DECARBONISATION

ENVIRONMENTAL STATEMENT: 6.3 APPENDIX 11-3: GROUNDWATER IMPACT ASSESSMENT

Cory Decarbonisation Project

PINS Reference: EN010128

March 2024

Revision A

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations (2009) - Regulation 5(2)(a)

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1. INTRODUCTION

1.1. BACKGROUND

1.1.1. WSP has been instructed by Cory Environmental Holdings Limited (hereafter referred to as the Applicant) to prepare a Groundwater Impact Assessment, for the Cory Decarbonisation Project to be located at Norman Road, Belvedere in the London Borough of Bexley (LBB; National Grid Reference/NGR 549572, 180512). The following figures are available in the ES:

- **Figure 1-1: Site Boundary Location Plan (Volume 2)**; and
- **Figure 1-2: Satellite Imagery of the Site Boundary Plan (Volume 2)**.

1.1.2. The Applicant intends to construct and operate the Proposed Scheme to be linked with the River Thames. It comprises of the following key components, which are described below, and further detail is provided within Chapter 2: Site and Proposed Scheme Description (Volume 1):

- The Carbon Capture Facility (including its associated Supporting Plant and Ancillary Infrastructure): the construction of infrastructure to capture a minimum of 95% of carbon dioxide (CO_2) emissions from Riverside 1 and 95% of CO_2 emissions from Riverside 2 once operational, which is equivalent to approximately 1.3Mt CO_2 per year. The Carbon Capture Facility will be one of the largest carbon capture projects in the UK.
- The Proposed Jetty: a new and dedicated export structure within the River Thames as required to export the CO_2 captured as part of the Carbon Capture Facility.
- The Mitigation and Enhancement Area: land identified as part of the **Outline Landscape, Biodiversity, Access and Recreation Delivery Strategy (Document Reference 7.9)** to provide improved access to open land, habitat mitigation, compensation and enhancement (including forming part of the drainage system and Biodiversity Net Gain delivery proposed for the Proposed Scheme) and planting. The Mitigation and Enhancement Area provides the opportunity to improve access to outdoor space and to extend the area managed as the Crossness Local Nature Reserve (LNR).
- Temporary Construction Compounds: areas to be used during the construction phases for activities including, but not limited to office space, warehouses, workshops, open air storage and car parking, as shown on the **Works Plans (Document Reference 2.3)**. These include the core Temporary Construction Compound, the western Temporary Construction Compound and the Proposed Jetty Temporary Construction Compound.
- Utilities Connections and Site Access Works: The undergrounding of utilities required for the Proposed Scheme in Norman Road and the creation of new, or the improvement of existing, access points to the Carbon Capture Facility from Norman Road.

1.1.3. Together, the Carbon Capture Facility (including its associated Supporting Plant and Ancillary Infrastructure), the Proposed Jetty, the Mitigation and Enhancement Area, the Temporary Construction Compounds and the Utilities Connections and Site Access Works are referred to as the ‘Proposed Scheme’. The land upon which the Proposed Scheme is to be located is referred to as the 'Site’ and the edge of this land referred to as the ‘Site Boundary’. The Site Boundary represents the Order Limits for the Proposed Scheme as shown on the **Works Plans (Document Reference 2.3)**.

1.1.4. In locations where ground sloping cannot be achieved due to space restrictions, sheet piled walls will be installed around the perimeter of the Carbon Capture Facility, to retain the engineering backfill used to raise the land. It is anticipated that the sheet piled wall will be approximately 15m in depth[a] (approximately 2m of this above existing ground level and 10m below). It has been established that the founding geology strata is likely to be Taplow Gravel Member. Dewatering is not anticipated to be required for the sheet piling installation. Once the sheet piles have been installed, engineering backfill will be used to raise the ground level of land for the Carbon Capture Facility.

[a] It is anticipated that all piling activities will have a 600mm diameter and will be 15m in length.

2. BASELINE GROUND CONDITIONS AND HYDROGEOLOGY

2.1. PURPOSE OF THIS REPORT

2.1.1. The proposed below ground structures (sheet pile walls) have the potential to hinder groundwater flow to the River Thames (natural groundwater receptor) and may result in rising groundwater levels (in the worst case causing groundwater flooding). Other below ground structures, including piling and associated sheet pile retaining wall for the Proposed Jetty (as described in **Chapter 2: Site and Proposed Scheme Description (Volume 1)**), are not considered to potentially hinder groundwater flow due to their location within River Thames. This appendix assesses risks and proposes mitigation measures where appropriate for the perimeter sheet pile wall required to retain engineering backfill used to raise the ground level of land for the Carbon Capture Facility only.

