AtkinsRéalis

Appendix 4-1 – Assessment of Likely Significant Effects of Replacement Options

Uisce Éireann
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BALLINA AND LOUGH TALT WATER SUPPLY UPGRADE

APPENDIX A – ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS OF REPLACEMENT OPTIONS

Site Code	Site Name	Qualifying Habitats	Qualifying Species	Impact Pathway	Likely Significant Effects
000633	Lough Hoe Bog SAC	(3110) Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) (7130) Blanket bogs (*if active only)	(1013) *Vertigo geyeri* (1092) White clawed crayfish (*Austropotamobius pallipes*)	**Option A: Do Nothing – Zero Option:** Direct connectivity**.** This option maintains the continued abstraction of 8MLD from Lough Talt.	Continued abstraction from Lough Talt at the current rate of 8MLD will continue to impact the Annex II species Geyer's Whorl Snail (*Vertigo geyeri*) [1013] and White-clawed Crayfish (*Austropotamobius pallipes*) [1092], particularly during drought conditions.
				Replacement Supply Option 1: Indirect connectivity. Route Option 1 adjoins this European site at Lough Talt and its immediate environs.	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors such as White-clawed Crayfish [1092] during the construction stage. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
				Replacement Supply Option 2: Direct connectivity. The route crosses the Eighnagh River (Lough Talt River) located 4.5km south of the Lough Hoe Bog SAC.	Lough Hoe Bog SAC is located upstream and therefore there should be no impacts to water dependent qualifying habitats. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and White-clawed Crayfish [1092] which is also found in the Eighnagh River. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
				Replacement Supply Option 3: Indirect connectivity. The route	Lough Hoe Bog SAC is located upstream and therefore there should be no

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				crosses the Eighnagh River (Lough Talt River) located 4.5km south of the Lough Hoe Bog SAC.	impacts water dependent qualifying habitats. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and White-clawed Crayfish [1092] which is also found in the Eighnagh River. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
				Replacement Supply Option 6: Direct connectivity. Option 6 requires continued abstraction from Lough Talt the construction of a new water plant at Lough Talt with capacity of 4 MLD.	A reduced abstraction of 4MLD may meet the conservation objectives of *Vertigo geyeri,* which is to restore the favourable conservation condition for this species. Favourable conservation condition would be reached through suitable hydrological and hydrogeological interactions occur at Lough Talt to provide optimal habitat for this species. However, further assessment is required. The construction of the new water plant at Lough Talt may result in localised impacts to water quality of Lough Talt and the Eighnagh River. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the construction stage.
				Replacement Supply Option 7: Direct connectivity. Option 7 requires continued abstraction from Lough Talt and the construction of a new water plant at Lough Talt with capacity of 4 MLD.	
002298	River Moy SAC	(7110) *Active raised bogs	(1092) White clawed crayfish (*Austropotamobius*	**Replacement Supply Option 1:** Direct connectivity due to water abstraction from Lough Conn via Wherrew WTP.	For all options, increasing the current rate of abstraction from Lough Conn from approximately 10MLD by another

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		(7120) Degraded raised bogs still capable of natural regeneration (7150) Depressions on peat substrates of the Rhynchosporion (7230) Alkaline fens (91A0) Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (91E0) *Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)	*pallipes*) (1095) Sea lamprey (*Petromyzon marinus*) (1096) Brook lamprey (*Lampetra planeri*) (1106) Atlantic salmon (*Salmo salar*) (only in fresh water) (1355) Otter (*Lutra lutra*)	Direct connectivity to the River Moy SAC also occurs at the crossing of the Brusna and Glenree River; both crossings are located in the River Moy SAC, east of Ballina. There is potential for indirect connectivity to the River Moy SAC at the route termination point at Lough Talt where the connection to existing pipeline occurs. There is also indirect connectivity to the River Moy SAC via a river crossing of the Sruffaunbrogue River west of Ballina and at the estuary crossing north of Ballina where a significant route crossing occurs.	8MLD may result in impacts to habitats sensitive to hydrological changes such as the priority habitat [91E0] Alluvial forests, which is found on the western shores of Lough Conn, which requires periodic flooding to maintain the habitat along river floodplains and lakeshores. Potential changes in the hydrogeological regime may impact groundwater dependent terrestrial ecosystems (GWDTE) such as Active raised bog (7110), Alkaline fens [7230] and Alluvial forests (91EO), habitats which may be found within the zone of influence of the abstraction. Based on the size and storage capacity of Lough Conn, it is unlikely that increasing the current abstraction will have a significant effect on the hydrological regime of the River Moy SAC; however further assessment is required. Should the pipeline installation be completed in the absence of best practice measures, proposed works may result in localised impacts to water quality and to water dependent species such as White-clawed crayfish which is widespread in the SAC including the rivers which feed Loughs Conn and Cullin, lamprey species, Salmon and Otter. However, robust and effective construction measures can be developed for the avoidance of any

