

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	30 June 2015			Time in	10:00	Out	16:40
What parts of the permit were assessed	See Below						
Assessment	Choose an item.	EPR Activity:	Installation	X	Waste Op		Water Discharge
Recipient's name/position	Ben Williams – Lead Environmental Engineer; Dafydd Williams – Environmental Engineer						
Officer's name	Karen Dunn – PPC Officer			Date issued		25 August 2015	

Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our [Compliance Classification Scheme](#) (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your [local office](#).

Permit Conditions and Compliance Summary

Condition(s) breached

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

KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk),
A = Assessed or assessed in part (no evidence of non-compliance), N = Not assessed, NA = Not Applicable

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This was a pre-arranged audit and an agenda had been provided in advance.

Operator representatives present:

Ben Williams – Lead Environmental Engineer
Dafydd Williams - Environmental Engineer

Agenda :

Review of actions from previous visit (CAR 5638)

Update on Foam Reduction Project

Update on C inspections

Permit Condition 1.1 in respect of the accident management plan, bunds and tanks (in particular Sodium Hypochlorite storage)

Site visit focusing on the areas reviewed during the audit

AOB

Introduction

The audit began with a brief overview on how business has been since the last audit. At present the main impact on operations has been the first major 'outages' or 'C inspections' of the 5 units since commissioning. This work has meant that the station has been very busy and has involved the need for additional contractors and RWE staff presence on site from across the business. This audit sought to gain an update on the timeline of this major piece of work along with the foam reduction project. A more in depth approach was then taken regarding permit condition 1.1 with the objective being to examine the provisions in place for chemical storage namely tanks, bunds and their maintenance specifically looking at Sodium Hypochlorite.

Objective 1: To review the actions from previous visit (CAR 5638).

The review identified that there were no outstanding actions from the previous visit report.

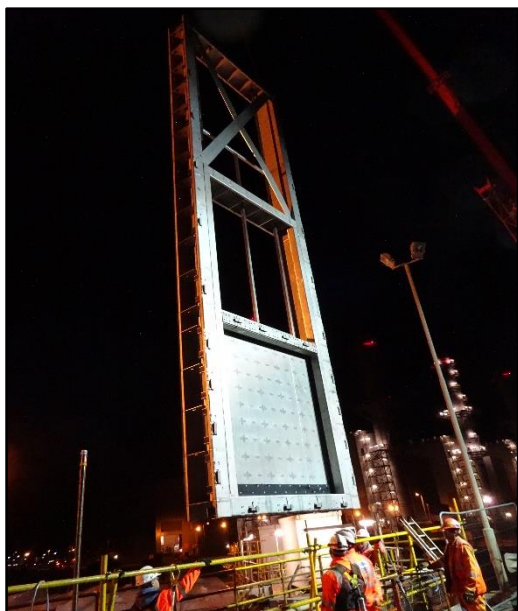
Since the last audit the operator had reviewed all the operating techniques linked to the environmental permit and consolidated them into one file for ease of management and reference. A key NRW objective has also been achieved with the implementation of an agreed 5 year monitoring plan (see CAR 5917).

Objective 2: To gain an update on the foam reduction project.

The week prior to the audit a permanent penstock was fitted in the power station's 'seal pit'. The pit was constructed in part from the former power station and provides sea water back pressure to the 5 units. However as the sea water falls over a weir in the pit it has been entraining air and forming foam that is akin to sea foam.

Although the foam isn't considered to have an environmental impact it has been an amenity concern, particularly when the bubbles burst and turn brown due to the organic content. The operator has warranted a commitment to NRW and the local community to investigate this matter and undertook a trial last year. The system was modelled and a trial to discharge all the cooling water through one tunnel to facilitate installation works was undertaken. The 2014 trial was a success so a 'Foam Reduction Project' aimed at providing a permanent solution to the sea foam generation has been taking place.

The picture below is of the first of two permanent penstocks to be installed in the 'seal pit' as part of the project. The local community have been kept up to date on the work through the RWE Local Liaison Committee (LLC). Most recently the operator sent an e-mail update to all members of the LLC following



the first penstock installation as a change to the foam may have been seen before the second penstock could be fitted. When the second one is in place the system will be optimized to make sure it is working as modelled and in turn reducing the potential for foam generation.

