestic, irrigation, industry, mining	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	5.3.1.2 Water shall not be allocated if rate of extraction should cause increases in salinity 100 mg/L above the baseline salinity ( means the existing salinity of the underground water at the proposed point of extraction)	Not specified / unknown	If salinity at point of extraction exceeds baseline salinity by more than 100 mg/L	Not specified / unknown	Degradation of groundwater quality	RCL derivation not specified, specific risks not specified, mechanism derivation not specified		
Australia	South Australia	Water Allocation Plan for the Musgrave Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2001		Resource Management Plan	MDBA0106	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Reticulated public water supply, stock, domestic, irrigation, industry, mining	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	5.3.1.4 Water shall not be allocated if rate of extraction will reduce the saturated thickness of the aquifer at the proposed point of extraction	Not specified / unknown	If saturated thickness of the aquifer reduces at proposed point of extraction by 10% or more within 12 months	Not specified / unknown	Hydrogeological integrity impact	RCL derivation not specified, specific risks not specified, mechanism derivation not specified		

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information				Contextual Information												Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description		
Australia	South Australia	Water Allocation Plan for the Musgrave Prescribed Wells Area	Eyre Region Water Resources Planning Committee	2001		Resource Management Plan	MDBA0106	Eyre Basin	Several - regional plan	Several - regional plan	Not specified	Retculated public water supply, stock, domestic, irrigation, industry, mining	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	5.3.15 Cease allocation of water that will cause or likely to cause a reduction in aquifer thickness within radial extent of extraction point	Not specified / unknown	If saturated thickness of the aquifer within a 500m radius at proposed point of extraction reduces by 5% or more within 12 months	Not specified / unknown	Hydrogeological integrity impact		RCL derivation not specified, specific risks not specified, mechanism derivation not specified	
Australia	South Australia	Water Allocation Plan for the Far North Prescribed Wells Area	South Australian Natural Resources Management Board	2009		Resource Management Plan	MDBA0107	Great Artesian Basin	Several - regional plan	Several - regional plan	Not specified	Stock and domestic, town water supplies, petroleum, mining, power generation, industrial and tourism, springs, road maintenance, wetlands and recreational	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	6.2.12 Water shall not be allocated for any new well established within a 5 km radius of any GAB springs identified in the SA Geodata data base	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs		RCL derivation not specified, specific risks not specified, mechanism derivation not specified	
Australia	South Australia	Water Allocation Plan for the Far North Prescribed Wells Area	South Australian Natural Resources Management Board	2009		Resource Management Plan	MDBA0107	Great Artesian Basin	Several - regional plan	Several - regional plan	Not specified	Stock and domestic, town water supplies, petroleum, mining, power generation, industrial and tourism, springs, road maintenance, wetlands and recreational	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	drawdown limits	6.2.13 Volume of water allocated at any proposed wells does not cause excessive drawdown, volumes of water greater may be allocated if EIR show it will not have an unacceptable impact on spring ecology.	Not specified / unknown	Cumulative drawdown exceeds 0.5m on the potentiometric surface of the Cadna-Owie-Agleuckina aquifer	Not specified / unknown	Impact to GDEs	Impact on spring ecology	RCL derivation not specified, specific risks not specified, mechanism derivation not specified	
Australia	South Australia	Water Allocation Plan for the Far North Prescribed Wells Area	South Australian Natural Resources Management Board	2009		Resource Management Plan	MDBA0107	Great Artesian Basin	Several - regional plan	Several - regional plan	Not specified	Stock and domestic, town water supplies, petroleum, mining, power generation, industrial and tourism, springs, road maintenance, wetlands and recreational	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	6.2.19 The plan that not cause the salinity to increase by more than 10% of the mean	Not specified / unknown	Taking and use of water at new wells shall not cause a mean increase in salinity of groundwater greater than 10% (measured over the proceeding 5 years) at the point of taking	Not specified / unknown	Degradation of groundwater quality		RCL derivation not specified, specific risks not specified, mechanism derivation not specified	
Australia	South Australia	Water Allocation Plan for the Far North Prescribed Wells Area	South Australian Natural Resources Management Board	2009		Resource Management Plan	MDBA0107	Great Artesian Basin	Several - regional plan	Several - regional plan	Not specified	Stock and domestic, town water supplies, petroleum, mining, power generation, industrial and tourism, springs, road maintenance, wetlands and recreational	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	drawdown limits	6.2.20, 6.2.23, 6.2.26 When allocation is greater than 10% of the predicted cumulative drawdown, water shall only be allocated in consultation with the appropriate interstate jurisdiction, and agreement of the South Australian Minister	Not specified / unknown	Predicted cumulative drawdown is in excess of 10% of the potentiometric surface measured above ground level	Not specified / unknown	Hydrogeological integrity impact		RCL derivation not specified, specific risks not specified, mechanism derivation not specified	
Australia	South Australia	Water Allocation Plan for the Far North Prescribed Wells Area	South Australian Natural Resources Management Board	2009		Resource Management Plan	MDBA0107	Great Artesian Basin	Several - regional plan	Several - regional plan	Not specified	Stock and domestic, town water supplies, petroleum, mining, power generation, industrial and tourism, springs, road maintenance, wetlands and recreational	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	drawdown limits	6.2.22, 6.2.25, 6.2.28 Where proposed new well results in a predicted cumulative drawdown greater than 1m on the potentiometric surface water may be allocated and used if an EIR has been prepared demonstrating that is shall not have an unacceptable impact on the ecology of springs within the underground water zone of influence around that well	Not specified / unknown	Predicted cumulative drawdown is greater than 1m on the potentiometric surface measured on the aquifer boundary	Not specified / unknown	Impact to GDEs	Impact on spring ecology	RCL derivation not specified, specific risks not specified, mechanism derivation not specified	
Australia	South Australia	Water Allocation Plan for the Far North Prescribed Wells Area	South Australian Natural Resources Management Board	2009		Resource Management Plan	MDBA0107	Great Artesian Basin	Several - regional plan	Several - regional plan	Not specified	Stock and domestic, town water supplies, petroleum, mining, power generation, industrial and tourism, springs, road maintenance, wetlands and recreational	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GW-SW connectivity, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	Rules around trading/transferring water allocations	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	Impact on spring ecology		RCL derivation not specified, specific risks not specified, mechanism derivation not specified
Australia	Tasmania	Boiyalla River Catchment Water Management Plan	Department of Primary Industries, Parks, Water and Environment	2012		Resource Management Plan	MDBA0151	Not Specified	Not specified	not specified	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	Replenishment of groundwater resources, water dependent ecosystems, baseflows	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows		RCL derivation not specified, risks not specified, management mechanism not specified, groundwater use not specified	
Australia	Tasmania	Groundwater and Surface Water Connectivity in Tasmania	Department of Primary Industries, Parks, Water and Environment	2011	Groundwater Management Report Series Report no. GW 2011/03 ISSN 2200-8896	Resource Management Plan	MDBA0152	Several - regional plan	Several - regional plan	not specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigated agriculture	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Well defined (based on numeric model)	GW-SW connectivity, groundwater monitoring network in place	No program. Groundwater monitoring network in place	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	Cease to take period if minimum flow trigger levels are exceeded	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	Risk to surface water from groundwater extraction assessed using baseflow index and ratio of groundwater extraction to diffuse recharge		RCL not specified, management mechanism derivation not specified
Australia	Tasmania	Groundwater and Surface Water Connectivity in Tasmania	Department of Primary Industries, Parks, Water and Environment	2011	Groundwater Management Report Series Report no. GW 2011/03 ISSN 2200-8896	Resource Management Plan	MDBA0152	Several - regional plan	Several - regional plan	not specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigated agriculture	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Well defined (based on numeric model)	GW-SW connectivity, groundwater monitoring network in place	No program. Groundwater monitoring network in place	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	Cease to take period if minimum flow trigger levels are exceeded	Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	Increasing groundwater extraction, interception and diversion of water in recharge zones, rising saline water tables, contamination through groundwater pollution		RCL not specified, management mechanism derivation not specified
Australia	Tasmania	Groundwater Report for the Sassafras Wesley Vale Water Management Plan	Department of Primary Industries, Parks, Water and Environment	2009	Internal reference number WMP 09/04	Resource Management Plan	MDBA0153	Devonport-Port-Sassafras Tertiary Basin	Several - regional plan	not specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Limited definition	Baseflows, groundwater dependent ecosystems	No program. Groundwater monitoring network in place	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	Reduction or stopping discharge from springs, impact on fish and invertebrate species		RCL not specified, management mechanism not specified
Australia	Tasmania	Sassafras Wesley Vale Water Management Plan	Department of Primary Industries, Parks, Water and Environment	2012		Resource Management Plan	MDBA0154	Devonport-Port-Sassafras Tertiary Basin	Several - regional plan	not specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDEs, water quality, river baseflows	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Restriction on the taking of groundwater based on groundwater levels thresholds (if levels are below historical minimums) as a precautionary measure	Not specified / unknown	Water levels (mbgl): Stewart are 1.25 (Spring) and 4.5 (Autumn); Swan are 5.0 (Spring) and 6.0 (Autumn); Richardson are 3.75 (Spring) and 7.0 (Autumn); Beveridge are 10.25 (Spring) and 12.0 (Autumn); Bramich are 7.75 (Spring) and 9.0 (Autumn); Mitchell are 5.5 (Spring) and 9.5 (Autumn); Foster are 1.75 (Spring) and 3.5 (Autumn); Rockliff are 3.75 (Spring) and 6.25 (Autumn); Marshall are 7.0 (Spring) and 9.0 (Autumn); Atkins are 9.75 (Spring) and 10.5 (Autumn); Thirstane Golf Club are 0.5 (Spring) and 1.75 (Autumn).	Understanding of scientifically established relationships	Impact to GDEs	risks not specified, management mechanism derivation not specified		
