

Compliance Assessment Report CAR_NRW0039000

Permit being assessed: BL1096IB.

For: Padeswood Cement Works , held by Castle Cement Limited

At: PADESWOOD WORKS , PADESWOOD, MOLD, MOLD, CLWYD, CH7 4HB.

Type of assessment carried out: Report/Data Review, Reason: Routine.

On 31/10/2021.

Parts of permit assessed: See report

NRW Lead Officer: Lara Cubley, accompanied by Emma Pierce.

Report sent to: Plant Manager, Plant Manager on 26/01/2022.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	Action only (X)	
E1 - Emissions - Air	C3 Minor	3.1.1
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	C4 No impact	4.3.2
E1 - Emissions - Air	C3 Minor	3.1.1
E1 - Emissions - Air	C3 Minor	3.1.1
E1 - Emissions - Air	C3 Minor	3.1.1
E1 - Emissions - Air	Action only (X)	
E1 - Emissions - Air	C3 Minor	3.1.1
E1 - Emissions - Air	C3 Minor	3.1.1
C2 - General Management - Management system and operating procedures	C3 Minor	1.1.1
E1 - Emissions - Air	C3 Minor	3.1.1
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	C3 Minor	4.3.2

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

Total number of non-compliances recorded	Total non-compliance score
10	36.1

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?

Criteria	Action needed	Complete by
G4	Action 1 - report section 4	28/02/2022
E1	Action 2 - report section 4	28/02/2022
G4	The Operator is to ensure notifications are in compliance with Permit requirements with immediate effect.	31/01/2022
E1	Actions 4 & 5 - Report section 4	31/03/2022
E1	Actions 6 & 7 - report section 4 -see timescales	28/02/2022
E1	Action completed - Bypass hole mended and now out of service.	Already completed
E1	Action 8 - report section 4. Provide Part B investigation.	31/01/2022
E1	Actions 9 -12 - report section 4 with varying timescales	30/06/2022
E1	Bolted chute cover down and updated kiln pre-start checklist	Already completed
C2	See report Section 4 - Advice & Guidance - Training regarding simple control measure to be delivered/reinforced.	Already completed
E1	Action 13 - see report section 4	28/02/2022
G4	Action 14 - see report section 4	28/02/2022

Action criteria codes are listed in the 'Important information' section below.

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.

You are non-compliant with your permit.

At this time, we are issuing you with a warning for the non-compliance recorded above. Warnings may influence future enforcement response for continued or further non-compliance.

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

Jul - Sept 21

This CAR covers a review of the routine monitoring and reports for the period July – Sept 2021 for all permitted emission points.

Emissions to Water (W1)

Emissions to water were compliant with the permitted limits during this period

Emissions to Air

Continuous Monitoring (A5, A8, A9, A15)

All continuous emissions monitoring was provided as required by the permit and shown to be within the permitted limit during this period.

Emissions from A3/A4 Cement Mills 1 & 2 now reported as commissioned. NRW inspection notes indicate CM2 was running 21st/22nd September, however, emissions are not reported for these days.

ACTION 1: The Operator is to investigate and report findings in writing to NRW by 28/02/22.

Other Reports

Alternative raw material / waste derived fuel usage reported. Operator to review as required by the permit.

Notifications

NRW received 9 Part A notifications relating to this period, as required by Condition 4.3 of the Permit.

9/7/21

Part B received 13/12/21. This notification relates to a dust release (<50kg) from silo 6 penthouse.

NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission) with minor potential impact due to reportedly small release and swift resolution.

Cement Mill 5 was reassigned to another silo to prevent any pollution.

Silo 6 filter was reportedly inspected that day. Ten solenoids were found not pulsing allowing compressed air to continuously pass through the filter resulting in low air pressure and in turn loss of filter performance. Of the 10 solenoids identified as faulty, 1 solenoid was replaced and the other 9 were repaired.

An interlock has been implemented to stop the milling process to silo 6 if the compressed air pressure to the filter is low for more than 10 seconds.

ACTION 2: The Operator should provide further information, specifically the emission point reference (P13 - Silo 6 Bottom?) and details of the frequency of measurements or performance checks based on a maintenance management system. Please provide in writing together with any related improvements by 28/02/22.

