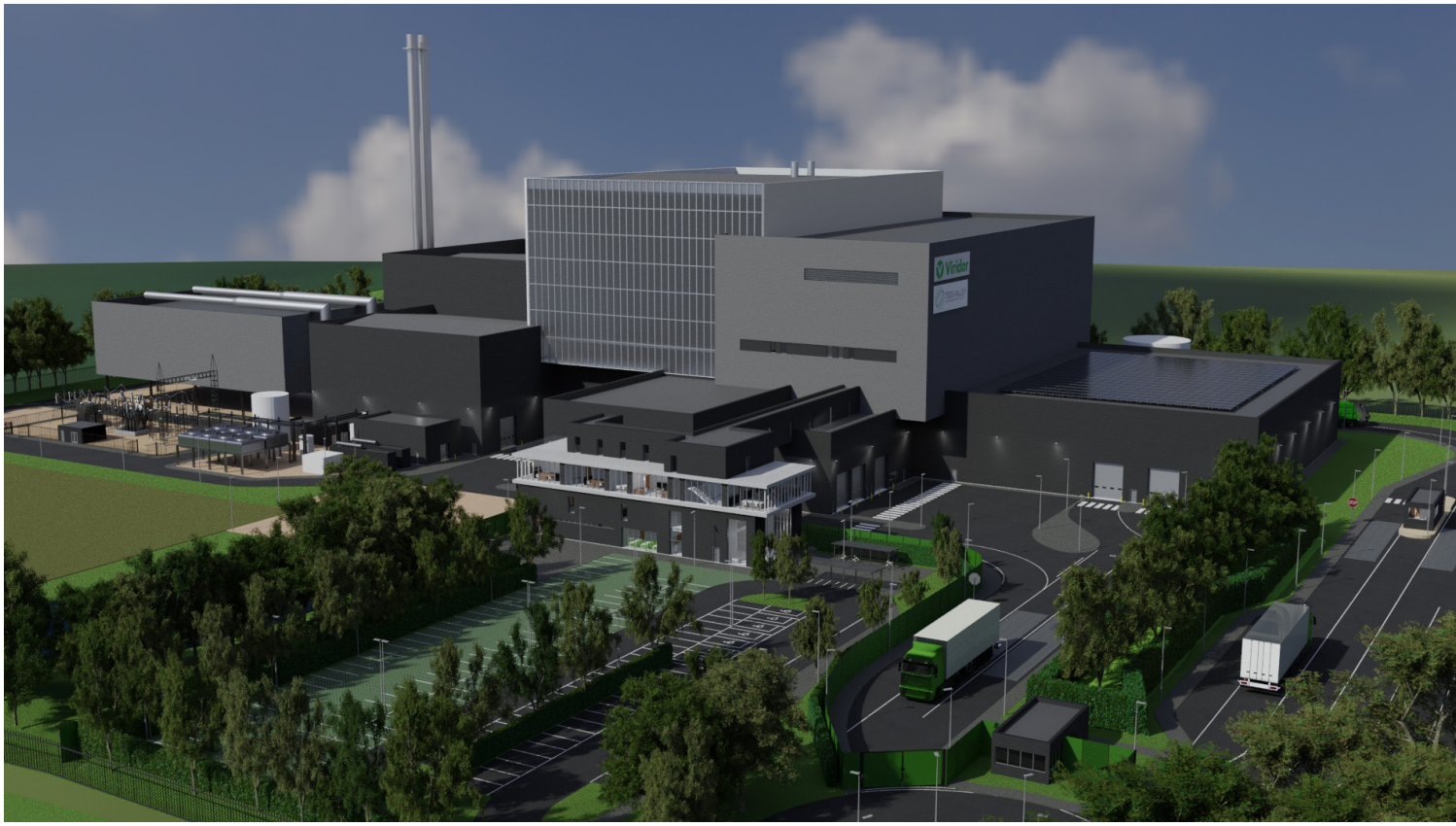

Water Framework Directive Assessment – Review and Update

Tees Valley Energy Recovery Facility
Grangetown Prairie, Dorman Point
Prepared on behalf of Viridor Tees Valley Limited
March 2023

Intended for
Viridor Tees Valley Limited

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Report

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March 2023

TEES VALLEY ENERGY RECOVERY FACILITY, GRANGETOWN PRAIRIE, DORMAN POINT

WATER FRAMEWORK DIRECTIVE ASSESSMENT – REVIEW AND UPDATE

RAMBOLL Bright ideas. Sustainable change.

TEES VALLEY ENERGY RECOVERY FACILITY
WATER FRAMEWORK DIRECTIVE ASSESSMENT – REVIEW AND UPDATE

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APPENDIX

EXECUTIVE SUMMARY

A Water Framework Directive (WFD) assessment has been prepared and is submitted as part of a reserved matters application for a proposed development comprising the construction of an Energy Recovery Facility (ERF) near Tees Valley, Redcar & Cleveland.

The WFD report reviews the WFD produced by JBA Consulting dated December 2019, which formed part of the outline planning application, and provides an updated WFD assessment in relation to the reserved matters application. This report therefore fulfils the requirements of the EA's informative note attached to the original outline planning consent.

It has been determined that with implementation of the mitigation measures set out within this report plus environmental management required by JBA Consulting December 2019 WFD report, the proposed development will not result in deterioration of the Tees Estuary transitional water body, Tees Estuary (S Bank) River and Tees Coastal water bodies. It is therefore concluded that the reserved matters application is in compliance with the requirements of the WFD.

1. INTRODUCTION

1.1 Background

Ramboll UK Limited (Ramboll) has been instructed by Viridor Tees Valley Limited (the Client) to provide a review of the Water Framework Directive (WFD) information for the proposed Tees Valley Energy Recovery Facility (ERF) site ('proposed development') located on the former South Tees Eco Park, Grangetown Prairie. Hereafter the Tees Valley ERF site will be referred to as 'the site', and the former South Tees Eco Park, Grangetown Prairie (exclusive of the site) will be referred to as 'Grangetown Prairie'.

Tees Valley Authorities, Durham County Council and Newcastle City Council (the Councils) have joined together to create an opportunity for a contractor to design, build, finance and operate a new ERF to be located in the Tees Valley on a mandated site owned by the South Tees Development Corporation (STDC). Redcar & Cleveland Borough Council (RCBC), as the local planning authority, granted outline planning permission for the construction of an ERF and associated development at the site under reference R/2019/0767/OOM on 24 July 2020.

Viridor is applying for reserved matters approval for the details of an ERF pursuant to this outline permission. The outline permission application referred to an ERF with a capacity of approximately 450,000 tonnes of residual waste per year.

A WFD assessment was completed by JBA Consulting in December 2019[1] to support the development of the site (and forms part of outline planning application R/2019/0767/OOM). The findings of the WFD assessment were accepted by the Environment Agency (EA) but within the informative note section of the decision notice that accompanied the outline application consent (dated 24 July 2020) they noted that the WFD assessment for the site should be updated to reflect the exact details of the proposed development at the site in order to inform the reserved matters application.

This report reviews the original WFD and provides an updated WFD assessment in relation to the detailed proposed development. It therefore fulfils the requirements of the EA's informative note attached to the original outline planning consent.

1.2 Objective and Scope of Works

This report comprises a review of the existing WFD report produced by JBA Consulting for the site and assessment of its applicability considering the detailed proposed development.

This document also provides an updated WFD assessment, identifying any additional risks to WFD status of water bodies that have arisen as part of the design development process and providing recommendations for any additional works which may be required in order to ensure compliance with the WFD.

