

Compliance Assessment Report

Report ID:
CAR_NRW0034619

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

Site	Port Talbot Steel Works	Permit Ref	BL7108IM		
Operator/Permit holder	Tata Steel UK Limited				
Regime	Installations				
Date of assessment	30/06/2019	Time in	N/A	Out	N/A
Assessment type	Check Monitoring/Sampling				
Parts of the permit assessed	3 Emissions and Monitoring; 4 Information				
Lead officer's name	Cowie, Douglas				
Accompanied by					
Recipient's name/position	Claire Grainger/ Environment Manager	Date issued	22/01/2020		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	CCS Category	Condition(s) breached
A1 - Specified by permit	A	
C2 - General Management - Management system and operating procedures	A	
E1 - Emissions - Air	C3	3.1.2 Emissions to air
	C3 - Suspended	3.1.2 Emissions to air
	C4	3.1.2 Emissions to air
E3 - Emissions - Surface water	C3	3.1.2 Emissions to water
	C3	3.1.2 Emissions to water
	C3	3.1.2 Emissions to water
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	A	
G2 - Monitoring and Records, Maintenance and Reporting - Records of activity, site diary/journal/events	A	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.

A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,

O = Ongoing non-compliance, not scored.

Number of breaches recorded	6	Total compliance score (see section 5 for scoring scheme)	16.1
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If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

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

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Purpose of visit/assessment

Condition 3.1.2 of Tata Steel's permit requires that the limits given in Schedule 3 of the permit (point source emissions) shall not be exceeded.

Section 4 of Tata Steel's permit contains several conditions in respect of notifications, including notifying breaches of permit conditions and/or emission limits to the regulator.

Schedule 5 of the permit outlines the information that the operator must provide when notifying the regulator and is divided into Part A and Part B. The schedule provides a framework/template for informing and/or notifying NRW in accordance with the requirements of permit condition 4.3.1.

The following operator notifications have been received concerning breaches/exceedances, incidents or accidents which occurred or were notified to us during **Quarter 2 2019** (1 April – 30 June):

QUARTER 2 (April - June) 2019

Notification reference	Date of event	Date of notification	Emission point	Parameter	Source	Emission limit (including unit)	Reference period	Monitoring frequency	Reported result(s)	Measurement uncertainty
S5N/19/17	03-Apr-19	04-Apr-19	A5A	N/A	BF5 Bleeder Valves	No limit applies	N/A	N/A	(see below)	N/A
S5N/19/18	31-Mar-19	09-Apr-19	A55	Sulphur Dioxide	Morfa Main Stack	600 tonnes	Total mass release	Annual	634 tonnes	Verified PRTR figure
S5N/19/19	03-Apr-19	09-Apr-19	A55	Visible Smoke (obscuration)	Morfa Main Stack	Ringelmann 1 (20% obscuration taking into account 95% CI)	Weekly mean	30mins in any day	26.17%	Not defined; inherent uncertainty
S5N/19/20	08-Apr-19	17-Apr-19	A14 A15 A16	Particulate Matter	BOS Secondary FEP North, Centre & South	15.00mg/m3	Daily mean	Continuous measurement	(see below)	+/- 30%
S5N/19/21	22-Apr-19	23-Apr-19	A2	Particulate Matter	Sinter Plant Secondary De-Dust	50.00mg/m3	Daily mean	Continuous measurement	50.85mg/m3	+/- 30%
UR/19/01	26-Apr-19	26-Apr-19	Fugitive emission	N/A	Torpedo rail car spill & hot metal explosion	No limit applies	N/A	N/A	(see below)	N/A
S5N/19/22	23-Apr-19	29-Apr-19	A55	Visible Smoke	Morfa Main Stack	Ringelmann 1 (20% obscuration taking into account 95% CI)	Weekly mean	30mins in any day	25.75%	Not defined; inherent uncertainty
S5N/19/23	29-Apr-19	30-Apr-19	A2	Particulate Matter	Sinter Plant Secondary De-Dust	50.00mg/m3	Daily mean	Continuous measurement	56.40mg/m3	+/- 30%
S5N/19/24	30-Apr-19	02-May-19	A1	Particulate Matter	Sinter Plant Main Stack	40.00mg/m3	Daily mean	Continuous measurement	(see below)	+/- 30%
S5N/19/25	04-May-19	14-May-19	W1	Total Hydrocarbons	Long Sea Outfall	5.00mg/l	Average from 7 x 24hr samples	Weekly	9.06mg/l	+/- 1.0mg/l
S5N/19/26	23-Feb-19	31-May-19	W1	Total Inorganic Nitrogen	Long Sea Outfall	50.00mg/l	Average from 7 x 24hr samples	Weekly	54.72mg/l	+/- 0.1mg/l
S5N/19/27	16-Mar-19	31-May-19	W1	Total Inorganic Nitrogen	Long Sea Outfall	50.00mg/l	Average from 7 x 24hr samples	Weekly	50.47mg/l	+/- 0.1mg/l
S5N/19/28	31-May-19	06-Jun-19	A1	Particulate Matter	Sinter Plant Main Stack	40.00mg/m3	Daily mean	Continuous measurement	(see below)	+/- 30%
S5N/19/29	10-Jun-19	12-Jun-19	A16	Particulate Matter	BOS Secondary FEP South	15.00mg/m3	Daily mean	Continuous measurement	16.68mg/l	+/- 30%
S5N/19/30	11-May-19	20-Jun-19	W1	Total Inorganic Nitrogen	Long Sea Outfall	50.00mg/l	Average from 7 x 24hr samples	Weekly	73.08mg/l 83.61mg/l 71.83mg/l 72.58mg/l	+/- 0.1mg/l
S5N/19/31	25-Jun-19	25-Jun-19	A5A	N/A	BF5 Bleeder Valves	No limit applies	N/A	N/A	(see below)	N/A
S5N/19/32	30-Jun-19	04-Jul-19	A1	Particulate Matter	Sinter Plant Main Stack	40.00mg/m3	Daily mean	Continuous measurement	(see below)	+/- 30%

