Lime Down
Solar Park

Water Framework Directive Assessment

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Revision 1

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1 Introduction

1.1 Scheme Context

1.1.1 The Lime Down Solar Scheme includes five Solar PV Sites (Lime Down A, B, C, D and E), as well as a Grid Connection Corridor (including the areas of Interconnecting Cables joining the Solar Sites). For assessment purposes, Lime Down C and E have been split into C1/C2 and E1/E2 respectively due to a railway line bisecting those areas.

1.1.2 The wider Scheme also includes associated infrastructure such as a Battery Energy Storage Systems (BESS) Area, 1 x 400 kV and 4 x 132 kV substations, internal access routes, fencing, and drainage. The Scheme is situated on predominantly agricultural land and is designed to minimise physical and ecological disturbance to surrounding water environments.

1.2 Purpose of this Assessment

1.2.1 This Water Framework Directive (WFD) Assessment has been undertaken to assess whether the Scheme could lead to deterioration in the status of nearby surface or groundwater bodies, or hinder the achievement of WFD objectives, in accordance with The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 1).

1.2.2 Specifically, this assessment considers:

- The current baseline WFD status of water bodies within or near the Scheme boundary;
- Whether the Scheme could result in deterioration or prevent future improvements in WFD status;
- Compliance with relevant measures and objectives set out in the Environment Agency (EA) & Natural Resources Wales (NRW) Severn River Basin Management Plan (2022) (Ref 2); and
- Whether any mitigation or good practice measures are needed to protect WFD objectives.

1.2.3 This assessment has been informed by consultation with the EA and the Lead Local Flood Authority (LLFA), as recorded in the submitted consultation records.

1.2.4 The Cable Corridor is subsurface infrastructure which will have a negligible impact on WFD status, therefore detail has been excluded from this assessment.

1.3 Sources of Information

1.3.1 The following sources of information have been reviewed and assessed for the purpose of this WFD Assessment:

- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 1);
- The Environment Agency (EA) & Natural Resources Wales (NRW) Severn River Basin Management Plan (2022 RBMP) (Ref 2);
- EA online flood maps (Ref 3);
- British Geological Society (BGS) Interactive Map (Ref 4);
- MAGIC Interactive Map, Aquifer Designation Data (Ref 5);
- MAGIC Interactive Map, Source Protection Zones Data (Ref 6);
- Soilscapes Mapping (Ref 7); and
- National Library of Scotland Historic Mapping (Ref 8).

2 Site Details

2.1.1 The aim of this section of the report is to outline key environmental information associated with the baseline environment.

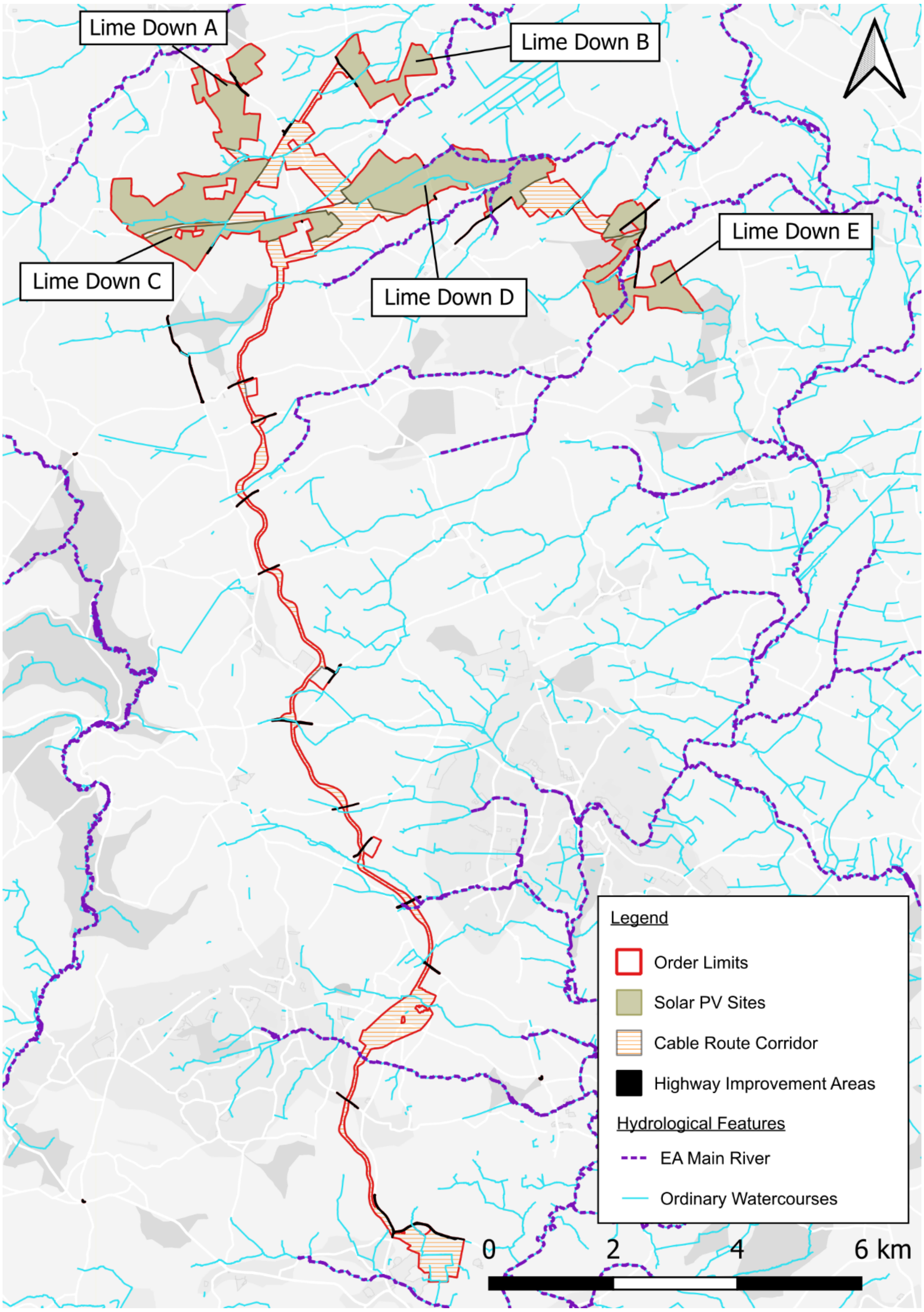

Figure 1: Site Location

2.2 Scheme Location

2.2.1 The Scheme comprises a solar photovoltaic (PV) electricity generating station of over 50 megawatts (MW) and 'associated development' comprising up to 500 MW export capacity Battery Energy Storage System (BESS), grid connection infrastructure and other infrastructure integral to the construction, operation and maintenance, and decommissioning phases.

2.2.2 The Solar PV Sites extend from Alderton Village in the west, where subsite C1 is situated, to Rodbourne Village in the east where subsites E1 and E2 are located.

2.2.3 The Scheme is located in a rural to semi-rural region, largely bounded by agricultural land. Subsites C1, C2, D, E1 and E2 are located along either side of the railway line.

2.2.4 The Order limits comprise a total area of 1,237 hectares (ha) of land located largely within the administrative area of Wiltshire Council with small areas of existing highway within the administrative area of South Gloucestershire Council.

2.2.5 The Scheme crosses several watercourses and land drainage ditches.

2.3 Topography

2.3.1 Topographic levels in metres Above Ordnance Datum (m AOD) have been taken from the EA's 1 m resolution composite LiDAR Digital Terrain Model (DTM). The data shows that the site falls from approximately 129 m AOD at the western extent (subsite C1) to around 72 m AOD in the east at Lime Down E2.

2.4 Hydrology

2.4.1 Given the scale of the Scheme there are numerous watercourses that flow within and adjacent to it. The watercourses are detailed below:

- The River Avon is located approximately 240 m north of Lime Down A;
- Gauze Brook is located approximately 30 m south of Lime Down B, 800 m south of Lime Down C2, 260 m north-east of Lime Down E1 and through the eastern extent of Lime Down D; and
- Gabriel's Well located approximately 200 m south of Lime Down E1 and through the centre of Lime Down E2.

2.4.2 There are also several Ordinary Watercourses and land drainage ditches at and surrounding the subsites, which are described in further detail within the **ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3]**.

2.4.3 The Scheme is located wholly within the Avon Bristol and Somerset North Streams Management Catchment WFD Surface Water Management Catchment and wholly within the Avon Bristol Rural Operational Catchment.

2.4.4 The Solar PV Sites are located within six Water Body locations:

- Luckington Bk;
- Tributary - source to conf Sherston Avon;
- Sherston Avon;
- Gauze Bk - source to conf R Avon (Brist);
- Rodbourne Bk - source to conf R Avon (Brist); and
- Sutton Benger Bk - source to conf R Avon (Brist).

