

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

Site	Bridgend Engine Works EPR/BL2548IF	Permit Ref	BL2548IF		
Operator/Permit holder	Ford Motor Company Ltd				
Regime	Installations				
Date of assessment	31/01/2017	Time in	10:00	Out	14:00
Assessment type	Audit				
Parts of the permit assessed	Monitoring, reporting, deration				
Lead officer's name	Taylor, Richard				
Accompanied by					
Recipient's name/position	Brett James/ Environmental Engineer	Date issued	15/02/2017		

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
C2 - Infrastructure - Management system and operating procedures	C4	1.3.1
G1 - Infrastructure - Monitoring of emissions and environment	C4	4.1.2.4

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	2	Total compliance score (see section 5 for scoring scheme)	0.2
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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

Ford Bridgend Works, Permit BL2548IF

Site Inspection by Natural Resources Wales.

Present;

Mark Thomas – Plant and Manufacturing Engineer.

Brett James - Plant Environmental Control Engineer

Richard Taylor – Natural Resources Wales, Pollution Prevention and Control (PPC) Officer.

At Boiler House – Peter Cobden – Dunphy Chief Engineer; Glynn Pask – ENGIE.

Prior to the meeting an agenda was sent to site.

- Introductions
- Business update from both parties
- Medium Combustion plant Directive
- Permit condition 2.10.1 – Emissions monitoring programme
- Permit condition 2.10.8.1 – access to monitoring
- Site Tour - including access to monitoring points and demonstration of the reduction in thermal capacity of A1/4.

Overview

Ford Operate an engine manufacturing facility in Bridgend, South Wales, and has done since 1977. The plant produces engines which are transported all over the World. Part of the plant falls under The Environmental Permitting Regulations (updated for 2017) at section 1.1A (1) (a) – burning gas oil or

natural gas in a boiler to heat water to produce high pressure hot water (HPHW) This is used throughout the entire 39 acre manufacturing site in the production process, but only the boiler plant is captured under the permit.

The boiler house is owned by Ford who are named as the Operator on the permit. At the time of the inspection, Ford had subcontracted the running of the boiler house to ENGIE (formerly GDF Suez). The plant opted to drop under the threshold level defined as 50MWth input by Chapter III of the Industrial Emissions Directive (Large Combustion plant directive LCPD) by derating Number 4 boiler from 12.7 MWth input to 11.18. This brings the input from an input of $4 \times 12.7\text{MW} = 50.8\text{MWth}$ to 3×12.7 plus $11.18 = 49.28\text{MWth}$. The site also has a smaller boiler which vents through a separate A2 stack of 4.5MWth input which is discounted from LCPD because it does not vent through the combined stack of boilers 1-4 and thus treated outside the scope of LCPD.

In CAR form NRW0020584 dated 10th May 2016, the conclusion was that the deration of boiler 4 enabled the plant to drop below the LCPD threshold, but was subject to complete verification of the software interlock. This visit aimed at verifying with certainty that the aggregated limit of 50MWth could not be breached. RGN2 requires *'the software constraint must offer a clear and unambiguous demonstration that the unit/s cannot be operated at >50MWth input'*. This visit aimed to analyse the control measures in place complied with the LCPD.

1. Business Update.

MT of Ford gave a business update in the form of a visual PowerPoint overview. It featured what the plant has done, is doing, and will be doing in the future regarding its global picture. The contribution which the plant makes to World engine numbers was put in perspective when together with its sister plant in Dagenham they produce 700,000 engines, which is approximately 15% of the World's total output. This showed how the Bridgend plant is an integral feature of the future of Ford in terms of engine numbers. Also featured in the presentation were several environmental projects which Ford are involved with in the locality which is commendable.

The plant is a sizeable employer in the Welsh economy, currently employing 1850 personnel on 24 hours a day, 5 days a week shifts, plus support staff on a 6 and a half days per week pattern. However, the number of personnel required to manufacture the future requirements of the plant after 2018 may be reduced. There is media speculation over the numbers required to produce the new 'Dragon' engines post 2018, so Ford may be downsizing to a leaner workforce within the next few years.

RT gave a basic overview of why NRW regulate the site and the basic differences in reporting (EPRTR) between Welsh and English based sites.