1.3 Proposed Development

The proposed development comprises the following:

- ERF building with boilers, fire water tank, BA storage, oil storage etc (details of above-ground features not relevant to land contamination assessment);
- Piled foundations (details currently unavailable);
- Below-ground waste bunker (foundation depth of 12.5 metres below ground level (mbgl));
- External hardstanding (access routes, car parking);
- Soft landscaping;
- Sustainable urban drainage.

It is proposed that below ground surface water drainage for the development will be collected and conveyed via gravity fed positive drainage and discharged off site. The runoff will be passed through

[1] JBA Consulting. December 2019. Energy Recovery Facility- Water Framework Directive Assessment. Final Report

oil interceptors and then directed via gravity into an attenuation pond or tank, both of which will be situated in the western part of the site. The proposed attenuation system will provide between 2,284 – 3,312m3 of attenuation storage volume.

This specified volume was calculated in order to retain a 1 in 100-year 24-hour storm event (inclusive of a 40% allowance for Climate Change) without causing any surface flooding on the site. The surface water is to be attenuated above (Q bar) rate of 43.21 l/s and runoff attenuated above Q bar will discharge to the Holme Beck subject to approval.

1.4 Limitations and Constraints

In preparation of the report and performance of any other services, Ramboll has relied upon publicly available information, information provided by the client and information provided by third parties. Accordingly, the conclusions reached in this report are valid only to the extent that the information provided to Ramboll was accurate, complete and available to Ramboll within the reporting schedule.

The key sources of information used to prepare this report are provided as footnotes within the document. Ramboll cannot accept liability for the accuracy or otherwise of any information derived from third party sources.

Ramboll's services are not intended as legal advice, nor an exhaustive review of site conditions and/or compliance. This report and accompanying documents are initial and intended solely for the use and benefit of the client for this purpose only and may not be used by or disclosed to, in whole or in part, any other person without the express written consent of Ramboll. Ramboll neither owes nor accepts any duty to any third party, unless formally agreed by Ramboll through that party entering into, at Ramboll's sole discretion, a written reliance agreement.

Unless otherwise stated in this report, the scope of services, assessment and conclusions made assume that the site will continue to be used for its current purpose and end-use without significant changes either on-site or off-site. Unless stated otherwise, the geological information provided is for general environmental interpretation and should not be used for geotechnical and/or design purposes.

2. SITE DETAILS

2.1 Site Location

The site lies within the south west corner of the STDC regeneration area within the Grangetown Prairie Zone. The extent of the ERF outline permission (R/2019/0767/OOM) covers around 10 ha of land that is roughly rectangular in shape. The site is situated between John Boyle Road to the west, Tees Dock Road to the east, the A66 to the south, and the railway line to the north. Further to this, Dorman Point Way is a newly constructed road that lies to the south of the proposed ERF site.

The site subject to the reserved matters application sits within the area of the outline permission and covers an area of 8.87 ha, at 10m above Ordnance Datum. The existing site and reserved matters boundary is shown in Figure 1.

The ERF site is a previously developed industrial site that was formerly used for the production of iron and steel (occupied by Eston Iron Works and Cleveland Steel Works). Following the closure of the steel works and cessation of industrial activities, the building complex was cleared in the 1980's and the site is now vacant.

2.2 Site Description

It was found during a walkover undertaken by Ramboll in January 2023 that remediation works are now complete on site and the entirety of the site is now flattened, levelled and built up with aggregate.A review of aerial photography indicates that the site surface, prior to the current remediation, was sparsely occupied by scrubland, partially buried concrete hardstanding and limited areas of standing water in depressions in the site surface. An above-ground pipe rack passed through the southernmost corner of the site, running from northwest to southeast.

The site is immediately surrounded by Grangetown Prairie, which has similarly been subject to demolition and recent remediation and comprises a similar surface to the site.

An above-ground pipe rack runs through Grangetown Prairie in a roughly northwest to southeast direction, approximately 30 m west of the site. The pipe rack is connected to a building located approximately 140 m southeast of the site, adjacent to Grangetown Prairie. It is believed to be associated with the now-demolished former land use at Grangetown Prairie.

An industrial estate is located approximately 140 m west of the site and adjacent to Grangetown Prairie. A high voltage overhead cable and associated pylons are located adjacent to the northern site boundary running parallel to the site boundary. The Tees Valley Railway (TVR) Line is located immediately beyond this, running approximately parallel to the northern site boundary.

2.3 Background

The WFD (2000/60/EC) was published in December 2000 and transposed into English law in December 2003 through the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003, later being updated through The Water Environment (WFD) (England and Wales) (Amendment) Regulation 2015 and most recently The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. The intention of the Directive is to provide a more holistic approach to protection of the water environment than had previously been in place, addressing a wide range of aspects of the water environment, including physico-chemical, chemical, hydromorphological and ecological.

The environmental objectives of the WFD are to:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;

- Aim to achieve at least 'good' status for all water bodies by 2015. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve 'good' status by 2021 or 2027;
- Meet the requirements of Water Framework Directive protected areas;
- Promote sustainable use of water as a natural resource;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Contribute to mitigating the effects of floods and droughts.

The Directive requires that the Environment Agency (EA) define River Basin Districts and for each of these develop a River Basin Management Plan (RBMP). As part of this process all inland (above or below ground) and coastal waters have been allocated status categories in order to help inform where water bodies are at risk and/or protective/management measures need to be put in place.

3. ASSESSMENT

3.1 Assessment Process

In December 2016 the EA produced updated guidance[2] as to how to assess the impact of activities in estuarine (transitional) and coastal waters with respect to the requirements of the WFD. The aim of such WFD assessments is to assist the regulator, in this case the EA, in assessing:

- The impact an activity may have on the immediate water body and any linked water bodies; and
- Whether the activity complies with the relevant River Basin Management Plan (RBMP).

The EA guidance adopts a three-stage process as follows:

i. Screening – This excludes any activities that do not need to go through the scoping or impact assessment stages;
ii. Scoping – identifies the receptors that are potentially at risk from your activity and need impact assessment; and
iii. Impact assessment – considers the potential impacts of your activity, identifies ways to avoid or minimise impacts, and shows if your activity may cause deterioration or jeopardise the water body achieving good status.

The review provided below follows this same structure.

3.2 Review of Existing WFD Report: Energy Recovery Facility – Water Framework Directive Assessment (December 2019), produced by JBA Consulting

A WFD report was completed by JBA Consulting in December 2019 to determine the effects of the proposed ERF facility based on an outline design on ecological, hydromorphological and chemical quality characteristics of water bodies designated under the WFD that are located within the vicinity of the site. It also sought to identify any potential impacts that could cause deterioration in the current status of any of these water bodies or could hinder them from meeting their WFD objectives in the future.

3.3 Screening

Table 3.1 provides a summary of the WFD water bodies statuses and objectives as they were at the time of the JBA WFD assessment, and as they stand at the time of writing, together with a screening decision as to whether each of the bodies requires assessment.

