

Compliance Assessment Report

Report ID:
CAR_NRW0020664

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

Site	Barry Silicon Plant EPR/BR9685IX	Permit Ref	BR9685IX		
Operator/Permit holder	Dow Corning Ltd				
Regime	Installations				
Date of assessment	14/03/2016	Time in	09:00	Out	17:00
Assessment type	Site Inspection				
Parts of the permit assessed	Site inspection and regulatory meeting				
Lead officer's name	Leakey, Antony				
Accompanied by	Hughes, Rhys				
Recipient's name/position	Helen Gough/ Environmental Team Leader	Date issued	15/06/2016		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. 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
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
B4 - Infrastructure - Containment of stored materials	A	
C2 - General Management - Management system and operating procedures	C3	1.1.1
E1 - Emissions - Air	C3	3.1.2
	C3	3.1.2
	C3	3.1.2
E2 - Emissions - Land and groundwater	A	
E3 - Emissions - Surface water	A	
F3 - Amenity - Dust/fibres/particulates and litter	A	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	

KEY: See Section 4 for breach categories, suspended scores will be indicated as such.

A = Assessed or assessed in part (no evidence of non-compliance), **N** = Not Assessed, **X** = Action only

Number of breaches recorded	4	Total compliance score (see section 5 for scoring scheme)	16
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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

Dow Corning Limited Site Visit Report

Site visit – 14/3/16

Business Update – the restructured ownership of the Dow Corning joint venture to become part of Dow Chemical Company was discussed with new Site manager Dave Brookes. Details of any consequential changes at the Barry site are not yet known.

ACTION: Dow Corning to notify NRW of any UK legal entity changes that may need to be reflected in the Environmental Permit.

D4/D5 cyclics – NRW expects that a review of emissions of these substances and other silicones to all media will be necessary as part of the BREF review process. In the meantime provision of available release data in the installation annual report should be considered.

The actions arising from the **W306 fire** on 30/5/15 investigation were reviewed. The main procedural changes have been implemented

Fugitive dust sources – potential fugitive dust sources at the site were reviewed again as part of the investigation into complaints to the North of the plant.

The W940 grinder plant duct failure on 23/8/15 was reviewed as potentially reportable under permit condition 4.3.1 and would be formally reportable if there were underlying procedural or maintenance failure causes. The release itself is not considered reportable due to the apparently localised on-site nature of the spill.

The W424 grinder bucket elevator replacement is planned for installation in October 2016.

A brief visit to the old landfill area confirmed that dust blow under high wind speeds does occur, particularly after a period of drier weather. The north easterly wind was taking occasional plumes of dust away from residential areas at the time of the inspection, but under similar wind speeds from a southerly direction material could deposit in parts of Barry.

ACTION: Dow Corning to review dust management at the old landfill area and propose measures to prevent or minimise dust blow at the next site meeting.

The grit blasting operation associated with the contractor's compound at the installation was visited to review potential for off-site fugitive dust releases. While not part of the EPR installation the area was checked on behalf of the local authority environmental health team. Records relating to bag filter replacement and bag house cleaning regime were inspected. There was no evidence of recent poor abatement performance associated with the grit blasting operation.

Examination of the bag house hopper discharge arrangements revealed some potential for dust spill and subsequent fugitive emissions. There was also evidence of blast media being dragged out of the workshop during the transfer of workpieces to the paint shop.

This should be addressed by improvements to housekeeping and cleaning regime. While there is potential for fugitive dust emissions to arise the area affected was localised and sheltered. Therefore, it is considered unlikely that significant off-site dust emissions will occur from this source. However, it is **recommended that Dow Corning take action to improve housekeeping in this area.**

Further, more conclusive testing or examination of site materials that could potentially become off-site fugitive emissions and comparison with fresh environmental samples claimed to be causing damage off-site is recommended.

ACTION: Dow Corning to consider scope for further testing of materials and advise NRW at next site visit.

ERU optimisation

The residence time trial has established a limitation at 1.7 seconds, due steam flow restrictions and ID fan capacity. These will be addressed by replacement of plant if a decision is taken to proceed to 1.5 second residence time trials.

The sampling location was discussed for the AOX analysis of the caustic scrubber effluent in case of carryover of chlorinated compounds from the water scrubber. The effluent passes to a Hydecatt treatment system to destroy hypochlorite, this may also affect AOX. It was agreed that sampling before and after the Hydecatt should be carried out.

The increased ERU loading and higher operating temperatures may have an impact on reliability. Modelling of refractory damage is to be undertaken.

ACTION: Dow Corning to provide next ERU refractory damage modelling report when available.

A review of the various BRef requirements relating to narrative BAT residence time-temperature profiles and the potentially applicable BAT AELs should be undertaken as part of this project to ensure that changes made to ERU operation can be justified against the indicative BAT requirements.

In particular, the potential future need for the ERU to achieve BAT AELs for VOC emissions of 1-20 mg/Nm³ (at 3% oxygen) and for dioxins/furans of 0.01-0.05 ng/Nm³ (at 11% oxygen) should be kept under review when making investment decisions associated with the unit.

The final 1.7 second residence time trial report (8 June 2016) has been examined and suggests that there are no adverse effects upon emissions. Longer term operation at residence times down to 1.7 seconds is therefore considered to be appropriate with immediate effect and will be formally approved during the determination of the current variation application for the replacement W714 FBR.

