Cyfoeth Naturiol Cymru / Natural Resources Wales	**EPR Compliance Assessment Report**	Report ID: 5854

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	11 March 2015			Time in	09.30	Out	11.30
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	27 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	C3		2.1.2 Management techniques and control
	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	A		
	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	C3		6.1.1 Emissions to air
	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	A		
	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	A		
	3. Maintenance records	A		
	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	2	**Total compliance score** (see section 5 for scoring scheme)	8

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

This intervention focused on the Ironmaking part of the steelworks and had three main aims:

1. To review the prolonged bleeder release on Blast Furnace No. 4 on 3 July 2014 (initially assessed in CAR 5643)
2. To review the 'special cause' Blast Furnace No. 4 cast house/taphole event on 15 August 2014
3. To review the iron plating event and associated environmental release on 24 January 2015

A discussion regarding Large Combustion Plant (LCP) emission limits also took place at Tata Steel Energy Control before the main intervention at Ironmaking.

Person(s) present (Office based)

Tata Steel	Richard Leonard	**NRW**	Mark Broom
	Ian Vaughan		Doug Cowie
	Jason Heatman		
	Andrew Townsend		
	Reg Bennett		
	Sean Langstone (LCP only)		
Harsco Metals	Mark Tilling		

LCP emission limits

We met with Energy Control to discuss the use of liquid fuels in Tata's existing LCP at Port Talbot post-2020. The regulatory regime will change from 2020 onwards following the conclusion of the Transitional National Plan (TNP). Tata needs to examine its fuel use data for previous periods between 2012 and 2014 (beyond 12 hours in duration) where blast furnace gas was not available to fire the boilers. This may inform what is achievable in terms of emission limits for NO_x, SO_2 and particulates.

The emission limits for existing LCP (that have been accepted into the TNP) post-2016 have still not been agreed at a national (UK) level. NRW will keep Tata Steel informed of any important developments.

Bleeder valve release 03/07/14

CAR 5643 identified some outstanding actions in relation to the bleeder valve event that took place on 3 July 2014 (UR/14/07A). One of these actions concerned Tata's investigation into the root cause of a solenoid coil failure which led to the north bleeder valve remaining open for an extended period. There was evidence of water ingress in the north bleeder valve's solenoid coil and corrosion of its copper conductor. The area where the coil is located has suffered from the furnace's fire deluge system going off due to surging pressure in the water system. It is possible this may have been the source of the water ingress and the cause of the subsequent corrosion. However the coil is a sealed unit with a continuous rating of IP65 (ingress protection for dust and water jets) and should be able to withstand such environments. The valves are also tested four times every year and Tata has not encountered problems with these coils before.

To overcome this problem, Tata has introduced a 'double-knock' arrangement to initiate the fire water deluge system. This has an extra sensor to reduce the possibility of the system activating un-necessarily. All the solenoid coils fitted to the bleeder valves have also been replaced. The coils are only designed to operate in the event of a bleeder valve release so they are not on a heavy-duty operating regime. Since the release on 3 July 2014 the operating philosophies for both furnaces have been changed, so that the semi-clean bleeder (located on the pipework for the gas cleaning plant) opens before the north, south and centre bleeder valves at the top of the furnace. This approach means that now if a bleeder opens there should be less dust released providing only one valve opens.

Based on the failure mode of the coil, it is possible that frequent exposure to water from the fire deluge system could have contributed to this particular coil failure, but there were a further 13 similar coils that were not affected. The fire water deluge operation has been changed as a precautionary measure. The possibility of a manufacturing defect cannot be discounted. No cause of this particular coil failure could be identified therefore no permit conditions were found to have been breached as a result of this event.

Cast house release 15/08/14

On 15 August 2014 the east taphole at Blast Furnace No. 4 was casting when it suddenly failed and broke up. When the taphole manipulator cover was removed there was a large release of smoke and fumes. Tata attempted to quickly plug the taphole with clay, but halfway through this procedure a fault with the remote clay gun occurred resulting in a failure to close the taphole and a prolonged emission from the cast house. While the furnace wind was reduced, the cast house operators resorted to a hard-wired system with a direct connection to the clay gun and succeeded in plugging the taphole and stopping the emission.

The switch gear, relays and circuits for the taphole equipment has to be close to the clay guns and this case is located in a sub-station basement near the slag cooling pits. Tata believes that there was ingress of sulphurous gases and water that corroded the copper switches in the relays and made them ineffective. As a result the remote control clay gun equipment had a power failure that meant the taphole could not be injected with clay to close it. The ingress problem appears to have also intermittently affected the circuits for the skip and hoist on No. 4 furnace.

