Permitting Decisions- Variation

We have decided to grant the variation for Sterling Pharma Solutions Dudley Installation operated by Sterling Pharma Solutions.

The variation number is EPR/AP3234LG/V007

The variation permits treatment of Dudley site generated and third-party wastewater, particularly containing solvents, through an anaerobic digestion pre-treatment process added to the existing Biological Treatment Plant. Biogas generated is upgraded and injected into the national grid.

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 provides a record of the decision-making process. It

- highlights key issues in the determination
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- explains why we have also made an Environment Agency initiated variation (for minor updating changes)
- shows how we have considered the consultation responses

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

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

Finalised Anaerobic Digestion Plant Design

The submitted application contained differing values for the maximum throughput capacity of the effluent treatment plant with the new anaerobic digestion plant addition and differing tank identification and capacity values.

The Schedule 5 notice response confirmed the maximum plant throughput capacity will remain unchanged at 2,200 m^3/day constrained by the Northumbrian Water sewer discharge consent. Although both the new anaerobic and existing aerobic parts of the biological treatment plant will have twin tanker off-loading point the applicant confirmed that there will be no increase in the maximum 20 delivery tankers per day.

A definitive vessel list was also supplied confirming the anaerobic digestion plant permitted by this variation will have two process lines.

Tag	Sterling Tag	Plant Area	Description	Volume (m3)	Recirculating tank	Odour abatement connection	Reactor Train
T101	B8001	Offloading	Reception Tank	200	No	Yes	
T102	B8002	Offloading	Reception Tank	200	No	Yes	
T103	B8003	Offloading	Reception Tank	200	No	Yes	
T104	B8004	Offloading	Reception Tank	65	No	Yes	
T110	B8005	Buffering	Pre-treatment Tank	800	No	Yes	
T120	B8006	R220 Reactor Train	R220 Reactor Train recirculation tank	211	Yes	Yes	Paired with R220
T130	B8007	R230 Reactor Train	R230 Reactor Train Recirculating tank	211	Yes	Yes	Paired with R230
T190	B3066	Buffering/Divert	Buffer storage	1200	No	Yes	
T401	B8008	Nutrient	IBC dosing skid	1	No	No	
T402	B8009	Nutrient	IBC dosing skid	1	No	No	
T403	B8010	Nutrient	NAOH storage tank	25	No	No	
R220	B8011	R220 Reactor Train	R220 Bioreactor	910	Yes	No	Paired with T120
R230	B8012	R230 Reactor Train	R230 Bioreactor	910	Yes	No	Paired with T130
T300	B3065	Effluent tank	AD effluent tank	800	No	Yes	
X701	X701	Odour abatement	Lava filter	50	No	No	

This information matches the submitted final Bioplant Layout plan and both are referenced in the Operational Techniques Table S1.2

Total additional untreated material storage is 1,465m^3.
Total vessel volume of these tanks 5184m^3.

In response to Schedule 5 notice Question 15 the operator has stated that the calculated required bund volume for the new and existing tanks (110% of largest, 25% of total) is 5,233m^3 and the existing bund plus anaerobic plant extension area will total 5,935m^3. In addition to the total tank volume of 15,073m^3 the submitted required volume calculation also includes an allowance for rainwater accumulation, surge and freeboard for dynamic effects. We therefore accept the bund volume is adequate.

Barrier Protection of export methane pipeline

The contaminated land investigation risk assessment report submitted as part of the application SES.SE.SPS.1_Contaminated Land RA P1 by Soil Environment Services Limited recommended the use of an impermeable barrier with the methane export pipe for the length near to the tank bund to protect against ingress of known land contamination. The proposed length affected is shown in Drawing 2.

The response to Schedule 5 notice Question 8 with excerpts from a CNG Services Limited confirmed the length of barrier pipe used. This does not directly match the recommendation in Drawing 2 but does match the length from the confirmed location of the gas treatment unit to the edge of the known contaminated area.

Waste Disposal and Recovery Codes

The operator requested recovery codes as well as the existing disposal codes for the operations and submitted a justification that the biomethane generated by the anaerobic digestion process would be fed into the national grid, thus displaces the use of fossil fuels.