Compliance assessment
A1: SINTER PLANT MAIN STACK

S5N/19/24: Schedule 5 Part A received 02/05/19 (by email)

Multiple notifiable breaches of the permitted limit for particulates in April 2019

S5N/19/28: Schedule 5 Part A received 06/06/19 (by email)

Multiple notifiable breaches of the permitted limit for particulates in May 2019

S5N/19/32: Schedule 5 Part A received 04/07/19 (by email)

Multiple notifiable breaches of the permitted limit for particulates in June 2019

A1: Sinter plant main stack

Permitted emission limit value (ELV) is 40.00mg/m³ as a daily mean (+/- 30%)

Schedule 5 Part A operator comment:

Regulation 61 actions in progress

Schedule 5 Part B operator comment:

As a result of the Regulation 61 being served on Tata Steel a comprehensive project has been put in place and regular meetings are held with the NRW providing a detailed update on progress to plan.

Please see a copy of the plan attached to this notification covering 2019 Q2 (April, May and June 2019).

Actions proposed to bring particulate emissions from emission point A1 to within 40 mg/Nm ³ as a daily mean	Start	Finish	Owner	Status	Progress
Reduction of air ingress					
Wind main repairs and replacement of 18m section	01-Apr-19	12-Jun-19			Complete
Windmain Double Cone Valves replacements	03-Sep-18	22-Sep-19			Ongoing routine replacement every 4 weeks.
ESP Hopper Conveyor repair / sealing	03-Sep-18	12-Sep-19			80% completed. Leak tests required in September stop
North & South ESP Structural Repairs	03-Sep-18	12-Jun-19			Complete
ESP North and South Hopper Door Sealing	03-Sep-18	22-Sep-19			80% completed. Leak tests required in September stop
North ESP Internal Repairs					
North ESP Field Repairs	03-Sep-18	30-Sep-18			Completed and all fields operational
Improved Instrumentation and ESP Control Optimisation					
Installation of new CEMS instrumentation into North and South ESP ducting systems, (Inlet and Outlet)	11-Jun-18	01-Dec-18			Complete
North and South ESP Control Optimisation	11-Jun-18	31-Aug-19			Control optimisation ongoing , rapping timings reduced on first field field of both ESPs. Plan to trial power off rapping and increased rapping on last fields going forward. weekly meeting held. Project team investigating ESP Hardware, and Swansea university assisting project team with Process influences.