2. Medium Combustion Plant Directive

The site was fully aware of the MCPD developments. At present the status remains that the MCPD will be adopted by the UK Government by December 2017 and will capture sites with thermal inputs of between 1MW and 50MW. The legislation is under consultation. No emission level limits have been finalised, but the limit values imposed are likely to be under the current permit limit for NOx. Therefore site needs to be aware that it may need put measures in place to reduce the NOx emission to air to conform to the likely new emission limit values. Currently the site has a NO2 limit of 250mg/m³ which is likely to drop to 200mg/m³ from 2025 onwards.

It is likely that the MCPD will be incorporated into the existing EPR regulations with any changes to emission levels for existing sites taking place in 2025 in the form of a permit variation to incorporate the changes.

3. Potential drop out of EPR A1 sites regulation.

Developments on site may mean that the boiler house drops below the capacity threshold for Combustion

plant before the MCPD permit variation takes place. Even with the derating of the boiler house, the site is captured under the EPR Regs at 1.1A (1) because the boiler house at 49.28MW is added to the A2 boiler at 4.5MW to form a site capacity of 53.78MWth which is above the 50MW limit for the EPR Regs. However, Ford may decommission the boiler house. Roof mounted localised high power units are to be phased in instead. The first phase consists of 12 x 2.2 kW units with more phases planned. The timeframe for the whole replacement is likely to coincide to the MCPD induced permit variation. The roof mounted units instead of the boiler house is likely to drop the site from a Part A1 installation regulated by natural Resources Wales, to a Part B installation regulated by the Local Authority. Site is reminded that they would need to apply to NRW to surrender their current permit.

4. Permit Condition 2.10.1

Emissions monitoring programme. This item was addressed with BJ. At the time of the inspection, the site had not sent their annual returns to NRFW as required by their permit. (The reports were received later on the same day, and thus met the required time limit). However, there had been no 6 monthly air quality monitoring carried out for the 6 months preceding the last monitoring on 13th June 2016. NRW expected permit conditions 2.10.2 and 2.10.3 to be carried out before the end of year, or at least 13th Jan 2017 so that the report for this could be submitted to NRW within 28 days of the end of the reporting period i.e., 28th Jan 2017.

To clarify this position, permit conditions state in Schedule 2 at table S2 that reporting should be carried out every 6 months with the original reporting period beginning on 1st Jan 2005.

Permit condition 4.1.2.4 gives a deadline for all reporting periods at 'within 28 days of the end of the reporting period'.

Therefore NRW expects one report every 6 months as follows;

- **Within 28 days of the end of June 30th (July 28th)**
- **Within 28 days of the end of Dec 31st (Jan 28th) each year.**

NRW were not informed of the lateness of the monitoring, nor asked for an extension to allow time for this to be submitted. The monitoring was carried out on Jan 12th 2017 and the results submitted on 3rd Feb 2017. It can be argued that the monitoring took place outside the 6 month zone dictated in the permit, but it can equally be argued that the latest monitoring took place within 6 months of the previous monitoring. NRW will accept the latter and not impose a permit breach for this. However, our records show that we have not received the air quality monitoring which took place in Dec15/Jan 2016.

Action 1– please forward the Dec2015/Jan 2016 Air quality results to NRW ASAP.

Also – we will issue a breach of permit conditions for reporting outside the 28 day deadline. This is exacerbated by the site not informing us that this would occur until it was conveyed verbally during the site visit on 31st Jan 2017.

We also issue a breach of permit 1.3.1 for failing to have in place a management system which achieves compliance with the conditions of the permit.

Note, site should ensure that permit conditions are met by having a robust scheduling system in place to ensure deadlines are met, and that there is enough time built in as a contingency if things go wrong. We recommend that site returns back to having 2 monitoring exercises within the calendar year.

Action 2– NRW impose 2 x Cat 4 breaches of permit conditions

- **4.1.2.4 - failing to meet the reporting period for Air quality returns.**
- **1.3.1 for not having a management system which achieves compliance with the conditions of the permit.**

1. Permit condition 2.10.8.1 and Site tour

The current site permit issued in 2004 has a disclaimer on it at schedule 2 which states that (permit) 'condition does not apply' to the schedule 2. The condition applies to the provision of 'safe and permanent means of access to enable sampling/monitoring to be carried out' for the emission points. However there are several pieces of legislation covering ladder access and scaffolding platforms which the site are expected to comply with. Also, this topic is included in NRW's Operational Management Audit (OMA) which is overdue.