At the time of this audit the second penstock was on route from the manufacturer and the expected completion date for the structural work was the end of July 2015. At the time of writing the operator was in the process of optimizing the system.

This project has been a major piece of work which needed to be undertaken during the planned outages associated with the 'C' inspections. Following the design stage a significant amount of preparation was necessary which involved dive surveys etc. and the procurement with the associated lead times and transportation considerations for wide loads of the major structural elements.

The photographs below were taken during this visit and shows the height of the cooling water in the seal pit. The cooling water was being directed through one lane while preparation works for the second penstock were being undertaken. The operator explained the importance of monitoring the height of the tide in order to carefully manage the height of the water in the seal pit during this work.

The photograph below left also shows the foam formation at the time of the visit which had visibly changed i.e. finer bubbles, gathered at one end due to only one lane being open. The photograph to the right shows the crane lifting the cage for the diver out of lane one while structural modifications were being carried out in preparation for the second penstock installation. The operator explained that some further work was also required in respect of the water level in the surge pit to prevent cavitation this is where reverse currents can erode the concrete in the pit so it is important to avoid it by managing the water levels in a controlled manner. The operator also outlined in this area how the penstocks are operated electronically, the location of the fixed stop logs and pH probes in the mixing zone.



Objective 3: To obtain an update on the planned 'C' inspections

At the local LLC meeting on 10 June 2015 the operator informed the local community that one unit had been completed, work had started on the second and the expected completion date was December 2015. This completion date differed from the initial timetable for this work so this visit sought to gain an update on the current status of the first major shut and strip down of the turbines at the power station. The operator confirmed that the 'C' inspections were ahead of schedule and at the time of the visit the second unit was due to start its eight day commissioning, first from cold and then hot. The current expected completion date has subsequently moved to mid-December 2015. The operator explained that the Alstom staff have been able to turn around and consolidate the work load to around a 29 day return with approximately 8 to 9 days commissioning.

Effluent Treatment Plant

With the additional contractors on site for the 'C' inspections the operator has been periodically tankering effluent off site. Unfortunately the on-site effluent treatment plant (ETP) has been having issues with the concentration of the effluent. The operator considers the issue isn't related to the volume of effluent but the concentration as it isn't getting the dilution associated with wash water that you would get with household sewage. The situation is being carefully managed by the operator in order to prevent a breach of an emission limit value (ELV). If the system is approaching the ELV the effluent is tankered off site for treatment at a sewage treatment works. It is considered that no long term modifications are required to the system as the number of staff is a temporary position brought about by the major shut down. A discussion was also had on the amendment to the drainage plan following the installation of a cesspit in the car park in preparation of the additional contractors on site. The operator explained the process for making a plant modification and demonstrated those raised for the cesspit work. When a modification is raised it goes to a panel for consideration and then categorised / prioritised. All modifications are recorded and can be tracked.

Action: Drainage plan to be updated to include the changes made in respect of the cesspit installed in the car park and associated drains.

Objective 4: To examine the provision for chemical storage namely tanks, bunds and their maintenance looking specifically at Sodium Hypochlorite.

Accident Management Plan

Within the environmental permit pre-operational condition 2 (PO2) required the operator prior to operations to have an accident management plan developed in line with Environment Agency guidance. This pre-operational condition was met by the operator (CAR 4301 dated 14 November 2011).

Permit condition 1.1 General Management makes reference to accidents and incidents:

1.1	General management
1.1.1	The operator shall manage and operate the activities:
(a)	in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
(b)	using sufficient competent persons and resources.

KD requested to view the document control procedure within the sites Environment Management System (EMS) to identify if the accident management plan was subject to a review date i.e. in respect of the drainage plan following the cesspit installation and regulator contact details from EAW to NRW in 2013 etc. The operator explained that accidents and incidents are managed by the Business Continuity Plan a copy of which is kept for use in the event of an accident or incident in the control room (see site tour below). The gatehouse is the secondary location that would be utilised in the event of an incident and subsequently it would also be managed off site from the Swindon office but this would be an operational decision made by the operator depending on the event.

