

Appendix 7B

Detailed Water Environment Baseline Information

October 2024

Revision 1

Volume

0001

Document ref.

852552-WSP-IA-ES-RP-W3-547114

Contents

1	Introduction	2
2	Water Framework Directive classifications	3
3	Conservation Sites	21
4	Water Resources	54
4.1	Aquifers	54
4.2	Shallow Groundwater Areas	71
4.3	Licensed Abstractions	74
5	Consented Discharges	120

Table 7B.1	WFD river water bodies across the Study Area (2022 Cycle 3 data)	4
Table 7B.2	WFD canal water bodies across the Study Area (2022 Cycle 3 data)	15
Table 7B.3	WFD transitional water bodies across the Study Area (2022 Cycle 3 data)	17
Table 7B.4	WFD lake water bodies across the Study Area (2022 Cycle 3 data)	18
Table 7B.5	WFD groundwater bodies intersected by the Draft Orders Limits (2019 Cycle 3 data)	20
Table 7B.6	Conservation sites within the water environment ZOI with potential water dependency or geological features of interest	22
Table 7B.7	Aquifer vulnerability screening	55
Table 7B.8	Shallow groundwater areas	72
Table 7B.9	Licensed non-public groundwater abstractions within the Study Area	75
Table 7B.10	Licensed public groundwater abstractions within the Study Area	102
Table 7B.11	Licensed non-public surface water abstractions within the ZOI	105
Table 7B.12	Deregulated groundwater abstractions within the Study Area	117
Table 7B.13	Consented discharges within the Draft Order Limits	121

1 Introduction

- 1.1.1 This technical appendix presents detailed results of the desktop studies to establish the existing water environment baseline conditions described in **Chapter 7: Water Environment** of the Draft ES. The detailed information on water dependent Water Framework Directive (WFD) water body classifications, conservation sites and water resources within this appendix informs the summary of baseline information and the assessment of effects in **Section 7.5** and **Section 7.9** (also **Appendix 7D: Assessment of water environment effects**) of **Chapter 7: Water Environment** respectively.
- 1.1.2 Background information on the approach to the assessment including the spatial Draft Order Limits, Study Area and Zone of Influence (ZoI) definition (**Figure 7.1**) and data gathering methodologies are presented in **Section 7.4** of **Chapter 7: Water Environment** for reference. Where water bodies and other water receptors have subsequently been determined to not be likely to be affected by the Project they have been 'screened out' of further assessment and the basis for the screening is provided in this appendix.
- 1.1.3 All WFD surface water and groundwater body catchments intersected by the Draft Order Limits are included within this appendix with limited screening. The WFD surface water body catchments define the Study Area, whilst the groundwater WFD water body catchments are spatially more extensive and extend beyond the Study Area.
- 1.1.4 Discharge data were collected for the Study Area and screened for those within the Draft Order Limits only. For conservation sites and surface water abstractions data have been collected within the ZoI and then screened based on possible hydraulic pathway connection to the Draft Order Limits area and/or whether the conservation sites are truly water-dependent.
- 1.1.5 Groundwater and public water supply abstractions data were collected for the Study Area and screened based on the presence of a likely hydrologic pathway connection to the Draft Order Limits. A conservative approach to screening was adopted with only abstractions over 1.5km from the Draft Order Limits and/or with a significant hydraulic divide between themselves and the Draft Order Limits being screened out.

2 Water Framework Directive classifications

- 2.1.1 The current (2022 Cycle 3) status of all Water Framework Directive (WFD) water bodies intersecting the Draft Order Limits are presented in the following tables. WFD river water bodies are included in **Table 7B.1**, WFD canal water bodies in **Table 7B.2**, WFD transitional water bodies in **Table 7B.3**, WFD Lake water bodies in **Table 7B.4** and WFD groundwater bodies in **Table 7B.5**. The locations of the WFD water bodies are shown in ES **Figures 7.2 and 7.5**. All WFD data has been downloaded from the Environment Agency Catchment Data Explorer website¹.
- 2.1.2 The WFD water bodies are presented on the basis that they intersect the Draft Order Limits, meaning that they have a potential hydrological or hydrogeological connection to the Project. The majority of the water bodies have been screened in and included for assessment within **Chapter 7: Water Environment** and **Appendix 7E: Water Framework Directive assessment**.
- 2.1.3 Two WFD river water bodies, namely the Dog Clog Brook and Forge (Kidd) Brook, have been screened out because of limited hydrological links with the Project. The Dog Clog Brook (including Mill Brook) (GB112069060690) is screened out on the basis of only the very upslope part of the WFD catchment being within the Draft Order Limits, and this area of catchment being entirely covered by a short section of motorway, which would not be affected by the Project and has an existing drainage system which would also not be affected. Similarly, the Forge (Kidd) Brook (GB112068060400) is screened out on the basis that while this WFD catchment comes within 100m of the Draft Order Limits at its closest point, it is not in direct hydrological connection with the boundary. In addition, there are no water bodies linking to the catchment and no overland flow paths. Three WFD lake water bodies within the Study Area have also been screened out on the basis that while they are all within the Study Area they are all located in excess of 1.5km upstream of the Project and therefore are unlikely to be affected.
- 2.1.4 In addition to the WFD water bodies, there are areas within the Study Area shown as being 'non-reportable' water bodies. These are not routinely monitored by the Environment Agency and have no associated WFD status. Their location is shown in **Figure 7.2** and the approach to their assessment is covered within **Chapter 7: Water Environment – Section 7.8**.

¹ Environment Agency (2022). Catchment Data Explorer. (Online). Available at: <https://environment.data.gov.uk/catchment-planning/> (Accessed 22 July 2024)

Table 7B.1 WFD river water bodies across the Study Area (2022 Cycle 3 data)

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
Sinderland Brook (GB112069060980)	Not designated artificial or heavily modified.	Poor status.	Poor. Fish – Moderate. Invertebrates – Poor. Macrophytes and Phytobenthos Combined – Moderate. Macrophytes Sub Element: Moderate.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Poor. Biochemical Oxygen Demand- Moderate. Dissolved Oxygen – Bad. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.	N/A.	High. Chromium (VI) – High. Copper – High Triclosan – High.	Does not require assessment. Priority hazardous substances – Does not require assessment. Priority substances – does not require assessment. Other pollutants- does not require assessment.	Urbanisation – urban development, Sewage discharge (continuous), Misconnections, Flood protection structures, Barriers – ecological discontinuity, Unknown (pending investigation).	Poor by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens. Disproportionately expensive: unfavourable balance of costs and benefits. Technically infeasible: No known technical solution is available.
Whittle Brook (Mersey Estuary) (GB112069060990)	Heavily modified.	Moderate status.	Moderate. Invertebrates – Moderate. Macrophytes Sub Element- Good.	Moderate. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime- Supports Good.	Moderate. Mitigation Measures Assessment – Moderate or less.	High. Triclosan- High.	Does not require assessment. Priority hazardous substances – Does not require assessment. Priority substances – Does not require assessment. Other pollutants- Does not require assessment.	Poor nutrient management, Urbanisation- urban development, Poor soil management, Misconnections, Flood protection- structures, Unknown (pending investigation), and Other (urban and transport; local	Good by 2027 (Low Confidence). Disproportionately expensive: Disproportionate burdens. Good status prevented by A/HMWB designated use: Action to get biological element to good would have significant

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
									and central government).	adverse impact on use.
Sutton Brook (GB112069061170)	Heavily Modified.	Moderate status.	Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos Combined – Moderate. Macrophytes Sub Element- Poor. Phytobenthos Sub Element- Moderate.	Moderate. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime- Supports Good.	Moderate. Mitigation Measures Assessment – Moderate or less.	High. Triclosan – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Contaminated land, Sewage discharge (continuous), Urbanisation, urban development, Other (urban and transport).	Moderate by 2021. Disproportionately expensive: Disproportionate burdens. Technically infeasible: no known solution is available.
Weaver (Dane to Frodsham) (GB 112068060500)	Heavily modified.	Moderate status.	Bad. Invertebrates – Bad. Macrophytes and Phytobenthos Combined – Good. Macrophytes Sub Element- Poor. Phytobenthos Sub Element- Good.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. Biochemical Oxygen Demand (BOD)- High. Dissolved Oxygen – Good. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime- Supports Good.	Moderate. Mitigation Measures Assessment – Moderate or less.	High. 2,4-dichlorophenol - High. 2,4-dichlorophenoxy acetic acid - High. Arsenic – High. Chlorothalonil – High. Chromium (VI) – High. Copper – High. Iron – High. Linuron – High. Manganese – High. Pendimethalin–	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Poor soil management, Poor nutrient management, Poor livestock management, Urbanisation – urban development, Farm / site infrastructure, Sewage discharge (continuous), Trade / industry discharge, Inland boating and structures, Unknown (pending investigation,	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
							High. Zinc - High.		and Other (navigation).	
Mersey / Manchester Ship Canal (Irwell / Manchester Ship Canal to Bollin) (GB112069061011)²	Heavily Modified.	Moderate status.	Bad. Invertebrates – Bad. Macrophytes and Phytobenthos Combined – Good. Macrophytes Sub element- Good. Phytobenthos Sub Element- Good.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. BOD – High. Dissolved Oxygen – Bad. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime- Supports Good.	Moderate. Mitigation Measures Assessment – Moderate or less.	High. Chromium (VI) – High. Copper – High. Mecoprop – High. Zinc- High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Contaminated water body bed sediments, Sewage discharge (intermittent), Sewage discharge (continuous), inland boating and structures, and unknown (pending investigation), and other (Local and central government, recreation, navigation, urban and transport.	Moderate by 2015. Disproportionately expensive: Disproportionate burdens. Disproportionately expensive: Unfavourable balance of costs and benefits; Technically infeasible: No known technical solution is available.
River Weaver (Barnet to Valley Brook) (GB112068060461)	Not designated artificial or heavily modified.	Bad status.	Bad. Fish- Poor. Invertebrates- Bad. Macrophytes and Phytobenthos combined- Poor.	Moderate. Acid Neutralising Capacity- High. Ammonia (Phys-Chem)- Moderate. Dissolved Oxygen- Good.	Supports good. Hydrological regime- supports good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment.	N/A.	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.

² The Mersey/ Manchester Ship Canal (Irwell/Manchester Ship Canal to Bollin) (GB112069061011) is classed as a river water body under the Water Framework Directive.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
			Macrophytes Sub Element- Poor.	Phosphate- Poor. Temperature- High. pH- High.				Other pollutants- Does not require assessment.		
River Weaver (Valley Brook to Winsford Flashes) (GB112068060462)	Not designated artificial or heavily modified.	Poor status.	Poor. Fish- Poor. Invertebrates- Poor. Macrophytes and Phytobenthos combined- Poor. Macrophytes Sub Element- Poor.	Moderate. Acid Neutralising Capacity- High. Ammonia (Phys-Chem)- High. Biochemical Oxygen Demand (BOD)- Moderate. Dissolved oxygen- High. Phosphate- Poor. Temperature- High. pH- High.	Supports good. Hydrological regime- Supports good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	N/A.	Good by 2027 (Low confidence). Disproportionately expensive: disproportionate burdens.
River Weaver (Winsford Flashes to Dane) (GB112068060463)	Heavily Modified.	Moderate status.	Poor. Fish- Poor. Invertebrates- Poor. Macrophytes Sub Element- Poor.	Moderate. Acid Neutralising Capacity- High. Ammonia (Phys-Chem)- Moderate. Biochemical Oxygen	Supports Good. Hydrological Regime- Supports Good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment.	N/A.	Good by 2027 (Low Confidence). Disproportionately expensive: disproportionate burdens.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
				Demand (BOD)- Moderate. Dissolved Oxygen- Good. Phosphate- Poor. Temperature- High. pH- High.				Other pollutants- Does not require assessment.		
Bollin (Ashley Mill to Manchester Ship Canal) (GB112069061382)	Not designated artificial or heavily modified.	Moderate status.	Moderate. Fish – Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos combined- Moderate. Macrophytes sub element- Moderate.	Moderate. Ammonia (Phys-Chem) – Good. Biochemical Oxygen Demand (BOD)- Poor. Dissolved Oxygen – Good. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological regime- Supports good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Urbanisation – urban development, Poor livestock management, Sewage discharge (continuous), Other (urban and transport, local and central government), Unknown (pending investigation).	Moderate by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.
Dane (Wheelock to Weaver) (GBGB1120680604 70)	Not designated artificial or Heavily modified.	Moderate status.	Moderate. Fish – Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos Combined – Moderate.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – High. Biochemical Oxygen Demand (BOD)- High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.	N/A.	High. Chlorothanonil – High. Copper – High. Diazinon – High. Dimethoate – High. Iron – High. Manganese – High. Pendimethalin –	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment.	Urbanisation – Urban development, Riparian / in- river activities (including bankside erosion), Poor livestock management, Poor soil management,	Moderate by 2015. Disproportionately expensive: Disproportionate burdens; Technically infeasible: No known technical solution is available.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
			Macrophytes sub element- Moderate.	Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.			High. Zinc – High.	Other pollutants- Does not require assessment.	Poor nutrient management, Farm / site infrastructure, sewage discharge continuous), Unknown (pending investigation).	
Gale Brook (GB112068060430)	Not designated artificial or heavily modified	Moderate status.	Moderate. Invertebrates – Good. Macrophytes and Phytobenthos combined – Moderate. Macrophytes sub element- Moderate.	Moderate. Ammonia (Phys-Chem) – High Biochemical Oxygen Demand- High. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology – Supports Good.	N/A.	High. Permethrin – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Poor livestock management, Poor soil management, Poor nutrient management, Farm / site infrastructure.	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.
Puddinglake Brook (GB112068060220)	Not designated artificial or heavily modified	Poor status.	Poor. Invertebrates – Moderate. Macrophytes and Phytobenthos combined – Poor. Macrophytes Sub Element- Poor.	Moderate. Ammonia (Phys-Chem) – Poor. Dissolved Oxygen – Poor. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology – Supports Good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment.	Riparian / in- river activities (inc bankside erosion), Poor nutrient management, Poor livestock management, Farm / site infrastructure, Private sewage treatment, Unknown	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
								Other pollutants- Does not require assessment.	(pending investigation).	
Bogart Brook (GB112068060540)	Not designated artificial or heavily modified.	Moderate status.	Moderate. Fish – High. Invertebrates – Good. Macrophytes and Phytobenthos combined – Moderate. Macrophytes Sub Element- Good. Phytobenthos Sub Element- Moderate.	Moderate. Ammonia (Phys-Chem) – High. BOD – High. Dissolved Oxygen – High Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology – Supports Good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Poor soil management, Poor nutrient management, Poor livestock management, Sewage discharge (continuous), Farm / site infrastructure, unknown (pending investigation).	Good by 2027 (Low confidence). Disproportionately expensive: disproportionate burdens.
Cuddington Brook (Source to Crowton Brook) (GB112068060480)	Not designated artificial or heavily modified.	Moderate status.	Moderate. Invertebrates – Good. Macrophytes and Phytobenthos combined – Moderate. Macrophyte Sub Element- Moderate.	Good. Ammonia (Phys-Chem) – High. Biochemical Oxygen Demand (BOD) High. Dissolved Oxygen – High. Phosphate – Good. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.	N/A.	N/A.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Poor soil management, Sewage discharge (continuous), Unknown (pending investigation).	Good by 2027. Disproportionately expensive: disproportionate burdens. Natural conditions: ecological recovery time.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
Wade Brook (GB112068060370)	Not designated artificial or heavily modified.	Poor status.	Poor. Invertebrates - Moderate Macrophytes and Phytobenthos combined – Poor. Macrophytes Sub Element- Poor.	Moderate. Acid Neutralising Capacity- High. Ammonia (Phys-Chem) – Bad. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.	N/A.	Moderate. 2, 4- dichlorophenol – High. Arsenic – High. Copper – High. Cyanide – Moderate Iron – High. Manganese – High. Phenol – Moderate. Zinc – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Poor soil management, Contaminated land, Poor livestock management, Poor nutrient management, Farm / site infrastructure, Landfill leaching, Trade / industry discharge, North American signal crayfish, Unknown (pending investigation).	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.
Peckmill Brook, Hoolpool Gutter at Ince Marshes. Water Body (GB112068060330)	Not designated artificial or heavily modified.	Moderate status.	Moderate. Fish – Moderate. Macrophytes and Phytobenthos combined – Moderate. Macrophytes Sub Element- Moderate.	Moderate. Acid neutralising capacity – High. Ammonia (Phys-Chem) – Poor. Dissolved Oxygen – High. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	N/A.	High. Zinc – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Urbanisation – urban development, Poor soil management Poor livestock management, Contaminated land, Sewage discharge (continuous), Farm / site infrastructure, Unknown (pending investigation).	Moderate by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens. Technically infeasible: No known technical solution is available.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
Arley Brook (Source to Gale Brook) (GB112068060420)	Not designated artificial or heavily modified.	Moderate status.	Moderate	Moderate	Supports Good	N/A.	N/A.	Does not require assessment.	Poor Soil management, Poor nutrient management, Poor livestock management, Private sewage treatment.	Good by 2027 (Low confidence).
			Invertebrates - High	Ammonia (Phys-Chem) – Moderate	Hydrological Regime – High Morphology - Supports Good			Priority Hazardous Substances- Does not require assessment.		Disproportionately expensive:
			Macrophytes and Phytobenthos combined – Moderate	Dissolved Oxygen – Moderate				Priority Substances- Does not require assessment.		Disproportionate burdens.
			Macrophytes Sub Element- Moderate.	Phosphate – Good Temperature – High pH – High				Other pollutants- Does not require assessment.		
Keckwick Brook (GB112068060520)	Heavily modified.	Moderate status.	Bad.	Moderate.	Supports Good.	Moderate.	High.	Does not require assessment.	Poor livestock management, Urbanisation – urban development, Trade / industry discharge Barriers – ecological discontinuity Ecological recovery time – surface waters, Unknown (pending investigation, Other (local and central government, urban and transport).	Good by 2027 (Low confidence)
			Fish – Poor. Invertebrates – Bad.	Ammonia (Phys-Chem) – High.	Hydrological Regime – Supports Good.	Mitigation measures assessment – Moderate or less.	Copper – High. Iron – High. Manganese – High. Zinc – High.	Priority Hazardous Substances- Does not require assessment.		Disproportionately expensive:
			Macrophytes Sub Element- Poor.	Biochemical Oxygen Demand (BOD)- High. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.				Priority Substances- Does not require assessment.		Disproportionate burdens.
								Other pollutants- Does not require assessment.		