[2] https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

Table 3.1: WFD Statuses, Objectives and Screening

WFD Water Bodies		Tees Transitional Water Body (GB510302509900)	Tees Estuary (S Bank) River (GB103025072320)	Tees Coastal Water (GB650301500005)	Morton West Beck Catchment (tributary of Tidal Tees) River (GB103025072210)	Tees Mercia Mudstone and Redcar Mudstone Groundwater Water Body (GB40302G701300)
JBA Report	**Overall status**	Moderate	Moderate	Moderate	Moderate	Poor
	Overall Status Objective	Moderate by 2015	Good by 2027	Good by 2027	Good by 2027	Poor by 2015
Ramboll	**Overall status**	Moderate	Moderate	Moderate	Moderate	Poor
	Overall Status Objective	Moderate by 2027	Good by 2027	Good by 2027	Good by 2027	Poor by 2027
Screening outcome by JBA at outline stage		**Screened in:** There is potential for the proposed development to discharge into the Tees Estuary and as such this water body may be impacted.	**Screened in:** There is potential for any discharges into the Tees Estuary to reach and impact this downstream water body.	**Screened in:** There is potential for any discharges into the Tees Estuary to reach and impact this downstream water body.	**Screened out:** This upstream water body is considered sufficiently distant from the proposed development and no hydrological pathways are identified that may connect the site to the water body.	**Screened in:** The proposed development is located over this groundwater water body and therefore it has the potential to be impacted, as construction of the facility will require deep excavations and foundations (such as the waste bunker).
Ramboll comments with respect to the current proposed development		Ramboll agree with the JBA screening outcomes when considering these with respect to the detailed design proposed development as it currently stands.				

3.4 **Scoping**

Table 3.2, Table 3.3, and Table 3.4 provides a review and update of the WFD scoping assessment.

Table 3.2: WFD Scoping Assessment – Surface Water

Baseline Status	Tees Transitional Water Body		Tees Estuary (S Bank) River		Tees Coastal Water	
	JBA Consulting (December 2019)	**Ramboll Comments**	**JBA Consulting (December 2019)**	**Ramboll Comments**	**JBA Consulting (December 2019)**	**Ramboll Comments**
Biological Quality Elements Status						
Fish Invertebrates Macrophytes and Phytobenthos	If the proposed development involves any discharges into the Tees Estuary, there is potential to negatively impact fish, invertebrate, macrophyte and phytobentho populations through accidental pollution events and local disturbance at discharge point(s). Construction of the ERF facility may also result in discharges into the Tees Estuary. Deposition of discharged materials may cover fish gravels or estuary bed, damaging habitat for these species. There is potential for entrapment of fish as a result of abstraction. **Requires impact assessment**	Surface water runoff is proposed to be attenuated via a hybrid system which includes both an attenuation pond and lined below-ground attenuation tank. Runoff attenuated above Q bar will discharge into Holme Beck (subject to approval) which will in turn discharge into the Tees Estuary, therefore there is the potential to negatively impact water biological populations, through accidental pollution events and local disturbance at discharge point(s). Construction of the proposed development may also result in surface discharges into the Tees Estuary. Deposition of discharged materials may cover fish gravels or estuary bed, damaging habitat for these species. No water abstraction is proposed from the Tees Estuary. **Requires impact assessment**	If the proposed development involves any discharges from construction and / or operation of the ERF facility into the Tees Estuary have the potential to reach the river and negatively impact fish, invertebrate, macrophyte and phytobentho populations through pollution. Discharged materials which reach the river may be deposited, covering fish gravels or smother invertebrate habitat. **Requires impact assessment**	Surface water runoff is proposed to be attenuated via a hybrid system which includes both an attenuation pond and lined below-ground attenuation tank. Runoff attenuated above Q bar will discharge into Holme Beck (subject to approval) which will in turn discharge into the Tees Estuary, therefore, there is the potential to negatively impact water biological populations, through accidental pollution events, where pollution may be washed upstream into Dabholm Gut (the lower reach of the water body) and potentially deposited. Construction of the proposed development may also result in surface discharges into the Tees Estuary (S Bank). Deposition of discharged materials may cover fish gravels or estuary bed, damaging habitat for these species. No water abstraction is proposed from the Tees Estuary (S Bank). **Requires impact assessment**	-	-
Phytoplankton Other aquatic flora Benthic invertebrate fauna	-	-	-	-	Any discharges from construction and / or operation of the ERF facility into the Tees Estuary have the potential to reach this coastal water body and negatively impact phytoplankton, other aquatic flora and benthic invertebrate fauna through pollution. Discharged materials which reach the coastal water body may be deposited, damaging habitat for these species. **Requires impact assessment**	The proposed development is proposed to only discharge surface water into Holme Beck which will in turn discharge into the Tees Estuary, when the surface water runoff attenuated above the Q bar is reached, there is therefore the potential to negatively impact phytoplankton, other aquatic flora and benthic invertebrate fauna. **Requires impact assessment**
Hydromorphological Quality Element Status						
Depth variation and width variation	If the proposed development involves any discharges into the Tees Estuary there is potential for water depth to vary depending on the timings and volumes of discharge from the ERF facility. If abstraction from the Tees Estuary is required, this will also impact depth variation. **Requires impact assessment**	The proposed development will discharge surface water into the Tees Estuary, therefore there is the potential for water depth to vary depending on the timings and volumes of discharge from the proposed development. No water abstraction is proposed from the Tees Estuary. **Requires impact assessment**	Abstraction and discharge processes (from construction and / or operation of the ERF facility) have the potential to impact Tees Estuary resulting in impacts to the depth and width of the river, dependent on the timings and scale. **Requires impact assessment**	The proposed development will discharge surface water into the Tees Estuary, therefore there is the potential for water depth to vary depending on the timings and volumes of discharge from the proposed development. No water abstraction is proposed from the Tees Estuary. **Requires impact assessment**	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**
Quantity, structure and substrate of the riverbed /coastal bed	If discharges are made into the Tees Estuary this may result in deposition of materials which will alter the estuary bed. **Requires impact assessment**	Water discharged into the Tees Estuary may result in localised deposition of materials which could alter the estuary bed. **Requires impact assessment**	If discharged materials reach the river there is potential to alter the structure and substrate of the riverbed. In particular, the discharge of materials is anticipated to be at its westernmost end, with alterations being greatest at this location. **Requires impact assessment**	Should water be discharged into the Tees Estuary this may result in localised deposition of materials which could alter the riverbed at its downstream end (within Dabholm Gut). **Requires impact assessment**	Any discharged materials which reach the coastal water body may be deposited. In particular, they may be deposited at the mouth of the Tees Estuary. Depositioning of materials may impact the structure and substrate of the coastal bed and the structure of the intertidal zone. **Requires impact assessment**	Any discharged materials which reach the coastal water body may be deposited, in particular at the mouth of the Tees Estuary, which may impact the structure and substrate of the coastal bed and the structure of the intertidal zone. **Requires impact assessment**

