

PERMIT NUMBER BR9685IX

DOW SILICONES UK LTD

SCHEDULE 5 INCIDENT NOTIFICATION

To:	Process Industry Inspector
FAO: Mr Geraint Thomas	Natural Resources Wales Rivers House St Mellons Business Park Fortran Road St Mellons Cardiff CF3 0EY
Phone	03000 65 3000
Email	icc@cyfoethnaturiolcymru.gov.uk
From:	Chris Chadwick
Name Of Operator	Dow Silicones UK Ltd
Location of Process:	Cardiff Road, Barry, Vale of Glamorgan
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Date Information Provided:	3rd March 2022

Part A

Permit Number	EPR/BR9685IX
Name of Operator	Dow Silicones UK Ltd
Location of Facility	Barry, South Glamorgan, Wales
Time and Date of Detection	Tested 11/2/2022 results received 28/2/2022

a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
To be notified immediately	
Date and time of event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substance(s) potentially released	
Best estimate of quantities or rate of release	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident	

b) Notification requirements for the breach of a permit condition	
To be notified immediately	
Emission point reference source	A41 ERU Vent stack
Parameter(s)	Particulates
Limit	10mg/m3
Measured value and uncertainty	Test 1 @ 11:33 had a result of 573mg/m3 Test 2 @ 13:40 had a result of 544mg/m3
Date and time of monitoring	11/2/22 11.33 and 13.40
Measures taken, or intended to be taken, to stop the emission	Issues with ERU dioxin stack sampling, due to solids blocking the sample probe, at the end of 2021 and start of 2022, led to a non-routine, additional particulates test being undertaken, by the external testing company, on request by Dow. The previous routine particulates sample (6/10/21) had passed, with a result of 2.3mg/m3 vs permit limit of 10mg/m3. The additional testing over a 2-hour period (11/2/22), showed results of 573mg/m3 & 544mg/m3.

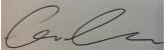
	Initial findings of the root cause investigation have shown that the water flows to the ERU scrubbing column are reduced, due to a fouled heat exchanger and control valve, reducing particulate scrubbing capacity. There has also been elevated SiH sent from the FBR, due to low CRU (chlorosilane recovery unit) reactor bed activity. The CRU reactor should convert SiH, generated by phoenix when its online, to usable chlorosilanes, which are recovered in the FBR vent recovery system, prior to the ERU. Unconverted SiH is not removed in the FBR's vent recovery system and is sent to the ERU and subsequently becomes silica after combustion in the ERU. Phoenix, which generates the SiH, has not run since Feb 22nd and is planned to be down until at least the last week March, this allows time for corrective actions and further testing to be conducted prior to any further SiH generation. Actions taken to reduce particulates. - Flow valve on water flow to the scrubbing column to be replaced this week. - Heat exchanger on water supply to scrubbing column installation being assessed (some piping mods maybe needed), date for change out TBC ASAP. - External contractor particulate retest on ERU will occur 16/3/2022 (soonest we could get them to site) - Phoenix has not been run since 9pm 22/2/22 and is not planned to come back online until last week of March, so there will be no SiH generation and so low particulates from the ERU. - There has been no SiH in the vent to the ERU since 22/2/2022. - CRU catalyst replacement being planned in, date TBC ASAP. Medium term actions to ensure this will not happen again - CRU catalyst change out to be placed on PM and have monitoring of critical parameters, to ensure change out occurs prior to loss of reactivity. - ERU heat exchanger change out to be monitored via clear KPT's, to define change out prior to fouling.
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Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

c) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:	
To be notified immediately	
Description of where the effect on the environment was detected	
Substance(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B- to be submitted as soon as practicable

Any more information on the matters for notification under Part A	
Measure taken, or intended to be taken, to prevent a recurrence of the incident	
Measure taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment,	

which has been or may be caused by the emission.	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	
Name	Chris Chadwick
Post	Barry Site Environmental Manager
Signature	
Date	3rd March 2022