

Compliance Assessment Report

Report ID:
CAR_NRW0033873

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

Site	Pembroke Power Station	Permit Ref	DP3333TA			
Operator/Permit holder	RWE Generation UK plc					
Regime	Installations					
Date of assessment	18/07/2018	Time in	10:00	Out	16:00	
Assessment type	Audit					
Parts of the permit assessed	See Below					
Lead officer's name	Dunn, Karen					
Accompanied by						
Recipient's name/position	Ben Williams / Lead Environmental Engineer	Date issued	30/08/2018			

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. 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
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
B4 - Infrastructure - Containment of stored materials	A	
C1 - General Management - Staff competency/training	A	
C2 - General Management - Management system and operating procedures	A	
C4 - General Management - Storage, handling labelling and Segregation	A	
E5 - Emissions - Waste	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.
A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,
O = Ongoing non-compliance, not scored.

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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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

SEE FINAL CAR ON DMS (WORD USED DUE TO FORMATTING ERRORS ON SYSTEM)

This was a pre-arranged visit and the company's representatives present during the audit were:

Ben Williams (BW) – Lead Environmental Engineer

Tom Warrell (TW) – Shift Operations Technician

Ben Dorian-Clark (BD) – Year in industry Placement Student

The following agenda was sent in advance of the audit:

Introductions and Overview

Recommendations from previous CAR

Update on FRR modification

Update on foam project

Permit condition 1.4

AOB:

Regulation 61 Notice for Information (LCP permit review)

Update following STW breach

Introduction and Overview

The audit began with a discussion on current matters and on-going projects across the business. The environment department has been busy with assisting in proposed projects at Pembroke and elsewhere. The 'A' inspections at Pembroke have now finished and the borescope instrumentation to inspect the mechanics on the gas turbines has also finished. The borescope findings have seen a change to operations due to unforeseen degradations on the turbine so containment measures involving firing at a lesser temperature and increased cooling of the air intake to ensure compliance has been key. Due to the exception hot weather the operator has also seen the cooling water intake temperature rise and this has also been carefully managed to keep operations within compliance. The operator has taken units off line due to the absolute temperature limit being met because of the exceptionally hot weather (the sun heats up the mudflats during the day and as the high tide moves in the water temperature increases). Next year the station will see the more extensive maintenance programme on the units or 'C' inspections which is a very busy undertaking of work at the power station.

Recommendations from previous CAR (ref CAR_NRW0033145)

The recommendations/action from the previous compliance assessment report (CAR) were reviewed which drew out current and on-going matters for discussion. The recommendations

have been replicated below (boxed to distinguish them from any new recommendations / actions) for ease of reference:

Recommendation: Operator to consider the best way to track deadlines and due dates for document reviews within the new EMS and to consider the requirements of the permit since the chapter III variation to capture any changes.

The operator has included deadlines for reviews required by the environmental permit in the 'Register of Obligations' in the environment management system (EMS). The register is available to view on the internal system PAMS and was demonstrated to KD. This should ensure that dates for document reviews are not missed. An example of such a review was discussed with the operator namely the waste audit linked to permit conditions 2.3 'Operating Techniques' 2.3.1 and 1.4.2.

The operator requested an extension to the water audit review linked to permit condition 2.3.1. The review is a requirement of the permit every 4 years and has a current review deadline of end of September 2018. The operator advised of a new year in Industry placement student starting in September 2018 (the timeline has changed for placement students in 2018 to reflect the academic year). It is hoped that the individual will bring together the waste audit review. Due to the findings of this audit and the information demonstrated it was agreed that the review date can be extended until the end of the year.

Recommendation: KD to speak with permitting during the determination of LCP BREF review to see if there is any scope for reinstating the 31 March deadline in the permit. **On-going.**

Recommendation: Operator to keep NRW updated at the next routine visit on the working groups tasked to address the issues with the foam reduction system.

The system was working with the front penstocks only and results were good however due to the aggressive nature of the environment in the seal pit damage occurred once again. One of the front penstocks jammed 95% open. All penstocks were non-operational at the time of the visit and it would require a diver to enter the seal pit to assess why the penstock jammed and any damage. This work requires careful planning and health and safety is a priority so likely to take place during a proposed full station outage.