2.5 Geology

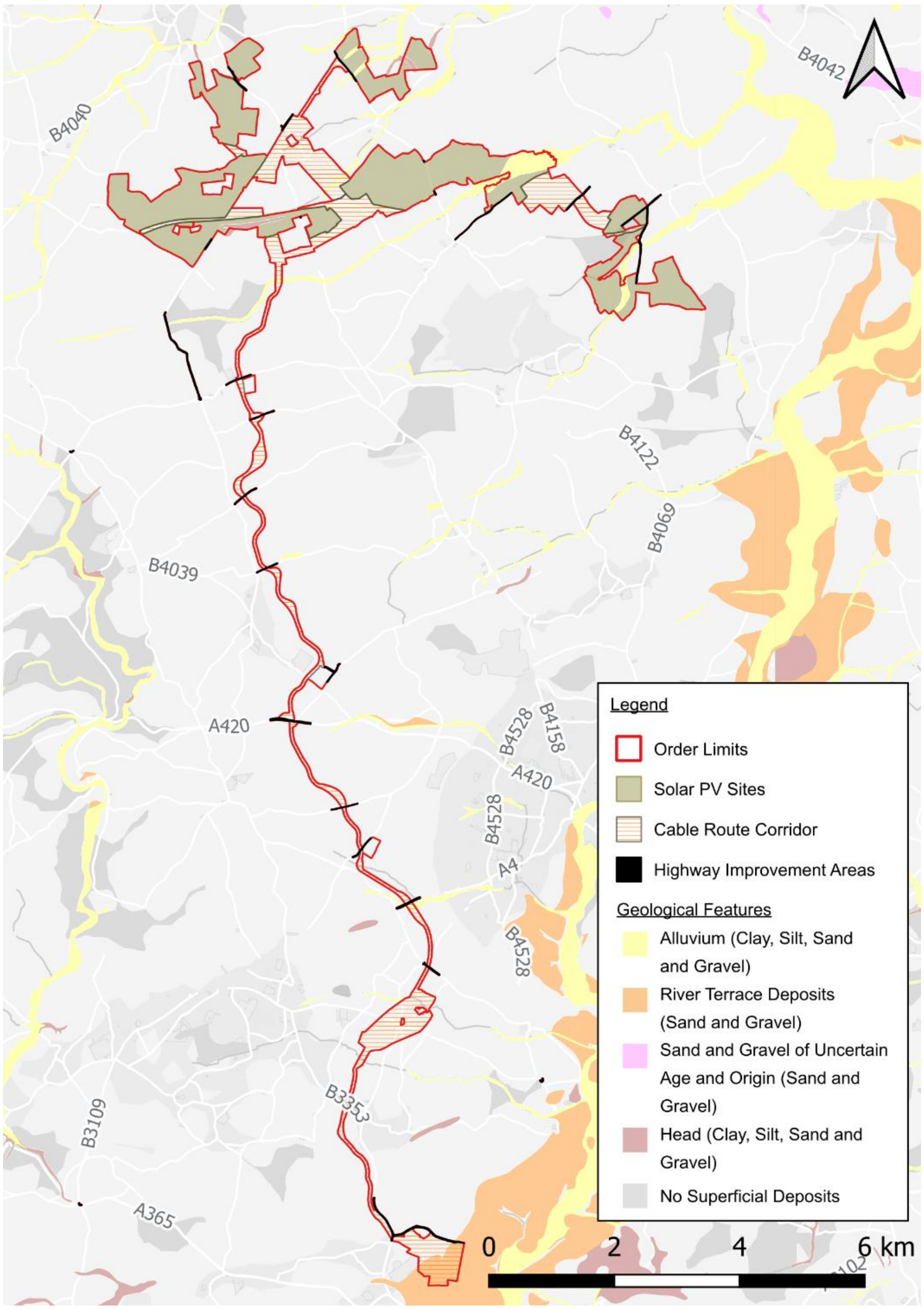

Figure 2: Superficial Deposits

2.5.1 Reference to the British Geological Survey (BGS) online mapping (1:50,000 scale) (Ref 4) indicates that the Scheme is underlain by the following superficial deposits (also in Figure 2).

- Alluvium (Clay, Silt, Sand & Gravel); and
- Head (Clay, Silt, Sand & Gravel).

2.5.2 The majority of the Scheme identified as not being underlain by any superficial deposits.

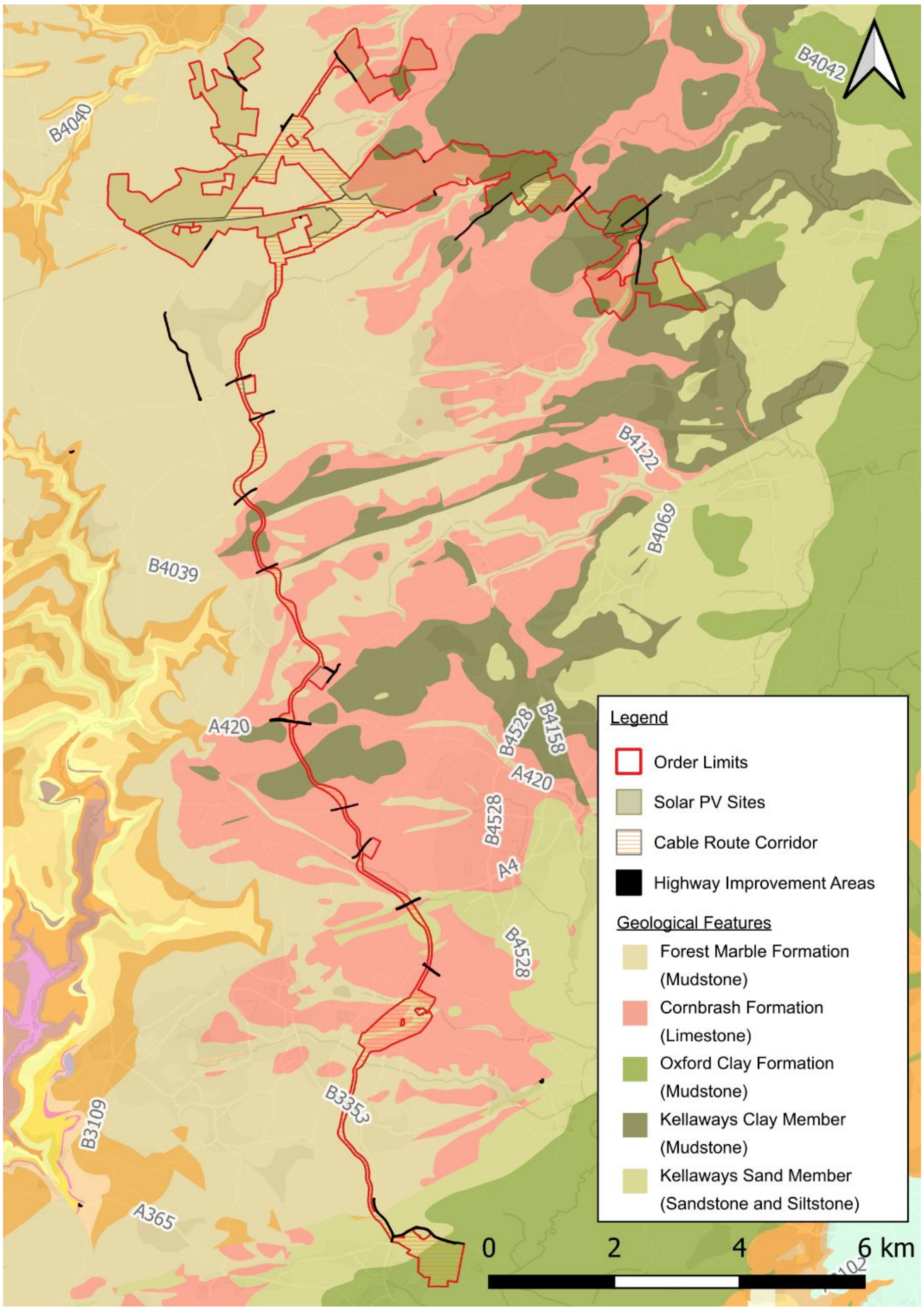

Figure 3: Bedrock Deposits

2.5.3 The Scheme is identified as being underlain by the following bedrock deposits (also in Figure 3):

- Forest Marble Formation (Mudstone);
- Cornbrash Formation (Limestone);

- Oxford Clay Formation (Mudstone);
- Kellaways Clay Member (Mudstone); and
- Kellways Sand Member (Sandstone and Siltstone, interbedded).

2.5.4 The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a site-specific basis.

2.6 Hydrogeology

2.6.1 According to the EA's Aquifer Designation data, obtained from MAGIC Map's online mapping (Ref 5), the superficial alluvium deposits are classified as a Secondary A aquifer, with the Head deposits defined as an Unproductive Aquifer.

2.6.2 The underlying bedrock deposits are classified as the following:

- Kellaways Clay Member and Oxford Clay Formation are classified as Unproductive Aquifers; and
- Forest Marble Formation, Kellways Sand Member and Cornbrash Formation are classified as Secondary A Aquifers.

2.6.3 The EA's 'Source Protection Zones' data, obtained from MAGIC Map's online mapping (Ref 6) indicates that the Solar PV Sites are located wholly within a Groundwater Source Protection Zone, defined as zones 1C, 2C and 3.

2.7 Groundwater Levels and Flow Direction

2.7.1 The following BGS borehole information was detailed in each subsite:

- Lime Down A: The closest historical BGS borehole record (BGS Ref: ST88SE9) is located in the centre of the subsite and indicates that no water strikes were encountered;
- Lime Down B: The closest historical BGS borehole record (BGS Ref: ST88NE51) is located approximately 20 m north-west of Lime Down B and indicates multiple water strikes were recorded at depths of 22m, 28m, 31m, 46m, and 62m;
- Lime Down C1: There are no legible BGS borehole records located at Lime Down C1 or in the near vicinity;
- Lime Down C2: There are no BGS borehole records located at Lime Down C2 or in the near vicinity;
- Lime Down D: There are no BGS borehole records located at Lime Down D or in the near vicinity;

- Lime Down E1: There are no BGS borehole records located at Lime Down E1 or in the near vicinity; and
- Lime Down E2: There are no BGS borehole records located at Lime Down E1 or in the near vicinity.

2.7.2 Groundwater is expected to flow locally towards drainage channels and regionally towards Gauze Brook, the River Avon and Gabriel's Well.

2.7.3 BGS records along the Cable Corridor were not investigated as the Cable Corridor is subsurface infrastructure which will have a negligible impact on WFD status. It is confirmed that no Per- and polyfluoroalkyl substances (PFAS) will be used within cables, and that they will not be fluid filled (refer to **ES Volume 1, Chapter 19: Ground Conditions [EN010168/APP/6.1]**).

2.8 Local Drainage

2.8.1 Due to the predominantly rural nature of the Scheme and the agricultural land use across most subsites, the presence of public sewerage infrastructure is considered limited. However, given the scale of the Scheme and its interface with a number of settlements, it is possible that isolated sections of public foul or surface water sewers may cross the Cable Route Corridor or lie in proximity to certain subsites. Any such infrastructure will be identified and safeguarded through detailed design and engagement with the relevant statutory undertaker, as necessary.

3 Introduction to the Water Framework Directive

3.1.1 The Water Framework Directive 2000/60/EC of the European Parliament and Council, dated 23 October 2000 (Ref 9) is a European Union (EU) directive that required member states to achieve good qualitative and quantitative status for all water bodies by 2015. The Directive defines water bodies as all groundwater and distinct, significant elements of surface water. This includes lakes, reservoirs, streams, rivers, canals, individual sections of these, as well as transitional waters (such as estuaries) and coastal waters extending up to one nautical mile from the shoreline.

3.1.2 Although the original deadline for achieving good status in all water bodies was 2015, the Water Framework Directive (Directive 2000/60/EC) permits deadline extensions under Article 4(4) where timely achievement is not possible due to technical infeasibility, disproportionate cost, or natural conditions. These extensions are linked to the six-year cycle of River Basin Management Plans (RBMPs), as defined in Article 13 of the Directive. As such, the Directive allows for up to two further RBMP cycles beyond 2015, resulting in revised target dates of 2021 and, in exceptional cases, 2027. It was not possible to achieve good status of all water bodies by 2021 and therefore the outstanding water bodies have objectives set for 2027.

3.1.3 The WFD is transposed into law in England and Wales by The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (the 2017 Regulations) (Ref 10).

3.2 Determination of Good Status

Surface Water

3.2.1 Good status is determined from the ecological and chemical status of surface waters. These statuses are assessed according to the following criteria:

- Biological quality (fish, benthic invertebrates, aquatic flora);
- Hydromorphological quality (e.g. riverbank structure, river continuity and substrate of the riverbed);
- Chemical quality (e.g. priority hazardous substances); and
- Physical-chemical quality (e.g. temperature, oxygenation and nutrient conditions).