It is important that the latest drainage plan (Appendix E) is kept within the accident management procedures so it is readily available in the event of an incident. This is one of the main documents NRW will refer to in an environmental incident. The Material Safety Data sheets (MSDS) for the chemicals stored on site are also frequently requested by NRW in an incident scenario. The operator explained that these are also located in the control room or designated incident location so they are immediately to hand. The incident documentation is controlled and subject to regular review (every 2 years).

A discussion was held over the need to maintain two documents as all accident and incident documents are accounted for in the continuity plan. From this discussion it was agreed that the continuity plan does not fit the regulators guidance on accident management plans that should support an environmental incident response. It is recognised in the current accident management plan that it should be a support document to the business plan and it is also a requirement of the environmental permit to manage the operations through the EMS to minimise the risk of pollution including those that arise from accidents and incidents. The conditions of an environmental permit regulation (EPR) permit and associated guidance have been written to incorporate the requirements of the legislation in this instance the need for an accident management plan.

Action: Operator to review and up-date the accident management plan linked to the site's written management system (EMS).

Action: If on review of the accident management plan (PO2 response) any significant changes are made i.e. updated drainage plan etc. a copy should be e-mailed to KD to update NRW files.

Hardstanding and Bunds

Within the application linked to the environmental permit the operator had outlined the following:

3.5.3.2 Regular site walks will occur to confirm the condition of the hardstanding and bunds.

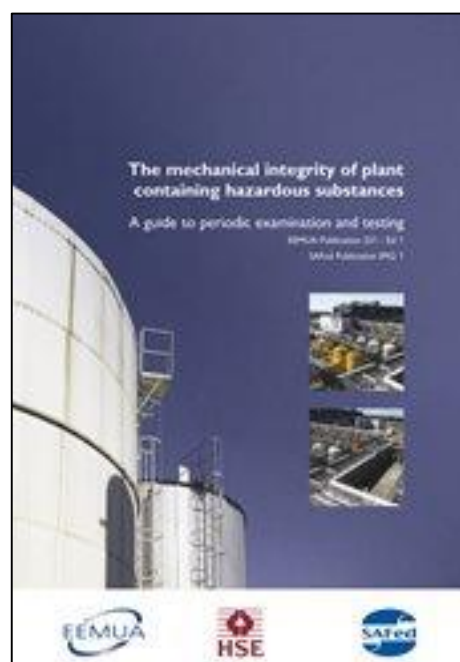
The operator explained that site walkovers and checks are undertaken routinely by site staff. This includes a visual check within bunds. A report would be made on exception and an Action Request (AR) raised, from an AR a work order is generated, this is all done in PRISM which is the planned and reactive maintenance system utilised by the station. A question was raised by KD over a tank integrity list which is reviewed and maintained. David Williams (DW) from the Engineering Department attended this section of the audit. DW has been tasked with reviewing the Local Procedure (LP) on the 'Inspection and maintenance of above ground vertical steel storage tanks (<300m³) & bulk storage installations' PEB/LP/ENG/6311-1 & 6311-2' implementation date 27/01/14.

The operator identified in January 2015 that the LP was in need of review as it was not considered to be a fit for purpose as all tanks on site were new and the timelines for inspection didn't seem to reflect that. Due to the new plant status the priority for inspection was considered to be low so the LP wasn't being completely followed.

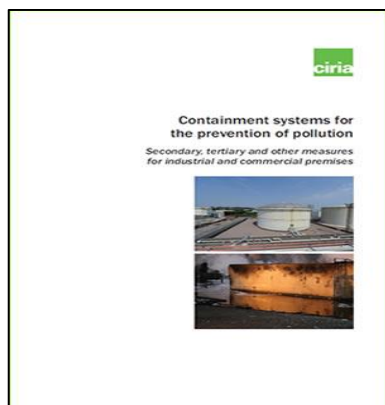
A question was raised by KD in respect of any maintenance undertaken on tank valves or routine work in particular on those facilities containing hazardous substances that would identify any corrosion etc. KD made reference to two documents for consideration in the review of the LP and the whole lifecycle approach to managing integrity.