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
Cogshall Brook (GB112068060510)	Not designated artificial or heavily modified.	Moderate status.	Good. Invertebrates – High. Macrophytes and Phytobenthos combined – Good. Macrophytes Sub Element- High. Phytobenthos Sub Element- Good.	Moderate. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.	N/A.	High. Copper – High. Zinc – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Poor livestock management, Poor soil management, Poor nutrient management, Farm / site infrastructure.	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.
Mersey (Bollin confluence to Howley Weir) including Padgate Brook (GB112069061012)	Heavily modified.	Moderate status.	Bad. Invertebrates – Bad. Macrophytes and Phytobenthos combined – Good. Macrophytes Sub Element- High. Phytobenthos Sub Element- Good.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. Biochemical Oxygen Demand (BOD)- High. Dissolved Oxygen – Poor. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	Moderate. Mitigation measures assessment – moderate or less.	High. 2, 4-dichlorophenol xyacetic acid – High. Arsenic – High. Chlorothalonil – High. Chromium (VI) – High. Copper – High. Diazinon – High. Dimethoate – High. Iron – High. Manganese – High. Pendimethalin – High. Permethrin – High. Toluene – High. Zinc – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Contaminated water body bed sediments, Sewage discharge (intermittent) Sewage discharge (continuous), Inland boating and structures, Flood protection – structures, Urbanisation – urban development, Unknown (pending investigation), other (navigation, local and central government).	Moderate by 2015. Disproportionately expensive: Disproportionate burdens. Technically infeasible: No known technical solution is available.

River water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico- chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good / reasons for deterioration	Objectives
Hardshaw (Windle) Brook (GB112069061210)	Heavily modified.	Moderate status.	Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos combined – Moderate. Macrophytes Sub Element- Poor. Phytobenthos Sub Element- Moderate.	Moderate. Ammonia (Phys-Chem) – High. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	Moderate. Mitigation measures assessment – moderate or less.	High. Triclosan – High.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other pollutants- Does not require assessment.	Urbanisation – urban development, Poor nutrient management, Contaminated land, Misconnections, Surface water abstraction, Other (urban and transport, local and central government), Unknown (pending investigation).	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.

Table 7B.2 WFD canal water bodies across the Study Area (2022 Cycle 3 data)

Canal water body (water body ID)	Ecological status / potential	Physico- chemical quality elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good/Reasons for deterioration	Objectives
Weaver Navigation (canal section Frodsham to Weston Point Docks) (GB71210545)	Moderate.	N/A.	Moderate Mitigation Measures Assessment – Moderate or less.	N/A.	Does not require assessment. Priority hazardous substances- Does not require assessment. Priority substances- Does not require assessment. Other pollutants- Does not require assessment.	Atmospheric deposition, Natural conditions- other, Other, Unknown (pending investigation).	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens.
Bridgewater Canal (GB71210001)	Moderate.	N/A.	Moderate Mitigation Measures Assessment – Moderate or less.	N/A.	Does not require assessment. Priority hazardous substances- Does not require assessment. Priority substances- Does not require assessment. Other pollutants- Does not require assessment.	Other.	Good by 2027 (Low confidence). Disproportionately expensive: disproportionate burdens.
Manchester Ship Canal (GB71210004)	Moderate.	N/A.	Moderate Mitigation Measures Assessment – Moderate or less.	High	Does not require assessment. Priority hazardous substances- Does not require assessment. Priority substances- Does not require assessment. Other pollutants- Does not require assessment.	Landfill leaching, Sewage discharge (intermittent), Sewage discharge (continuous), Other (Navigation, Sector under investigation).	Good by 2027 (Low confidence). Disproportionately expensive: disproportionate burdens.

Canal water body (water body ID)	Ecological status / potential	Physico- chemical quality elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not achieving Good/Reasons for deterioration	Objectives
Sankey Canal (GB71210055)	Moderate.	Moderate pH - Moderate	Moderate Mitigation Measures Assessment – Moderate or less.	N/A.	Does not require assessment. Priority hazardous substances- Does not require assessment. Priority substances- Does not require assessment. Other pollutants- Does not require assessment.	Other (Recreation).	Good by 2027 (Low confidence). Disproportionately expensive: Disproportionate burdens. Technically infeasible: cause of adverse impact unknown.
Trent and Mersey Canal, summit to Preston Brook Tunnel (GB71210247)	Moderate.	High. pH – High.	Moderate. Mitigation Measures Assessment – Moderate or less.	Moderate. Arsenic – High. Chromium (VI) – High. Copper – High. Iron – High. Manganese – Moderate. Zinc – High.	Does not require assessment. Priority hazardous substances- Does not require assessment. Priority substances- Does not require assessment. Other pollutants- Does not require assessment.	Contaminated water body bed sediments, Other, Unknown (pending investigation).	Good by 2027 (Low confidence). Disproportionately expensive: disproportionate burdens.

Table 7B.3 WFD transitional water bodies across the Study Area (2022 Cycle 3 data)

Transitional water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / reasons for deterioration	Objectives
Mersey (GB531206908100)	Heavily modified.	Moderate.	Moderate.	Moderate.	Supports Good.	Moderate.	Moderate.	Does not require assessment.	Contaminated land, Contaminated water body bed sediments, Other, Unknown (pending investigation).	Good by 2027 (Low confidence).
			Invertebrates – Moderate. Infaunal Quality Index- Moderate. Macroalgae – High. Opportunistic Macroalgae- High. Phytoplankton – Moderate.	Dissolved Inorganic Nitrogen – Moderate. Dissolved Oxygen – Good.	Hydrological Regime – Supports Good.	Mitigation Measures Assessment – Moderate or less.	2, 4-dichlorophenol – High. 2, 4-dichlorophenoloxycetic acid – High. Arsenic – High Chlorothalonil – High. Chromium (VI) – High. Copper – High. Diazinon – High. Dimethoate – High. Iron – High. Linuron – High. Mecoprop – High. Pendimethalin – High. Permethrin – High. Phenol – High. Toluene – High. Triclosan – High. Zinc – Moderate.	Priority hazardous substances- Does not require assessment. Priority substances- Does not require assessment. Other pollutants- Does not require assessment.		Disproportionately expensive: Disproportionate burdens. Technically infeasible: cause of adverse impact unknown.

Table 7B.4 WFD lake water bodies across the Study Area (2022 Cycle 3 data)

Lake water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Chemical status	Reasons for not Achieving Good / reasons for deterioration	Objectives	Potential connection to the Draft Order Limits
Oakmere (GB31233474)	Not designated artificial or heavily modified.	Poor.	Poor. Macrophytes and Phytobenthos Combined – Moderate. Macrophytes Sub Element-Moderate. Phytoplankton-Poor.	Moderate. Salinity- High. Total Nitrogen-Good. Total Phosphorus-Bad.	Supports Good. Hydrological regime – High. Morphology- Supports good.	Moderate. Expert judgement – Moderate.	Chemical- Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other Pollutants- Does not require assessment.	Poor soil management; Poor nutrient management; Private sewage treatment	Good by 2027 (low confidence). Disproportionately expensive: disproportionate burdens. Technically infeasible: cause of adverse impact unknown. Technically infeasible: no known technical solution is available.	The lake is located circa 4.9km upstream of the Draft Order Limits and is not considered likely to be affected. Screened out.
Petty Pool (GB31233344)	Heavily modified.	Moderate.	High. Phytoplankton – High.	Moderate. Salinity – High. Total Nitrogen – Poor. Total Phosphorus – Moderate.	Supports Good. Hydrological regime – High.	Moderate. Expert judgement – Moderate. Mitigation measures assessment – Moderate or Less.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not	Poor livestock management, Poor nutrient management, Poor soil management, Farm / site infrastructure, and Other.	Moderate by 2015. Disproportionately expensive: disproportionate burdens. A/HMWB use prevents Good status: biological element would have significant	As the lake is located circa 1.2km upstream of the Draft Order Limits it is not considered likely to be affected. Screened out.

Lake water body (water body ID)	Hydromorphological designation	Ecological status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Chemical status	Reasons for not Achieving Good / reasons for deterioration	Objectives	Potential connection to the Draft Order Limits
							require assessment. Other Pollutants- Does not require assessment.		adverse impact on use. Technically infeasible: No known technical solution is available.	
Appleton Reservoir (GB31232665)	Heavily Modified.	Moderate.	Moderate. Phytoplankton – Moderate.	Moderate. Salinity – High. Total Nitrogen – Poor. Total Phosphorus – Moderate.	N/A.	Moderate. Expert judgement – Moderate. Mitigation measures assessment – Moderate or Less.	Does not require assessment. Priority Hazardous Substances- Does not require assessment. Priority Substances- Does not require assessment. Other Pollutants- Does not require assessment.	Forestry, Private sewage treatment, Unknown (pending investigation), internal nutrient load (lakes only), and Other.	Moderate by 2015 Disproportionately expensive: disproportionate burdens.	As the lake is located circa 2.4km upstream of the Draft Order Limits it is not considered likely to be affected. Screened out.

Table 7B.5 WFD groundwater bodies intersected by the Draft Orders Limits (2019 Cycle 3 data)

Name and ID	Overall water body classification	Quantitative status element	Chemical status	Supporting elements, trend assessment	Issues preventing the attainment of ‘Good’ status	Objectives
Wirral and West Cheshire Permo-Triassic Sandstone Aquifers (GB41101G202600)	Poor.	Good.	Poor (due to Chemical Drinking Water Protected Area being Poor, all other elements at Good).	Upward trend.	Poor nutrient management, Poor livestock management Forestry Private sewage treatment, Other (water industry and domestic general public).	Good by 2027. Disproportionately expensive: disproportionate burdens.
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Poor.	Good.	Poor (due to Chemical Drinking Water Protected Area, Chemical GWDTEs test and General Chemical Test being Poor, all other elements at Good).	Upward trend.	Poor nutrient management, Suspect data, and unknown (pending investigation).	Good by 2027. Technically infeasible: cause of adverse impact unknown.
Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB41201G101100)	Poor.	Poor (due to Quantitative Saline Intrusion being Poor, all other elements at Good).	Poor (due to Chemical Saline Intrusion being Poor, all other elements at Good).	Upward trend.	Saline and other intrusion, unknown (pending investigation).	Good by 2021.
Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers (GB41201G101700)	Poor.	Poor (due to Quantitative Saline intrusion being Poor, all other elements at Good).	Poor (all elements at Poor apart from Chemical GWDTEs test being Good).	Upward trend.	Poor nutrient management, Poor pesticide management, Saline or other intrusion, Private sewage treatment, Unknown (pending investigation).	Good by 2027. Technically infeasible: cause of adverse impact unknown.
Sankey and Glaze Carboniferous Aquifers (GB41202G100100)	Poor.	Good.	Poor (due to Chemical Dependent surface water body status and General Chemical Test being Poor, all other elements at Good).	No trend.	Abandoned mines.	Poor by 2015. Disproportionately expensive: disproportionate burdens.

3 Conservation Sites

- 3.1.1 This section provides details of designated conservation sites where hydrological or hydrogeological conditions support water dependent features. A complete list of other ecologically designated sites (including non-water dependent sites) is provided in Draft ES **Chapter 5: Biodiversity**. Within the ZoI, the designations of conservation sites considered within this assessment are Special Protection Areas (SPAs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), Local Nature Reserves (LNRs), Local Wildlife Sites (LWSs) and Local Geological Sites (LGSs). No Special Areas of Conservation (SACs) or National Nature Reserves (NNRs) were identified within the ZoI. Table 7B.6 provides details on the sites and their water dependency and are presented in **Chapter 7: Water Environment** and within **Figure 7.2**.
- 3.1.2 A number of conservation sites within the ZoI have been screened out of further assessment on the basis that they have no hydrological or hydrogeological component to their designation. These are as follows:
- Hatton's Hey Wood, Whittle's Corner and Bank Rough (SSSI);
 - Frodsham Railway and Road Cuttings (SSSI, LGS);
 - Red Brow Cutting (SSSI);
 - Beechmill Wood and Pasture (SSSI);
 - Daresbury Firs (SSSI);
 - Reeve Court Woodland and Grassland (LWS); and
 - Green Wood³ (LWS).
- 3.1.3 Within Table 7B.6 further information is included to determine whether or not the conservation sites are likely to be affected by the Project, and are therefore screened in for further assessment or whether, due to factors such as distance, being sufficiently upslope / upstream or having no direct hydraulic connection, they have been deemed unlikely to be affected and therefore screened out.

³ No name provided in LWS information supplied by Halton Borough Council. The name of this LWS has therefore been assumed, pending clarification from the Council.

Table 7B.6 Conservation sites within the water environment ZOI with potential water dependency or geological features of interest

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C1	Flood Brook Clough (SSSI)	Flood Brook Clough is an Ancient Semi-Natural Woodland and SSSI located in the Beechwood area of Runcorn. It is a mixed broadleaved woodland in a long deep steep-sided valley with Flood Brook running through the bottom. It has been relatively undisturbed due to the steep slopes and is one of the best examples in Cheshire of clough woodland on Mercia Mudstone. It has rich assemblages of wet woodland plants including two nationally rare species (thin spiked wood sedge and wood barley).	The site is located circa 280m upstream of the Draft Order Limits. It is therefore unlikely to be affected. Screened out.
C2	Woolston Eyes (SSSI)	Woolston Eyes consists of four large lagoons used for depositing dredgings from the Manchester Ship Canal. Recently used lagoons contain large expanses of open water and mud, whilst older lagoons are dry and at various stages of colonisation by vegetation. The site is still operational with the lagoons being used for the deposition of dredgings, maintaining the range of wetland habitats across the site. Woolston Eyes supports a breeding bird assemblage of lowland open waters and their margins, including nationally important numbers of black-necked grebe, gadwall and pochard.	Located circa 140m from the Draft Order Limits and in direct hydrological connection with the Manchester Ship Canal. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C3	Pettypool Brook Valley (SSSI, GWDTE)	Petty Pool is located on site. The wetland communities at the head of Pettypool, and those downstream along the course of Pettypool Brook, comprise Cheshire's most extensive and diverse valley mire system. The open water of Petty Pool, an artificially enlarged mere, supports small patches of floating vegetation and a narrow broken band of emergent swamp vegetation.	Located circa 230m from the Draft Order Limits and downslope. Screened in.
C4	Mersey Estuary (SSSI, RAMSAR, SPA, LWS)	The Mersey Estuary is an internationally important site for wildfowl and consists of large areas of intertidal sand and mudflats. The site also includes an area of reclaimed marshland, salt-marshes, brackish marshes and boulder clay cliffs with freshwater seepages. The Manchester Ship Canal forms part of the southern boundary of the site and separates a series of pools from the main estuary. These pools together with Hale Marsh are important roosting sites for wildfowl and waders at high tide. Throughout the winter the estuary supports large numbers of wildfowl and waders. The birds feed on the rich invertebrate fauna of the intertidal sediments as well as plants and seeds from the salt-marsh and adjacent agricultural land. The estuary is also a valuable staging post for migrating birds in spring and autumn.	The Mersey Estuary is downstream of the whole Project Draft Order Limits. Screened in.
C5	Oxmoor Wood (LNR)	A small area of woodland, also including grassland, reedbeds and tall herbs and areas of open water. It is identified as an important nesting site for herons.	Located circa 1.5km downstream of the Draft Order Limits and while it is in direct hydrological connection, given the distance it is considered unlikely to be affected. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C6	Runcorn Hill (LNR, LWS)	Runcorn Hill is a unique combination of Formal Park and LNR at the heart of industrial Runcorn. Runcorn Hill LNR includes the largest area of lowland heath in North Cheshire. The woodlands, ponds and scrub along with its geological structure complete a unique mosaic of habitat.	This site is located circa 1.6km to the north-west of the nearest part of the Draft Order Limits. It is therefore unlikely to be affected. Screened out.
C7	Thatto Heath Meadows (LNR, LWS)	A remnant meadow system within the urban area. The meadows consist of unimproved grassland with a network of hedgerows. A stream valley runs through the site. The principal habitats are stream, neutral grassland, and hedgerows.	The site bounds the Draft Order Limits and is in direct hydrological connection with an ordinary watercourse which intersects them. It therefore has the potential to be affected. Screened in.
C8	Dorchester Park (LNR, LWS)	A wooded park area containing Ordinary Watercourses, adjacent to Sandymoor Pool.	The site is located circa 850m downstream of the Draft Order Limits but it is not in direct hydrological connection and therefore is unlikely to be affected. Screened out.
C9	Murdishaw Wood and Valley (LNR)	The steep sided valley has been wooded for hundreds of years. Part of this ancient semi natural woodland still remains, there are trees which over 100 years old, including oak, birch and beech, with some ash, alder, cherry, hawthorn, pine and sycamore. There are also areas of younger woodland, open glades, five ponds, wildflower-strewn meadows and a meandering stream that flows along the valley bottom. The woodland provides an important habitat for local bats, foxes and squirrels as well as a wide range of bird species. The	While this site is just over 1km to the north of the West Corridor, there is a topographic divide which means that there is no hydrological connection. It is also 2km to the west of the North Corridor, though it is on the opposite side of a steep sided valley. On this basis it is

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		ground flora in particular attracts a number of butterflies and other insects, and dragonflies flit by close to the ponds and streams.	considered unlikely to be affected. Screened out.
C10	Marshall's Arm, Hartford (LNR)	Marshall's Arm was designated a LNR in 1998 for wildlife and people. The 'Arm' refers to the arm of the river that is in the reserve and comprises old meanders of the river before it was straightened for the movement of salt in the 1700s.	The site is located 1.5km downstream of the Draft Order Limits and in direct hydrological connection with the River Weaver. It is therefore considered that there is potential for the site to be affected. Screened in.
C11	Colliers Moss Common (LNR)	This LNR was designated in 2005 and is the site of disused colliery spoil heap. Remnants of the mossland on which the spoil heap sits remain around the perimeter of the site. A diverse range of habitats has developed on the site including acid and neutral grassland and heath whilst lagoons provide wetland habitats and breeding sites for a number of dragonfly and damselfly species.	The site is located 2.6km to the east of the Draft Order Limits on a tributary of Sutton Mill Brook. Its location on a tributary means that it is not in direct hydraulic connection with the Project and is therefore unlikely to be affected. Screened out.
C12	Wigg Island (LNR)	A nature reserve comprised of former saltmarsh situated between the River Mersey and the Manchester Ship Canal. It contains a lake and Ordinary Watercourse.	While the site is on the banks of the River Mersey and Manchester Ship Canal it is 3.4km downstream of the Draft Order Limits. It is therefore unlikely to be affected by upstream impacts. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C13	The Bongs and the Gorse (LWS)	An area of mature woodland containing both the Mag Brook and Bradley Brook in addition to a number of ponds.	The site is located 1.1km to the west of the Draft Order Limits and is situated downslope. However, there is no direct hydrological connection with any of the Ordinary Watercourses extending up to the Draft Order Limits and the M56 motorway forms a barrier to overland flow. It therefore is unlikely to be affected by the Project. Screened out.
C14	Old Mineral Line Lea Green (LWS)	A mix of grasslands established on colliery spoil. Scrub has developed since the site was first designated. Recent management work has occurred that has enabled vegetation colonisation to begin again. The site contains the upstream reach of Pendlebury Brook, which supports a population of water voles.	The site is located 750m downstream of the Draft Order Limits. The Pendlebury Brook intersects the Draft Order Limits upstream and the site is in direct hydrological connection with the Project. It therefore has the potential to be affected by the Project. Screened in.
C15	Pendlebury Brook (SJ493920-SJ515914) (LWS)	A stretch of Pendlebury Brook that supports a population of water voles.	The site is within the Draft Order Limits. Screened in.
C16	Whittle Brook (SJ521902-SJ535896) (LWS)	A stretch of Whittle Brook that provides habitat for water voles.	The site is located 610m to the east of the Draft Order Limits which are within the upslope