Waste Gas System Maintenance Strategy					
Double Dome Valve Improved Maintenance Strategy Implementation	03-Sep-18	on-going			Ongoing process of DDV and seal changes
North and South ESP Improved Maintenance Strategy Implementation	03-Sep-18	on-going			Next ESP maintenance due in Sept 2019
Reduction of the chloride content of the sinter feed material					
Treatment of Sinter Plant ESP dusts and BF flue dusts - trial 1	01-Sep-18	12-Nov-18			Enquiry issued waiting proposals from Suppliers. Tenders returns due May 2019. CAPEX submissions planned July 2019. Removal of ESP material Trial discussed with NRW. Trial agreed by them in principle
Treatment of Sinter Plant ESP dusts and BF flue dusts - trial 2	12-Nov-18	01-Sep-21			Group environment developing process parameters based on trial results. Terex, CDE, Danelli Corus, Darlow Boyd & Weir engaged, Samples sent, awaiting proposals from suppliers. Trial to be proposed on removal of ESP dust
Subject to outcomes of trial and feasibility study: Full Scale Plant CAPEX Scheme	12-Nov-18	01-Sep-21			Resource risk, TCE engineer now recruited.
Definition	12-Nov-18	30-Jun-19			Plan being developed on way forward
Implementation of project	01-Oct-19	31-Mar-21			Plan being developed on way forward
Commissioning and optimisation	01-Apr-21	30-Jun-21			Plan being developed on way forward
Implementation of scheme and preparation of materials	01-Jul-21	01-Sep-21			Plan being developed on way forward
In the event that the Revert Washing scheme is not viable, alternative options to include fabric bag filter systems will be evaluated, an option selected, developed and installed.	01-Sep-18	01-Sep-21			Working with Lodge Cotrell and Primetals to investigate bypass bag filter and end of line solution Potential for weathering BFFD if levels return. Currently running at 1.0% BFFD in sinter blend

NRW has agreed to accept a monthly written Schedule 5 notification from Tata in the event of continued breaches of the particulate daily mean ELV at A1.

After applying the appropriate measurement uncertainty factor, the following exceedance recorded at A1 and notified within **S5N/19/24** remains non-compliant with the permitted limit and Condition 3.1.2:

06/04/2019: 60.36mg/m³

One CCS Category 3 score (suspended: see below) has been recorded in response to this non-compliance.

We have assessed and consolidated all subsequent notified exceedances of this emission limit during Quarter 2 2019 under a single CCS3 score for **S5N/19/24** confirmed above, in line with our Compliance Classification Scheme [CCS]. The consolidated notifications are listed below:

S5N/19/28 received on 06/06/19

S5N/19/32 received on 04/07/19

Sinter Plant improvement plan

Tata Steel has submitted an improvement plan in response to an EPR Regulation 61 (Statutory) Information Notice issued by NRW. This plan outlines the steps Tata Steel will take to achieve compliance with the relevant ELV for particulates at emission point A1. NRW can suspend CCS scores while an operator is working towards compliance (see Principle 5 and Annex 4 of our Compliance Classification Scheme [CCS] (version 3, 26 March 2013).

We have **suspended** the CCS3 compliance score for the particulates ELV breach at emission point A1 identified above. Compliance with this ELV has since been reviewed at regular intervals by NRW during 2019, and our assessments captured in relevant compliance assessment reports.

The **Summary and actions required** section of this report (below) also discusses Tata Steel's improvement plan.

A2: SINTER PLANT SECONDARY DE-DUST

S5N/19/21: Schedule 5 Part A received 23/04/2019 (by email)

Daily mean (average) for particulates recorded at emission point A2:

22/04/2019: 50.85mg/m³

S5N/19/23: Schedule 5 Part A received 30/04/2019 (by email)

Daily mean (average) for particulates recorded at emission point A2:

29/04/2019: 56.40mg/m³

A2: Sinter Plant Secondary De-dust

Permitted limit is 50.00mg/m³ as a daily mean (+/- 30%)

Schedule 5 Part A operator comment:

S5N/19/21: Investigation ongoing.

S5N/19/23: Inspections carried out on System, PCME unit and strand discharge sprays.

Schedule 5 Part B operator comment:

S5N/19/21: Gradual increase in the de-dust readings through the shift, Rappers altered but with little success. Precip and chain conveyors checked out ok, PCME filters checked and cleaned but no change. Discharge end spray bar valves opened to full and levels dropped.

S5N/19/23: Inspections were carried out on the Dedust system including the PCME Particulate Monitor and Strand discharge sprays. Some issues were found with the Denseveyor. There were minor changes made to the discharge sprays to help with efficiency which kept the dust emissions under the permitted levels. The Denseveyor issues were repaired at the next Planned Maintenance stop in Week 19 2019.

