

M5 Junction 10 Improvements Scheme

Environmental Statement Appendix 8.2B WFD Groundwater Impact Assessment TR010063 - APP 6.15

Regulation 5 (2) (a)

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M5 Junction 10 Improvement Scheme Development Consent Order 202[x]

Environmental Statement: Appendix 8.2B WFD Groundwater Impact Assessment

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Project Name: M5 Junction 10 Improvements Scheme

Screening assessment

Water bodies affected by Proposed Scheme											
WFD Water Body Name	WFD Water Body ID	Overall Status	Quantitative Status	Chemical Status	River Basin Management Plan (RBMP)	EA Operational catchment	WFD Protected Areas located within groundwater body extent	Groundwater Dependent Terrestrial Ecosystems	WFD surface water bodies located within groundwater body within the Zol	Crossed by the route? (Y/N)	Groundwater feature screened in for consideration in detailed impact assessment? (Y/N)
Severn Vale - Secondary Combined	GB40902G204900	Good	Good	Good	Severn	Severn Vale - Secondary Combined Operational Catchment	Nitrates Directive: Cotswold Jurassic G83, Hereford, England G4, Newent G38 Drinking Water protected Area: Severn Vale - Secondary Combined	N/A - None within the Scheme Zol	Chelt – source to M5 (GB109054032820) Chelt – M5 to conf. R. Severn (GB109054032810) Hatherley Bk - source to conf R Severn (GB109054032801) Severn – conf R Avon to conf Upper Parting (GB109054044404) Leigh Bk – source to conf. R. Chelt (GB109054039770) Swilgate – source to conf. R. Avon (GB109054039780)	Y	Y
Warwickshire Avon - Secondary Mudrocks	GB40902G990900	Good	Good	Good	Severn	Avon Warwickshire - Secondary Mudrocks Operational Catchment	Nitrates Directive: Coventry G36 West Midlands G29 Warmington G82 Offenham G163 Cotswold Jurassic G83 Balscote G164 Drinking Water protected Area: Warwickshire Avon - Secondary Mudrocks	N/A - none within the Scheme Zol	Leigh Bk – source to conf. R. Chelt (GB109054039770) Swilgate – source to conf. R. Avon (GB109054039780)	N	Y

Project Name: M5 Junction 10 Improvements Scheme
 Detailed Impact Assessment - Effects on current status

