

Hylton Castle 275/66kV Substation

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Acronyms and Abbreviations

Acronym	Definition
CEMP	Construction Environmental Management Plan
WMP	Water Management Plan
EA	Environment Agency
ES	Environmental Statement
RPS	Regulatory Position Statement
HDPE	High-Density Polyethylene
LEMP	Landscape and Ecological Management
LLFA	Lead Local Flood Authority
PWS	Private Water Supply
SSSI	Site of Special Scientific Interest

1. Aims and Objectives

This Water Management Plan (WMP) is to set out good practice measures that would be employed to reduce impacts on water during the construction of Hylton Castle Substation, and to maintain positive working relationships with local communities, the relevant planning authorities, the EA and the LLFA.

Water includes surface water systems such as rivers and watercourses, and groundwater resources such as aquifers. The WMP covers measures in relation to flood risk, water quality (including pollution prevention) and geomorphology (and other considerations in line with the Water Framework Directive (WFD) Regulations.

The objectives of the WMP are to define:

- The existing good practice measures in relation to water;
- The processes and procedures in place to control the discharge of water;
- How water will be managed, including monitoring and sediment control; and
- How the project will monitor water usage and manage risks with and reduce use of potable water.

2. Roles and Responsibilities

Overall roles and responsibilities for the project are presented in the CEMP. The main roles and responsibilities specific to the WMP are set out in Table 1. Along with the specification for the roles where applicable.

Table 1. Roles and Responsibilities

Roles and Specification	Responsibilities
Environmental Manager	The Environmental Manager will be responsible for the maintenance of all environmental plans and registers, including monitoring that the environmental measures and mitigations are implemented on site and as recorded within the CEMP. They will be the main point of contact for all environmental matters on the project. They will also develop good working relationships with key external stakeholders such as the Local Authorities. They will sign off permit to pumps and also deliver training (as below)
Environmental Engineer	Sign off the permits in the absence of the Environmental Engineer. Will also assist with delivering training consisting of Toolbox Talks and briefings will include topics such as water management, flood risk, dewatering and silt management.
Works Supervisor	Responsible for delivering the site works in accordance with the requirements of the CEMP and implementing good environmental practices required by the Environmental Manager. They are responsible for managing operatives, plant and their areas of work in accordance with the principles of good environmental practice
PCSM	Review and countersign any permit to pumps

3. Site Planning and Set Up

During site set up the construction site layout will be planned to control potential risks to surface water, groundwater or flooding.

Good practice measures in relation to pollution control, storage of fuels and hazardous materials will be adhered to in accordance with the OTW Environmental Standards (TW-ENV-ST-XXXX-0008/REV 3 and TW-ENV-ST-XXXX-0009/REV 3). Across site, fuel and oil will be stored in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001.

The site will use water deliveries to supply potable and non-potable water to welfare facilities and tanker away foul water as waste.

Concrete Wash Water

The activities that will require concrete to be used in temporary and permanent works, include, but will not be limited to:

- Installation of the substation foundations
- Creation of concrete formwork

If concrete works are being conducted onsite, the SSR must ensure that a strategy for dealing with concrete wash water is produced and put in place before concrete mixing or deliveries start on site. This needs to include:

- A designated washout area in a suitable place on site.
 - The area should provide an impermeable containment for wash out water. This is the only area on site where concrete activities are permitted to wash out, including mixers, barrows and rakes. A lined and watertight skip may be an acceptable solution
- As far as reasonably practicable; concrete mixing or delivery lorries should return for washout to the batching plant with only chutes being washed out on site.

Management of water discharges from site

Lot 2 – Compound Area (April – June 2024)

As this is going to be a less than 3 months in duration we can use the ‘Regulatory Position Statement (RPS) Temporary dewatering from excavations to surface water’.

The water will be clean water, collected at the bottom of temporary excavations and settles out through the settlement tanks. Due to the measures set out below, it will not result in water containing fine or coarse suspended solids entering the surface water and will not last for more than three consecutive months.

<https://www.gov.uk/government/publications/temporary-dewatering-from-excavations-to-surface-water/temporary-dewatering-from-excavations-to-surface-water>

This is being managed by a Permit to Pump system, this will be managed by site team and overseen by the Environmental Manager and Senior Engineer who are authorised to sign off the Permit to Pumps.

A briefing was undertaken on 11th April with the site team to ensure we are complying with the conditions of the Permit and the RPS.

Discharge from the excavation works will be put through a series of settlement tanks to allow the silt to drop out and the water run clear, through a pipe with a silt sock, this is into a surface water drain which outfalls to a nearby pond.

Lot 1 – Main site (from June 2024)

We are applying for a bespoke permit with the EA as this activity will be greater than 3 months. This will be managed as above using the Permit to Pump system set out below.

Permit to Pump

No water will be pumped without an approved Permit to Pump (PTP). The PTP process is detailed below.