Australia	Tasmania	Sassafras Wesley Vale Water Management Plan	Department of Primary Industries, Parks, Water and Environment	2012		Resource Management Plan	MDBA0154	Devonport-Port-Sassafras Tertiary Basin	Several - regional plan	not specified	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDEs, water quality, river baseflows	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Restriction or prohibition on the extraction of groundwater from any wells with close proximity of a relevant watercourse (where connectivity between groundwater and surface water has been identified)	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	risks not specified, management mechanism derivation not specified, RCL not specified		
Australia	Tasmania	State Policy on Water Quality Management 1997	Government of Tasmania	1997		Resource Management Plan	MDBA0155	not specified	Not specified	not specified	Not specified	Drinking, irrigation, industry, stock, ecosystem protection	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	Water quality, groundwater ecosystems	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality		RCL not specified, management mechanism not specified, risks not specified	
Australia	Tasmania	Tomahawk River Catchment Water Management Plan	Department of Primary Industries, Parks, Water and Environment	2012		Resource Management Plan	MDBA0156	not specified	Not specified	not specified	Not specified	not specified	Not specified / unknown	Connected	Not specified / unknown	Not demonstrated	Replenishment of groundwater resources, water dependent ecosystems, baseflows	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows		RCL derivation not specified, risks not specified, management mechanism not specified, groundwater use not specified	
Australia	Victoria	Shepparton Irrigation Region Groundwater Supply Protection Area, Groundwater Management Plan	Goulburn-Murray Water	1997		Resource Management Plan	MDBA0005	Murray Darling Basin	Alluvium (alluvial basin)	not specified; probably Shepparton Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	salinity management	No program. Groundwater monitoring network in place	GDEs not identified	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	groundwater pumping * RCL not specified is required for salinity control but is also used by irrigators.		RCL not specified

**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information				Contextual Information												Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions						
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	risks not specifically identified	
Australia	Victoria	Groundwater Management Plan for the Katunga Water Supply Protection Area	Goulburn-Murray Water	2006		Resource Management Plan	MDBA0006	Murray Darling Basin	Alluvium (alluvial valley)	Murray Valley Deep Lead Aquifer system	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	maintain aquifer integrity	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Available allocations are determined annually and the allocation for each season will depend on the 5-year average annual groundwater use.	Non-technical means (nominally adopted)	Recovery of groundwater levels to 20 metres below ground level or higher within 5 years.	Understanding of scientifically established relationships	Degradation of groundwater quality	<ul style="list-style-type: none"> <li>the availability of water now and in the future;</li> <li>adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment;</li> <li>the existing and projected water quality in the WSPA</li> </ul>	* risks not specifically identified	
Australia	Victoria	Groundwater Management Plan for the Katunga Water Supply Protection Area	Goulburn-Murray Water	2006		Resource Management Plan	MDBA0006	Murray Darling Basin	Alluvium (alluvial valley)	Murray Valley Deep Lead Aquifer system	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	maintain aquifer integrity	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	Restrictions on inter-zone water trading enforced	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact	<ul style="list-style-type: none"> <li>the availability of water now and in the future;</li> <li>adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment;</li> <li>the existing and projected water quality in the WSPA</li> </ul>	* RCL determination not clear * Mechanism determination not known	
Australia	Victoria	State Environment Protection Policy (Groundwaters of Victoria) 1997	Victorian Government	1997	No. S160	Resource Management Plan	MDBA0007	Statewide	Statewide	Statewide	Not specified	Statewide policy	Statewide policy	Statewide policy	Statewide policy	Statewide policy	maintain or improve groundwater quality	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	water quality indicators	Groundwater has been classified into five segments on the basis of background TDS levels, which contain specific beneficial uses to uphold.	Not specified / unknown	N/A	Not specified / unknown	Degradation of groundwater quality	protection and/or improvement		
Australia	Victoria	Murrayville Area Groundwater Management Plan 2001	Murrayville Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0008	Murray Darling Basin	Porous rock	Murray Group Limestone Aquifer	Not specified	not specified	Not specified / unknown	Not specified / unknown	Within Allocated Limit	Not demonstrated	long-term aquifer sustainability	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	licences restricted if the upper limit of allocation for any zone is exceeded. Border agreement modelling	Non-technical means (nominally adopted)	not specified	Not specified / unknown	Not specified/identified		* RCL not specified * Risks not identified	
Australia	Victoria	Sustainable Extraction Limits Derived from the Recharge Risk Assessment Method - Victoria	CSIRO and SKM	2010	1835-095X	Technical	MDBA0004	all within VIC	Several - regional plan	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Stock, domestic	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Well defined (based on numeric model)	GDEs, GW-SW connectivity	Not specified / unknown	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified		Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	Uses risk matrix to assess risk with respect to key environmental assets, key ecosystem function, productive base and key environmental outcomes. GDEs could suffer reduced water availability as the results of climate change, groundwater pumping could reduce baseflow to rivers	Specific groundwater use not specified, groundwater monitoring not specified, management mechanism not specified	
Australia	Victoria	Neurpur Area Groundwater Management Plan 2001	Neurpur Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0085	Murray Darling Basin	Conduit aquifers (cavernous limestone, basalt caves, etc.)	Duddo Limestone (part of Murray Group Limestone)	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Irrigation	Renewable (younger water; recharge occurring)	Not specified / unknown	Over Allocated	Reasonably defined	Protecting groundwater quality and quantity	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	undertake technical investigations	Border agreement modelling	Detailed scientific study	not specified	Not specified / unknown	Degradation of groundwater quality	Mobilisation of salts in the unsaturated zones, downward leakage of saline water from upper aquifer, contamination from land use	* RCL and management mechanisms not identified * References were made to a report to be released in 2004, however this was not able to be found	
Australia	Victoria	Spring Hill Groundwater Supply Protection Area Groundwater Management Plan 2001	Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0088	Murray Darling Basin	Fractured rock	Newer Volcanics	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	D&S, and irrigation	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Limited definition	SW-GW interaction, possible salinity problems	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	not specified	not identified		Not specified / unknown	not specified	Not specified / unknown	Impact to GDEs	GW-SW interactions and need for conjunctive management	* no RCL or management mechanisms identified
Australia	Victoria	Spring Hill Groundwater Supply Protection Area Groundwater Management Plan 2001	Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0088	Murray Darling Basin	Fractured rock	Newer Volcanics	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	D&S, and irrigation	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Limited definition	SW-GW interaction, possible salinity problems	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	trading rules		Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	potential salinity impacts	
Australia	Victoria	Spring Hill Groundwater Supply Protection Area Groundwater Management Plan 2001	Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0088	Murray Darling Basin	Fractured rock	Newer Volcanics	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	D&S, and irrigation	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Limited definition	SW-GW interaction, possible salinity problems	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	trading rules		Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users	Over allocation in areas of the GSPA, irrigators taking more than is allocated on their licence	
Australia	Victoria	Lower Campaspe Valley Water Supply Protection Area Groundwater Management Plan	Low Campaspe Valley Water Supply Protection Area Consultative Committee	2012		Resource Management Plan	MDBA0089	Murray Darling Basin	Several - regional plan	Shepparton Formation and Deep Lead (Calivil Formation and Renmark Group)	Not specified	Stock and Domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	Salinity, GW-SW interaction, GDEs	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	local access rules to protect GDEs		Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	Inducting flow of saline shallow water to the deeper Deep Lead Formations	
Australia	Victoria	Lower Campaspe Valley Water Supply Protection Area Groundwater Management Plan	Low Campaspe Valley Water Supply Protection Area Consultative Committee	2012		Resource Management Plan	MDBA0089	Murray Darling Basin	Several - regional plan	Shepparton Formation and Deep Lead (Calivil Formation and Renmark Group)	Not specified	Stock and Domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	Salinity, GW-SW interaction, GDEs	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	local access rules to protect GDEs		Not specified / unknown	not specified - inferred to be groundwater level indicators	Not specified / unknown	Impact to GDEs	impact to GDEs and GW-SW interactions	
Australia	Victoria	Lower Campaspe Valley Water Supply Protection Area Groundwater Management Plan	Low Campaspe Valley Water Supply Protection Area Consultative Committee	2012		Resource Management Plan	MDBA0089	Murray Darling Basin	Several - regional plan	Shepparton Formation and Deep Lead (Calivil Formation and Renmark Group)	Not specified	Stock and Domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	Salinity, GW-SW interaction, GDEs	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	water quality indicators	Trigger level initiates additional groundwater level and quality monitoring.		Not specified / unknown	2mAHd (negative) in November/December	Not specified / unknown	Degradation of groundwater quality		
Australia	Victoria	Lower Campaspe Valley Water Supply Protection Area Groundwater Management Plan	Low Campaspe Valley Water Supply Protection Area Consultative Committee	2012		Resource Management Plan	MDBA0089	Murray Darling Basin	Several - regional plan	Shepparton Formation and Deep Lead (Calivil Formation and Renmark Group)	Not specified	Stock and Domestic and irrigation	Renewable (younger water; recharge occurring)	Connected	Below Allocated Limit	Reasonably defined	Salinity, GW-SW interaction, GDEs	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Local access rules to minimise excessive drawdown		Not specified / unknown	2mAHd (negative) in November/December	Not specified / unknown	Hydrogeological integrity impact	excessive drawdown	
