Regulated Industry Permitting Team
Natural Resources Wales
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Date: 30th September 2019

Subject: Solutia UK Ltd, Cefn Mawr, Wrexham, LI143SL – EPR Ref: EPR/NP3335GR
Response to BAT Request letter, dated: 05/04/2019

As requested, site permitted activities have been reviewed against BAT conclusions documents: (i) Waste Treatment and (ii) Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector

BAT document for Waste Treatment

The BAT document for Waste Treatment is the most applicable to site current activities. It includes the physio–chemical treatment of non-hazardous waste with a capacity exceeding 50 tonnes / day as authorised by the site permit. It also provides guidance for other types of waste treatment, receipt / storage / recycle / disposal of both hazardous and non-hazardous waste from multiple sources. Therefore, much of the BAT guidance is not considered applicable to the site activity of solely treating collected groundwater using activated carbon filters and subsequent storage with storm water for final discharge to the river

Review of the BAT guidance is as follows. Section 1 of the guidance is for General BAT Conclusions and includes BAT 1 to BAT 24 requirements:

1. BAT 1 is requirement for an Environmental Management System (EMS) with a scope related to the nature, scale and complexity of the installation. Site Permit Variation Application in December 2014 included as Document 5 a description of the EMS applicable to the site
2. BAT 2 outlines techniques appropriate for accepting, processing, storing, segregating, mixing and sorting different types of waste received from multiple sources. Most of the guidance is not applicable to site activity of treating solely groundwater. The key requirements of a tracking system and output quality management are met by recording metered quantities of groundwater and analysis of inlet and outlet of the carbon treatment
3. BAT 3 is to establish an inventory of waste water and waste gas streams including information about the characteristic of the waste to be treated. The requirement is met by GCMS analysis of micro-pollutants in groundwater at inlet and outlet of the carbon filters and final discharge to the river. There are no waste gas streams from site activities
4. BAT 4 and BAT 5 guidance for storage and handling of received waste are not considered applicable. Collected groundwater is treated without any storage
5. BAT 6 requirement to monitor key process parameters at inlet and outlet of treatment and final discharge from the installation are considered to be met. Volume of

groundwater for treatment is measured and recorded. Carbon filter effectiveness is monitored by analysis of inlet and outlet streams in addition to analysis of final discharge to the river

6. BAT 7 lists guidance for minimum monitoring frequencies for substances if they have been identified as part of the inventory of wastes required by BAT 3. There is no specific listing for micro-pollutants identified in groundwater therefore the quarterly frequency as agreed by the current permit is considered appropriate. Note 11 of the listing is considered to apply i.e. monitoring frequencies can be reduced if emission levels are proven to be sufficiently stable. Quarterly frequency was agreed based on past 10 years recorded data. Total Organic Carbon (TOC) is listed with a guideline frequency of monthly. Site current permit is for a quarterly frequency which based on Note 11 is considered appropriate
7. BAT 8, BAT 9 and BAT 10 for emissions to air and odour are not applicable to site activities
8. BAT 11 requirement is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water. Annual recording of residue and waste is reported to NRW. Monitoring of water, energy and raw material usage is not applicable to site activities and therefore was assessed as not being required at time of permit issue
9. BAT 12, BAT 13 and BAT 14 for odour and diffuse emissions to are not applicable to site activities
10. BAT 15 and BAT 16 for flaring are not applicable to site activities
11. BAT 17 and BAT 18 for noise and vibration are not applicable to site activities
12. BAT 19 guidance for impermeable surfaces, overflow protection, secondary containment and recycle of drainage water is met
13. BAT 20 lists techniques which can be used for treatment of waste water, physio-chemical treatment of hydrocarbons by adsorption using activated carbon is listed. Included as Table 6.1 is a listing of BAT-associated emission levels (BAT –AELs) for direct discharge to a receiving water body. Substance/Parameters included in the site permit are Phenol and TOC. Phenol limit at 0.2 mg/l is as in the guidance. The permit has no limit set for TOC whereas the guidance is for a limit of 10 – 100 mg/l. The low level of micro-pollutants present in groundwater does not require a TOC limit
14. BAT 21 requirement to prevent or limit the environmental consequences of accidents and incidents is met. Security fencing and CCTV provide protection of the facilities. Response to high level alarms, automatic tank changeover and secondary bunds are established to manage potential spillage incidents. Incidents are recorded for monthly reporting and review
15. BAT 22 use of materials efficiency, BAT 23 energy efficiency and BAT 24 re-use of packaging are not considered applicable to site activities
16. Section 2 of the guidance for Mechanical Treatment of Waste is not applicable to site activities. (BAT 25 to BAT 32)
17. Section 3 of the guidance for Biological Treatment of Waste is not applicable to site activities. (BAT 33 to BAT 39)
18. Section 4 of the guidance is specific for Physio-Chemical Treatment of Waste (BAT 40 to BAT 51). The guidance is for specific types of waste e.g. solid /pasty waste, waste oils, spent solvents. Much of the guidance relates to emissions to air. The section is not applicable to the site activities

19. Section 5 of the guidance for Treatment of Water Based Liquid Waste is not applicable to site activities (BAT 52 and BAT 53)
20. Section 6 is a listing of Techniques that can be used for the Treatment of Waste Streams. The use of activated carbon for treatment of pollutants in waste water is listed

BAT document for Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector

The BAT document for Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector is of limited applicability to site current activities. It includes guidance for operating chemical manufacturing facilities which is no longer applicable to current activities. Review of the BAT guidance is as follows:

1. BAT 1 is requirement for an EMS as covered by BAT 1 in review above
2. BAT 2 is requirement for inventory of waste streams as covered in BAT 3 in review above
3. BAT 3 is requirement for monitoring as covered in BAT 6 review above
4. BAT 4 is requirement for minimum monitoring frequency as covered in BAT 7 in review above. As above the guidance states monitoring frequency can be adapted if data series clearly demonstrate a sufficient stability. This is the case for site treatment of groundwater as opposed to potential variability of operating chemical plant
5. BAT 5 and BAT 6 relate to air emissions and are not applicable to site activities
6. BAT 7 to BAT 11 is for reducing the volume and / or pollutant load of waste streams in the production process, segregation of uncontaminated waste water, appropriate buffer storage capacity, recovery of pollutants at source or pre-treatment prior to final waste water treatment. The requirements are not applicable to site activities
7. BAT 12 lists waste water treatment techniques for typical pollutants from chemical processes. Physio-Chemical Treatment is not listed, possibly because treatments listed are for more heavily polluted waste streams from direct chemical manufacture. As in BAT 20 review above, listing of BAT AELs is included. Comments are as in BAT 20 review above
8. BAT 13 and BAT 14 requirements for reduction in waste volume by management or pre-treatment are not applicable to site activities
9. BAT 15 to BAT 21 all relate to emissions to air and are not applicable to site activities
10. BAT 22 and BAT 23 relate to noise emissions and are not applicable to site activities
11. Section 6 is a listing of Techniques that can be used for waste water treatment. The use of activated carbon for waste water treatment is not listed

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