3.2.2 Chemical quality relates to environmental quality standards set for pollutants specific to each river basin. These standards define the maximum allowable concentrations for certain substances in the water. The WFD follows a ‘one out, all out’ principle—meaning if even one pollutant exceeds its threshold, the entire water body cannot be classified as having good status. As a result, the chemical status of surface waters is assessed as either good or fail, while biological, physical-chemical quality indicators are rated on a scale of high, good, moderate, poor, or bad.

3.2.3 Under the WFD, the ecological status of surface waters is classified as high, good, moderate, poor or bad. The environmental objective for natural surface water bodies, such as rivers, lakes and coastal waters, is to achieve at least good ecological status by the target year defined in the relevant RBMP. Where water bodies have been physically modified to support uses such as flood protection, navigation or water supply, they may be designated as 'Heavily Modified Water bodies' (HMWB) (Ref 11). In such cases, achieving good ecological status may not be feasible without undermining their intended function. Instead, the objective for these water bodies is to achieve good ecological potential, which represents the best ecological outcome possible given the constraints of their modified state. Both natural and heavily modified water bodies are assessed using the same five-tier classification system, and are expected to meet their respective objectives within the specified timeframe, unless an exemption is justified.

3.2.4 These objective years, typically 2015, 2021 or 2027, are set by the EA within RBMPs in line with the WFD.

3.2.5 The Severn RBD follows national WFD policy, requiring natural surface water bodies to achieve at least good ecological status by 2027. Where water bodies have been physically altered for uses such as flood protection or navigation, they may be designated as HMWBs, with an objective to achieve good ecological potential instead. Both natural and heavily modified water bodies are assessed using the same five-tier classification system. The Severn RBMP does not set alternative objectives for HMWBs and aligns with the national framework, with most water bodies expected to meet their targets by 2027 (Ref 2).

Groundwater

3.2.6 The WFD stipulates that groundwater must achieve good quantitative status and good chemical status by their objective year. Groundwater bodies are classified as either good or poor. The quantity status considers elements such as impacts of saline intrusion, ability to serve groundwater and surface water abstractions, and ability to support groundwater dependent terrestrial ecosystems. The chemical status refers to the environmental quality standards for river basin specific pollutants and the priority substances specified under the WFD.

River Basin Management Plans

3.2.7 The WFD introduced River Basin Districts (RBDs) in order to better manage watercourses without administrative and political boundaries. Each river basin is managed to achieve at least good status according to RBMPs, which provide a clear indication of how the objectives set for the river basin are to be reached within the required timescale.

4 Water Framework Directive Assessments

4.1.1 WFD assessments are undertaken to ensure that proposed works—whether at the strategic planning stage or during detailed design and implementation—can proceed without negatively affecting the status of water bodies or hindering future improvements needed to achieve good status or potential.

4.1.2 Determining WFD compliance involves a structured process designed to identify any potentially significant effects of the Scheme. These effects are then evaluated in detail to assess whether they would breach any requirements of the WFD.

4.1.3 The assessment objectives, derived from the Environmental Objectives of the Directive, are used to determine whether the water environments impacted by the Scheme comply with the overarching objectives of the WFD:

- Objective 1: To prevent deterioration in the ecological status of the water body;
- Objective 2: To prevent the introduction of impediments to the attainment of good WFD status for the water body;
- Objective 3: To ensure that the attainment of the WFD objectives for the water body are not compromised; and
- Objective 4: To ensure the achievement of the WFD objectives in other water bodies within the same catchment are not permanently excluded or compromised.

4.1.4 The assessment process is usually as follows:

- Screening the Scheme against ecological, chemical, and quantitative status objectives and elements to determine whether the Scheme has the potential to impact any identified criteria for water bodies;
- Scoping the assessment for criteria where a potential adverse effect has been identified, in order to determine the effects on quality elements;
- Identifying significant effects in relation to ecological and supporting chemical and Hydromorphological status objectives;
- For Heavily Modified Water Bodies (HMWBs), the preferred option must also be evaluated against the applicable mitigation measures; and
- If the preferred option is expected to cause a deterioration in the status of a water body or prevent it from achieving its objectives, it must be assessed against the conditions set out in Article 4.7 of the Directive 2000/60/EC of the European Parliament and Council (Ref 9) detailed as the following:

a) All practicable steps are taken to mitigate the adverse impact on the status of the body of water;

b) The reasons for those modifications or alterations are specifically set out and explained in the RBMP required under Article 13 and the objectives are reviewed every six years;

c) The reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development; and

d) The beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

- All of these conditions must be satisfied for the option to proceed without breaching the WFD; and
- Additionally, the potential impact on other water bodies within the River Basin District must be taken into account (Article 4.8), and the protection afforded to any Protected Areas under existing Community legislation must be upheld (Article 4.9).

4.2 Assessment Methodology

4.2.1 Due to the low-impact nature of the Scheme and the minimal disturbance expected from the construction methods, as detailed in **Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1]**, the assessment was carried out using the following approach:

- Gathering baseline information to establish the current condition of nearby water bodies and evaluate their potential to meet WFD objectives now and in the future;
- Compiling baseline data specific to the Scheme;
- Engaging with the appropriate regulatory bodies; and
- Conducting an initial review of the possible significant impacts on surface water bodies, including identifying effects that may either support progress toward WFD objectives or affect the ability of the water bodies to achieve the WFD objectives.

4.2.2 The Scheme crosses multiple watercourses, including designated Main Rivers and ordinary watercourses. Further detail on watercourse crossing is detailed within **Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1]**.

4.2.3 Where minor watercourse crossings are required, these will be subject to permitting or disapplication through the DCO and will not involve any works likely to affect water body morphology or status. The route has therefore been excluded from the WFD assessment on the basis that the proposed works present no reasonable pathway for WFD deterioration or constraint to future objectives.

5 Baseline Desk Study

5.1 Catchment Characteristics

5.1.1 The Scheme covers one WFD Operational Catchment, and six water body catchments. The Scheme is located wholly within the Avon Bristol and Somerset North Streams Management Catchment and is located wholly within the Severn River Basin District (RBD). The WFD water bodies and Operational Catchments are provided as **Figure 4** and in **Table 1** below:

Table 1: Waterbody Catchments

River Basin District	Management Catchment	Operational Catchment	Water Body
Severn	Avon Bristol and Somerset North Streams Management Catchment	Avon Bristol Rural	Luckington Bk
			Tributary - source to conf Sherston Avon
			Sherston Avon
			Gauze Bk - source to conf R Avon (Brist)
			Rodbourne Bk - source to conf R Avon (Brist)
			Sutton Benger Bk - source to conf R Avon (Brist)

5.1.2 The Cable Route Corridor sits with the following catchments:

- Luckington Bk;
- Tributary - source to conf Sherston Avon;
- Sherston Avon;
- Gauze Bk - source to conf R Avon (Brist);
- Rodbourne Bk - source to conf R Avon (Brist);
- Sutton Benger Bk - source to conf R Avon (Brist);
- Avon (Brist) conf R Marden to conf Semington Bk;
- Pudding Bk - source to conf R Avon (Brist);
- Bydemill Bk - source to conf River Avon (Brist); and
- South Bk - source to conf R Avon (Brist).

5.1.3 As the cable route is subsurface infrastructure, it will have a negligible impact on WFD status.

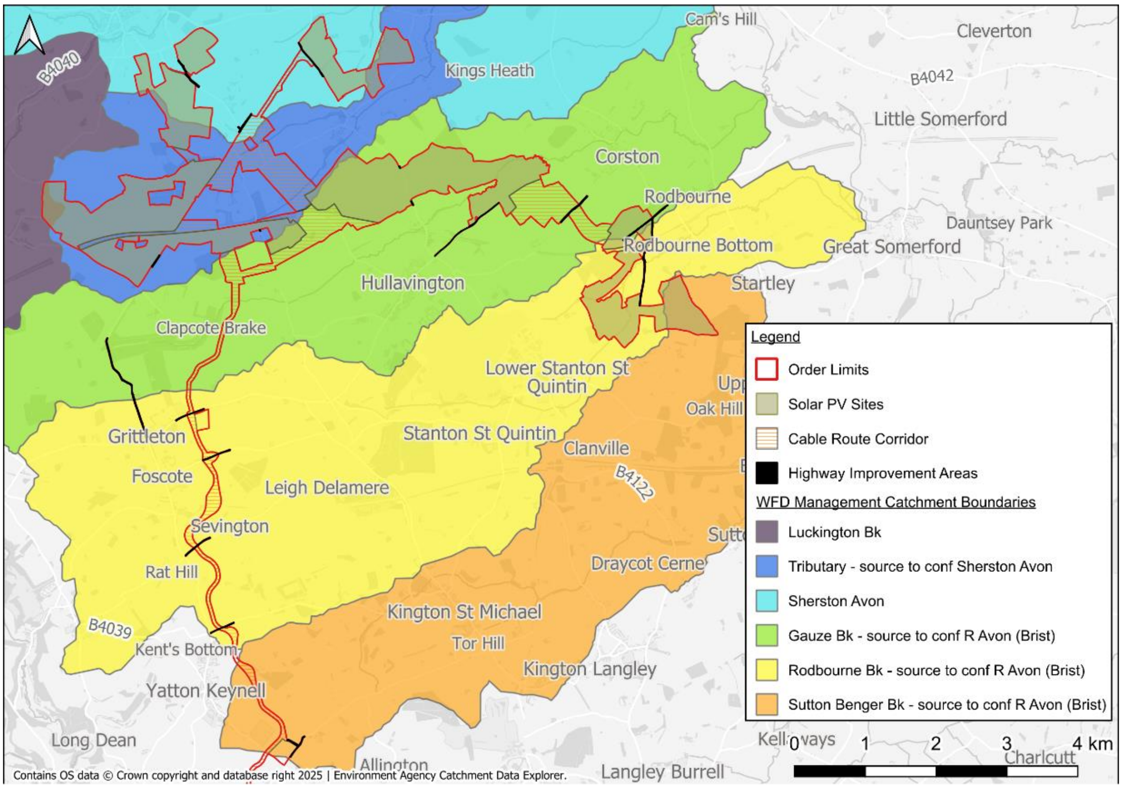

Figure 4: Waterbody Catchment

5.1.4 The six identified WFD water bodies all have very similar characteristics; therefore, broad description of their host Operational Catchment, the Avon Bristol Rural Operational Catchment, is provided below (Section 5.2). The individual WFD status tables are included as Annex A.

5.1.5 The Solar PV Sites fall within two WFD groundwater bodies. Subsites A, C1, C2, the west extent of B, the west of D and the south-western boundary of E2 are located within the Bristol Avon Forest Marble Groundwater body. The east of subsites D and B as well as the central areas of E2 are located within the South of Malmesbury Groundwater Body. The remainder of subsite E2 and all of E1 are not located within a Groundwater Body.