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					impacts to European sites during the installation of the pipeline network. Option 3 comprises a new WTP and abstraction point near southern end of Lough Conn. There is potential for landtake, disturbance and pollution due to the construction of a new WTP at the shores of Lough Conn which may result in impacts to the River Moy SAC. Robust and effective construction measures can be developed for the avoidance of any impacts to European sites during the construction of the WTP.
				Replacement Supply Option 2: Direct connectivity due to water abstraction from Lough Conn via Wherrew WTP. Direct connectivity occurs via the River Moy at the route crossing in Foxford. Indirect connectivity to the River Moy SAC also occurs in the townland of Pollsharvoge where the route is adjacent to the SAC along the road. Further potential indirect connectivity to the River Moy SAC occurs at the following river crossings: ▪ Via a tributary of the River Moy (WE_MoyTRIB_Carrowneden) located in the townland of Carrowmoremoy. ▪ Via the Bellanamean River south of Aclare. There is potential for direct connectivity to the River Moy SAC at	For all options, increasing the current rate of abstraction from Lough Conn from approximately 10MLD by another 8MLD may result in impacts to habitats sensitive to hydrological changes such as the priority habitat [91E0] Alluvial forests, which is found on the western shores of Lough Conn, which requires periodic flooding to maintain the habitat along river floodplains and lakeshores. Potential changes in the hydrogeological regime may impact groundwater dependent terrestrial ecosystems (GWDTE) such as Active raised bog (7110), Alkaline fens [7230] and Alluvial forests (91EO), habitats which may be found within the zone of influence of the abstraction. Based on the size and storage capacity of Lough Conn, it is unlikely that increasing the current

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				the river crossing of the Eighnagh River (Lough Talt River) providing direct connectivity to the River Moy SAC.	abstraction will have a significant effect on the hydrological regime of the River Moy SAC; however further assessment is required. Should the pipeline installation be completed in the absence of best practice measures, proposed works may result in localised impacts to water quality and to water dependent species such as White-clawed crayfish which is widespread in the SAC including the rivers which feed Loughs Conn and Cullin, lamprey species, Salmon and Otter. However, robust and effective construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. Option 3 comprises a new WTP and abstraction point near southern end of Lough Conn. There is potential for landtake, disturbance and pollution due to the construction of a new WTP at the shores of Lough Conn which may result in impacts to the River Moy SAC. Robust and effective construction measures can be developed for the avoidance of any impacts to European sites during the construction of the WTP. For all options, increasing the current rate of abstraction from Lough Conn from approximately 10MLD by another 8MLD may result in the reduction of
				Replacement Supply Option 3: Direct connectivity due to water abstraction from Lough Conn via a proposed new WTP at southern end of Lough Conn. Direct connectivity occurs via the River Moy at the route crossing in Foxford. Indirect connectivity also occurs in the townland of Pollsharvoge where the route is adjacent to the SAC along the road. Further indirect connectivity occurs at the following river crossings; ▪ Via a tributary of the River Moy (WE_MoyTRIB_Carrowneden) located in the townland of Carrowmoremoy. ▪ Via the Bellanamean River south of Aclare. There is potential for direct connectivity to the River Moy SAC at the river crossing of the Eighnagh River (Lough Talt River), within Aclare village, providing direct connectivity to the River Moy SAC.	
				Replacement Supply Option 1: Direct connectivity due to water abstraction from Lough Conn via Wherrew WTP.	