Australia	Victoria	Groundwater Management Plan: Koo Wee Rup Water Supply protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0092	Westport Basin	Several - regional plan	Baxter, Sherwood and Yallock Formations for unconfined, which older volcanics and chinders formations lower down	Not specified	irrigation for vegetable crops and D&S	Renewable (younger water; recharge occurring)	Non-connected	Below Allocated Limit	Limited definition	PASS, Salinity	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	zonal limits on entitlements	The KWR WSPA comprises 8 separately managed sub-zones. Temporary qualification (restriction) of licensed extraction if zonal limits exceeded (metered usage exceeds 50% in any zone). In the first instance, the restriction level shall be 75%.		Not specified / unknown	not specified	Not specified / unknown	Not specified/identified	no specific risks mentioned	
Australia	Victoria	Groundwater Management Plan: Koo Wee Rup Water Supply protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0092	Westport Basin	Several - regional plan	Baxter, Sherwood and Yallock Formations for unconfined, which older volcanics and chinders formations lower down	Not specified	irrigation for vegetable crops and D&S	Renewable (younger water; recharge occurring)	Non-connected	Below Allocated Limit	Limited definition	PASS, Salinity	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	water trading (within the management area)	Restrictions on water trading between sub-zones. Prohibition of groundwater transfer from inland management zones into coastal management zones		Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	potential for mixing of high and low salinity aquifers - the risk of seawater intrusion	
Australia	Victoria	Nullawarre Groundwater Supply Protection Area Explanatory Paper to the Groundwater Management Plan	Nullawarre Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0093	Otway Basin	Porous rock	Port Campbell Limestone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Dairy pastures	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Limited definition	GW mining, declining WL trends, reduced baseflows and saline intrusion	No program. Groundwater monitoring network in place	GDEs not identified	Cultural flows not considered/mentioned	not specified	not identified		Not specified / unknown	not identified	Not specified / unknown	impact to river baseflows	reduced river baseflows	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Nullawarre Groundwater Supply Protection Area Explanatory Paper to the Groundwater Management Plan	Nullawarre Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0093	Otway Basin	Porous rock	Port Campbell Limestone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Dairy pastures	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Limited definition	GW mining, declining WL trends, reduced baseflows and saline intrusion	No program. Groundwater monitoring network in place	GDEs not identified	Cultural flows not considered/mentioned	not specified	not identified		Not specified / unknown	not identified	Not specified / unknown	Interference impacts to existing users		* RCL and management mechanisms not identified to relate back to the risks identified

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information				Contextual Information													Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions				
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms derived?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	Victoria	Nullawarre Groundwater Supply Protection Area Explanatory Paper to the Groundwater Management Plan	Nullawarre Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0093	Otway Basin	Porous rock	Port Campbell Limestone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Dairy pastures	Renewable (younger water; recharge occurring)	Connected	Over Allocated Limit	Limited definition	GW mining, declining WL trends, reduced baseflows and saline intrusion	No program. Groundwater monitoring network in place	GDEs not identified	Cultural flows not considered/mentioned	not specified	not identified	Not specified / unknown	not identified	Not specified / unknown	Degradation of groundwater quality	potential for saline intrusion	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Sale Water Supply Protection Area	Sale Water Supply Protection Area (Groundwater) Consultative Committee	2003		Resource Management Plan	MDBA0094	Gippsland Basin	Sands (coastal, aeolian)	Bosdale Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, urban supply, dairy, commercial	Renewable (younger water; recharge occurring)	Non-connected	Within Allocated Limit	Limited definition	GW mining, declining WL trends, reduced baseflows and saline intrusion	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	distance rules for bores	local rules to minimise bore interference - minimum bore distance of 300 m	Not specified / unknown	not identified	Not specified / unknown	Interference impacts to existing users		* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Sale Water Supply Protection Area	Sale Water Supply Protection Area (Groundwater) Consultative Committee	2003		Resource Management Plan	MDBA0094	Gippsland Basin	Sands (coastal, aeolian)	Bosdale Formation	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, urban supply, dairy, commercial	Renewable (younger water; recharge occurring)	Non-connected	Within Allocated Limit	Limited definition	GW mining, declining WL trends, reduced baseflows and saline intrusion	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	Sale numerical groundwater model not mentioned in this Plan.		Not specified / unknown	not identified	Not specified / unknown	Degradation of groundwater quality	potential for saline intrusion	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Warion Water Supply Protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0096	Otway Basin	Fractured rock	fractured basalt and scoria	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Dairy, irrigation, commercial and domestic & stock purposes	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	sustainable groundwater use and GDE protection	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	undertake technical investigations	none identified	Not specified / unknown	none identified	Not specified / unknown	Hydrogeological integrity impact	* sustainability risks of over allocation	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Warion Water Supply Protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0096	Otway Basin	Fractured rock	fractured basalt and scoria	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Dairy, irrigation, commercial and domestic & stock purposes	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	sustainable groundwater use and GDE protection	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	undertake technical investigations	none identified	Not specified / unknown	none identified	Not specified / unknown	Impact to GDEs	* GDE impact risk through impacting GW gradients and discharges	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Warion Water Supply Protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0096	Otway Basin	Fractured rock	fractured basalt and scoria	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Dairy, irrigation, commercial and domestic & stock purposes	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	sustainable groundwater use and GDE protection	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	undertake technical investigations	none identified	Not specified / unknown	none identified	Not specified / unknown	Degradation of groundwater quality	* saline intrusion from lakes	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	YANGERY GROUNDWATER SUPPLY PROTECTION AREA EXPLANATORY PAPER TO THE GROUNDWATER MANAGEMENT PLAN	Yangery Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0097	Otway Basin	Porous rock	Port Campbell Limestone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, dairy, domestic, stock, industrial, commercial	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	saline intrusion, unsustainable extraction, interference	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	not specified	not identified	Not specified / unknown	not identified	Not specified / unknown	impact to river baseflows	reduced river baseflows	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	YANGERY GROUNDWATER SUPPLY PROTECTION AREA EXPLANATORY PAPER TO THE GROUNDWATER MANAGEMENT PLAN	Yangery Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0097	Otway Basin	Porous rock	Port Campbell Limestone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, dairy, domestic, stock, industrial, commercial	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	saline intrusion, unsustainable extraction, interference	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	not specified	not identified	Not specified / unknown	not identified	Not specified / unknown	Interference impacts to existing users		* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	YANGERY GROUNDWATER SUPPLY PROTECTION AREA EXPLANATORY PAPER TO THE GROUNDWATER MANAGEMENT PLAN	Yangery Groundwater Supply Protection Area Consultative Committee	2001		Resource Management Plan	MDBA0097	Otway Basin	Porous rock	Port Campbell Limestone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, dairy, domestic, stock, industrial, commercial	Renewable (younger water; recharge occurring)	Connected	Over Allocated	Reasonably defined	saline intrusion, unsustainable extraction, interference	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	not specified	not identified	Not specified / unknown	not identified	Not specified / unknown	Degradation of groundwater quality	potential for saline intrusion	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Yarram Water Supply Protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0098	Gippsland Basin	Sands (coastal, aeolian)	Latrobe Group, Ballook Formation	Deep groundwater (>200 m bgl)	80% irrigation, but also dairy, commercial and industrial	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	saline intrusion, unsustainable extraction, interference	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	not identified	Not specified / unknown	not identified	Not specified / unknown	Degradation of groundwater quality	saline intrusion	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Groundwater Management Plan Yarram Water Supply Protection Area	Southern Rural Water	2010		Resource Management Plan	MDBA0098	Gippsland Basin	Sands (coastal, aeolian)	Latrobe Group, Ballook Formation	Deep groundwater (>200 m bgl)	80% irrigation, but also dairy, commercial and industrial	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	saline intrusion, unsustainable extraction, interference	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	not specified	not identified	Not specified / unknown	not identified	Not specified / unknown	Hydrogeological integrity impact	loss of artesian conditions, access to users	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Loddon Highlands Water Supply Protection Area Groundwater Management Plan	Goulburn-Murray Water	2012		Resource Management Plan	MDBA0099	Murray Darling Basin	Several - regional plan	Newer Volcanic fractured basalt and the Deep Lead sand and gravel deposits	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	domestic and stock use, irrigation, commercial and industrial purposes, reticulated urban supply	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	sustainable groundwater use and GDE protection	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	trigger levels / temporary reductions	local rules to manage extraction with trigger levels and restrictions, entitlement caps.	Understanding of scientifically established relationships	not identified	Not specified / unknown	Impact to GDEs		* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Victoria	Loddon Highlands Water Supply Protection Area Groundwater Management Plan	Goulburn-Murray Water	2012		Resource Management Plan	MDBA0099	Murray Darling Basin	Several - regional plan	Newer Volcanic fractured basalt and the Deep Lead sand and gravel deposits	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	domestic and stock use, irrigation, commercial and industrial purposes, reticulated urban supply	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	sustainable groundwater use and GDE protection	Yes, groundwater monitored periodically	Yes; but not monitored	Cultural flows not considered/mentioned	water trading (within the management area)	local rules to manage temporary water trading/transfers. 2.5 km maximum distance for trading to be permitted	Not specified / unknown	not identified	Not specified / unknown	Hydrogeological integrity impact	protect the integrity of the aquifer and reduce the potential for unacceptable impacts to authorised groundwater users and the environment.	* RCL and management mechanisms not identified to relate back to the risks identified
