

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	14 August 2015	Time in	09.30 Out 15.30
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	26 February 2016

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	N	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	A	
	3. Materials acceptance	A	
	4. Storage handling, labelling, segregation	N	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	N	
e) Emissions	1. Air	A	
	2. Land & Groundwater	N	
	3. Surface water	N	
	4. Sewer	N	
	5. Waste	A	
f) Amenity	1. Odour	N	
	2. Noise	N	
	3. Dust/fibres/particulates	A	
	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	N	
h) Resource efficiency	1. Efficient use of raw materials	A	
	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

To review the Morfa Coke Ovens fugitive release monitoring progress, to conclude the trial on the use of recovered oil from Trostre Works at the Coke Ovens and finally review the actions taken by Tata Steel following a PM₁₀ air quality exceedance event in August 2015.

Person(s) present (Office based)

Tata Steel	Jason Heatman Andrew Townsend Charlotte Barlow Paul Dickinson (oil trials only) Jamie-Ross Landeg (oil trials only) Georgina Brooks (AQ issues) Sam Gorji (AQ issues) Claire Grainger (AQ issues)	NRW	Mark Broom Doug Cowie
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Fugitive release monitoring

During 2015 Natural Resources Wales (NRW) has been examining monitoring techniques in use at Port Talbot steelworks for fugitive emissions/releases from coke oven tops, doors and the charging process. 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. Our previous CAR forms 5848 and 5915 describe the approach being used by Tata in more detail. The purpose of this visit was to review progress with this work. We also reviewed Benzo-a-pyrene (B[a]P) emissions modelling for Port Talbot and the implications of the EC target value for B[a]P.

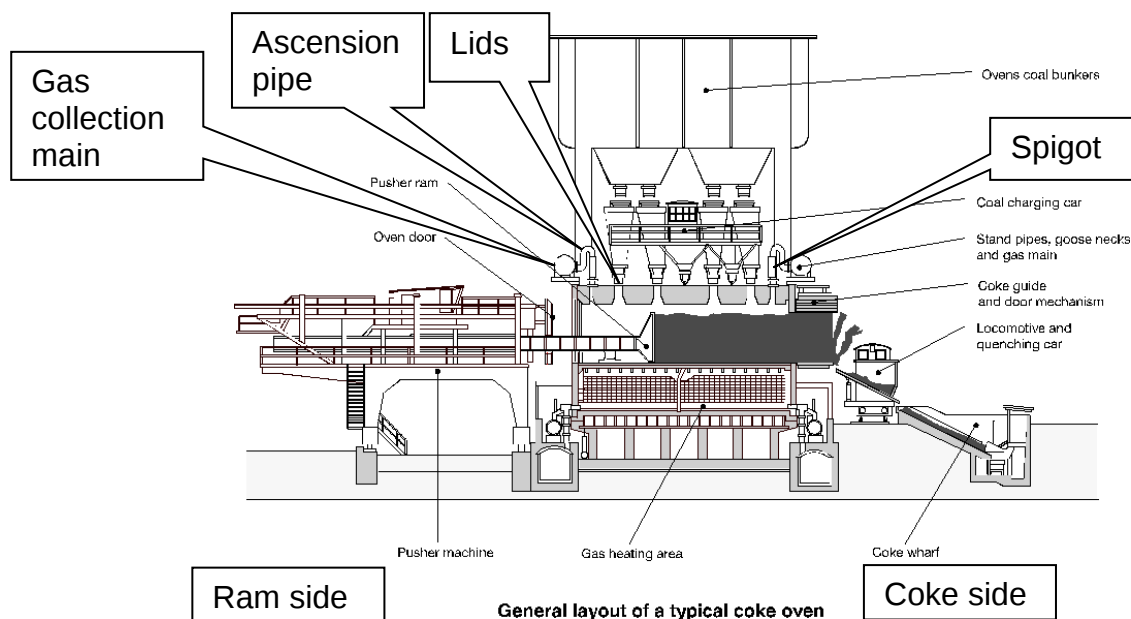
Since April 2015 Tata has adopted a modified United States EPA approach to coke ovens fugitive release assessment. This is a binary system - either it leaks or it does not leak. The United Kingdom BCRA method uses four grades of leak which are then converted by the use of calculation into a percentage value. The higher the percentage the fewer the leaks. The calculation method 'weights' the severity of leaks based on the grading.

There are four types of fugitive release assessment in the UK BCRA method, top leakage, door leakage, charging and pushing releases. The US EPA method only covers three fugitive releases that equate to top, door and charging releases. Although the Iron and Steel BAT Conclusions for coke oven fugitive releases 'allow' both monitoring methods, the BAT-AEL only prescribes a leakage rate for the tops (1%) and the doors (10%) and for charging the average visible release of 30 seconds release from each charge over a month.

For top leakage, every door, cap, spigot, spindle and lid is currently assessed daily using both methods. Looking at Tata's 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. Previously Tata has indicated that its engineers can replace two ascension pipes per month if the coke oven batteries are kept in continuous operation; however following further review it appears that not all the pipes may need to be shortened. Tata has also reviewed progress with the collar method for the spigots. There are two spigots on each oven and there are 84 ovens and 168 ascension pipes that need assessing. If all spigots have to be replaced, it will take Tata 84 months or 7 years at a rate of 2 spigots per month!