After applying the appropriate measurement uncertainty factor, these exceedances remain within the permitted limit of 50.00mg/m³. No non-compliance (CCS) scores have been applied to these

events.

IRONMAKING

S5N/19/17: Schedule 5 Part A received 04/04/2019 (by email).

Release of particulates and blast furnace gas from No.5 Blast Furnace bleeder valves (emission point A5A)

03/04/2019 09:25hrs

A5A: Blast Furnace 5 bleeders

No emission limit values (ELVs) apply to emissions/releases from A5A

Schedule 5 Part A operator comment:

Gas surge resulting in Bleeder opening @ 09.25am. Snort opened to relieve pressure. Investigations ongoing.

Schedule 5 Part B operator comment:

On the 3rd April, the furnace process had been relatively stable with regular burden descent and stable differential pressure but with regular gas surges. The production rate was reduced at the time due to balancing production with the BOS Plant speed of operation. The furnace process was very sensitive to disturbances which would increase the severity of the gas surges with the larger ones resulting in bleeder openings. The furnace gas would surge up the walls of the furnace short circuiting the burden and so increasing high top pressure to the point at which the bleeders opened.

On the 3rd April the bleeder opening occurred during a period of particularly poor quality direct charge iron ore bed containing a large amount of fines. The fines originated from a cargo of iron ore lump that had been screened out from sinter feed. Initially the screenings were clean, however the fines content increased towards the end of the pile. The increased fines loading reduced the permeability of the ferrous burden so disrupting the process enough to open the north and semi-clean bleeders for 15 seconds.

Although this bleeder opening event has been attributed to an individual disturbance, the sensitivity of the furnace process with gas surges has been common throughout the period. Work is ongoing with burden distribution to improve the stability of the blast furnace process to make it more robust to disturbances. This includes operating on a more open centre profile to avoid blowing through at the furnace walls, as blow throughs at the furnace walls are more likely to result in a bleeder opening.

Work is ongoing to understand the impact of Morfa coke quality as Blast Furnace 4 has seen improved process stability from operating on an imported coke blend. Initial work suggests that a wider size distribution may be resulting in less permeable coke layers. Lower blowing volumes also make the process more susceptible to blowing through at the furnace walls resulting in bleeder openings. For this event the furnace operators reduced blast volume to reduce the pressure in the furnace to allow the bleeders to shut again.

Conclusions

Blast Furnace 5 furnace top bleeder valves opened on 3rd April due to a disturbance to the furnace process caused by increased fines loading from the direct charge bed. This resulted in a

blow through which increased high top pressure to the point at which the bleeders opened.

- 1. The furnace process had been sensitive to disturbances resulting in instability and increases in the severity of the blow through making bleeder openings more likely.*
- 2. Blast Furnace 5 north and semi-clean bleeder valves functioned correctly by opening at the correct limits when the high top pressure deviated from its set-point.*
- 3. The process team leader and senior operator opened the cold blast snort valve to reduce furnace pressure and close the bleeder valves.*
- 4. The Davey cone opened in an attempt to control / relieve furnace top pressure.*

Recommendations

- 1. Plan to be put in place to reclaim clean sections of direct charge bed and rescreen the rest of the bed – Complete*
- 2. Plan a pre-screening trial of Morfa coke to improve the size distribution and improve the permeability of the coke layer – Complete*

Targeted compliance interventions are undertaken periodically by NRW to understand the root cause(s) of any notifiable blast furnace bleeder valve releases.

S5N/19/31: Schedule 5 Part A received 25/06/2019 (by email).

Release of particulates and blast furnace gas from No.5 Blast Furnace bleeder valves (emission point A5A)

25/06/2019 07:48hrs

A5A: Blast Furnace 5 bleeders

No emission limit values (ELVs) apply to emissions/releases from A5A

Schedule 5 Part A operator comment:

Gas surge resulting in Bleeder opening @ 07:48am. Snort opened to relieve pressure. Investigations ongoing.

Schedule 5 Part B operator comment:

On the 25th June, the furnace process had been recovering from a shutdown due to a breakout of iron on the East main iron runner. The furnace was shutdown unplanned at 02:30am on the 24th June and was blown-in at 06:20am. The volume increased to the minimum set-point for coal and oxygen by 06:55am. However the burden did not descend on its own after waiting for a period of time to see if it would start to descend. The differential pressure increased throughout this period with still no sign of burden descent.