The last OMA took place on 26th Oct 2011. These are scheduled audits on a 4-5 year cycle, meaning the next OMA is was due Oct-2015-Oct 2016.

Action 3 -NRW to Schedule an OMA Inspection before end of July 2017.

The OMA will score the access to monitoring locations which are covered by permit condition 2.10.8.1. On a basic inspection, the monitoring points may not be in the best location according to TGN M1 available at; <https://www.gov.uk/government/collections/monitoring-emissions-to-air-land-and-water-mcerts>

The sampling occurs from angled branch lines external to the combined stack which is not recommended for obtaining a well-mixed representative sample. There is also concern over the temporary access to the sample ports in that this occurs from temporary scaffolding which may not conform to platform size requirements specified in TGN M1. H1 guidance refers to the use of temporary scaffolding meeting minimum monitoring requirements in exceptional circumstances only.

Pic 1. Sample locations are within branches leading to the stack. Temporary platforms are placed prior to monitoring. Scafftags are employed. Labelling of ports has been raised by previous CAR forms as an improvement item.



Site are reminded that OMA version 4 at 2A requires minimum standards of sampling provisions to

be met. These have to ideally comply with technical guidance note M1 in the following criteria;

- location of the sampling planes and ports
- labelling of the sampling points
- Condition and position of sampling lines and ports.
- compliance with flow criteria
- safe means of access, preferably stairs, self-closing gates or safety chains above ladders
- the use of a permanent platform with platform inspection records or a heavy duty fixed tag scaffold that has been inspected
- the platform size requirements specified in TGN M1
- installation of lifting equipment, so that personnel do not have to lean over handrails in order to manoeuvre equipment onto platforms
- Minimising exposure to stack gases by installing sample ports with access fittings that allow port adaptors to be fitted.

Note - Failure to score over the minimum 3 points during the OMA will necessitate improvements to the sampling provisions to be carried out. **NRW recommend that the above criteria is reviewed by site to ensure the minimum requirements for sampling provision are met prior to the OMA.**

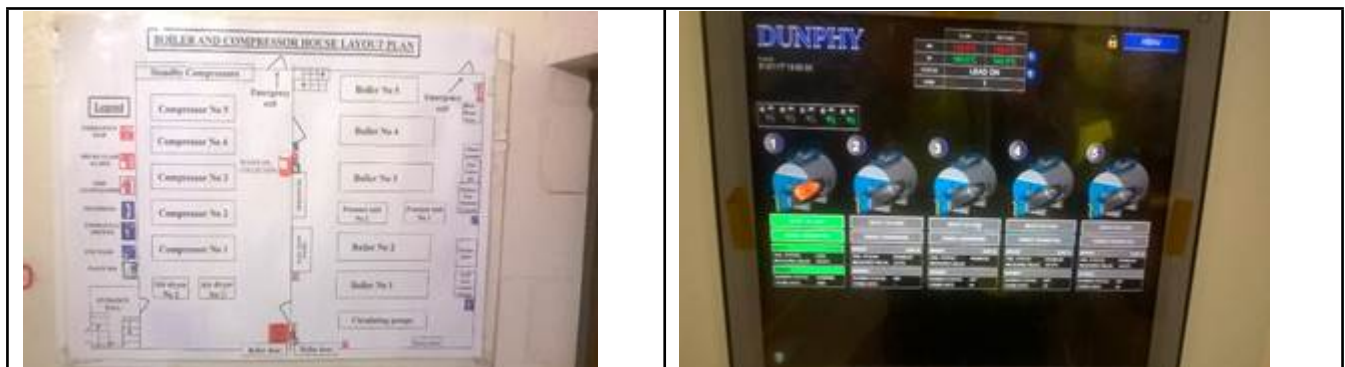
MCERTS accredited operators are required to forward a site specific protocol (SSP) to the Operator prior to the monitoring taking place. The template for this can be found at www.mcerts.net under 'MCERTS Manual stack emissions monitoring-performance standard for the organisations'. This is an auditable document as part of the site permit under 2.10.6. NRW requests that site send a copy of the SSP as soon as practicable.

Action 4– Site are to obtain a copy of the SSP sent to site prior to the last sampling and forward a copy to NRW.