Baseline Status	Tees Transitional Water Body		Tees Estuary (S Bank) River		Tees Coastal Water	
	JBA Consulting (December 2019)	**Ramboll Comments**	**JBA Consulting (December 2019)**	**Ramboll Comments**	**JBA Consulting (December 2019)**	**Ramboll Comments**
Structure of the intertidal zone	Any abstraction and discharge processes have the potential to impact on the intertidal zone, depending on their timings and scale. **Requires impact assessment**	Any discharge processes have the potential to impact on the intertidal zone, depending on their timings and scale. No water abstraction is proposed from the Tees Estuary. **Requires impact assessment**	-	-		
Freshwater flow	Freshwater flow from WFD and non-WFD waterbodies., **Requires impact assessment**	Flow from the site will potentially change, however it should be noted that the drainage design will restrict the surface water runoff rates to greenfield run-off rates, and thus no impact is predicted. No further assessment needed. Reference should be made to Flood Risk Assessment/drainage strategy. **Requires no impact assessment**	-	-	Abstraction and discharge processes into the Tees Estuary may impact freshwater flow into this coastal water body. **Requires impact assessment**	It is considered unlikely that the proposed development will have an impact upon the freshwater flows at the site due to the distance from the site to the waterbody **Requires no impact assessment**.
Wave exposure	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**	-	**-**	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**
Hydrology: Quantity and dynamics of water flow	**-**	Discharge processes (both during the construction and operation of the proposed development) have the potential to impact Tees Estuary resulting in impacts to the quantity and dynamics of the river's water flow, dependent on the timings and scale. No water abstraction is proposed from the Tees Estuary. **Requires impact assessment**	Abstraction and discharge processes (from construction and / or operation of the ERF facility) have the potential to impact Tees Estuary resulting in impacts to the quantity and dynamics of the river's water flow, dependent on the timings and scale. **Requires impact assessment**	Discharge processes (both during the construction and operation of the proposed development) have the potential to impact Tees Estuary (S Bank) resulting in impacts to the quantity and dynamics of the river's water flow, dependent on the timings and scale. No water abstraction is proposed from the Tees Estuary (S Bank). **Requires impact assessment**	-	-
Hydrology: Connection to groundwater bodies	**-**	Reference should be made to the Ramboll contaminated land condition report[3]. Ramboll report noted that previous ground investigations undertaken by Stantec inferred that groundwater generally flowed in a westwards direction towards the Tees Estuary. Given that the Tees Estuary is located to the north of the site and the River Tees is located 1.4 km to the northwest of the site at its closest point, Ramboll anticipates groundwater flow direction to be in a northerly to north-westerly direction. Stantec noted that tidal defences have been constructed in the Tees Estuary, and therefore the potential for tidal influence on groundwater levels may be limited. Should piling or deep foundations be proposed at the site, mitigation in compliance with the findings of a Foundation Works Risk Assessment will be undertaken. **Requires no impact assessment**	No impacts are anticipated due to the location of the WFD body being approximately 1.8 km northeast of the site. **Requires no impact assessment**	Reference should be made to the Ramboll contaminated land condition report[3]. Ramboll anticipates groundwater flow direction to be in a northerly to north-westerly direction. There is likely to be little interaction between waterbodies. **Requires no impact assessment**	-	-

[3] Ramboll. June 2021. Tees Valley Energy Recovery Facility. Contaminated Land Condition Report. Report Reference: 1620010534-RAM-XX-XX-RP-EV-00001

Baseline Status	Tees Transitional Water Body		Tees Estuary (S Bank) River		Tees Coastal Water	
	JBA Consulting (December 2019)	**Ramboll Comments**	**JBA Consulting (December 2019)**	**Ramboll Comments**	**JBA Consulting (December 2019)**	**Ramboll Comments**
River continuity	-	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**	-	-
Morphology: Structure of the riparian zone	-	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**	No impacts are anticipated. **Requires no impact assessment**	-	-
Tidal regime: Direction of dominant currents	-	Previous investigation undertaken by Stantec noted that tidal defences have been constructed in the Tees Estuary, and therefore the potential for tidal influence on groundwater levels may be limited. In addition, no works within the water is proposed. No impacts are anticipated. **Requires no impact assessment**	-	No works within the water is proposed. No impacts are anticipated. **Requires no impact assessment**	No works within the water is proposed. No impacts are anticipated. **Requires no impact assessment**	No works within the water is proposed. No impacts are anticipated. **Requires no impact assessment**
Physico-Chemical Quality Elements Status						
Transparency Thermal conditions Oxygenation conditions Salinity Nutrient conditions Specific Pollutants Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	If the proposed development involves discharging into the Tees Estuary, there is potential to directly impact all these physico-chemical elements dependent on the nature of the discharge. Construction of the ERF facility may also result in discharges into the Tees Estuary. If abstraction is also required, there is potential to influence these physico-chemical elements. **Requires impact assessment**	Surface water runoff is proposed to be attenuated via a hybrid system which includes both an attenuation pond and lined below-ground attenuation tank. Runoff attenuated above Q bar will discharge into Holme Beck (subject to approval) which will in turn discharge into the Tees Estuary, therefore there is the potential to directly impact all these physico-chemical elements (with the exception of thermal conditions). During the construction of the proposed development surface water runoff may also result in discharges into the Tees Estuary. No water abstraction is proposed from the Tees Estuary. **Requires impact assessment**	Abstraction and discharge processes (from construction and / or operation of the ERF facility) have the potential to impact Tees Estuary resulting in impacts to the physico-chemical elements of the river, dependent on the timings and scale. **Requires impact assessment**	Surface water runoff is proposed to be attenuated via a hybrid system which includes both an attenuation pond and lined below-ground attenuation tank. Runoff attenuated above Q bar will discharge into Holme Beck (subject to approval) which will in turn discharge into the Tees Estuary, therefore there is the potential to directly impact all these physico-chemical elements of this downstream water body. During the construction of the proposed development surface water runoff may also result in discharges into the Tees Estuary and enter this downstream waterbody during incoming tidal conditions. No water abstraction is proposed from the Tees Estuary (S Bank). **Requires impact assessment**	Any abstraction and discharge processes (from construction and / or operation of the ERF facility) have the potential to impact Tees Estuary resulting in impacts to all the physico-chemical elements of the coastal water body, dependent on the timings and scale. **Requires impact assessment**	The proposed development (from construction and operational use) will discharge surface water into the Tees Estuary above the Q bar (subject to approval), and therefore there is the potential to directly impact all these physico-chemical elements of the coastal water body. **Requires impact assessment**

Table 3.3: WFD Scoping Assessment – Groundwater

Baseline Status	Groundwater - Tees Mercia Mudstone and Redcar Mudstone Groundwater water body	
	JBA Consulting (December 2019)	**Ramboll Comments**
Tees Mercia Mudstone and Redcar Mudstone Drinking Water Protected Area (DrWPA)	This DrWPA will be negatively impacted by pollution from discharges during construction and / or operation of the ERF facility. **Requires impact assessment**	The DrWPA has the potential to be negatively impacted by pollution from construction activities that may enter the ground. Should piling (such as augured piles) be undertaken this could produce vertical pathways that could create a potential risk to aquifer within the DrWPA. In addition, dewatering of the proposed excavations is proposed during the construction phase. Dewatering could significantly increase the risk of contaminant migration towards the proposed excavations (such as the waste bunker) through the creation of a cone of depression. **Requires impact assessment**

3.5 Protected Species

The Tees Transitional water body and the Tees Estuary (S Bank) River are both linked to the Teesmouth and Cleveland Coast which is designated as a Special Protection Area (SPA) and Ramsar site.

These designations are due to the water bird assemblage that these sites are able to support. In addition, Tees Transitional water body and the Tees Estuary (S Bank) River is also designated as a Site of Special Scientific Interest (SSSI) for its nationally important geology and mosaic of coastal and freshwater habitats, which support a diverse assemblage of birds, invertebrates associated with sand dunes and breeding harbour seals *Phoca vitulina*. Table 3.4 shows how far the protected sites are in relation to the proposed development.