5.1.6 The WFD Groundwater Bodies are mapped as **Figure 5** below.

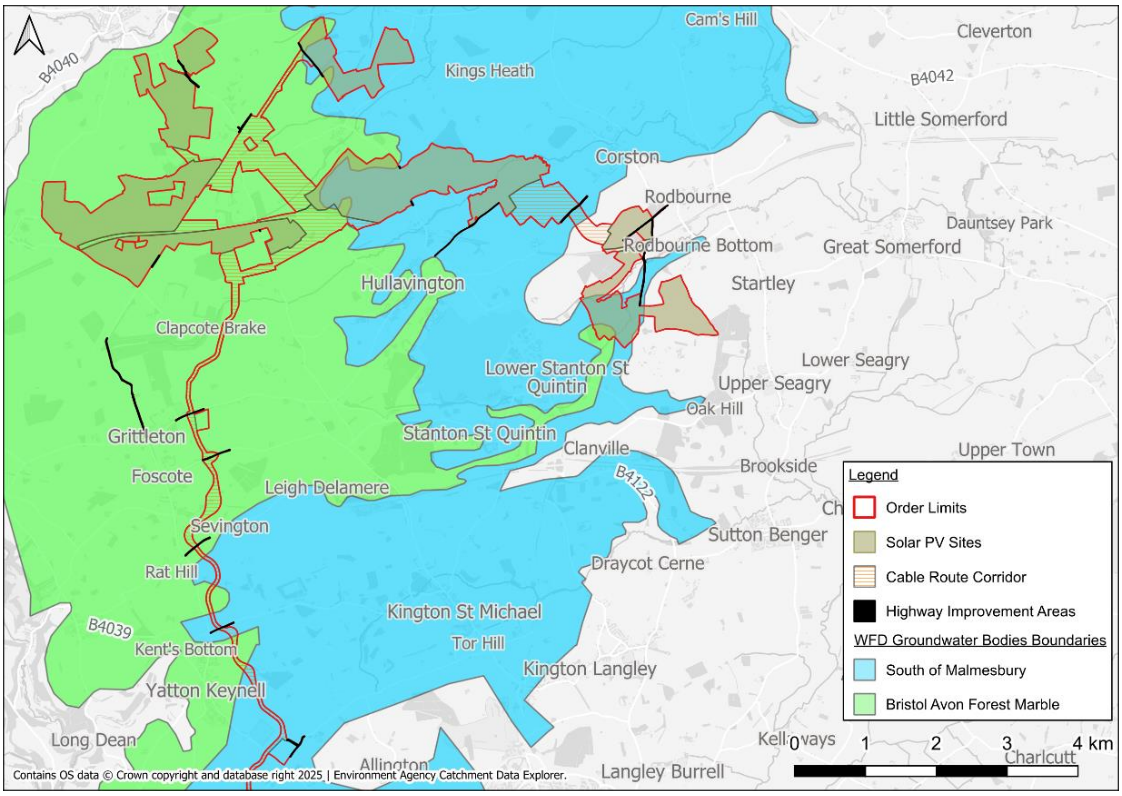

Figure 5: Groundwater Body Classifications

5.2 Avon Bristol Rural General Operational Catchment Characteristics

5.2.1 The Avon Bristol Rural Operational Catchment is a 183,314 ha catchment which ranges significantly in elevation across the catchment. LiDAR data details areas ranging from approximately 296 m AOD to the south-west of the catchment south of Oakhill, to 7 m AOD along areas of the River Chew in Keynsham.

5.2.2 However, the Solar PV Sites are situated in the upstream section of the catchment, north of Hullavington, ranging from elevations of 72 m AOD to 129 m. The northern section of the catchment, where the Scheme is located, generally flows in a south-westerly direction towards Melksham, then beyond which towards Bath, in the neighbouring catchment.

5.2.3 Due to the size of the catchment, the land use ranges from urbanised areas to rural. Urban areas, including Chippenham, Malmesbury, Westbury, Royal Wootton Bassett and Frome (as well as other smaller towns) predominately comprise residential, commercial and industrial developments, whereas the remainder of the catchment largely comprises arable farmland and improved grassland.

5.3 Avon Bristol Rural Catchment Hydrology

5.3.1 The Avon Bristol Rural Catchment has good coverage of readily available hydrology data due to the catchment size. Within the Scheme's vicinity, there is a National River Flow Archive (Ref 12) gauge situated approximately 970 m north-east of Lime Down E1. The gauge (53020 - Gauze Brook at Rodbourne), details average rainfall for the region as 801mm and 792mm for the periods 1941-1970 and 1961-1990 respectively. The mean river flow between 1968 – 2023 is 0.284m3/s and a baseflow (Q95) of 0.47m3/s.

5.4 Avon Bristol Rural Catchment Geology and Soils

5.4.1 A description of the underlying geology is included in Section 2 above.

5.4.2 Due to the size of the catchment, many soil designations are identified, therefore only the subsites have been summarised. Additionally, as the Cable Route Corridor is subsurface infrastructure, it will have a negligible impact on WFD status.

5.4.3 The Solar PV Panel Sites are detailed as largely having 'Lime-rich loamy and clayey soils with impeded drainage', 'Shallow lime-rich soils over chalk or limestone' and 'Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils', with an isolated area of 'Loamy and clayey floodplain soils with naturally high groundwater' at Lime Down D and an isolated area of 'Slightly acid loamy and clayey soils with impeded drainage' in Lime Down E2.

5.5 Avon Bristol Rural Historical Channel Change

5.5.1 Analysis of the historical mapping record National Library of Scotland (NLS, 2025, Ref 8) reveals very little channel change at the Scheme location over long-term and more recent timeframes respectively. This is because modifications to watercourses and excavation of land drainage ditches for agriculture took place many centuries before the emergence of formal mapping.

5.6 Avon Bristol Rural WFD Status

5.6.1 The most recent (2022) WFD status (Ref 13) of the six screened-in surface water bodies and ground water bodies are provided in **Table 2** overleaf:

Table 2: Summary of WFD Surface Water and Groundwater Bodies

	Surface Water (Avon Bristol Rural)					
Water Bodies	Luckington Bk	Tributary - source to conf Sherston Avon	Sherston Avon	Gauze Bk - source to conf R Avon (Brist)	Rodbourne Bk - source to conf R Avon (Brist)	Sutton Benger Bk - source to conf R Avon (Brist)
Water Body ID	GB109053027665	GB109053027680	GB109053027690	GB109053027730	GB109053027720	GB109053027700
Artificial or Heavily Modified Water Body?	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified	Not designated artificial or heavily modified
Overall Ecological Status	Good	Good	Poor	Moderate	Moderate	Good
Biological Quality Elements	Good	Good	Poor	Good	Moderate	Good
Physio- Chemical	Good	Good	Good	Moderate	High	High
Hydro-morphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	Supports Good	Supports Good
Chemical	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment
Priority Hazardous	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment
Other Pollutants	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment	Does Not Require Assessment

	Groundwater	
Water Body	Bristol Avon Forest Marble	South of Malmesbury
Water Body ID	GB40902G302900	GB40901G806000
Overall Water Body	Good	Poor
Quantitative	Good	Poor
Quantitative Status Element	Good	Poor

6 WFD Screening

6.1.1 The purpose of the WFD screening stage is to determine the area of influence of the Scheme and assess whether this influence could potentially have an adverse impact on WFD water body receptors. This stage also identifies specific elements of the Scheme that may affect the WFD status of those receptors, which are then taken forward for further assessment. Water body receptors that are screened out, meaning they are not considered to be at risk, are not carried forward and do not require further consideration, with justification provided for their exclusion.

6.1.2 Certain activities on or near waterbodies are exempt from the requirement for Environmental Permits for Flood Risk Activities, and hence would be unlikely to require WFD assessments, as summarised in **Table 3**, below. However, where such activities could still affect water body status, they may be considered as part of a WFD assessment in line with Article 4 of the Directive.

Table 3: Summary of Environmental Permits for Flood Risk Activities

Activity	Type of Modification
Low impact maintenance activities (encourage removal of obstructions to fish/eel passage)	Re-pointing (block work structures)
	Void filling ('solid' structures)
	Re-positioning (rock or rubble or block work structures)
	Replacing elements (not whole structure)
	Re-facing
	Skimming/covering/grit blasting
	Cleaning and/or painting of a structure
Temporary Works	Temporary scaffolding to enable bridge re-pointing
	Temporary clear span bridge with abutments set-back from bank top
	Temporary cofferdam(s) (if eel/ fish passage not impeded)
	Temporary flow diversion (if fish/eel passage not impeded) such as flumes and porta-dams
	Repair works to bridge or culvert which do not extend the structure, reduce the cross-section of the river or affect the banks or bed of the river, or reduce conveyance
	Excavation of trial pits of boreholes in byelaw margin
	Structural investigation works of a bridge/ culvert/ flood defence such as intrusive tests, non-intrusive surveys
Footbridges	Footbridge over a main river not more than 8 m wide from bank to bank
	Bridge deck/parapet replacement/repair works

Service Crossing	Service crossing below the riverbed, installed by directional drilling or micro tunnelling if more than 1.5 m below the natural bed line of the river
	Service crossing over a river. This includes those attached to the parapets of a bridge or encapsulated within the bridge's footpath or road
	Replacement, installation or dismantling of service crossing/ high voltage cable over a river
Other Structures	Fishing Platforms
	Fish/ eel pass on existing structure (where <2% water body length is impacted)
	Cattle drinks
	Mink rafts
	Fencing (if open panel/chicken wire) in byelaw margin
	Outfall to a river ≤300 mm diameter

6.2 Screening of WFD Surface Water Bodies

6.2.1 The scheme interacts with a number of WFD surface water bodies. Screening of these water bodies is provided in **Table 4**.

Table 4: Screening of WFD Surface Water Bodies

WFD Surface Water Body	Screened in/out
Luckington Bk	In
Tributary - source to conf Sherston Avon	In
Sherston Avon	In
Gauze Bk - source to conf R Avon (Brist)	In
Rodbourne Bk - source to conf R Avon (Brist)	In
Sutton Benger Bk - source to conf R Avon (Brist)	In

6.2.2 The footprint of the Solar PV Panels interacts with these water bodies and therefore there is a risk to WFD quality elements and the ecological and chemical status of each receptor water body. Therefore, these water bodies are screened in for further assessment below.

6.3 Screening of WFD groundwater bodies

6.3.1 The Scheme interacts with a number of WFD groundwater bodies. WFD Screening of these water bodies is provided in **Table 5**.

Table 5: Screening of WFD groundwater bodies

Water Body	Screen In/Out
Bristol Avon Forest Marble	In
South of Malmesbury	In

6.3.2 Groundwater bodies designated under the WFD lie beneath the Solar PV Panel areas and may be affected depending on foundation or excavation depth and the thickness of overlying superficial deposits. As such, these groundwater bodies have been included for further assessment. However, this decision has been made on a precautionary basis and may be revised should more detailed information become available.

6.4 Screening of Activities

6.4.1 The Scheme comprises a number of activities that present a potential risk to the WFD status of the water body identified in the previous section. The screening assessment of activities pertaining to the Scheme is provided in **Table 6**.