Action 5- Site are to inform NRW when the next scheduled monitoring is to take place.

1. Meeting with Peter Cobden, Dunphy Engineer.

RT met Peter Cobden of Dunphy Engineering at the boiler-house. Peter installed the deration equipment to Boiler 4. Peter physically demonstrated the boiler as it was operating and explained the 'set points' at which the boiler can follow to its required maximum output.





Boiler 4 stage 2 governor is tamper proof sealed.



At the time of the inspection, boilers 1 and 4 were operating. Peter explained that the thermal capacity of the boiler is limited by several factors which cannot easily be removed or over-ridden. The burner head is individually mapped for the boiler. Inputs into the system for gas, air and fan speed are controlled by access codes provided under control by the software engineering company 'ETC'. This cannot be accessed without a commissioning code provided on license to authorised Dunphy Chief Engineer.

The current site boiler-house contractors are 'ENGIE' and their on-site staff reportedly do not have access to the codes, but can run the boiler house on behalf of Ford and carry out maintenance tasks without altering the boiler inputs. Any tampering would send an alert to the software company and the boiler would go into lock down mode. This would also invalidate the terms of the contract between Ford and ENGIE, (as well as placing Ford within the scope of the LCP directive).

RGN 2 states; *Software interlocks must be protected to restrict access and be able to generate audit logs identifying any changes made. The software constraint must offer a clear and unambiguous demonstration that the unit/s cannot be operated at >50MWth input. The unit/s must be recertified by the manufacturer / installer and documentary evidence provided.*

<https://www.gov.uk/government/publications/rgn-2-understanding-the-meaning-of-regulated-facility>

NRW Comment –

- The system can generate audit logs and inform the software designers that there is a breach in the system codes.
- The codes cannot feasibly be overridden to increase the thermal input of the burner.
- There remains ambiguity over whether the system can be over-ridden to increase capacity over 50MWth. There remains a necessity to have the capacity demonstrated so that this ambiguity is removed. Therefore capacity needs to be checked by the Regulator at least annually to ensure there has been no over-riding of the system.

From the demonstration and talk by Peter, it was clear that the Low NOx burner modification has de-rated the No4 boiler, but the demonstration was ambiguous and did not demonstrate to satisfaction of the Inspector that this could not be over-turned.

Placing the Boiler house in perspective regarding its risk to the environment; NRW accept that the 4 boilers have not operated together beyond working memory of site staff.

We also accept that the current set up limits the input below LCP.

The doubt remains over whether the software system offers a clear and unambiguous demonstration that the site cannot operate over 50MWth. Therefore this issue is ongoing and subject to annual inspections.

1. Security.

The rear of the boiler house is within a fenced area adjacent to a deserted through road. There are prohibitive signs fixed to the outside of the single fence line. This appears to be a weak area in the sites security where additional measures could be taken to deter thieves.



1. Permit Display

A copy of the permit was found under several folders at the boiler house. Permit condition 2.3.1 requires a copy of the permit to be available to all staff with duties which are subject to the permit.

Action 6 - It is recommended that a copy of the permit is displayed prominently on the notice board of the boiler house. This would ensure permit condition 2.3.1. Is met in full.

1. Annual Site returns.

Site are required to report the following;

Permit Requirement	Permit Condition	Current Status
The Operator shall carry out waste minimisation audits and water use efficiency audits. If such an audit has not been carried out in the 2 years prior to the issue of this permit, then the first such audit shall take place within 2 years of its issue. The methodology used and an action plan for increasing the efficiency of the use of raw materials or water shall be submitted to the Agency within 2 months of completion of each such audit and a review of the audit and a description of the progress made against the action plan shall be submitted to the Agency at least every 4 years	Pc 2.4.1.2 Every 4 years	No Record of NRW receiving this in the last 4 years. Cat 4 breach pending. Unless Site can prove a copy of this report has been sent to us within the last 4 years Note annual waste totals are provided on in permit conditions below as well as EPRTR reporting. Water is recorded on PER1 form. The permit condition will be met if the results of the audits are tabulated with the methods for reducing the targets identified for reductions in the waste and water site produces/uses.

