

EPR Compliance Assessment Report

Report ID: BR9685IX/0231332

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

Site	Barry Silicon Based Manufacturing Installation EA/EPR/BR9685IX/V007			Permit Ref	BR9685IX		
Operator/ Permit holder	DOW CORNING LTD						
Date	04/02/2015			Time in	09:00	Out	16:00
What parts of the permit were assessed	Emissions, infrastructure						
Assessment	Site Inspection	EPR Activity:	Installation	X	Waste Op	Water Discharge	
Recipient's name/position	Environmental Team Leader						
Officer's name	Tony Leakey			Date issued	09/02/2015		

Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). 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

Condition(s) breached

a) Permitted activities	1. Specified by permit	N	
b) Infrastructure	1. Engineering for prevention & control of pollution	A	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	A	
	4. Containment of stored materials	N	
	5. Plant and equipment	A	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	N	
	3. Materials acceptance	N	
	4. Storage handling, labelling, segregation	N	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	N	
e) Emissions	1. Air	A	
	2. Land & Groundwater	A	
	3. Surface water	A	
	4. Sewer	N	
	5. Waste	A	
f) Amenity	1. Odour	N	
	2. Noise	N	
	3. Dust/fibres/particulates	N	
	4. Pests, birds & scavengers	N	
	5. Deposits on road	N	
g) Monitoring and records, maintenance and reporting	1. Monitoring of emissions & environment	N	
	2. Records of activity, site diary, journal & events	N	
	3. Maintenance records	N	
	4. Reporting & notification	A	
h) Resource efficiency	1. Efficient use of raw materials	A	
	2. Energy	A	

KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk),

A = Assessed (no evidence of non-compliance), N = Not assessed, NA = Not Applicable, O = Ongoing non-compliance – not scored

Number of breaches recorded

0

Total compliance score
(see section 5 for scoring scheme)

0

If the Total No Breaches is greater than zero, then please see Section 3 for details of 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 (e.g. 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 suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This report should be clear, comprehensive, unambiguous and normally completed within 14 days of an assessment.

Dow Corning Limited Site Visit Report

W307 vent modifications

Discussion on the volatility of the main siloxane compounds present in the vent stream and the operating conditions on the plant established that vapour releases from the proposed knockout drum modification are likely to be insignificant.

Primary removal of volatiles will take place in the reactor condenser. This is equipped with an outlet temperature trip at an appropriate set point and the typical inlet temperature to the knock out drum will be well below the boiling point of the typical compounds present. The temperature trip is currently checked annually, although this is under review. The plant cooling water supply is also protected with a hardwired low pressure trip.

Inspection of the plant confirmed that dispersion characteristics from the new vent will be similar to the existing scrubber vent although efflux velocity will be lower.

ACTION: It is recommended that Dow Corning visually check the vent during commissioning for any visible vapour plume that may give an indication of poor dispersion.

The releases will be quantified by monitoring during commissioning and will be reported to Natural Resources Wales.

ACTION: Dow Corning to provide monitoring results upon completion of commissioning and include in application for new vent.

Accumulation of material in the bottom of the knock out drum will be controlled using the existing level switch. Consideration should be given to checking the accumulation rate during the first few commissioning batches before relying solely on the level switch. Also interlocking the level switch with the batch cycle to prevent a new batch starting before the high level is cleared should be considered.

ACTION: Dow Corning to include details of knock out drum level control arrangements in variation application.

A sight glass is fitted to the knock out drum and this allows inspection of the internal coils (not used). This will enable signs of blockage or entrainment problems to be detected if checked regularly.

A minor technical variation application is required for this modification and to improve catalyst addition on the W930 reactor. Given the insignificance of the expected releases these modifications can proceed provided that a retrospective application for variation is received by **31 March 2015**.

ERU optimisation

Further details of the proposed trial to increase ERU through put to reduce venting to atmosphere have been provided (letter dated 22/12/14) and are acceptable. The current MCERTS monitoring contractor is to undertake the VOC/TOC emissions measurements during the trial period.

The key objectives of the trial emissions monitoring will be:

- Determine baseline emissions of VOC/TOC at typical residence times and vent stream compositions.
- Determine any changes in VOC/TOC and dioxin emissions resulting from reduced residence time and any changes in vent stream composition.
- Determination of baseline and any changes in ERU waste water (quench and main scrubber) stream composition.

The success of a project to reduce silane carryover to the ERU has significantly reduced the need for cleaning of the waste heat boiler tubes and will significantly reduce venting if lower residence times can be tolerated.

ACTION: Dow Corning to provide ERU trial monitoring report when available.

W922 scrubber incident

Drawings have now been updated and a new MPM procedure is to be implemented for the routine overhaul of this unit. There are other environmentally critical plant items that may also require MPM procedures to minimise the risk of incorrect reassembly. A review is being undertaken to identify areas where changes to practices will be beneficial.

ACTION: Dow Corning to provide a copy of the W922 MPM procedure and updates on progress for other units at future meetings.