Table 6: Summary of Screening Assessment of Activities Pertaining to the Scheme

Activity	Type of Modification
The development of the Scheme including Solar PV Panels and associated electrical equipment, BESS Area and access.	The Scheme falls within the following water body catchments: • Luckington Bk • Tributary - source to conf Sherston Avon • Sherston Avon • Gauze Bk - source to conf R Avon (Brist) • Rodbourne Bk - source to conf R Avon (Brist) • Sutton Benger Bk - source to conf R Avon (Brist) Construction, operation and maintenance and decommissioning phases pose a potential risk to WFD receptors or may prevent the identified water bodies from reaching their objectives. This is however a conservative assessment, and potential mitigations are considered below.
Cable Route Corridor	The Cable Route Corridor sits with the following catchments: • Luckington Bk • Tributary - source to conf Sherston Avon • Sherston Avon • Gauze Bk - source to conf R Avon (Brist)

	• Rodbourne Bk - source to conf R Avon (Brist) • Sutton Benger Bk - source to conf R Avon (Brist) • Avon (Brist) conf R Marden to conf Semington Bk • Pudding Bk - source to conf R Avon (Brist) • Bydemill Bk - source to conf River Avon (Brist) • South Bk - source to conf R Avon (Brist) This is however a conservative assessment, and potential mitigations are considered below. As the cable route corridor is subsurface infrastructure, it will have a negligible impact on WFD status.

7 Mitigation associated with the WFD

7.1 Embedded Mitigation

7.1.1 A range of embedded mitigation measures have been incorporated into the design of the Scheme to avoid or minimise adverse effects on WFD-designated waterbodies. These measures are integral to the Scheme and will be implemented across all phases, including construction, operation, and decommissioning. The full embedded mitigation recommendations are listed within **Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1]**; however, the measures listed below are those most relevant to minimising impacts on the water environment in the context of the Water Framework Directive.

<u>Drainage and Surface Water Management</u>

- A minimum 8 m buffer zone will be maintained around all Main Rivers and Ordinary Watercourses, reducing the risk of direct disturbance, sediment mobilisation, and water quality deterioration. This is an improvement over the baseline scenario, where arable farming typically involves ploughing closer to ditches than the proposed separations, resulting in better drainage outcomes.
- Linear infiltration trenches will be incorporated around isolated infrastructure (e.g. string inverters or cable jointing pillars) within panelled areas to manage surface water at source, mimic the undeveloped state, and prevent lateral surface water migration;
- Where practicable, runoff from equipment and access tracks will be directed to permeable SuDS features such as gravel-filled trenches or French drains, or similar passive drainage features appropriate to local conditions;
- The construction of the cable route will include several watercourse crossings which are described and mapped within **ES Volume 3, Appendix 11-9: Flood Risk Assessment and Drainage Strategy - Lime Down Cable Route Corridor [EN010168/APP/6.3]**. While works would ordinarily require Flood Risk Activity Permits from the Environment Agency and Land Drainage Consents from the Lead Local Flood Authority, it is intended that these requirements be disapplied through the Development Consent Order. Protective provisions have been included in the draft DCO to ensure that both the EA and LLFA retain oversight and control over the proposed works where relevant;
- Access to the Scheme during construction, operation and maintenance, and decommissioning phases will be taken from new

permeable or existing farm tracks accessed from the local highway network. This limits the potential for increased surface water runoff rates and sedimentation effects during construction/decommissioning;

- Where practicable, existing access tracks would be retained to limit the requirement to develop new access which can disturb soils and lead to compaction. Where new access tracks are required, they would be designed to avoid crossing drainage ditches, where practicable. Appropriate soil handling and storage protocols are set out in the **Outline Soil Resources Management Plan [EN010168/APP/7.15]**;
- The Scheme layout has been developed to maximise separation of infrastructure from drainage ditches and watercourses, including those managed by the Internal Drainage Board;
- Surface water runoff from equipment, substations, and battery energy storage areas will be managed through a combination of permeable surfacing, lined gravel infiltration trenches, and other sustainable drainage systems (SuDS) features, attenuating flows up to the 1 in 100-year event plus 45% climate change allowance; and
- Where practicable, runoff from access tracks and hardstanding will be directed to gravel-filled trenches or French drains, ensuring infiltration and protection of baseline hydrology.

<u>Watercourse Crossings and HDD Installation</u>

- Where the cable route crosses designated watercourses, Horizontal Directional Drilling (HDD) will be used to avoid direct disturbance of channel morphology; and
- An HDD breakout contingency procedure will be secured through the detailed Construction Environmental Management Plan (CEMP) to contain and remediate any inadvertent returns of drilling fluid.

<u>Water Quality and Pollution Prevention</u>

- An **Outline CEMP [EN010168/APP/7.12]** accompanying the DCO application, describes water management measures to control surface water run-off and drain hardstanding and other structures during the construction, operation and decommissioning of the Scheme;
- The detailed CEMP will include a Pollution Prevention Plan detailing how fuels, lubricants, and chemicals will be handled and stored to prevent contamination of surface water and groundwater;

- All fixed plant used on the site will be self-bunded, and mobile plant will be maintained in good condition and fitted with drip trays where appropriate;
- Where trenchless crossing techniques such as HDD are used, appropriate environmental controls will be implemented to manage the risk of drilling fluid escape. This includes procedures to detect and respond to potential breakouts. These measures will be secured through the detailed CEMP, based on the commitments set out in the **Outline CEMP [EN010168/APP/7.12]**;
- Emergency spill kits will be available on all mobile plant and at designated locations, and site personnel will be trained in spill response procedures;
- Concrete wash water will be contained in designated facilities to prevent uncontrolled discharge;
- A Water Management Plan (which will form part of a detailed CEMP) will include details of pre-construction, construction, and post-construction water quality monitoring. This will be based on a combination of visual observations and reviews of the Environment Agency's automatic water quality monitoring network; and
- Beyond this, construction/decommissioning groundworks would be kept as far from the from watercourses/drainage ditches as reasonably practicable.

Firewater and Spill Containment

- Substations and battery energy storage areas will incorporate lined and bunded surfaces, with drainage systems fitted with automatically actuating shut-off valves to isolate the system in the event of firewater runoff or significant spills; and
- Firewater will be retained on site for testing, treatment, and safe disposal as required in consultation with regulators.

Soil Management and Baseline Improvement

- An **Outline Soil Resources Management Plan (OSRMP) [EN010168/APP/7.15]** will be implemented to protect soil structure, limit compaction, and maintain infiltration capacity;
- Wildflower and grass mixes will be established under and around the Solar PV Panels, stabilising soils and reducing erosion compared to the current arable farming use; and

- Removal of arable cultivation will eliminate the routine application of nitrates and pesticides, reducing long-term diffuse pollution risks to local watercourses.

7.1.2 These embedded mitigation measures will be secured by DCO requirement and detailed in the **Outline CEMP [EN010168/APP/7.12],** the **Outline Soil Resources Management Plan [EN010168/APP/7.15],** the **Outline Landscape and Ecological Management Plan [EN010168/APP/7.18],** and associated management plans. Collectively, they are designed to ensure that the Scheme does not result in deterioration of WFD status or prevent future improvements in line with the Severn River Basin Management Plan objectives.

8 Potential Significant Effects under the WFD

8.1.1 An assessment of the potential likely significant effects of the Scheme during the construction, operation and maintenance, and decommissioning phases has been undertaken within **ES Volume 1, Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1].** This assessment has been structured to describe each effect, explain the sensitivity of the receptor and the magnitude of the impact, set out the embedded mitigation measures proposed, and identify the overall significance of residual effects in the context of the Water Framework Directive.

8.1.2 The potential likely significant effects of the Scheme during decommissioning are expected to be the same as, and no worse than, those encountered during the construction phase. Accordingly, the effects described below for the construction phase are also anticipated to arise during decommissioning. See **Table 7** below.

Table 7: Summary of Likely Significant Impacts of the Scheme

Likely Significant Effect	Description
Construction/Decommissioning Phase	
Mud and Debris Blockages	There is the potential for mud and debris generated during construction activities to enter existing surface water and land drainage systems, leading to blockages and restricted flows. This could lead to the mobilisation of sediment, mud, and debris into nearby watercourses and land drainage systems, increasing the risk of pollution and affecting the water environment. A robust maintenance regime will be secured through the **Outline CEMP [EN010168/APP/7.12]** and maintained throughout the construction phase. Equivalent safeguards will be secured during the decommissioning phase through the **Outline Decommissioning Strategy [EN010168/APP/7.14],** which set out requirements for site drainage design, surface water management, and maintenance strategies. Temporary drainage infrastructure and sediment control measures, such as silt fencing and settlement ponds, will be implemented where required to prevent uncontrolled discharges. This results in a residual effect that is Negligible and not significant in EIA terms. The duration of any impact would be short-term and limited to the construction phase only.
Temporary Increase in Impermeable Area	During the construction phase, temporary areas of hardstanding and compacted ground will be created to accommodate construction compounds, access tracks, and material storage. These surfaces have the potential to increase the volume and rate of surface water runoff compared to the existing baseline, resulting in more rapid

	discharge to local watercourses or increased overland flow. If unmanaged, this could also elevate downstream flood risk and affect water quality. These risks will be appropriately managed through embedded mitigation measures, including the installation of temporary drainage infrastructure, vegetated buffer strips, and linear infiltration trenches, as outlined in the **Outline CEMP [EN010168/APP/7.12]** and **Drainage Strategy [EN010168/APP/6.4]**. Equivalent safeguards will be implemented during the decommissioning phase via the **Outline Decommissioning Strategy [EN010168/APP/7.14].** The sensitivity of the receiving environment is considered to be Medium as the Scheme is currently greenfield and adjacent watercourses are designated under the Water Framework Directive. With embedded mitigation in place, the magnitude of impact is considered to be Negligible. The residual effect is therefore assessed as Minor Adverse and not significant in EIA terms. The duration of this effect is short-term, limited to the active construction and decommissioning phases only.
Compaction of Soils	Temporary increases in soil compaction during the construction phase have the potential to increase flood risk both within and outside of the Scheme. Temporary hardstanding and the movement of vehicles and heavy plant could lead to more rapid surface water runoff to local watercourses or an increase in overland flow. As the Scheme is currently agricultural, there is potential for overland flows to be created and for localised flooding to occur, particularly during high rainfall events. The construction of access tracks and the movement of heavy machinery may compact soils, reducing their permeability and aeration. This can lead to increased surface water runoff and reduce the soil’s ability to support vegetation. Although the underlying superficial geology is of low permeability and currently in agricultural use, construction activity could still cause temporary, localised deterioration in soil structure. Embedded mitigation measures include the retention of existing access tracks where practicable, limiting construction traffic to designated routes, and implementing soil handling and reinstatement protocols as set out in **Section 11.9, the Outline CEMP [EN010168/APP/7.12]**, and **the Outline Soil Management Plan [EN010168/APP/7.15].** Taking embedded mitigation into account, the magnitude of impact is considered to be Low. The sensitivity of receptors, including Water Framework Directive–designated surface water bodies, is Medium. The residual effect is therefore assessed to be Minor Adverse and not significant in EIA terms. This effect would be temporary, limited to the construction phase.
Silt-laden Runoff	During the construction and decommissioning phases, a range of activities have the potential to generate sediment-laden runoff and adversely impact the local water environment. Excavation, earthworks, concreting, dewatering, and the