thereafter.		Site are required to have the personnel available to carry out the requirements of this condition and provide the report by the following deadline. (Ref pc 1.3.1). DUE 31st March 2017
The Operator shall produce a report on the energy consumed at the permitted installation over the previous calendar year, by 31 January each year, providing the information required by condition 4.1.2	Condition 2.7.1 31 January each year	Form PER1 submitted on time satisfies this condition.
The Operator shall submit to the Agency a report on the performance of the permitted installation over the previous year, by 31 January each year, providing the information listed in Tables S4.1 and S4.2 of Schedule 4, assessed at any frequency specified therein and using the form specified in Table S3 to Schedule 3	<i>Condition 4.1.3</i> 31 January each year	Form PER 1 submitted on time satisfies this condition
The Operator shall review fugitive emissions, having regard to the application of Best Available Techniques, on an annual basis, or other such period as shall be agreed in writing by the Agency, and a summary report on this review shall be sent to the Agency detailing such releases and the measures taken to reduce them within 3 months of the end of such period.	<i>Condition 4.1.4</i> Annually	Date of last submission 22/03/2016 DUE 31 March 2017
Where the Operator has a formal Environment Management System applying to the permitted installation which encompasses annual improvement targets, the Operator shall, not later than 31 January in each year, provide a summary report of the previous year's progress against such targets	<i>Condition 4.1.5</i> 31 January each year	Form submitted on time shows 2016 scorecard which includes a 14001 performance summary only. This does not fully meet the requirement of this pc. Targets need to be identified and progress against each one identified. A summary total is not enough on its own for this requirement. Action - Report to be reviewed and resubmitted – DUE 31st March 2017.

The Operator shall within two months of the date of this permit, submit a detailed Site Protection and Monitoring Programme, in accordance with and using the appropriate template format given in the Land Protection Guidance. The Operator shall implement and maintain the Site Protection and Monitoring Programme (SPMP) submitted under this condition and shall carry out regular reviews of it at a minimum frequency of every 2 years. The results of such reviews and any changes made to the SPMP shall be reported to the Agency within 1 month of the review or change.	<i>Condition 4.1.7</i> Every 2 years	Last received Dec 2015 – DUE Dec 2017
<i>Air emissions when fired with gas oil</i>	A1/GO 6 Monthly	Late monitoring at 12 th Jan 2017. Previous one May 2016 Breaches permit conditions Received on time
<i>Air emissions when fired with natural gas</i>	A1/NG 6 Monthly	As above
<i>Gas flow</i>	A1/Gas flow 6 Monthly	As above
<i>Performance Indicators</i>	PER1 Annually	Received on time. Small increases in natural gas 2.6%. and water 1.7%

Summary of Recommendations, Actions and permit breaches.

Action 1	Forward Air monitoring returns from Dec15/Jan16 monitoring please.	ASAP
Action 2	NRW impose 2 x Cat 4 breaches for permit conditions 4.1.2.4 - failing to meet the reporting period for Air quality returns, and 1.3.1 for not having a management system which achieves compliance with the conditions of the permit.	Effective Immediately 0.2 OPRA points
Action 3	NRW to schedule an OMA to Air inspection before end July 2017.	NRW to action
Action 4	Site are to obtain a copy of the SSP from their MCERTS monitoring company which should have been sent to site prior to the last sampling -and forward a copy to NRW.	ASAP
Action 5	Site are to inform NRW when the next scheduled	ASAP

	monitoring is to take place.	
Action 6	It is recommended that a copy of the permit is displayed prominently on the notice board of the boiler house to satisfy permit condition 2.3.1	ASAP
Action 7	Site to meet the requirements of permit condition 2.4.1.2. Or prove they have sent this within the last 4 years.	DUE 31 March 2017 Cat 4 pending
Action 8	Permit condition 4.1.4 due 31 st March 2017	DUE 31 March 2017
Action 9	Permit condition 4.1.5 – More detailed breakdown of the targets identified and improvements made against them for 2016 reporting year.	DUE 31 st March 2017 Cat 4 pending

End.

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0031139**

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

Site	Bridgend Engine Works EPR/BL2548IF	Permit Ref	BL2548IF
Operator/Permit holder	Ford Motor Company Ltd	Date	31/01/2017

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			
C2	C4	Review scheduling of monitoring personnel, build in contingency time period, be aware of permit conditions	31/03/2017
G1	C4	Review current procedure of scheduling and reporting	31/03/2017

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.