The operator decided to wait for good iron flow from the taphole as well as slag flow rather than attempting an earlier check on the furnace to establish burden decent. Just prior to checking the furnace the burden slipped on its own at 07:47am, after an hour with running on minimum coal and oxygen. The burden slipped to 5.4m and furnace gas surged up the walls of the furnace, short circuiting the burden and so increasing high top pressure to the point at which the bleeders opened.

The combination of having to shutdown the furnace unplanned due to the East main iron runner breakout (with the furnace shutdown for 28 hours before returning to blast) as well as waiting too long to check the furnace to establish burden descent, made it more likely the bleeders could

open on this recovery. In this instance the bleeders did open on relatively low pressure. To reduce the possibility of the bleeder opening on what was likely to be a difficult recovery, a check should have been attempted earlier to avoid a larger burden slip.

Conclusions

- 1. Blast Furnace 5 top bleeder valves opened on 25th June while recovering the furnace from an unplanned shutdown.*
- 2. The furnace slipped to 5.4m during the blow in while on minimum volume for an hour instead of checking the furnace earlier to establish burden descent.*
- 3. Blast Furnace 5 north and semi-clean bleeder valves functioned correctly by opening at the correct limits when the high top pressure deviated from its set-point.*
- 4. The process team leader and senior operator opened the cold blast snort valve to reduce furnace pressure and close the bleeder valves.*
- 5. The Davey cone opened in an attempt to control / relieve furnace top pressure.*

Recommendations

- 1. Investigate reason for East main iron runner breakout to avoid these incidents that result in unplanned shutdowns - Complete*
- 2. Review bleeder opening event with operator to understand learnings around aiming to check the furnace earlier to avoid large burden slips and potential bleeder openings - Complete*

Targeted compliance interventions are undertaken periodically by NRW to understand the root cause(s) of any notifiable blast furnace bleeder valve releases.

UR/19/01: Schedule 5 Part A received 26/04/2019 (by email).

Molten iron, particulate and fume release following a molten metal spill and explosion at the CES Curve rail tracks

Start time	End Time
26/04/2019 03:37hrs	26/04/2019 08:38hrs (approx.)

No emission limit values (ELVs) apply to fugitive emissions from this area of the steelworks

Schedule 5 Part A operator comment:

Whilst moving two torpedoes by locomotive between Blast Furnace 5 and the BOS plant, one of the torpedoes tilted resulting in a loss of containment of molten iron onto the railways tracks.

This led to reactions with water on the ground causing particulate emissions, some minor fires within the local vicinity and damage to the rail tracks and surrounding buildings.

The emergency services were immediately called at 03.38am, they attended site and a Major Emergency was declared. The Blast Furnaces were also brought off wind in a safe and controlled manner.

At approximately 08.38am the emergency services were stood down, and departed site.

We are currently assessing the plant conditions in order to bring the Blast Furnaces back online, albeit at a reduced production rate.

This incident remains the subject of ongoing formal investigations and therefore the

updated information normally provided within a Schedule 5 Part B notification is not yet available.

This incident has been formally investigated by the Health & Safety Executive (HSE), alongside a Tata Steel (internal) company investigation. These investigations are ongoing and NRW will provide support to the HSE as necessary.

The environmental impact of this incident appears to have been short term (explosion and fume release). No persistent environmental impacts (attributable to this incident) have been identified so far, however the incident has resulted in damage to infrastructure within the steelworks and operational disruption. The impact could have been much worse had the explosion occurred during a daytime shift.

No EPR permit breaches associated with this incident have been identified at the time of writing. However, we will review this incident with Tata Steel once the relevant investigation findings become available.

BASIC OXYGEN STEELMAKING (BOS) PLANT

S5N/19/20: Schedule 5 Part A received 12 June 2018 (by email).

Temporary loss of monitoring data telemetry between 04 – 08 April 2019

A14: BOS Plant Secondary FEP North

A15: BOS Plant Secondary FEP Centre

A16: BOS Plant Secondary FEP South

Permitted limit is 15.00mg/m³ as a daily mean (+/- 30%)

Schedule 5 Part A operator comment:

During the days of

04/04/2019

05/04/2019

06/04/2019

07/04/2019

08/04/2019

The connection from the monitor was lost on the 04th April and was restored on the 9th April.

An investigation is currently being carried out.

Schedule 5 Part B operator comment:

Secondary Fume Extraction monitors for Fans 4, 5 and 6 failed to report readings for 6 days between 04/04/19 and 09/04/19. Monitors brought back online on 10/04/19.