Severn Vale - Secondary Combined (GB40902G204900)				Detailed Impact Assessment					Test A Potential to cause deterioration of current WFD Ecological Status									
EA Management Catchment	Severn England Groundwater	Scheme component (SIC)		Enbankments		West Cheltenham Link Road River Clerk Bridge		PFI, Elm Interchange Bridge North		PFI, Elm Interchange Bridge South		Road storage area		Detailed Impact Assessment Outcome				
Overall Status (2015)	Good	Description of scheme component		Enbankment option 5 ("worst case embankment type") with 1.5m high foundation along base of embankment. PFI, Elm Interchange, N, S, E & W embankment.		2 x 10 concrete bored pile along the width of the Clerk crossing. 1000 mm diameter bored piling with 50% w/w distance between each bore. Approx 1300 mm (13 m) depth below existing ground level.		2 x 10 concrete bored pile along the width of the PFI, Elm Interchange bridge. 1200 mm diameter bored piling with 1200 mm distance between each bore. Approx 1300 mm (13 m) depth below existing ground level.		2 x 8 concrete bored pile along the width of the PFI, Elm Interchange bridge. 1200 mm diameter bored piling with 1200 mm distance between each bore. Approx 1300 mm (13 m) depth below existing ground level.		Shallow 1.5 - 3 m deep flood storage area between the link road and junction. Storage area to be excavated from the superficial deposits. Existing outflow through PFI, Elm silt to be retained.		Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective:	Good by 2015	Summary of local geology (Site specific encountered geology)		1: 50,000 bedrock geology mapping and site specific ground investigation indicates that the ZOI is underlain predominantly by the Charmouth Mudstone Formation with a small area of the Rugby Limestone Member on its western edge. Superficial deposits in the ZOI comprise of Alluvium and Cheltenham Sand and Gravel (over terrace deposits) ranging from 0.2, 2.7 m and 0 - 2.4 m respectively.		Site specific ground investigation shows the scheme element to be underlain by the Charmouth Mudstone bedrock and superficial deposits comprising Alluvium and Cheltenham Sands and Gravel (over terrace deposits).		Site specific ground investigation shows the scheme element to be underlain by the Charmouth Mudstone bedrock and superficial deposits comprising Alluvium and Cheltenham Sands and Gravel (over terrace deposits).		Site specific intrusive ground investigations shows the scheme element to be underlain by the Charmouth Mudstone bedrock and superficial deposits comprising Alluvium and Cheltenham Sands and Gravel (over terrace deposits).		Site specific intrusive ground investigation shows the scheme element to be underlain by the Charmouth Mudstone bedrock and superficial deposits comprising Alluvium and Cheltenham Sands and Gravel (over terrace deposits).		Groundwater monitoring data throughout the ZOI across fourteen sites and eight monitoring rounds from August 2021 to February 2022. No groundwater monitoring data available in the vicinity of the Scheme component however the nearest monitoring points (DK_W0204) and (DK_W0205) show a minimum groundwater level of 0.11 m, maximum of 0.11 m, minimum of 0.11 m and average of 0.13 m. Superficial Secondary A aquifer. Bedrock Secondary (Undifferentiated) aquifer.				
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Barriers to groundwater flow Groundwater control measures Creating or altering pathways between the surface and the aquifer Remobilising existing contaminants		Barriers to groundwater flow Groundwater control measures Creating or altering pathways between the surface and the aquifer Remobilising existing contaminants		Barriers to groundwater flow Groundwater control measures Creating or altering pathways between the surface and the aquifer Remobilising existing contaminants		Barriers to groundwater flow Groundwater control measures Creating or altering pathways between the surface and the aquifer Remobilising existing contaminants		Barriers to groundwater flow Groundwater control measures Creating or altering pathways between the surface and the aquifer Remobilising existing contaminants						
Quantitative	Quantitative Saline Intrusions	Good	Good	Element is insensitive to impact. No measurable change to element.		Element is insensitive to impact. No measurable change to quantitative element.		Element is insensitive to impact. No measurable change to quantitative element.		Element is insensitive to impact. No measurable change to quantitative element.		Element is insensitive to impact. No measurable change to quantitative element.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A
	Quantitative Water Balance	Good	Good	Element is insensitive to impact. No measurable change to element.		Element is insensitive to impact. No measurable change to quantitative element.		Element is insensitive to impact. No measurable change to quantitative element.		Element is insensitive to impact. No measurable change to quantitative element.		Element is insensitive to impact. No measurable change to quantitative element.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A