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					wetland habitats on the shores of Lough Conn on which waterbirds rely. Diffuse and point source pollution of freshwaters during the construction stage of pipeline installation and the construction of the new WTP for Option 3 is likely to have indirect effect on bird species through impacts on prey abundance. Based on the size and storage capacity of Lough Conn, it is unlikely that increasing the current abstraction will have a significant effect on the hydrological regime of the River Moy SAC; however further assessment is required. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
004228	Lough Conn & Lough Cullin SPA	N/A	Tufted Duck (*Aythya fuligula*) [A061] Common Scoter (*Melanitta nigra*) [A065] Common Gull (*Larus canus*) [A182] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] Wetland and Waterbirds [A999]	**Replacement Supply Option 2:** Direct connectivity due to water abstraction from Lough Conn via Wherrew WTP. **Replacement Supply Option 3:** Direct connectivity due to water abstraction from Lough Conn via a proposed new WTP and abstraction near the southern end of Lough Conn. **Replacement Supply Option 4:** Direct connectivity. Increase in the current abstraction at Lough Gill.	For all options, increasing the current rate of abstraction from Lough Conn from approximately 10MLD by another 8MLD may result in the reduction of wetland habitats on the shores of Lough Conn on which waterbirds rely. Diffuse and point source pollution of freshwaters during the construction stage of pipeline installation and the construction of the new WTP for Option 3 is likely to have indirect effect on bird species through impacts on prey abundance. Based on the size and storage capacity of Lough Conn, it is unlikely that increasing the current

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					abstraction will have a significant effect on the hydrological regime of the River Moy SAC; however further assessment is required. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. All options require an increase in the current abstraction at Lough Gill by another 8 MLD for options 4 and 5 and an increase of 4MLD for options 6 and 7. Increasing the current rate of abstraction from Lough Gill may impact to habitats sensitive to hydrological changes such as the priority habitat [91E0] Alluvial forests, which is found on the mouth of the Bonnet River on the southern shores of Lough Gill, which requires periodic flooding to maintain the habitat along river floodplains and lakeshores. It is unclear as to whether the Lough Gill is of a sufficient size to support increased abstraction. This option will require further assessment. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to water dependent species such as White-clawed crayfish, lamprey species, Salmon and Otter. However, robust and effective best practice construction

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					measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
001976	Lough Gill SAC	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation [3150] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	(1092) White clawed crayfish (*Austropotamobius pallipes*) (1095) Sea lamprey (*Petromyzon marinus*) (1096) Brook lamprey (*Lampetra planeri*) (1106) Atlantic salmon (*Salmo salar*) (only in fresh water) (1355) Otter (*Lutra lutra*)	**Replacement Supply Option 5:** Direct connectivity. Increase in the current abstraction at Lough Gill. **Replacement Supply Option 6:** Direct connectivity. Increase in the current abstraction at Lough Gill. **Replacement Supply Option 7:** Direct connectivity. Increase in the current abstraction at Lough Gill. **Replacement Supply Option 5: Direct connectivity.** Option 5 includes for the increase in abstraction from Lough Easkey by 4 MLD.	All options require an increase in the current abstraction at Lough Gill by another 8 MLD for options 4 and 5 and an increase of 4MLD for options 6 and 7. Increasing the current rate of abstraction from Lough Gill may impact to habitats sensitive to hydrological changes such as the priority habitat [91E0] Alluvial forests, which is found on the mouth of the Bonnet River on the southern shores of Lough Gill, which requires periodic flooding to maintain the habitat along river floodplains and lakeshores. It is unclear as to whether the Lough Gill is of a sufficient size to support increased abstraction. This option will require further assessment. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to water dependent species such as White-clawed crayfish, lamprey species, Salmon and Otter. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. An increase in abstraction from Lough