The W922 scrubber system was visited in order to review the likely impact of the mal-operation. Dispersion from the release point is likely to be good and the primary and tail gas abatement arrangement such that a significant proportion of hydrogen chloride will have been captured despite the loss of designed gas-liquid contact in the secondary spray column.

Use of extractive gas tubes to check for excessive emissions is under review across the site and consideration should be given to use of tail gas effluent temperature as an indication of hydrogen chloride breakthrough from primary and secondary absorption columns. Abatement designed to remove hydrogen chloride down to the BAT ELV in multiple contact stages will usually remove most of the gas and heat of absorption in the primary and secondary (where installed) stages. A tail gas stage is then used to mop up any residual traces of the gas slipping through the system, achieving the emissions standard, but generating very little heat of absorption. It is therefore possible to monitor performance of the primary abatement stages by measuring the temperature of the tail gas unit effluent. Any increase in temperature significantly above the ambient water supply temperature provides an indication of excess slippage from the primary abatement stages.

ACTION: Dow Corning to consider use of tail gas effluent temperature monitoring as an indicator of hydrogen chloride abatement performance when reviewing current testing arrangements.

River Cadoxton Abstraction

A temporary exemption from eel screening has been granted pending submission of proposals to modify the abstraction point to meet best practice, including an eel pass at the weir. The notice requires implementation within 2 years. Progress will be reviewed at future meetings.

CHP IED Chapter III Review

The TNP provisions for the CHP appear to allow sufficient flexibility for unrestricted operation through to mid-2020. ELVs and other IED parameters will still need to be agreed as part of the Regulation 60 Notice response by the end of March 2015 and decisions relating to future compliance with applicable BAT AELs will also need to be made after the LCP BRef conclusions are finalised.

The key issue appears to be treatment of the permanently auxiliary-fired HRSG and the scope for investment to achieve boiler ELVs or addition of a further gas turbine.

This topic will be taken forward through direct discussions with the operating contractor Cofely, involving Dow Corning representatives.

DPR Recovery

Further details of the potential use of DPR blended with other materials to produce a cement for use in the production of a concrete cap for a landfill closure project in Germany were provided. A number of technical details remain to be confirmed and in order to consider the proposal further NRW require the following details:

- full chemical composition of the waste
- details of and evidence from the appropriate German authority that the landfill capping requires this particular cementing process and the specification of the material that would typically be used for the process
- evidence that the properties of the waste indicate that the waste will serve a 'useful function' in the process
- confirmation that the DPR will fully substitute for a virgin non-waste material
- details of existing authorisations from the German authority for the use of the DPR waste as a substitute for non-waste material
- if partial substitution is proposed this should be justified

ACTION: Dow Corning to provide further technical details relating to the proposal.

Common Waste Water/Gas Treatment BRef

Some clarifications have been obtained relating to queries raised in relation to this BRef. However, it must be noted that the BRef has yet to be approved and interpretations may change as implementation experience is gained:

- At what point are the removal rates for COD/TOC determined when considering which BAT AEL applies?

Determination of removal rates should include in-process removal/recovery of COD before discharge into the chemical sewer system. Note, however, that a distinction may need to be

made between in-process recycle streams and in-process pre-treatment of effluents.

- The BRef allows compliance with a TOC or COD BAT AEL. Is this choice conditional?

In highly saline (chloride > 1000 mg/l) effluents the dilution requirements for some test methods may result in an unacceptably high limit of detection. This may be a situation where TOC measurement is more appropriate. Also, continuous TOC measurement can be used as a surrogate measurement for COD, but any TOC compliance reporting will need to be demonstrably equivalent to the relevant wet chemistry TOC or COD method results. In any case, however, the BAT Conclusions do state that TOC monitoring is preferred.

- Does a broad spectrum analysis of trace metals and other trace pollutants in effluent need to be undertaken if they are not present?

If evidence can be provided that certain trace species are not or cannot be present in effluents then monitoring will not be required.

SPMP Report (Permit condition 4.2.6)

The 2014 report is noted. The following aspects will be discussed and considered at the next site visit:

- Ground contamination risks associated with delayed repair of high priority defects require clarification.
- The spills report identifies incidents with potential risk of ground contamination and these also require further consideration.
- TMS results are considered to be inaccurate. The implication of this for tracking ground contamination risks are not clear.
- Presentation of borehole monitoring data as concentration and water level contour plots may aid interpretation of future reports.

Monitoring return review

Monitoring data has been reviewed and the following aspects require clarification at next site meeting:

- Confirmation of effluent suspected solids 95%ile for Q4 2014.
- Releases to air from emission point A60 are reported in kg/hour against an ELV of 5000 kg/year. A cumulative quarterly total release in kg would allow tracking against the annual mass release ELV.

No breach of permit conditions was identified.

END

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Operator/ Permit	DOW CORNING LTD	Date	04/02/2015

Section 3- Enforcement Response		Only one of the boxes below should be ticked	
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.			☐
In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.			☐
We will now consider what enforcement action is appropriate and notify you, referencing this form.			☐

Section 4- Action(s)			
Where non-compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.			
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 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 which 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 fulfill 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 (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 and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information 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 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 the officer's line managers. 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.

