

Permit Variation Application – Non-Technical Summary

Permit Ref: EPR/BR9715IB

Application Date: 01/2018

Introduction:

The following items have been identified as requiring a variation to the existing permit, in order to better reflect site operations following a number of changes. Due to the number of variations in effect also (V007 prior to this application), a request is also made to consolidate the variations into a single Permit document. Note that Form C3 is not supplied, as questions are either: not applicable, not changed from existing permit, or covered in other sections of this application;

[1] Removal of Santicizer Process

This is one of the main reasons for the application, this operation having ceased at the end of 2016, and subsequently decommissioned & dismantled during the course of 2017 (complete at the time of this variation application). The changes to the Activities are now as listed in the attached (NRW version) OPRA spreadsheet

In addition to this, there are also some other associated considerations that are no longer relevant to current operations i.e. i) Emission Point to air 'A11' (Reactor), 'A13' (POCL3 Storage), and 'A12' (Stripper Ejector), and the requirement to monitor the listed parameters of the latter ii) W1 'Phenol' – this emission being specific to the Santicizer operation. As such it is requested that these be removed from the Permit. Reportable environmental metrics such as water, energy etc. are per tonne of product, and as such remain unaffected

Other items that are considered relevant include the removal of the various bulk storages (16 in total) associated with the operation, including: finished product, raw materials, process vessels, and intermediate & blend tanks. The Phosphorus Chloride tank specifically associated with the Santicizer operation (albeit geographically separate) has also been removed

Whilst no longer in use, the Biotreatment Plant remains in-situ, however this operation is in a mothball state as the requirement to treat phenol is no longer present. That said, the intention is to retain the process within the permit, such that it can be restarted in the future e.g. should it be required to assist in meeting future emissions limits to effluent

As the means of removing this operation from the Permit is a Variation rather than a Surrender (being a relatively small operation completely within the main site), then 'Site Condition' is not considered a factor as this would be dealt with upon Surrender of the site Permit proper

[2] Emissions to Water – W1 and W2

Due to historical effluent discharge arrangements, the 'Table 2.2.5 Emission Limits to Water & Monitoring' has proven difficult to interpret wrt W1 Vs W2 discharge points. To better explain, W1 is the only routine discharge, with W2 (surface water) feeding into the W1 stream where the measurements for the various parameters, including flowrate are made. Effectively W1 is the single discharge for both process & surface waters for the site, and so the mass limits currently labelled 'W1 & W2' should just read W1, and the sub-notes removed

W2 should still be referenced on the remainder however (as per existing concentration limits), as there remains the possibility of direct discharge under extreme flooding conditions. In such an event the effluent could be pumped directly to the estuary, and the respective parameters measured and reported – this including the submission of a Notification to advise that such an occurrence had taken place. Under normal circumstances however, the limits would not apply, as compliance would be demonstrated by the W1 measurements

For the purpose of clarity also, a change is sought wrt the flowrate parameter. The MCertified flowrate device measures total volume of effluent & surface water discharged from site (for Permit, and Pollution Inventory reporting etc.), however the parameter is worded 'Max volume of process effluent discharged'. The process effluent is currently reported (by subtracting W2 from W1), but the value is this reporting parameter is questioned, when all reportable mass release, and concentration parameters are on the combined effluent

As of Q4/2015, and as per Improvement Item(s), the emission limit for Phenol was reduced from 40 to 10 mg/l, but as mentioned in section [1], this is no longer relevant following decommissioning of the Santicizer process. Also, the PCP limit was reduced to 15ug/l – and so this change can now be captured also

[3] Emissions Points

Following a review of emissions points, including as part of an Operator Monitoring Assessment session, and subsequent discussions, it became evident that there might be benefit in a review of the atmospheric emissions points, to ensure all points are correctly captured in the Permit (inc ELV's and monitoring requirements). It is thought that the means to address this in a formal manner might be via an Improvement Item i.e. to conduct a comprehensive review, and report on the findings

[4] TH3 Pyrolysis Furnace NOx emissions

The 'TH3' operation was incorporated into the Permit in the V006 Variation issued in 2014. The NOx emission predictions at the time were based on the older 'TH2' plant in the absence of other data, and emissions limits were set according to this estimation. However, the x2 pyrolysis furnaces that were subsequently installed (A26 and A27) have shown not to be able to operate at these low levels, and as such an increase is requested from 135 mg/Nm3 to 200 mg/Nm3 – this being the benchmark listed in the respective Sector Guidance Notes

To demonstrate that there would be no significant adverse impact associated with this change, an Air Quality Assessment has been conducted (and included with this application), which hopefully demonstrates that there is no significant difference in impact between: the 135 mg/Nm3 permit limit, the 200 mg/Nm3 benchmark limit being sought, and the actual ~280 mg/Nm3 currently being emitted

At this stage, we don't believe there is legal scope to request an emission limit higher than the 200 mg/Nm3 benchmark, meaning that ongoing emissions will be in a non-compliant state until either; a step change improvement is made, or a Derogation is pursued and granted. Therefore, we would believe an Improvement Item would serve to acknowledge the situation, and allow time for the most appropriate way forward to be found. The reason for seeking an increase in the limit is because it would mean a smaller emission reduction would be required to obtain compliance, meaning that more potential options would

be available for evaluation. We also believe it can be justified on the basis of no appreciable difference in environmental impact

[5] Removal of CWx

The emissions points 'A31' (CWx Scrubber Stack), and 'A32' (Temp Neutraliser Stack) were associated with a temporary project which has been concluded some time previous, as such these emission points are no longer in effect, and can therefore be removed

[6] Site Layout

Where there are changes from any of the above, the enclosed Site Layout document has been updated to reflect the changes – mainly this relates to emissions points, and also shows (in red) those areas occupied by other site based companies. No changes have been made to the external site boundary compared to previous, although an additional layout is included in order to show the effluent pipeline which ultimately discharges in to the Severn estuary

[7] Gas Turbine

The Gas Turbine Unit mated to Boiler 16 has specific reference conditions attached (namely referenced to 15% Oxygen STP), which only strictly apply in Gas Turbine Operation. There will no doubt be short periods where the turbine is unable to run (e.g. for essential maintenance, start-ups, following electrical / process trips), at which point a 3% Oxygen Limit would better apply for that duration. In addition, whilst there would not be an intention of operating Boiler 16 without the Gas Turbine, should there be an extended outage, it is suggested that a monitoring requirement be written in to replicate that of Boiler 14 in Table 2.2.2 Note 2 i.e. 'monitoring is required for a continuous operating period of 14 days or more in a calendar year'. This would ensure there would be no extended period of 'non-standard' operation without a check on compliance of emissions, and still allow for unexpected process outages