Conclusions:

The root cause was a WiFi failure to Operator's device. Operator identified and removed a cable that was pulling the network down.

Data was sent to an environmental engineer (recorded by the SCADA) to demonstrate that the monitors were working and displaying on the SCADA just not being copied to PI.

This appears to be a monitoring data telemetry issue, rather than an actual loss of CEMS monitoring capability at emission points A14, A15 and A16. NRW understands the telemetry failure was temporary, it has not affected the actual monitoring instruments themselves and the process control platform used routinely by Tata Steel personnel was unaffected.

At the time of writing there is no evidence of a permit breach associated with this issue, however the monitoring (and telemetry) arrangements for the BOS Secondary Fume Extraction systems will be reviewed during the next targeted compliance intervention at the BOS Plant.

S5N/19/29: Schedule 5 Part A received 12/06/2019 (by email).

Daily mean (average) for particulates recorded at emission point A16:

10/06/2018: 16.68mg/m³

A16: BOS Plant Secondary FEP South

Permitted limit is 15.00mg/m³ as a daily mean (+/- 30%)

Schedule 5 Part A operator comment:

Investigations ongoing.

Schedule 5 Part B operator comment:

Ht 06 poor fumes throughout blow/sec vent 5 PM/-5.6 MB.

Offline cleaning regime to be completed more frequently when suction begins to decrease.

FEP 5 outage on going due to project work. Suction decreased until FEP 5 back online.

Offline cleaning carried out by shifts in addition to ongoing maintenance being carried out on FEP by engineering.

Filter renewal maintenance was undertaken throughout June on FEP 5 and 6. A breach on stack 6 was recorded for Fan 6 10.06.19. Maintenance of the FEP ongoing. FEP 5 brought back online 02.07.19

After applying the appropriate measurement uncertainty factor, this exceedance remains within the permitted limit of 15.00mg/m³. No non-compliance (CCS) score has been applied to this event.

SURFACE WATERS

S5N/19/25: Schedule 5 Part A received 14/05/2019 (by email)

Weekly average for total hydrocarbons recorded at emission point W1:

28/04/2019 – 04/05/2019: 9.06mg/l

W1: Long Sea Outfall

Permitted limit for discharge is 5.00mg/litre

The operator has specified that a measurement uncertainty factor of +/- 1.00mg/l should be applied to the reported result.

Schedule 5 Part A operator comment:

Weekly averages of daily composite samples taken between 28/04/2019 and 04/05/2019.

Reported weekly averages since elevated week are within permitted limit.

Source of exceedance is under investigation

Schedule 5 Part B operator comment:

The weekly average of daily composite samples for W1 Long Sea Outfall w/c 28 April 2019 was reported to be 9.1 mg/l, above the oil limit of 5 mg/l.

Based on analysis of sump samples taken across site, ongoing operations and meteorological data, evidence suggests a major contributor was a internal sump within the Coke Ovens area.

This does not rule out other contributions from other areas of the site.

Improvement strategies put in place since the breach event include the weekly distribution of effluent flash reports to works areas.

After applying the appropriate measurement uncertainty factor, the following exceedance recorded at W1 during Quarter 2 2019 and notified within **S5N/19/25** remains non-compliant with the permitted limit and Condition 3.1.2:

28/04/2019 – 04/05/2019: 9.06mg/l

One CCS Category 3 score has been recorded in response to this non-compliance.

S5N/19/26: Schedule 5 Part A received 31/05/2019 (by email)

Weekly average for total inorganic nitrogen recorded at emission point W1:

17/02/2019 – 23/02/2019: 54.72mg/l

S5N/19/27: Schedule 5 Part A received 31/05/2019 (by email)

Weekly average for total inorganic nitrogen recorded at emission point W1:

10/03/2019 – 16/03/2019: 50.47mg/l

W1: Long Sea Outfall**Permitted limit for discharge is 50.00mg/litre**

The operator has specified that the following measurement uncertainty factors for the constituent compounds of total inorganic nitrogen are associated with the reported results:

Substance	Uncertainty (+/-)
Nitrate (NO-3)	0.1mg/l
Nitrite (NO-2)	0.05mg/l
Ammonia (NH3)	0.056mg/l

We have applied the uncertainty factor for nitrate (NO₃) to the measured results. The proportions of [ammonia to nitrite to nitrate] within the effluent generated by Tata Steel and discharged at W1 are not known. The on-site effluent treatment plant utilises biological treatment, therefore it is assumed that nitrification of ammonia has already taken place before treated effluent is discharged at W1. Therefore, we have used the compound with the widest uncertainty factor (NO₃) and which is the most likely to be present in the treated effluent because of nitrification.