Australia	Western Australia	Carnarvon Artesian Basin Water Management Plan	Department of Water, Government of Western Australia	2007		Resource Management Plan	MDBA0108	Carnarvon Artesian Basin	Porous rock	Several - regional plan	Deep groundwater (>200 m bgl)	Pastoral and horticultural properties, industry, mining, tourism, town water supplies	Non-renewable (fossil water. Usually confined or semi-confined)	Non-connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows incorporated in Plan	undertake technical investigations	5.2.5 Applicant requesting water entitlements greater than 50,000 KL/yr or where impacts are deemed significant, they must provide a monitoring program	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		RCL method not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	Carnarvon Artesian Basin Water Management Plan	Department of Water, Government of Western Australia	2007		Resource Management Plan	MDBA0108	Carnarvon Artesian Basin	Porous rock	Several - regional plan	Deep groundwater (>200 m bgl)	Pastoral and horticultural properties, industry, mining, tourism, town water supplies	Non-renewable (fossil water. Usually confined or semi-confined)	Non-connected	Within Allocated Limit	Well defined (based on numeric model)	sustainable water use	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows incorporated in Plan	not specified	5.2.6 Should an existing water user allege impacts by another, the complainant will have to provide other monitoring data and analyses of the information	Not specified / unknown	not specified	Not specified / unknown	Interference impacts to existing users		RCL method not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	La Grange Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010		Resource Management Plan	MDBA0109	not specified	Porous rock	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Horticulture, cultural, agriculture, mining, pasture production, domestic consumption and tourism	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GDEs, groundwater quality and quantity	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	Trading is not permitted between subareas	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		RCL method not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	La Grange Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010		Resource Management Plan	MDBA0109	not specified	Porous rock	Several - regional plan	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Horticulture, cultural, agriculture, mining, pasture production, domestic consumption and tourism	Renewable (younger water; recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	GDEs, groundwater quality and quantity	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	If allocation limit is reached for 50% the regional monitoring program will need to be assessed and consultation with stakeholders to evaluate further work to be done. If it reaches 70% a review is scheduled of the allocation limit and a water-use survey is conducted on groundwater users. If it reaches 90%, assess the need to review the water allocation plan.	Not specified / unknown	not specified	Not specified / unknown	Not specified/identified		RCL method not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	Jurien Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010		Resource Management Plan	MDBA0110	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Agricultural production, public water supply, mining public water supply and horticulture	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Groundwater quality, GDEs, sustainable water use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	water trading (within the management area)	Rules around trading water between management areas	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact		RCL not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	Jurien Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010		Resource Management Plan	MDBA0110	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Agricultural production, public water supply, mining public water supply and horticulture	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Groundwater quality, GDEs, sustainable water use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	Where the department has trigger water levels for a specific site, the department may restrict abstraction, require production bores to be located away from these sites or require the development of operating strategies with monitoring programs	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact		RCL not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	Jurien Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010		Resource Management Plan	MDBA0110	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Agricultural production, public water supply, mining public water supply and horticulture	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Groundwater quality, GDEs, sustainable water use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	Where a new licence has the potential to decrease groundwater contribution to river baseflow during low-flow periods the department may request hydrogeological studies to be done, relocate the proposed extraction point away from the river and restrict the volume taken during certain time periods	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows		RCL not specified, risks not specified, management mechanism derivation not specified
Australia	Western Australia	Jurien Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010		Resource Management Plan	MDBA0110	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Agricultural production, public water supply, mining public water supply and horticulture	Not specified / unknown	Connected	Not specified / unknown	Reasonably defined	Groundwater quality, GDEs, sustainable water use	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned in Plan	trigger levels / temporary reductions	Department may restrict groundwater abstraction to prevent/minimise risk of saltwater interface moving inland	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	Risk to groundwater quality	RCL not specified, management mechanism derivation not specified



**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information				Contextual Information										Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions							
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour?	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values in issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Salinity	Other Descriptions	
Australia	Western Australia	Lower Gascoyne Water Allocation Plan	Department of Water, Government of Western Australia	2011	Water Resource Allocation and Planning Series Report no. 46	Resource Management Plan	MDBA0111	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, horticulture	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, groundwater levels and water quality	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	The department takes a minimum of 4 salinity samples per year if the licensee wishes to apply for an increase	Not specified / unknown	Salinity needs to remain below 78.6 mS/m EC at 25 oC for the preceding 3 year period	Not specified / unknown	Degradation of groundwater quality	Salinity risks, salinity movement	RCL method not identified, management mechanism derivation not specified
Australia	Western Australia	Lower Gascoyne Water Allocation Plan	Department of Water, Government of Western Australia	2011	Water Resource Allocation and Planning Series Report no. 46	Resource Management Plan	MDBA0111	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, horticulture	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, groundwater levels and water quality	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Cease pumping and notify licensee of high salinity levels	Non-technical means (nominally adopted)	If salinity levels exceed 176 mS/m EC at 25oC in horticultural land, 146.5 mS/m EC at 25oC in individual subarea 1 bores and 467 mS/m EC at 25oC in non-horticultural land.	Not specified / unknown	Degradation of groundwater quality	Salinity risks, salinity movement	RCL method not identified, management mechanism derivation not specified
Australia	Western Australia	Lower Gascoyne Water Allocation Plan	Department of Water, Government of Western Australia	2011	Water Resource Allocation and Planning Series Report no. 46	Resource Management Plan	MDBA0111	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, horticulture	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	sustainable water use, groundwater levels and water quality	Yes, groundwater monitored periodically	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	If water levels drop below trigger, the licensee must start to monitor tree stress using a department approved program, modify their abstraction regime based on the results of the forma and implement water efficiency measures	Not specified / unknown	Groundwater levels fall to within 10% of historical minimum water levels	Not specified / unknown	Hydrogeological integrity impact	RCL method not identified, management mechanism derivation not specified, risks not identified	
Australia	Western Australia	Grangara Groundwater Areas Allocation Plan	Department of Water, Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 30	Resource Management Plan	MDBA0112	not specified	Several - regional plan	Several - regional plan	Not specified	Domestic	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	Declining groundwater levels, GDEs, water quality (salinity), groundwater acidification	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	trigger levels / temporary reductions	Review allocation limits and update plan	Not specified / unknown	Declining groundwater levels	Not specified / unknown	Hydrogeological integrity impact	specific risks not identified, RCI derivation not specified, management mechanism derivation not specified	
Australia	Western Australia	Grangara Groundwater Areas Allocation Plan	Department of Water, Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 30	Resource Management Plan	MDBA0112	not specified	Several - regional plan	Several - regional plan	Not specified	Domestic	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	Declining groundwater levels, GDEs, water quality (salinity), groundwater acidification	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	water trading (within the management area)	Uses internal policy to manage trading around environmentally sensitive areas	Not specified / unknown	not specified	Impact to GDEs	specific risks not identified, RCL not specified, management mechanism derivation not specified		