As a result of these findings Tata has replaced all the connections with conformally-coated copper ones, rather than original copper versions, in case there is a sulphurous gas or moisture ingress again. The company has also installed a pumping/fan system to prevent water and gas ingress and to keep the basement under positive air pressure. Air-conditioning has been added to improve the environment around the clay gun relays and circuits. A standard maintenance regime is now in place for the sub-station basement area. Finally, all panel connections have been re-made and network connections upgraded with additional redundancy built in.

We have recorded a **Compliance Classification Scheme (CCS) score of 3** in response to the unauthorised release from Blast Furnace No.4 cast house on 15 August 2014 (see photo below). The identified root cause for the failure to maintain the clay gun control circuitry has also been scored as a **CCS3**. Both scores have been recorded under **CCS reference 239007**.

Plating release 24/01/15

On 24 January 2015 molten iron was being poured and plated at pit number 3. At approximately 0930hrs a violent reaction occurred towards the end of the pour sending a sudden release of smoke and fumes into the air. Pouring was immediately halted. The emission resulted in a highly visible smoke cloud above the steelworks (see photo below).

Reactions of this nature can occur when pockets of water within the plating pit become trapped under the advancing molten metal, rapidly superheating the water into steam which then erupts through the surface of the metal and releases fumes.

There was heavy rain the week before the event although there was no high tide at the time. The proximity of ground water to molten metal is believed to increase the risk of having explosions and releases from the plating pit. This observation comes from work carried out on similar operations and incidents in Belgium and Holland. At Port Talbot it is recognised that the tide can influence the level of ground water. On 26 January 2015 the ground water was measured at around 2.5 m below the bottom of pit 3. Work in Belgium suggests that if the ground water is less than 1.7 m from molten metal this can create problems. Based on this information a high ground water level is unlikely to be the cause of this event.

There is some evidence that the wrong (wet) slag could have been used to build the pit. A tundish was being replaced around this time and the slag that should have been used for this replacement could have been used as a base of pit 3. There is also some anecdotal evidence that there was some standing water in the pit before the pour started, but the pits are always inspected by Harsco Metals before pouring. Also the molten metal from the pour had reached the end of the pit when the reaction took place. This might be an indication that the pour was too fast and any water present could not evaporate quickly enough in front of the advancing metal.

Before NRW can reach a final conclusion on the root cause(s) of this event, the potential causes identified above need to be explored with Tata Steel and Harsco Metals personnel. Video footage of the pour into pit 3 on 24 January 2015 also needs to be viewed by the inspecting officers. A follow-up visit will be undertaken to progress our investigations.

Goggle valve (BF4)

During 2013 there was a problem with a goggle valve used to isolate the new cyclone on Blast Furnace No.4 (see CAR 5266). This valve was leaking gas and had to be removed and replaced with a spool piece. On inspection the valve casing was found to have developed a leak. The valve supplier investigated the problem and a new valve was installed instead of the spool piece. After a few weeks of use this replacement valve also developed a leak and it too has now been replaced with a spool for the foreseeable future. Tata will have to use a pressurised goggle valve, find a more robust goggle valve design or continue with the use of a spool.

CAPEX update
Tata are considering some changes to the scope and timing of some of the BAT CAPEX projects. These changes were discussed. Further details will be confirmed during the next CAPEX visit (April 2015).

Plant stops and maintenance
Every quarter the steel plant will go to a reduced level of operation for a period of two weeks. During this fortnight, one furnace will come off wind followed by the second one. At some point during this maintenance, the sinter plant will also stop production. If these operational dates are known it may help to eliminate certain plant and operations from the reported noise problems being reported from residents who claim to be affected by the steelworks. The operator is encouraged to share these dates with NRW to help investigate these noise issues.

Conclusions and further actions required
NRW has reviewed and has been able to close out its investigations into the Blast Furnace No. 4 bleeder valve event of 3 July 2014 and the cast house release on 15 August 2014. No permit non-compliance was identified in relation to the former event, but we have recorded two CCS3 compliance scores for the cast house release (CCS reference 239007).

NRW will propose some possible dates for a follow up visit to progress our investigation into the plating event of 24 January 2015.

[END OF SECTION 2]

Cyfoeth Naturiol Cymru Natural Resources Wales	**EPR Compliance Assessment Report**	Report ID**:** 5854

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	27 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.	✓
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			
N/A		**Recommendation:** Tata needs to examine its fuel use data for previous periods between 2012 and 2014 (beyond 12 hours in duration) where blast furnace gas was not available to fire the boilers. This may inform what is achievable in terms of emission limits for NOx, SO2 and particulates.	To be reviewed in Autumn 2015
N/A		NRW will propose a date and time for a follow-up visit to discuss the plating event of 24 January 2015.	As soon as possible

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.