

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

Site	Tata Steel Port Talbot steelworks	Permit Ref	BL7108IM (as amended)
Operator/ Permit holder	Tata Steel UK Ltd		
Date	16 June 2015	Time in	09.30 Out 16.30
What parts of the permit were assessed	See below		
Assessment	EPR - inspection	EPR Activity:	Installation X Waste Op Water Discharge
Recipient's name/position	Jason Heatman, Lead Environmental Engineer, Tata Steel Port Talbot		
Officers names	DMP Broom & DE Cowie	Date issued	28 July 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	A	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	N	
	5. Plant and equipment	A	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	A	
	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	N	
	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	A	
	2. Records of activity, site diary, journal & events	A	
	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
------------------------------------	---	---	---

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

Site description

Tata Steel UK Ltd (Tata) operates an integrated iron and steel works at Port Talbot, Neath Port Talbot. The site is permitted as an installation under the Environmental Permitting Regulations (EPR). The steelworks has several identifiable permitted processes which are carried out sequentially across the installation to convert raw iron ores and coal to semi finished (slab) and finished steel products (such as hot rolled, pickled and oiled, cold rolled and annealed). The permit also covers coke making and the reception, stockpiling and blending of raw iron making materials. Two other companies, Cambrian Stone and Harsco, undertake separately-permitted slag handling and iron plating activities at the steelworks on Tata's behalf.

Purpose of visit/assessment

During 2015 Natural Resources Wales* (NRW) has been examining fugitive monitoring techniques in use for coke oven doors, tops and charging at Port Talbot steelworks. Tata Steel has been trialling a modified approach to fugitive release assessment in preparation for new BAT-AEL limits for coke ovens which will be introduced from March 2016 onwards. A visit was undertaken to review progress with this work. We also reviewed Benzo-a-pyrene (B[a]P) modelling for Port Talbot and the implications of the EC target value for B[a]P.

The second part of this intervention focused on an iron plating event that occurred in January 2015 and which we previously investigated in March (see CAR 5854) and which required some follow up work. During this visit we examined some video footage of the event and we were able conclude our investigation.

Person(s) present (Office based)

CO = Coke Ovens only

Plating = Ironmaking only

Tata Steel

Ian Gofton (CO)
Ian Vaughan (Plating)
Jason Heatman
Andrew Townsend
Neil Haines (CO)
Lee Puckey (CO)
Huub Schulter (CO)
Charlotte Barlow (CO)
Reg Bennett (Plating)
Kevin Davies (Plating)

NRW

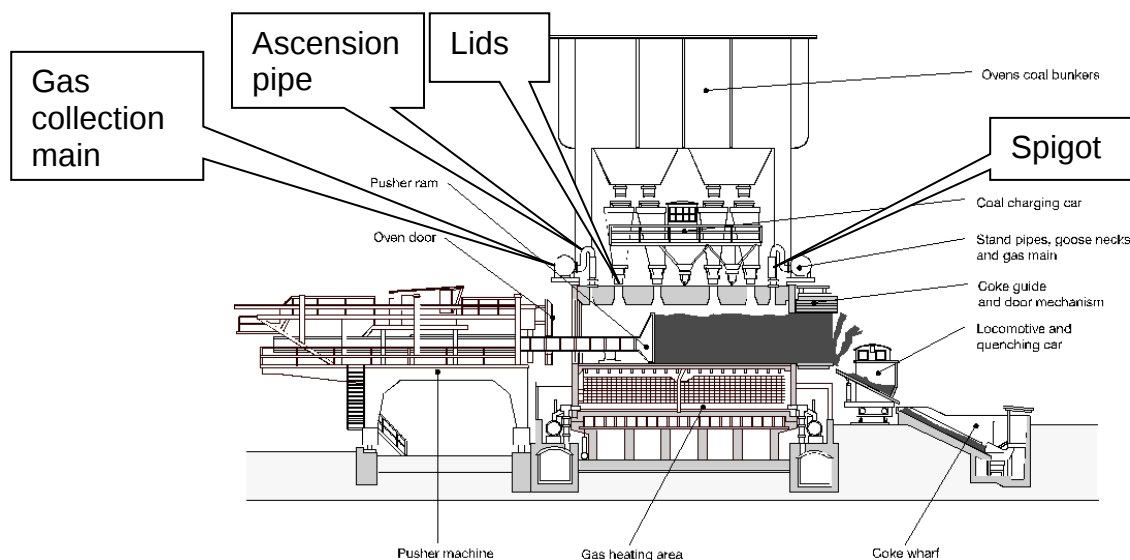
Mark Broom
Doug Cowie

Morfa Coke Ovens

We gave a short presentation to Tata Steel personnel about the B[a]P results and modelling that has been carried out for Port Talbot releases. The fugitive releases from doors dominate the coke oven B[a]P releases.