Table 3.4: Designated Sites

Type (within 2 km)	Name	Distance from Site
Site of Special Scientific Interest (SSSI)	Teesmouth and Cleveland Coast	1.4 km north
Special Protection Area (SPA)		1.8 km northwest
Potential Special Protection Area (pSPA)		1.8 km northwest
Ramsar		1.6 km northwest
PRamsar		

Table 3.5: WFD Scoping Assessment – Protected Sites

Baseline Status*	JBA Consulting (December 2019)	Ramboll Comments
Teesmouth and Cleveland Coast SPA, pSPA, Ramsar, pRamsar and SSSI	Any discharges into the Tees Estuary have the potential to reach these designated sites, causing pollution effects that will impact the coastal habitats and its associated bird assemblages. There is potential for disturbance due to noise and also air pollution	A Shadow Habitat Regulations Assessment has been produced by Terence O'Rourke Ltd in March 20234. No impacts to the Teesmouth and Cleveland Coast SPA, pSPA, Ramsar, pRamsar and SSSI were identified by Terence O'Rourke Ltd. In addition, it is unlikely that the proposed construction works will disturb sediments as there will be no in-channel works. The

[4] Terence O'Rourke Ltd. March 2023. Draft Shadow Habitat Regulations Assessment.

Baseline Status*	JBA Consulting (December 2019)	Ramboll Comments
	which will negatively affect the bird populations. **Requires impact assessment**	proposed works will be undertaken on land, which will reduce the potential for mobilisation of material into the water column. The following mitigation measures include; • The completion of a construction works under the management of a Construction Environmental Management Plan (CEMP) which is required under a condition on the outline permission. For example, all construction will follow the requirements of the Pollution Prevention Guidelines (PPG5) and carry appropriate spill kits should accidental spillage occur, to minimise the effects upon water quality; • Water quality downstream of the works should be monitored regularly to detect any changes that could indicate a pollution incident. Should the monitoring indicate any potential pollution works should stop and a solution found to prevent pollution; and • Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks. Requires no impact assessment
Bathing Waters	Any discharges into the Tees Estuary have the potential to reach these designated sites, causing pollution effects that will impact bathing waters along the coastline. **Requires impact assessment**	Bathing waters, the closest bathing water sites to the site, include: • Seaton Carew North Gare approximately 5km northeast); • Redcar Coatham (approximately 6.7 km)); and • Redcar Lifeboat station (approximately 9 km east of the site) Due to the distance of the closest designated bathing water being approximately 5 km northeast of the site, the risks to bathing waters are considered to be low. In addition, any discharge would be subject to significant dilution by the time that it reached a designated bathing water. Construction works will be completed and managed using a CEMP; for example, all construction will follow the requirements of the Pollution Prevention Guidelines (PPG5) and carry appropriate spill kits should accidental spillage occur, to minimise the effects upon water quality. In addition, Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.

Baseline Status*	JBA Consulting (December 2019)	Ramboll Comments
		During the operation phase of the project the surface water discharged from the site would be anticipated to be uncontaminated. Where water was derived from higher risk locations, such as HGV parking areas, surface water run-off would pass through interceptors prior to discharge. In addtion, the surface water runoff is proposed to be attenuated via a hybrid system which includes both an attenuation pond and lined below-ground attenuation tank. Requires no impact assessment
Seal Sands, Tees Estuary Urban Wastewater Treatment Directive (UWWTD)	This Directive relates to the area to the north of the Tees Estuary and therefore is not considered to be impacted by the proposed development. **Requires no impact assessment**	This Directive relates to the area to the north of the Tees Estuary and therefore is not considered to be impacted by the proposed development. **Requires no impact assessment**
NVZs (244 (ID: NVZ12SW012450) and 245 (ID: NVZ12SW012440))	These NVZs are upstream of the Tees Estuary and will not be impacted by the proposed development. **Requires no impact assessment**	These NVZs are upstream of the Tees Estuary and will not be impacted by the proposed development. **Requires no impact assessment**

Notes:
*
SPA: Special Protection Area
pSPA: Potential Special Protection Area
Ramsar: Convention on Wetlands of International Importance
pRamsar Proposed Convention on Wetlands of International Importance
NVZs: Nitrate Vulnerable Zones

3.6 Impact Assessment

The impact assessment is provided in Table 3.6. Table 3.6 provides a comparison between the reserved matters application and the outline proposed development from 2019. In general, the main difference between the scenario assessed by JBA and the current detailed proposed development are that in the current proposals there will be no abstraction of water, apart from dewatering required within excavations for the waste bunker and excavations are likely to be deeper than previously assumed.

The impact assessment below is written in the context of the following mitigation measures/design interventions being included within the design and construction of the proposed works:

i. Completion of construction works under the management of a Construction Environmental Management Plan (CEMP); for example, all construction will follow the requirements of the Pollution Prevention Guidelines (PPG5) and carry appropriate spill kits should accidental spillage occur, to minimise the damage caused by such an event;
ii. Discharge of wastewater through connection to mains sewage or obtain an appropriate environmental permit from the EA;
iii. Pollution prevention measures, such as implementing the CIRIA Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors (C532D);
iv. Completion of a Foundation Works Risk Assessment (FWRA), if deep or piled foundations are included within future developments, with piling methods and protocol being implemented in

compliance with the FWRA in order to minimise risk of migration of contamination from the site to underlying groundwater bodies;

v. Preventing silt runoff, such as silt curtains used, where appropriate, to prevent silt from the construction works entering the watercourse and any exposed sloping bare earth should be covered as soon as possible to prevent soil erosion and silt runoff;
vi. Regular monitoring of water quality downstream of the works to detect any changes that could indicate a pollution incident; and
vii. Programming of the construction period to minimise effects on fish and aquatic species.