Tony Barnett has compiled an allocated impact rating based on the discussions proposed at the 'ideas workshop' to identify what is feasible going forward. A scale model is being investigated and considerations of possible changes to identify a feasible change to the system to reduce the foam generated in the seal pit. A brief discussion was had with the operator over mechanical aspects involved with the penstocks and should an 'easy' fix be identified by the diver this could be undertaken. However, based on the mechanical issues that have been experienced it is likely that an improvement to the system to reduce the foam would involve a capital expenditure following careful investigation.

The number of complaints concerning the foam in the Haven Waterway was also discussed and consider to be at a minimum. This maybe however due to the good communication between the operator and the local community over the issue. NRW acknowledges this effort and considers it important to continue to update on the foam reduction efforts at the stations Local Liaison Committee. This helps the community understand the significant engineering considerations involved and the difficulties encountered to date.

Recommendation: Operator to keep NRW updated at the next routine visit on the work to address the issue with the reduction in efficiency of the Fish Return and Recovery (FRR) system at the cooling water intake.

Following the last routine inspection NRW agreed to a trial on one of the drum screens involving a submersible pump in the drum well. This proposal aimed to eliminate some of the pipework to the spray bar and nozzles in the system which the operator identified as causing constant maintenance issues through bio-fouling. The submersible pump trial was subsequently scrapped however as the eelgrass and macroalgae (seaweed) could blind the pump causing a loss of functionality to the system.

The operator has opted for an alternative approach involving the replacement of pipework to stainless steel with mechanical access points or 'rodding' points to de-foul the lines to the spray bar and nozzles. It is hoped this change will provide a constant water pressure by reduced fouling and labour through constant maintenance and address any loss in efficiencies on the system. At the time of the visit the spec for the new pipework which involves a capital expenditure was underway and once complete will go out to tender. The expected timeline for changing the pipework is currently around end of 2018. A discussion was held over how the work will be undertaken which is complex as the drum screens will need to be taken out of service sequentially. This approach aims to retain functionality of the FRR system through the change in pipework.

A discussion was also held on the proposed laboratory trials involving 'Atlantic Herring' which the operator initiated as part of their investigations in the effectiveness of the strobe lights on the FRR system. The operator confirmed that the report was complete and will be forwarded to NRW for information. The report is entitled 'Evaluation of strobe light effectiveness as a deterrent in Atlantic Herring' and was compiled by THA Aquatic.

Action: Operator to forward a copy of the herring strobe trials report for NRW information (complete)

Further discussion was held on on-going investigations with Dr Dave Clark at Swansea University concerning fish behaviour around the Haven for better understanding and fish genetics. The operator also advised of the proposed submission of the environmental monitoring. NRW can confirm receipt of the submissions on 27 July 2018 and are currently under NRW review.

Action: Due to the proposed changes to the lines to stainless steel on the FRR operator to provide updates to NRW on the progress of this work.

Permit condition 1.4 'Avoidance, recovery and disposal of wastes produced by the activities'

An in-depth approach was taken to this section of the audit which focused on waste management at the station. TW provided a comprehensive overview and presentation on the management of waste at the Pembroke power station. The business had recognised following construction and the early operations that it needed to be reviewed. The waste management system in place prior to review was discussed as a comparison to the one in place to date. Several improvements identified and acted upon involving the waste management process and education, hazardous and bulk storage and ultimately a reduction in the number of 'general mixed waste' removed from site.

In brief the operator has an overarching document in the sites EMS entitled 'Management of Waste GMD-ENV-007v1'. Third-party contractors are used for both non-hazardous and hazardous waste removed and disposed of from the station. There is a good clear system in place for the segregation of waste on site and this was inspected during the site visit. It was apparent during the audit that there was a very good understanding and appreciation of the legal requirements involved in waste management and the responsibilities involved in the classification and sign off on the consignor's certificate.

Duty of Care and Waste Classification

In general, anyone who produces, imports, keeps, stores, transports, treats or disposes of controlled waste must take all reasonable steps to ensure that waste is managed properly. Waste poses a threat to human health and the environment and must be recovered or disposed of safely. If undertaken well it can be self-regulating as it is based on good business practice. This 'duty of care' is imposed under section 34 of the Environment Protection Act 1990. DEFRA has published a 'Duty of Care Code of Practice' which can be found via the following link:

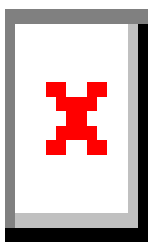
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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/506917/waste-duty-care-code-practice-2016.pdf

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Unfortunately, waste cannot be divided simply into safe and the hazardous. It is important that there are safe ways in dealing with any waste as they can be hazardous to human health and the environment if incorrectly managed. In determining if a waste poses a problem requires the understanding of its composition and means of handling and disposal. For the majority of wastes the classification and description of the waste needs to be detailed enough to manage it safely. The practical implications of duty of care are extensive and these need to be understood to understand and assess it across the business.