Since mid-April 2015 Tata has adopted a modified United States EPA approach to coke ovens fugitive release assessment. This is a binary system - either it leaks or it does not leak. Every door, cap, spigot, spindle and lid is assessed every day using this method. Looking at the results, spigots, doors and leveller doors account for most of the leaks at Morfa Coke Ovens. The spigots – the joint between the ovens and the gas main – show a number of leaks. Tata has developed and continues to refine a collar for the spigots to help provide a tight seal until the ascension pipes can be shortened and bespoke seals fitted. There are 84 ovens and 168 ascension pipes that need assessing. Tata can replace two ascension pipes every month if the coke oven batteries are kept in continuous operation; however not all the pipes may need to be shortened.

The diagram on the next page shows the general layout of a typical coke oven, showing the locations of the gas collection main, ascension pipe, spigot and lids.



General layout of a typical coke oven

Other coke ovens in the UK are looking at adopting this approach to manage their fugitive releases from their coke ovens. For May 2015 the monthly averages for the doors were 88% no-leak (12% leaks) on battery 1, and a monthly leakage rate of 12.7% leaks (87.3% no leaking doors) on battery 2. For the tops (ascension pipes, spigots, spindles and caps and lids), the monthly rates were 7% and 6% on batteries 1 and 2 respectively. The BAT-AEL levels from March 2016 onwards are <10% leaks for doors and < 1% leaks for tops. The doors have a few percentage points to make up before they can attain the limit value. For tops the limits are more challenging, but Tata's spigot repair plans mean the company should be able to close the gap. Tata correlates and uses the data to target persistent offending leaks. The company could also consider recording oven pressure readings on the assessment forms to help target its efforts.

Following our discussions we undertook a physical inspection of the battery top. The ram side did appear to have significantly more leaks than the coke side. The ovens on the ram side looked better when we left the coke ovens (12:00hrs) than when we arrived (09:30hrs). The battery top did look quite dusty and fumes were also visible when looking down each battery from the coal loading area. Battery 2 (Swansea side) appeared slightly worse than Battery 1 (Porthcawl side).

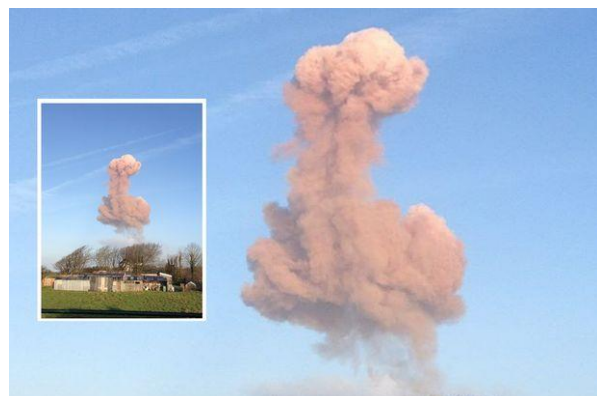
The battery top did also look slightly uneven along the edges of the battery but this may reflect the condition of the battery fabric. The battery life extension project should help arrest the fabric deterioration in the medium term. We were shown examples of the spigot repairs and collars that have been fitted to some ovens and it was clear that the operational personnel we met had a good understanding of the work required.

Based on the current door design, Tata feels that it will be able to meet the new BAT-AEL limits for coke oven fugitive emissions. If a step change in performance is required, Tata will need to change the design of the coke oven doors to use 'blue sky' type door seals which means a corresponding change to the door removal and cleaning devices on the ram and coke side equipment. Blue sky seals are in use at Ijmuiden steelworks on their tall and short ovens. The tall ovens can have problems meeting the Dutch permitted limits due to the taller ovens having more stresses.

Tata need to look at the contribution to their Pollution Inventory (PI) B[a]P figures from various activities within their site and how these contributions may change as the limits change due to the investments they are making to comply with BAT. Tata should also approach NRW when it is ready to discuss its coke ovens charging measurements using the modified US EPA method.

Plating event 24/01/15

On Saturday 24 January 2015 NRW received a number of complaints about a release from the steelworks. The source of this release coincided with an event while plating molten iron within the steelworks. CAR Form 5854 contains details of NRW's initial investigation which concluded that ground water was not a contributor or source of the water that caused this event. During this visit we viewed video footage of the molten iron pour from the torpedo into plating pit number 3. The photograph shows the release above the steelworks from this plating operation. There appeared to be no discernible effect of this event on the air quality monitors around the steelworks.



The video showed the pour from the torpedo took around 15 minutes to complete. NRW understands the pour should take 30 minutes; at this rate the iron moves slowly enough to allow any moisture to evaporate in front of the advancing metal. After 8 minutes the hot metal reached the end of pit 3 with little release/fume visible. After 12 minutes the far end of the pit started to fume, then boiled and finally erupted like a volcano scattering molten metal into the air that rained down in front of the camera and the 'igloo'. Tata's initial report into this event suggests that damp slag had been used to prepare pit 3, but this cannot be confirmed. Tata showed us a photo of the pit 7 days before it was used and this showed a pool of water visible towards the far end of the pit. Pit 3 was prepared and dressed with slag by Harsco prior to the event although it is not clear how any standing water was dealt with during this process. What is clear is that the eruption took place in the same part of pit 3 where the standing water had been 7 days earlier.