Table 3.6: WFD Impact Assessment

WFD Quality Element	Pathway (direct/ indirect/ none)	Potential Impact/ Mitigation Measures JBA Consulting 2019	Ramboll Comments in Relation to the Current Proposed Development
Biological			
Fish	Direct and Indirect	The potential for discharge into the Tees Estuary may result in pollution, dependent on the nature of the discharged materials. Deposition of these materials may also cover fish gravels. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks. A fish guard must be installed to prevent entrapment within the abstraction pipe(s). Discharge and abstraction points shall be minimised wherever possible to decrease the levels of disturbance to these biological elements.	**Construction** • No highly sensitivity habitats were recorded within 2 km of the site boundary. • No abstraction is proposed at the site, however dewatering of the proposed excavations would be required during the construction phase for the waste bunker, as a minimum. • The proposed works are unlikely to disturb sediments as no in- channel works are proposed and thus the risk to biological creatures (such as fish, crabs, clams and other shellfish) is low. • The identified effects associated with the proposed works will be limited in extent and the effects, such as deposition of materials and pollution will be temporary and will not contribute to deterioration of the Tees Estuary water body. • Pollution prevention measures should be put in place, such as using drip trays and using emergency spill kits. • The completion of a construction works under the management of a Construction Environmental Management Plan (CEMP). No significant effects are anticipated during the construction phase to the Tees transitional water body, the Tees Estuary (S Bank) River and the Tees coastal water body. **Operation** • The proposed development will not present an impediment to fish movement or behaviours as the proposed development will not have direct in-water works nor encroach on the estuary channel. • No significant effects are anticipated during the operational phase of the proposed development, in relation to the Tees Transitional water body, the Tees Estuary (S Bank) River and the Tees coastal water body.
Invertebrates	Direct and Indirect		
Macrophytes and phytobenthos	Direct and Indirect		
Phytoplankton	Direct and Indirect		
Other aquatic flora	Direct and Indirect		
Benthic invertebrate fauna	Direct and Indirect		
Hydromorphological			
Quantity, structure and substrate of the estuary, river and coastal bed	Direct and Indirect	Discharge and abstraction processes will impact depth variation of the Tees Estuary, depending on timings and the scale of these processes. A Water Resources licence will be required, which regulates levels of water abstraction. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks. There will be direct impacts to the structure and substrate of the Tees Estuary bed as a result of deposition of discharged materials. There will also be indirect impacts to the river and coastal water body as discharged materials are carried into these waterbodies. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	**Construction** • No works are proposed within the Tees Estuary for the development, therefore the risk to hydromorphological status is low. • Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks. • The proposed works will be limited in extent and the effects will be temporary and will not contribute to deterioration of the Tees Estuary water body. • No abstraction is proposed at the site, however dewatering of the proposed excavations would be required during the construction phase for the waste bunker and excavations which are likely to be deeper than previously assumed. No significant effects are anticipated during the construction phase to the Tees Transitional water body, the Tees Estuary (S Bank) River and the Tees coastal water body. **Operation** • Discharge into the Tees Estuary is not proposed; • It is considered unlikely that the proposed development will have an impact upon the Tees Transitional water body, the Tees Estuary (S Bank) River and the Tees coastal water body freshwater flows, due to controlled surface water runoff rates through the proposed drainage strategy (such as implementing runoff discharge rates agreed with Northumbrian Water and constructing both attenuation ponds and below ground attenuation tanks), reference should be made to the Ramboll Drainage technical note (1620010534, Memo Number: 01, Dated 08/10/2021); and • No abstraction is proposed at the site. No significant effects are anticipated during the operational phase of the proposed development, in relation to the Tees Transitional water body, the Tees Estuary (S Bank) River and the Tees coastal water body.
Structure of the intertidal zone	Direct and Indirect	There will be direct impacts to the structure of the Tees Estuary's intertidal zone as a result of deposition of discharged materials. There will also be indirect impacts to coastal intertidal zone as discharged materials are carried into these waterbodies. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	
Freshwater flow	Direct and Indirect	Discharge and abstraction processes will impact freshwater flow into the Tees Estuary, depending on timings and the scale of these processes, and subsequently into the river and coastal water body. A Water Resources licence will be required, which regulates levels of water abstraction. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	
Hydrology: Quantity and dynamics of water flow	Indirect	Discharge and abstraction processes into the Tees Estuary may indirectly impact quantity and dynamics of water flow into the river. A Water Resources licence will be required, which regulates levels of water abstraction. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	

WFD Quality Element	Pathway (direct/ indirect/ none)	Potential Impact/ Mitigation Measures JBA Consulting 2019	Ramboll Comments in Relation to the Current Proposed Development
Morphology: River depth and width variation	• Indirect	Discharge and abstraction processes into the Tees Estuary may indirectly impact river depth and width variation. A Water Resources licence will be required, which regulates levels of water abstraction. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	
Physico-chemical			
Transparency Thermal conditions Oxygenation conditions Salinity Acidification status Nutrient conditions Specific Pollutants Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Direct and Indirect	The potential for discharge into the Tees Estuary may result in direct pollution and indirect pollution to the Tees Estuary (S Bank) River and Tees Coastal water body, dependent on the nature of the discharged materials. Discharges into the environment must be through connections to mains sewage. If this is not possible, an appropriate Environmental Permit must be obtained from the EA. Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	**Construction** • It is unlikely that the proposed construction works will disturb sediments as there will be no in-channel works. • The proposed works will be undertaken on land, which will reduce the potential for mobilisation of material into the water column. • The completion of a construction works under the management of a Construction Environmental Management Plan (CEMP), for example, all construction will follow the requirements of the Pollution Prevention Guidelines (PPG5) and carry appropriate spill kits should accidental spillage occur, to minimise the effects upon water quality; • Water quality downstream of the works should be monitored regularly to detect any changes that could indicate a pollution incident. Should the monitoring indicate any potential pollution works should stop and a solution found to prevent pollution. • Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks. On the basis of the above, together with the implementation of mitigation measures, it is concluded that the proposed development will not result in a significant residual effect on the water quality at and within the vicinity of the site. **Operation** • Surface water runoff is proposed to be attenuated via a hybrid system which includes both a lined attenuation pond and below-ground attenuation tank. Runoff attenuated above Q bar will discharge into Holme Beck which will in turn discharge into the Tees Estuary, all wastewater discharges must be through connections to mains sewage, not into the surface water bodies. • Surface water discharged from the site would be anticipated to be uncontaminated. Where water was derived from higher risk locations, such as outside workshops, surface water run-off would pass through interceptors prior to discharge. No significant effects are anticipated during the operational phase of the proposed development, in relation to the Tees Transitional water body, the Tees Estuary (S Bank) River and the Tees coastal water body.
Tees Mercia Mudstone and Redcar Mudstone DrWPA	Direct	The DrWPA may be directly impacted by abstraction and discharge processes (during construction and / or operation of the ERF facility). Pollution prevention measures shall be implemented during construction works to prevent excessive sediment input and mitigate impacts in the event of oil or fluid leaks.	**Construction** • Historical ground investigations at the site by Enviros in 2007 recorded groundwater levels between 1.52 mbgl and 2.5 mbgl, with perched groundwater levels occurring within the Glaciolacustrine Deposits. Stantec inferred that groundwater generally flowed in a westward's direction towards the Tees Estuary. Given that the Tees Estuary is located to the north of the site and the River Tees is located 1.4 km to the northwest of the site at its closest point, Ramboll anticipates groundwater flow direction to be in a northerly to north-westerly direction. Stantec noted that tidal defences have been constructed in the Tees Estuary, and therefore the potential for tidal influence on groundwater levels may be limited. • Communication from the EA to RCBC dated 20 August 2020 (ref. NA/2020/115071/01-L01, see Appendix 1) noted that while the site is considered a lower environmental sensitivity area with respect to groundwater, the EA did not consider the pollution risk to controlled waters underlying Grangetown Prairie to be acceptable or that it should not be considered further without appropriate investigation and assessment. • It should be noted that piling is proposed for the heavy foundations and slabs across the site, the type of piling is currently unknown. In addition, dewatering of the proposed bunker excavations would be required during the construction phase. Dewatering could significantly increase the risk of contaminant migration towards the proposed excavations (such as the waste bunker) through the creation of a cone of depression. • Disposal of potentially contaminated water: Discharges to public foul/combined sewers will require consent from the water and sewerage provider. If the water and sewerage provider is unable to approve, it will be necessary to tanker the contaminated water off site for authorised disposal. No abstraction is proposed at the site, apart from the potential dewatering of excavations during the construction phase. **Operation** • The design of the proposed development does not include for discharge of water or other waste to ground.

3.7 Deterioration and Risk to Good Status Assessment

The identified effects associated with the proposed development will be limited in extent and duration (such as construction phase that will be short lived) and will not be significant. Implementation of the mitigation measures outlined within the JBA consulting report[1] will provide further protection to designated waterbodies. No significant deterioration in water body classification will occur, and as such the proposed development will:

- Not result in reduction of WFD classification in any water bodies;
- Not put at risk the good status/potential of any water body; and
- Not inhibit any water body from progressing towards good status/potential.