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
			catchment of the Brook. It therefore has the potential to be affected by the Project. Screened in.
C17	Ansdells Wood (LWS)	A semi-natural oak woodland containing a number of nationally and regionally important habitats including neutral grassland, a pond and marsh. The site contains english bluebell and a number of regionally and locally important species.	Part of the site is within the Draft Order Limits. Screened in.
C18	Ravenhead Ponds (LWS)	This site is part of the Ravenhead Greenway and consists of two ponds with swamp and marginal vegetation. The site contains a number of regionally and locally important species including several species associated with coastal habitats.	The site is located 400m to the south-east of the Draft Order Limits and it is hydrologically linked to the Project via an Ordinary Watercourse which flows from within the Draft Order Limits into the ponds. Screened in.
C19	Dog Kennel Plantation (LWS)	A mature plantation of beech, oak and sycamore provide an important bird breeding site. The site also contains standing water.	The site is located 2.4km to the east of the Draft Order Limits and there appears to be no direct hydraulic connection. It is therefore considered to be unlikely to be affected. Screened out.
C20	Booth's Wood (LWS)	The wood comprises deciduous plantation woodland dominated by sycamore, horse chestnut and oak. A stream and ditch network runs through the woodland. The large pond	The site is located 3km to the east of the Draft Order Limits and there appears to be no direct hydraulic

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		in the south of the woodland is surrounded by rush pasture providing wetland habitat for a number of locally rare wetland species.	connection. It is therefore considered to be unlikely to be affected. Screened out.
C21	Mersey Valley Golf Course (LWS)	A golf course containing a number of ponds and hedgerows. The ponds provide habitat for the regionally important species Rigid Hornwort, whilst the hedgerows contain a number of locally rare species.	The site is located 730m to the north of the Draft Order Limits and there appears to be no direct hydraulic connection. It is therefore considered to be unlikely to be affected. Screened out.
C22	Sherdley Park (LWS)	The Victorian-designed Sherdley Park includes several areas of relict woodlands, wetlands and ponds. The European protected species great crested newt is present and the site offers an excellent variety of habitats for plants, invertebrates, amphibians and mammals.	The site is located 118m from the Draft Order Limits at its closest point and is also downslope. However, there is no direct hydrological connection and the A570 road is likely to intercept any surface runoff. It is therefore unlikely to be affected by the Project. Screened out.
C23	Sutton Manor (LWS)	An extensive mosaic of grassland, scrub, woodland and wetland habitats created on a former colliery. The site is owned and managed by the Forestry Commission and has a large expanse of developing plantation woodland intersected by grasslands. The geology of the site means it retains water and a large amount of wetland and marsh is present. Water voles have been recorded on site and the site is well populated with bird species.	The site abuts the Draft Order Limits. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C24	Sinderland Green Wood (LWS)	The site comprises areas of riparian woodland and cultivated agricultural land and contains the Red Brook transitioning to Sinderland Brook.	This site is within the Draft Order Limits. Screened in.
C25	Partington Nature Reserve	Two modified watercourses are present. The reserve comprises a woodland area with a disused railway line running through the centre.	This site is within the Draft Order Limits. Screened in.
C26	Dunham Park (LWS)	The site is an area of primarily cultivated agricultural land containing an Ordinary Watercourse, the River Bollin and the Old Bollin. Sparse trees are present.	This site is located 1.3 km east of the Draft Order Limits, but upslope and not in direct hydraulic connection. It is unlikely to be affected. Screened out.
C27	Lymm Dam Complex (LWS)	This is a riparian woodland corridor with Kaylane Brook passing through and feeding into Lymm Dam (the name of the dam and the lake).	The site is located 1.7km to the west of the Draft Order Limits, but upslope and not in direct hydraulic connection. It is unlikely to be affected. Screened out.
C28	Moore Nature Reserve (LWS)	This is an extensive nature reserve containing woodland, multiple lakes and ponds. The area is noted for bitterns and herons.	This site is within the Draft Order Limits. Screened in.
C29	Upper Moss Side Farm (LWS)	The site contains areas of woodland, grassland and agricultural fields with multiple Ordinary Watercourses.	This site is within the Draft Order Limits. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C30	Norton Marsh and Upper Moss Side Fields (LWS)	Sparse woodland and rough grassland containing multiple ponds and an Ordinary Watercourse.	This site is 400m downstream of the Draft Order Limits and is likely to be affected. Screened in.
C31	Gatewarth (LWS)	Rough grassland and scrub with sparse trees over former landfill containing several ponds.	The site is situated on the banks of the River Mersey and the St Helens Canal, opposite the Draft Order Limits, and downstream of the boundary along Penketh Brook. It therefore has the potential to be affected. Screened in.
C32	Helsdale Wood and Newhey's Plantation (LWS)	The site comprises mature broadleaved deciduous woodland with dense areas of rhododendron. Helsdale Brook passes through it and the site contains two ponds.	The site is located over 1km to the west of the Draft Order Limits and does not appear to be in direct hydrological connection. It is therefore unlikely to be affected. Screened out.
C33	Rows Wood (LWS)	The site comprises an area of woodland with an Ordinary Watercourse passing through it.	The site is directly upstream of the Draft Order Limits. Screened in.
C34	St Helens Canal Disused A (LWS)	The site comprises a canal with some areas of adjacent woodland.	This section of the canal is within the Draft Order Limits. Screened in.
C35	St Helens Canal Disuses B (LWS)	The site comprises a canal with some areas of adjacent woodland.	This section of the canal is upstream of the Draft Order Limits

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
			and is therefore unlikely to be affected. Screened out.
C36	Pitts Heath Wood (LWS)	Pitts Heath Wood is part of the 'Moore Meadows' nature reserve and is a wet woodland. The site contains a range of habitats from carr woodland, open water ponds and seasonal pools and is criss-crossed by a network of open drains.	This site is within the Draft Order Limits. Screened in.
C37	Clifton Lagoon (LWS)	The site is predominantly industrial origin grassland with an open mosaic habitat. The River Weaver is adjacent to southern border of the site. Flood Brook is located in the east of the site and drains southwards to the River Weaver. There is deciduous woodland in the north of the site and low calcereous grassland in the south-west.	This site is within the Draft Order Limits. Screened in.
C38	Morts Wood (LWS)	This is an area of woodland containing a pond and an Ordinary Watercourse.	The site is located approximately 500m downslope of the Draft Order Limits and is likely to have a hydrological connection. Screened in.
C39	Manor Park Woodland (LWS)	Ordinary Watercourses within the site along all site boundaries flow west to join Manchester Ship Canal to the north-west. The site comprises deciduous woodland and refined coastal and floodplain grazing marsh with 'high biodiversity potential'. The woodland is a mix of broadleaved, mixed and yew. The site is classified as 'Network Enhancement Zone 2' and a medium priority area for Countryside Stewardship Water Quality.	The site is approximately 1.4km downstream of the Draft Order Limits and has no direct hydrological connection. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C40	Barker's Hollow Wood (LWS)	Keckwick Brook flows west through the site and drains to the Bridgewater Canal past the site boundary. The site is Ancient Woodland and a High Priority Woodland Improvement Area comprising broadleaved deciduous woodland. It is also a medium priority Countryside Stewardship Water Quality Priority Area.	The site is located approximately 420m downslope of the Draft Order Limits and is likely to have a hydrological connection. Screened out.
C41	Beechwood (LWS)	The site is situated in a steeply sided valley and is host to predominantly urban woodland (classified as ancient woodland) consisting of broadleaved trees. An Ordinary Watercourse flows south through the centre of the site towards the River Weaver.	The site is located approximately 350m upslope of the Draft Order Limits and is not directly hydrologically connected. Screened out.
C42	Clough Wood (LWS)	The north-eastern area of the site is situated on a small plateau which falls into a shallow clough in the south-west. The site is an ancient urban woodland consisting of broadleaved woodland. The soils are predominantly sandy. An unnamed Ordinary Watercourse flows through the south of site and exits the site through the southern boundary to join the River Weaver.	The site is located 350m upstream of the Draft Order Limits and is in direct hydrological connection. Screened out.
C43	Daresbury (LWS)	Keckwick Brook flows through the site and exits through the northern boundary to drain to the River Mersey. Bridgewater Canal flows adjacent to the eastern boundary. The site comprises good quality semi-improved acid, calcereous neutral grassland and mixed yew and broadleaved woodland. The site also features ancient woodland, a lower spatial priority woodland habitat network and a high priority woodland improvement area (in the south of the site). The site has been	The site is located more than 1.5km from the Draft Order Limits. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		identified as a Countryside Stewardship Water Quality Priority Areas (England).	
C44	Disused Railway Line South of Warrington Road (LWS)	An unnamed Ordinary Watercourse runs through the centre of the site. The watercourse enters western boundary and exits through the east to join Penketh Brook (a Main River). The Ordinary Watercourse is culverted towards the eastern boundary. The site comprises marsh grassland, scrub vegetation and bare ground in open areas, open mosaic on previously developed land, lowland mixed deciduous woodland, wet woodland, ponds and ditches.	The site intersects the Draft Order Limits. Screened in.
C45	Green Wood (LWS)	An Ordinary Watercourse originates in the site and flows through the western boundary to join Keckwick Brook. Keckwick Brook flows north to join the River Mersey. Multiple ditches are located in the western and northern areas and a pond is located in the south of the site. The site comprises secondary broadleaved woodland, veteran trees, flat ground with sandy loam soils and a variety of mammals, amphibians and birds.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C46	Lodge Plantation (LWS)	The site comprises mature broadleaf lowland / secondary woodland, wetland, veteran trees, open ground, scrub and flat ground with sandy loam soil. Two ponds are situated within a wetland area.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C47	Moore Meadows (LWS)	Two unnamed Ordinary Watercourses flow through the south of the site to join Keckwick Brook to the north-west of the site boundary. The site is a Woodland Improvement (England) low	The site is approximately 850m downslope of the Draft Order Limits but is not in direct

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		to high priority area and part of the Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England). There is broadleaved deciduous woodland on site.	hydrological connection. Screened out.
C48	Murdishaw Wood and Valley (LWS)	Keckwick Brook flows through the centre of the site. The site comprises semi-improved grassland, wetlands, younger woodlands and ancient semi-natural woodland. Wildlife includes squirrels, woodland birds, bats, badgers and foxes (several Biodiversity Action Plan (BAP) species / habitats).	The site is located 1km from Draft Order Limits in an adjacent catchment so there is no direct hydrological connection. Screened out.
C49	Norbury Wood (LWS)	The Manchester Ship Canal is approximately 10m to the north of the site. There is also a drain located onsite. The wet woodland has ditches that are a habitat for water voles.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C50	The Glen (LWS)	The site comprises woodland and grassland with the Ordinary Watercourse Flood Brook flowing through the site.	The site has a direct hydrological connection to the Draft Order Limits but is located approximately 1km upstream. Screened out.
C51	Upper Mersey Estuary Intertidal Areas and Mudflats (LWS)	The site is host to estuary, marsh and tidal mudflats associated with the Mersey Estuary.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C52	Weston Marsh Lagoon (LWS)	Two lagoons and marshland are located on site. The site is located between River Weaver and Weaver Navigation.	The site is approximately 880m downstream of the Draft Order Limits located between the River Weaver and Weaver Navigation

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
			and is direct hydrological connection. Screened in.
C53	Astmoor Saltmarsh and Swamp (LWS)	The northern border of the site is adjacent to the River Mersey. Several drains run through the site. A lake in the south-west of the site is surrounded by ponds, marsh and swampland. The site is subject to tidal cycles of the Mersey Estuary.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C54	Sandymoor Wood (LWS)	A network of open drainage ditches around the boundary of the wood feed two ponds, one of which is within the site.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C55	Oxmoor_A (LWS)	Keckwick Brook flows along the north of the site and several drains run through the site. A lake is present in the east of the site. The site comprises woodland, grassland and wetland.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C56	Oxmoor_B (LWS)	This woodland site has a seasonally dry lake which is fed by a stream connected to Keckwick Brook. Keckwick Brook flows along the northern boundary of the site.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C57	Clifton Cloughs_B (LWS)	An Ordinary Watercourse flows through the site. The site has deciduous woodland.	The site intersects the Draft Order Limits and has a direct hydrological connection. Screened in.
C58	Clifton Cloughs_A (LWS)	This deciduous woodland has an unnamed Ordinary Watercourse flowing through it.	The site intersects the Draft Order Limits. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C59	Walton Locks (LWS)	A small channel just off the Manchester Ship Canal at Stockton Heath flows through this site. The channel connects Manchester Ship Canal and the River Mersey. The site is a woodland and riverine habitat.	The site intersects the Draft Order Limits. Screened in.
C60	Heatley Lake_A (LWS)	Heatley Flash Lake (approximately 3 acres) is connected to a small brook onsite. Several species of fish are present e.g. Carp, Tench, Bream, Perch, Chubb, Roach and Crucion.	The site is 1.4km from the Draft Order Limits and within a separate catchment. Screened out.
C61	Heatley Lake_B (LWS)	Heatley Little Mere pond is located on the site. Several species of fish can be found in the pond e.g. Carp, Tench, Bream, Perch, Chubb, Roach and Crucion.	The site is 1.4km from the Draft Order Limits and within a separate catchment. Screened out.
C62	Mill Wood, Big Wood and Willowbed Wood (LWS)	The site is a riverine and woodland habitat with Arley Brook flowing through the site. Arley Pool is a large lake in the northern part of the site.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C63	Woolstencroft Farm Meadow (LWS)	Agden Brook and an unnamed Ordinary Watercourse flow through this riverine, woodland and grassland habitat.	The site is located 200m upstream of the Draft Order Limits and is in direct hydrological connection. Screened in.
C64	Fields Behind Ye Olde No. 3_B (LWS)	The Agden Brook (Environment Agency Main River) flows through the centre of the site. Riverine, woodland and grassland habitats are located on site. A section of the north-east border of the site is adjacent to Bridgewater Canal.	The site is located 25m downstream of the Draft Order Limits and has a hydrological connection. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		Agden Brook flows through the centre of the site from west to east.	
C65	River Gowy (LWS)	The River Gowy flows northwards through the site terminating directly south of the Manchester Ship Canal. The site hosts nationally and locally rare and conservation status plants.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C66	Frodsham Field Studies Centre (LWS)	The site is located between the River Weaver and the Weaver Navigation. There are several ponds throughout site. The site is designated as undetermined species-rich grassland (UK BAP habitat) including wetlands, ponds, ditches, invertebrates, areas of fens, swamps, bogs and reedbeds.	The site intersects the Draft Order Limits and has a direct hydrological connection. Screened in.
C67	Sutton Bridge Unused Lagoon (LWS)	Drains and ponds are present on site. The River Weaver flows along southern boundary. The site contains restorable grassland (good semi-improved restorable to BAP grassland), wetlands, accessible natural greenspace, fens, swamps, bogs and reedbeds (UK BAP priority habitat), and well as coastal and floodplain grazing marsh (UK BAP priority habitat).	At its closest point the site is approximately 20m from the Draft Order Limits and is likely to have a hydrological connection. Screened in.
C68	Lowes Wood (LWS)	An Ordinary Watercourse flows through the site. Lowland mixed deciduous woodland (UK BAP priority habitat) (European Annex 1 habitat), ancient woodland and wildlife corridors / buffers are present.	The site is located 300m downstream of the Draft Order Limits and is likely to have a hydrological connection. Screened in.
C69	Lower Weaver Valley Woods (LWS)	A lake and culvert are present in the east of the site. The Sutton Weaver Ordinary watercourse and a pond are present in west of site. The site contains deciduous woodland (UK	The site is adjacent to the Draft Order Limits and has a direct