It is anticipated that requirements to review ongoing ERU emissions trends under the new operating regime, benefits of the new ERU operating regime and a review of CO/VOC/dioxin emissions associated with online cleaning of the ERU will be required

ERU A41 vent breach

Elevated chlorine and HCl emissions were detected during Draeger tube testing on 6 January 2016, approximately 22 mgCl/m³ and 32 mgHCl/m³. These readings are generally indicative and cannot be taken as fully representative monitoring of release concentrations.

However, it is known that the process vent loadings to the ERU were particularly high at the time due to plant start up and a fridge trip. Under these conditions (>100 kg MeCl/hour vent flow) compliance is maintained by increasing the scrubber water flow rate. On this occasion this had not happened in contravention of operating instructions.

Compliance for this release point is on an annual average basis and typical data (2015) suggest that over the full year the ELVs are unlikely to be exceeded. This will be reviewed at the end of 2016. The 150% monthly maximum value is likely to have been exceeded based on the Draeger results, but the level of exceedance cannot be determined with certainty. However, an impact assessment based upon the highest indicative results obtained suggest that no significant increase in ambient concentrations will have occurred. Therefore a minor category 3 breach of permit condition 3.1.2 has been recorded. Similarly, a minor category 3 breach of the management condition 1.1.1 has been recorded for the operating procedure failings that would have prevented the increased emissions.

An internal investigation has already set out actions to be taken to ensure that the relevant operating procedures are updated and followed.

ACTION: Dow Corning to provide an update on action progress at next site meeting.

W957 Hydrogen Plant CO breach

The elevated release point A50 CO emissions will have limited air quality impact due to the good dispersion characteristics of the vent and a minor category 3 breach of permit condition 3.1.2 has been recorded. It appears likely that the elevated emissions are caused by the same heat exchanger failure that occurred prior to repairs in 2008.

An investigation is underway to confirm the cause and identify actions required.

ACTION: Dow Corning to provide an update on investigation progress at next site meeting.

W930 Copper Chloride Release

The release point A17 CuCl dust emissions will have limited air quality impact due to the small scale nature of the event and a minor category 3 breach of permit condition 3.1.2 and a category 3 breach of the management condition 1.1.1 have been recorded. The process and procedural changes identified by the internal investigation have been completed.

River Cadoxton Abstraction

Eel pass and screening discussions are continuing directly with NRW fisheries staff. If necessary the exemption notice can be updated to reflect longer implementation timescales of the final designs.

Waste Minimisation (Permit conditions 1.3 and 1.4)

The update is noted. Future reviews would benefit from an overview of all waste minimisation issues at the site and how they have been prioritised.

Annual Fugitive Releases Report (Permit condition 4.2.5)

The 2015 report is noted. The planned waste inventory reduction on the landfill storage area is noted. It is critical that this reduction is achieved to plan to ensure that both leachate and dust fugitive emissions are minimised.

SPMP Report (Permit condition 4.2.6)

The 2015 report is noted. Consideration of the use of groundwater data trending and commentary in future reports to aid interpretation is recommended.

Annual EMS Review (Permit condition 4.2.7)

The 2015 report is noted. The increased venting releases are expected to reduce as a result of the ERU residence time changes. The reduction expected should be quantified and reported as part of the target for this project in 2016.

Monitoring return and notification review

Monitoring data has been reviewed and the following aspects are noted:

A41 – dioxin/furan result is reported in mg/m³. This is presumed to be ng/m³ based upon historic data. **Please confirm this and ensure that correct units are used for future reporting.**

Note also that the trend graphics for energy and water use have been included in the public register versions of the reporting forms. These constitute part of the commercially sensitive data and have been removed. **Please ensure that these are excluded from future reports.**

No other breach of permit conditions was identified.

LVOC Bref

Some BAT AELs included in the Large Volume Organic Chemicals Bref, in particular relating to combined vent stream treatment, may be applicable to the ERU release point.

A review of potential implications is recommended.

LVOC Bref was being discussed at the final TWG meeting in Seville late April 2016. The current expectation is that Article 75 Committee will take place Apr – June 2017.

NRW currently understands that:

- Unless otherwise stated, the generic BAT conclusions of the LVOC BREF are applicable to all installations covered by the LVOC Bref.
- More specific BAT conclusions will prevail over more generic ones.
- An intention to propose BAT AELs for emissions to air of VOCs; and
- To redraft BAT on acid gases abatement and include AELs.

CWW Bref Article 75 Committee vote end of 2015, BATc implementing decision published 30 May 2016.

New Waste Gas Treatment Bref Article 75 Committee expected Jul – Sep 2019.

END

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EPR Compliance Assessment Report

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Operator/Permit holder	Dow Corning Ltd	Date	14/03/2016

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			
E1	C3	Improvements implemented following internal investigation.	15/06/2016
E1	C3	Route cause to be confirmed at next site visit.	30/12/2016
E1	C3	Actions implemented following internal investigation. To be followed up at next site visit.	30/12/2016
C2	C3	Internal actions identified and implemented. Follow up at next site visit.	30/12/2016

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 reports should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty 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.