2.1.2. The assessment methodology for this appendix is based on the following steps that have been undertaken:

- a review of available geological and hydrogeological information to describe ground conditions, particularly groundwater level and flow conditions;
- collection of design information with focus on proposed structures below ground level;
- a comparison of the depth of below ground structures, groundwater levels and aquifer conditions to establish where impacts on groundwater flow may occur; and
- providing recommendations for areas with likely impacts or identified knowledge gaps/uncertainties.

2.2. GROUND CONDITIONS

2.2.1. The summaries below describe ground conditions based on Ground Investigation (GI) exploratory borehole data and historic borehole logs from the British Geological Survey (BGS) website[1] and BGS Map Sheet 257 and Map Sheet 271[2] (for previous ground investigations, see **Figure 17-2: Previous Ground Investigations (Volume 2)**):

- Wilkinson Associates; Report Contamination Investigation Greenham Site Waste to Energy Incineration Plant Belvedere for Cory Environmental Limited; ref.: i7-01-02; dated December 1992[3];
- Applied Environmental Research Centre Limited (AERC); Riverside Resource Recovery (Energy from Waste) Facility, Norman Road, Belvedere, Site Investigation and Remediation Proposals Report; ref.: C3477/R1384; dated September 2003[4];
- RSA Geotechnics Ltd.; Ground Investigation at Norman Road, Belvedere, Kent Final Report, ref.: 10487/FINAL; dated February 2007[5];

- Soil Mechanics; Riverside Resource Recovery Facility, Belvedere, Kent Factual Report on Ground Investigation; ref.: A7007; dated April 2007[6];
- AERC; Letter presenting findings of site investigation at Riverside Resource Recovery Facility, Norman Road, Belvedere; ref.: JRW/C34129/R2397; dated 14 August 2006[7];
- AERC; Riverside Resource Recovery (Energy from Waste) Facility, Norman Road, Belvedere, Contaminated Land Remediation Method Statement; ref.: C34129/R2489; dated May 2007[8];
- WSP; Riverside Data Centre Ground Investigation Report Riverside Resource Recovery Ltd.; ref.: 70031031; dated August 2017[9];
- Gavin & Doherty Geosolutions (UK) Ltd. (GDG); Geotechnical Interpretative Report & Contaminated Land Report; ref.: 21083-R-002-02; dated July 2021[10];
- TerraConsult; Riverside EfW; ref.: 3765R001-2; dated July 2018[11]; and
- **Appendix 17-1: Preliminary Risk Assessment (Volume 3)**, including a Groundsure Report for the Proposed Scheme.

2.2.2. **Table 2-1** provides a summary of the anticipated geological strata encountered onsite and the descriptions provided from the BGS[1] and GI reports referenced above. An average thickness only is provided where the spatial distribution of exploratory hole data (including BGS boreholes) is limited across the Site.

Table 2-1: Summary of Geological Strata Encountered on Site

Stratum		Description	Thickness* (m)
Artificial	Made Ground	A combination of artificial ground comprising man-made materials (i.e., tarmac, cement. ash and brick).	1.5
Superficial	Alluvium	Soft to firm compressible silty clay with layers of silt, sand, peat and basal gravels.	6.2
	Taplow Gravel Member	Variable lithology of mainly silt and clay.	7.9
Bedrock	London Clay Formation	Poorly laminated silty to very silty clay, clayey silt and sandy clay. Thin beds or pockets of shells and fine sands are recorded.	6.8

Stratum		Description	Thickness* (m)
	Harwich Formation (Blackheath Member)	Dominated by black and well-rounded flint gravel in a matrix of sand, with lenses of sand and thin clay layers. May be encountered at the base of the London Clay Formation.	7.8
	Lambeth Group	Sequence of silty or sandy clays with some sands and gravels interbedded.	7.6
	Thanet Formation	Typically composed of homogenous, bioturbated, glauconitic silty fine-grained sand, with sandy silt, silt or sandy, silty clay. Rare coarse gravel is present in places in London.	15 – 30*
	Chalk Group	White Chalk (microporous coccolithic limestone) with beds of flint, nodular chalks, hard grounds and marl seams.	Up to 100+**

Notes:
* Average thickness of strata provided considering limited spatial distribution of exploratory hole data (including BGS boreholes) across the Site.
** expected thickness where unit has not been fully intercepted during GI and/or local BGS borehole logs. The expected thickness of the Chalk Group is referenced from BGS GeoIndex[1] and BGS Map Sheet 257 and 271[2.]