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		BAP priority habitat) (contains European Annex 1 habitats), wildlife corridors / buffers, dry woodland, accessible natural greenspace.	hydrological connection. Screened in.
C70	Marbury Lime Bed and Forge Pool (LWS)	Forge Brook, Forge Pool, and ponds are present on site. The site contains restorable grassland (good semi improved restorable to BAP grassland), wetlands, wildlife corridors / buffers and vascular plants. It also contains fens, swamps, bogs and reedbeds (BAP priority habitat) and accessible natural greenspace.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C71	Ashton's and Neumann's Flashes (LWS)	The site is a wetland and marsh and a lake is present within site. A drain is in the north-east. The site contains deciduous woodland, priority habitats inventory, lowland calcareous grassland priority habitat inventory and coastal floodplain grazing marsh habitats.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C72	Rookery Wood and Pool (LWS)	An Ordinary Watercourse flows through the east of the site linking Rookery Pool with the River Weaver. The site features lowland mixed deciduous woodland (UK BAP priority habitat), wildlife corridors / buffers and accessible natural greenspace.	The site is located approximately 700m upstream of the Draft Order Limits. Screened out.
C73	Wharton Green Pasture (LWS)	Ordinary Watercourses are located throughout the site. The site features fens, swamps, bogs and reedbeds (UK BAP priority habitat), restorable grassland (good semi-improved, restorable to BAP grassland), wetlands and accessible natural greenspace.	The site is located approximately 480m upstream of the Draft Order Limits but does not have a direct hydrological connection. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C74	Model Farm Pasture (LWS)	An Ordinary Watercourse within the site joins the River Weaver to the east of the site boundary. The site comprises acid grassland (lowland dry acid grassland UK BAP habitat), restorable grassland (good semi-improved, restorable to BAP grassland), a wildlife corridor and vascular plants.	The site is 380m upstream of the Draft Order Limits and is unlikely to have a direct hydrological connection. Screened out.
C75	East Clifton Tip (LWS)	Flood Brook flows through the site towards River Weaver. The site comprises calcareous grasslands (UK BAP habitat) (contains LBAP limebed communities), wetland grasses, open mosaics, vascular plants, and lowland heathland (dry) (UK BAP habitat, EU Annex 1 habitat). The site also contains 'deep peaty soils'.	The site intersects the Draft Order Limits and has a direct hydrological connection. Screened in.
C76	Beach Hill Wood (LWS)	The site comprises lowland mixed deciduous woodland (UK BAP priority habitat) and contains European Annex 1 habitats. An Ordinary Watercourse flows northward to the River Weaver.	The site is located more than 1.5km from the Draft Order Limits. Screened out.
C77	Pickering's Oxbow (LWS)	The River Weaver and Cliff Brook flow through the site. The site features wetlands, ditches, wildlife corridors / buffers and accessible natural greenspace. UK BAP priority habitats on site include fens, swamps, bogs and reedbeds.	The site is downstream of the Draft Order Limits, however it is over 2.2km away. Screened out.
C78	Silver Well Wood (LWS)	The Stable Meadow Pipe (an Ordinary Watercourse) flows east to River Weaver (just east of the site boundary). The Silver Well Petrifying Spring is located in the north of the site. Wildlife corridors and accessible natural greenspace are present on the site. The site comprises deciduous woodland and ancient woodland.	The site is approximately 800m downstream of the Draft Order Limits and is on the opposite side of the River Weaver to the Draft Order limits. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C79	Birds Wood (LWS)	An Ordinary Watercourse flows throughout the site towards the Trent and Mersey Canal east of the site. The site features lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor/buffer, ancient woodland and accessible natural greenspace.	The site is 100m downslope of the Draft Order Limits. Screened in.
C80	Rye Grass Pipes (LWS)	A lake is located in the centre of the site. An Ordinary Watercourse also flows through the site and is culverted in the east. The site features lowland mixed deciduous woodland - UK BAP priority habitat (contains European Annex 1 habitats), wildlife corridors / buffers and ancient woodland.	The site intersects the Draft Order Limits and has a direct hydrological connection. Screened in.
C81	Quick Woods (LWS)	An Ordinary Watercourse is located in the north-west of the site. Another Ordinary Watercourse flows south through eastern branch of the site towards Weaver Navigation, south of the site boundary. Wildlife corridors are located onsite. The site is identified as a deciduous woodland priority habitat and an ancient woodland.	The site is approximately 435m downslope of the Draft Order Limits and is likely to have a direct hydrological connection. Screened in.
C82	Long Acre Wood (LWS)	Longacre Brook flows through the site and a culvert is located to the north-west of the site boundary. The site comprises lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), wildlife corridors / buffers, accessible greenspace, vascular plants and ancient woodland.	The site is approximately 535m upstream of the Draft Order Limits and in direct hydrological connection. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C83	Park Brow Pool (LWS)	The site features ponds, accessible natural greenspaces, wildlife corridors / buffers and vascular plants. Ponds are located either side of Dutton Viaduct. The site has been identified as a 'good quality grassland priority habitat'.	The site is approximately 550m downstream of the Order Limits and in direct hydrological connection. Screened in.
C84	Acton Cliff Meadow (LWS)	An Ordinary Watercourse flows along the southern border towards the River Weaver. The site features veteran trees, ancient trees and a wildlife corridor buffer. The site has been identified as a lowland meadow priority habitat.	The site is 1.3km from the Draft Order Limits and is not in direct hydrological connection. Screened out.
C85	Lodge Wood (LWS)	An Ordinary Watercourse flows through centre of the site. The site contains a deciduous woodland priority habitat inventory, a reedbeds priority habitats inventory and an ancient woodland inventory.	The site is 65m upstream of the Draft Order Limits and has a direct hydrological connection. Screened in.
C86	Garden Wood (LWS)	An Ordinary Watercourse is present in the centre of the site. The site contains a deciduous woodland priority habitats inventory and an ancient woodland inventory.	The site is located within 200m of the Draft Order Limits and is likely to have a direct hydrological connection. Screened in.
C87	Dutton Dean (LWS)	An Ordinary Watercourse (Dean Brook) flows through the centre of site. The site contains wet woodland UK BAP priority habitat (contains European Annex 1 habitats) and veteran and ancient trees.	The site is directly adjacent to the Draft Order Limits and has a direct hydrological connection. Screened in.
C88	New Pool and Wood (LWS)	New Pool Lake is located in the centre of the site. Pettypool Brook enters the site through the eastern boundary and flows west through the site. A drain flows between the lake and a river south of the site. The site contains wet woodland UK	The site approximately 550m downstream of the Draft Order Limits and the Lake (New Pool) is fed by Pettypool Brook which is

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		BAP priority habitat (contains European Annex 1 habitats), undetermined species rich grassland UK BAP habitat, ponds, wildlife corridors, vascular plants, accessible natural greenspace and lowland heathland (dry) UK BAP habitat (EU Annex 1 habitat).	also downstream of the Draft Order Limits. Screened in.
C89	Parkside Farm Wood (LWS)	An Ordinary Watercourse (Pettypool Brook) is located in the north of the site. Pettypool Brook flows south of site connecting to a lake. The site comprises lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats) and a wildlife corridor/buffer.	The Pettypool Brook runs through the centre of the site, however, the site is approximately 2.8km away from the Draft Order Limits. Screened out.
C90	Bradford Mill Wood and Marsh (LWS)	Pettypool Brook flows eastwards within the site along the northern boundary. The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats) and accessible natural greenspace.	The site is located within 560m of the Draft Order Limits but is not in direct hydrological connection. Screened out.
C91	Weaver Valley / Newbridge Pool (LWS)	The site consists of the River Weaver and several of its tributaries. The site contains lowland mixed deciduous woodland, wet woodland, veteran and ancient trees, neutral grassland, marshy grassland, coastal and floodplain grazing marsh UK BAP priority habitat, fens, swamps, bogs and reedbeds.	The site intersects the Draft Order Limits and has a direct hydrological connection. Screened in.
C92	Bradley Meadow Wood, Hawton Clough and Little Leigh Ponds (LWS)	Little Leigh Pond is located in the west of site. A drain feeds into pond from the north. The site is either site of the Trent and Mersey Canal. An Ordinary Watercourse flows to the River Weaver south of the site. The site contains lowland mixed	The site is approximately 700m upstream of the Draft Order Limits and is not in direct hydrological connection. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor/buffer and accessible natural greenspace.	
C93	Owley Wood (LWS)	An Ordinary Watercourse in south of the site routes east to join the River Weaver adjacent to the eastern site boundary. The site comprises lowland mixed deciduous woodland (UK BAP priority habitat) (European Annex 1 habitats), wetlands, ancient woodland and accessible natural greenspace.	The site is approximately 1.6km upstream of the Draft Order Limits. Screened out.
C94	Heys Wood and the Riddings (LWS)	An unnamed Ordinary Watercourse flows through the site towards River Weaver. The site contains lowland mixed deciduous woodland - UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor / buffer, accessible natural greenspace and vascular plants.	The site intersects the Draft Order Limits and is in direct hydrological connection. Screened in.
C95	Bestway Wood, Gunners Clough and Nursery Wood (LWS)	An unnamed Ordinary Watercourse flows south through to the east of the site towards the Trent and Mersey Canal. A pond is located in the north of the site with an unnamed Ordinary Watercourse routing towards the pond. The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), wildlife corridors and accessible natural greenspace.	The site is located more than 1.5km from the Draft Order Limits and is not in direct hydrological connection. Screened out.
C96	Model Farm Wood (LWS)	An unnamed Ordinary Watercourse flows east through site towards the Weaver Navigation. The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor and accessible natural greenspace.	The site is located 180m downstream of the Draft Order Limits on a tributary of the River Weaver. The site is elevated more than 10m above the hydrologically

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
			connected watercourse. Screened out.
C97	Kennel Wood, Northwich (LWS)	The Cogshall Brook (Environment Agency Main River) flows through the centre of the site and is culverted towards the southern boundary. Marbury Brook flows into the site from the western boundary. The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats) and wildlife corridors/buffers	The site is located more than approximately 3km downstream of the Draft Order Limits. Screened out.
C98	Anderton Lime Bed (LWS)	The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), calcareous grassland (UK BAP habitat) (LBAP lime bed communities), restorable grassland (good semi-improved), floodplain, wildlife corridors/buffers, vascular plants and accessible natural greenspace.	The site is located more than 3km from the Draft Order Limits. Screened out.
C99	Hopyards Wood (LWS)	Marbury Brook flows through the centre of the site. The site is comprised of lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor/buffer, high value hedges UK BAP priority habitat and accessible natural greenspace.	The site is located more than 4.5km from the Draft Order Limits. Screened out.
C100	Marbury Big Wood (LWS)	Forge Brook flows through the centre of the site and is culverted at the south-east border. A pond is located in the north. The site is comprised of lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), veteran trees, wildlife corridors / buffers, ancient woodland and accessible natural greenspace.	The site is located more than 4.5km from the Draft Order Limits. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C101	Billinge Green Farm Pond (LWS)	Billinge Green Flash is located in the centre of site. Ponds are present throughout the site. The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), eutrophic/mesotrophic standing water/ lakes UK BAP priority habitat (contains European Annex 1 habitat), restorable grassland, wetland, wildlife corridors, vascular plants and accessible natural greenspace.	The site approximately 880m from the Draft Order Limits but is not in direct hydrological connection. Screened out.
C102	Dutton Dingles (LWS)	An unnamed Ordinary Watercourse flows through the site towards River Weaver. The site contains lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats) and wildlife corridors/buffers.	The site is located approximately 260m downslope of the Draft Order Limits and is likely to have a direct hydrological connection. Screened in.
C103	Acton Bridge Meadows (LWS)	The site contains neutral grassland lowland meadows UK BAP (contains EU Annex 1 habitat), purple moor grass and rush pasture UK BAP habitat, restorable grassland (good semi-improved, restorable to BAP grassland), coastal and floodplain grazing marsh UK BAP priority habitat, floodplain, wildlife corridors, high value hedges/ditches UK BAP priority habitat and accessible natural greenspace.	The site intersects the Draft Order Limits. Screened in.
C104	Witton Flashes (LWS)	Haydn's Pool is located in the east of the site. Witton Brook is present along the south of the site. Neutral grassland lowland meadows UK BAP (contains an Environment Agency Annex 1 habitat), wetlands, wildlife corridors / buffers, fens, swamps, reedbeds and bogs priority BAP habitat (contains EU Annex 1 habitat) are also present.	The site is located more than 5km from the Draft Order Limits. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C105	Peck Mill Valley (LWS)	Peckmill Brook flows in an eastern direction along the southern boundary to join the River Dane to the east of the site. An unnamed Ordinary Watercourse within the site flows from north to south towards Peckmill Brook. The site comprises lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), undetermined grassland UK BAP habitat and accessible natural greenspace.	Peckmill Brook that flows through the site is intersected by the Draft Order Limits approximately 1.2km upstream and hence there is no hydrological connection Screened out.
C106	Greenbank Wood (LWS)	An unnamed Ordinary Watercourse flows through the centre of the site in a west to east direction to join the Weaver Navigation east of the site. The site features lowland mixed deciduous woodland UK BAP priority habitat (European Annex 1 habitats), wildlife corridors, ancient woodland and accessible greenspace.	The site is approximately 1.46km downstream of the Draft Order Limits. Screened out.
C107	Fury Tip (LWS)	A lake is located at the north-west boundary of the site. Undetermined species-rich grassland UK BAP habitat, open mosaics on previously developed land UK BAP priority habitat, vascular plants and accessible natural greenspace are present on site. The site is identified as a deciduous woodland priority habitat.	The site is located more than 4.5km upstream of the Draft Order Limits. Screened out.
C108	Nursery Wood (LWS)	An unnamed watercourse flows south through the site (tributary to River Weaver) and is culverted within the north of the site. Lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor / buffer and an accessible natural greenspace are	The site is located approximately 530m upstream of the Draft Order Limits and therefore not in direct hydrological connection. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		present. The site is identified as a deciduous woodland priority habitat and has ancient woodland.	
C109	Vale Royal Wood (LWS)	Tributaries of the Weaver Navigation flow south eastwards through the site. Lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats), a wildlife corridor and accessible greenspace are present.	The site is located 180m downstream of the Draft Order Limits on a tributary of the River Weaver. The site is elevated more than 10m above the hydrologically connected watercourse. Screened out.
C110	Helsby Hill (LWS)	The site is a former quarry that is now a sandstone escarpment with the former working face covered in important mosses.	The site is located within 320m from the Draft Order Limits but is elevated by 37m. The site may have a hydrogeological connection to the Draft Order Limits. Screened in.
C111	Hefferston Grange Farm Meadows (LWS)	The site is an acid grassland UK BAP habitat with accessible natural greenspace and vascular plants. Grange Brook flows along the site boundary towards the west to join Acton Brook.	The site is located approximately 230m upstream of the Draft Order Limits and is not in direct hydrological connection. Screened out.
C112	Sandiway Golf Course (LWS)	The site has a range of habitats including lowland mixed deciduous woodland UK BAP priority habitat, acid grassland UK BAP habitat and heathland (dry) UK BAP habitat (EU Annex 1). The site is also the location of wildlife corridor	The site intersects the Draft Order Limits. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		vascular plants and mosaics. Ponds are located throughout the golf course.	
C113	Frodsham, Helsby and Ince Marshes (LWS)	The site has a range of wildlife and habitats including sludge lagoons, reed ditches, shallow pools and flooded fields. Sludge lagoons were originally deposits from the Ship Canal. River Weaver flows along the north-eastern border. Several drains run throughout the site.	The site is directly adjacent to the Draft Order Limits but is situated at a slightly higher elevation. Screened in.
C114	Gowy Meadows and Ditches (LWS)	River Gowy and Thornton Brook flow through the centre of the site. Drains throughout the site flow to River Gowy and Thornton Brook. Neutral grassland lowland meadows UK BAP, restorable grassland (good- semi improved, restorable to BAP grassland), floodplain grazing marshy grassland, floodplain, wetland, ditches, wildlife corridors, fens, swamps, bogs and reedbeds UK BAP priority habitat, high value hedges UK BAP priority habitat and accessible natural greenspace are present on site.	The site is approximately 700m west of the Draft Order Limits and located in a separate catchment. Screened out.
C115	Puddinglake Brook Wood (LWS)	Puddinglake Brook flows through the centre of the site. Lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats) and veteran trees are present on site.	The site is located approximately 360m downstream of the Draft Order Limits and is in direct hydrological connection. Screened in.
C116	Wharcroft Woodland (LWS)	The River Dane routes to the west of the site and the Trent and Mersey Canal routes to the east. The site comprises lowland mixed deciduous woodland UK BAP priority habitat	The site is located approximately 220m downstream of the Draft Order Limits but is not in direct

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		(European Annex 1 habitat). An overspill weir between the canal and River Dane goes through the site.	hydrological connection. Screened out.
C117	Trent and Mersey Canal, Whatcroft (LWS)	The Trent and Mersey Canal flows along the western site boundary. The site comprises lowland mixed deciduous woodland (UK BAP priority habitat (contains European Annex 1 habitats), veteran trees, wetlands and wildlife corridors.	The site intersects the Draft Order Limits. Screened in.
C118	Whatcroft Lane Wetlands (LWS)	The Trent and Mersey Canal routes through the site. The site features a pond, wetlands and wildlife corridors and a neutral grassland habitat (UK BAP, EU Annex 1 habitat).	The site is approximately 40m downstream of the Draft Order Limits and is in direct hydrological connection. Screened in.
C119	Littledales Gorse (LWS)	Two Ordinary Watercourses flow towards the north to join Handforth Brook Ordinary Watercourse. The site has wet woodland UK BAP priority habitat (contains European Annex 1 habitats) and lowland mixed deciduous woodland UK BAP priority habitat (contains European Annex 1 habitats).	The site is directly adjacent to the Draft Order Limits and has a direct hydrological connection. Screened in.
C120	Meadow by Earls Wood and River Dane (LWS)	The site comprises restorable grassland (good semi-improved, (restorable to BAP grassland) with wildlife corridors. A drain is located along the western boundary, together with a pond.	The River Dane is intersected by the Draft Order Limits approximately 930m upstream of the site and flows adjacent to the site. Screened in.
C121	Park Moss Wood (LWS)	An Ordinary Watercourse flows along the northern boundary, flowing west then south to join Gale Brook. The site also features a lowland mixed deciduous woodland UK BAP	The site is directly adjacent to the Draft Order Limits and is likely to have a direct hydrological connection. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
		priority habitat (European Annex 1 habitats), veteran trees and greenspace.	
C122	Crowholt Wood and Whitley Brook (LWS)	The site is a woodland with Whitley Brook flowing along its southern boundary.	The Draft Order Limits are located 1.2km north-west and are not in direct hydrological connection. Screened out.
C123	Merryfall Wood (LWS)	The wet woodland is a UK BAP priority habitat. Ponds are located throughout the site.	The site is located approximately 830m downslope of the Draft Order Limits with ponds throughout the site. Screened in.
C124	Cuddington Brook (North) (LWS)	The site is a wet woodland with veteran trees and high value hedges UK BAP priority habitat. Cuddington Brook flows north through the centre of the site.	The site is located approximately 300m west of the Draft Order Limits. Screened in.
C125	Whitegate Way (LWS)	The site features undetermined species rich grassland UK BAP priority, wildlife corridors / buffers, heathland, peatland, vascular plants and accessible natural greenspace.	The site is predominantly located in the upper catchment and has no direct hydrological connection to the Draft Order Limits. At its closest point it is more than 1km from the Draft Order Limits. Screened out.
C126	Weaver Valley Country Park (LWS)	The site has deciduous woodland priority habitats and lowland heathland priority habitats. The site also has a wildlife corridor. An unnamed Ordinary Watercourse flows west and leaves the site through its western boundary to join the River Weaver.	The site is approximately 415m south-west of the Draft Order Limits at a similar elevation but is separated hydrologically by the

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
			west coast mainline. Screened out.
C127	River Dane, Bostock (LWS)	The site has riverine and woodland habitats. A stretch of the River Dane runs alongside the Trent and Mersey Canal.	The closest part of the designation is approximately 50m upstream of the Draft Order Limits. Screened in.
C128	Rough Grassland around Sutton Dam Stream (LWS)	Sutton Mill Brook flows through the site with Sutton Mill Dam located in the centre of the site. Wetland and marsh areas are located around the brook. A drain runs through the south of the site. The single species dominant swamp located on site is a Priority BAP habitat and a Priority Habitat Directive habitat.	The site is located more than 1.5km downstream of the Draft Order Limits and is in direct hydrological connection. Screened out.
C129	Land, west of Gerrards Lane (LWS)	The site is a riverine and woodland habitat with Sutton Mill Brook flowing from the south to the north.	The site is located 2.1km from the Draft Order Limits and is in direct hydrological connection. Screened out.
C130	Sutton Mill Dam (LWS)	Sutton Mill Dam is created by damming Sutton Mill Brook. Priority BAP habitats and Priority Habitat Directive habitats are present, together with unimproved neutral grassland, single species dominant swamp, swamp tall fen vegetation and eutrophic standing water. The site has Regionally Important habitats, nationally scarce species, such as Tasteless Water-pepper, and locally rare species, such as Fool's Parsley, Tasteless Water-pepper, Burnet Rose, Purple Willow, Heath Groundsel and Smooth Tare.	The site is 1.2km downstream of the Draft Order Limits and is in direct hydrological connection. Screened in.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C131	Sutton Brook (SJ530935-SJ526945) (LWS)	A stretch of Sutton Brook flows through the site. Regionally important species include Yellow-wort, Ploughman's-spikenard and moss. Locally rare species include liverwort, moss, Hoary Willowherb, Bell Heather, Ploughman's-spikenard and Common Vetch subspecies. The site supports water vole.	The site is over 2.6km downstream of the Draft Order Limits and multiple watercourses (that are not intersected by the Draft Order Limits) discharge into Sutton Brook upstream of the site. Screened out.
C132	Tunstalls Farm (LWS)	Ponds and ditches are present on site. Regionally important habitats include unimproved neutral grassland, marshy grassland and standing water. Regionally important plant species include Common Comfrey, whilst locally rare plant species such as Fen Bedstraw are also found on site. Great crested newt and water voles are present.	The site is located more than 2.7km from the Draft Order Limits and is not in direct hydrological connection. Screened out.
C133	Clock Face country park pond (LWS)	A fishing pond is located on site which has aquatic plants around the edges e.g. flag iris, reed mace and water lily. Fish are present in the pond such as roach, bream and tench.	The site is located more than 2.1km from the Draft Order Limits and not in direct hydrological connection. Screened out.
C134	Fox Covert and Meadows (LWS)	The site has riverine, woodland and grassland habitats. Old Bollin River flows within the site along the southern border. The River Bollin is ~80m south of the site.	The site is approximately 1.3km downstream of the Draft Order Limits in direct hydrological connection. Screened out.
C135	Coroners Wood (LWS)	The site is a woodland habitat. Red Brook flows along the south-eastern boundary of the site.	The site is approximately 2.2km downstream of the Draft Order Limits and is in direct hydrological connection. Screened out.