Compliance with waste duty of care doesn't stop with the handing it over to a waste contractor and this is where an operator can fall foul of the requirements, registered waste carriers and suitable authorised facilities need to be used. Controlled waste 'transfer notes' or hazardous waste consignment notes documenting off site movements are key in the traceability of the waste. When a waste has been assessed and classified by the producer and passed to a third party, the duty of care is shared however the responsibility is retained by the producer.



The correct determination and appropriate coding and classification of a waste is important in ensuring the options for treatment, recovery or disposal. The Waste Framework Directive (2008/98/EC) outlines what is a waste and how it should be managed.

KD advised of the recent update (May 2018) to 'Guidance on the Classification and Assessment of Waste' WM3. The operator was aware of this guidance which provides a technical assessment on how to classify a waste and identify its hazardous properties. The updated guidance can be found using the following link.

<https://www.gov.uk/government/publications/waste-classification-technical-guidance>

Hazardous Waste

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In brief there are 2 aspects to the definition of hazardous waste:

- Article 3 of the Waste Framework Directive defines hazardous waste as “waste which displays one or more of the hazardous properties listed in Annex III of the directive”
- The application of this is established by the list of Waste Decision or more commonly known as European Waste Catalogue (EWC).

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There are 15 hazardous properties (HP codes) contained in Annex III of the waste framework directive. A discussion was held on the level of knowledge for awareness purposes on site. The operator has included the HP codes in the internal tool box talk. It was considered that it was important that the waste is recognised as hazardous on site and taken to the appropriate area at the station for disposal. The area for the segregated hazardous waste was clear and visited during the site inspection. In general terms the level of understanding of the hazardous properties to classify the waste was not deemed necessary as a form of general awareness.

According to the EWC waste streams considered to always be hazardous are called ‘Absolute Hazardous’ entries (AH) e.g. 13 07 01 * fuel oil and diesel. If the entry is an ‘absolute hazardous’ entry the level of chemicals present is not essential for classification purposes as it is always hazardous. It is important however to determine the appropriate hazardous properties for duty of care purposes and the correct description of the waste for consignment and disposal/recovery. Some ‘sealant containers’ for example would be classified as packaging containing residues of or contaminated by hazardous substances and is an AH entry. So, called ‘empty sealant type containers’ are often found in mixed waste streams but can be AH.

‘Mirror hazardous’ (MH) entries are those that contain hazardous substances, but it depends on the level present which determines whether they are classified non-hazardous or hazardous. Many wastes would likely fall within mirror entries such as paints, resins adhesives, wood etc.

The above guidance contains a colour coded guide to the EWC codes and is a good reference document in classifying a waste. Safety data sheets are also important for the classification of wastes and a discussion was held on their use on site for this purpose. The assessment of wastes utilises the classification used in the chemicals legislation. To establish if a substance is a 'hazardous substance' various sources of chemical data can be used including chemical databases along with safety data sheets (for wastes that were previously products). During the audit a quick look at the harmonised entries on the European Chemicals Agency (ECHA) C & L Inventory was looked at with the operator as an example of an information source.

<https://echa.europa.eu/information-on-chemicals/cl-inventory-database>

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Non-Hazardous Waste

For entries designated as non-hazardous (AN) (WM3 colour code these are written in black) for non-hazardous entries no further assessment is needed e.g. 16 06 04 Alkaline batteries (except 16 06 03) AN. Again 'duty of care' and authorisations apply as some non-hazardous wastes can still pose a hazard so need to be handled and managed correctly.

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Third Party Audits

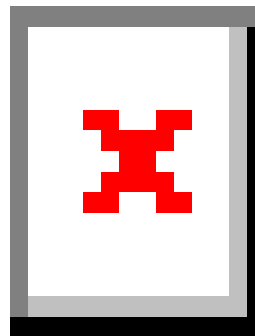
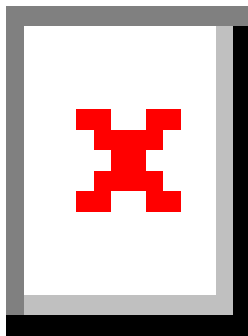
The operator was asked if any third-party audits of their waste contractors had been undertaken. This is important to ensure that the wastes from the station are being handled appropriately and in

line with the relevant legislation and associated guidance. A copy of 2 audits carried out by the operator on their waste contractors were shared with NRW demonstrating follow up on duty of care responsibilities. The most recent of the third-party audits was in June 2018.

