

Soil Management Strategy

Lullington Solar Park Limited

Land North of Lullington, Swadlincote

1.0 Introduction

- 1.1 Tetra Tech has been instructed by Lullington Solar Park Limited to prepare a Soil Management Strategy in relation to a development of a solar farm and associated infrastructure on land north of Lullington in Swadlincote.
- 1.2 The site covers approximately 70 hectares of farmland and the proposed works comprise the installation of ground mounted solar arrays, a Distribution Network Operator (DNO) substation, security fencing, security cameras and buried grid connections. Drainage swales would be formed at the site as part of the proposals.
- 1.3 The main purposes of this document are to: -
- Demonstrate how any soils would be managed and preserved so that they can be reinstated when the site is decommissioned; and
 - To ensure and describe why there would be no impact on the River Mease Special Area of Conservation (SAC).

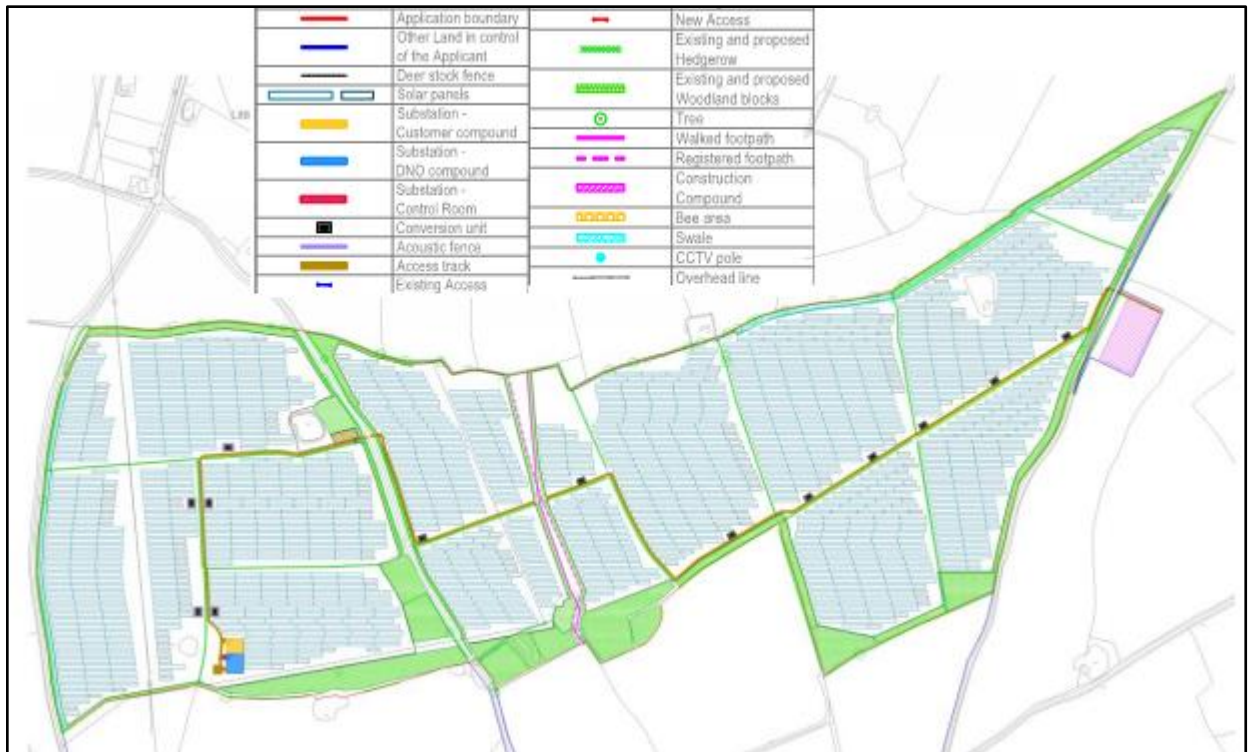
Background

- 1.4 The site is located around 1.8km from the River Mease SAC, although the site is within the identified catchment area for the river. A number of tributaries draining to the Mease including Pessall Brook and a further unnamed watercourse are located within or close to the site.
- 1.5 The site largely comprises arable / improved grassland fields. An Agricultural Land Quality Survey has been completed in support of this planning application as a separate document. The survey shows that the site comprises mostly classification subgrade 3b (predominantly in the west). Less than half the site comprises grade 2 or subgrade 3a land.