2.3. HYDROGEOLOGY

2.3.1. Hydrogeological units are present and defined by the Environment Agency as follows:

- **Principal Aquifers** – layers of rock or drift deposits that have high intergranular and/or fracture permeability meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.
- **Secondary A Aquifers** – support water supplies at a local rather than strategic scale and in some cases, form an important source of base flow to rivers.

- **Secondary (Undifferentiated) Aquifers** – assigned in cases where it has not been possible to attribute either a Category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

2.3.2. Made Ground deposits have no designation. The Environment Agency designates the Alluvium as a Secondary (undifferentiated) aquifer, and the Taplow Gravel Member is designated a Secondary A aquifer[12]. The Harwich Formation, Lambeth Group and Thanet Formation are designated Secondary A aquifers[12]. The Chalk Group is designated a Principal aquifer, and the London Clay Formation is designated as unproductive strata with limited water bearing capacity[12].

2.3.3. There is limited groundwater level monitoring data available for the Site from the previous GI. Discontinuous groundwater level monitoring data was undertaken at specific borehole locations during the 2017 GI[9] and 2021 GI[10]. Groundwater observations found water levels to be variable across the Site for the superficial deposits (**Table 2-2** and **Table 2-3**). The average depth to groundwater level from the GI is 1.4m bgl (meters below ground level). Shallow groundwater levels are recorded at 1.26m ordnance datum (OD) (0.55 m bgl) at BH05[10] and the deepest groundwater level recorded at -0.86m OD (2.21m bgl) at BH101D[9] for the Taplow Gravel Member.

2.3.4. Water strikes are recorded during borehole development and identify areas on Site where potentially separate deeper bedrock groundwater levels exist. Water strikes are recorded at -17.6m OD (20.0m bgl) at BH01 – BH08[10] for the Harwich Formation and up to -30.55m OD (32.0m bgl) at BH13[10] for the Lambeth Group.

2.3.5. There is evidence of hydraulic connectivity existing between the bedrock and superficial deposits where a second deeper water strike recorded in BH04[10] -16.79m OD (18.6m bgl Harwich Formation) rose to -1.88m OD (3.69m bgl) after 20 mins. Hydraulic connectivity with the overlying superficial deposits also occurred in BH02, BH03 and BH06[10] for the Harwich Formation.

2.3.6. Variable head test data are available for BH02 and BH10[10,11] and tests were predominantly undertaken within gravelly clay strata, gravelly silty coarse sand strata and clay strata (BH02 and BH10, respectively). No hydraulic conductivity was calculated for BH10 where all five tests were completed in clay strata. BH02 recorded an average hydraulic conductivity of 2.2E-04 metres per second (m/s)[10,11] for four tests undertaken in gravelly clay strata. A hydraulic conductivity of 1.99E-05 m/s[10,11] was recorded for one test completed within gravelly silty coarse sand strata. The values represent low permeability superficial deposits.

2.3.7. The Groundsure Report (within **Appendix 17-1: Preliminary Risk Assessment (Volume 3)**) identifies a dewatering borehole associated to the construction of Riverside 2 to the north of the Site at NGR TQ 49416 80774 under licence number TH/039/0044/030 (see **Table 11-14** of **Chapter 11: Water Environment and Flood Risk (Volume 1)**). The period of the licence for the abstraction is between March

2023 and January 2025. The maximum quantity of water abstraction cannot exceed 320 litres per second. The water abstracted for construction of Riverside 2 is discharged to the Thames Middle Waterbody at NGR TQ 49670 80879 and/or TQ 49579 80771 (Discharge 1 and Discharge 2 respectively).

2.3.8. The dewatering borehole will influence groundwater levels locally on the Site while under operation. No groundwater level monitoring data is available for the Site while the dewatering borehole has been active, therefore its influence on groundwater levels locally is currently unknown.

2.3.9. Under cessation of the Riverside 2 dewatering licence (January 2025) it is expected that groundwater levels (locally) are anticipated to rebound/recover to pre-construction groundwater levels within the superficial deposits, like the groundwater levels summarised in **Table 2-2** and **Table 2-3** below.

2.3.10. The Applicant is aware of the Crossness LNR using water windmill pumps to abstract water to enhance the habitat to the west of Great Breach Dyke. These minor abstractions may also influence groundwater levels (locally) while in operation (further details are provided in **Section 11.6** of **Chapter 11: Water Environment and Flood Risk (Volume 1)**).

