Agglomeration Name: Kilnaleck, Co. Cavan
WWDA No: D0500-01
Licensee Return Subject: Inlet Works, Storm and Sludge Management Upgrade Works at Kilnaleck WWTP, Co. Cavan
Date: 12/01/2023
Proposed Start Date: 06/02/2023
Duration: 40 weeks

Dear Inspector,

Irish Water (IW) and Cavan County Council (CCC) wish to advise the Agency that upgrade and improvement works are required at Kilnaleck WwTP, Kilnaleck, Co. Cavan.

Background
The existing wastewater treatment plant is to the northeast of Kilnaleck town, Co. Cavan. and is accessed off the R154. It is bordered on all sides by agricultural land.

Operation of Existing Plant
Incoming flows enter the plant through a gravity inlet pipe into a foul pump sump. The sump has provision for 2 pumps but there is currently only one pump installed. Due to ragging with the original channel pumps, one of these was replaced with a Vaughan chopper pump. There is currently no standby pump. Flows spill from this sump to an adjoining storm tank, as reported by JB Barry Technical Options report. This was subsequently confirmed through a CCTV survey, which was carried out during design stage by Conway Engineering.
Flows are pumped forward to a 6mm Filtran auger screen, after which flow gravitates through a measurement flume and composite sampling channel on to an Imhoff Tank. This tank acts as primary settlement prior to the secondary treatment process. After the Imhoff tank, flow is delivered by pumping to Stream A (trickling filter) only. There is a flow splitting chamber located upstream of the Imhoff tank, which splits flows between stream A and B.
Stream A – The trickling filter has a diameter of approx. 12.5m and a surface area of 122.7m2. There is no recirculation arrangement after the trickling filter. Effluent from the filters goes into a humus tank and then on to an AquaSol pressure filter which provides treatment before reaching the gravity outfall
Stream B – This is an FM Environmental package aeration Biosam system which includes 2 primary settlement tanks, 3 aeration compartments and 2 final clarifier chambers

There is RAS/recirculation via submersible pump from the final chambers to the first primary settlement tank. Effluent from Stream B is decanted through a bellmouth into the pressure filter for tertiary treatment before discharge to the combined outfall with Stream A.
A flow proportional composite sampler and magflow meter are installed at the final effluent discharge manhole before the outfall.
There are two no. sludge drying beds providing sludge storage. Sludge drying beds are approx. 7.8m3 each. Sludge is also removed from the Imhoff tank (stream A) and the primary settlement tanks (stream B) by tanker.

Proposed Upgrade Works

At the conclusion of scope clarification, the following is the defined scope of works for Kilnaleck WwTP to be completed by Conway Engineering under this IWSS programme of works

• Supply and installation of 2 no. forward feed pumps to operate in duty/standby configuration in the existing inlet pumping station.

• Supply and installation of Storm Storage Tank 56m3 and cleaning system.

• Supply and installation of 36m3 sludge holding tank with a separate sludge pumping station taking WAS from Imhoff tank and Humus tank and delivering it to the sludge holding tank.

• Supply and installation of recirculation/wash water pumping station which delivers treated effluent to keep the existing trickling filter wetted and feeds wash water to inlet screen on two separate deliver lines.

• Modifications to Inlet screen to capture screenings.

• Modifications to waste sludge to new sludge storage tank from stream B

Mitigation Measures:

Construction Management and interface with existing plant

The focus is to minimise disruption to the operation of the existing plant during construction works. We want the operational site and associated existing operational personnel to go about their daily activities with minimal disruption caused by the construction works being undertaken by us. We are acutely aware of the requirement to keep wastewater treatment plants in full operation during upgrade/ retrofit works.

The general approach can be summarised as follows:

Consideration: All work will be carried out with positive consideration to the needs of operational personnel visitors, pedestrians, the general public and the environment in general.

Environment: Noise from construction operations and all other sources will be kept to a minimum at all times. Consideration will be given to the selection and use of resources with local resources assigned wherever possible. Attention will be paid to waste management and the avoidance of pollution; recycling of surplus materials will be implemented.

Cleanliness: The working site will be kept clean and in good order at all times. Temporary safety barriers, lights and warning signs will be maintained in a clean and safe condition. Surplus materials, rubbish etc., will not be allowed to accumulate on the site or spill over to the surrounding environment. Dust from construction operations will be kept to a minimum.

Good Neighbours: Full and regular consultation with possible affected neighbours and existing operational staff regarding programming of site activities will be maintained from pre-start to completion. General information regarding any project can be made available for operational staff

Safe: Construction operatives and site vehicle movements will be carried out with great care and consideration for the safety of the general public, operational staff and any possible affected residents. No activity will constitute a risk to others.

Responsible: Considerate Construction will ensure that all site personnel, specialist subcontractors, drivers and any other persons working on the site will understand and implement the obligations of this Code and monitor their compliance with it.

Accountable: Posters will be displayed around the site and on the main site notice board providing names and contact details of all staff who can be contacted in response to issues raised by the existing operational personnel.

Phasing and Sequencing of Works

To keep plants operational, we sequence and phase proposed works, such as service connections, upgrades to internals of tanks, electrical upgrades etc, to enable the continued operation of the existing plant. A large factor to the successful completion of projects within live plants is to complete our design so the works can progress in a phased and sequenced manner. During the design stages the construction team will work closely with the design team to ensure the phased constructability of designs. The majority of the works in Kilnaleck WwTP have been designed to allow them to be carried out/ installed offline to minimise disruption to the existing process.

Conclusion:
Irish Water and Cavan County Council propose for works to commence on the week beginning 6th February 2023, and to run over a period of 40 weeks. We will continue to work closely with the EPA, IFI and other statutory bodies and endeavour to minimise any impact. Should the Agency so wish we would welcome an opportunity to discuss at a suitable time and location. If there are any queries in relation to this project, please feel free to contact me at your convenience.

Kind regards,

Pearse Casey
Project Manager IWSS Programme
Irish Water