2.0 Construction Phase

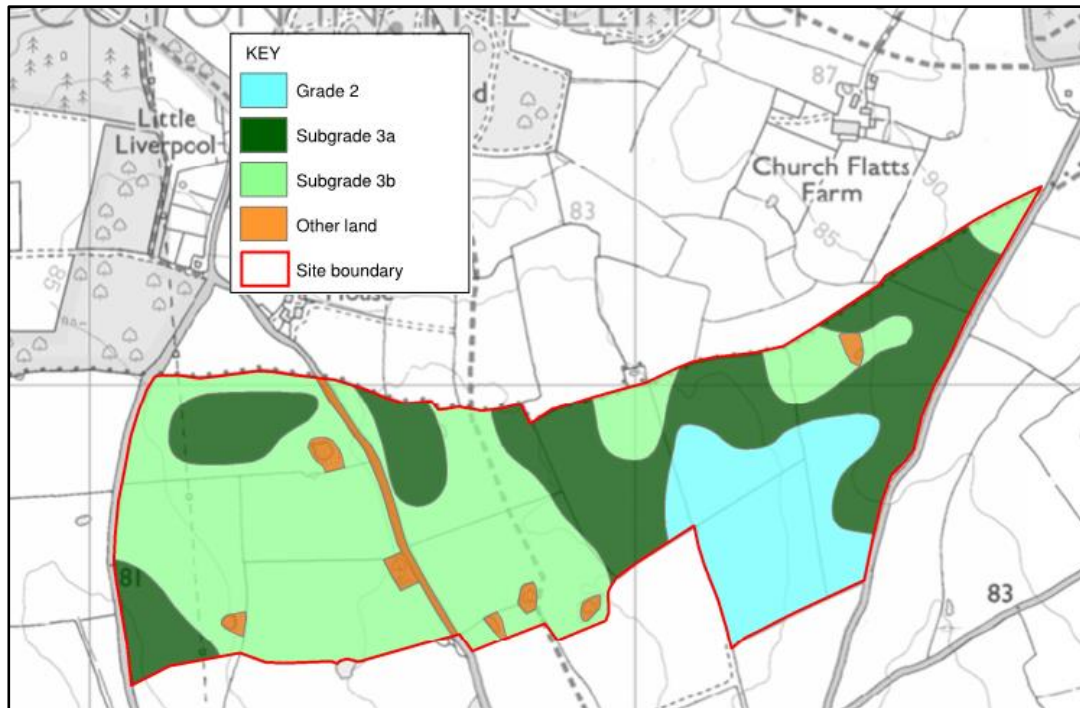
- 2.1 Whilst the development is over a large area it is considered that only small quantities of soils would be excavated and all of this material could be retained at the site. The excavations required for the shallow foundations of the substation and the installation of the stanchions for the solar arrays would generate small quantities of soil. Buried grid connections would require initially excavating some soils although the vast majority would be backfilled in these areas to bury the connections.
- 2.2 Whilst drainage swales would be formed at the site, these soils would be reused in the design of the swales. Swales would be clearly marked before site works commence by way of appropriate signage and/or fencing to avoid disturbance during construction. As stated in the Flood Risk Assessment during construction, unnecessary soil disturbance and trafficking of the land should be avoided to prevent compaction. If any compaction occurs 300mm depth of soil would be removed and replaced with a blend of topsoil and sand to promote infiltration and biologic growth as per recommendation from Natural England.
- 2.3 Grass seed would be sown to provide cover and to protect any exposed soils in the swales. The exposure of soils will be minimised and would be avoided in winter months or long periods of cold weather. A seeding plan is detailed in the Landscape Management Plan.
- 2.4 Prior to the installation of the solar arrays the surplus soils (soils that would not be used in the swales) would be spread over the site. Due to the size of the site, and the negligible amounts of soil that are likely to be generated, it is considered that the grass would be almost unaffected by the spreading of a thin layer of soils and would emerge through the soils.
- 2.5 The proposed area for the substation is shown shaded in orange and blue in the south west corner of the below layout drawing. This provides an overview of the size of the site and the relatively small area that would need to be excavated in order to dig the foundations. These excavations would also be shallow.