Table 2-2: Discontinuous Groundwater Level Monitoring Data from the 2017 GI[9]

BH ID	GL (m OD)	Easting	Northing	Screened Strata	Discontinuous Groundwater Monitoring (m OD) 2017		
					Min	Max	Mean
BH101S	1.3	549537.012	180368.068	Made Ground	-0.09	0.10	0.02
BH101D	1.3	549537.012	180368.068	Taplow Gravel Member	-0.89	0.00	-0.47
BH102S	1.3	549616.961	180399.038	Alluvium	-0.59	0.64	-0.16
BH102D	1.3	549616.961	180399.038	Taplow Gravel Member	-0.63	0.39	-0.28
BH103S	1.3	549573.981	180308.997	Alluvium	-1.32	-0.61	-1.06
BH103D	1.3	549573.981	180308.997	Taplow Gravel Member	-0.77	-0.04	-0.38

Table 2-3: Discontinuous Groundwater Level Monitoring Data from the 2021 GI[10,11]

BH ID	GL (m OD)	Easting	Northing	Screened Strata	Discontinuous Groundwater Monitoring (m OD) 2018 -2019		
					Min	Max	Mean
BH01	3.02	549433.37	180764.48	Alluvium	-0.39	0.36	0.00
BH02	2.40	549427.99	180724.99	Alluvium	0.87	1.58	1.10
BH03	3.40	549487.14	180720.48	Alluvium	0.98	1.12	1.03
BH04	1.81	549477.07	180679.14	Made Ground / Alluvium	0.08	0.69	0.44
BH05	1.81	549532.61	180668.51	Taplow Gravel Member	-1.44	1.26	-0.47
BH08	1.32	549559.32	180559.36	Taplow Gravel Member	-0.86	0.73	-0.10
BH09	1.70	549400.00	180660.00	Made Ground / Alluvium	-0.78	0.97	0.86
BH11	1.28	549477.76	180565.97	Alluvium	0.60	0.78	0.64
BH12	1.04	549429.90	180577.09	Taplow Gravel Member	-0.83	0.42	-0.15
BH13	1.45	549501.99	180611.01	Alluvium	0.66	1.19	0.94

2.3.11. Local groundwater flow direction is expected to flow north towards the River Thames (**Figure 11-2: Water Environment Study Area (Volume 2)**) but due to the presence of drains and watercourses surrounding the Site as well as the tidal influence of the River Thames, groundwater flow and level are expected to vary. **Appendix 17-1: Preliminary Risk Assessment (Volume 3)** reports variable local groundwater flow conditions within the Alluvium and Taplow Gravel Member. Monitoring within the Taplow Gravel Member identified a tidal influence from the River Thames where a 2.5m difference was noted over the full tidal cycle. Groundwater flow direction was noted to be towards the River Thames to the north at high tide and northwest during low tide (**Appendix 17-1: Preliminary Risk Assessment (Volume 3)**).

2.3.12. The Proposed Scheme is considered Moderate Risk from groundwater flooding[13]. The London Borough of Bexley (LBB) Level 1 Strategic Flood Risk Assessment (SFRA)[13] indicates that elevated groundwater from permeable soils is in the Lower Thamesmead Area of the LBB and shows elevated groundwater from consolidated aquifers along the eastern edge of the LBB boundary. The other potential source of groundwater related flooding is where superficial sand and/or gravel deposits (for example the Alluvium and/or Taplow Gravel Member) are perched on clay strata i.e. London Clay Formation. In these instances, local superficial deposit aquifers can become saturated during prolonged rainfall and result in flooding at the surface. The risk of groundwater flooding within Thamesmead, Abbey Wood and Belvedere area is considered to be locally variable.

2.3.13. The Level 2 SFRA[14] identifies that the Erith Ditches and Dykes (a network of open watercourses) modelling studies concluded that groundwater is present in the superficial deposits above the London Clay Formation, related to the managed water levels in the ditches and dykes. The Environment Agency has two pumping stations in the area (Great Breach Pumping Station and Green Level Pumping Station (**Figure 11-1: Water Environment Study Area (Volume 2)**). Great Breach Pumping Station is located within the Site and will control water levels (locally) to mitigate flood risk in the area. The Green Level Pumping Station is outside of the Site and pumps to the River Thames.