Turning to the relevant procedures, Harsco Metals' work instruction WI-PT-BOS-0336 (Revision 10) entitled 'Iron Pool Maintenance and Iron Plating into Pits' (page 6, pouring instruction) clearly indicates that Harsco Metals has primary control of the speed of pour and not Tata Steel. Written authorisation from the Tata shift manager/team leader must be submitted to the Harsco shift team leader prior to the pour if it must be speeded up. Harsco confirmed by email that its personnel received no instruction from Tata to change the speed of pour for this plating operation into pit 3. NRW has not found evidence that any such authorisation was submitted to Harsco for the pour into pit number 3 on the morning of 24 January 2015.

The current environmental permits are written in a manner indicating Harsco Metals prepares and maintains the plating pits, and Tata Steel controls the pouring of molten iron into the pits. This does not appear to be the case based on the procedures and series of events NRW has examined. It has become clear to us that Tata Steel moves the torpedo to the designated plating pit and Harsco then pours the iron; the activity should be permitted as such.

Twelve actions were identified by Tata Steel when they and Harsco personnel investigated this event.

1	Re-iteration of the procedures and pouring schedule when the pits could be wet.	Completed
2	Review plating bed dressing instructions to take into account weather conditions	Completed with fresh dry slag used
3	Harsco to formally report on pit condition every shift to the Tata Steel shift leader	Pit conditions are now routinely reported every shift
4	Plating bowls (tundishes) to be returned to standard	There is a plan to refurbish each tundish when required and maintain at least two spare tundishes on 'standby' using old desulph pots.
5	Communications of plating responsibilities for Tata staff	See point 6 below
6	Re-iteration of plating rules to shift staff	The duties of the Tata observer have been reinforced. Tata must give as much notice as possible to the Harsco shift team.
7	Review of plating practices across Tata Steel	Similar practices are used at Scunthorpe and Ijmuiden. In both cases Tata Steel observes rather than manages or controls the pour.
8	Install drainage system within the plating pits	A drainage system has been installed in to pit 3 but there has been little use. It could be that the drainage improvements could be linked to the use of molehills with the molehills used to 'protect' the drains when the pits are dug. There is a concern that the drainage changes etc. will become compacted over time due to movement of heavy plant over the channels.
9	Explore the influence of tide on the ground water beneath the plating pits	The ground water beneath this pit is outside the influence of the tide and does not come within the 'magic' 1.5m of the pit base.
10	Audits of plating activities by the Environmental department	In progress
11	Improve visibility of the pouring operations	A new remote camera will be installed looking across all pits to help improve the visibility of the pits from the control 'igloo'.
12	Review meeting for progress of actions – End Feb 2015	Complete

Conclusions and further actions required

The majority of B[a]P affecting the immediate area around the coke ovens comes from the door leakages. Tata needs to look at the contribution to their PI B[a]P figures from various activities within the steelworks and how these contributions may change as the limits change due to the investments they are making to comply with BAT.

In NRW's view, the most likely causes of the plating release on 24/01/15 were a torpedo pour that was too fast and the presence of water in the plating pit. No discernible effect of the event could be seen on the air quality monitors around the steelworks. According to the Harsco procedure/work instruction, the pouring of molten iron and the maintenance and preparation of the pit are the responsibility of Harsco Metals. The permits for Tata Steel and Harsco Metals need to be reviewed and updated to correctly reflect this arrangement. NRW believes a meeting with both companies present would be the most appropriate way of progressing the necessary permit changes and the inspecting officers will contact the relevant personnel to arrange this.

NRW will complete a corresponding CAR for Harsco Metals Group Ltd (EPR-BP3635MR) in respect of the event on 24/01/15.

[END OF SECTION 2]

	EPR Compliance Assessment Report	Report ID: 5915	
This form will report non-compliance with your permit as determined by an NRW officer			
Site	Tata Steel Port Talbot steelworks	Permit	BL7108IM (as amended)
Operator/ Permit	Tata Steel UK Ltd	Date	28 July 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.	n/a	
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.	n/a	
We will now consider what enforcement action is appropriate and notify you, referencing this form.	n/a	

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			
A1	N/A	NRW to arrange a meeting with Tata Steel and Harsco Metals personnel to clarify and agree responsibilities for iron plating at Port Talbot steelworks. The permits need to be reviewed and updated to correctly reflect the current arrangements for this activity.	31 August 2015
N/A		Recommendation: The majority of B[a]P affecting the immediate area around the coke ovens comes from the door leakages. Tata needs to look at the contribution to their Pollution Inventory B[a]P figures from various activities within the steelworks and how these contributions may change as the limits change due to the investments they are making to comply with BAT.	30 September 2015

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**.