The following guidance is relevant to sites that fall both within and outside of the Control of Major Accident and Hazards (COMAH) Regulations where there are hazardous substances present:

Engineering Equipment and Materials User Association (EEMUA) The Mechanical Integrity of Plant Containing Hazardous Substances. A guide to periodic examination and testing (EEMUA Publication 231).
<https://www.zurich.co.uk/NR/rdonlyres/327EC585-57D0-46E7-A7FA-97D8F2F17A4E/0/COMAHV1.pdf>



The guidance was developed by the Safety Assessment Federation (SAFed) and EEMUA in consultation with the Health and Safety Executive (HSE). The HSE considers maintenance of the integrity of plant containing hazardous substances to be a fundamental element of good process safety management.



Secondly CIRIA guidance C736 Containment Systems for the Prevention of Pollution

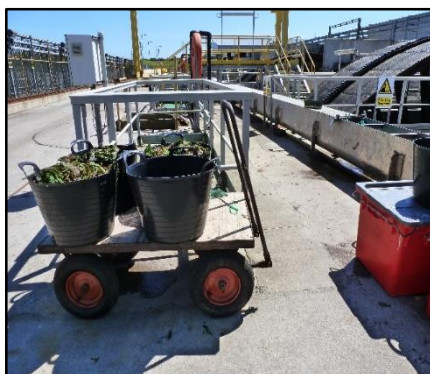
Recommendation: Operator to consider the guidance documents EEMUA 231 and CIRIA C736 for the prevention of pollution in the operations at the Pembroke Power Station.

http://www.ciria.org/Resources/Free_publications/containment_systems.aspx

DW explained that he is a certified tank inspector and was familiar with the EEMUA guidance as well as the American Petroleum Industry (API) guidance amongst other things and would be considering these in his review. The LP already makes reference to such regulation / standards in the procedure.

Objective 4: To undertake a site tour focusing on the areas visited during the audit.

The site tour began at the site office and mainly focused on the sodium hypochlorite storage which is located near the fish return system close to the abstraction point at the easterly end of the site. It was noted that the general housekeeping at the site is very good. At the abstraction point and fish return system the operators consultants Jacobs were undertaken one of the 40 annual impingement sample surveys which are undertaken over a 24 hour period. The operator's contractors monitor the net which is clipped into the flume upstream of the fish retention tank (photograph below left) the net is monitored over the 24 hour period and emptied at intervals depending on what has entered it, for processing by the consultants. The central photograph shows the samples obtained on the day of the audit and the containers where any fish are placed in water for processing and release.



The photograph on the right shows the operators consultants / marine specialists processing the samples and classifying anything to the lowest taxonomic species. The full methodology of this survey hasn't been replicated here however KD found it very useful to be able to see the work being undertaken.

From the abstraction point a visual inspection was undertaken of one of the four drum screens and the trash which had been subject to discussion over the agreed 5 year monitoring plan.

There are two 100 tonne tanks on site for the storage of sodium hypochlorite used for dosing in the process. One of the tanks has been isolated from the system so the total volume kept on site can be managed through one operational tank. This operational decision has been made to prevent the site from coming under the Control of Major Accidents Hazards (COMAH) regulations. A brief discussion on the 2 % rule in the 2015 regulations was held in the office before attending the storage tanks i.e. the quantities

to be considered for the application of the regulations being the maximum quantities which are present or likely to be present at any one time. If a full tank was parked on site overnight this rule would need to be considered. The operator explained that this scenario is unlikely to happen in that the storage tank is kept at 70 % capacity and it is unlikely that a full tanker would be present overnight or without the need for the delivery that would take the site over the threshold. The operational tank has a level alarm in place for 65% capacity and a high level alarm for 75%.

Firstly a visual inspection of the delivery points was undertaken followed by the tanks which are under cover. Each delivery is supervised by the operator, the fill points are locked and these can only be removed by the operative in attendance. The following photographs were taken at the sodium hypochlorite intake point. The area was well sign posted in that the isolated intake point was clearly labelled and protective bollards, blind sumps and emergency contact details contained within the spill kit etc. were all to hand in the event of a spill. There is also a site phone in the 'MCW Dosing Skid' which was evident along with the alarms on the system. House-keeping again was very good and the bund was empty with just a minor amount of water that had collected by the sump. Some corrosion was noted on the bolts to the isolated intake which was to be expected in the environment. The operator should consider the required maintenance of the unused or isolated tank in the review of the LP i.e. the tank may deteriorate at a faster rate internally if unused and corrosion on the intake maybe an issue if required for service etc.