To be consistent with similar operations we have split the hazardous and non-hazardous treatment activities each into a D8 disposal code for the anaerobic and aerobic treatment plant and an R3 recovery code for just the anaerobic treatment plant.

Analysis of carbon in final discharge to sewer

The permit had a requirement to monitor Total Organic Carbon (TOC) concentration against a limit of 400mg/l. The operator has stated that originally they were actually monitoring Chemical Oxygen Demand (COD) as a proxy but this was changed, with the agreement of the sewerage contractor Northumbrian Water, to Dissolved Organic Carbon (DOC) due to problems with chloride interference in the COD analysis. Evidence has been provided that the Environment Agency was notified of the change in 2014 and DOC has been reported since then in monitoring returns.

This discharge is not directly to a receiving water body so it is not subject to mandatory BAT-AELs for TOC/COD in the BAT Conclusions for common waste water and waste gas treatment/management systems in the chemical sector.

We have updated the S1 monitoring requirement for TOC to DOC with the Northumbrian Water consent limit of 600mg/l. The emission of undissolved carbon is protected against by the existing suspended solids monitoring requirement and 500mg/l limit which matches the Northumbrian Water consent.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

An initial claim at the time of application was subsequently withdrawn.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

Food Standard Agency
North Tyneside Council – Environmental Health Department
Health and Safety Executive
North Tyneside Council - Director of Public Health
United Kingdom Health Security Agency (IUKHSA)

No public responses were received.
A no comment response was received from the Health and Safety Executive

The comments and our response from UKHSA are summarised in the consultation responses section below.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, Appendix 2 of RGN2 ‘Defining the scope of the installation’, Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit. The description of limits for the waste treatment activities has been updated and a Directly Associated Activity (AR11) added for biogas upgrading.

The site

The operator has provided an updated plan which we consider to be satisfactory. This shows the location of the new effluent plant emission points to air A9-A12, the energy centre A8, remaining solvent tank farm A6 and the groups of plant vents A1-A4. The Table S3.1 and S3.2 emission point locations now refer to the site plan in the permit.

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

We have advised the operator that we believe historical contamination may be present and collection of baseline data is recommended.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations.

The location is within screening distance for:
Northumberland Marine Special Protected Area,
Northumbria Coast Special Protected Area and
Northumbria Coast Ramsar Site.

As well as:
Annitsford Pond Local nature Reserve,
Annitsford Pond :Local Wildlife Site (LWS),
Seaton Burn Ponds LWS,
Seaton Burn House Woods LWS,
Fordley Marsh LWS,
Seaton Burn High School Nature Reserve LWS,
Burradon Colliery LWS and
Weetslade Country Park LWS

In each case we considered the source (for each identified pollutant), pathway and receptor.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We sent our Habitats Regulation assessment to Natural England for information. They have not commented in this case.

The decision was taken in accordance with our guidance.

Environmental Impact Assessment

In determining the application we have considered the Environmental Impact Assessment document SPS -5 EIA. This did not contain any significant information not submitted in other documents.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

After asking for further information and clarification by a Schedule 5 notice we consider the operator’s risk assessment is satisfactory.

General operating techniques

In response to a Schedule 5 notice request (Q21) the operator submitted an assessment of the proposed anaerobic plant operations against the Waste Treatment BAT conclusions and a consideration for the draft appropriate measures for Biological Treatment of Waste.

We have reviewed the techniques used by the operator and, after asking for further information and clarification by a Schedule 5 notice, compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operator has confirmed that all waste accepted on site for processing in the biological treatment facility will be pumped into the process within 72 hours of receipt as there is currently no storage for accepted waste. This time restriction, with a requirement to operate in accordance with Environment Agency guidance Chemical Waste: appropriate measures for permitted facilities, has been added to the limits for waste treatment activities in scheduled activity Table S1.1.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Operating techniques for emissions that screen out as insignificant

Emissions of Volatile Organic Compounds from emission point A10 (odour abatement lava filter) were assessed as 100% methanol worst case (largest fraction of mass emissions in the most recent monitoring of the existing process) and have been screened out as insignificant. Emission point A9 (membrane separation) will emit carbon dioxide at insignificant concentrations. Emission point A11 (final methane sampling) will emit methane at an insignificant rate. We

therefore agree that the applicant's proposed techniques are Best Available Techniques (BAT) for the installation.