Figure 1 - Layout



- 2.6 For the digging of substation foundations, the soils would be excavated using typical agricultural/ construction equipment such as excavators and diggers. The excavations for the stanchions for the solar arrays would be made with piling equipment to a depth of between 1 and 2 metres. Only minimal quantities of soil would come to the surface. The soils would be spread over the land using an agricultural spreader in the fields close to where the material is sourced. This will help reduce compaction.
- 2.7 Soils would be handled as detailed in the relevant sheets of the Ministry of Agriculture, Fisheries and Food (MAFF) Good Practice Guide for Handling Soils (2000). Soils will only be handled when they are dry and friable – this is usually between April and September, and when ground conditions permit. Operations would be suspended during or after heavy rain. In addition, ground conditions should be such that significant damage is not caused to the ground surface.
- 2.8 Any soils that are required to be excavated would be kept to the areas which are classified as the same agricultural grade as shown on the below plan.

Figure 2 – Agricultural Land Classification (Extract from Agricultural Land Quality Survey)



2.9 Agricultural quality of land is primarily determined by soil wetness and droughtiness. The even spreading of negligible quantities of soil over the site would not impact on the wetness or droughtiness of the land.

3.0 Operational Phase

3.1 During the operational life of the site the soils would be covered by grass. This would help protect the soils for the duration of development. The land would be monitored, as described in the Landscape Management Plan, and the swales, which as detailed above would be seeded, would be inspected and over-sown if necessary.

3.2 The majority of the land will be grazed by sheep with a bee habitat established in a smaller area.

3.3 No fertilizer applications would be used at the site, including where low fertility is essential for the habitat. Applications of herbicides would only be carried out with prior agreement and where necessary to prevent the establishment of undesirable species. Any invasive weeds would be removed. More information in this regard is provided in the Landscape Management Plan.

4.0 Decommissioning Phase

4.1 On decommissioning of the solar farm and once the site is cleared, there would be small excavations, mainly from the solar array stanchions, the siting of the substation areas and the removal of cabling. Soils would be regraded in these areas as necessary to cover any holes, using the same methods, machinery and practices (correct seasons) as were used to distribute the soils prior to the development. Any re-seeding would also take place as detailed in paragraph 2.2.

- 4.2 The swale features would remain in situ post decommissioning and will continue to assist with drainage at the site. More information on the swales is provided in the Flood Risk Assessment and Drainage Strategy.

5.0 Conclusions

- 5.1 A negligible quantity of surplus soil is anticipated to be generated from the preparatory earthworks required at the site. It is considered that these soils could be managed and preserved on site through spreading them thinly across the areas of the site, close to where they are excavated. The soils would be thin and would allow grass to establish through the soils. This will help protect the soils throughout the life cycle of the site and the land would be monitored over the course of the development.
- 5.2 As the soils would be spread evenly and very thinly, close to where they are sourced, it is considered that the moved soils would have a negligible impact on surface and ground water flows water flows and would therefore have no impact on the River Mease SAC. Details of the drainage swales are provided in Flood Risk Assessment and Drainage Strategy and have been designed to avoid any impact on the SAC.