ID	Conservation site (designation)	Description and hydrological or hydrogeological dependency	Potential connection to the Draft Order Limits
C136	Sinderland Green Wood (LWS)	Sinderland Brook flows through the site as well as several drains.	The site is directly upstream of the Draft Order Limits and is in direct hydrological connection. Screened in.
C137	Red Brook (LWS)	A stretch of Red Brook flows through the site. The site has riverine and woodland habitats.	The site is a riverine habitat and approximately 940m downstream of the Draft Order Limits and is in direct hydrological connection. Screened in.

4 Water Resources

4.1 Aquifers

- 4.1.1 Aquifers comprise different designations. A Principal Aquifer is a regionally important resource that provides significant groundwater resource often used in public water supply. Source protection zones (SPZs) protect catchments of abstractions in a Principal Aquifer. The Principal Aquifer in the Study Area is the Permo-Triassic Sherwood Sandstone Group. Secondary aquifers in the Study Area are associated with superficial deposits and constitute water resources on a smaller scale compared with the Principal Aquifer.
- 4.1.2 During consultation with United Utilities a screening methodology was developed to identify the vulnerability of groundwater resource receptors from construction activities associated with the Project. Areas where the Draft Order Limits intersected with SPZ3 were included within the screen as these define the total catchment for public water abstractions.
- 4.1.3 The vulnerability of groundwater to a pollutant discharged to the ground is dependent upon the hydrological, geological, hydrogeological and soil properties at a particular location. The Environment Agency's digital groundwater vulnerability mapping dataset, available for one kilometre Ordnance Survey (OS) grid squares⁴, were used during the screening exercise to identify the vulnerability of groundwater resources within the Principal Aquifer. Other data relating to groundwater vulnerability were collected during the screening process, such as available British Geological Survey (BGS) and Ground Investigation⁵ (GI) borehole data, to confirm site-specific vulnerabilities and to develop site-specific preliminary conceptual models to inform the assess of impacts within SPZs from the Project. Results from the screening exercise are shown within **Table 7B.7** and areas included within the screen are shown within **Figure 7.13**.
- 4.1.4 It should be noted that the Environment Agency vulnerability mapping classification⁶ is based on one kilometre grid squares and during the screening process the vulnerability within the specific area of proposed Project works was reassessed based on all available information to screen areas in and out. This means that the final interpretation for Principal Aquifer may not match that of the Environment Agency's vulnerability mapping classification.

⁴ 1km grids where the Draft Order Limits intersected with SPZs were selected for the screening process.

⁵ United Living Energy Services (ULES) (May 2023) Factual report on ground investigation Hynet, North West Hydrogen Pipeline. Contract No. 2230746

⁶ [Groundwater Vulnerability Maps \(2017\) on MAGIC - data.gov.uk](https://data.gov.uk/dataset/groundwater-vulnerability-maps-2017)

Table 7B.7 Aquifer vulnerability screening

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
North Corridor					
SJ4992	Till with low permeability, ~0 - 3m.	Triassic sandstone aquifer with a ~10m unsaturated zone	Principal Aquifer – Medium / High Superficial – Low / no aquifer	Within this grid square is an area of faulting between Permo-Triassic and Carboniferous Coal Measures occurring within the Draft Order Limits. It is also coincident within a Class A groundwater flooding zone with limited potential for groundwater flooding to occur. Shallow boreholes indicate a thin, up to 2.8m, layer of gravely, sandy clay superficial deposits north of the railway line. Groundwater was not encountered within boreholes down to 5m depth. The Principal Aquifer has a Medium/High vulnerability in the vicinity of the haul road due to thin/non-existent superficial deposits. Within the area of the proposed haul road (south of the B5204) there is an area of	The Draft Order Limits occur on the very edge of the SPZ3, but thin superficial deposits, Medium vulnerability, proposed trenchless crossings and faulting exists within the area. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				no superficial deposits (other areas are likely thin superficial deposits) which could present a direct flow pathway into the Principal Aquifer at depth.	
SJ4991	Till with low permeability, ~3 m.	Triassic sandstone aquifer with ~10m unsaturated zone.	Principal Aquifer – Medium / Low Superficial - Low	Only thin superficial deposits in the area where faulting between Permo-Triassic and Carboniferous Coal Measures occurs within the Draft Order Limits. The area is within a Class A groundwater flooding zone with limited potential for groundwater flooding to occur. Shallow boreholes indicate thin, up to 2.8m, layer of gravelly, sandy clay superficial deposits north of the railway line and the grid square. Groundwater not encountered within boreholes down to 5m depth but it is expected at around 10m depth in the area. The proposed infrastructure is on the very edge of the SPZ3.	Proposed works are on the very edge of the SPZ3 but thin superficial deposits, Medium / Low vulnerability, proposed trenchless crossings and faulting exists within the area. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
SJ5487	Till – diamicton / blown sand, up to 41m with up to 8m of till and sand / gravel.	Triassic sandstone aquifer with a 10m unsaturated zone (but it is likely a confined aquifer). There may also be perched water tables within sand / gravel.	Principal Aquifer - Low Superficial - Low	Thick superficial deposits with a clay till in surface layers reducing pathway likelihood into aquifer. There may be perched water tables in the area because of sand / gravel units within the till (superficial deposits).	Proposed works are on the very edge of the SPZ3 (production borehole 4.7km to the north-east), thick superficial deposits, Low vulnerability of the Principal Aquifer and a proposed trenchless crossing beneath a minor road (possibly trenched) exist within the area. Screened out.
SJ5486	Till – diamicton / blown sand (beneath). ~10m clay, sand and gravel.	Triassic sandstone aquifer with groundwater close to the surface (near River Mersey). There may be also perched water tables within sand / gravel.	Principal Aquifer - Low Superficial - Low	Thick superficial deposits with a clay till within surface layers reducing pathway likelihood into aquifer. There are areas of sand / gravel which may be in hydraulic connection with the Triassic sandstone aquifer. Although, flow downwards into bedrock is unlikely the vertical hydraulic gradients in the area are uncertain. There may be perched water tables because of sand / gravel units within the till (superficial deposits). The industrial area with Fiddler's	Proposed works are on the very edge of the SPZ3 (with the production borehole 4.7km to the north-east) on thick superficial deposits. The aquifer vulnerability is Low, but there may be hydraulic connection to the Triassic aquifer through permeable sand / gravel deposits and uncertainty with regard to proposed trenchless crossings beneath a major road. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				Ferry Power Station is located to the west of the pipeline route with abstraction boreholes (one within the Draft Order Limits) in the area. Boreholes in the surrounding area indicate a surface layer of clay till potentially reducing any surface pathway into aquifer.	
SJ5586	Till – diamicton / blown sand ~12m of boulder clay, gravel and sand.	Triassic sandstone aquifer < 5mAOD water table (near surface). There may be perched water tables within the sand / gravel.	Principal Aquifer - Low Superficial - Low	Thick superficial deposits with some clay layers (as well as sand / gravel) would reduce the pathway likelihood into the Permo-Triassic sandstone aquifer. There is a very small overlapping intersection with SPZ and Draft Order Limits boundary.	Proposed works are on the very edge of the SPZ3 (production borehole 4.7km to the north-east) located on thick superficial deposits and on Low vulnerability aquifers with no major works planned within the area. Screened Out.
SJ5882	Till – diamicton with sand, thin but thickness unknown.	Ground elevation is at ~60mAOD. Environment Agency groundwater level mapping gives water	Principal Aquifer - Medium Superficial - Low	Thin fine sand, occasional gravel and till superficial geology deposits occur within the area, although there is a lack of borehole records in the immediate vicinity for a definitive superficial geology	There are thin/no superficial deposits, bedrock, Medium/ High vulnerability and proposed works are likely to be significant. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
		levels around > 25mAOD so there is likely an unsaturated zone of tens of metres.		description. A Medium groundwater vulnerability in the Principal Aquifer is identified, but it is probably High within the Order Limit / SPZ intersection area. The proposed pipeline route is found bordering the edge of SPZ3. One crossing is at Daresbury Lane (B5356), although it is uncertain if it is trenchless. The thickness of the unsaturated zone will reduce the likelihood of a pathway but is uncertain.	
SJ5883	Till – diamicton is thin but thickness unknown.	Likely unsaturated zone of tens of metres.	Principal Aquifer - High Superficial - Medium	Thin sand and till superficial geology deposits exist across the area, however there is a lack of borehole records in the immediate vicinity for any definitive superficial geology identification. There is High groundwater vulnerability to the Principal Aquifer but the unsaturated zone is thick, possible around 20m. The proposed pipeline route borders the edge of SPZ3. There is one	There are thin / no superficial deposits on High vulnerability bedrock and likely significant proposed works infrastructure in the area. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				trenchless crossing at Chester Road (A56). Thickness of the unsaturated zone here will reduce the likelihood of a pathway but its thickness is uncertain.	
SJ5783	Mostly blown sand and a small area of till diamicton.	Likely unsaturated zone of approximately 20m.	Principal Aquifer - High Superficial - High	Shallow boreholes indicate very thin superficial deposits (~1.5 m sand) or no superficial deposits in the area, offering little protection to Permo-Triassic sandstone aquifer below and giving the bedrock a High Aquifer vulnerability. The pipeline runs adjacent to the Daresbury Expressway and there are two rail track crossings and one canal crossing beneath the Bridgewater Canal, so major trenchless crossings are required. However, the unsaturated zone is thick, possible around 20m (although uncertain) and hence will	There is thin / no superficial deposits on high vulnerability bedrock. Proposed works are likely to be significant within the area. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				reduce the likelihood of a pathway.	
SJ5683	Alluvium - clay, silt and sand, and blown sand ~5 to 7m in thickness.	Likely unsaturated zone of around 5m.	Principal Aquifer - Low Superficial - Medium	Up to 7m thick superficial deposits with some clay layers are likely to reduce pathway into the subsurface. Pathways are possible within the east due to more permeable superficial deposits (loose sand) and a relatively shallow water table. There is a possible perched water table at around 5m depth (perched) within a low lying topographic area. Medium vulnerability is given to superficial aquifers.	Superficial deposits reduce the likelihood of any pathways. The bedrock has low vulnerability and the proposed works beneath the minor road are not likely to be significant. Screened Out.
SJ5684	Alluvium - clay, silt and sand ~5 to 8m in thickness.	The water table is close to the surface and groundwater could be artesian. Perched water	Principal Aquifer - Low Superficial - Medium	Up to 8m thick superficial deposits with some clay layers are likely to reduce the pathway into the subsurface, although a pathway is possible within the east due to more permeable superficial deposits (loose sand) and relatively shallow	Superficial deposits reduce the likelihood of any pathways. The bedrock has a low vulnerability and proposed works not likely to be significant. Screened Out.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
		tables are also likely.		water table. Possible artesian flow indicating upward hydraulic gradients and surface water is controlled by ditches and groundwater is likely close to the ground surface within a low lying topographic area. Medium vulnerability is given to superficial aquifers. Proposed works are on the edge of an SPZ3.	
SJ5784	Alluvium - clay, silt and sand, and blown sand likely ~5 to 8m in thickness.	The water table is close to the surface and groundwater could be artesian. Also likely perched water tables.	Principal Aquifer - High Superficial - Low	Up to 8m thick superficial deposits, although this could be thinner in some areas, so there is a possible pathway within permeable superficial deposits (loose sand) and a relatively shallow water table. High vulnerability to bedrock aquifer could reflect the thin superficial deposits in the area. A pathway is possible in the southern section of pipeline route within the area where characteristics are shared with grid square SJ5783 (but this is a very small area). Two separate sections of	Superficial deposits reduce the likelihood of a pathway, however these deposits are likely thin in some areas. The bedrock has high vulnerability, even though the proposed works are not likely to be significant. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				the pipeline intercept an SPZ3, although mostly on its edge. Possible artesian flow indicating upward hydraulic gradients and surface water is controlled by ditches and possibly perched water tables exist close to the ground surface within a low lying topographic area. There is a Low vulnerability to superficial aquifers.	
SJ5884	Mostly blown sand and some till diamicton of uncertain thickness.	The water table is close to the surface and groundwater could be artesian particularly in the north-west. Perched water tables are also likely.	Principal Aquifer - High Superficial - High	The thickness of superficial deposits is uncertain but they could be thin so there is a possible pathway to the subsurface through permeable superficial deposits (loose sand) and the relatively shallow water table. A High vulnerability to bedrock aquifer could reflect thin superficial deposits in the area. Possible artesian flow indicating upward hydraulic gradients and surface water is controlled by ditches and possibly perched water tables close to the ground surface	Superficial deposits reduce the likelihood of a pathway, but these deposits are thin. The bedrock has high vulnerability, and some proposed works in the area could be significant. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				(with possible artesian conditions) within a low lying topographic area. Significant trenchless crossings in the area are proposed and an open cut crossing at Holly Hedge Lane and likely two other crossings beneath the Runcorn Road.	
SJ5984	Wind-blown sand.	The water table is close to the surface and groundwater could be artesian particularly in the north-west. Also likely perched water tables.	Principal Aquifer - Medium Superficial - low	Blown sand could indicate a thin superficial layer but some evidence suggests it may be deeper. A Medium bedrock aquifer vulnerability is given but there is a lack of borehole records in the vicinity to verify superficial deposit thicknesses. Very thin superficial geology is possible. Relatively shallow water table and possible artesian flow indicating upward hydraulic gradients. Groundwater is controlled by ditches and possibly perched water tables close to the ground surface (possible artesian conditions) within a low-lying topographic area. Significant	Superficial deposits reduce the likelihood of a pathway but the deposits are thin. The bedrock has medium vulnerability but a pathway may exist within the western area of grid square area. Proposed works are significant and likely trenchless, at depth and within or close to an SPZ2. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				trenchless crossings are proposed in the area within an SPZ2 and production borehole 800m to the east.	
SJ5985	Blown sand south of area and thin alluvium - clay silt and sand in the north.	The water table is close to the surface and the unsaturated zone is less than 5m.	Principal Aquifer - High Superficial - High	Blown / glacial sand could indicate a thin superficial layer but it is missing in places (around Grange Green Manor). Some evidence suggests a relatively shallow water table, hence a high bedrock aquifer vulnerability. The superficial layer is possibly thinner near the Manchester Ship Canal in the north of the grid square with a ~depth of 3 to 4m. Elsewhere there is a superficial layer 11m thick with mostly sandstone and shale with bands of clay and marl. Vertical hydraulic gradients are unknown but groundwater is close to the surface (possible artesian conditions) within a low lying topographic area. There are	Superficial deposits reduce the likelihood of a pathway but the deposits are thin. The bedrock has high vulnerability and a pathway may exist within the area of grid square. Proposed works are significant with trenchless works (although outside of SPZ2). Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				significant trenchless crossings in the area and a SPZ2 in the southern area. There is a production borehole 1 km to the south-east.	
SJ5885	Blown sand is located south of the area and thin alluvium – clay, silt and sand is in the north of the area.	Water table is close to surface and there is an unsaturated zone less than 5m.	Principal Aquifer - Low Superficial - High	Blown / glacial sand could indicate a thin superficial layer but missing/ thin in places (south of railway line ~depth of 2.5m). The Principal Aquifer vulnerability is given as low across the whole grid (due to the existence of tidal superficial deposits). However, a higher vulnerability to the bedrock aquifer may exist due to thin / absent superficial deposits in some areas. The area is located at the edge of SPZ3. A pathway is possible within the SPZ3 intersected area and therefore there is likely high Principal Aquifer vulnerability. There are no road or rail crossings but there are open cut utilities crossings proposed.	Superficial deposits reduce the likelihood of pathway but the deposits are thin. bedrock vulnerability is high in places but a pathway may exist within the area of the grid. Although it is noted that there are no significant trenchless crossings in the area. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
				There is a shallow water table around 5m depth controlled by ditches within low lying topographic area, but vertical hydraulic gradients are unknown.	
SJ6186	Glacial sand / gravel and layers of boulder clay 14m thick.	The water table is close to surface and the unsaturated zone is less than 5m and/or there are likely perched water tables.	Principal Aquifer - Low Superficial - High	Up to 14 m thick superficial deposits with some clay layers would likely reduce the risk of a significant pathway. The area has a relatively shallow water table with perched water tables and surface drainage is controlled by ditches. It is in a built-up urban area, which results in numerous proposed open cut crossings. It is also on the edge of SPZ3 where there is significant superficial deposit thickness. The Low Principal aquifer vulnerability is due to thick superficial deposits, but High vulnerability to superficial aquifers.	The superficial deposits reduce the likelihood of a pathway. The bedrock has low vulnerability and proposed works within the grid square are not likely to be significant in the area of works. Screened Out.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
SJ6286	Alluvium - clay, silt and sand, and thick river terrace deposits - sand and gravel between 6 and 14m.	Water table is close to the ground surface and the unsaturated zone is less than 5m or there are likely perched water tables.	Principal Aquifer - High Superficial - High	In the area there is a thick superficial till layer between 6 to 14m, mostly sand and gravel with some boulder clay layers reducing the likelihood of a pathway. This grid square is in a built-up urban area, which results in numerous proposed open cut crossings. There is a relatively shallow water table with likely perched water tables. The Principal Aquifer vulnerability given as High across the area (due to sand superficial deposits in the south) but the pathway possibility is likely reduced within SPZ2 / Draft Order Limits intersected area due to the superficial deposits.	Superficial deposits reduce the likelihood of a pathway in the area of works. Therefore bedrock has likely a lower vulnerability and proposed works are not likely to be significant. Screened Out.
SJ6287	Glacial deposits - sand and gravel.	The water table is close to surface and the unsaturated zone is less than 5m and/or there are likely	Principal Aquifer - Low Superficial - High	Glacial sand and gravels could indicate a permeable thin superficial layer. There is some evidence that suggests a relatively shallow water table (5mbgl), and hence a higher bedrock aquifer vulnerability	Superficial deposits reduce likelihood of a pathway but there are thin deposits in the area of works. Therefore, bedrock vulnerability is low but a pathway exists and there

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
		perched water tables.		than indicated (although mapping shows Low vulnerability within grid square due to river deposits to the north). Vertical hydraulic gradients in the area are unknown. This is in a built-up urban area, which results in numerous open cut utility crossings, one being on a main road, and significant trenchless crossings of the Manchester Ship Canal.	are significant trenchless crossings in the area. Screened In.
SJ6387	Alluvium - clay, silt and sand - sand and gravel 2.5m (from the Richmonds Gas Stove Co Ltd 1 water borehole).	The surface elevation is at 10mAOD. Environment Agency mapping gives a groundwater level of <10mAOD so the water table is close to the surface. There are also likely to	Principal Aquifer - Low Superficial - High	Glacial sand in the area could indicate a permeable thin superficial layer. Some evidence suggests that there is a relatively shallow water table (there is evidence of 5mbgl depth to groundwater within a water borehole into sandstone aquifer just to north of canal), hence a higher bedrock aquifer vulnerability than indicated (although mapping shows low vulnerability within grid square due to river deposits to the	The groundwater is close to the surface (5mbgl) with thin / absent superficial deposits (glacial sands and gravels). The bedrock has high vulnerability in the area of the proposed works. This is in a built-up urban area, which results in numerous open cut utility crossings and possible trenchless crossings of the Manchester Ship Canal. Screened In.