Australia	Western Australia	Arrowsmith Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010	Water Resource Allocation and Planning Series Report no. 28	Resource Management Plan	MDBA0113	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Mining, public water supply and agricultural production	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDE, groundwater quality, sustainable water use, groundwater levels	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Where the department has trigger water levels for a specific site, the department may restrict abstraction, require production bores to be located away from these sites or require the development of operating strategies with monitoring programs	Not specified / unknown	not specified	Hydrogeological integrity impact	specific risks not identified, RCL not specified, management mechanism derivation not specified		
Australia	Western Australia	Arrowsmith Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010	Water Resource Allocation and Planning Series Report no. 28	Resource Management Plan	MDBA0113	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Mining, public water supply and agricultural production	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDE, groundwater quality, sustainable water use, groundwater levels	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Where a new licence has the potential to decrease groundwater contribution to river baseflow during low-flow periods the department may request hydrogeological studies to be done, relocate the proposed extraction point away from the river and restrict the volume taken during certain time periods	Not specified / unknown	not specified	impact to river baseflows	specific risks not identified, RCL not specified, management mechanism derivation not specified		
Australia	Western Australia	Arrowsmith Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010	Water Resource Allocation and Planning Series Report no. 28	Resource Management Plan	MDBA0113	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Mining, public water supply and agricultural production	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDE, groundwater quality, sustainable water use, groundwater levels	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	water trading (within the management area)	Rules around trading water between management areas	Not specified / unknown	not specified	Hydrogeological integrity impact	specific risks not identified, RCL not specified, management mechanism derivation not specified		
Australia	Western Australia	Arrowsmith Groundwater Allocation Plan	Department of Water, Government of Western Australia	2010	Water Resource Allocation and Planning Series Report no. 28	Resource Management Plan	MDBA0113	Northern Perth Basin	Several - regional plan	Several - regional plan	Not specified	Mining, public water supply and agricultural production	Renewable (younger water, recharge occurring)	Connected	Not specified / unknown	Reasonably defined	GDE, groundwater quality, sustainable water use, groundwater levels	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	Department may restrict groundwater abstraction to prevent/minimise risk of saltwater interface moving inland	Not specified / unknown	not specified	Degradation of groundwater quality	Risk to groundwater quality	RCL not specified, management mechanism derivation not specified	
Australia	Western Australia	Cockburn Groundwater Area Water Management Plan	Department of Water, Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 18	Resource Management Plan	MDBA0114	not specified	Several - regional plan	Several - regional plan	Not specified	All development, industry, infrastructure	Non-renewable (fossil water, usually confined or semi-confined)	Connected	Over Allocated	Well defined (based on numeric model)	GDE, groundwater quality, sustainable water use, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows mentioned but not incorporated in Plan	water trading (within the management area)	Market based instrument to reallocate water to uses with higher economic benefit, more efficient water use, response of industry to changing conditions and assist in regional development	Non-technical means (nominally adopted)	not specified	not specified/identified	risks not specified, RCL not specified		
Australia	Western Australia	Cockburn Groundwater Area Water Management Plan	Department of Water, Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 18	Resource Management Plan	MDBA0114	not specified	Several - regional plan	Several - regional plan	Not specified	All development, industry, infrastructure	Non-renewable (fossil water, usually confined or semi-confined)	Connected	Over Allocated	Well defined (based on numeric model)	GDE, groundwater quality, sustainable water use, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows mentioned but not incorporated in Plan	trigger levels / temporary reductions	If abstraction regime is likely to have significant impacts on GDEs the department may require site specific work to be done see 5.3.2	Non-technical means (nominally adopted)	Minimum water levels for wetlands: Thomsons Lake: 10.8 mAHD, Bibra Lake 13.6 mAHD, Bangrup Lake: 11.5 mAHD, Lake Coogee - 0.1 mAHD and Long Swamp: 0.1 mAHD.	Understanding of scientifically established relationships	Impact to GDEs	Impacted by groundwater abstraction	
Australia	Western Australia	Murray Groundwater Allocation Plan	Department of Water, Government of Western Australia	2012	Water Resource Allocation and Planning Series Report no. 22	Resource Management Plan	MDBA0115	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry (48%), agriculture, parks and conservation, commercial including public water supply and backyard bores	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, GDEs, groundwater quality	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Where a new licence has the potential to decrease groundwater contribution to river baseflow during low-flow periods the department may request hydrogeological studies to be done, relocate the proposed extraction point away from the river and restrict abstraction	Not specified / unknown	not specified	impact to river baseflows	risk to river flow regime	RCL not specified, management mechanism derivation not specified	
Australia	Western Australia	Murray Groundwater Allocation Plan	Department of Water, Government of Western Australia	2012	Water Resource Allocation and Planning Series Report no. 22	Resource Management Plan	MDBA0115	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry (48%), agriculture, parks and conservation, commercial including public water supply and backyard bores	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, GDEs, groundwater quality	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Where the department has trigger water levels for a specific site, the department may restrict abstraction, require production bores to be located away from these sites or require the development of operating strategies with monitoring programs	Not specified / unknown	not specified	Hydrogeological integrity impact	RCL not specified, management mechanism derivation not specified, risks not specified		
Australia	Western Australia	Murray Groundwater Allocation Plan	Department of Water, Government of Western Australia	2012	Water Resource Allocation and Planning Series Report no. 22	Resource Management Plan	MDBA0115	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry (48%), agriculture, parks and conservation, commercial including public water supply and backyard bores	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, GDEs, groundwater quality	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Department may restrict groundwater abstraction to prevent/minimise risk of saltwater interface moving inland	Not specified / unknown	not specified	Degradation of groundwater quality	Risk to groundwater quality	RCL not specified, management mechanism derivation not specified	
Australia	Western Australia	Rockingham-Stakehill Groundwater Management Plan	Department of Water, Government of Western Australia	2008	Water Resource Allocation and Planning Series Report no. 23	Resource Management Plan	MDBA0116	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry, agriculture, irrigation, service sector, domestic, stock and garden	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	Sustainable water use, GDEs, groundwater levels, water quality	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	undertake technical investigations	Assess the local and regional impacts of the proposed abstraction on the hydrology, environment and other groundwater users	Not specified / unknown	not specified	Hydrogeological integrity impact	derivation of management mechanism not specified, RCL not specified, risks not specified		
Australia	Western Australia	Rockingham-Stakehill Groundwater Management Plan	Department of Water, Government of Western Australia	2008	Water Resource Allocation and Planning Series Report no. 23	Resource Management Plan	MDBA0116	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry, agriculture, irrigation, service sector, domestic, stock and garden	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	Sustainable water use, GDEs, groundwater levels, water quality	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	water trading (within the management area)	Trading can be utilised in a fully allocated system, impacts on GDEs are considered. Market based instrument to reallocate water to uses with higher economic benefit, more efficient water use, response of industry to changing conditions and assist in regional development	Not specified / unknown	not specified	Hydrogeological integrity impact	derivation of management mechanism not specified, RCL not specified, risks not specified		
Australia	Western Australia	Rockingham-Stakehill Groundwater Management Plan	Department of Water, Government of Western Australia	2008	Water Resource Allocation and Planning Series Report no. 23	Resource Management Plan	MDBA0116	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry, agriculture, irrigation, service sector, domestic, stock and garden	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	Sustainable water use, GDEs, groundwater levels, water quality	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	trigger levels / temporary reductions	If abstraction regime is likely to have significant impacts on GDEs the department may require site specific work to be done see 4.1.3 and 4.1.2	Not specified / unknown	not specified	Impact to GDEs	derivation of management mechanism not specified, RCL not specified, risks not specified		
Australia	Western Australia	Rockingham-Stakehill Groundwater Management Plan	Department of Water, Government of Western Australia	2008	Water Resource Allocation and Planning Series Report no. 23	Resource Management Plan	MDBA0116	not specified	Several - regional plan	Several - regional plan	Not specified	Mining and industry, agriculture, irrigation, service sector, domestic, stock and garden	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Well defined (based on numeric model)	Sustainable water use, GDEs, groundwater levels, water quality	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	trigger levels / temporary reductions	If the licensee is required to monitor groundwater quality any increases above the trigger level needs to be reported within 7 days	Not specified / unknown	not specified	Degradation of groundwater quality	derivation of management mechanism not specified, RCL not specified, risks not specified		
Australia	Western Australia	Kemerton Groundwater Subareas Water Management Plan	Department of Water, Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 17	Resource Management Plan	MDBA0117	not specified	Several - regional plan	Several - regional plan	Not specified	Livestock and domestic	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric SW model)	GDEs, sustainable water use, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows not considered/mentioned	not specified		Not specified / unknown	Critical levels of drawdown for different depths to groundwater (m): depth of 0-3m: 0.75m drawdown, depth of 3-6m: 1.25m drawdown, depth of 6-10m: 1.75m drawdown.	Understanding of scientifically established relationships	Impact to GDEs	Risks from abstraction	management mechanism not specified
