Cyfoeth Naturiol Cymru Natural Resources Wales

Compliance Assessment Report

Report ID: CAR_NRW0035722

This form will report compliance with your permit as determined by an NRW officer					
Site	Newport Chemical Complex	Permit Ref	BR9715IB		
Operator/Permit holder	Solutia UK Ltd				
Regime	Installations				
Date of assessment	27/06/2019	Time in	10:00	Out	16:00
Assessment type	Report/Data Review				
Parts of the permit assessed	Rountine submissions and audit actions				
Lead officer's name	Kemp, Andi				
Accompanied by	Sharp, Emma				
Recipient's name/position	Stephen Thomas/ Environmental Specialist	Date issued	25/09/2019		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	**CCS Category**	**Condition(s) breached**
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.
A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,
O = Ongoing non-compliance, not scored.

Number of breaches recorded	**0**	**Total compliance score** (see section 5 for scoring scheme)	0

If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Compliance Assessment: Eastmant Chemicals, Newport – 25th September 2019 – Permit – BR9715

Purpose of Compliance Assessment

This compliance assessment comes after the latest CAR1 (29th March 2019) and ahead of the next meeting / inspection / update, scheduled for 1st October 2019.

This CAR1 covers the following aspects:

- Current status of Improvement Programme
- Latest scheduled notifications
- Action responses from CAR1 29th March 2019
- Inspection / meeting on site 27th June 2019

Current Status of Improvement Programme

A variation to update and refine the permit and its many variations was successfully issued by NRW to Eastman on 5th December 2018. Amongst other refinements, the variation recognised the completion of all previous improvement conditions, except IC33, and added IC34 – IC37 incl.

IC33 concerned measures and proposals to reduce emissions of Pentachlorophenol in the surface water discharge. The operator has installed a reed bed groundwater pump and treat system – this was seen initially in June 2019 – see previous CAR1s and inspection 27th June 2019 heading. **IC33 extended until 31st August 2019** – *this will be looked at again during the 1st October 2019 inspection, where either it will be signed off or extended, with appropriate potential non-compliances assigned.*

IC34 concerned the review of aerial emission points to ensure what is actually on site is reflected in the permit with appropriate limits if necessary. **This was extended until 30th September 2019** - *this will be covered in 1st October 2019 inspection.*

IC35 requires the operator to review NOx emissions from TH3 pyrolysis furnaces with a view of reaching compliance with the ELVs. **Deadline 1st December 2019.**

IC36 operator to conduct additional NOx monitoring at the newly configured boiler 16 (emission point A4) and the condensing economiser stack (emission point A31) to demonstrate that combined the ELV of 75 mg/m^3 NOx is not breached. **This was extended until 30th September 2019** - *this will be covered in 1st October 2019 inspection.*

IC37 requires the operator to submit design and commissioning details and operating parameters of the condensing economiser. **Due 1st June 2019 – rec'd 31st May 2019.**

The principle behind this initiative is to recover the heat from hot flue gases from boiler 16 and use this to pre-heat boiler feedwater, thus reducing natural gas consumption. The submission from the operator includes details of the contractor used and design adopted, along with a Master Plan schedule, from proposal through to validation. A schematic is also supplied that illustrates the main pieces of equipment in the process. IC36 requires NOx monitoring to demonstrate the ELV of 75 mg/m^3 NOx is met as the emissions are shared between the regular boiler emission point and the economiser stack. The operators response states that emissions will be shared not increased. NRW accepts the response. **IC37 complete.**

Latest scheduled notifications

The notifications below have been submitted:

- *16th July 2019 – TH2 benzene to atmosphere – Part A, Part B received 13th August 2019*

TH2 compressor trip led to the loss of hydrogen entrained with benzene to vent. It is believed that static created by a steam leak from the heating of the flame arrestor, ignited the gas / vapour mixture. The pressure relief venting and flame arrestor systems worked as intended. Actions identified post investigation include: modifying steam lines; alternative flame arrestor heat sources; movement of flame arrestor and ignition source; highlight the issue of static caused by steam. The amount of

benzene lost is not significant and the safety systems worked. It is worrying though that such vapours could be ignited – **this should be discussed with the HSE.** Whilst it is good practice to fit flame arrestors in certain locations to minimise flame propagation, within design temperatures and pressures, it is not clear how large the risk is for ignition at this venting position and therefore how well the current system is designed and inspected. **To be discussed at the 1st October 2019 meeting – evaluate potential non-compliance.**