OS grid square	Superficial deposits type / thickness	Aquifer unsaturated zone	Vulnerability mapping classification	Preliminary conceptual model / screen summary	Vulnerability summary
		be perched water tables.		north). Vertical hydraulic gradients are unknown. There are possible significant trenchless crossings of the Manchester Ship Canal in the area.	

4.2 Shallow Groundwater Areas

- 4.2.1 Areas of shallow groundwater where groundwater flow has the potential to interact with the Project's pipeline subsurface infrastructure have been identified using a desk top study approach and utilising depth to groundwater, groundwater flooding and geological mapping datasets. Superficial geology mapping datasets have also been used to indicate where shallow groundwater flow paths may be dynamic within shallow permeable strata, such as sands and gravels and/or alluvial deposits. These are possible areas within which streams and rivers and water dependent habitats are receiving significant baseflow that requires protection.
- 4.2.2 In this manner shallow groundwater areas where works within the Draft Order Limits, such as pipeline installation, have the potential to create barriers to groundwater flow or act as areas for preferential pathways have been identified. These areas are listed and screened within **Table 7B.8**.

Table 7B.8 Shallow groundwater areas

Area	Description	Potential barriers to groundwater flow	Screen In / Out
North Corridor			
River Mersey crossing (NGR SJ 5637 8664)	Shallow groundwater levels associated with alluvium, river terrace deposits and wind-blown sands. However, this area is associated with minimal groundwater flooding potential.	Limited groundwater flooding indicates likely static water table and minimal groundwater flow in the area. Highly permeable superficial deposits with large baseflow volumes to major water features are unlikely to be impacted by any barriers to flow.	Screened out.
West Corridor			
Frodsham (NGR SJ 49238 76974)	A low lying area with surface water drainage ditches, and the shallow water table is shallow, within 5m of surface, with a high potential for groundwater flooding. The area is predominantly composed of tidal flat deposits clay, silts and sands, with occasional lenses of peat and blown sand superficial deposits. Thicker accumulations of alluvium deposits infill a series of broadly north-trending buried paleo-channels (north-flowing tributaries of the River Mersey i.e. the west and the Hornsmill / Peckmill Brook). These channels are up to tens of metres deep and occasionally up to hundreds of metres wide, infilled with glacial deposits comprising mainly sands, gravels, clays and silts.	Horizontal groundwater flow within the surface is minimal due to low permeability sediments, shallow gradients in the area are largely controlled by drainage. Therefore, natural groundwater flow will be minimal within the superficial deposits, with the exception of the buried channels. Depending on the composition of their infill, these may influence groundwater flow in the area.	Screened in.
South Corridor			
North of the River Weaver (NGR SJ 5506 7889)	4.2.3 The area consists of superficial sands and gravels along a tributary south east of the Sutton Weaver and the Draft Order Limits runs perpendicular and up hydraulic gradient to the small stream running into woodland (Beckett’s Wood).	The proposed pipeline would be excavated into well drained fields and although up hydraulic gradient of the watercourse it runs perpendicular to the headwaters of the stream. The pipeline excavation is unlikely to be deep enough to cause significant barriers to flow.	Screened out.
West of Dutton Park Farm (NGR SJ 5764 7760)	4.2.4 The Draft Order Limits runs parallel and up hydraulic gradient of a west to east flowing tributary to the River Weaver. This area is located on the Bollin Mudstone Member with no superficial deposits.	The streams in this area are likely to be topographically and runoff controlled with limited groundwater flow or baseflow to them.	Screened out.
Longacre Brook (NGR SJ 5831 7744)	4.2.5 This area is within the floodplain of the River Weaver and is associated with alluvium, clay, silt, sand and gravel.	The proposed pipeline route runs perpendicular to the watercourse and relative to the size of the river any barriers to baseflow are likely to be minimal.	Screened out.
South of the River Weaver, north-east of Sandiway (NGR SJ 6139 7162)	4.2.6 This is an area of superficial sands and gravels, with the pipeline route passing across the headwaters of the Handforth Brook tributary. This area comprises low-lying ground and a	The Draft Order Limits are down hydraulic gradient of the tributary and unlikely to have major impact on the pond in the area due to its size. There is also a local large sand quarry ~	Screened out.

Area	Description	Potential barriers to groundwater flow	Screen In / Out
	large pond is located in a hollow to the west of the pipeline, in the vicinity of Littleedale’s Gorse.	100m to the south which will have a much greater control on groundwater levels in the area. Higher ground to the east is also likely to control groundwater baseflow to watercourses and lower lying areas.	
South of the A556 (NGR SJ 6202 7051)	4.2.7 Area of undulating superficial sands and gravels, where the Draft Order Limits cross a valley to the north-east of Petty Pool Lake and Pettypool Wood (which is a GWDTE).	Higher topography in the area is likely to supply the majority of baseflow to the water features in the area, including ground to the south of the water features. The pipeline infrastructure is 400m from the Petty Pool Lake on higher ground and is therefore unlikely to have any major impacts to groundwater flow.	Screened out.
South of Moulton (NGR SJ 6542 6913)	4.2.8 An area is of interbedded superficial sands and gravels and till where the Draft Order Limits runs parallel to the Vale Rroyal Cut for ~ 2.5km.	The Vale Royal Cut is a man-made feature and given its size and distance from the proposed pipeline route (over 300m) no influence on baseflow from barriers to groundwater flow are anticipated.	Screened out.
River Dane in the vicinity of Bostock Green (NGR SJ 67056 69089) and east of Whatcroft (NGR SJ 68263 69930)	4.2.9 An area of shallow groundwater and floodplain within lower lying valleys of tributaries of the River Dane. These areas are associated with alluvial deposits as well as peat and sand and gravel superficial deposits.	The pipeline is perpendicular to the watercourses and therefore does not represent barriers to flow since river baseflow flow paths are likely to be parallel to the orientation of the proposed infrastructure.	Screened out.
East Corridor			
South and east of Higher Whitley (NGR SJ 6187 8005)	4.2.10 An area of shallow groundwater and potential groundwater flooding within shallow valleys on undulating ground. Superficial sands and gravels predominantly make up the higher ground, whilst till deposits form the valley bottoms. The Draft Order Limits in this area generally runs perpendicular and up hydraulic gradient above the headwaters of small watercourses to the north-east and north-west of Oldmill Farm (Frandlely NGR SJ 6358 7937).	The proposed pipeline is perpendicular to these watercourses and therefore does not represent barriers to flow since river baseflow flow paths are likely to be parallel to the orientation of infrastructure.	Screened out.
North of M56 up to Partington (NGR SJ 71678 87964)	4.2.11 An extensive area of shallow groundwater and potential groundwater flooding exists on permeable superficial deposits. These deposits are alluvium, river terrace and blown sand deposits associated with the River Bollin.	The pipeline in this area generally runs perpendicular to watercourses in the area such as Sinderland Brook and infrastructure is therefore unlikely to have an impact on groundwater flows in the area.	Screened out.
North of Dunham Woodhouses (NGR SJ 7297 8939)	4.2.12 The Caldwell Brook lies on thick (~32m) wind-blown sands and is on an area of low lying (< 20mAOD) wet but well drained ground with shallow groundwater levels. However, the area not associated with groundwater flood risk.	Likely any baseflow from higher ground to the east (opposite bank to that of the proposed pipeline route) and hydraulic continuity with bedrock is likely to be high, minimal impact on baseflow in area.	Screened out.

4.3 Licensed Abstractions

- 4.3.1 The Environment Agency has provided information for licensed abstractions. Within the Study Area 98 licensed abstractions have been screened as having a potential hydrological pathway to the Draft Order Limits and are shown within **Table 7B.9** (licensed non-public groundwater abstractions), **Table 7B.10** (licensed public groundwater abstractions) and Table 7B.11 (licensed non-public surface water abstractions). These include 51 other groundwater abstractions, five public water supply groundwater abstractions and 42 surface water abstractions. Of the nine deregulated abstractions identified two were screened in for assessment (Table 7B.12). There are no known private water supplies (PWSs) within the Study Area.
- 4.3.2 There are multiple groundwater SPZs within the Draft Order Limits. These include a continuous area of Total Catchment SPZ3s across the northern part of the Study Area, where the Draft Order Limits is intercepted in places, and five Inner Protection Zones SPZ1 within the Study Area. The nearest SPZ1s to the Draft Order Limits are located at Daresbury and Higher Walton, ~250m and 480m from the Draft Order Limits respectively. Environmental measures have been embedded within **Section 7.6 of Chapter 7: Water Environment** to ensure the protection of these public water supplies (along with other licensed abstractions) during proposed works.
- 4.3.3 The locations of the licenced abstractions are shown in **Figure 7.6**. The majority of the surface water abstractions are located in the southern part of the ZOI around the wider Northwich area, with other clusters in the East Corridor centred around Heatley, the North Corridor centred around Warrington and the West Corridor centred around the Stanlow area of the Manchester Ship Canal. Groundwater abstractions are less clustered, with clusters around the Walton area of the Manchester Ship Canal located on the North Corridor Spur, Cuerdley on the North Corridor and Great Budworth located between the South Corridor Spur and East Corridor.
- 4.3.4 Licenced and deregulated abstractions were screened based upon an assumed conservative 500m buffer (representing an SPZ2) and 1km buffer (representing SPZ3 full catchment zone) around the Draft Order Limits. Therefore, all licenced and deregulated abstractions outwith 1km of the Draft Order Limits were screened out from the assessment

Table 7B.9 Licensed non-public groundwater abstractions within the Study Area

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A1	2569017028, Borehole at Peterhouse Farm, Gorsey Lane, Warburton	Duncan Priestner and Mark Priestner	372800, 389250	Agriculture	10000	Borehole located ~60m from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A2	2569017026, Borehole at Broad Oak Farm, Warburton Lymm	H Booth and Son	372300, 390600	Agriculture, General Farming and Domestic	15000	Borehole located ~680m west from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone) and located on river terrace / blown sand superficial deposits. Screened in.
A3	2569017026, borehole at Broad Oak Farm, Warburton Lymm	H Booth and Son	372300, 390600	Agriculture, Vegetable Washing	15000	Borehole located ~680m west from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone) and located on river terrace/blown sand superficial deposits. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A4	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 12	Solvay Interlox Ltd	359570, 386060	Industry, Effluent / Slurry Dilution	7807300	Borehole located adjacent (~1m) from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A5	2569024013, boreholes x 6 At Warrington and Penketh Cheshire- Well 12	Solvay Interlox Ltd	359570, 386060	Industry, Evaporative Cooling	7807300	Borehole located adjacent (~1m) from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A6	2569024013, Boreholes x 6 at Warrington and Penketh Cheshire- Well 12	Solvay Interlox Ltd	359570, 386060	Industry, Non-Evaporative Cooling	7807300	Borehole located adjacent (~1m) from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A7	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 12	Solvay Interlox Ltd	359570, 386060	Industry, Pollution Remediation	7807300	Borehole located adjacent (~1m) from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A8	NW/069/0024/005, AO Plant Wells	Solvay Interrox Ltd	359633, 386125	Industry, Pollution Remediation	51100	Well located adjacent (~1m) from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A9	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 1	Solvay Interrox Ltd	359953, 386039	Industry, Pollution Remediation	7807300	Borehole located ~4m from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A10	2569024013, boreholes x 6 at Warrington and Penketh Cheshire - Well 11	Solvay Interrox Ltd	360124, 386090	Industry, Evaporative Cooling	7807300	Borehole located ~100m from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A11	2569024013, Boreholes x 6 at Warrington and Penketh Cheshire - Well 11	Solvay Interrox Ltd	360124, 386090	Industry, Effluent / Slurry Dilution	7807300	Borehole located ~100m from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A12	2569024013, Boreholes x 6 at Warrington and Penketh Cheshire - Well 11	Solvay Interlox Ltd	360124, 386090	Industry, Non-Evaporative Cooling	7807300	Borehole located ~100m from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A13	2569024013, boreholes x 6 at Warrington and Penketh Cheshire - Well 11	Solvay Interlox Ltd	360124, 386090	Industry, Pollution Remediation	7807300	Borehole located ~100m from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone). Screened in.
A14	NW/069/0025/001/R01, Warrington Wolves borehole	The Warrington Football Club Limited	360574, 388822	Industry, Spray Irrigation - Direct	2400	Borehole located ~2km from the Draft Order Limits on flat ground in the same geology (Triassic Sherwood Sandstone). Screened out.
A15	2569021019, Excavation at Caddick's Clematis Nursery, Lymm	H Caddick	366000, 387600	Agriculture, Spray Irrigation - Direct	905	Excavation located ~2.2km from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone) located on superficial

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						alluvium within a SPZ3. Screened out.
A16	2569021019, Excavation at Caddick's Clematis Nursery, Lymm	H Caddick	366000, 387600	Other Potable Uses, Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household	905	Excavation located ~2.2km from the Draft Order Limits in the same geology (Triassic Sherwood Sandstone) located on superficial alluvium within a SPZ3. Screened out.
A17	2569021018, borehole at Lymm G.C., Whitbarrow Rd, Lymm	Lymm Golf Club	367850, 387890	Industry, Spray Irrigation - Direct	9092	Borehole located ~ 3.8km north-west and ~4km east of the Draft Order Limits and although located on the Triassic Sherwood Sandstone and down hydraulic gradient there are hydraulic divides (rivers/streams) separating the borehole from the Project. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A18	2568002143, well at New Hall Farm, feeding a hydraulic ram at Davenham	The Misses Russell Allen	366700, 370800	Agriculture	299	Borehole located over 1.5km from the nearest Draft Order Limits and although located on the Triassic Sherwood Sandstone the area is covered in till superficial deposits and hydraulic connection unlikely. Screened out.
A19	2568003040, collecting tank at Bridge Farm, Anderton, Northwich, Cheshire	G Done	364800, 375600	Agriculture	841	A collection tank at Bridge Farm, at Anderton, on till superficial deposits ~4.5km to the south-east of the Draft Order Limits. Screened out.
A20	2568003055, well at Manor Farm, Anderton, Northwich, Cheshire	J and J Whalley	363500, 375900	Agriculture	236	A well at Manor Farm on till superficial deposits ~3.3km to the south-east of the Draft Order Limits. Screened out.
A21	2568003069, springs x 3 at Hield House Farm, Aston By Budworth, *15	J M Williamson	366700, 377400	Agriculture	5819	Spring on till superficial deposits issuing from higher ground to the north into a localised

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						depression. The Draft Order Limits is over ~3.9km to the north and ~6.3km to the west and therefore no hydraulic connectivity is possible. Screened out.
A22	2568003069, springs x 3 at Hield House Farm, Aston By Budworth, North	J M Williamson	367400, 377700	Agriculture	5819	Spring on till superficial deposits issuing from higher ground to the north into a localised depression. The Draft Order Limits is over ~3.9km to the north and ~7km to the west and therefore no hydraulic connectivity is possible. Screened out.
A23	2568003069, springs x 3 at Hield House Farm, Aston by Budworth	J M Williamson	367100, 377700	Agriculture	5819	Spring on till superficial deposits issuing from higher ground to the north into a localised depression. The Draft Order Limits is over ~3.9km to the north and ~7km to the west and therefore no hydraulic

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						connectivity is possible. Screened out.
A24	2568004025, borehole at Blackstone Farm, Lower Whitley, Daresbury	P A Waterman	359800, 380800	Agriculture, Fish Farm/Cress Pond Throughflow	4148	Borehole on till superficial deposits and Triassic Mercia Mudstone. The Draft Order Limits is ~930m to the west. Screened in.
A25	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 2	Solvay Interlox Ltd	359418, 385869	Industry, Pollution Remediation	7807300	6 boreholes within 100m of the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.
A26	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 2	Solvay Interlox Ltd	359418, 385869	Industry, Effluent / Slurry Dilution	7807300	6 boreholes within 100m of the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A27	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 2	Solvay Interrox Ltd	359418, 385869	Industry, Evaporative Cooling	7807300	6 boreholes within 100m of the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.
A28	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 2	Solvay Interrox Ltd	359418, 385869	Industry, Non-Evaporative Cooling	7807300	6 boreholes within 100m of the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.
A29	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 1	Solvay Interrox Ltd	359953, 386039	Industry, Evaporative Cooling	7807300	6 boreholes adjacent (~5m) to the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.
A30	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 1	Solvay Interrox Ltd	359953, 386039	Industry, Effluent / Slurry Dilution	7807300	6 boreholes adjacent (~5m) to the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						and alluvial superficial deposits). Screened in.
A31	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 1	Solvay Interrox Ltd	359953, 386039	Industry, Non-Evaporative Cooling	7807300	6 boreholes within 100m of the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.
A32	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 5	Solvay Interrox Ltd	358842, 385841	Industry, Effluent / Slurry Dilution	7807300	6 boreholes adjacent (~10m) to the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.
A33	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 5	Solvay Interrox Ltd	358842, 385841	Industry, Evaporative Cooling	7807300	6 boreholes adjacent (~10m) to the Draft Order Limits and on the same geology (Triassic Sherwood Sandstone and alluvial superficial deposits). Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A34	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354700, 386500	Power Generation, Boiler Feed	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~320m to the Draft Order Limits. Screened in.
A35	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354700, 386500	Power Generation	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~320m to the Draft Order Limits. Screened in.
A36	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354600, 386600	Power Generation	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~340m to the Draft Order Limits. Screened in.
A37	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354600, 386600	Power Generation, Boiler Feed	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~340m to