Australia	Western Australia	SouthWest Groundwater Areas Allocation Plan	Department of Water, Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 21	Resource Management Plan	MDBA0118	not specified	Several - regional plan	Several - regional plan	Not specified	Commercial, water supply, stock and domestic, horticulture, mining, pasture production	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric SW model)	Sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	trigger levels / temporary reductions	If trigger is breached a management trigger and response framework has been developed shown in figure B1, where reviews are undertaken of vegetation condition monitoring data, water level monitoring data and water quality monitoring data.	Understanding of scientifically established relationships	Water level triggers: Kemerton 8.05 mAHD, Kay Park: 2.73 mAHD, Harewoods Rd: 5.72 mAHD, Ludlow Rail Reserve: 7.50 mAHD, Ruabon Reserve: 17.16 mAHD, Ambergate Reserve: 16.85 mAHD, poison Gully: 30.47 mAHD, Reedlia: 23.73 mAHD, Black Point Rd: 42.69 mAHD, Lake Jasper: 38.50 mAHD.	Detailed scientific study	Impact to GDEs	specific risks not identified	
Australia	Western Australia	SouthWest Groundwater Areas Allocation Plan	Department of Water, Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 21	Resource Management Plan	MDBA0118	not specified	Several - regional plan	Several - regional plan	Not specified	Commercial, water supply, stock and domestic, horticulture, mining, pasture production	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric SW model)	Sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	trigger levels / temporary reductions	If trigger is breached a management trigger and response framework has been developed shown in figure B1, where reviews are undertaken of vegetation condition monitoring data, water level monitoring data and water quality monitoring data.	Understanding of scientifically established relationships	Triggers for GDEs Blackwood River-Darradup Gauging Station and Hut Pool Gauging Station: Flow below historical minimum during months of summer baseflow	Detailed scientific study	Impact to GDEs	Impact from groundwater abstraction to GDEs by causing changes in discharge zones	specific risks not identified

**MDBA: Rules and Resource Condition Limits**  
 Literature Review Compilation

Location Information				Contextual Information												Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions					
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values in issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
Australia	Western Australia	SouthWest Groundwater Areas Allocation Plan	Department of Water: Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 21	Resource Management Plan	MDBA0118	not specified	Several - regional plan	Several - regional plan	Not specified	Commercial, water supply, stock and domestic, horticulture, mining, pasture production	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	Sustainable water use, GDEs, GW-SW connectivity	Yes, groundwater monitored periodically	Yes; monitored	Cultural flows incorporated in Plan	water trading (within the management area)	Must comply with trading policies set out in Table 4 and 6	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact		specific risks not identified, RCL not specified, management mechanism derivation not specified
Australia	Western Australia	Upper Collier Water Allocation Plan	Department of Water: Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 20	Resource Management Plan	MDBA0119	not specified	Several - regional plan	Several - regional plan	Not specified	Mining, power station water supply, irrigation, domestic, stock	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable water use, groundwater levels and water quality, GDE	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	Transfer and trade water entitlements can be purchased for protection of a critical environmental asset. This water becomes the property of the asset and can not be reallocated. See Table 9, 13	Non-technical means (nominally adopted)	not specified	Not specified / unknown	Not specified/identified		RCL not specified, risks not specified
Australia	Western Australia	Upper Collier Water Allocation Plan	Department of Water: Government of Western Australia	2009	Water Resource Allocation and Planning Series Report no. 20	Resource Management Plan	MDBA0119	not specified	Several - regional plan	Several - regional plan	Not specified	Mining, power station water supply, irrigation, domestic, stock	Renewable (younger water, recharge occurring)	Connected	Over Allocated	Well defined (based on numeric model)	sustainable water use, groundwater levels and water quality, GDE	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	The department requires licensee to monitor and report on the quality of the water	Not specified / unknown	Increase in salinity concentration above baseline levels	Not specified / unknown	Degradation of groundwater quality		RCL derivation not specified, risks not specified
Australia	Western Australia	Esperance Groundwater Area Water Management Plan	Department of Water: Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 16	Resource Management Plan	MDBA0120	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, public water supply, parks and gardens, domestic, agricultural and industrial	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, groundwater quality, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	water trading (within the management area)	Solves difficult management issues where demand for a limited resource exceeds supply. Market based instrument to reallocate water to uses with higher economic benefit, more efficient water use, response of industry to changing conditions and assist in regional development	Not specified / unknown	not specified	Hydrogeological integrity impact		Specific risks not specified, RCL not specified, management derivation not specified	
Australia	Western Australia	Esperance Groundwater Area Water Management Plan	Department of Water: Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 16	Resource Management Plan	MDBA0120	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, public water supply, parks and gardens, domestic, agricultural and industrial	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, groundwater quality, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	The application for a license should refer to the Water Allocation Branch and Water Investigation and Assessment Branch for assessment and advise if the trigger levels are breached. See 5.2.12. Extraction from the well exceeds 1,500KL/yr within 500 metres of, or greater than 50,000KL/yr within 1 kilometre of Ramsar Wetlands or wetlands of national and international importance	Not specified / unknown	not specified	Impact to GDEs		Specific risks not specified, RCL derivation not specified, mechanism derivation not specified	
Australia	Western Australia	Esperance Groundwater Area Water Management Plan	Department of Water: Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 16	Resource Management Plan	MDBA0120	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, public water supply, parks and gardens, domestic, agricultural and industrial	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, groundwater quality, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	distance rules for bores	Water shall not be allocated within 1km of bore	Not specified / unknown	not specified	Impact to GDEs	Risk to water regime	Specific risks not specified, RCL derivation not specified, mechanism derivation not specified, RCL derivation not specified	
Australia	Western Australia	Esperance Groundwater Area Water Management Plan	Department of Water: Government of Western Australia	2007	Water Resource Allocation and Planning Series Report no. WRAP 16	Resource Management Plan	MDBA0120	not specified	Several - regional plan	Several - regional plan	Not specified	Irrigation, public water supply, parks and gardens, domestic, agricultural and industrial	Renewable (younger water, recharge occurring)	Connected	Within Allocated Limit	Reasonably defined	Sustainable water use, groundwater quality, GDEs	Yes, groundwater monitored periodically	Yes; monitoring status unknown	Cultural flows incorporated in Plan	trigger levels / temporary reductions	An exceedance of the trigger must be reported to the department within 7 days. The department may require the licensee to monitor the quality of the groundwater on a monthly basis	Not specified / unknown	Increase in salinity above 1,000 mg/L TDS	Degradation of groundwater quality		Specific risks not specified, RCL derivation not specified, mechanism derivation not specified, RCL derivation not specified	
United Kingdom		Managing water abstraction plan	Environment Agency	2013	LY 4892 / 746_12 Version 3	Non-Technical	MDBA0169	Several - regional plan	Several - regional plan	Non specific regional plan	Not specified	not specified	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	Not specified	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	not specified	N/A		high level non technical management strategy outline	
United Kingdom		Broadland Abstraction Licensing Strategy	Environment Agency	2013		Resource Management Plan	MDBA0170	not specified	Porous rock	Broads Chalk	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	irrigation, public water supply	Not specified / unknown	Connected	Not specified / unknown	Limited definition	sustainable use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	if the flow in the river drops below that which is required to protect the environment abstraction must stop, hence 'Hands-Off Flow'.	Through advice from technical advisors	not specified	Degradation of groundwater quality	saline intrusion	RCL not identified	
United Kingdom		Aire and Calder Abstraction Licensing Strategy	Environment Agency	2013		Resource Management Plan	MDBA0171	not specified	Porous rock	Millstone Grit, Magnesium Limestone and Sherwood Sandstone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	public water supply, the chemical industry, textiles, mineral washing and some fish farming	Not specified / unknown	Connected	Not specified / unknown	Limited definition	sustainable use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	not specified	Degradation of groundwater quality	saline intrusion	RCL not identified	
United Kingdom		Aire and Calder Abstraction Licensing Strategy	Environment Agency	2013		Resource Management Plan	MDBA0171	not specified	Porous rock	Millstone Grit, Magnesium Limestone and Sherwood Sandstone	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	public water supply, the chemical industry, textiles, mineral washing and some fish farming	Not specified / unknown	Connected	Within Allocated Limit	Limited definition	sustainable use	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	not specified	Interference impacts to existing users	Groundwater levels in this area will be drawn down if new licences are granted	RCL not identified	
United Kingdom		The Merionydd Catchment Abstraction Management Strategy	Environment Agency	2005		Resource Management Plan	MDBA0172	not specified	Alluvium (alluvial valley)	alluvial (glacial deposits), alluvial deposits (clay, silt and sand) primarily in the river valleys and areas of sand near the coast.	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	the groundwater resource is considered insignificant and groundwater abstraction has been exempt from licence control since the 1960's as a result of the Gwynedd River Authority (Exemption from Control) Order, 1965.	Not specified / unknown	Not specified / unknown	Not specified / unknown	Not demonstrated	Not specified	Not specified / unknown	GDEs not identified	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	not specified	Not specified/identified		Groundwater not allocated. No RCLs or risks specified.	