- *1st August 2019 – TH3 east pyrolysis furnace – Part A received*

The Part B has not been received for this notification. This event was a flange leak following start up, with approximately 200 kg of benzene and polyphenyls released to ground and eventually into the catchment tank – interceptor? **To be discussed at the 1st October 2019 meeting – evaluate potential non-compliance.**

- *24th June and 18th August 2019 – PCP in W1 treated effluent, Part A and B for June, only Part A for August notification.*

This is linked to IC33, which will be discussed on 1st October 2019. It is known that high rainfall events can cause groundwaters to flow into site surface water drains. Previous work has been conducted to minimise migration of PCP contamination – this is a legacy issue in a specific location – the former Santobrite area. The most recent development is the installation of a groundwater pump and treat reed bed system. The success of this will be discussed at the next inspection. **Refer to March 2019 CAR1 where further non-compliances for these 2019 exceedances will not be applied until IC33 and the reed bed process success has been evaluated.**

There is an ongoing open part A notification for the TH3 pyrolysis furnaces (emission points A26 and A27) and IC35 seeks to address this. When TH2 pyrolysis furnace is brought online and monitored (emission point A23), it will be interesting to see if the emissions of NOx are similar to the TH3 furnaces. The NOx limits were raised to 200 mg/m^3 from 135.

Action responses from CAR1 29th March 2019

In the previous draft CAR1 of March 2019 7 actions were raised and upon review of the CAR1 and some additional information off the operator, Actions 2 and 5 were rescinded. The operator submitted a response for the other actions on 31st May 2019 – the response is assessed below.

Action 1 Eastman 20th Mar. 2019 – this action concerned liaison between Eastman and the other organisations on site about the safe storage of substances in certain locations. This response confirmed that through regular meetings between Eastman and AES, security and environmental matters are covered. AES have agreed to provide Eastman with an inventory of hazardous materials. AES storage of liquids and solids in drums and other containers are in line with Eastman procedures. Recent improvements and projects still to be delivered include: dedicated storage for ecotoxic and toxic chemicals; upgrade lorry park area to concrete hardstanding; use of a central storage area, removing drums / IBCs from the un-kerbed Dequest and Maleic areas; upgrade an area of the warehouse for fully contained storage; surface water pumps are automatically switched off if oil is detected – this is linked to an upgrade of the oil detector – **these items will be checked by NRW. Action closed.**

Action 3 Eastman 20th Mar. 2019 – As part of the permit variation an air quality modelling exercise for various NOx release scenarios was carried out. This is linked to IC35 – compliance with NOx limits for TH3 pyrolysis furnaces, due Dec. 2019. The modelling report: Air Quality Assessment, Filkin & Co. EHS Limited, 26/10/2018. The report is well structured, includes three scenarios, model input parameters, nitrogen deposition, background concentrations, local of relevant human and ecological receptors, data on Air Quality Management Zones etc. The results are presented as appendices. There are diagrams of plume dispersion. In summary, taken from the report, there are no predicted exceedances of the EQS; the hourly mean NO_2 PC for all scenarios is less than 10% of the AQO; the annual mean NO_2 PC is less than 10% of the EQS, with PECs less than 70%; annual mean NOx PCs for designated habitats is less than 1% of the EQS, except for three locations; for the locations above 1%, the PECs is less than 70% of the EQS. This includes a scenario for combined Nitrogen emissions from the boiler, TH3 and TH2 plants. In conclusion, Eastman's NOx emissions are not significant and when added to background concentrations, the AQO / EQS are not exceeded and it can be seen that the PEC (predicted environmental concentration, i.e. site process contribution (PC) + background) is dominated by background concentrations, primarily power generation and road traffic emissions. **Action closed.**

Action 4 Eastman 20th Mar. 2019 – This concerned a scheduled notification of a failed bellows and the action required the operator to confirm what changes they have made to their processes to prevent reoccurrence. Measures identified and being pursued include: installation of a recirculation line on D2010 reactor; with pressure relief into the top of the vessel; lagged and traced PTFE line with actuated block valve fitted to relieve pressure in the recirculation line; this is all controlled via sequencing in the DCS system. **Action closed.**

