Environment Agency permitting decisions

Bespoke Variation

We have decided to issue the variation for Davyhulme WwTW operated by United Utilities Water PLC.

The permit number is EPR/HP3931LJ.

The variation number is EPR/HP3931LJ/V006.

This was applied for, and determined as, a minor technical variation.

This application was duly made on 12/07/2012.

This variation authorises the installation of an additional temporary two-stage Odour Control Unit (OCU), which consists of a catalytic iron filter and carbon filter, exhausted via a new 6 metre stack (emission point reference O3t).

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Key issues
- Annex 1 the decision checklist

Key issues of the decision

Point source emissions to air
There is an additional emission point from the temporary OCU (referenced as emission point O3t).

The Environment Agency H4 guidance on Odour Management highlights benchmarks which are based on the 98th percentile of hourly average concentrations of odour modelled over a year at the site/installation boundary. The benchmark for sewage sludge is 1.5 odour units (OU) per cubic metre of air. Any modelled results that project exposures above these benchmark levels, after taking uncertainty into account, indicates the likelihood of unacceptable odour pollution.

Point source emissions from the new stack have been modelled by the Applicant using the ADMS dispersion model which shows that during the commissioning phase of the Sludge Balanced Asset Program (SBAP) project the emissions from the temporary OCU and the existing Sludge OCU, at both average and peak, are within the H4 odour management guideline of 1.5OU at the site boundary for a 98th percentile hourly average odour concentration over a year.
Two scenarios were modelled (peak and average emission rates) during the transitional period (operation of both the existing and the temporary Odour Control Units). The peak scenario marginally exceeds 0.5OU at the site boundary, and the highest predicted concentration at any of the receptors was 0.3OU at Skipton Drive (referenced R9) – both well below the H4 odour management guideline of 1.5OU.

The input data from the ADMS dispersion model was used to model the combined point source emissions from the new and existing stacks using the AERMOD dispersion model. This shows an hourly average peak value of 0.53OU at a distance of 114 metres from the source of emission. This is equivalent to 36% of the H4 odour management guideline of 1.5 odour units for a 98th percentile hourly average odour concentration over a year.
The odour modelling report identified the sensitive receptors as the residential streets surrounding the installation, the closest of which is Bent Lanes (R11). At a distance of 170 metres from the closest emission point (the new stack), the odour will be expected to be even lower at this receptor than the peak value of 0.53OU (at 114 metres from the source) due to the effects of dispersion.

The emissions data input to the modelling tools were based on measured data from an odour survey completed by H&M Environmental in April 2012. The meteorological data used was taken from Woodford weather station (the closest weather station to the site), using data from the year 2010 as a worst case scenario from the years 2008-2010. For these reasons, the modelling results are considered to be conservative.

Point source emissions to surface water and sewer
Any condensate from the OCU will drain through the existing sealed drainage system to the onsite off installation treatment works downstream of the storm overflow for treatment prior to discharge to controlled waters.

Point source emissions to groundwater
There are no point source emissions to groundwater.

Potential fugitive emissions to air
The temporary OCU is designed to capture and treat fugitive emissions from the GBT building. Proactive operational inspections of the extraction ductwork will minimise the potential for fugitive emissions.

Potential fugitive emissions to surface water, sewer and groundwater
There are not expected to be any potential fugitive emissions to surface water, sewer and groundwater. All drainage within the area returns to the site wastewater treatment process for treatment as per the existing permit.

Corrections to the permit
It was noted during this determination that all references to the Odour Control Unit O1 were erroneously removed during the determination of variation V005. After confirmation from the operator that this emission point is still in use, it has been reintroduced into table S4.1.

Annex 1: decision checklist
This document should be read in conjunction with the Duly Making checklist, the application and supporting information and permit/ notice.

Aspect considered	Justification / Detail	Criteria met Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The operator proposed the following measures: • With the temporary OCU in operation there will be a reduction in odour loading to the existing OCU during SBAP equipment commissioning and therefore emissions from the temporary OCU will not contribute any additional odour to the site odour profile. • The temporary OCU is capable of treating the primary	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	source of odours from the GBT and the secondary or fugitive odours captured within the GBT building. • The foul air passes through both stages (the catalytic iron filter and the carbon filter) of the OCU before being discharged via a new 6 metre stack (emission point O3t). This height of stack results in adequate dispersion as demonstrated by dispersion modelling. • Performance checks have been carried out on the temporary OCU: the hydrogen sulphide (H_2S) emissions levels from the emission point (O3t) were low (7ppb) resulting in an overall removal efficiency of 99.7%. • Drainage from the temporary OCU is directed to the sealed drainage system for return downstream of the storm overflow, for treatment. • The OCU operates automatically, and the unit and relevant ductwork are inspected daily for leaks or any operational issues. • The Operator's Odour Management Plan (OMP) has been revised to include daily, monthly and quarterly monitoring of the temporary OCU. • The Operator's Accident Management Plan (AcMP) has also been updated to include the temporary OCU. The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in the Sector Guidance Note S5.06 and we consider them to represent appropriate techniques for the facility.	
The permit conditions		
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions. 1. Updating of the Environment Management System to include the operation of the new temporary odour control unit. 2. Updating the site's odour management plan to incorporate the temporary odour control unit Both of these pre-operational conditions are required to be completed prior to the commencement of operation of the temporary odour control unit. These are imposed to ensure the Operator has fully considered the impact of the new odour control unit, and has in place a system to monitor its impacts.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Incorporating the application	We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process. These descriptions are specified in the Operating Techniques table in the permit.	✓
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