	movement of heavy machinery can produce substantial volumes of silty runoff. This runoff may also contain hydrocarbons and other construction-related materials, posing a risk of pollution to nearby surface water, groundwater, and the ecological receptors they support. Embedded mitigation measures will be implemented from the outset of construction to minimise the potential for sediment mobilisation and prevent silt migration to receiving waterbodies. These measures include perimeter buffer zones around sensitive receptors, use of silt fencing and temporary swales, control of water at source through staged excavation and working areas, and provision of designated washout and refuelling zones. These measures are secured through **the Outline CEMP [EN010168/APP/7.12]** and the Water Management Plan to be produced with the detailed CEMP. Taking embedded mitigation into account, the magnitude of impact on surface and groundwater quality is considered to be Low. The sensitivity of receptors, including Water Framework Directive–designated surface water bodies, is considered to be Medium, as the receiving environment includes surface watercourses and unproductive aquifers. The residual effect is therefore assessed to be Minor Adverse and not significant in EIA terms. This effect would be temporary, limited to the construction phase.
Spillages, Leakages and Pollutants	During construction and decommissioning, a range of substances will be stored and used across the Scheme, including fuels, hydraulic fluids, solvents, grouts, paints, and detergents. If not properly managed, these substances could be mobilised by rainfall or site runoff, entering surface water or infiltrating to groundwater, with potential to degrade water quality and affect aquatic and terrestrial ecosystems within and downstream of the Site. Embedded mitigation measures will be implemented from the outset to prevent and contain pollution incidents. These include bunded storage areas for fuels and chemicals, designated refuelling zones set away from sensitive receptors, routine inspection and maintenance of plant and equipment, provision of spill kits at key locations, and staff training in spill response protocols. These measures are secured through the **Outline CEMP [EN010168/APP/7.12]**, which includes commitments to pollution prevention, emergency response, and the secure storage, handling, and disposal of potentially polluting substances in compliance with the Water Resources Act 1991 and other relevant regulations. An Emergency Response Plan will be in place to ensure any incidents are contained and remediated quickly. A precautionary approach has been adopted in the assessment, recognising that construction compounds could be located near existing drainage features. The sensitivity of the water environment is considered to be High, particularly due to the presence of a Drinking Water Groundwater Safeguard Zone within the central part of the BESS site. Taking embedded mitigation into account, the magnitude of impact is assessed to be Negligible. The

	resulting effect on water resources from potential spillages, leakages or pollutants is therefore assessed to be Minor Adverse and not significant in EIA terms. This effect would be temporary, limited to the construction phase.
Increase in Highway Routine Runoff/Spillage Risk	During the construction phase, traffic movements across the Site are more frequent and diverse than during operation, with regular HGV access, movement of plant and delivery vehicles, and temporary facilities such as welfare and material storage areas. These activities have the potential to generate silt-laden runoff and mobilise contaminants such as fuel and oil during rainfall, presenting a temporary risk to the surrounding water environment and to meeting Water Framework Directive (WFD) objectives for local surface and groundwater bodies. Embedded mitigation measures have been incorporated into the Scheme design to reduce this risk. These include the use of permeable surfaces such as compacted gravel for access tracks and working areas, promoting infiltration and reducing runoff. Linear infiltration trenches are proposed alongside key routes and compounds, providing near-source drainage and limiting flow conveyance. Watercourses are protected by a minimum eight metre development-free buffer, and temporary measures such as silt fencing and straw bales will be used as required during early works and soil handling. Vegetated buffers and wildflower margins will also be used where practicable to intercept suspended solids and reduce erosion, supporting compliance with WFD requirements to prevent deterioration in water body status These drainage and pollution prevention measures are secured through the **Outline CEMP [EN010168/APP/7.12]** and described in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy Covering Report [EN010168/APP/6.3].** The sensitivity of the water environment is considered to be High due to the presence of minor surface watercourses within the Site and its location within a Drinking Water Groundwater Safeguard Zone. With the embedded mitigation in place, the magnitude of impact is Negligible. The resulting residual effect on water quality from highway-related runoff and spillages during construction is assessed to be Minor Adverse, temporary, and not significant in EIA terms.
Increased Demand on Water Supply	Water usage during the construction phase will be limited and temporary, primarily related to welfare facilities, dust suppression, and occasional equipment wash-down. Water will be sourced from a mains connection where practicable or delivered by a licenced water supplier. No abstraction from local surface water features or groundwater is proposed. The Scheme does not rely on sensitive water sources for construction activities, and the temporary increase in demand is not expected to affect the availability of public or private supplies. Embedded mitigation includes coordination with the appointed contractor and utilities provider to ensure continuity of supply and avoid disruption to other users. Where needed, tankered

	supply may be used as a contingency. These controls are addressed further in the **Outline Water Resources Strategy [EN010168/APP/7.25]** and secured through the **Outline CEMP [EN010168/APP/7.12].** The sensitivity of the local water environment is considered to be Low, and the magnitude of additional demand is considered to be Negligible. When accounting for embedded mitigation and the short duration of construction activities, the residual effect on water supply is assessed to be Negligible, temporary, and not significant in EIA terms.
HDD and Drilling Fluid Breakout Risk	The use of HDD to install cables beneath watercourses and sensitive areas presents a residual risk of drilling fluid breakout (frac-out), particularly where ground conditions include fractured geology or shallow groundwater. In the event of a breakout, drilling fluids could migrate to the surface or directly enter watercourses or groundwater, temporarily affecting water quality and potentially impacting ecological receptors. To mitigate this risk, the Scheme includes embedded controls secured through the **Outline CEMP [EN010168/APP/7.12], OEMP [EN010168/APP/7.13]**, and a Water Management Plan to be produced at the detailed design stage. These documents will incorporate a breakout contingency procedure, which will require works to stop immediately in the event of a breakout. The procedure will include containment measures, clean-up methods, and regulatory notification protocols to ensure environmental protection. The sensitivity of surrounding water resources to drilling fluid breakout risk is considered to be Medium. With the mitigation measures in place, the residual magnitude of effect is considered to be Low, and the significance is Minor Adverse. The effect would be temporary, limited to the construction phase, and is not significant in EIA terms.
Inappropriate Wastewater Disposal from Welfare Facilities	During construction and decommissioning, foul wastewater will be generated from welfare facilities used by site personnel. In the absence of appropriate collection and disposal arrangements, there is a risk that untreated wastewater could be discharged to ground or enter local watercourses, leading to contamination of surface water and groundwater and potential harm to ecological receptors. Embedded mitigation measures include the provision of self-contained welfare facilities sized appropriately to accommodate workforce requirements. These units will be supplied and maintained by a specialist contractor and will not be connected to any uncontrolled discharge points. Wastewater will be removed from site by tanker and disposed of at licensed facilities in accordance with relevant regulations. These measures are secured through the **Outline CEMP [EN010168/APP/7.12]** and **Outline Decommissioning Strategy [EN010168/APP/7.14].** The sensitivity of surrounding water resources to inappropriate wastewater disposal is considered to be Medium. However, in

	the absence of a pathway for contamination, and taking into account the limited duration of construction activities, the magnitude of impact is considered to be negligible. The residual effect is assessed to be Minor Adverse and insignificant in EIA terms.
Operation and Maintenance Phase	
Increase in Permanent Impermeable Area	During the operational and Maintenance phase, the Scheme will introduce limited areas of permanent impermeable surfacing associated with substations, battery energy storage areas, and ancillary infrastructure. Although the overall increase in impermeable area is negligible relative to the site as a whole, these surfaces will generate increased volumes of surface water runoff compared to the existing agricultural baseline. If unmanaged, this runoff could mobilise silt or contaminants and enter nearby watercourses, affecting water quality. Embedded mitigation measures include the provision of sustainable drainage systems set out in **ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3],** which confirms that runoff from permanent infrastructure will be attenuated to greenfield rates for all design storm events up to and including the 1 in 100-year event plus 45% climate change allowance. Measures such as lined gravel surfacing, infiltration trenches, and permeable surfacing will ensure that no increase in runoff rates or volumes occurs, preserving the pre-development runoff regime. The sensitivity of operational receptors, including Water Framework Directive–designated surface water bodies, is considered Medium. With the embedded measures in place, the magnitude of effect is considered Low Adverse, and the residual significance is assessed to be Minor Adverse. Effects would be long-term but are not significant in EIA terms. The Solar PV Sites are expected to drain in a manner consistent with pre-development conditions.
Increase in Discharge to Local Watercourses.	During the operational and Maintenance phase, surface water runoff from permanent infrastructure, including substations and battery energy storage areas, has the potential to increase the volume and rate of discharge to local watercourses if left unmanaged. This could alter hydrological conditions, increase sediment transport, and potentially affect the ecological status of receiving waterbodies designated under the Water Framework Directive. Embedded mitigation measures include the sustainable drainage design set out **in ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3],** which ensures that runoff from all operational infrastructure will be attenuated to greenfield rates for all relevant storm events up to and including the 1 in 100-year event plus 45% climate change allowance. Permeable surfacing, infiltration trenches, and lined gravel storage areas

	will retain runoff on site and maintain pre-development discharge rates and volumes. The sensitivity of downstream receptors, including Water Framework Directive–designated surface water bodies, is considered Medium. The magnitude of impact with the embedded mitigation is considered to be Negligible. With embedded mitigation and maintenance controls in place, the residual effect is assessed as Minor Adverse, of long-term duration, and not significant in EIA terms.
Blockage of Drainage Networks	During construction and decommissioning, mud, debris, and silt generated by earthworks and vehicle movements could enter existing surface water and land drainage systems. This material has the potential to accumulate within drains and ditches, causing blockages that impede flows and alter the baseline hydrological regime. Such changes could increase sedimentation downstream and affect the ecological status of WFD-designated watercourses. Embedded mitigation measures include implementation of the **Outline CEMP [EN010168/APP/7.12]**, which requires installation of temporary drainage controls, silt fencing, and regular inspection and maintenance of drainage features to prevent blockages. Construction activities will be sequenced to minimise exposed surfaces, and any accumulations of debris will be cleared proactively to maintain flow capacity. The sensitivity of receptors, including Water Framework Directive–designated surface water bodies, is considered to be Medium. With the implementation of embedded mitigation the magnitude of impact is considered to be Negligible. Therefore, the residual effect is assessed as Minor Adverse, of long-term duration, and not significant in EIA terms.
Diffuse Pollution Contained in Urban Runoff	During the operation and maintenance phase, surface water runoff from the Scheme and associated infrastructure has the potential to mobilise diffuse pollutants. Runoff may contain hydrocarbons, heavy metals, nutrients, debris, and silt originating from access tracks, equipment, and maintenance activities. If unmanaged, these contaminants could discharge to nearby watercourses or infiltrate to groundwater, affecting water quality and the ecological status of WFD-designated receptors. Embedded mitigation measures include the use of sustainable drainage systems described in **ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3],** which provide appropriate treatment stages for runoff. Permeable surfacing and lined gravel infiltration areas will retain and filter runoff before discharge or infiltration. Operational controls will include regular maintenance of drainage infrastructure and good housekeeping practices to prevent accumulation of contaminants. The sensitivity of surface and groundwater receptors to diffuse pollution is considered to be Medium. With embedded mitigation measures in place the magnitude of impact is