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Waste Documentation

A request was made for copies of waste transfer notes and hazardous waste consignment notes for NRW review. A recent selection of notes was chosen at random for the power station which were readily to hand and in chronological order. The operator recognised the human factors involved with the completion of waste transfer notes and the omissions and errors in their completion. A system was developed on site which involved the waste carrier completing a duplicate note to capture any omissions. This is a unique approach, but it works as can be seen in the notes below the operator's duplicate note captured the missing entries.



On the notes reviewed there appeared to be inconsistencies over the name of the producer between RWE Npower PLC and RWE Generation UK. (CAE461/00004 29/8/17 RWE Npower PLC, 00003 RWE Npower PLC).

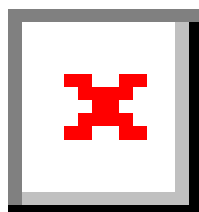
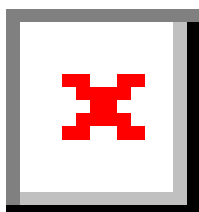
Action: Operator to check with their third-party contractor over the correct producer name on their system as this appears to be pre-printed in the old name of RWE Npower PLC rather than RWE Generation UK.

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Waste Storage

Education in the form of a hazardous waste tool box talk was rolled out by the operator to relevant staff to highlight the importance of waste segregation at source for correct handling and disposal. Where the site had multiple waste storage locations previously clear designated areas are now in place. The operator explained that they also had a purge on waste left over from the construction of the power station which impacted on the overall figures for 2017. In some instances, the waste provided a challenge for classification which can be time consuming. Most of this redundant / inherited waste from contractors during construction has now been removed from the station. The amount of waste generated on site is influenced by site activities such as planned maintenance outages or oil filter changes. The improvements in waste segregation has also shown certain waste streams increase e.g. metal.

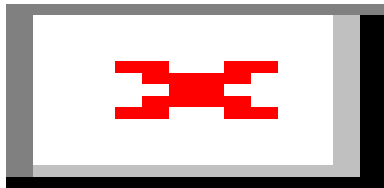
Waste management on site demonstrated the implementation of the waste hierarchy as required by permit condition 1.4.1. Following the operator's review, a '2017 Waste Report' was compiled for the Pembroke Leadership Team and HESAC (internal Health and Environment employee committee). This was shared with NRW and outlines the total of percentage decrease of mixed waste from site due to better segregation and the high level aims and achieved practical objectives which included third party audits and tool box talks. The figures indicating a percentage decrease of general waste removed from site is commendable.



During the site visit waste disposal area 2 next to the stores building and designated for mixed recycling and 'general waste' was visited. The area was found to be clearly sign posted showing alternative locations on site depending on waste type (photograph opposite left). From here Unit 31 was visited to

inspect and compare the waste oil storage that was demonstrated in the tool box talk. On the way the new concrete bund was visited beneath the IBC used to contain any oily residue skimmed from the transformer bund. The drain runs back to the transformer bund which is all contained and skimmed for recovery of any oil.

In preparation for planned maintenance designated containers are placed outside a unit to aid waste segregation at source. The photograph below shows the containers for waste electrical equipment (WEE), clean metal, clean wood and a general waste bin. A bag of waste had been misplaced in the middle metal container, but this was immediately acted upon by TW. Human factors do come into play here and despite the sign on the container stating clean metal waste 'no other material can be placed within the container' it sometimes occurs. The operator explained that it is a constant challenge ensuring wastes are segregated correctly but has definitely improved due to the system adopted on site.