We consider that the emission limits included in the installation permit reflect the BAT for the sector.

The applicant has committed to building sampling points on the new vents to our M1 guidance requirements.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit

Odour management

Current Odour Management Plan reference updated to SOP022F/A001 Rev4 in Schedule 5 notice response (Q17).

We have reviewed the odour management plan in accordance with our guidance on odour management.

We consider that the odour management plan is satisfactory and we approve this plan.

We have approved the odour management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance 'Control and monitor emissions for your environmental permit'.

The plan has been incorporated into the operating techniques S1.2.

Noise management

The loudest expected continuous noise is expected to be the skid mounted upgrade unit at 74dBA at 1m. At the nearest receptor this will have an insignificant additional impact to the existing background.

The loudest intermittent noise source may be the flare but this is confirmed in the Schedule 5 notice response will only operate <1% of the time (Q19).

We have reviewed the noise management plan in accordance with our guidance on noise assessment and control.

We consider that the noise and vibration management plan is satisfactory and we approve this plan.

We have approved the noise and vibration management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance 'Control and monitor emissions for your environmental permit'.

The plan has been incorporated into the operating techniques S1.2.

Updating permit conditions during consolidation

We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permits.

Changes to the permit conditions due to an Environment Agency initiated variation

We have varied the permit as stated in the variation notice. We have taken this opportunity to amend some conditions that are superseded or out of date.

Waste types

The applicant requested the addition of several waste codes that can be treated in the new anaerobic digestion plant and removal of several waste codes that are no longer required in order to reflect current operation.

We have assessed the resulting waste code list. The one 'wastes not otherwise specified' 99 code remaining (13 08 99) has been clarified as aqueous waste containing petrol/diesel oils. We have also added the phrase 'liquid fraction only' where the waste code would be expected to be mostly solid.

Several of the requested waste codes specifically relate to mercury or heavy metal containing wastes. In response to request for further information the

operator has stated that trials are in progress to design additional pre-treatment for these wastes to render them acceptable for input to the effluent treatment plant. We have include an improvement condition IC3 to submit a report on the these trials, after which we will notify the operator which (if any) of these waste codes, which are now listed in a separate Table S2.3, can be accepted.

The permitted maximum amount of external waste that may be accepted for treatment in the combined anaerobic and aerobic effluent treatment plant remains at 600m^3/day.

We are satisfied that the operator can accept these wastes for the following reasons:

- they are suitable for the proposed activities
- the proposed infrastructure is appropriate; and
- the environmental risk assessment is acceptable.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

IC 2 requires the operator to submit a post-commissiong report to ensure the anaerobic/aerobic treatment plant is performing as designed or to describe the changes made during commissioning.

IC3 requires the operator to submit a report of the development of processes and equipment to treat liquid waste containing inorganic contaminants such as mercury, platinum group and other heavy metals, before they can be accepted for treatment.

Emission limits

Emissions of Volatile Organic Compounds from emission point A10 (odour abatement lava filter) were assessed as 100% methanol worst case (largest fraction of mass emissions in the most recent monitoring of the existing process) rather than the originally submitted acetone and have been screened out as insignificant. Emission point A9 (membrane separation) will emit carbon dioxide at insignificant concentrations. Emission point A11 (final methane sampling) will emit methane at an insignificant rate.

The flare (A12) will only operate in other than normal operating conditions, expected to be <1% of the time. We have added a performance parameter in Table S4.3 to monitor and report the dates and duration of flare use to ensure the

expected low level of use is being realised and there is no correlation to any odour or noise complaints.