	considered Negligible. Therefore, the residual effect on water quality is considered to be Minor Adverse, of long-term duration, and not significant.
Diffuse Pollution Resulting from Fire	During the operation and maintenance phase, there is a potential risk of fire within battery energy storage areas and substations that could negatively affect the local water environment. While the risk of fire associated with panelled areas is considered low, the BESS and substation areas present a higher risk due to the nature of the equipment. Runoff generated during or following a fire could mobilise hydrocarbons, heavy metals, debris, and silt, which may be discharged to nearby watercourses or infiltrate to the underlying groundwater, resulting in deterioration of water quality. Embedded mitigation measures include the provision of lined, permeable SuDS-based drainage systems with gravel subbases and automatically actuating valves at drainage outfalls, as detailed in **ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3].** These valves are designed to automatically close in the event of a fire, isolating the affected drainage system. Retained firewater will be tested, treated, and disposed of appropriately in consultation with relevant regulators. An **Outline Battery Safety Management Plan [EN010168/APP/7.21]** will also be implemented to guide response procedures and local firewater provision. Although receptor sensitivity is High, the likelihood of uncontrolled release is low due to the robustness of embedded measures. As a result, the magnitude of impact is considered Negligible, and the residual effect is assessed as Minor Adverse, of long-term duration, and not significant in EIA terms.
Increase in Highway Routine Runoff/Spillage Risk	There is no significant traffic flow associated with the Scheme during normal operation. The construction phase represents the worst-case scenario in terms of traffic frequency and spillage risk. During the operational and Maintenance phase, vehicle movements will typically involve light maintenance vehicles and occasional deliveries, confined to designated access tracks and occurring infrequently. Occasional periods of increased activity may occur during equipment replacement or repair, but these would be temporary, planned in advance, and subject to the same embedded controls. Access tracks and hardstanding areas have been designed with embedded mitigation features that reduce the risk of pollutants entering the environment during rainfall. These include the use of permeable surfacing, such as compacted gravel, to promote direct infiltration and reduce runoff. Vegetated margins and wildflower planting are proposed along access routes and across panelled areas to filter pollutants and reduce surface erosion. Linear infiltration trenches are proposed adjacent to isolated infrastructure and access routes to retain runoff close to source. In addition, gravel-filled trenches and French drains are proposed where appropriate

	to replicate greenfield drainage conditions and minimise alteration to natural flow patterns. All watercourses within or near the Scheme are protected by a minimum eight metre development-free buffer, providing an added safeguard against direct discharge to sensitive receptors. These measures are described in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy [EN010168/APP/6.3]**, and are secured through the DCO via the **Outline CEMP [EN010168/APP/7.12]** and **Outline OEMP [EN010168/APP/7.14].** The sensitivity of surface and groundwater resources is considered High, due to the presence of a Drinking Water Groundwater Safeguard Zone and nearby watercourses. However, routine operational traffic movements are infrequent, and embedded SuDS-based mitigation features have been incorporated to intercept and manage any incidental runoff. Occasional equipment replacement activities are not expected to materially increase the risk, given their short duration and the continued application of drainage controls. Considering the low pollutant load, limited likelihood of incidents, and the effectiveness of embedded mitigation, the magnitude of impact is considered Negligible. The residual effect is therefore assessed to be Minor Adverse and not significant in EIA terms for the duration of the operational and Maintenance phase.
Disposal of Surface and Foul Water from the Scheme	Associated infrastructure such as Conversion Units, substations, and the BESS Area will increase the permanent impermeable area and associated surface water runoff. Without appropriate control, this could lead to localised surface water flooding within the Site and increase flood risk downstream. However, surface water will continue to follow existing flow paths, discharging to local land drainage ditches or watercourses in line with natural topography. The Drainage Strategy incorporates embedded mitigation measures including permeable surfacing for access routes, gravel-filled trenches and French drains adjacent to small infrastructure, and wildflower planting at the leeward edge of Solar PV Panels to intercept and attenuate surface water. The BESS and substation areas will include lined, sealed SuDS-based drainage systems with gravel subbases and pollution control features, including automatically actuating valves, which prevent runoff discharge in the event of a fire or spill. The public surface water sewer will not receive any flow from the Site. SuDS features will be sized to attenuate runoff from impermeable areas for a 1 in 100 year rainfall event plus climate change, with discharge restricted to greenfield runoff rates. The design approach ensures runoff is appropriately managed across the Site and does not result in increased flood risk. Routine operation of the Site will not involve foul water generation beyond low-volume welfare use. There is no known public foul sewer within or near the Site. Any welfare provision at substations will be served by self-contained septic tanks, emptied periodically by tanker. During occasional programmed equipment replacement periods, on-site staffing may increase

	temporarily. However, the drainage approach will remain unchanged, with tanker collections increased as needed to manage peak foul wastewater volumes. The sensitivity of surface water and groundwater resources is considered to be Low with an impact of Negligible magnitude in this context, and the embedded provision of localised firewater infrastructure, alongside the absence of reliance on abstraction or mains water connections, ensures that operational water use would not give rise to significant effects. The residual effect is assessed to be Negligible and not significant in EIA terms. Further detail is provided in the **Outline Water Resources Strategy [EN010168/APP/7.25]**.
Equipment Replacement During Operation	During the operational and Maintenance phase, there is potential for occasional replacement of equipment such as transformers, inverters, or battery energy storage units. These activities could result in localised soil disturbance and temporary increases in vehicle movements within the site. In the absence of appropriate controls, there is also a minor risk of accidental spillages of fuels, lubricants, or other hazardous substances during equipment handling and maintenance. Embedded mitigation measures include implementation of the operational maintenance protocols and pollution prevention measures set out in the **Outline OEMP [EN010168/APP/7.13], the Outline CEMP [EN010168/APP/7.12],** and **ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3].** Where works involve battery energy storage units, procedures outlined in the **Outline BSMP [EN010168/APP/7.21]** will be applied. These measures require appropriate containment during handling of equipment, use of spill kits, and immediate response to any incidents to prevent contamination of surface water or groundwater. Once replacement works are completed, the Scheme would resume normal operation, and the temporary impacts would cease. The residual impact on the Water Framework Directive is assessed as Negligible and not significant.

9 Additional Mitigation Measures associated with the WFD

9.1 Site Specific Mitigation associated with associated with the WFD

9.1.1 As detailed in Section 7, embedded mitigation measures will substantially reduce the majority of potential adverse effects on the water environment.

9.1.2 No additional mitigation measures are considered necessary. Through discussions with relevant stakeholders and the implementation of embedded mitigation, all potential impacts on hydrology, flood risk and drainage have been reduced such that no significant residual effects are expected. The embedded measures are secured through the DCO and associated management plans, and no further mitigation is proposed.

9.2 Residual Effects and Conclusions

9.2.1 This section summarises the residual effects of the Scheme on the water environment relevant to Water Framework Directive compliance, following the implementation of embedded mitigation measures.

9.2.2 With the embedded mitigation measures described in Sections 7, 8 and 9 of this assessment, all identified effects on WFD-designated waterbodies have been reduced to levels assessed as negligible or minor adverse. No residual effects are considered likely to result in deterioration of waterbody status or to prevent the achievement of relevant environmental objectives set out in the Severn River Basin Management Plan.

9.2.3 No further mitigation is proposed.

9.2.4 For completeness, it is confirmed that no residual effects remain that are assessed as significant in WFD terms.

<u>Summary of Residual Effects</u>

9.2.5 **Table 8** below provides an overview of all WFD-relevant potential effects identified in this assessment, confirming whether embedded mitigation measures alone were sufficient to avoid significant effects, whether additional mitigation was required, and whether the final residual significance is considered compliant with Water Framework Directive objectives.

Table 8: Summary of WFD-Relevant Effects, Mitigation and Residual Significance

Likely Significant Effect	Mitigated by Embedded Mitigation?	Additional Mitigation Required?	Residual Significance (WFD)
Construction			
Mud and Debris Blockages	Yes	No	Minor Adverse (Not Significant)
Temporary Increase in Impermeable Area	Partially	No	Minor Adverse (Not Significant)
Compaction of Soils	Yes	No	Minor Adverse (Not Significant)
Silt-laden Runoff	Yes	No	Minor Adverse (Not Significant)
Spillages, Leakages and Pollutants	Yes	No	Minor Adverse (Not Significant)
Increase in Highway Routine Runoff/Spillage Risk	Yes	No	Minor Adverse (Not Significant)
Increased Demand on Water Supply	Yes	No	Negligible (Not Significant)
HDD and Drilling Fluid Breakout Risk	Yes	No	Minor Adverse (Not Significant)
Inappropriate Wastewater Disposal from Welfare Facilities	Yes	No	Minor Adverse (Not Significant)
Operation and Maintenance			
Increase in Permanent Impermeable Area	Yes	No	Minor Adverse (Not Significant)
Increase in Discharge to Local Watercourses	Yes	No	Minor Adverse (Not Significant)
Blockage of Drainage Networks	Yes	No	Minor Adverse (Not Significant)
Diffuse Pollution Contained in Urban Runoff	Yes	No	Minor Adverse (Not Significant)
Diffuse Pollution Resulting from Fire	Partially	Maintain a Firewater Containment Management Plan	Minor Adverse (Not Significant)
Increase in Highway Routine Runoff/Spillage Risk	Yes	No	Minor Adverse (Not Significant)

Disposal of Surface and Foul Water from the Scheme	Yes	No	Negligible (Not Significant)
Equipment Replacement During Operation	Yes	No	Negligible (Not Significant)

9.2.6 In the context of this assessment, receptors at risk refer specifically to Water Framework Directive–designated surface water bodies and the status elements used to classify them, including hydromorphology, chemical quality, and biological conditions. These receptors have been screened to determine whether the proposed activities could lead to deterioration of status or prevent future improvements.

9.2.7 The mitigation measures necessary to avoid or reduce adverse effects on these receptors are secured through a combination of design commitments, DCO Requirements, and implementation of management plans.

