

Regulated Industry Permitting Team
Natural Resources Wales
Ty Cambria
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Date: 11th November 2020

Subject: Solutia UK Ltd, Cefn Mawr, Wrexham, LI143SL – EPR Ref: EPR/NP3335GR
Further Response to BAT Information Request

This letter is a further response to a BAT Information Request, to supply additional detail on the specified topics - where applicable the respective BAT item reference is provided. It is hoped that this, in conjunction with the accompanying information will serve to answer each query

1.0 OVERVIEW OF OPERATIONS

The above-referenced permit is to allow Physio – Chemical Treatment of collected groundwater from the former manufacturing site area. Treatment is done in three enclosed carbon filter units located on a concrete slab in the ex-manufacturing area – this treated groundwater along with rainwater collected from drains (also in the ex-manufacturing area) are transferred by pipeline(s) to storage tanks in the GSSF (Groundwater & Stormwater Storage Facility). The mixed treated groundwater & rainwater is discharged at a controlled flow rate via pipeline to an outlet at the River Dee

Permit conditions specified for Final Effluent are: flow rate, daily volume, Phenol 0.2 mg/l, Total Tetrachloroethene 2.5 ppb and TOC (no limit set). In addition; GCMS analysis of an established list of micro-pollutants associated with previous manufacturing operations is conducted, also with no limits set. This historical list was agreed with the Regulator in 1985 and has become part of subsequent permits

An Environment Monitoring Programme is also included in the permit - it requires GCMS analysis of micro-pollutants in groundwater collected from; two boreholes and two sumps prior to the carbon treatment

The land area covered by the permit includes; the 10x10m concrete slab where the carbon filters are sited, and the area at the GSSF where the bunded storage tanks are located. The land area associated with the ex-manufacturing plants is not included within the current permit, this having been surrendered with all necessary soil and groundwater sampling required for permit closure completed at the time

The limited operation authorised under the permit has the following points of note as they relate to the supplied BAT Permit Review Spreadsheet:

- **There are no Raw Materials** (as would be recognised for a manufacturing operation permit) involved in the current permit operation. Untreated groundwater is fed to carbon filters for treatment, the carbon treatment media is delivered in enclosed filter units which are subsequently returned to the supplier when the activity of the carbon is spent

Spreadsheet BAT 22 item is not considered applicable

- **Energy usage** is limited to electricity required for pump operations, pipeline frost protection, control room facilities, and area lighting for the GSSF. There is no requirement for gas use to heat any liquid stream. The scope for energy improvement is therefore limited and the need for a formal improvement plan is not considered required. Nevertheless, operation of frost protection by thermostats, lighting by photocells and recent replacement of street lighting by low energy bulbs are all considered good practice. Utility usage is recorded monthly

Spreadsheet BAT 23 is considered met for the limited scale of permit operations

- **Operations do not generate any significant off-site waste disposal;** quantities are limited to domestic type waste from control room activities. Discharge of treated groundwater / rainwater is direct to the River Dee and is the purpose of the permitted activity, hence this is considered the operational end-product rather than a waste stream. Operations do not give rise to any gas or dust emissions

Spreadsheet BAT 2, BAT 4, BAT 5 and BAT 25 to 53 are not considered applicable

- **Flow diagrams and description of operations exist.** Information on characteristics of waste-water discharge as required by the permit are recorded. There are no waste gas streams

Spreadsheet BAT 3 (i)(a & b) are met. BAT 3 (ii)(a) requirement is met for applicable permit consent for flow. Other BAT 3 (ii)(a) items of pH, temperature and conductivity are not process controlled parameters and therefore not considered applicable. BAT 3 (ii)(b & c) characteristics with the exception of Micro-Pollutants are not required by reporting by the permit. Requirement is therefore met for micro-pollutants and not considered applicable for the other characteristics. BAT 3 (iii) (a, b & c) are not considered applicable as they relate to waste gas streams.