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						the Draft Order Limits. Screened in.
A38	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354800, 386700	Power generation	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~125m to the Draft Order Limits and within SPZ3. Screened in.
A39	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354500, 386700	Power Generation	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~340m to the Draft Order Limits. Screened in.
A40	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354200, 386700	Power Generation, Boiler Feed	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~660m to the Draft Order Limits. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A41	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354800, 386700	Power Generation, Boiler Feed	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~125m to the Draft Order Limits and within SPZ3. Screened in.
A42	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354200, 386700	Power Generation	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~660m to the Draft Order Limits. Screened in.
A43	2569024024, 5 boreholes at Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354500, 386700	Power Generation, Boiler Feed	721848	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located within ~370m to the Draft Order Limits. Screened in.
A44	2569024027, borehole at Gatewarth Ind. Estate, Sankey Bridges, Warrington	Hanson Quarry Products Europe Ltd	358870, 387240	Industry, Process Water	24500	Borehole within alluvial superficial deposits located ~ 350m to the north of the Draft Order

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						Limits (access road). Screened in.
A45	2569027004, borehole near premises at Moorfield Road, Widnes	Byk Additives Ltd	352900, 387700	Industry, Process Water	560000	Borehole within the Triassic Sherwood Sandstone and on till superficial deposits located 870m to the west of the Draft Order Limits (access road). Screened in.
A46	2569025019, boreholes (3) at Burtonwood, Warrington	Molson Coors Brewing Company (UK) Limited	355600, 393500	Industry, Process Water	250939	Borehole with SPZ but over 3.9km east of the nearest Draft Order Limits with associated river hydraulic divides between the two. Screened out.
A47	NW/069/0025/008, Burtonwood, Warrington, Cheshire	Thomas Hardy Burtonwood Ltd	355643, 393667	Industry, Process Water	120000	Borehole with SPZ but over 3.9km east of the nearest Draft Order Limits with associated river hydraulic divides between the two. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A48	2568003039, well at Aston Grange, Preston Brook	S and A Shaw	356600, 377700	Agriculture	500	Borehole within sand and gravel superficial deposits present, ~300 m to the south and slightly down hydraulic gradient of the Draft Order Limits (access road). Screened in.
A49	2568003088, borehole at Premises at Rocksavage Works, Runcorn	INEOS Chlorvinyls Ltd	351600, 379900	Industry, General Cooling	1991148	Borehole within the Triassic Sherwood Sandstone where there are no superficial deposits present, ~560m to the west and ~1km north and down hydraulic gradient of the Draft Order Limits. Screened in.
A50	NW/068/0004/001, Borehole 2	Daresbury SIC LLP	357748, 383276	Power Generation, Heat Pump	305000	Borehole within the Triassic Sherwood Sandstone and on blown sands superficial deposits ~1.5km to the west of the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A51	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 6	Solvay Interlox Ltd	357772, 385506	Industry, Effluent/Slurry Dilution	7807300	Borehole within the Triassic Sherwood Sandstone and on blown sand superficial deposits ~ 45m to the north of the Draft Order Limits within flat ground. Screened in.
A52	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 6	Solvay Interlox Ltd	357772, 385506	Industry, Non-Evaporative Cooling	7807300	Borehole within the Triassic Sherwood Sandstone and on blown sand superficial deposits ~ 45m to the north of the Draft Order Limits within flat ground. Screened in.
A53	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 6	Solvay Interlox Ltd	357772, 385506	Industry, Evaporative Cooling	7807300	Borehole within the Triassic Sherwood Sandstone and on blown sand superficial deposits ~ 45m to the north of the Draft Order Limits within flat ground. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A54	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 6	Solvay Interrox Ltd	357772, 385506	Industry, Pollution Remediation	7807300	Borehole within the Triassic Sherwood Sandstone and on blown sand superficial deposits ~ 45m to the north of the Draft Order Limits within flat ground. Screened in.
A55	2569024013, boreholes x 6 at Warrington and Penketh Cheshire- Well 5	Solvay Interrox Ltd	358842, 385841	Industry, Non-Evaporative Cooling	7807300	Borehole within the Triassic Sherwood Sandstone and on blown sand superficial deposits just outside (~10m) the northern edge of the Draft Order Limits within flat ground. Screened in.
A56	2569024013, boreholes x 6 at Warrington and Penketh Cheshire - Well 5	Solvay Interrox Ltd	358842, 385841	Industry, Pollution Remediation	7807300	Borehole within the Triassic Sherwood Sandstone and on blown sand superficial deposits just outside (~10m) the northern edge of the Draft Order Limits within flat ground. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A57	NW/068/0006/012, Borehole No 7 at Thornton-Le-Moors and Stanlow, Ellesmere Port	University of Chester	344954, 375514	Industry, General Cooling	955636	Borehole within the Triassic Sherwood Sandstone and ~ 280m to the north of the Draft Order Limits within flat ground. Screened in.
A58	NW/068/0006/012, Borehole No 7 at Thornton-Le-Moors and Stanlow, Ellesmere Port	University of Chester	344954, 375514	Industry, General Cooling	955636	Borehole within the Triassic Sherwood Sandstone and ~ 280m to the north of the Draft Order Limits within flat ground. Screened in.
A59	NW/068/0006/012, Borehole No 7 at Thornton-Le-Moors and Stanlow, Ellesmere Port	University of Chester	344954, 375514	Industry, Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services	955636	Borehole within the Triassic Sherwood Sandstone and ~ 280m to the north of the Draft Order Limits within flat ground. Screened in.
A60	NW/068/0006/012, Borehole No 7 at Thornton-Le-Moors and Stanlow, Ellesmere Port	University of Chester	344954, 375514	Industry, Process Water	955636	Borehole within the Triassic Sherwood Sandstone and ~ 280m to the north of the Draft

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						Order Limits within flat ground. Screened in.
A61	NW/068/0006/012, Borehole No 7 at Thornton-Le-Moors and Stanlow, Ellesmere Port	University of Chester	344954, 375514	Industry, Boiler Feed	955636	Borehole within the Triassic Sherwood Sandstone and ~ 280m to the north of the Draft Order Limits within flat ground. Screened in.
A62	NW/068/0006/012 Borehole No 7 at Thornton-Le-Moors and Stanlow, Ellesmere Port	University of Chester	344954, 375514	Industry	955636	Borehole within the Triassic Sherwood Sandstone and ~ 280m to the north of the Draft Order Limits within flat ground. Screened in.
A63	2568004012 borehole at Weston Point, Runcorn	Inovyn Chlorvinyls Limited	350100, 380700	Industry, General Cooling	1000120	Borehole within the Triassic Sherwood Sandstone and ~ 1.9km to the north-west of and down gradient of the Draft Order Limits. Screened out.
A64	2568002189, lagoon at Rudheath Woods, Cranage, Knutsford	W and A Halman	373500, 370700	Agriculture, Spray Irrigation - Direct	6819	Well located over ~3.8km from the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A65	2568003052, well at Dairy Farm, High Legh, Knutsford	R H Cornwall Legh	369800, 383400	Agriculture, General Use Relating To Secondary Category (Medium Loss)	490	Well ~ 500m to the south-east of the Draft Order Limits within flat ground. Screened in.
A66	2569017039/R02, borehole	Manchester United Football Club Plc	374942, 391195	Industry, Spray Irrigation - Direct	95200	Borehole located over 1.6km to the east of the Draft Order Limits. Screened out.
A67	2569021004, claypit on premises at Moss Side Lane Rixton	Thomas Mosedale and Sons Ltd	368700, 390800	Industry, Dust Suppression	2273	Borehole located over ~3.8km from the Draft Order Limits with hydraulic divides between. Screened out.
A68	2568001005, well at Dalefords Farm, Sandiway	J R Leech and Co	360500, 369600	Agriculture	4978	Well located over 1.8km from the Draft Order Limits. Screened out.
A69	2568001225, lagoon in underground strata at Whitegate, near Northwich	J R Leech and Co	360300, 369800	Agriculture, Spray Irrigation	18502	Lagoon located over 1.8km from the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A70	2568001139, spring-fed catchpit at Brook House Farm, Winsford, Cheshire	P and R Robinson	363600, 367800	Agriculture, General Farming and Domestic	5810	Boreholes located over 2.2km from the Draft Order Limits and separated by the River Weaver hydraulic divide. Screened out.
A71	2568003028, catchpit at farm, Peel Hall, Kingsley, Frodsham	Sydney Sproston	353600, 375600	Agriculture	2491	Boreholes located over 3.3km from the Draft Order Limits and separated by the River Weaver hydraulic divide. Screened out.
A72	2568003068, spring-fed catchpits x 3 at Peel Hall, Kingsley, Frodsham	T and R Gleave and Sons	353900, 375800	Agriculture	5078	Boreholes located over 3.2km from the Draft Order Limits and separated by the River Weaver hydraulic divide. Screened out.
A73	2568003068, spring-fed catchpits x 3 at Peel Hall, Kingsley, Frodsham	T and R Gleave and Sons	353900, 376000	Agriculture	5078	Boreholes located over 3.4km from the Draft Order Limits and separated by the River Weaver hydraulic divide. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A74	2569024009, 2 boreholes at Moss Bank, Widnes	Widnes Regeneration Ltd	353100, 385500	Industry	210000	Boreholes located over 2.2km from the Draft Order Limits. Screened out.
A75	2569024028/R01, premises at Tanhouse Lane Widnes	Plasmor (Halton) Limited	352870, 385810	Industry, Dust Suppression	30000	Borehole located over 2.2km from the Draft Order Limits. Screened out.
A76	2568001251, a borehole at Pigwood, Fishpool Road, Northwich	N A Haworth	357100, 367500	Agriculture, General Farming & Domestic	250	Borehole located over 5.5km from the Draft Order Limits. Screened out.
A77	2568001001, quarry at Relicks Moss, Delamere	Tarmac Limited	356628, 369773	Industry, Dust Suppression	1463489	Borehole located over 4.8km from the Draft Order Limits. Screened out.
A78	2568001001, quarry at Relicks Moss, Delamere	Tarmac Limited	356628, 369773	Industry, Mineral Washing	1463489	Borehole located over 4.8km from the Draft Order Limits. Screened out.
A79	NW/068/0003/006, Crown Farm Quarry, Stoneyford Lane, Oakmere Cheshire	Tarmac Limited	357199, 370203	Industry, Mineral Washing	1000000	Borehole located over 4.2km from the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A80	NW/068/0003/006, Crown Farm Quarry, Stoneyford Lane, Oakmere Cheshire	Tarmac Limited	357199, 370203	Industry, Dust Suppression	1000000	Borehole located over 4.2km from the Draft Order Limits. Screened out.
A81	NW/068/0003/006, Crown Farm Quarry, Stoneyford Lane, Oakmere Cheshire	Tarmac Limited	357199, 370203	Industry	1000000	Borehole located over 4.2km from the Draft Order Limits. Screened out.
A82	2568005004, well on land adjacent to Well Lane, Mouldsworth	P Willis	350500, 371200	Agriculture	9710	Borehole located over 4.5km from the Draft Order Limits. Screened out.
A83	2568005010, spring at Manley Old Hall, Manley	G J Ford and Sons	350100, 372800	Agriculture	4978	Borehole located over 3km from the Draft Order Limits. Screened out.
A84	2568005002, borehole at Mersey Bank Farm, Hapsford, Helsby	Messrs B and G Leatherbarrow	347400, 374500	Agriculture	4978	Borehole within the Triassic Sherwood Sandstone and ~ 900m to the south of the Draft Order Limits within flat ground. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A85	NW/068/0006/011, boreholes (22) at Thornton-Le-Moors and Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	Industry, Boiler Feed	8997914	Borehole within the Triassic Sherwood Sandstone and ~ 1170m to the west of the Draft Order Limits within flat ground. Screened out.
A86	NW/068/0006/011, boreholes (22) at Thornton-Le-Moors and Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	Industry, Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial / Industrial / Public Services	8997914	Borehole within the Triassic Sherwood Sandstone and ~ 1170m to the west of the Draft Order Limits within flat ground. Screened out.
A87	NW/068/0006/011, boreholes (22) at Thornton-Le-Moors and Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	Industry, General Cooling (Existing Licences Only) (High Loss)	8997914	Borehole within the Triassic Sherwood Sandstone and ~ 1170m to the west of the Draft Order Limits within flat ground. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A88	NW/068/0006/011, boreholes (22) at Thornton-Le-Moors and Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	Industry	8997914	Borehole within the Triassic Sherwood Sandstone and ~ 1170m to the west of the Draft Order Limits within flat ground. Screened out.
A89	NW/068/0006/011, boreholes (22) at Thornton-Le-Moors and Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	Industry, Process Water	8997914	Borehole within the Triassic Sherwood Sandstone and ~ 1170m to the west of the Draft Order Limits within flat ground. Screened out.
A90	NW/068/0006/011, boreholes (22) at Thornton-Le-Moors and Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	Industry, General Cooling	8997914	Borehole within the Triassic Sherwood Sandstone and ~ 1170m to the west of the Draft Order Limits within flat ground. Screened out.
A91	2568003068, spring-fed catchpits x 3 at Peel Hall, Kingsley, Frodsham	T and R Gleave and Sons	353900, 375500	Agriculture	5078	Boreholes located over 3km from the Draft Order Limits and separated by the River Weaver hydraulic divide. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A92	2569028024R01, borehole at Alder Lane, Cronton, Widnes	Morphet	347880, 387920	Industry	34000	Borehole located over 4km from the Draft Order Limits. Screened out.
A93	2569028024R01, borehole at Alder Lane, Cronton, Widnes	Morphet	347880, 387920	Other Potable Uses, Water Bottling	34000	Borehole located over 4km from the Draft Order Limits. Screened out.
A94	2568003045, well at Fields Farm, Kermincham, Holmes Chapel	R and B Riddell	379900, 369300	Agriculture	4978	Borehole located over 10km to the east of the Draft Order Limits. Screened out.
A95	2568002021, wells x 2 at Davenport Lane Farm, Marton	Worth Partners	383800, 368300	Agriculture	4146	Borehole located over 14km to the east of the Draft Order Limits. Screened out.
A96	2568002021, wells x 2 at Davenport Lane Farm, Marton	Worth Partners	383900, 368300	Agriculture	4146	Borehole located over 14km to the east of the Draft Order Limits. Screened out.
A97	2568003026, well at Lower Gorseley Green Farm, Marton, Macclesfield	P Okill	384100, 368700	Agriculture	2489	Borehole located over 14km to the east of the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A98	2568003022, well at Higher Gorseley Farm, Marton, Macclesfield	Alan Mosford	384500, 369200	Agriculture	166	Borehole located over 10km to the east of the Draft Order Limits. Screened out.
A99	2568003018, collecting chamber at Northwood Farm, Siddington	Mr W A Venables	384700, 369700	Agriculture	830	Borehole located over 14km to the east of the Draft Order Limits. Screened out.
A100	2568003019, collecting chamber at Carditch Farm, Siddington	Mrs M Carbutt	384700, 369700	Agriculture	2157	Borehole located over 14km to the east of the Draft Order Limits. Screened out.

Table 7B.10 Licensed public groundwater abstractions within the Study Area

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A105	2569025040, well at Winwick P.S., Warrington	United Utilities Water Plc	360657, 393117	Public Water Supply, Potable Water Supply - Direct	909200	Draft Order Limits are inside of SPZ3, but the borehole is located over 5km to north-west of the nearest Draft Order Limits and separated by a hydraulic divide (River Mersey). Screened out.
A106	2569021011, boreholes (2) at Lymm P.S., near The Dingle at Lymm	United Utilities Water Plc	368109, 387000	Public Water Supply, Potable Water Supply - Direct	3318580	Draft Order Limits are outside of SPZ3 and located over 2km to north-west of the Draft Order Limits. Upgradient areas (recharge area) of the Draft Order Limits are located on till superficial deposits and over Mercia Mudstone. Screened out.
A107	2568004008, boreholes (2) at Hough Lane, Higher Walton, Warrington	United Utilities Water Plc	360170, 384620	Public Water Supply, Potable Water Supply - Direct	1245604	Borehole is approximately 500m to the east of the Draft Order Limits, which intersect SPZ3. Screened in.
A108	2569025039, boreholes x 2 Forest Farm P.S., Burtonwood	United Utilities Water Plc	Unknown	Public Water Supply, Potable Water Supply - Direct	4150498	Draft Order Limits are inside of SPZ3, but the intersection of the two is approximately 6km to the south of the borehole and separated by hydraulic divide (Whittle Brook). Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A109	2568004016, borehole at Daresbury, near Warrington	United Utilities Water Plc	357680 , 382040*	Public Water Supply, Potable Water Supply - Direct	1246000	Draft Order Limits are inside of SPZ3, and the intersection of the two is less than 500m to the north-east of the source. Screened in.
A110	2568001159, borehole at Eddisbury, Northwich, Cheshire	United Utilities Water Plc	Unknown	Public Water Supply, Potable Water Supply - Direct	909200	Draft Order Limits are outside of SPZ3 and the borehole is located over 5.6km to the south-west and up hydraulic gradient of the nearest Draft Order Limits. Screened out.
A111	2568005008, boreholes (2) at Helsby P.S.	United Utilities Water Plc	348341 , 374256*	Public Water Supply, Potable Water Supply - Direct	454600	Draft Order Limits is outside of SPZ zone and located over ~ 1.5km to south-east and up hydraulic gradient of the nearest Draft Order Limits. Screened out.
A112	2569025037, borehole (1) and wells (2), Eccleston Hill, St. Helens	United Utilities Water Plc	348810 , 394070*	Public Water Supply, Potable Water Supply - Direct	1161503	Draft Order Limits are just inside of SPZ 3, although the intersection of the two is ~ 2km to the south-east of the borehole. Screened in.
A113	Bold Heath borehole ⁺	United Utilities Water Plc	353730 , 389110*	Public Water Supply, Non-Operational Borehole	N/A	Borehole is 450m north of the Draft Order Limits and although not operational, United Utilities requested that the borehole be screened in. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A114	Broomedge borehole ⁺	United Utilities Water Plc	370760 , 386570*	Public Water Supply, Non-Operational Borehole	N/A	Borehole is 600m north-west of the Draft Order Limits, although not operational United Utilities requested that the borehole be screened in. Screened in.