United States	Lake County, California	Big Valley GROUNDWATER MANAGEMENT PLAN	Big Valley Groundwater Management Zone Commission	1999		Resource Management Plan	MDBA0162	Big Bailey	Alluvium (alluvial basin)	Kelseyville and Adobe Creek-Manning Creek (unconfined) Western and Central Upland (confined)	Deep groundwater (>200 m bgl)	irrigation, food processing, and domestic uses	Renewable	Connected	Varies throughout the basin	Limited definition	sustainable GW allocation and gw quality protection	Yes	GDEs not identified	Cultural flows not considered/mentioned	drawdown limits	Monitoring, user coordination	Not specified / unknown	No net negative impact	Degradation of groundwater quality	agricultural induced salt intrusion, managing conjunctive mentioned	specific trigger level RCLs to minimise negative impacts not use	
United States	Lake County, California	Big Valley GROUNDWATER MANAGEMENT PLAN	Big Valley Groundwater Management Zone Commission	1999		Resource Management Plan	MDBA0162	Big Bailey	Alluvium (alluvial basin)	Kelseyville and Adobe Creek-Manning Creek (unconfined) Western and Central Upland (confined)	Deep groundwater (>200 m bgl)	irrigation, food processing, and domestic uses	Renewable	Connected	Varies throughout the basin	Limited definition	sustainable GW allocation and gw quality protection	Yes	GDEs not identified	Cultural flows not considered/mentioned	distance rules for bores	Monitoring, user coordination. Establish quantitative limitations on groundwater extractions for particular areas and establishing criteria for well spacing and operations to limit adverse impacts of groundwater extraction on Basin wells, if needed	Not specified / unknown	No net negative impact	Interference impacts to existing users	agricultural induced salt intrusion, managing conjunctive mentioned	specific trigger level RCLs to minimise negative impacts not use	
United States	Lake County, California	Lake County Water Inventory and Analysis	Lake County Watershed Protection District	2006		Technical	MDBA0164	Multiple basins	Several - regional plan	12 groundwater basins and one groundwater source area	multiple	agricultural and domestic	Renewable	Connected	Varies throughout the basin	well defined	overdraft and wellhead protection	yes	GDEs not identified	Cultural flows not considered/mentioned	not specified	not specified	Not specified / unknown	not specified	Not specified/identified		RCLs, risks and management mechanisms not identified	
United States	Lassen County, California	Lassen County Groundwater Management Plan	Lassen County Board of Supervisors	2007		Resource Management Plan	MDBA0165	Honey Lake, Big Valley, and Modoc Plateau Pleistocene Volcanic Area	Holocene Sedimentary Deposits Pleistocene Lake and Near-shore Deposits Plio-Pleistocene and Pleistocene Volcanic Rocks Quaternary Sedimentary Deposits Tertiary Hallelujah Formation	Honey Lake, Big Valley, and Modoc Plateau Pleistocene Volcanic Area	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agricultural and domestic	Renewable	Connected	Varies throughout the basin	Varies	Control of saline intrusion, wellhead protection, migration of contaminated, overdraft, conjunctive use. Establish management objectives	yes	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Groundwater monitoring, monitoring ground subsidence, develop Basin Management Objectives	Public meetings and studies	Land subsidence or aquifer compaction	review of monitoring results, grant funded studies	Degradation of groundwater quality	agricultural induced salt intrusion, overdraft impacts	
United States	Lassen County, California	Lassen County Groundwater Management Plan	Lassen County Board of Supervisors	2007		Groundwater Management Plan	MDBA0165	Honey Lake, Big Valley, and Modoc Plateau Pleistocene Volcanic Area	Holocene Sedimentary Deposits Pleistocene Lake and Near-shore Deposits Plio-Pleistocene and Pleistocene Volcanic Rocks Quaternary Sedimentary Deposits Tertiary Hallelujah Formation	Honey Lake, Big Valley, and Modoc Plateau Pleistocene Volcanic Area	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agricultural and domestic	Renewable	Connected	Varies throughout the basin	Varies	Control of saline intrusion, wellhead protection, migration of contaminated, overdraft, conjunctive use. Establish management objectives	yes	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Groundwater monitoring, develop Basin Management Objectives	Not specified / unknown	not specified	review of monitoring results, grant funded studies	Hydrogeological integrity impact	agricultural induced salt intrusion, overdraft impacts	
United States	Lassen County, California	Lassen County Groundwater Management Plan	Lassen County Board of Supervisors	2007		Resource Management Plan	MDBA0165	Honey Lake, Big Valley, and Modoc Plateau Pleistocene Volcanic Area	Holocene Sedimentary Deposits Pleistocene Lake and Near-shore Deposits Plio-Pleistocene and Pleistocene Volcanic Rocks Quaternary Sedimentary Deposits Tertiary Hallelujah Formation	Honey Lake, Big Valley, and Modoc Plateau Pleistocene Volcanic Area	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	agricultural and domestic	Renewable	Connected	Varies throughout the basin	Varies	Control of saline intrusion, wellhead protection, migration of contaminated, overdraft, conjunctive use. Establish management objectives	yes	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Groundwater monitoring, monitoring ground subsidence, develop Basin Management Objectives	Public meetings and studies	Land subsidence or aquifer compaction	review of monitoring results, grant funded studies	Hydrogeological integrity impact	agricultural induced salt intrusion, overdraft impacts	
United States	Paso Robles, California	Paso Robles Basin Groundwater Management Plan	Paso Robles Groundwater Basin -Groundwater Advisory Committee	2011		Resource Management Plan	MDBA0166	Paso Robles Formation	Plio-Pleistocene, predominantly non-marine geologic unit comprised of relatively thin, often discontinuous sand and gravel layers interbedded with thicker layers of silt and clay	Paso Robles Formation Sub basins: Atascadero, Bradley, Creston, Estrella, Gabilan (North and South), San Juan, and Shandon	Deep groundwater (>200 m bgl)	Municipal, commercial, and agricultural	Renewable	Connected	highly but varies throughout the basin	fair but varies	maximum yield and land subsidence	yes	GDEs not identified	Cultural flows not considered/mentioned	undertake technical investigations	develop Basin Management Objectives	Public meetings and studies	not specified	Not specified / unknown	impact to river baseflows	Well head and source area protection, over drafting causing loss of water supply	

**MDBA: Rules and Resource Condition Limits**  
Literature Review Compilation

Location Information		Contextual Information														Management Mechanisms			Resource Condition Limit (RCL)		Risk		Clarification / Verification Requirements of Jurisdictions					
Country	State/Region	Document Title	Author	Date	Report Reference No.	Document Type	GHD Catalogue Number	Groundwater Basin	Kind of Aquifer	Aquifer Name	Aquifer depth / interval	What are the main uses of groundwater in this management area?	Renewable?	GW-SW connectivity?	Level of Development?	Level of knowledge of system behaviour	What are the key environmental priorities identified?	Is a groundwater monitoring program in place?	Are potential GDEs identified?	Are Cultural Flow values an issue?	Mechanism Type	Mechanism Descriptions	How are these mechanisms delivered?	What is the RCL?	How was the RCL derived?	Severity	Risk Description	
United States	Paso Robles, California	Paso Robles Basin Groundwater Management Plan	Paso Robles Groundwater Basin -Groundwater Advisory Committee	2011		Resource Management Plan	MDBA0166	Paso Robles Formation	Plio-Pleistocene, predominantly non-marine geologic unit comprised of relatively thin, often discontinuous sand and gravel layers interbedded with thicker layers of silt and clay	Paso Robles Formation Sub basins: Atascadero, Bradley, Creston, Estrella, Gablian (North and South), San Juan, and Shandon	Deep groundwater (>200 m bgl)	Municipal, commercial, and agricultural	Renewable	Connected	highly but varies throughout the basin	fair but varies	maximum yield and land subsidence	yes	GDEs not identified	Cultural flows not considered/mentioned	drawdown limits	develop Basin Management Objectives	Public meetings and studies	not specified	Not specified / unknown	Degradation of groundwater quality	Well head and source area protection, over drafting causing loss of water supply. Contaminant migration.	