Action 6 Eastman 20th Mar. 2019 – The operator has submitted the latest round of Aquacheck results for organics in W1 effluent. Aquacheck is an inter laboratory proficiency scheme and can demonstrate the on site lab competence in lieu of using an off site test house accredited to ISO 17025. 11 samples of known concentration (unknown to Eastman) were sent to Eastman. They analysed and submit results back to the Aquacheck scheme. 7 results were satisfactory, 3 were questionable and 1 was not tested. PCBs were the main parameters analysed and it was three PCBs results that all came out as elevated compared to spiked concentration. **This is something that can be examined more closely during an OMA.** The seven

satisfactory results, out of ten analysed, can give the regulator some confidence that the operator can use their analytical equipment to obtain reasonable results. **Action closed.**

Action 7 Eastman 20th Mar. 2019 – This related to missing monitoring data from operator submissions. In fact the benzene data from storage tank emission points A16 and A30 was included – the regulator must have missed this. The TH3 pyrolysis furnace emission point A27 had not come on line at the time of reporting (2017). **Action closed.**

Examining emission points and, in addition monitoring or estimation of tank losses, is an area NRW will look at in future inspections.

Inspection / meeting on site 27th June 2019

This inspection and meeting covered several items.

With regard to the ongoing project (under IC33) to reduce levels of PCP in surface water, the location and infrastructure of the reed bed system was examined. The system had not been commissioned at the time of this inspection, but the regulator could see the principles behind the operation. Contaminated groundwater is pumped from the contaminated zone and fed into metal containers planted with reeds. The water discharged from these containers is pumped back into the ground. In previous CAR1 forms and accompanying submissions the design and operating principles were disclosed. The ability of the reeds to breakdown the PCP and pumping tests on groundwater were all investigated and fed into the final design. When this is up and running proper, procedures will need to be set up to monitor the performance.

Potential improvements will likely be needed for the composite sampler and the position of sample withdrawal and preservation – this is ongoing. The operator gave an update on the emission point work, which is involving many P&IDs being checked out on plant – this is part of IC34, which had been extended to 30th September 2019. Steve Walford is running a project to investigate potential uses and / or end of waste for the Santotar – the bottoms from the final separation column in the Therminols process. This has been discussed before and the regulator and operator intend to explore the potential to regard this material as not waste or by product, depending on its properties and future use and pollution / performance compared to raw materials it may substitute.

Improvements in NOx emissions from the Therminols units is taking the form of:

1. New coil for TH2 pyrolysis furnace – on plant during Dec. 2019, with 4 weeks fitting, testing and bringing into operation.

2. Trialling a new burner management system in TH2 pyrolysis furnace – 7 month lead time; Q1 2020 – burners bench tested. If successful, will be extended to TH3.

The design intention is for NOx emissions to be around 110 mg/m^3. A comparison will be made on emissions while the furnaces are run on natural gas or natural gas supplemented by hydrogen recycle.

Some of the ongoing storage infrastructure locations, proposed warehouse improvements and storage practices were looked at. It appears that personnel are utilising the correct engineered locations and adhering to fitting end caps on IBC taps and facing taps into the engineered area. A bund that had lining repairs under way was showed to the regulator.

AK mentioned that the OPRA profile should be filling in correctly on the latest spreadsheet template and include information on procedures and document location and owners in the Operator Performance tab.

Potential changes in Dequest Amino, using phosphonic acid instead of PCl_3 and Therminol 72 being produced on TH2, leading to an additional NOx emission point – these will require formal detailed written proposals from the operator. Not likely to require a variation, but information must be supplied to the regulator, indicating whether new substances or increases in current emissions are expected or the operating techniques are different from those submitted with the permit and variation applications. This will be picked up in the October inspection.

Future regulatory topics, namely the hazardous waste audit and assessment of effluent treatment processes, was discuss and tentatively scheduled for later in this compliance year – to be discussed during the October inspection.

END

Cyfoeth Naturiol Cymru Natural Resources Wales	**EPR Compliance Assessment Report**	**Report ID: CAR_NRW0035722**

This form will report compliance with your permit as determined by an NRW officer

Site	Newport Chemical Complex	Permit Ref	BR9715IB
Operator/Permit holder	Solutia UK Ltd	Date	27/06/2019

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition.
Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	**CCS Category**	**Action required/advised**	**Due Date**
See Section 1 above			

Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language
If you would like this form in Welsh please contact your Regulatory Officer.