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					Easkey is likely to result in significant effects to the qualifying interests of the Ox Mountains SAC including the Annex I habitat Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] and the Annex II species Geyer's Whorl Snail (*Vertigo geyeri*) which is present around Lough Easkey and in the slopes downstream by the Easkey River. Any increase in abstraction of the lake especially in drought conditions is likely to have an impact on the habitat of the *Vertigo geyeri*. The Easkey River immediately downstream of the lake (and possibly the lake itself) is also home to a population of pearl mussel and any increase in the abstraction at Lough Easkey is likely to have a negative impact on the pearl mussel.
002006	Ox Mountains SAC	(3110) Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) (3160) Natural dystrophic lakes and ponds (4010) Northern Atlantic wet heaths with *Erica tetralix* (7130) Blanket bogs (*if active only) (7150) Depressions on	(1013) *Vertigo geyeri*	**Replacement Supply Option 1** – Direct connectivity to the SAC occurs at the route crossing north of Ballina town. There is indirect connectivity to the River Moy SAC via a river crossing of the Sruffaunbrogue River, a tributary of Killala Bay, located west of Ballina.	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised disturbance to bird species and pollution may reduce prey abundance. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.

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		peat substrates of the *Rhynchosporion*			
004036	Killala Bay/Moy Estuary SPA	N/A	Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Wetland and Waterbirds [A999]	**Replacement Supply Option 2** – There is tenuous indirect connectivity to the SAC via the route crossing of the River Moy in Foxford, located approximately 15km south of the SAC. **Replacement Supply Option 3** - There is tenuous indirect connectivity to the SAC via the route crossing of the River Moy in Foxford, located approximately 15km south of the SAC. **Replacement Supply Option 1** – Indirect connectivity to the SPA via the estuary crossing north of Ballina. The SPA is located 190m north of the proposed crossing. There is indirect connectivity to the River Moy SAC via a river crossing of the Sruffaunbrogue River west of Ballina. The River Moy SAC is a tributary of the Killala Bay / Moy Estuary SPA.	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised disturbance to bird species and pollution may reduce prey abundance. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors such as Sea Lamprey [1095]. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
000458	Killala Bay/Moy Estuary SAC	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other	Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1014] Sea Lamprey (*Petromyzon marinus*) [1095] Harbour Seal *(Phoca vitulina*) [1365]	**Replacement Supply Option 2** – Indirect Connectivity. There is tenuous indirect connectivity to this SPA via the route crossing of the River Moy in Foxford, located approximately 17.2km south of Killala Bay/Moy Estuary SPA.	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors such as Sea Lamprey [1095]. However, robust and effective best practice construction measures can be developed for the

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		annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190]		**Replacement Supply Option 3** – Indirect Connectivity. There is tenuous indirect connectivity to the SAC via the route crossing of the River Moy in Foxford, located approximately 17.2km south of Killala Bay/Moy Estuary SPA. **Replacement Supply Option 1:** Indirect Connectivity**.** Proposed pipeline lies within 0.12km of SAC	avoidance of any impacts to European sites during the installation of the pipeline network. Given the characteristics of the proposed pipeline works, the distance and tenuous connectivity to the European site, there will be no potential adverse impacts on the conservation interests of this European site. No likely significant effects.
000634	Lough Nabrickkeagh Bog SAC	(7130) Blanket bogs (*if active only)	n/a	**Replacement Supply Option 4:** Indirect Connectivity**.** Lies 0.39km east of pipeline route.	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
000636	Templehouse & Cloonacleigha Loughs SAC	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. [3140] Water courses of plain to montane levels with the	n/a	**Replacement Supply Option 6**: Indirect Connectivity**.** Lies 0.39km east of pipeline route. **Replacement Supply Option 7:** Indirect Connectivity**.** Lies 0.39km east of pipeline route.	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best

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		Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]		**Replacement Supply Option 4:** Direct Connectivity**.** This option crosses the Owenmore River, designated as part of Unshin River SAC	practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
000636	Unshin River SAC	Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation [3260] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-*	*Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355]	**Replacement Supply Option 5:** Direct Connectivity**.** This option crosses the Owenmore River, designated as part of Unshin River SAC **Replacement Supply Option 6:** Direct Connectivity**.** This option crosses the Owenmore River, designated as part of Unshin River SAC**.** **Replacement Supply Option 7:** Direct Connectivity**.** This option crosses the Owenmore River, designated as part of Unshin River SAC**.** **Replacement Supply Option 4:** Indirect Connectivity**.** Lies 0.22km east of pipeline	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. Given the characteristics of the proposed pipeline works, the distance and tenuous connectivity to the European site, there will be no potential adverse impacts on the conservation interests of this European site. No likely significant effects.