United States	Paso Robles, California	Paso Robles Basin Groundwater Management Plan	Paso Robles Groundwater Basin -Groundwater Advisory Committee	2011		Resource Management Plan	MDBA0166	Paso Robles Formation	Plio-Pleistocene, predominantly non-marine geologic unit comprised of relatively thin, often discontinuous sand and gravel layers interbedded with thicker layers of silt and clay	Paso Robles Formation Sub basins: Atascadero, Bradley, Creston, Estrella, Gablian (North and South), San Juan, and Shandon	Deep groundwater (>200 m bgl)	Municipal, commercial, and agricultural	Renewable	Connected	highly but varies throughout the basin	fair but varies	maximum yield and land subsidence	yes	GDEs not identified	Cultural flows not considered/mentioned	undertake technical investigations	develop Basin Management Objectives	Public meetings and studies	Land subsidence or aquifer compaction	Not specified / unknown	Hydrogeological integrity impact	Inelastic land subsidence, which is a permanent lowering of the ground surface resulting from compaction of geologic materials caused by groundwater extraction	
United States	Sacramento, California	Sacramento Groundwater Authority Groundwater Management Plan	Sacramento Groundwater Authority	2008		Resource Management Plan	MDBA0167	North American (as in American River Basin) Groundwater Sub basin	Turlock Lake and Riverbank Formations: unconsolidated decomposed granite, Laguna Formation: non-volcanic, comprised of heterogeneous deposits of silt, clay, sands and fine gravels, Mehten Formation: upper sedimentary unit is composed of well sorted black andesitic sands, sometimes with cobbles and boulders, and interbedded blue to brown clays; the lower consolidated unit is a hard and very dense gray tuff-breccia	North American sub units Turlock Lake and Riverbank, Laguna, and Mehten	Deep groundwater (>200 m bgl)	Municipal, commercial, and agricultural	Renewable	Connected	highly developed	well defined	Migration of contamination	Yes	GDEs not identified	Cultural flows not considered/mentioned	undertake technical investigations	further investigate groundwater - surface water interactions	Not specified / unknown	not specified	Not specified / unknown	impact to river baseflows	Well head and source area protection, over drafting causing loss of water supply	
United States	Sacramento, California	Sacramento Groundwater Authority Groundwater Management Plan	Sacramento Groundwater Authority	2008		Resource Management Plan	MDBA0167	North American (as in American River Basin) Groundwater Sub basin	Turlock Lake and Riverbank Formations: unconsolidated decomposed granite, Laguna Formation: non-volcanic, comprised of heterogeneous deposits of silt, clay, sands and fine gravels, Mehten Formation: upper sedimentary unit is composed of well sorted black andesitic sands, sometimes with cobbles and boulders, and interbedded blue to brown clays; the lower consolidated unit is a hard and very dense gray tuff-breccia	North American sub units Turlock Lake and Riverbank, Laguna, and Mehten	Deep groundwater (>200 m bgl)	Municipal, commercial, and agricultural	Renewable	Connected	highly developed	well defined	Migration of contamination	Yes	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Groundwater monitoring, monitoring ground subsidence, develop Basin Management Objectives	Public meetings and studies	not specified	review of monitoring results, grant funded studies	Hydrogeological integrity impact	Well head and source area protection, over drafting causing loss of water supply	
United States	Sacramento, California	Sacramento Groundwater Authority Groundwater Management Plan	Sacramento Groundwater Authority	2008		Resource Management Plan	MDBA0167	North American (as in American River Basin) Groundwater Sub basin	Turlock Lake and Riverbank Formations: unconsolidated decomposed granite, Laguna Formation: non-volcanic, comprised of heterogeneous deposits of silt, clay, sands and fine gravels, Mehten Formation: upper sedimentary unit is composed of well sorted black andesitic sands, sometimes with cobbles and boulders, and interbedded blue to brown clays; the lower consolidated unit is a hard and very dense gray tuff-breccia	North American sub units Turlock Lake and Riverbank, Laguna, and Mehten	Deep groundwater (>200 m bgl)	Municipal, commercial, and agricultural	Renewable	Connected	highly developed	well defined	Migration of contamination	Yes	GDEs not identified	Cultural flows not considered/mentioned	water quality indicators	Groundwater monitoring, monitoring ground subsidence, develop Basin Management Objectives	Public meetings and studies	not specified	Not specified / unknown	Degradation of groundwater quality	migration of contaminated groundwater, saline water intrusion	
United States	San Diego, California	San Pasqual Basin Groundwater Management Plan	The City of San Diego Water Department	2007		Resource Management Plan	MDBA0168	San Pasqual Valley basin	unconsolidated granitic alluvium	San Pasqual Valley basin	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Municipal, and agricultural	Renewable	Connected	highly developed	fair but varies	Source area and wellhead protection, groundwater supply	yes	GDEs not identified	Cultural flows not considered/mentioned	water quality indicators	Groundwater monitoring, develop Basin Management Objectives	Not specified / unknown	not specified	Not specified / unknown	Degradation of groundwater quality	Well head and source area protection, over drafting causing loss of water supply	
United States	San Diego, California	San Pasqual Basin Groundwater Management Plan	The City of San Diego Water Department	2007		Resource Management Plan	MDBA0168	San Pasqual Valley basin	unconsolidated granitic alluvium	San Pasqual Valley basin	Shallow groundwater (<200m bgl) e.g. stock/domestic productive use	Municipal, and agricultural	Renewable	Connected	highly developed	fair but varies	Source area and wellhead protection, groundwater supply	yes	GDEs not identified	Cultural flows not considered/mentioned	water quality indicators	Groundwater monitoring, develop Basin Management Objectives	Not specified / unknown	not specified	Not specified / unknown	Hydrogeological integrity impact	Well head and source area protection, over drafting causing loss of water supply	
United States	Southern Tulare County and Northern Kern County (foothills of sierras), California	GROUNDWATER MANAGEMENT PLAN DELANO-EARLMART IRRIGATION DISTRICT	DELANO-EARLMART IRRIGATION DISTRICT	2007		Resource Management Plan	MDBA0163	Tule and Kern County Groundwater Sub-basins	Alluvium (alluvial basin)	Tulare Lake Hydrologic Region, Kern County Sub-basin and the Tule River Sub-basin	Deep groundwater (>200 m bgl)	95% irrigation	Renewable	Connected	highly developed	well defined	overdraft saline intrusion from agriculture	Yes	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Monitoring, user coordination	Not specified / unknown	No net negative impact	Interference impacts to existing users	overdraft impacts	specific trigger level RCLs to minimise negative impacts not mentioned	
United States	Southern Tulare County and Northern Kern County (foothills of sierras), California	GROUNDWATER MANAGEMENT PLAN DELANO-EARLMART IRRIGATION DISTRICT	DELANO-EARLMART IRRIGATION DISTRICT	2007		Resource Management Plan	MDBA0163	Tule and Kern County Groundwater Sub-basins	Alluvium (alluvial basin)	Tulare Lake Hydrologic Region, Kern County Sub-basin and the Tule River Sub-basin	Deep groundwater (>200 m bgl)	95% irrigation	Renewable	Connected	highly developed	well defined	overdraft saline intrusion from agriculture	Yes	GDEs not identified	Cultural flows not considered/mentioned	trigger levels / temporary reductions	Monitoring, user coordination	Not specified / unknown	No net negative impact	Degradation of groundwater quality	agricultural induced salt intrusion, contaminant migration	specific trigger level RCLs to minimise negative impacts not mentioned	