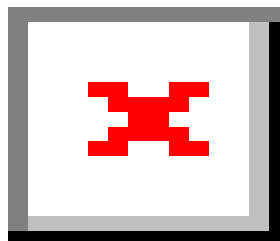
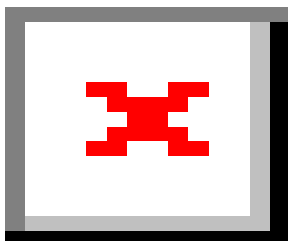
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Waste Oil Areas

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The operator explained the waste management facilities in each unit for the storage of oily waste. The set up was included in the hazardous waste tool box talk and compared with the available facilities on site. The schematic below is from the operator's talk to staff and the photograph opposite shows the layout in Unit 31 (as mentioned on the schematic unit 31 has an additional topless IBC for filters). Adjacent to the oil filter IBC was a 'Denios' storage container for maintenance oils and there was also racking for drums of oils. Each unit has the provision therefore for the storage of waste oil, rags and gloves. The area is managed by Interserve who are the stations industrial site cleaners. Daily checks are undertaken by Interserve through instruction by the operator. On inspection the general housekeeping at the waste oil area was very good. Maintenance technician Bernard Peterson (BD) checks the skips to see if they are full for off site removal. Compliance checks includes weekly walk arounds by BD and the auditing of waste consignment and transfer notes to ensure they are accurate.

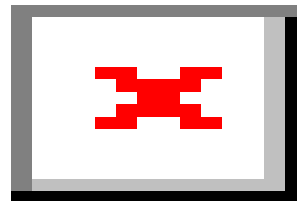
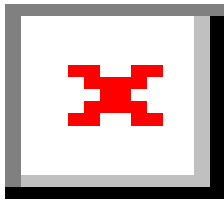


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The designated hazardous waste storage (waste disposal area 4) was inspected on site. This was a concreted

area which provided secondary containment and protected drainage. There were clear designated areas which were sign posted to prevent the mixing of waste streams to retain good segregation. An IBC storage container or 'Denios' was also present and the third-party contractors skips and containers were present for safe handling of wastes.



Some waste
which are
classified as
non-
hazardous

can have hazardous properties and still need to be handled and managed appropriately. A discussion was held before going on site about sealants and paints as these waste streams can have hazardous properties. The operator explained how 'empty' paint containers are crushed and placed in the appropriate container. There were some containers containing paint that had been placed on a pallet in the area and it was considered that these should be in the storage container as a means of secondary containment and were moved during the inspection.

There was a discussion following the inspection of area 4 concerning the recovery of certain waste streams and those where there are limited options for their disposal e.g. waste air filters. Pallets and scaffolding boards also formed part of this discussion and this included the definition of waste. The operator demonstrated that the definition of waste was understood and therefore could be applied on site correctly. The legal definition of waste can be found via the following link:

<https://www.gov.uk/government/publications/legal-definition-of-waste-guidance>

AOB

In any other business a discussion was held on the current NRW notice for information (Reg61) following the publication of the Large Combustion Plant (LCP) Best Reference document (BREF). The publication of the BREF triggers a permit review and the operator had queries in respect of the water framework (WFD) element to the notice and provision of data held by NRW. KD had sought a response to the operator's queries in advance of the audit and advised that the information if already held by NRW can be signposted in the response. The WFD queries have also since been responded to on e-mail and have not been duplicated in this report. The operator also provided an update on the sealing of the sewage plant final pump chamber following the leak

(see CAR-NRW0033477). The sewage plant was visited on the site inspection and it was clear the level of final effluent had been lowered along with the probe to ensure there is no leakage in advance of sealing the chamber as a long-term preventative measure.

Conclusion

Waste management is a responsibility that needs to be kept on top of to ensure it is working effectively and this was recognised at the station and forms part of the installations environmental objectives. Recognised practical objectives have been met at the power station and this work has seen a decrease in the amount of 'general mixed waste' generated on site for disposal. Following construction and early operation the operator reviewed the waste management at the station and it was good to see the much-improved waste segregation, tool box talks to staff and understanding at the station. It is good practice to undertake third party audits to ensure waste generated from the station is being handled and disposed of at a suitably licensed facility and these had been carried out by the operator on their waste contractors. An understanding of the complexities and responsibilities of waste management was demonstrated by the operator and it was clear there is not an over reliance on the waste contractor which is where business can be caught out. No non-compliances have been incurred from this visit or following the review of the documents provided in support of this routine visit. There is an action and recommendation outlined in the report for the operator's attention relating to the areas visited on the day.

[End]

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EPR Compliance Assessment Report

**Report ID:
CAR_NRW0033873**

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

Site	Pembroke Power Station	Permit Ref	DP3333TA
Operator/Permit holder	RWE Generation UK plc	Date	18/07/2018

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.

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			

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 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 fifteen 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.