02/8/21

This notification relates to CM5 BF10 Filter having 2 holed bags and venting visible emissions as noted during an NRW inspection on the 02/08/21 and recorded in Compliance Assessment Report NRW0038827. Part A was provided 16/08/21. The permit requires Part A notifications within 24 hours.

NRW considers this to be a breach of Condition 4.3.2 (G4 Reporting & Notifications = CCS4)

in that the Operator failed to Notify within 24 hours.

ACTION 3: The Operator is to ensure notifications are in compliance with Permit requirements.

Investigation report received 12/08/21.

17/8/21

Part B received 13/12/21. This notification relates to a 50Kg cement dust cloud release from Cement Mill 3 (CM3) building and stack. **NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission to air) with minor potential impact due to reportedly small release over short duration and no related dust complaints.**

The mill was stopped immediately whilst investigations could be carried out to identify the cause. The Operator reports that prior to restarting the mill, the cause was resolved, the cement transport system was cleared of material and the cement mill building was cleaned using vacuumation.

The investigation reportedly identifies the cement transport system of filter hopper to be the cause; in particular a compressed air inlet valve brass ring. The brass ring unscrewed itself which prevented the fluxo inlet valve from closing. The inlet valve remaining open allowed compressed air to pass through the fluxo (vessel used for transport) and hopper which in turn prevents the transport of cement and causes a backlog of cement within the system.

Cement dust within the building was caused by the compressed air mixing with the cement and escaping from the fluxo hopper and the dust at the stack was caused by a reverse flow of air through the ducting when the system was stopped.

To address and resolve the issue the Operator suggests adding a preventative maintenance task for the brass ring and prevention of reverse flow of air through the system, the former of which has been completed.

Advice & Guidance: The Operator should assess emissions during CM3 stoppages, (whether planned or unplanned (i.e. fan trip)), and comply with Permit Condition 4.3 regarding notifications until a more permanent study and solution to the Actions 4 & 5 below regarding dampers are completed.

The Operator has suggested a solution to the reverse air flow through the system, of closing the mill dampers on a mill stop. Mechanical work is required on the dampers before software changes can be implemented. The Operator anticipates this solution to be complete by March 2022. Discussion with the Operator have confirmed that this emission is only likely to occur during CM3 fan trip and not under normal stoppages. This is because normal fan/material run out procedures should prevent emissions. Further investigations are required as per action below. Fan trips are reportedly rare making further emissions less likely.

ACTION 4: A review into the mechanism causing release of dust via CM3 stack during stoppages should be conducted and submitted in writing to NRW prior to 31/03/22.

ACTION 5: The solution (see above) to close CM3 dampers on a mill stop as suggested by the Operator is to be implemented by 31/03/22. The Operator shall confirm details to NRW in writing upon completion.

19/8/21

Part B received 14/12/21. This notification relates to a small fire caused by a burst hydraulic hose spraying oil onto the hot surface of ducting. This ignited the oil at the tertiary air duct (kiln outlet). The kiln was stopped and the fire service attended 17:28 - 19:57hrs.

NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission to air) with minor potential impact due to small localised fire brought quickly under control.

The inlet to the lagoon was closed to contain fire water and the outlet confirmed as closed. Fire water was contained, disposed of and drainage cleaned. The Operator reports that investigations could not determine the precise cause as the hose was severely damaged.

The hose was replaced but the Operator reports that the damper is not yet back in service with a plan to thoroughly inspect the damper in the January 2022 kiln shutdown prior to return to service.

ACTION 6: The Operator should provide further details of the investigation; in particular frequency and findings of past maintenance inspections, fluid changes, design review and any suggested improvements to planned preventative maintenance (PPM) or design (i.e. hose specification, location, protection from heat/bends/erosion). This shall be provided in writing to NRW by 28/02/22.

ACTION 7: The Operator should provide an update regarding damper inspection, re-commissioning date and impact of having out of action/fixed damper for this period of time in writing by 31/01/22.

8/9/21

Part B received 12/12/21. This notification relates to a dust release from a hole on ducting from the by-pass off take to the drop out box. The release estimated as 20Kg, occurred when the kiln was stopped.

NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission to air) with minor potential impact due to actions of the Operator to stop and repair. One dust complaint was received that could be related to this incident.