	Groundwater Dependent Terrestrial Ecosystems (GDTE) Test	Good	Good	The embankment option assessed includes a continuous strip foundation to 1.5 m along the length of the embankment. This would likely to make from impermeable material and potentially be a minor barrier to shallow groundwater flow. Groundwater levels in the ZOI were recorded to be between 0.11 m and 0.13 m. The average water level was 0.13 m. The option is therefore unlikely to significantly impact the groundwater table and cause an adverse effect to any local receptors or the waterbody as a whole. Provided excavation and disposal of pumped water is to industry standards and best practice is followed, the risk to the groundwater body should be mitigated. No deterioration in status of quality element anticipated at the water body scale.		Clear spaces between the piles means that although piling is anticipated to interact with groundwater, no effect on groundwater flow and levels is expected. Provided best practice guidelines i.e. piling risk assessment and PPG are followed the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		Clear spaces between the piles means that although piling is anticipated to interact with groundwater, no effect on groundwater flow and levels is expected. Provided best practice guidelines i.e. piling risk assessment and PPG are followed the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		Clear spaces between the piles means that although piling is anticipated to interact with groundwater, no effect on groundwater flow and levels is expected. Provided best practice guidelines i.e. piling risk assessment and PPG are followed the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		No barriers to groundwater flow are expected. There is expected to be some groundwater flow across the storage area derived from the superficial deposits shallow aquifer. No deterioration in status of quality element anticipated at the water body scale.		None	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	N/A	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	Compliant - no deterioration in element status anticipated
	Quantitative Dependent Surface Water Body	Good	Good	No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A
Chemical	Chemical Saline Intrusions	Good	Good	Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A
	Chemical Drinking Water Protected Area (DWPA)	Good	Good	Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		Element is insensitive to impact. No measurable change to chemical element.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A
	Chemical Groundwater Dependent Terrestrial Ecosystems (GDTE) Test	Good	Good	Below ground foundations are unlikely to intersect the water table. Provided excavation and disposal of pumped water is to industry standards and best practice is followed i.e. PPG and piling risk assessments, the risk to the groundwater body should be mitigated. No deterioration in status of quality element anticipated at the water body scale.		Bore piling is estimated to extend 13 m. It is likely this will penetrate the groundwater table. Provided excavation and disposal of pumped water is to industry standards and best practice is followed i.e. PPG and piling risk assessments, the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		Bore piling is estimated to extend 13 m. It is likely this will penetrate the groundwater table. Provided excavation and disposal of pumped water is to industry standards and best practice is followed i.e. PPG and piling risk assessments, the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		Bore piling is estimated to extend 13 m. It is likely this will penetrate the groundwater table. Provided excavation and disposal of pumped water is to industry standards and best practice is followed i.e. PPG and piling risk assessments, the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		Bore piling is estimated to extend 13 m. It is likely this will penetrate the groundwater table. Provided excavation and disposal of pumped water is to industry standards and best practice is followed i.e. PPG and piling risk assessments, the overall risk is considered negligible. No deterioration in status of quality element anticipated at the water body scale.		None	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	N/A	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	Compliant - no deterioration in element status anticipated
	Chemical Dependent Surface Water Body	Good	Good	No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A
General Chemical Test	Good	Good	No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		No deterioration in status of quality element anticipated at the water body scale.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A	