9.2.8 **Table 9** below summarises how each proposed mitigation measure will be secured to ensure compliance with Water Framework Directive objectives:

Table 9: Method of Securing Proposed Mitigation Measures

Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured	
	By Design	By DCO Requirement
Establishment of 8 m undeveloped buffers around watercourses	X	X
Layout separation of infrastructure from drainage ditches and watercourses	X	X
Permeable surfacing for access tracks and passive SuDS features (e.g. gravel trenches/French drains)	X	X
Linear infiltration trenches around isolated infrastructure to manage runoff at source	X	X
Cable crossings of watercourses via HDD or other trenchless methods with appropriate consents	X	X
Inclusion of HDD breakout contingency procedures in detailed CEMP		X
Implementation of detailed CEMP including Water Management Plan		X
Installation of self-bunded fixed plant and drip trays on mobile equipment	X	X

Isolation of BESS drainage with self-actuating valves, firewater containment and testing	X	X
Provision of Firewater Containment Management Plan secured via BSMP and OEMP		X
Wildflower or grass cover to stabilise ground and reduce siltation	X	X
Elimination of nitrate inputs due to cessation of arable farming	X	
Implementation of Soil Resources Management Plan		X

10 Summary and Conclusions

10.1.1 This WFD Assessment has evaluated the potential significant impacts of the Scheme in relation to the Water Framework Directive criteria. The evaluation considered the assessment methods applied, the existing baseline conditions at and around the site, the mitigation measures necessary to prevent, reduce or offset any adverse impacts, and the expected residual effects following the implementation of those measures.

10.1.2 The primary potential impacts on the WFD water bodies associated with the Scheme relate to managing surface water risks. These include silt-laden runoff, accidental spillages, leaks and other pollutant discharges during both the construction and decommissioning phases, as well as diffuse pollution arising from operational runoff, all of which could affect water quality and water resource management. These risks will be controlled through embedded mitigation measures incorporated into the Scheme design and secured via the **Outline CEMP [EN010168/APP/7.12]**, ensuring they are effectively managed to avoid deterioration of WFD water body status and to support the achievement of WFD objectives.

10.1.3 To address these issues, the Scheme will implement a detailed CEMP, prepared in substantial accordance with the certified **Outline CEMP [EN010168/APP/7.12]**, and a detailed DS prepared in accordance with the **Outline DS [EN010168/APP/7.14].** These plans will set out specific mitigation measures to protect controlled waters, incorporating temporary SuDS features to reduce surface water risks during construction and decommissioning. For the operational and Maintenance phase, water protection measures will be secured through an **Outline OEMP [EN010168/APP/7.13]** where applicable. Given the low pollution potential of the Scheme, **ES Volume 3, Appendices 11-1-11-9: Flood Risk Assessments and Drainage Strategy [EN010168/APP/6.3]** typically includes one or two treatment stages to mitigate any adverse impacts.

10.1.4 Embedded measures include the use of permeable surfacing for site access, lined gravel surfacing at permanent infrastructure locations such as substations and battery units, and wildflower planting beneath and around panels. These interventions are designed to promote infiltration, filter pollutants, and preserve the existing runoff regime.

10.1.5 With the implementation of these measures, the Scheme is expected to have no significant adverse effects on any WFD water bodies. The proposed mitigation ensures that both direct and diffuse water quality risks are controlled, supporting compliance with Water Framework Directive objectives and safeguarding local water quality.

10.1.6 The Scheme has been designed to avoid in-channel works, with all designated Main River crossings proposed to be delivered using trenchless techniques such as HDD, where appropriate. A minimum 8 metre easement from all watercourses has been incorporated into the Scheme layout. Within the panelled areas, no formal surface water drainage infrastructure is proposed; instead, runoff will be managed through vegetative cover, including wildflower and grass mixes, reducing runoff, enhancing infiltration, and improving water quality relative to baseline agricultural conditions. For permanent infrastructure areas, runoff will be managed through lined SuDS systems incorporating gravel subbase, flow control, and automatically actuating shut-off valves to prevent pollution in the event of spillage or firefighting. These measures collectively ensure compliance with the Water Framework Directive.

10.2 References

Ref 1 Environment Agency (2017) The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. SI 2017/407. [Accessed December 2024].

Ref 2 Environment Agency & Natural Resources Wales (2022) Severn River Basin Management Plan. Third cycle, updated 2022. [Accessed December 2024].

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Ref 4 British Geological Survey. Geology of Britain viewer. Available at: [redacted] [Accessed December 2024].

Ref 5 Natural England. (2024). MAGIC Map's online mapping: Aquifer Designation Data. Available at: https://magic.defra.gov.uk/ [Accessed December 2024].

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Ref 11 Environment Agency (2009). Designating artificial and heavily modified water bodies. Annex I, River Basin Management Plan [Accessed June 2025].

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Ref 14 Cook, L.M. and McCuen, R.H. (2013). Hydrologic response of solar farms. Journal of Hydrologic Engineering, 18(5), pp.536–541. Available at: [redacted]/(ASCE)HE.1943-5584.0000530 [Accessed December 2024.]

Annex A Tabulated WFD Status

10.1 Gauze Bk - Source to Conf R Avon (Brist)

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	High	High	Good	Good	2015	
Invertebrates	High	High	High	Good	2015	
Macrophytes and Phytobenthos Combined	High	High	Good	Good	2015	
Macrophytes sub element	High	High	Good	Good		
Physio-Chemical Quality Elements	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Acid Neutralising Capacity						
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	Poor	Poor	Poor	Good	2015	
Phosphate	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Hydrological Regime	Does not support good	Does not support good	Supports Good	Does not support good		Disproportionately expensive: Unfavourable balance of costs and benefits
Morphology	Supports Good	Supports Good	Supports Good			
Supporting Elements (surface Water)				N/A	2015	
Specific Pollutants				N/A	2015	
Copper						
Triclosan						
Zinc						
Iron						
Maganese						
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good		Good	2015	
Cadium and Its Compounds						
Dioxins and dioxin-like compounds	Good	Good		Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good		Good	2015	
Hexabromocyclododecane	Good	Good		Good	2015	
Hexachlorobenzene	Good	Good		Good	2015	
Hexachlorobutadiene	Good	Good		Good	2015	
Mercury and Its Compounds	Fail	Fail		Good	2040	Natural conditions: Chemical status recovery time
Nonylphenol						
Perfluorooctane sulphonate (PFOS)	Good	Good		Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail		Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Lead and Its Compunds						
Nickel and Its Compunds						
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

10.2 Luckington BK

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Good	Good	Good	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Good	Good	Good	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	High	High	High	Good	2015	
Macrophytes and Phytobenthos Combined	Good	Good	Good	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes sub element	Good	Good	Good			
Physio-Chemical Quality Elements	Good	Good	Good	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	Moderate	Good	Good	Good	2015	
Phosphate	Moderate	Good	Good	Good	2027	Disproportionately expensive: Disproportionate burdens
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Fail	Fail	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	N/A	N/A	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

10.3 Rodbourne Bk - Source to Conf R Avon (Brist)

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	Moderate	Moderate	Moderate	Good	2015	
Macrophytes and Phytobenthos Combined	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes sub element	Moderate	Moderate	Moderate			
Physio-Chemical Quality Elements	High	High	High	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	High	High	High	Good	2015	Disproportionately expensive: Disproportionate burdens
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Hydrological Regime	Supports Good	Supports Good	Supports Good		2015	
Specific Pollutants				N/A	2015	
Copper						
Triclosan						
Zinc						
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good		Good	2015	
Cadium and Its Compounds						
Di(2-ethylhexyl)phthalate (Priority hazardous)						
Dioxins and dioxin-like compounds	Good	Good		Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good		Good	2015	
Hexabromocyclododecane	Good	Good		Good	2015	
Hexachlorobenzene	Good	Good		Good	2015	
Hexachlorobutadiene	Good	Good		Good	2015	
Mercury and Its Compounds	Fail	Fail		Good	2040	Natural conditions: Chemical status recovery time
Nonylphenol						
Perfluorooctane sulphonate (PFOS)	Good	Good		Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail		Good	2063	Natural conditions: Chemical status recovery time
Tributyltin Compounds						
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good		Good	2015	
Fluoranthene	Good	Good		Good	2015	
Lead and Its Compounds						
Nickel and Its Compounds						
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

10.4 Sherston Avon

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	High	High	High	Good	2027 - Low Confidence	
Macrophytes and Phytobenthos Combined	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Physio-Chemical Quality Elements	Moderate	Moderate	Good	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Acid Neutralising Capacity	N/A	N/a	N/A	Good	2015	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	Moderate	Moderate	N/A	Good	2015	
Phosphate	Good	Good	Good	Good	2027	Disproportionately expensive: Disproportionate burdens
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Supporting Elements (surface Water)	N/A	N/A	N/A	N/A	N/A	
Mitigation Measures Assessment	N/A	N/A	N/A	N/A	N/A	
Specific Pollutants	N/A	N/A	N/A	N/A	N/A	
Iron	N/A	N/A	N/A	N/A	N/A	
Maganese	N/A	N/A	N/A	N/A	N/A	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	N/A	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate	Good	Good	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	N/A	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

10.5 The Sutton Benger Bk – Source to Conf R Avon (Brist)

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Good	Good	Good	Good	2021	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Good	Good	Good	Good	2021	Disproportionately expensive: Disproportionate burdens
Invertebrates	High	High	High	Good	2015	
Macrophytes and Phytobenthos Combined	Good	Good	Good	Good	2021	Disproportionately expensive: Disproportionate burdens
Macrophytes sub element	Good	Good	Good			
Physio-Chemical Quality Elements	High	High	High	Good	2015	
Acid Neutralising Capacity	N/A	N/A	High		2015	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	High	High	High	Good	2015	
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Hydrological Regime	Supports Good	Supports Good	Supports Good	Supports Good	2021	Disproportionately expensive: Disproportionate burdens
Morphology	Supports Good	Supports Good	Supports Good			
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	Good	Good		Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good		Good	2015	
Hexabromocyclododecane	Good	Good		Good	2015	
Hexachlorobenzene	Good	Good		Good	2015	
Hexachlorobutadiene	Good	Good		Good	2015	
Mercury and Its Compounds	Fail	Fail		Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Good	Good		Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail		Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good		Good	2015	
Fluoranthene	Good	Good		Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

10.6 Source to Conf Sherston Avon

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Good	Good	Good	Good	2015	
Biological Quality Elements	Good	Good	Good	Good	2015	
Invertebrates	Good	Good	Good	Good	2015	
Macrophytes and Phytobenthos Combined	Good	Good	Good	Good	2015	
Physio-Chemical Quality Elements	Good	Good	Good	Good	2015	
Acid Neutralising Capacity	N/A	N/A	N/A	Good	2015	
Ammonia (Phys-Chem)	Good	Good	Good	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	Good	Good	Good	Good	2015	
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Supporting Elements (surface Water)	N/A	N/A	N/A	N/A	N/A	
Mitigation Measures Assessment	N/A	N/A	N/A	N/A	N/A	
Specific Pollutants	N/A	N/A	N/A	N/A	N/A	
Iron	N/A	N/A	N/A	N/A	N/A	
Maganese	N/A	N/A	N/A	N/A	N/A	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	N/A	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Good	Good	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment