

Compliance Assessment Report CAR_NRW0037022

Permit being assessed: JP3632ZH.

For: Barry CHP , held by Dow Silicones UK Limited

At: Wimborne Road - Dock 2, Barry, Vale of Glamorgan, CF63 3DH.

Type of assessment carried out: Report/Data Review, Reason: Routine.
On 12/10/2020.

Parts of permit assessed: Monitoring, emissions, noise control

NRW Lead Officer: Antony Leakey.

Report sent to: Judith Sartor, Environmental Specialist on 12/10/2020.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
E1 - Emissions - Air	Assessed (A)	
F2 - Amenity - Noise	Assessed (A)	
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	Assessed (A)	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	Assessed (A)	

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

No action required.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Dow CHP permit and reporting review

LCP Bref Review/end of TNP

A revised permit has been issued effective from the end of the TNP in order to implement the IED Annex V ELVs and LCP Bref BAT AELs in the future when the chemicals installation permit is reviewed or sooner if optimisation is completed before the chemical Bref review.

COVID-19 restrictions have resulted in delays to the upgrading programme and statutory boiler inspections which is expected to preclude full compliance with Annex V requirements after 1 July.

NRW has agreed an approach that will allow HP boiler operation exceeding the Annex V NO_x ELV for 8-11 weeks during delayed upgrading and statutory inspection works. A permit condition breach will be recorded and then suspended subsequently as there is a credible plan to achieve compliance (upgrade programme) already in place.

This is a transparent approach, fully implements the legislative requirements and is consistent with the other UK regulators' proposed approach to allow operation of plants unable to meet the post-TNP ELVs.

Note that Dow will need to report the boiler emissions against the Annex V NO_x ELV at 3% oxygen correction and any non-compliance notified by Schedule 5.

The upgraded GT-B early commissioning NO_x emissions performance is less than 35 mg/m³, a more than 50% improvement and a significant contribution to local and national air quality improvement targets.

Note that NO_x CEM certified ranges will need to be reviewed in light of lower emissions. If the certified range is not less than 2.5 times the new daily ELV then an AST should be scheduled as soon as possible.

Also, lower calibration gas concentrations will need to be used for QAL3 purposes.

ACTION: Dow Silicones to provide a further update on upgrading and commissioning progress, including any CEM management changes, at next site meeting.

Noise control

An apparent increase in noise complaints has arisen since March relating to different parts of the site (see separate report on potential chemical plant impacts).

The rise may be due to a combination of factors: reduced background noise levels due to COVID-19 restrictions on movement and the prolonged period of northerly and easterly winds between March and June, coupled with unusually warm temperatures.

It is noted that Dow does not have a full BS4142 assessment of CHP site impact on the western Hayes Road area.

Steady state current CHP noise levels under some weather conditions may have potential for impact at receptors. For example, 58 dB at the fence line (typical measurements based on the data seen for 17 July) could give rise to 45 dB levels at Hayes Road (this level is typically the median of the historic Hunter data). If the night-time background is low at around 30-40 dB (Hunter reports don't provide LA₉₀ data, but the LA_{eq} data might suggest levels in this region) then there could be measurable impact due to the normal site operations under some conditions.

There is also a 315 Hz tone at multiple locations, although it is marginal, but possibly of significance at Position 2 which may be representative of the residential location where night-time/early morning complaints are arising. An examination of the historic data to see if the 315 Hz tone is always there and less marginal may provide more information. FFT frequency analysis at the residential location and on site may then enable a potential source to be identified. This frequency is high enough to be potentially associated with gas turbine compressor noise breakout from the air intake, for example.

Currently no day time observations of tonal or broadband noise that might be attributed to the CHP have been made at Hayes Road.

Noise control aspects are being taken forward through an action for the chemical installation permit as there are also potential sources there also. Implications for the CHP will be reviewed as part of this activity.

HP boiler CO ELV breach

The high CO emissions were caused by an oxygen sensor failure (see previous CAR). Several changes have been introduced to minimise a recurrence:

- 3 monthly calibration has been introduced. This calibration is undertaken by the Dow analyser group using authorised Dow procedures.
- A new calibration panel has been installed to make the task easier and ensure consistency.
- The calibration schedule is set in the SAP maintenance scheduling system.

No further actions are considered necessary. Verification of the calibration process will be undertaken at the next OMA.

Monitoring returns and notification review

Monitoring data for Q3 2019 to Q2 2020, the annual report for 2019 has been reviewed and no breach of permit conditions was identified other than those already addressed in previous correspondence.

It is noted that >10 days of invalid CEM data was accumulated during Q1 2019 on emission point A1 of the LCP. The cause of the invalidation appears to be spurious, although this is not demonstrated by the data trends provided and further interpretation of these is needed. The proposed preventative actions implementation is approved and will be reviewed at the next site visit.

ACTION: Dow Silicones to provide an update at next site meeting.

It is noted that CHP 2019 PRTR NO_x emissions are reported as 103.7 tonnes vs. 81 tonnes for TNP and LCP Inventory. This is expected as PRTR data includes start up and shut down emissions, whereas TNP and LCPI do not. The difference appears quite high given that starts and stops would be expected to be fairly limited for a CHP operation. Is the difference made up by banked operation emissions from the MP (shell) boilers?

ACTION: Dow Silicones to provide an update at next site meeting.

It is noted again that LCP operating hours reporting is unlikely to be on the correct basis. GT by-pass and LCP operating hours reporting should be on the basis that by-pass is total time either GT is operated in by-pass mode, which should normally be less than 500 hours per year, and total time that any of the units which make up the LCP are in operation, discounting overlapping operating hours of units, when just the overlap period should be included in the total.

Banked (standby) operation of the MP (shell) boilers should not be recorded as operational hours. Only runtime where the boilers operate above the "low-fire" start-up threshold should be recorded as operational time.

UK regulators are now closing out the TNP Register and associated reporting requirements, including a review of the TNP monitoring forms that cover the CEMs and flow quality assurance summaries. The forms are referred to as:

Reporting form for flue gas flow rate monitoring

Reporting form for TNP pollutant monitoring

Reporting form for peripherals monitoring

It is noted that these forms have not previously been submitted for the Dow CHP and provide a summary of the CEMs, peripheral and flow measurement QA history. Where appropriate these should be submitted on one form for the whole TNP period, for each CEM, peripheral and flow measurement.

ACTION: Dow Silicones to provide TNP Annual Verification Reports by 1 December 2020

New LCP reporting forms, applicable from 1 Jan 2021, are now available on the Energy UK web site:

<https://www.energy-uk.org.uk/publication/272-governmentdocuments.html>

Dow will need to get these changed reporting requirements into the CHP Data Acquisition and Handling System (DAHS) software provider's schedule for delivery by the end of 2021 - noting that manual completion is allowed during 2021 in case of high demand, but the UK regulators are not currently anticipating allowing second year. One reason that might warrant a delay is incorporation of the first level data processing changes introduced by the recent DAHS standard EN 17255-1, as the UK regulators have not yet agreed a timescale for full implementation.

END

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

What are suspended scores?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry and Waste action criteria (used in section 1 and 2):

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. 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 our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.