Jacobs

Request for Further Information – Farmoor - 18th September 2024.

Date:	4 October 2024
Project name:	STC IED
Project no:	B22849AZ
Attention:	Emily Ball
Company:	Thames Water
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Document no:	C.241004

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Dear Emily,

Thank you for your email "Application Variation V003 EPR/PP3197EB/V003 Not Duly Made 18 09 2024 CRM:0192001" on Wednesday the 18th of September 2024. Please see below for the answers to your questions:

1. **Please provide a H1 assessment to assess the fate and impact of the substances emitted to water (via sewer) following the Environment Agency's risk assessment guidance and our guidance Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk). Please ensure that this assessment is representative of your controlled emission.**

Answer 1

We have been unable to complete the current excel based H1 model at this time. The current version of the tool (v9.2) does not currently include a water discharge element, as this has been turned off in this version. We do not have a clean copy of the older access based version of H1 to undertake the analysis with, although this has been requested from the EA's enquiries email.

However, we do not believe a H1 model is the appropriate tool for the assessment of the already permitted release to sewer.

The site produces a maximum of 1000m^3 of effluent released to sewer in any 24 hours, produced approximately evenly across the day. The sewer is linked to the Oxford sewage treatment works, which is a major Thames Water works utilising primary settlement, activated sludge processing and final stage filtration for treatment of UWWTD liquids.

This comprises two major sources:

1) Surface water from operational areas, including areas outside of the permit boundary

2) Filtrate from the filter presses (bucher presses) which dewater the sludge and wastewater from the treatment work process

The surface water is uncontaminated and as such, does not need to be assessed with regards to releases to sewer.

The filtrate will primarily contain traces of the coagulant and flocculant used in order to facilitate the filtration process, which is polyaluminium chloride. This is a non-hazardous chemical from an

environmental perspective, as traces may remain within the potable water supplied by the site and is authorised for the purpose by the Drinking Water Inspectorate. Polyaluminium chloride is used in an approx. 1% solution, following dilution of a stronger delivered solution on site. The aluminium content is approximately 2.5% w/w when in solid form, which means that it is approximately 0.0025% aluminium.

There is no EQS currently set for aluminium or its salts. As such, given the nature of the effluent generated and the mitigation of the Oxford WwTW on this effluent, the H1 model is unlikely to show any impact from the release to sewer at Farmoor.

2. **If you would like the EWC Code 16 10 02 this will affect other parts of the application. Throughout the non tech summary etc it talks about only clean water treatment sludges – no sewage wastes being handled, this is a constant theme throughout the application so will need to be updated if you want to keep the sewage waste code on. Please could you provide a tighter description of what the 16 10 02 waste code will be.**

Answer 2 We propose to remove this code from the application.

3. **Please could you revise the Environmental Risk Assessment as it doesn't meet the guidance Risk assessments for your environmental permit - GOV.UK (www.gov.uk). The Risk assessment does not consider the protected habitats SSSI – Wytham Woods and LWS - Farmoor Reservoir and cover how you will prevent any damage to them. The risk assessment also does not mention how you will prevent damage from flooding – as the site is in Flood Zone 2.**

Answer 3 Please see the appended updated ERA at the end of this document.

4. **In order to Duly Make the application I will need confirmation that Thames will be signing up to the Biological Treatment AM as we discussed, if they can't comply with certain sections please list these and what alternative measures they are proposing.**

Answer 4

We note that the introductory test for both the 'Non Hazardous and Inert waste Appropriate Measures for permitted facilities' and 'Biological waste treatment appropriate measures for permitted facilities' does not appear to include the type of processes undertaken at Farmoor, however to the extent that this guidance is applicable, suitable and relevant Thames Water confirm they will comply with the 'Biological waste treatment appropriate measures for permitted facilities'. Thames Water will continue to assess the applicability of the guidance.

5. **With regard to the emission point into Filchampstead Brook, I would like to confirm this should be for clean surface water only. This permit application with not allow any discharge from the DAF Plant or Wastewater Treatment Plant interceptor. If this is something you require please could you discuss this with the Environment Agency Water Quality Team.**

Answer 5

The point is noted.

Although there is the potential for the overflow to be used, the discharge from the DAF plant is on the incoming (abstracted from the reservoir) water, and the tanks are equipped with high level alarms and high – high level alarms which when activated would lead the pumps being switched off in the control room (staffed 24 hours). As such, the risk of discharge is mitigated.