Recommendation: Operator to consider the required maintenance of the unused or isolated tank in the review of the tank maintenance and associated pipework inspection procedure



On returning to the control room following a visit to the seal pit (see objective 2 above) the bund on the spare transformer was visually inspected and found to be in good condition. Furthermore the capacity of the bund hadn't been compromised by the presence of water.

At the control room the provision for accidents and incidents was viewed in brief as discussed previously during the audit. The 'Site Incident Management and Recovery Plan' dated October 2013 was in place and adjacent to this on the wall was the Emergency Action Card or EAC library. The operator explained that training is undertaken in respect of the operational instructions contained within the library and linked to the plan. It was noted that the plan made reference to the NRW contact details and had clearly been updated to incorporate the change from Environment Agency Wales to NRW.

Industrial Emissions Directive (IED) Permit Review – Regulation 60 Notice for further information

Regarding the review of the operator's permit to incorporate the requirements of the IED this work is currently on-going. Since this visit discussions have been held on the further information submitted by the operator. Most recently on the 18 August 2015 KD and Tony Leakey (NRW combustion lead) attended site to discuss the July 2015 information which had been supplied to supplement the Regulation 60 response. This was a productive meeting in order to gain consistency with the EA and the operator's sister plant in implementing the IED. Actions arose from the meeting which haven't been detailed on this CAR but discussed with NRW permitting to feed into the permit review.

2014 Environmental Monitoring Reports

On 7 August the operator submitted in line with the permit the annual environmental monitoring reports for NRW review. These reports are currently under review by NRW.

Conclusion

No breaches of the environmental permit were identified in the areas visited by this audit. The audit mainly sought to gain updates on on-going matters relating to the first major shut down or 'C' inspections and the foam reduction project. An in-depth approach was then taken in respect of permit condition 1.1 in particular the accident management plan that was compiled in respect of a pre-operational condition 2 and the provisions in place for the storage of sodium hypochlorite. The operator is ahead of schedule on their 'C' inspections and good progress has been made with the foam minimisation project, at the time of the visit the operator had successfully installed one of the 2 penstocks in the seal pit and are now in the process of optimising the system. Communication has been good throughout the foam minimisation project and the local community has been updated on progress through the sites LLC. There were only a few actions and recommendations that arose from the audit and there were no outstanding ones from the previous visit report. All actions/recommendations have been consolidated in the table at the end of this Compliance Assessment Report (CAR).

[End]

	EPR Compliance Assessment Report	Report ID: 5910	
This form will report non-compliance with your permit as determined by an NRW officer			
Site	Pembroke Power Station	Permit	DP3333TA
Operator/ Permit	RWE Generation UK Plc	Date	25 August 2015

Section 3- Enforcement Response		Only one of the boxes below should be ticked	
You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.			
Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.			
In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.			
We will now consider what enforcement action is appropriate and notify you, referencing this form.			

Section 4- Action(s)			
Where a non - compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.			
Criteria Ref.	CCS Category	Action Required/Advised	Due Date
See Section 1 above			
There were no breaches identified in the areas visited in this audit however the adjacent action/recommendations have been placed on the operator.		Action: Drainage plan to be updated to include the changes made in respect of the cesspit installed in the car park and associated drains.	As soon as practicable
		Action: Operator to review and up-date the accident management plan linked to the site's written management system (EMS).	By the next planned routine audit.
		Action: If on review of the accident management plan (PO2 response) any significant changes are made i.e. updated drainage plan etc. a copy should be e-mailed to KD to update NRW files.	On review
		Recommendation: Operator to consider the guidance documents EEMUA 231 and CIRIA C736 for the prevention of pollution in the operations at the Pembroke Power Station.	N/A
		Recommendation: Operator to consider the required maintenance of the unused or isolated tank in the review of the tank maintenance and associated pipework inspection procedure	N/A

Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you.

● We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.

● Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance which could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General Information

Data protection notice

The information on this form will be processed by Natural Resources Wales (NRW) to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). NRW may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

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

NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with the officer's line managers. If you wish to raise your dispute further through our official **Complaints** and Commendations procedure, phone our general enquiry number **0300 065 3000** (Mon to Fri **08.00–18.00**) and ask for the **Customer Contact team** or send an email to enquiries@naturalresourceswales.gov.uk If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on **(0845) 601 0987**.