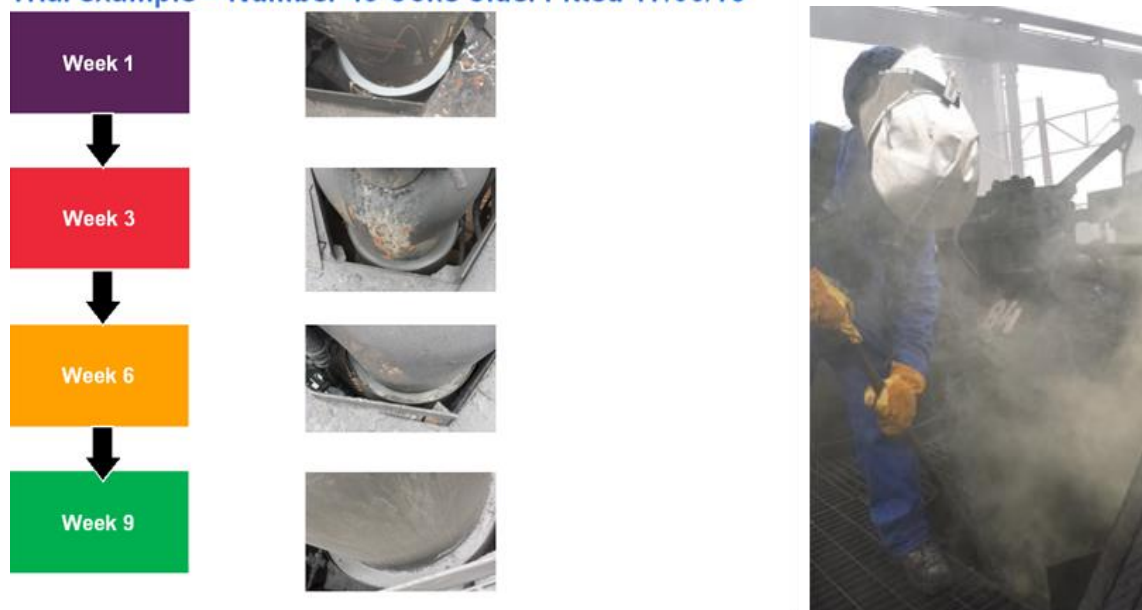
The diagram below shows the general layout of a typical coke oven, showing the locations of the gas collection main, ascension pipe, spigot and lids.



The photos below, looking down on the spigot joint, show the new collar fitted around the spigot joint. The jointing material has traditionally been coal tar, but these joints now use a type of silicon which appears to be effective in reducing the fugitive releases from these joints. The use of coal tar by comparison is not as effective and may also contribute to B[a]P releases. The benefits of this work are reduced fugitive releases from the tops, a higher probability of compliance with the BAT-AEL, improved working conditions on the coke ovens battery top and reduced B[a]P releases from this part of the coke ovens.

The B[a]P releases from the tops are not thought to be a major contributor to the overall coke ovens B[a]P releases. Tata is currently achieving an approximate 6% leakage rate for the tops. Through the use of collars and the gradual replacement of the spigots the company expect to comply with the 1% BAT-AEL by the March 2016 deadline.

Trial example – Number 49 Coke-side. Fitted 17/06/15



For fugitive emissions from doors, previously Tata Steel showed that it only has a few percentage points to make up before it can attain the doors 10% BAT-AEL limit value. The company is confident it can achieve this by March 2016.

Since June 2015 Tata has been trialling the use of the US EPA method which assesses the duration of fugitive releases from charging. This approach would provide a direct comparison for compliance against the BAT conclusion. The BAT-AEL is 30 seconds as a monthly mean. The monitoring frequency should aim to assess the equivalent of every oven every month – if 3 oven charges per day are monitored (89 ovens assessed on average a month over a year), then the requirements should be met. Tata confirmed 3 charging assessments per day was feasible.

Based on the company's current view of its coke ovens, Tata Steel will be able to comply with the fugitive door, top and charging BAT-AELs by the March 2016 deadline.

At our last inspection at the coke ovens we noted a significant difference between visible fugitive emissions from the ram side doors and the coke side doors. The ram side seemed to generate more frequent emissions. This difference in performance could be down to officer perception, different practices between the ram side and coke side operators, differences in the performance of the equipment (doors and door cleaners on the guide/ram) and/or differences in the infrastructure such as the gas collection pipework. Tata should investigate the reason(s) for this perceived difference between the fugitive releases between the coke side and ram side doors.

NRW is satisfied that the modified US EPA method proposed by Tata will enable direct comparison with the relevant BAT-AEL limits from March 2016. Improvement Condition (IC) 3 of permit BL7108IM requires the operator to propose a methodology for assessing visible emissions from the coke oven batteries. The methodology shall be equivalent to with the methods identified in BAT Conclusions 44 and 46. At the time of our visit Tata Steel was compiling its response to IC3 and did not anticipate any problems meeting the compliance deadline.