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Amenity issues: Litter, vermin and pests	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity, and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. The nearest commercial properties are located approx. 50m to the south of the cake skips, and nearest residential site is located approx. 75 m to the North from the sludge lagoons. **The permitted site is located approximately 80m Southwest of the village of Farmoor, Oxfordshire at its closest point near to the sludge lagoons. The permitted sludge processing site is part of the wider Farmoor Water Treatment facility neighboured to the south by Oxford sailing club, a trout fishery and a boat park associated with Farmoor reservoir.** Ecological receptors: There is a SAC within 10 km of the site and SSSI within 2km, there are no LNRs or NNRs sites within 2 km of the site. There is one non-statutory designated LWS within 200m of the site, namely the Farmoor Reservoir LWS, located approximately 27m to the West of the WTW.	The wastes handled at the site are primarily liquids and sludges delivered by reservoir abstraction pipe or pipeline from another works. As such, there is no source of litter within the materials handled at the site. In the unlikely event pests or vermin are observed on site a suitable contractor is called in as soon as practicable.	X
Dust and Bioaerosol	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Litter above. The impact of dust on human health will depend on the distance and wind direction. For bioaerosols this is 250 m.	The wastes handled at the site are liquids, sludges, and sludge cake. The site will not be handling inherently dusty or powdery wastes. Sludge cake retains a high moisture content and is not dusty and is stored within 3No. dedicated skips, and therefore dust and bioaerosols will not impact on nearby receptors. Roads will be maintained to avoid the production of dust. Produced sludge cake has sufficient moisture content to ensure it does not give rise to dust. Please see Appendix G for the site specific bioaerosol risk assessment.	√
Assessment of point source emissions to air	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.	The site sits outside any designated AQMA. There are no air emission points to are on the permitted site. Fugitive emissions to air are assessed in Table C4-3b(i).	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Emissions deposited from air to land	For human health and ecological receptors, see notes for Amenity issues above. The impact of emissions from air on human health will depend on the distance and wind direction.		
Assessment of point source and fugitive emissions to water	The WTW is approximately 27m from Farmoor reservoir at its closest (lagoons) and 25m (near wastewater tanks) from a Filchampstead Brook. This brook runs adjacent to Cumnor Road and flows into the river Thames. The WTW is approximately 620m from the River Thames at its closest point (lagoons). The vast majority of surface water drainage from within the permitted site is controlled in an alarmed level chamber prior to discharge to the brook. The site sits within Flood Zone 2 and 3 due to its proximity to the reservoir, however the reservoir water is enclosed in embankments and the reservoir can be drained in a case of emergency. Thames Water are signed up to flood warnings from the EA and have an action plan in place	The main product of the process is a sludge cake, which is stored in above ground level secure skips on impermeably surfacing. Other aqueous discharges generated by the drinking water treatment processes on site are limited (comprising treated supernatant & filtrate and surface water run off). These sources are subject to regular monitoring with lagoon settlement treatment prior to discharge. These discharges are already covered by EA environmental discharge permits. Chemicals, fuels, and oils are all stored within suitably bunded tanks and IBCs with rainwater removed as required to maintain 110% capacities. Chemicals on site have been chosen for their low environmental risk due to the plants purpose being the preparation of water for public supply. Discharge of water to Filchampstead Brook of clean surface water drainage is protected by an alarmed collection chamber prior to discharge. This is regularly monitored. In the unlikely event of external flooding posing a risk to the WTW plant, an emergency plan is in place to prevent water ingress to the plant threatening the public water supply. Due to the nature and small quantity of these emissions no further assessment of point source emissions is not deemed necessary.	X
Assessment of odour	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Amenity issues above.	The WTW has processes in place to minimise odour which includes physical containment, management systems, procedures and monitoring to control fugitive emissions of odour at the plant. The WTW has an Odour Management Plan which is appended as Appendix C.	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	The impact of emissions from odour on human receptors will depend on the distance and wind direction.	Odour emissions are assessed in Table C4-3b (ii).	
Energy	Global atmosphere (direct and indirect emissions).	Good maintenance procedures will help the plant to run efficiently and reduce site energy consumption. Use of LED lighting reduces site electricity consumption. Insulated hot water pipes minimises heat losses during transmission.	X
Land and disposal of waste to other processes	Rivers and streams – see Assessment of point source and fugitive emissions to water above. Drainage systems/sewers. The site lies outside the boundaries of any Groundwater source protection zones (SPZ). Aquifers are classified as Principal (superficial deposits). The Farmoor reservoir itself is a public supply source.	All waste streams are taken off-site for recovery or disposal and will continue to be transferred (and consigned where hazardous) to appropriately permitted facilities. Materials handled on site take into account the presence of the reservoir and the output of the process being public supply.	X
Noise and vibration	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. The permitted site is located approximately 80m Southwest of the village of Farmoor, Oxfordshire at its closest point near to the sludge lagoons. The permitted sludge processing site is part of the wider Farmoor Water Treatment facility neighboured to the south by Oxford sailing club, a trout fishery and a boat park associated with Farmoor reservoir. Ecological receptors: There is a SAC within 10 km of the site and SSSI within 2km, there are no LNRs or NNRs sites within 2 km of the site. There is one non-statutory designated LWS within 200m of the site, namely the Farmoor Reservoir LWS, located approximately 27m to the West of the WTW.	Site design minimises the impact of noise on offsite receptors through building orientation, finishes and location of openings. Noise from plant and equipment will be minimised through purchasing decisions and a robust preventative maintenance programme. There are no sources of vibration within the facility. Deliveries likely to take place during daytime hours to delivery areas are mostly within the central area of the site. Vehicle movements across the site subject to speed limit to reduce generation of noise. Noise and vibration emissions are assessed in Table C4-3b(iii).	X
Other issues (including visual impact)	Protected Species & Habitats	There are records of protected fish located within the specified screening distance (within 500m) of the site associated with Farmoor Reservoir. There is 1 SAC; 1 SSSI and 1 LWS within screening distances of the site.	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
		The site has a robust water emissions monitoring programme and settlement lagoon treatment tom limit environmental impact on receiving watercourses. Discharges to Farmoor Reservoir and the River Thames are controlled by EA Environmental discharge permits which also considers designations.	