Note:

* United Utilities confirmed locations whilst other locations are estimates based on believed SPZ locations.

⁺ After consultation with United Utilities two non-operational boreholes (Bold Heath and Broomedge) were requested to be included within the assessment.

Table 7B.11 Licensed non-public surface water abstractions within the ZOI

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A115	2569020016, Agden Brook at Agden Brook Farm, Altrincham	FH Cookson and Sons	372000, 386100	Agriculture, Spray Irrigation - Direct	7092	Abstraction ~ 15m from the Agden Brook and located ~400m upstream of the Draft Order Limits. Screened out.
A116	2569020060, Bridgewater Canal at Agden, Lymm	Mr Blackburn	371200, 387000	Agriculture, Spray Irrigation - Direct	6810	Abstraction from the Bridgewater Canal, ~515m to the west of the Draft Order Limits. Screened in.
A117	2569020063, River Bollin at Agden, Lymm, Cheshire	Mr Blackburn	371900, 387850	Agriculture, Spray Irrigation - Direct	13000	Abstraction from the River Bollin 26m to the east of Draft Order Limits. Screened in.
A118	2569020041, River Bollin at Heatley, Altrincham, Cheshire	FH Cookson and Sons	371360, 387980	Agriculture, Spray Irrigation - Direct	16300	Abstraction from the River Bollin 290m to the west of Draft Order Limits. Screened in.
A119	2569020015, unnamed tributary of River Bollin at Moss Brow Farm, Warburton	R and V Clegg	370700, 388600	Agriculture, Spray Irrigation - Direct	10638	Abstraction from the Old Bollin, 1.2km from the Draft Order Limits and not in direct hydraulic

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						connection. Screened out.
A120	2569017033, Caldwell Brook at Sinderland Green, Dunham Massey, Altrincham	Priestner	372900, 389500	Agriculture, Spray Irrigation - Direct	10624	Abstraction from the Caldwell Brook, located on blown sand superficial deposits and located within the Draft Order Limits. Screened in.
A121	2569017030, Sinderland Brook at Warburton, Lymm, And Dunham Massey, Altrincham	S J Booth	372100, 390500	Agriculture, Spray Irrigation - Direct	10575	Abstraction on the Sinderland Brook, located 820m downstream of the Draft Order Limits. Screened in.
A122	2569017031, Sinderland Brook at Sinderland Green Dunham Massey, Altrincham	Priestner	373100, 390500	Agriculture, Spray Irrigation - Direct	17661	Located immediately upstream of the Draft Order Limits. Screened in.
A123	2569020067, Bridgewater Canal at Agden	FH Cookson and Sons	370250, 387400	Agriculture, Spray Irrigation - Direct	13650	Abstraction located on the Bridgewater Canal 1.5km to the west of the Draft Order Limits. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A124	2569020065, Heatley fed by tributary of the River Bollin at Heatley Lymm	Priestner	370120, 388000	Agriculture, Spray Irrigation - Direct	13640	Abstraction from a pond which is fed by a tributary of the River Bollin. The abstraction is 1.5km to the west of the Draft Order Limits and not in direct hydraulic connection. Screened out.
A125	2568001028, rookery pool at Vale Royal Abbey, Whitegate	Vale Royal Abbey Golf Club	363300, 370100	Industry, Spray Irrigation - Direct	28004	Abstraction from rookery pool, located 70m to the south and downslope of the Draft Order Limits. Screened in.
A126	2568001206, Pettypool Brook at Whitegate, Winsford, Cheshire	A J E C Thorley	364800, 368800	Agriculture, Spray Irrigation - Direct	34550	Abstraction is within the Draft Order Limits. Screened in.
A127	2568001173, R. Weaver at LH's premises, Winsford, Cheshire	Compass Minerals UK Limited	365300, 368200	Industry, Process Water	28000	Abstraction on the River Weaver, located 200m to the south of the Draft Order Limits. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A128	2569020059, River Bollin at Warburton, Lymm	R and V Clegg	370500, 388400	Agriculture, Spray Irrigation - Direct	17048	Located 1.22km to the west and downstream of the Draft Order Limits. Screened in.
A129	2569020010, River Bollin at Warburton, Lymm, Cheshire	FH Cookson and Sons	370450, 388450	Agriculture, Spray Irrigation - Direct	13650	Located 1.29km to the west and downstream of the Draft Order Limits. Screened in.
A130	2568001018, Petty Pool, Sandiway fed by unnamed tributaries of River Weaver	Sandiway Golf Club Ltd	361900, 370200	Industry, Spray Irrigation - Direct	2273	Abstraction on the Petty Pool (pond/lake) on a tributary of the River Weaver, ~3.5km downstream and only 300m to the south-west of the Draft Order Limits. Screened in.
A131	NW/068/0003/007, tributary of River Weaver at Hartford Golf Club	Hartford Golf And Leisure Limited	363501, 373169	Industry, Spray Irrigation - Spray Irrigation Definition Order	5400	Located ~1.25km of the River Weaver and ~6km upstream of the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A132	NW/068/0003/003, Cliff Brook at Acton Bridge, Northwich, Cheshire	Ej and Jr Woodward	359051, 374614	Agriculture, Make-Up or Top Up Water	2467	Located 1.35km west and ~2.5km downstream of the Draft Order Limits. Screened in.
A133	2568003120, Acton Brook at Weaverham, Northwich	R E Ford	358700, 374700	Agriculture, Spray Irrigation - Direct	16820	Located 1.6km west and ~2.85km downstream of the Draft Order Limits. Screened in.
A134	2568003082, River Weaver at premises, Winnington, Northwich	Brunner Mond and Co Ltd	365000, 375000	Industry, General Cooling	56825000	Located 25m north and adjacent to Draft Order Limits. Screened in.
A135	2568003082, River Weaver at premises, Winnington, Northwich	Brunner Mond and Co Ltd	365000, 375000	Industry, Process Water	56825000	Located 25m north and adjacent to Draft Order Limits. Screened in.
A136	NW/068/0003/014, River Weaver Navigation at Saltersford Lock	Canal and River Trust	362690, 375139	Power generation, Hydroelectric Power Generation	252455405	Located ~3.75km Downstream and 2.3km west of the Draft Order Limits. Screened in.
A137	NW/068/0003/009, Anderton boat lift	Canal and River Trust	364778, 375355	Power generation, Hydroelectric	7568640	Located 200m south and Downstream of the Draft Order Limits. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
				c Power Generation		
A138	2568003133, pool at the head of unnamed tributary of the River Weaver, Little Leigh	J E Horton and Partners	361030, 376540	Agriculture, Spray Irrigation - Direct	4546	Located on a pond on a tributary of the River Weaver, 459m South and ~1.25km upstream of the Draft Order Limits. Screened out.
A139	2568003097, Whitley Brook at Heath Hall Farm, Little Leigh	Timothy and Robert Horton	361700, 377000	Agriculture, Spray Irrigation - Direct	1227	Abstraction from either the Ordinary Watercourse or pond which is likely fed by the Ordinary Watercourse. The Ordinary Watercourse rises within the Draft Order Limits and flows north. The abstraction is also 53m north and downslope/downstream of the Draft Order Limits. Screened in.
A140	NW/068/0003/011, hydropower intake - Dutton Sluices	Canal and River Trust	358755, 377050	Power generation, Hydroelectri	378432000	Located 156m South and ~1.3km downstream of

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
				c Power Generation		the Draft Order Limits. Screened in.
A141	2568003097, Whitley Brook (tributary) at Heath Hall Farm, Little Leigh	Timothy and Robert Horton	361200, 378100	Agriculture, Spray Irrigation - Direct	1227	Located 300m east and downstream of the Draft Order Limits. This watercourse also joins the River Weaver downstream which flows through another branch of the Draft Order Limits. Screened in.
A142	2568003128, pond fed by surface drainage at Aston Heath, Aston	J E Stubbs and D R Stubbs	355700, 379500	Agriculture, Spray Irrigation - Direct	27276	Abstraction from a pond located on till, 650m to the north-east of Arley Heath and therefore no direct hydraulic connection to the Draft Order Limits. Screened out.
A143	2568004026, unnamed watercourse feeding a pond at Daresbury Farm	Daresbury Properties Ltd	358620, 382100	Agriculture, Spray Irrigation - Direct	4546	Abstraction from a watercourse feeding a pond, located on till and within the Draft Order Limits. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A144	2568004026, unnamed watercourse feeding a pond at Daresbury Farm.	Daresbury Properties Ltd	358620, 382100	Agriculture, Transfer Between Sources (Pre Water Act 2003)	4546	Abstraction from a watercourse feeding a pond, located on till and within the Draft Order Limits. Screened in.
A145	2569024005, River Mersey at Bank Quay, Warrington	Ineos Silicas Ltd	359800, 387900	Industry, General Cooling	6819000	Abstraction from Mersey and located within the Draft Order Limits. Screened in.
A146	2569024005, River Mersey at Bank Quay, Warrington	Ineos Silicas Ltd	359600, 387900	Industry, General Cooling	6819000	Abstraction from Mersey and located within the Draft Order Limits. Screened in.
A147	2568005017, unnamed watercourse feeding pond at Godscroft Hall, Frodsham	G Warburton	350300, 376700	Agriculture, Spray Irrigation - Direct	9092	Abstraction from a pond located on glaciofluvial deposits, 395m south-west of the Draft Order Limits. This pond is upslope and therefore there is no direct hydrological connection with the Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A148	2568003109, Weston Canal (Weaver Navigation) at Pumping Station, Frodsham	Canal and River Trust	351900, 379800	Industry, Conveying Materials	65462	Located 160m west and downstream of the Draft Order Limits. Screened in.
A149	2568003095, Weston Canal at Sutton, Runcorn (ICI), Sutton Causeway / West CI	Canal and River Trust	352000, 379800	Industry, Process Water	70000	Located 65m west and downstream of the Draft Order Limits. Screened in.
A150	2568004997, Weston Canal at Weston Point, Runcorn, Cheshire	British Waterways Board	351750, 379840	Industry, Process Water	10000000	Located 315m west and downstream of the Draft Order Limits. Screened in.
A151	2568004997, Weston Canal at Weston Point, Runcorn, Cheshire	British Waterways Board	351750, 379840	Industry, Non-Evaporative Cooling	10000000	Located 315m west and downstream of the Draft Order Limits. Screened in.
A152	2568009008, Manchester Ship Canal at Weston Point, Runcorn	Ineos Enterprises Group Limited	349410, 381920	Industry, General Cooling	52279000	Located on the Manchester Ship Canal ~8.4km directly downstream. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A153	2568009008, Manchester Ship Canal at Weston Point, Runcorn	Ineos Enterprises Group Limited	349430, 381980	Industry, General Cooling	52279000	Located on the Manchester Ship Canal ~8.4km directly downstream. Screened in.
A154	2569025077, St. Helens Canal at St. Helens, Merseyside	Pilkington Properties Ltd	351270, 394950	Industry, Evaporative Cooling	7273600	Abstraction from St Helens Canal ~500m north-east of the Draft Order Limits downstream. Screened in.
A155	2569025077, St. Helens Canal at St. Helens, Merseyside	Pilkington Properties Ltd	351270, 394950	Industry, General Cooling	7273600	Abstraction from St Helens Canal ~500m north-east of the Draft Order Limits downstream. Screened in.
A156	2569017032, Red Brook at Warburton, Lymm, Cheshire	FH Cookson and Sons	370030, 390780	Agriculture, Spray Irrigation - Direct	13640	Abstraction from Red Brook ~2.9km west of the Draft Order Limits with a direct downstream hydrological connection. Screened in.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A157	2568009001, Manchester Ship Canal at Ellesmere Port	Shell UK Oil Products Ltd	342700, 376900	Industry, Non-Evaporative Cooling	60000000	Abstraction from Manchester Ship Canal ~2.5km north-west of the Draft Order Limits and downhill. Screened in.
A158	2568009017, Manchester Ship Canal at Ellesmere Port	Cleanaway Ltd	342700, 376900	Industry, Gas Suppression / Scrubbing	2186670	Abstraction from Manchester Ship Canal ~2.5km north-west of the Draft Order Limits and downhill. Screened in.
A159	2568009017, Manchester Ship Canal at Ellesmere Port	Cleanaway Ltd	342700, 376900	Industry, General Cooling	2186670	Abstraction from Manchester Ship Canal ~2.5km north-west of the Draft Order Limits and downhill. Screened in.
A160	NW/068/0006/016, Inland Water - Thornton Brook at Stanlow Manufacturing	Essar Oil (UK) Ltd	343173, 375839	Industry, Hydraulic Testing	41500	Abstraction from Manchester Ship Canal ~1.6km west of the Draft Order Limits and downhill. Screened in.
A161	2568009001, Manchester Ship Canal at Ellesmere Port	Shell UK Oil Products Ltd	343500, 376900	Industry, Non-	60000000	Abstraction from Manchester Ship Canal ~1.7km north-west of the

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
				Evaporative Cooling		Draft Order Limits and downhill. Screened in.
A162	2568009001, Manchester Ship Canal at Ellesmere Port	Shell UK Oil Products Ltd	344600, 377200	Industry, Non-Evaporative Cooling	60000000	Abstraction from Manchester Ship Canal ~1.2km north of the Draft Order Limits and downhill. Screened in.
A163	NW/069/0007/002, Manchester Ship Canal, Partington, Carrington, Manchester	SAICA Paper UK Limited	46843, 372165	Industry, General Use Relating to Secondary Category (Medium Loss)	3000000	Abstraction from Manchester Ship Canal ~1.2km north of the Draft Order Limits and downhill. Screened in.

Table 7B.12 Deregulated groundwater abstractions within the Study Area

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A164	2568005010, Spring at Manley Old Hall, Manley	G J Ford and Sons	350100, 372800	Agriculture	4978	Spring is located over 3.7km from the Draft Order Limits on different bedrock geology. A dividing band of superficial till deposits is present between the spring and Draft Order Limits. Screened out.
A165	2568005002, Borehole at Mersey Bank Farm, Hapsford, Helsby	Messrs B and G Leatherbarrow	347400, 374500	Agriculture	4978	Borehole is located ~900m from the Draft Order Limits and within the same bedrock geology (Triassic sandstone) and superficial alluvium deposits. Screened in.
A166	2568001139, Spring Fed Catchpit at Brook House Farm, Winsford, Cheshire	P and R Robinson	363600, 367800	Agriculture	5810	Spring is located over 2km from the Draft Order Limits and within the same bedrock geology (Triassic mudstone, siltstone and sandstone) and same superficial deposits (glacial sand deposits). However, the Pettypool Brook provides a hydraulic divide between the spring and the Draft Order limits. Screened out.
A167	2568001005, Well at Dalefords Farm, Sandiway	J R Leech & Co	360500, 369600	Agriculture	4978	Well is located over 1.9km from the Draft Order Limits but within the same bedrock geology (Triassic mudstone, siltstone and sandstone) and within the same

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
						superficial deposits (glacial sand and gravel). However, the well is hydraulically upgradient of the Draft Order Limits. Screened out.
A168	2569021019, Excavation into U/G Strata at Caddick's Clematis Nursery, Lymm	H Caddick	366000, 387600	Agriculture	905	The excavation is located over 2.2km east of the Draft Order Limits and within the same bedrock geology (Triassic Sherwood Sandstone) and superficial deposits (alluvium). However, due to the distance and hydraulic divide caused by the Thelwall Brook, there is unlikely to be a connection between the excavation and Draft Order Limits. Screened out.
A169	2569021019, Excavation into U/G Strata at Caddick's Clematis Nursery, Lymm	H Caddick	366000, 387600	Other potable uses	905	The excavation is located over 2.2km east of the Draft Order Limits and within the same bedrock geology (Triassic Sherwood Sandstone) and superficial deposits (alluvium). However, due to the distance and hydraulic divide caused by the Thelwall Brook, there is unlikely to be a connection between the excavation and Draft Order Limits. Screened out.

ID	Licence no. and name	Operator	NGR	Use	Annual licence limit (m ³ /year)	Potential connection to the Project
A170	2569017028, Borehole at Peterhouse Farm, Gorsey Lane, Warburton	Duncan Priestner and Mark Priestner	372800, 389250	Agriculture	10000	The borehole is located ~60m from the Draft Order Limits and within the same bedrock geology (Triassic mudstone, siltstone and sandstone) and superficial alluvium deposits. Screened in.
A171	NW/068/0003/006, Crown Farm Quarry, Stoneyford Lane, Oakmere, Cheshire	Tarmac Limited	357199, 370203	Industry	1000000	The abstraction is located over 4km from the Draft Order Limits. Although the abstraction is within the same bedrock geology (Triassic mudstone, siltstone and sandstone) and superficial deposits (glacial sand and gravel), it is hydraulically upgradient of the Draft Order Limits. Screened out.
A172	NW/068/0003/006, Crown Farm Quarry, Stoneyford Lane, Oakmere, Cheshire	Tarmac Limited	357199, 370203	Industry	1000000	The abstraction is located over 4km from the Draft Order Limits. Although the abstraction is within the same bedrock geology (Triassic mudstone, siltstone and sandstone) and superficial deposits (glacial sand and gravel), it is hydraulically upgradient of the Draft Order Limits. Screened out.

5 Consented Discharges

- 1.1.6 The Environment Agency has provided information on consented discharges. Within the Draft Order Limits five consented discharges have been identified as shown in **Table 7B.13** and **Figure 7.6** of **Chapter 7: Water environment**. Only those within the Draft Order Limits are considered as having a potential to be directly influenced by the Project. Information on the volume of discharge and/or the receiving environment, i.e. whether the discharges are to surface or ground, was not provided by the Environment Agency.

Table 7B.13 Consented discharges within the Draft Order Limits

ID	Discharge no.	Site address	Discharge outlet NGR	Discharge category	Potential connection to the Project
D1	EPRAP3424GU	Porch House Farm, Runcorn Road, Higher Walton	358813, 384891	Domestic property (multiple) (including farm houses)	Discharge located within the Draft Order Limits. Screened in.
D2	016890503	East Clifton Marsh Northern Outfall	352690, 379040	Making of Chemicals and Chemical Products	Discharge located within the Draft Order Limits. Screened in.
D3	016892435	Encirc, Ash Road, Elton, Cheshire	346207, 376302	Offices administration and support	Discharge located within the Draft Order Limits. Screened in.
D4	016892436	Encirc, Ash Road, Elton, Cheshire	346207, 376302	Offices administration and support	Discharge located within the Draft Order Limits. Screened in.
D5	016892391	Weaver Sailing Club	352840, 378830	Sport, amusement and recreation / golf club / gym / theme park / spa	Discharge located within the Draft Order Limits. Screened in.

HyNet North West Hydrogen Pipeline

Delivering clean growth