Test B Potential to prevent future attainment of Good Ecological Status				Test C Potential to prevent attainment of Protected Area Objectives				
RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Effect of Scheme component on WFD element	Effect of Scheme component on WFD element	Effect of Scheme component on WFD element	Effect of Scheme component on WFD element	Effect of Scheme component on WFD element	Overall effect of Scheme on proposed measure
No measures associated with this water body. Already at Good status.								None of the features that were identified as contributing to the waterbody not achieving good status (identified through data catchment englobor and the extended waterbody report) are in the vicinity of the works.

* assumes that mitigations embedded in the Scheme are implemented.
 ** assumes additional mitigation measures are also implemented.

Project Name: M5 Junction 10 Improvements Scheme
Detailed Impact Assessment - Effects on current status

Test A Potential to cause deterioration of current WFD Ecological Status

Warwickshire Avon - Secondary Mudrocks (GB40902G990900)				Detailed Impact Assessment		Detailed Impact Assessment Outcome						
EA Management Catchment:	Severn England Groundwater	Scheme component (ID):		Embankments		Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale		
Overall Status (2015):	Good	Description of scheme component:		Embankment option 5 ("worst case embankment type") with 1 mbgl strip foundation along base of embankment. The scheme component does not directly intersect the WFD groundwater body however potential embankment works are estimated to be within 200 m of the WFD GWB and have therefore been included.								
Overall Status Objective:	Good by 2015	Summary of local geology (Site specific encountered geology)		1: 50,000 bedrock geology mapping and site specific ground investigation indicates that the Zol is underlain predominantly by the Charmouth Mudstone Formation with a small area of the Rugby Limestone Member on its western edge. Superficial deposits in the Zol comprise of Alluvium and Cheltenham Sand and Gravel (river terrace deposits) ranging from 0 – 2.7 m and 0 – 2.4 m respectively.								
		Summary of local hydrogeology		Groundwater monitoring data throughout the Zol across fourteen sites and eight monitoring rounds from August 2021 to February 2022. No groundwater monitoring are available in the vicinity of the Scheme component however the nearest monitoring point (M5_BH032) recorded a minimum groundwater level of 0.35 mbgl, maximum 1.7 mbgl and average of 0.98 mbgl. During the monitoring period groundwater levels fluctuated a minimum of 0.1 m and maximum of 1.35 m. Superficial Secondary A aquifer Bedrock Secondary (Undifferentiated) aquifer								
		Impact type from scheme component:		Barriers to groundwater flow Groundwater control measures Creating or altering pathways between the surface and the aquifer Remobilising existing contaminants								
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2019 Status	RBMP Cycle 2 Status Objective									
Quantitative	Quantitative Saline Intrusions	Good	Good	Element is insensitive to impact. No measurable change to quantitative element.		None	Element is insensitive to impact. No measurable change to quantitative element.	N/A	N/A	N/A		
	Quantitative Water Balance	Good	Good	At present the most intrusive embankment option comprises a continuous strip foundation to ~1 mbgl along the length of the embankment. This would likely be made from impermeable material and hence cause a potential minor barrier to shallow water flow on the assumption that water is flowing through the shallow superficals in the area and that the embankment foundation is perpendicular to flow direction. Groundwater levels in the Zol were recorded to be between 0.11 mbgl and 5.98 mbgl. The average water level was 1.59 mbgl. The option is therefore unlikely to intersect the groundwater table and cause an adverse effect to any local receptors or the waterbody as a whole. Provided excavation and disposal of pumped water is to industry standards, this risk to the groundwater body should be mitigated.		None	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	N/A	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	Compliant - no deterioration in element status anticipated		
	Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good			None						
	Quantitative Dependent Surface Water Body	Good	Good			No deterioration in status of quality element anticipated at the water body scale.					None	
Chemical	Chemical Saline Intrusions	Good	Good	At present the most intrusive embankment option comprises a continuous strip foundation to ~1 mbgl along the length of the embankment. Provided excavation and disposal of pumped water is to industry standards and best practice is followed i.e. PPG and piling risk assessments, this risk to the groundwater body should be mitigated.		None	Element is insensitive to impact. No measurable change to chemical element.	N/A	N/A	N/A		
	Chemical Drinking Water Protected Areas (DrWPAs)	Good	Good			None	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	N/A	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	Compliant - no deterioration in element status anticipated		
	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good			None	Element is insensitive to impact. No measurable change to chemical element.	N/A	N/A	N/A		
	Chemical Dependent Surface Water Body	Good	Good			No deterioration in status of quality element anticipated at the water body scale.		None	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	N/A	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	Compliant - no deterioration in element status anticipated
	General Chemical Test	Good	Good			None	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	N/A	Negligible effect is anticipated when Scheme component effects are considered in combination. No measurable change in element anticipated. Additional mitigation not required.	Compliant - no deterioration in element status anticipated		