The Operator reportedly continued to run bypass fan FN01 for 30 minutes following the kiln stop to keep the bypass system under negative pressure. Welding repairs were completed on the ducting and the system was returned to normal operation. The bypass system was removed from service in November 2021 as part of the upgrade project which is planned for completion in Q1 2022.

09/09/21

Part A received 11/11/21. Extractive testing of Kiln (A8) emissions showed a Mercury concentration of 0.051mg/m3 versus Emission Limit Value (ELV) of 0.050mg/m3. Condition 3.1.2 - no breach as within error margins of testing.

ACTION 8: Part B investigation to be provided to NRW by 31/01/22.

10/9/21

Part B received 13/12/21. This notification relates to a dust release from the kiln bag filter and gas conditioning tower (GCT).

NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission to air) with minor potential impact.

Investigation concluded that the root cause of this dust release was the condition of the main kiln bag filter media leading to increased differential pressure.

ACTION 9: As proposed by the Operator, all bags in the filter should be changed during the annual shutdown. The Operator should provide details of this work to NRW in writing on completion by 28/02/22.

ACTION 10: The operator must undertake a review of the PPM of the main bag filter and present findings together with any suggested improvements to NRW in writing by 30/06/22.

The incorrect selection of bag filter cleaning cycle was found to be a contributing factor. Removing these offending cleaning cycle options from the kiln software prior to re-starting the kiln temporarily addressed this issue. The Operator has also committed to reinstating the two offending cleaning options with an interlock to prevent their use when the kiln is operational as intended.

ACTION 11: Update NRW in writing on completion of reinstating cleaning options and interlock with a summary of details by 28/02/22.

Further dialogue with the Operator suggested that dampers and their associated air pressure system was not working as it was originally designed.

ACTION 12: The Operator should complete their investigation into this element and provide a summary of findings together with any suggested improvements to NRW in writing by 28/02/22.

16/9/21

Part B received 13/12/21. This notification relates to a dust release of approximately 50Kg dust from the chute that takes dust from the kiln inlet to the dust room.

NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission to air) with minor potential impact. The area was reportedly cleaned by vacuumation.

Investigations found that an access cover removed earlier in the week for cleaning purposes had been re-seated but not bolted down. The cover was subsequently bolted down. The kiln pre-start checklist has been updated to confirm this cover is in place and secure prior to a kiln start.

NRW considers this to be a breach of Condition 1.1.1 (C2 = CCS3 Management Systems) in that the management system had failed to identify and minimise this risk of pollution.

ADVICE & GUIDANCE: The update of the kiln pre-start checklist addresses this breach. However, it is advisable that employees receive training on simple control measures associated with dust management as per CAR NRW 0038746 Action 4.

27/9/21

Part B received 14/12/21. This notification relates to a dust release from pipework at the bottom of silo 6. The small hole on top of the pipework which carries cement from CM5 to silo 6 was on the bend just before the vertical pipework up the side of silo 6.

NRW considers this to be a breach of Condition 3.1.1 (E1 = CCS3, Unauthorised Emission to air) with minor potential impact.

CM5 was stopped and transport to silo 6 deselected. CM5 started 10 minutes later but with transport to Silo 2 and monitoring to confirm no further release. A weld repair was reportedly

conducted. No emissions were observed during monitoring of first use following repair. The Operator reports that on review of the incident, this section of pipe was planned for replacement and was actually replaced during the December 2021 CM5 shutdown. The new section of pipe is now lined the same as other bends.

ACTION 13: The Operator should provide further details of their investigation into the root cause of this incident and any measures to prevent recurrence. Provide a summary to NRW in writing by 28/02/22. Investigations should not be limited to but include inspection and maintenance.

Part Bs

The Permit requires Part B of notifications to be submitted as soon as practicable. The Operator has taken between 3 to 5 months to provide Part Bs.

The level of information in the Part Bs provided often lacks detail in terms of the root cause of failures and measures taken, or intended to be taken, to prevent a recurrence.

NRW considers this to be a breach of Condition 4.3.2 - G4 Reporting & Notifications CCS3.

ACTION 14: The Operator should review procedures to ensure the correct detail is provided to the timescales required by the relevant permit conditions. The review shall cover the sufficiency of resources to ensure compliance with these permit conditions. A report documenting the review together with findings and any suggested improvements should be submitted to NRW in writing by 28/02/22.

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.