- **A monitoring programme is established.** Discharge flow at final discharge point from the GSSF is continuously measured and recorded within the Process PLC. Volume of groundwater is similarly measured and logged. GCMS analysis for micro-pollutants is sampled at inlet and outlet of the carbon filters to monitor performance six monthly. TOC and GCMS analysis of the final discharge are completed quarterly

Frequency of sampling is as agreed at time of permit issue based on previous 10 years' experience. BAT 7 listing contains a recommended frequency of monthly for TOC, however quarterly is considered appropriate based on Note 11 which allows reduced frequency where results can be shown to be stable. There is no listing for micro-pollutants

Spreadsheet BAT 6 and BAT 7 requirements are considered fully met

- **The scope of the operations means there is limited impact on the environment.** There are no; routine or diffuse emissions to air, and no flaring. The collected groundwater does not present a source of significant odour. Noise from operation of pumps is local and not audible at the site boundary

Spreadsheet BAT 8,9,10,12,13,14,15,16,17 and 18 are not considered applicable

- **Annual Monitoring and Reporting.** Operations involve no raw materials or water usage and only energy from electricity. Therefore, at time of permit issue, monitoring and reporting was agreed as not required. Annual reporting of the limited waste disposal is completed as per permit requirements

Hence Spreadsheet BAT 11 requirement for; water / energy / raw materials is considered not applicable and for waste fully met

- **Operations do not include any use of additional fresh water.** The activity is for the collection / treatment of groundwater and rainwater. Impermeable surfaces, bunding and high level interlocks prevent loss of the collected water to soil or water sources

Spreadsheet BAT 19 c, d, g, h and i are met. Items: a, b, e and f are not applicable

- **The permitted operation is for the physio-chemical treatment of trace organic micro-pollutants in groundwater.** This uses adsorption on activated carbon and is a listed method of treatment in BAT 20. Substance / Parameters included in the site permit and listed in BAT 20 Table 6.1 (BAT-AELs for discharge to water bodies) are Phenol and TOC. Phenol permit limit is 0.2 mg/l as per the guidance listing. TOC has no permit limit c.f. guidance listing of 10 to 100 mg/l. Monitoring of the low level of organic micro-pollutants (ppb) evidences that a high TOC limit is not required.

Spreadsheet BAT 20 list treatment d is met, other treatment methods are not applicable. BAT AELs listed for Phenol and TOC can be considered met. Other listed AELs are not applicable

2.0 RESPONSE TO LETTER DATED 28/08/20

- **Compliance with BAT 1 Environment Management System (EMS)**

The EMS for the site has been revised since closure of the manufacturing operations and the reduction in number of personnel for the current limited permitted operations. Site personnel is now one full time Site Caretaker and a part time Holiday Relief. Contractor support for maintenance type activities is employed as required

Additional support also comes from Solutia Newport site for: technical support, HR Purchasing support, use of Corporate Shared Data Computer Systems, and Management direction. Accompanying this letter is a document describing changes to the EMS from full site operations to the current operation. This document was part of Transfer Application (Doc3) and Variation (Doc6) relating to the current permit. The document has previously been provided when information has been requested on the site EMS. The description is for a system appropriate to the limited scale of operations with an emphasis to ensure ongoing maintenance and interlock / alarm inspections through use of Newport Computer Scheduling Systems. Specific responses to Spreadsheet items are:

BAT 1

I Compliance for Management Commitment for site personnel is met from; Newport based Director Manufacturing Operations, and Director EH&S Europe

II Compliance for Environmental Policy and Performance Criteria is provided at corporate level with Manager EHS Newport providing the link for the site. Site is considered compliant for the level of operation

III Eastman Remediation Group have responsibility for the site and maintain annual budget / business plan for the site covering a 30 year period. Hence considered compliant