Test B Potential to prevent future attainment of Good Ecological Status

RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Effect of Scheme component on WFD element	Overall effect of Scheme on proposed measure
No measures associated with this water body. Already at Good status				

Test C Potential to prevent attainment of Protected Area Objectives
Addressed elsewhere in Environmental Scoping Report

*assumes that mitigations embedded in the Scheme are implemented.
 ** assumes additional mitigation measures are also implemented.

Project Name: M5 Junction 10 Improvements Scheme

RAYG traffic light decision matrix for assessing magnitude of effects on surface water quality element status class

Type of effect	Impact of scheme element on WFD element i.e. in individual cells	Impact on WFD element i.e. at end of row	Impact on WFD water body i.e. the combined effect on the water body as a result of all the effect on WFD elements	Examples	Outcome
Moderate Beneficial	Impacts when taken on their own have the potential to lead to significant improvement.	Impacts in combination with others have the potential to lead to the improvement in the class of a WFD element.	Impacts in combination with others have the potential to lead to the improvement in the WFD status of the water body.	Creation of significant areas of riparian habitats (for example, within a river diversion) which enhance the value of the water body. Removal of hard bank protection. Removal of barriers to fish species. Major improvement to groundwater quality or improved quality of GWDTE due to groundwater contributions.	Increase in status class for that water body.
Minor / localised beneficial	Impacts when taken on their own have the potential to lead to a minor localised or temporary improvement.	Impacts in combination with others have the potential to lead to a minor localised improvement of the WFD element.	Impacts in combination with others have the potential to lead to a minor localised or temporary improvement that does not affect the overall WFD status of the water body.	Minor habitat creation measures such as creation of marginal berms up/downstream of a structure. Minor improvement to groundwater quality or improved quality of GWDTE due to groundwater contributions.	Localised improvement, no change in status of WFD water body.
Green (no effect)	No measurable change to any quality elements.	No measurable change to any quality elements.	No measurable change to any quality elements.	Clear span bridge which causes no significant light shading. Changes to flow with no likely impact in macroinvertebrate community/contamination in areas with highly tolerant invertebrate community (e.g. Average Score Per Taxon <4). Minor, temporary encroachment into the channel Improvement in the existing surface water quality through improvement to existing drainage systems. Minor, temporary changes to groundwater levels	No change
Yellow – Localised/ temporary adverse effect	Impacts when taken on their own have the potential to lead to a minor localised or impact.	Impacts in combination with others have the potential to lead to a minor localised or temporary impact on the WFD elements. Consideration will be given to habitat creation measures.	Impacts in combination with others have the potential to lead to a minor localised or temporary impact on the WFD elements. Consideration will be given to habitat creation measures.	Loss of macrophytes/phytobenthos due to shading from a bridge or other structure.. Temporary loss of invertebrates/macrophytes etc. during channel re-alignment Estimated loss in diversity of invertebrates for e.g. <100m of water body (due to habitat loss, changes to flow etc.). Localised loss of fish habitat/numbers of fish. Reduction in water quality with negligible knock on effects to biological elements Localised changes to groundwater levels or quality with no impact to GWDTE or protected water bodies.	No change in status of WFD water body when balanced against mitigation embedded in the scheme.
Amber – adverse widespread or prolonged effect	Impacts when taken on their own have the potential to lead to a widespread or prolonged impact. Consideration will be given to habitat creation measures.	Impacts in combination with others have the potential to have an adverse impact on the WFD element. Additional mitigation will be applied.	Impacts in combination with others have the potential to have an adverse impact on the WFD water body. The current WFD risk category will be taken into account when assessing these combined impacts. Consideration will be given to habitat creation measures.	Loss of macrophytes/phytobenthos for a significant length of water due to shading from a long (e.g. >200m) culvert or other similar structure. Likely significant drop in invertebrate diversity over e.g. >300m of water body (due to habitat loss /siltation or combination of various impacts etc.). Obstruction to upstream migration of fish to spawning grounds in a salmonid river therefore affecting fish in the whole of the WFD water body. Reduction in water quality with potential to cause knock on effects to biological elements. Adverse changes to GWDTE or baseflow contributions to protected surface water bodies.	Adverse effect but risk of status change needs to be considered with any additional mitigation, and taking into account the level of confidence.
Red – adverse impact on an individual quality element and/or overall status of water body	Impacts when taken on their own have the potential to lead to a widespread or prolonged impact even with mitigation in place.	Impacts in combination with others have the potential to have an adverse impact on the WFD element and change its class. Consideration will be given to habitat creation measures.	Impacts in combination with others have the potential to have an adverse impact on the WFD water body and change its status. The current WFD risk category will be taken into account when assessing these combined impacts. Consideration will be given to habitat creation measures.	Loss or extensive change to a fishery Significant loss of hydromorphological diversity likely to impact the water body scale such as channelisation of a natural watercourse using hard engineering for a significant length. Creation of barriers which will inhibit migration and movement of fish within the system. Significant decline in water quality resulting in knock on effects to biological elements at the water body scale. Loss of or extensive change to GWDTE or baseflow contributions to protected surface water bodies. Any significant change in groundwater quality reducing WFD status.	Decrease in status of WFD water body when balanced against additional mitigation. Outcome is considered to be certain.

Environment Statement SMR (water resources and flood risk)	
Relative EIA Receptor Value	EIA Receptor value criteria
Major or Moderate Benefit	In addition to below, Contribution to improvement in water body WFD classification. Removal of existing polluting discharge, or removing the likelihood of polluting discharges occurring to a watercourse. Improvement in water body WFD classification.
Moderate or Minor Benefit	HEWRAT assessment of either acute soluble or chronic-sediment related pollutants becomes pass from an existing site where the baseline was a fail condition. Calculated reduction in existing spillage risk by 50% or more (when existing spillage risk is <1% annually).
Negligible	No risk identified by HEWRAT (pass both acute-soluble and chronic-sediment related pollutants). Risk of pollution from spillages <0.5%.
Minor Adverse	Failure of either acute soluble or chronic sediment related pollutants in HEWRAT. Calculated risk of pollution from spillages ≥0.5% annually and < 1% annually. Minor effects on water supplies.
Moderate Adverse	Failure of both acute-soluble and chronic-sediment related pollutants in HEWRAT but compliance with EQS values. Calculated risk of pollution from spillages ≥1% annually and <2 % annually. Partial loss in productivity of a fishery. Degradation of regionally important public water supply or loss of major commercial/industrial/agricultural supplies. Contribution to reduction in water body WFD classification.
Major Adverse	Failure of both acute-soluble and chronic-sediment related pollutants in HEWRAT and compliance failure with EQS values. Calculated risk of pollution from a spillage ≥2% annually (spillage assessment). Loss or extensive change to a fishery. Loss of regionally important public water supply. Loss or extensive change to a designated nature conservation site. Reduction in water body WFD classification.