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		Padion, Alnion incanae, Salicion albae) [91E0]			
000638	Union Wood SAC	Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]		**Replacement Supply Option 5:** Indirect Connectivity**.** Lies 0.22km east of pipeline	Given the characteristics of the proposed pipeline works, the distance and tenuous connectivity to the European site, there will be no potential adverse impacts on the conservation interests of this European site. No likely significant effects. Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
				Replacement Supply Option 6: Indirect Connectivity**.** Lies 0.22km east of pipeline	
				Replacement Supply Option 7: Indirect Connectivity**.** Lies 0.22km east of pipeline	
				Replacement Supply Option 4: Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SAC	
000622	Ballysadare Bay SAC	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation	*Vertigo angustior* (Narrow-mouthed Whorl Snail) [1014] *Phoca vitulina* (Harbour Seal) [1365]	**Replacement Supply Option 5:** Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SAC	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. Should the pipeline installation be completed in the absence of best practice, proposed works may result in
				Replacement Supply Option 6: Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SAC	
				Replacement Supply Option 7: Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SAC	

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		(grey dunes) [2130] Humid dune slacks [2190]		**Replacement Supply Option 4:** Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SPA**.**	localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network.
004129	Ballysadare Bay SPA		Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Grey Plover (*Pluvialis squatarola*) [A141] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Wetland and Waterbirds [A999]	**Replacement Supply Option 5:** Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SPA **Replacement Supply Option 6:** Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SPA **Replacement Supply Option 7:** Indirect Connectivity**.** Crosses the Ballysadare River which flows into Ballysadare Bay SPA	Should the pipeline installation be completed in the absence of best practice, proposed works may result in localised impacts to water quality and to downstream sensitive receptors. However, robust and effective best practice construction measures can be developed for the avoidance of any impacts to European sites during the installation of the pipeline network. Turloughmore SAC is located 2km northeast of Tobercurry town in Co. Sligo. A desktop assessment of the potential impact of the groundwater abstraction on the turlough during drought periods was undertaken and showed that the abstraction of 4MLD would result in a reduction of between 0.9m and 2.4m in the watertable over a period of 95 days. It is therefore it is deemed that a groundwater abstraction to supplement the Lough Talt abstraction will result in likely significant effects to Turloughmore (Sligo) SAC
000637	Turloughmore (Sligo) SAC	(3180) *Turloughs	n/a	**Replacement Supply Option 4:** Indirect Connectivity**.** Turloughmore (Sligo) SAC is situated 0.8km north of	Given the characteristics of the proposed pipeline works, the distance and tenuous connectivity to the

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				the Castletoye reservoir and the pipeline runs 0.28km from SAC.	European site, there will be no potential adverse impacts on the conservation interests of this European site. No likely significant effects.
				Replacement Supply Option 5: Indirect Connectivity**.** Turloughmore (Sligo) SAC is situated 0.8km north of the Castleoye reservoir and the pipeline runs 0.28km from SAC.	Given the characteristics of the proposed pipeline works, the distance and tenuous connectivity to the European site, there will be no potential adverse impacts on the conservation interests of this European site. No likely significant effects. Given the characteristics of the proposed pipeline works, the distance and tenuous connectivity to the European site, there will be no potential adverse impacts on the conservation interests of this European site. No likely significant effects.
				Replacement Supply Option 6: Indirect Connectivity**.** Turloughmore (Sligo) SAC is situated 0.8km north of the Castleoye reservoir and the pipeline runs 0.28km from SAC.	
				Replacement Supply Option 7: Indirect Connectivity**.** Turloughmore (Sligo) SAC is situated 0.8km north of the Castleoye reservoir and the pipeline runs 0.28km from SAC.	
				Replacement Supply Option 7: Indirect Connectivity**.** Lies 1.2 km from pipeline route	
004048	Lough Gara SPA	n/a	Whooper Swan (*Cygnus cygnus*) [A038] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]		