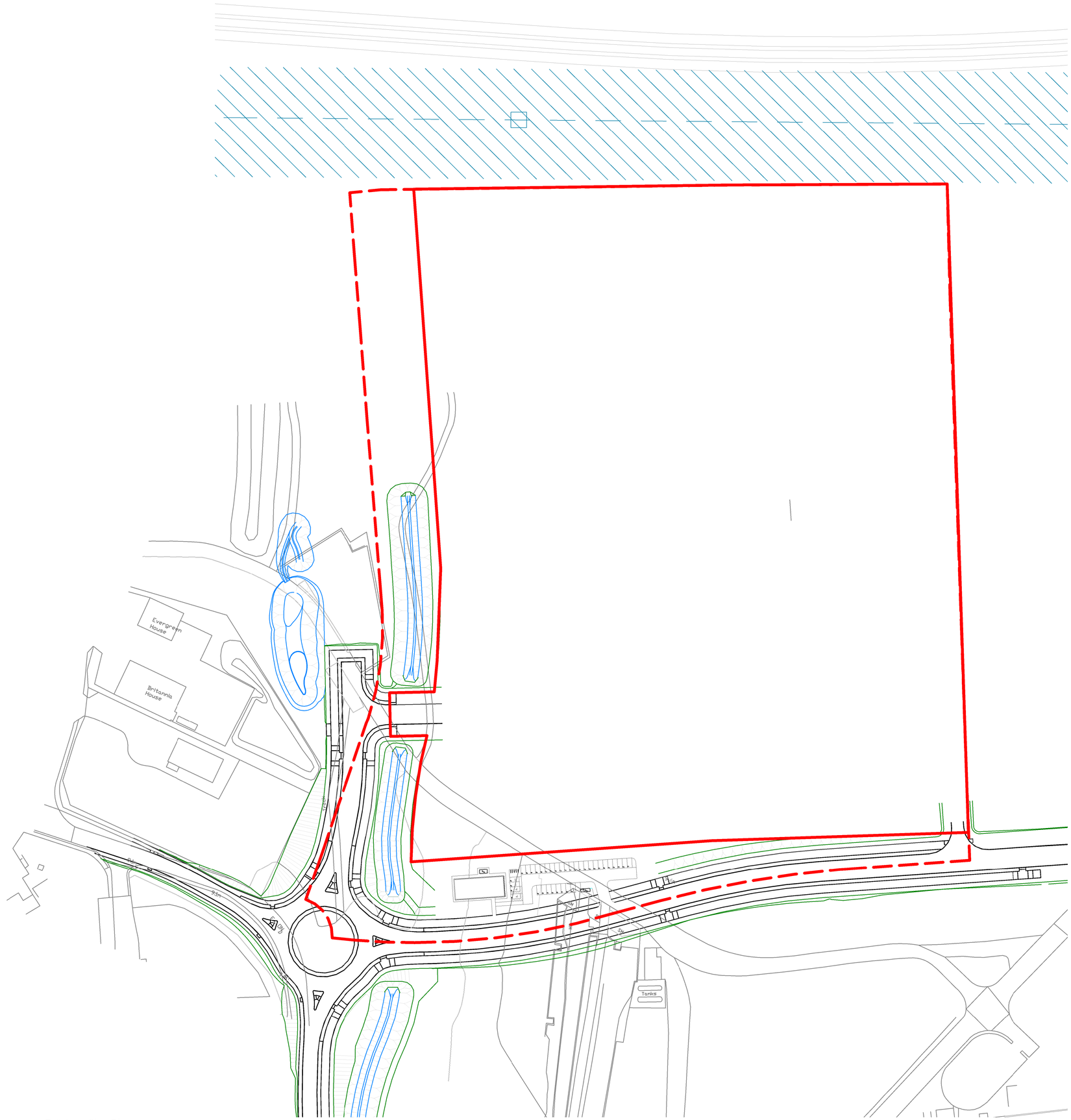
3.8 Mitigation

The EA Catchment Data Explorer website records that there are no water-body specific WFD mitigation measures in place for the Tees Estuary transitional water body, Tees Estuary (S Bank) River or Tees Coastal water bodies. As such the proposed development does not put at risk any mitigation measures.

4. CONCLUSIONS

It is concluded from the above assessment that, with implementation of the mitigation measures set out in the JBA document plus the environmental management set out in this report, the proposed development will not result in deterioration of the Tees Estuary transitional water body, Tees Estuary (S Bank) River and Tees Coastal water bodies. It is therefore concluded that the proposed detailed scheme is in compliance with the requirements of the WFD.

FIGURE 1
EXISTING SITE



0 10m 25m 50m
1:1000

Existing Site Plan
1 : 1000

General Notes

Do not scale from this drawing. Only work to written dimensions.

All site dimensions shall be verified by the Contractor on site prior to commencing any works.

Map bases were provided to Viridor Tees Valley Limited by the Tees Valley Energy Recovery Facility Contract Authority (comprising Darlington, Hartlepool, Middlesbrough, Redcar & Cleveland, and Stockton Unitary Authorities and Durham County Council and Newcastle City Council) in 2020.

Reserved Matters Boundary
Outline Planning Boundary

Site Area: 88,180m2 / (21.79 acres)

Highways indicated within this drawing form part of the new Teesworks development

Rev.	Description	Date	ISS	APP
P7	Amendment to drawing title	21.02.2023	JDC	RT
P6	General amendments	14.02.2023	JDC	RT
P5	Amendments to suit client comments	07.02.2023	JDC	RT
P4	Planning / Bid Issue	31.01.2023	JDC	RT
P3	General Updates	10.01.2023	JDC	RT
P2	General note added for copyright purposes	04.04.2022	JDC	RT
P1	Drawing updated to client comments	28.03.2022	JDC	RT
P0	Planning pack update	10.02.2022	JDC	RT

Scale **1 : 1000 @ A1**
Status **S2 Information**
Drawn By **JDC**
Checked By **RT**
Date **04.04.2022**

Client:
VIRIDOR

Project:
TEES VALLEY ERF

Sheet Name:
Existing Site Plan

Project No. Orig. Zone Level Type Role Cls Dwg No. Rev
20044-FRA-00-00-DR-A -90-0025 P7

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APPENDIX 1
EA LETTER – NA/2020/115071/01-LO1

creating a better place

Environment Agency

David Pedlow
Redcar & Cleveland Borough Council
Development Department
Belmont House Rectory Lane
Guisborough
Cleveland
TS14 7FD

Our ref: NA/2020/115071/01-L01
Your ref: R/2020/0318/FFM

Date: 20 August 2020

Dear David,

ENGINEERING OPERATIONS ASSOCIATED WITH GROUND REMEDIATION AND PREPARATION INCLUDING REMOVAL OF FORMER RAILWAY EMBANKMENT AND WORKS TO HOLME BECK AND KNITTING WIFE BECK LAND AT PRAIRIE SITE GRANGETOWN

Thank you for consulting us on the above planning application which we received 16 July 2020.

Environment Agency position
We have reviewed the submission and have **NO OBJECTION** to the development proposals subject to the following **CONDITION**.

In order to mitigate potential adverse effects, as noted within the *South Tees Development Corporation, Prairie Site Remediation, Ecological Impact Assessment Issue | 24 June 2020*, we would like to see the following condition:

Condition – Construction Environment Management Plan

No development shall commence until a Construction Environment Management Plan is submitted to, and agreed in writing by, the local planning authority. The Construction Environment Management Plan shall include the following:

- Measures to control invasive plant species

The Construction Environment Management Plan shall be implemented as approved.

Reason
This condition is supported by paragraph 170 of the National Planning Policy Framework (NPPF) which seeks to minimise impacts on biodiversity and prevent new development from contributing to unacceptable levels of water pollution.