1. An Engineer of Works Supervisor will complete the Project’s PTP Template which will detail exactly what control measures will be followed when dewatering.
2. Once the template is complete, it will be forwarded to the Project Manager/ Environment Manager for review.
 - a. Should the PTP satisfy all requirements detailed within this Management Plan and wider Project Commitments, then the permit will be issued. Permit.
 - b. Should the PTP not satisfy all requirements, the necessary adjustments to the PTP will be made and await evidence to ensure necessary adjustments have been made before issuing the PTP.

3. The PTP will details the olfactory (sight, smell) and chemical (hydrocarbons, pH) checks required prior to dewatering.
4. Dewatering activities will then commence.

Control measures:

- Flow meter to enable daily records
- Daily visual checks with photographs to demonstrate no visual evidence of silt taken as part of site inspection
- Calculation of any discharge into the surface drains will be calculated against the EA 10% discharge in dry weather parameters
- Monthly monitoring will be undertaken for TSS, pH (which will be sent to Socotec) to ensure QA

Records of daily discharge will be undertaken, and should there be visual evidence of silt or other contaminants, e.g, oily sheen, discharge will be stopped until an investigation is carried out by the Environment manager/senior engineer and further analysis undertaken.

If contaminants are present, the water will be tankered away.

Training for Construction Staff

All staff and operatives will undergo a site induction which will incorporate water management as a specific topic. Targeted training consisting of Toolbox Talks and briefings will include topics such as water management, flood risk, dewatering and silt management.

4. Pollution and Erosion Prevention Measures

This section of the WMP sets out any requirements for pollution and erosion prevention. As pollution prevention and erosion control measures are often similar, the Erosion and Sediment Control Plan is incorporated into this section of the WMP.

An Emergency Incident and Emergency Response Plan sets out the procedures to follow should a pollution event occur. The measures set out in this plan will not be reiterated in the final WMP, which deals with prevention.

During construction, each work activity method statement will set out how pollution and sediment risk would be managed, including proactive actions and measures to control pollution risks. This could be either directly from the construction works or due to external factors, such as extreme weather. Measures will include appropriate storage and handling of fuels and other substances hazardous to the environment.

Construction method statements will take into account the requirements of the LLFAs as per the consented works. Works will consider the advice set out in the following guidance documents:

- Formers guidance for Pollution Prevention, various publication dates (accessed via <http://www.netregs.gov.uk>);
- C532 Control of Water Pollution from Construction Sites (Construction Industry Research and Information Association (CIRIA), 2001); and
- C650 Environmental Good Practice on Site (CIRIA, 2005).

While mobilising works, various measures will be implemented to manage site surface water, divert clean surface water away from the work site and to prevent silt pollution and erosion of exposed soils. Examples of these types of measures are summarised in Table 2 and will be selected for use as necessary, dependent on the local conditions, such as level of risk from flooding, weather conditions and surrounding topography.

Table 2. Surface Water Control and Silt and Erosion Management Measures

Clean Water Diversion	Responsibilities
Temporary Site Drains	Control and collection of runoff water from site into temporary drainage channels using the various silt control measures listed below to maintain the water free of silt.
Culverts/Flume Pipes – Cross Track Drainage	Structures made from pipes (concrete or steel) designed to maintain continuous flow of clean water through the worksite during construction.
Diversion Berms	Used to divert clean water runoff to a well-vegetated area by constructing a small berm of compacted earth from material excavated from a shallow trench located on the upslope. Berms are constructed at set intervals from the top of the slope down and with enough fall to allow the water to slowly flow outside of the berm to a well vegetated area.
Protection of Exposed Soils	To reduce the risk of silt being mobilised by erosion caused during rainfall events. Stockpiles should be compacted and graded to reduce rainwater infiltration. If they are in a sensitive area. E.g. near a watercourse, consideration should be given to covering over, e.g. with tarp or geotextile, to prevent erosion.
Check Dams and Sumps	Installed within drainage ditches and cut-off trenches to slow down the flow of water, preventing erosion and allowing silt to settle out. Check dams can be made from a variety of materials, including silt fencing, stone, straw bales, sandbags, soil or clay. Sumps behind the dam allow for emptying of silt.
Silt Fencing	A geotextile barrier installed on stakes and buried into the ground to provide a barrier to protect sensitive receptors such as adjacent watercourses. The fence captures and slows the flow of silty water, allowing the fence to filter out the silt particles.
Buffer Strips	Retained areas of vegetation between the work site and sensitive receptors, to allow natural drainage and protection. These will be demarcated on site.
Silt Bags and Filters	For water to be pumped into, during dewatering operations, to provide filtration of silt particles. They can also be used to accept a gravity feed from a settlement lagoon or drainage pipe.
Settlement Tanks	Use of purpose-made tanks, that allow silt-laden water to be pumped through at controlled rates, to allow settlement and discharge of clear water downstream.
Flocculants and Coagulents	A chemical solution for very fine silt particles that will not settle out by gravity alone. Their use will require agreement with the EA.