3. PRELIMINARY GROUNDWATER IMPACT ASSESSMENT

3.1.1. Perimeter sheet pile walls, described in **Section 1.2**, are likely to be founded within the Taplow Gravel Member. The type of sheet piling proposed is likely to be steel cantilever sheet pile walls. No over dig estimates have been considered where the sheet piles will be installed and backfilled to the future ground level.

3.1.2. The **Outline Drainage Strategy (Document Reference 7.2)** specifies that all drainage features will be lined and no infiltration to ground is expected.

3.1.3. Existing flood defences have been identified in **Appendix 17-1: Preliminary Risk Assessment (Volume 3)** and these are confirmed to be non-intrusive natural high ground defences. These defences have not been considered as part of this groundwater impact assessment.

POTENTIAL GROUNDWATER IMPACTS

3.1.4. Sheet pile walls that extend below the groundwater table act as groundwater flow barriers i.e. reducing horizontal groundwater flow. Measuring groundwater levels to establish groundwater flow directions can be difficult due to the variable ground conditions and presence of local perched water tables i.e. water pressures change over depth. Groundwater flow often occurs along dedicated flow paths, typically thin layers or lenses of more permeable material. If such pathways get blocked by sheet pile walls or other below ground structures, groundwater pressures can build up in absence of alternative flow paths. In low permeability and low porosity environments groundwater level can easily increase by several meters i.e. in the worst case cause groundwater flooding impacts.

3.1.5. This assessment is based upon the information available to date. As presented in **Section 17.7** of **Chapter 17: Ground Conditions and Soils (Volume 1)**, GI would be undertaken prior to the construction phase as secured by a requirement within the **Draft DCO (Document Reference 3.1)** and set out in the **Outline CoCP (Document Reference 7.4)**. This will be led by geotechnical requirements but would include geo-environmental sampling of terrestrial soils, marine sediments, groundwater, and surface water. Detailed assessments are required later in the design process supported by more detailed GI data to identify mitigation measures that should be considered during detailed design stages where required as shown in **Figure 17-3: Connections between the Ground Conditions and Soils Mitigation Tasks and Design (**see **Chapter 17: Ground Conditions and Soils (Volume 1)**).

3.1.6. This assessment focuses on identifying potentially high-risk areas based on the previous GI data (see **Section 1.2**) and design information for the Proposed Scheme at the time of writing.

IMPACT AREAS

3.1.7. The key element of the design of relevance to groundwater flooding is the depth and location of proposed sheet pile walls that extend below the groundwater table. The Proposed Scheme is considered as Moderate Risk from groundwater flooding[13]. The risk of groundwater flooding is locally variable due to the composition of the superficial deposits and bedrock aquifers (that will influence groundwater level and flow locally) as well as the presence of the active dewatering borehole (for the construction of Riverside 2) and the Environment Agency Pumping Station within the Site (Great Breach Pumping Station).

3.1.8. Groundwater level data for the Site is limited and has not allowed for establishing seasonal changes. Therefore, it has been considered that existing water level data does not represent maximum groundwater levels and additional groundwater monitoring (to identify seasonal changes and response to groundwater levels upon cessation of active dewatering borehole at Riverside 2) should be considered prior to construction phase as secured by a requirement within the **Draft DCO (Document Reference 3.1)** and set out set out in the **Outline CoCP (Document Reference 7.4)**. This will also identify what influence (locally) the dewatering abstraction is having while actively pumping and monitoring should continue once dewatering activities are ceased.

3.1.9. A potential source of groundwater related flooding is where superficial sand and/or gravel deposits (i.e. Alluvium and Taplow Gravel Member) are perched on clay strata (London Clay Formation). In these instances, the local superficial sand and gravel aquifers can become saturated during prolonged intense rainfall and result in flooding at the surface. The recorded groundwater level and water strike data for the Site indicates hydraulic continuity between the Taplow Gravel Member and overlying superficial deposit aquifers.

3.1.10. Given the findings of the previous GI and the variable lithology of the superficial deposits dedicated flow paths may potentially occur within the more permeable layers, although this may be restricted both horizontally and vertically (i.e. presence of gravel sandy clay beds at some locations). **Table 3-1** provides a summary of recorded average groundwater levels and calculated groundwater head (m) relative to the invert base level of the perimeter sheet pile wall (10m bgl).

3.1.11. The groundwater head (m) is a measurement of pressure above a geodetic datum (in this case total length of sheet pile wall (10m bgl). An average groundwater level has been considered for each section of perimeter sheet pile wall (**Figure 3-1**) considering the spatial coverage of previous GI data.