At the request of the operator emission points A5 (old boiler stacks) and A7 acid/alkali tank farm have been removed from the permit as these have been decommissioned. The monitoring for NO_x and particulates only related to A5 for the boilers so these have been removed. There is a still a sodium hydroxide solution tank but the breather vent emissions from this are insignificant.

The solvent tank farm has been reduced to 3 tanks with individual breather vents. The collective emission point A6 has been retained as there is a potential for solvent emissions but these are expected to be insignificant and no monitoring is required.

The description of emission points A1-A4 has been clarified as individual vessel vents grouped by plant. The monitoring programme is to be planned and carried out for the vents in use for the products being produced at the time of sampling in accordance with Standard Operating Procedure PGM022C (currently Rev8).

The Chloroform; 1,2-Dichloroethane; Benzene; Toluene; and Xylene spot sample requirement without monitoring frequency is no longer required and has been removed. The monitoring frequency and methods for suspended solids and ammonia have been updated.

The monitoring of TOC with a limit of 400mg/l has been updated to DOC with a limit of 600mg/l. See Key issue above.

Monitoring

We have decided that monitoring should be added for the Total Volatile Organic Compounds from new emission point A10 (odour abatement lava filter) using the methods detailed and to the frequencies specified.

The performance parameters table S4.3 has been amended to remove TOC input ratio % efficiency as this is no longer required and to add assessment of the separate annual liquid waste inputs to the aerobic and anaerobic treatment processes.

Reporting

We have added reporting in the permit for Total Volatile Organic Compounds from new emission point A10 (odour abatement lava filter) List parameters and briefly explain the reasons for the reporting frequencies specified.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Financial competence

There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, [and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from UKHSA

Brief summary of issues raised:

1. Air Pollution: Reducing public exposures to non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards has potential public health benefits. We support approaches which minimise or mitigate public exposure to non-threshold air pollutants and address inequalities (in exposure) and encourage their consideration during site design, operational management, and regulation.

   We ask that the regulator is satisfied that the design will suitably minimise combustion via the flare or releases of odorous substances.

   Our response:
   Minimisation of use of the flare was queried in the Schedule 5 notice for more information during application determination (Q19). The operator has confirmed it will be expected to operate less than 1% of running time and will meet BAT Conclusion 17 of the BAT Conclusions for Common Waste Water and Waste Gas treatment/management systems in the chemicals sector to use flares for only safety reasons or non-routine operational conditions.

   We have added a performance parameter in Table S4.3 to monitor and report the dates and duration of flare use to ensure the expected low level of use is being realised and there is no correlation to any odour or noise complaints.

2. We ask that effluent throughput quantities are confirmed. The application's Environmental Impact Assessment states the variation is to seek approval for an incremental throughput of effluent through the BTP up to a maximum of 1968m3 per day. Whereas, the Non-technical Summary documentation states throughput of effluent up to a maximum of 2200m3 per day.

   Our response:
   Confirmation of the effluent throughput quantities was requested in the Schedule 5 notice for more information (Q4). The operator has confirmed the throughput maximum of 2200m^3/day as constrained by their sewer discharge consent to Northumbrian Water and we have conducted our assessment on

that basis.

3. We understand the site is an Upper Tier Control of Major Accident Hazards (COMAH)site. We recommend the Regulator (Environment Agency) consults with the Health and Safety Executive (HSE), Emergency Planning team of the Local Authority and the Fire and Rescue Service for this environmental permit consultation. All have responsibilities for the off-site plan of COMAH sites and protecting the public from impacts of major accidents.

   Our response:
   Assessment of COMAH considerations is not directly addressed in determination of a permit variation under the Environmental Permitting Regulations (beyond confirmation that there is an adequate written management system that minimises risks from accidents under permit condition 1.1.1). Our local COMAH regulation team have been made aware of the variation.

4. The Odour Management Plan appears to have been updated in 2018. We recommend this is updated to take into account the environmental permit variation increase in quantities.

   Our response:
   Confirmation of the status of the Odour Management Plan was requested in the Schedule 5 notice for more information (Q17). The operator has confirmed that a revised Odour Management Plan SOP022F/Rev4 which considers the expanded effluent treatment plant is now in operation.