Proposed erection of a nitrate treatment building with associated infrastructure - land to the north of Risby Water Treatment Works, Risby, IP28 6QP

Project Summary Sheet

Nitrate

Nitrate is a naturally occurring form of nitrogen found in soil and is the most important source of nitrogen available to plants. Because nitrate is highly soluble, it can easily pass into surface and groundwater. Surface waters are particularly vulnerable to rapid changes in nitrate concentrations following prolonged heavy rain.

High levels of nitrate in surface and groundwater can be naturally occurring but are generally the result of agricultural practices which use animal manures or manufactured nitrate compounds as fertiliser.

Nitrate is tasteless, odourless and invisible to the naked eye. At high concentrations, nitrate can interfere with the ability of blood cells to carry oxygen which can cause significant health impacts, particularly in infants.

Due to the potential harm, public water supplies must comply with concentration limits. Anglian Water applies stricter targets than set out in supporting legislation:

- World Health Organisation limit = 100 mg/L
- European Union legislation = 50 mg/L
- Anglian Water limit = 45 mg/L

As rising nitrate levels within the area are predicted to continue over the next 5-6 years, a new nitrate treatment building and its ancillary infrastructure are required to ensure that the drinking water supplied to Anglian Water customers can continue to meet regulation standards.

Scheme Options

Of the four solutions available to treat nitrate levels, a system which utilises an ion exchange (IX) process is considered to be the most deliverable. All options also would require connecting pipework to/from the proposed nitrate building back to the existing RWTW. As the pipework would be located below ground, these works are considered permitted development under Part 13, Class A(a) of the Town and Country General Permitted Development Order 2015 (as amended).

Four parcels of land within the vicinity of the existing Risby Water Treatment Works (RWTW) have been assessed from technical, construction and operational perspectives. These options have been considered in detail and an overview map is appended to this summary sheet.

All the sites have ecological, heritage, flood risk and landscape constraints which will inform the planning decision making process.

Summary:

Parcels A and B

Both these areas of land have operational benefits including the relatively straightforward pipework connections. However, parts of the sites lie within Flood Zone 2 and 3. Further, correspondence with Historic England advised of a significant challenge with regard to the Scheduled Monument (Black Ditches: List Entry no. 1006065) to the northeast and recommended relocating the proposal site to a position north of the road.

Parcel C

Whilst outside of the Flood Zone, a similar challenge with regard to the aforementioned Scheduled Monument is anticipated. This area of land is also constrained operationally by both the overhead power lines and the proximity of

the existing boreholes to the north. Effective screening through landscaping would be inherently difficult given the changes in relief when viewing the parcel of land from the south.

Parcel D
Whilst outside the Flood Zone and further away from the Scheduled Monument, this parcel of land is identified as being a breeding habitat for Stone Curlew. A Preliminary Ecological Appraisal report has been commissioned, alongside a Habitat Regulations Assessment (HRA) Screening assessment to allow Ground Investigation and Archaeological investigations to take place. All archaeological investigations have been agreed with the Suffolk Archaeological Service. Conversations with Natural England are ongoing with respect to ecological impacts.

Parcel D
Notwithstanding the inherent ecological considerations of Parcel D, this area of land has emerged as the favoured location due, in part, to the extent of the challenges associated with the alternative parcel options.

Whilst the location of Parcel D falls outside of a defined built-up area, the proposed works would facilitate the operation of an element of utilities infrastructure which has a functional relationship with the treatment processes at the existing RWTW. In short, a countryside location is essential for the delivery of the proposed works. Subject to mitigation measures the proposal would accord with other policies in the development plan.

Noting the indicative elevations shown on the pre-application drawings, the nitrate building would likely represent a significant structure, measuring approximately 32m (L) x 22m (W) x 7.4m (H). The associated infrastructure would also be of a significant scale, reaching a height of approximately 10.2m. Whilst substantial, the over form of the building would be similar to a grain store/agricultural unit.

New landscaping as shown indicatively on the pre-application plans would be incorporated to screen elements of the development and soften the visual impact. New security fencing as specified would also be required to ensure that the site complies with the requirements of the Security and Emergency Measures Direction (SEMD).

Highways
Improvements to the existing access point from the highway to facilitate construction and operational traffic are required. A plan identifying the required improvements is included in the pre-app pack.

Brine water (a by-product of an IX operation) would require tankers to remove the brine for disposal off site. Based on similar operations, the following vehicle movements are envisaged:

- Approx. 6-7 tanker movements per week to remove the brine waste (which is taken to a water recycling centre for treatment.
- Approx. 1 HGV vehicle per month to deliver salt (which is used in the IX nitrate removal process)
- Monitoring/Maintenance procedures – 1 x car/van per week

Local Plan policies
From a review of the existing West Suffolk Local Plan and the West Suffolk Local Plan 'Main Modifications' March 2025 document, the following objectives and policies (*from the Main Modifications document*) are considered to be relevant. All would be addressed in a Planning Statement to accompany an application for planning permission.

Strategic Objectives:

- S02
- S013
- S016

Strategic Policies:

- SP1: The climate and environment emergency and sustainable development
- SP3: Design
- SP5: Locally Valued Landscapes
- SPx: Landscape
- SP6: Biodiversity net gain and enhancements
- SPx: Protected sites, habitats and features
- SP7: Special protection area and special areas of conservation
- SP9: The spatial strategy
- SPx: Economic development and essential utilities in the countryside
- SP11: Neighbourhood planning
- SP14: Historic Environment
- SP15: Infrastructure

Non-strategic policies:

- LP3: Electric vehicle charging points in new developments
- LP4: Reducing waste and the circular economy
- LP5: Flood risk and sustainable drainage
- LP6: Water quality and resources
- LP8: Protecting and enhancing natural resources, minimising pollution and safeguarding from hazards
- LP55: Archaeology

Mitigation measures

To inform the design and to understand the extent of the required mitigation, the following documents are being finalised by the project team:

- Arboricultural Assessment
- Archaeological Assessment
- Construction Environmental Management Plan
- Construction Traffic Management Plan
- Drainage Strategy
- Ecological Assessment
- Flood Risk Assessment
- Ground Investigations
- Habitats Regulations assessment
- Heritage Impact Assessment
- Landscape and Ecological Management Plan
- Landscape and Visual Impact Assessment
- Planning/Design and Access Statement

Site Selection options