Figure 3-1:Indicative Perimeter Sheet Pile Wall and Section References for Groundwater Impact Assessment (see Table 3-1)

Table 3-1: Groundwater Head (m) Relative to Invert Level for Perimeter Sheet Pile Wall

Sheet Pile Wall Section*	Average GL (m OD)	Sheet Pile Invert Level (m)	Average Depth to Groundwater Level (m bgl)	Groundwater Table Relative to Invert Level (groundwater head in m)
1	1.33	10.0	1.45	8.55
2	1.33	10.0	1.20	8.80
3	1.51	10.0	1.28	8.72

Note:

*Section reference as illustrated on **Figure 3-1**.

3.1.12. The variable ground conditions do not allow a clear definition of high or low risk areas for the Site. However, **Table 3-1** provides a summary of the potential groundwater head (m) that may be acting on the sheet pile walls. This does not account for the active dewatering borehole at Riverside 2 that will be influencing groundwater levels (locally) while actively dewatering and, the available groundwater level data is also not considered to represent maximum groundwater levels (**Section 2.1.6**).

3.1.13. It is unclear at this stage whether the proposed perimeter sheet piling will cause substantial groundwater table rises (and in the worst case resulting in groundwater flooding) and under which specific conditions cannot be estimated at this stage. The Level 1[13] and Level 2 SFRA[14] for Thamesmead, Abbey Wood and Belvedere identify a Moderate risk from groundwater flooding.

3.1.14. The thickness of the superficial deposits (approximately 15m) may offer alternative groundwater flow paths towards the River Thames but vertical hydraulic continuity within the superficial deposits (classified as **Medium** sensitivity) is not guaranteed across the Site due to the variability of the sediments (clayey, silty, sandy, gravels) and connectivity to the underlying bedrock geology (specifically Harwich Formation).

3.1.15. Given the findings of the previous GI, the variable lithology of the superficial deposits provides dedicated flow paths within the more permeable layers (superficial deposit aquifers). Where potential groundwater flows could emerge because of the installation of the perimeter sheet pile wall onsite, a risk to groundwater flooding exists.

MITIGATION MEASURES

3.1.16. To mitigate the potential build-up of groundwater the following options will be considered as part of the detailed design and have been included in the **Outline CoCP (Document Reference 7.4)**:

- implement groundwater drainage on one side or on both sides of the sheet pile walls (depending on how well local groundwater flow direction can be defined during the detailed GI) to capture rising groundwater and to direct the captured water to a discharge location. Diverting flows from higher to minor risk areas i.e., optimising back drainage design or identifying high permeability lithological layers within the superficial deposits; and
- improve vertical pathways draining shallow groundwater towards deeper layers.

3.1.17. The construction of back drainage may provide an opportunity to enhance vertical and lateral hydraulic continuity within these deposits. However, considerations will need to be made for alleviating the impacts from groundwater flow, notably in wetter months.

3.1.18. A ground investigation will be undertaken prior to the construction phase as secured by a requirement within the **Draft DCO (Document Reference 3.1)** and set out in the **Outline CoCP (Document Reference 7.4)** and **Section 17.7** of **Chapter 17: Ground Conditions and Soils (Volume 1).** As shown in **Figure 17-3: Connections between the Ground Conditions and Soils Mitigation Task and Design** (see **Chapter 17: Ground Conditions and Soils (Volume 1)**) future ground investigations will determine mitigation requirements at detailed design including considerations of changes in groundwater abstractions adjacent to the Site. If shallow groundwater levels are identified or expected within the superficial deposits mitigation to prevent groundwater flooding may include measures for additional groundwater drainage and/or formation of granular pathways to introduced flow barriers (i.e., perimeter sheet pile wall). This will ensure groundwater flow conditions are only altered locally.

3.2. REFERENCES

[1] British Geological Survey. 'Geology of Britain Viewer'. Available at:
[redacted]

[2] BGS Geological Map. 'Sheet 257 and Sheet 271'. Available at:
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[3] Wilkinson Associates (1992). 'Report Contamination Investigation Greenham Site Waste to Energy Incineration Plant Belvedere for Cory Environmental Limited'. Ref.: i7-01-02.

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[12] DEFRA (2024). 'Magic Online Mapping'. Available at: https://magic.defra.gov.uk/MagicMap.aspx

[13] Wood. (2019). 'London Borough of Bexley Strategic Flood Risk Assessment Level-1'. Available at: https://www.bexley.gov.uk/sites/default/files/2021-05/Strategic-flood-risk-assessment-level-1-November-2020.pdf

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