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I would like to also add the following advisory comments:

Non-Environmental Agency lead priority species and habitats/species of conservation concern – Advice to LPA/applicant

Evidence shows that the proposed development poses a risk to a priority habitat or species that is *listed in section 41 of the NERC Act 2006/a species of conservation concern/ a habitat of conservation concern*. Common toad is known to be on site and information about the compensation for the loss of potential impact on the species as part of the development is lacking.

We strongly recommend that this is taken into account when the application is considered for approval. Failure to take relevant habitats and species into account may leave the determination of the application open to challenge.

Water Framework Directive – Advice to LPA/applicant

In reference to page 5 of the Ecological Impact Assessment, Arup, 24 June 2020, we would remind the developer that the Water Framework Directive 2000/60/EC covers all waters on land this is defined as “all standing or flowing water on the surface of the land”. The culverted watercourses are part of the water body GB510302509900, ‘Tees’. The current status of the Tees estuary (waterbody reference GB510302509900) is ‘moderate’ ecological potential.

The objective for this waterbody is to achieve ‘good’ ecological potential. Individual element classifications and objectives are provided below. These environmental objectives are legally binding. All public bodies must have regard to these objectives when making decisions that could affect the quality of the water environment. The River Tees is important wildlife corridor and should remain as such and be enhanced where possible.

Culverts and opportunities for net gain – Advice to applicant

To not de-culvert the watercourses would be a missed opportunity for WFD enhancement and biodiversity net gain and could have a detrimental effect for the sustainability of the site, increasing maintenance costs for future land owners.

Detrimental effects of culverting watercourses can include:

- increased likelihood of flooding due to their limited capacity and propensity for blockage, both of which can result in obstructions to flow, and loss of floodwater storage;
- exacerbating the nature of flooding by increasing flow velocities and speed of onset;
- loss of and adverse effects on morphology, fisheries and wildlife habitat including substrate;
- if present, adverse effects on protected species;

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- the creation of barriers to fish passage through increased water velocities, behavioural deterrent, shallow depths, darkness, oxygen depletion and eroded culvert entrances;
- increased geomorphological risk including changes to channel stability, river bank and bed erosion and increased deposition around the culverted sections;
- greater difficulties in providing for drainage connections;
- increased liabilities and costs due to the need to maintain, repair and replace culverts or to manage upstream and downstream risks;
- increased health and safety hazards, notably for workers clearing blockages and for children in urban areas;
- locally reduced groundwater recharge;
- increased difficulty in detecting the origins of pollution and in monitoring water quality;
- reduced resilience for communities and wildlife to the effects of extreme weather events, climate change and acute pollution.

In addition to avoiding the detrimental effects of new culverting listed above, the restoration of river corridors by removing or opening sections of existing culverting and restoring natural river beds and banks can have wider benefits, including:

- providing habitat for wildlife and improving its connectivity;
- providing additional flood storage capacity and slowing flows;
- ameliorating the urban heat island effect;
- providing areas for recreational use;
- improving amenity, health and educational opportunities;
- increasing property prices and their desirability;
- reducing maintenance costs and improving safety.

We are unlikely to support planning applications for proposals to build over existing culverts because of health and safety considerations, increased maintenance costs and complexities, and because future options to restore the watercourse may be precluded.

Forthcoming Environment and Biodiversity Strategy – Advice to LPA/applicant

In accordance with paragraph 175 of the National Planning Policy Framework (NPPF), local planning authorities should apply the following principles: if significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused. We would like to stress that prior to determining if compensation is suitable, options for on-site mitigation should always be explored.

In respect to the forthcoming Environment & Biodiversity Strategy we would recommend it includes suitable ponds and wet grassland habitat creation

designed to support common toad, as compensation for the loss of common toad breeding habitat, with suitable habitat monitoring and maintenance plans put in place. Opportunities on site should be sought, following the mitigation hierarchy principle. We recommend that CEMP includes measures to protect toads where possible, and consider measures either to displace them from the site or translocate them to a suitable receptor site.

The Environment and Biodiversity Strategy does not yet exist and therefore we would recommend that a condition is placed to secure compensation.

Ground contamination and protection of controlled waters – Advice to Applicant

This development site appears to have been the subject of past industrial activity which poses a medium risk of pollution to controlled waters.

However, we are unable to provide site-specific advice relating to land contamination as we have recently revised our priorities so that we can focus on:

- Protecting and improving the groundwater that supports existing drinking water supplies
- Groundwater within important aquifers for future supply of drinking water or other environmental use.

Please be aware that whilst we consider the site to be located within a lower environmental sensitive area, **we are not stating in any way that the pollution risk to controlled waters underlying the site is acceptable, should not be considered further by appropriate investigation and assessment.**

We would kindly remind the LPA that they are responsible for ensuring that the applicant appropriately investigate and address the risk to controlled waters, both surface waters and groundwaters. In doing so, this would promote remediation where required and an enhancement of the water environment through the planning regime. We would kindly ask the LPA to take into consideration our comments above with respect to controlled waters risk assessment.

We would highlight that the applicant be reminded of our current guidance which can be found on gov.uk and include Groundwater Protection, EA Approach to Groundwater Protection, Land Contamination Risk Management and the Guiding Principles of Land Contamination.

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Model procedures and good practice – Advice to LPA/applicant

We recommend that developers should:

- Follow the risk management framework provided in CLR11, Model Procedures for the Management of Land Contamination, when dealing with land affected by contamination
- Refer to our Guiding principles for land contamination for the type of information that we require in order to assess risks to controlled waters from the site - the local authority can advise on risk to other receptors, such as human health
- Consider using the National Quality Mark Scheme for Land Contamination Management which involves the use of competent persons to ensure that land contamination risks are appropriately managed
- Refer to the contaminated land pages on gov.uk for more information

Waste on-site – Advice to applicant

The CL:AIRE Definition of Waste: Development Industry Code of Practice (version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/or land development works is waste or has ceased to be waste. Under the Code of Practice:

- excavated materials that are recovered via a treatment operation can be reused on-site providing they are treated to a standard such that they are fit for purpose and unlikely to cause pollution
- treated materials can be transferred between sites as part of a hub and cluster project
- some naturally occurring clean material can be transferred directly between sites

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays. We recommend that developers should refer to:

- The position statement on the Definition of Waste: Development Industry Code of Practice
- The waste management page on GOV.UK

Waste to be taken off-site – Advice to applicant

Contaminated soil that is (or must be) disposed of is waste. Therefore, its handling, transport, treatment and disposal are subject to waste management legislation, which includes:

- Duty of Care Regulations 1991

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- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2016
- The Waste (England and Wales) Regulations 2011

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005 'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

If the total quantity of hazardous waste material produced or taken off-site is 500kg or greater in any 12 month period, the developer will need to register with us as a hazardous waste producer. Refer to the hazardous waste pages on GOV.UK for more information.

Information on nearby permits – Advice to Applicant
The Grangetown Prairie site falls outside of the former SSI integrated iron and steel making permit boundary. We understand that the land may not have been used for iron and steel making purposes since the 1970's or earlier. The Coke Oven Gas Main does run through the site and forms part of the COMAH establishment and will need appropriate decontamination.

Decision Notice
In accordance with the planning practice guidance (determining a planning application, paragraph 019), please notify us by email within two weeks of a decision being made or application withdrawn. Please provide us with a URL of the decision notice, or an electronic copy of the decision notice or outcome.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me on the number below.

Yours sincerely,

Ms Caitlin Newby
Planning Adviser

[redacted]