IV Implementation of Procedures

- (a) Responsibilities for the one full time employee are established along with reporting structure to off-site management
- (b) A training package for the then new role of Site Caretaker was developed by previous GSSF Manager prior to his leaving in 2015 and has been updated when required. HR Newport recruitment procedures would similarly apply in the future as / when necessary. The Site Caretaker has the experience & competence to recognise when advice / input from Newport Technical Support is required - some examples are; electrical distribution, and inspection of civil structures
- (c) The Site Caretaker issues a Monthly Report to communicate site activities to Newport and Eastman Remediation Group Management. Other communication occurs as and when required
- (d) There is only one full time site employee, he is fully involved in all aspects of undertakings on the site
- (e) Documented operating instructions were prepared when the Site Caretaker role was established in 2015 - the Site Caretaker has revised these when subsequent changes have been required. Documentation includes Process Flow Sheets, Alarm and Interlock Descriptions with their test procedures as well as listed routine operational check lists
- (f) Process control requirements for the operations are limited to the need for control of storage tank levels and controlled discharge flow rate of final effluent. Such control is provided within a PLC with additional hard wired alarms to an annunciator panel and alerted to the Site Caretaker's Mobile Phone
- (g) Maintenance programmes for weekly / monthly routine checking of; in-line filters, valve operation, and standby pump operation are listed by the Site Caretaker and reported within a monthly report. Annual programmes for service maintenance and interlock / alarm checking are contained in the Newport scheduling system. The system issues a reminder when action is required and records completion of the inspection(s)
- (h) Most probable required emergency response is likely to be a high level in a sump or storage tank. The situations are both control room alarmed and linked to the Site Caretaker's mobile phone. Alarm levels are set to allow time for manual response when required. Preparedness includes in-situ standby pump, emergency mobile pump, procedures for manual operation of valves in event of PLC failure, and bunding of the GSSF area. Fire risk is low as no flammables are processed
- (i) The site permit is displayed in the Control Room and the Site Caretaker is aware of compliance requirements. Environment Specialist Newport role includes being up to date with legislation, and informing the Site Caretaker of any changing compliance requirements

V Checking performance and taking corrective action.

- (a) Final Effluent Discharge flow is continuously measured and monitored within the PLC to calculate a daily total volume and record peak flow. Both (permit consent) parameters are then manually logged into Newport Data Sharepoint system thereby evidencing permit compliance. Weekly measurements of collected groundwater volumes are also logged into the Data System, and weekly iron content of Final Effluent is checked in-house. As per permit required frequency, a sample of Final

Effluent is taken quarterly and samples of groundwater six monthly for external laboratory analysis - results are again recorded in the Data System

- (b) Routine cleaning of in-line pipe filters and backwashing of the carbon beds are preventative actions to ensure continued operation. GCMS results of outlets from carbon filters evidence their ability to remove trace organics, confirming experience over the past 10 years. Corrective action for replacement of carbon filter beds is done every 2 to 3 years based on carbon blinding giving reduced flow capability. Visual checks of flows through the carbon filters also monitors their performance
- (c) Records are maintained in Newport Data Sharepoint System and are reported in the Caretaker's Monthly Report at the time results are taken
- (d) Formal auditing of the site EMS is not considered applicable due to the limited operation with only one full time employee

VI Formal Senior Management review of the EMS is not considered applicable. Director Operations, Director EH&S, and Eastman Remediation Manager are all closely involved in site decision making not warranting further senior management review

VII Development of cleaner technologies is not applicable to site activities

VIII Whole life cycle considerations when designing new plant is not applicable to site activities

IX Regular sectoral benchmarking is not applicable to site activities

X to XV are not considered applicable to site operations based on above responses to BAT 2, 3, 12 and 17

Compliance with BAT 2 is as described in previous section above

Compliance with BAT 20

A risk assessment for the potential of contamination of groundwater and soil from current activities has already been completed, and current site activities do not involve introduction of any hazardous raw materials. Activity is for the treatment of groundwater already containing trace organic chemicals using carbon filtration, and correspondence with the Site Inspector has previously agreed that the risk of contamination from current operation is not considered significant - Ref accompanying letter

There is no discharge to sewer. Discharge to surface water is via pipeline to the River Dee and it contains no priority hazardous substances. Indeed, the quantity of any substances involved in activities is limited to trace (part per billion) levels in untreated groundwater

I hope the above provides adequate information to answer all the outstanding queries



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