Tata Steel's response to IC3 was subsequently received by NRW on 27 August 2015. Our assessment is detailed in CAR 6002.

Coke ovens oil trials

Previously, Tata has written to NRW describing the trial results, its plans for an extended trial using its own recovered Port Talbot oil and a further trial using Trostre oil as a bulking agent at Morfa Coke Ovens. The trial using Trostre oil started on 15/07/15 and is still in progress. So far little difference has been found between the performance of the Trostre oil and the Port Talbot recovered oils at the Coke Ovens, although the iron (Fe) content in the Trostre oil appears to be higher. A further update should be available in September 2015.

Black pushes

Each oven in a coke oven is slightly tapered with the oven being widest at the coke side and narrowest at the ram side. The ovens at Port Talbot are split into two batteries with 42 ovens being grouped together to form each battery. The coking process relies on the oven walls to heat the coal inside the oven and each wall therefore heats coal on either side of the wall. However the end ovens can suffer from heating problems as one wall is always cooler due to its position at the end of the battery.

The number of visible black pushes appears to have increased in recent months. While inspecting the stockyards area NRW officers have noticed black pushes on multiple occasions. This is acknowledged by Tata Steel and investigations have found that the end ovens and some others are experiencing heating problems which are being addressed as part of the ongoing coke ovens life extension project.

Tata has been monitoring the number of black pushes and has produced a specific recording sheet for its staff to use. The best performance has been around 2 black pushes per day and the worst has been around 10. When the batteries are occasionally fired with coke oven gas (COG), the number of black pushes seems to increase to around 20 per day. The Hub Director is kept informed about the performance of the batteries and the number of black pushes on a weekly basis.

The main problems appear to lie within the end flues of the end ovens. Temperature analysis for the flues appears to indicate a correlation with the occurrence of black pushes. Ovens 1 – 6 are being worked on and the regenerators below oven 1 are being renewed. The remaining ovens are being mapped out over the next few weeks. By mid-November 2015 this mapping work and an action plan will be complete.

NRW will continue to scrutinise the performance of the coke ovens in respect of black pushes, however we are satisfied that Tata Steel has a plan in place to address the cause of these emissions and make the necessary repairs and refurbishments to individual ovens as part of a rolling programme. Progress will be reviewed in Spring 2016.

Air quality response to high levels of PM₁₀ at the Margam Fire Station AURN and Prince Street

There were two PM₁₀ exceedance days on 3 and 4 August 2015 at the AURN. The exceedance on 4 August coincided with an exceedance day at Prince Street. Tata Steel's local air quality management plan for the coke ovens (revision 5) was reviewed and its use on both exceedance days was examined. Tata's staff presented evidence that they had carried out the actions identified in their air quality plan by the use of additional activity checks, increased and/or modified use of the dust suppression water bowsers and submission of a completed checklist of actions. The checklist follows a new template that the SHE Team have developed to aid capture of works area feedback.

It is acknowledged that it is difficult to make production changes e.g. lowering coke output to minimise emissions from Morfa Coke Ovens without increasing the risk of thermal imbalances within the battery and subsequent deterioration and damage to individual ovens. This in turn can generate more fugitive emissions.

One suggestion we would offer (that could better inform Tata's assessments) would be to capture the under firing status of each coke oven battery during the day. If a battery is being fired on coke oven gas rather than blast furnace gas there is a higher risk of black pushes (see above) and hence a higher risk of visible dust releases that could be contributing to elevated PM₁₀ levels.

Other matters

Tata Steel is looking to improve the sinter plant particulate emissions abatement performance by removing the dust from the final stage of the main stack electrostatic precipitators (EPs). This dust contains higher levels of chloride which when recycled directly back into the sinter process adversely affects the performance of the EPs. Most sinter plants across Europe do not recycle this dust back to the sintering process.

Tata wants to trial the dust removal by sucking the accumulated dust from the final stage of the EPs into a vacuum tanker and then adding it to the material in the 'Betsi' lagoon to avoid further handling and storage of this fine EP dust. It is estimated that the EPs produce around 2 tonnes of dust per day. During the trial they will monitor a range of parameters and then review the effect of the trial on particulate and other releases from the sinter plant main stack. Tata estimates the trial will take approximately 1 week. The findings from the trial should be communicated to NRW at the next CapEx meeting.

Conclusions and further actions required

Tata Steel should be able to meet the coke ovens fugitive emissions BAT-AELs by the March 2016 deadline provided that all ongoing plans are implemented on schedule. The life extension project for the coke ovens should address the black push problems being seen from time to time. Progress should be reviewed during Spring 2016 to see the extent of the work required and the plans to complete this part of the work plan. The use of Trostre Works recovered oil has so far produced similar results to the use of other oils. Tata's air quality response for the exceedance days on 3 and 4 August 2015 was in accordance with the company's air quality management plan for the coke ovens.

[END OF SECTION 2]

	EPR Compliance Assessment Report	Report ID: 5956	
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	26 February 2016

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			
-	-	-	-
-		-	-

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**.