Schedule 5 Part A operator comment:

S5N/19/26: Reported weekly averages since elevated week have been within permitted limit. Source of exceedance is under investigation.

S5N/19/27: Reported weekly averages since elevated week have been within permitted limit. Source of exceedance is under investigation.

Schedule 5 Part B operator comment:

During the period Q4 2017 to Q4 2018, a number of Part A notifications were submitted for breaches of the weekly average ammonia, nitrite and nitrate limit at W1 Long Sea Outfall.

Issues around ammonia incinerator and ammonia still stability during this period led to increased ammonia, nitrate and nitrite (A+N+N) concentrations in treated wastewater.

S5N/19/26: The weekly average of daily composite samples for W1 Long Sea Outfall w/c 17 February 2019 was 54.72 mg/l, above the A+N+N limit of 50 mg/l.

S5N/19/27: The weekly average of daily composite samples for W1 Long Sea Outfall w/c 10 March 2019 was 50.47 mg/l, above the A+N+N limit of 50 mg/l.

The improvements made to the By-products Plant during Q4 2017 have required a period of process optimisation.

The stability of both the incinerators and stills has improved since the upgrade and we are now seeing improvement through less prolonged periods of elevated A+N+N at the LSO and lower average concentrations.

Further improvements to the control and optimisation of the still and the operation of the BET plant were made during Q2 2019 and, to date, have reduced the loading of total nitrogen in the final effluent discharged from W1 Long Sea Outfall.

After applying the appropriate measurement uncertainty factor, the following exceedance recorded at W1 during Quarter 1 2019 and notified within **S5N/19/26** remains non-compliant with the permitted limit and Condition 3.1.2:

17/02/2019 – 23/02/2019: 54.72mg/l

One CCS Category 3 score has been recorded in response to this non-compliance.

We have assessed and consolidated all subsequent notified exceedances of this emission limit during Quarter 1 2019 under a single CCS3 score for **S5N/19/26** confirmed above, in line with our Compliance Classification Scheme [CCS]. The consolidated notifications are listed below:

S5N/19/27 received on 31/05/2019

S5N/19/30: Schedule 5 Part A received 20/06/2019 (by email)

Weekly average for total inorganic nitrogen recorded at emission point W1:

05/05/2019 – 11/05/2019: 73.08mg/l

12/05/2019 – 18/05/2019: 83.61mg/l

19/05/2019 – 25/05/2019: 71.83mg/l

26/05/2019 – 01/06/2019: 72.58mg/l

W1: Long Sea Outfall

Permitted limit for discharge is 50.00mg/litre

The operator has specified that the following measurement uncertainty factors for the constituent compounds of total inorganic nitrogen are associated with the reported results:

Substance	Uncertainty (+/-)
Nitrate (NO-3)	0.1mg/l
Nitrite (NO-2)	0.05mg/l
Ammonia (NH3)	0.056mg/l

We have applied the uncertainty factor for nitrate (NO-3) to the measured results. The proportions of [ammonia to nitrite to nitrate] within the effluent generated by Tata Steel and discharged at W1 are not known. The on-site effluent treatment plant utilises biological treatment, therefore it is assumed that nitrification of ammonia has already taken place before treated effluent is discharged at W1. Therefore, we have used the compound with the widest uncertainty factor (NO-3) and which is the most likely to be present in the treated effluent because of nitrification.

Schedule 5 Part A operator comment:

Weekly averages of daily composite samples taken between 05/05/2019 and 01/06/2019

Source of exceedance has been investigated and is outlined in accompanying Part B notification.

Schedule 5 Part B operator comment:

During May 2019, four weekly composite samples for W1 Long Sea Outfall were reported to be above the ammonia, nitrite and nitrate (A+N+N) limit:

w/c 05/05/2019 - 73.08 mg/l

w/c 12/05/2019 - 83.61 mg/l

w/c 19/05/2019 - 71.83 mg/l

w/c 26/05/2019 - 72.58 mg/l

Insufficient dosing of caustic soda into the ammonia tank at the Morfa Byproducts Plant was found to be the root cause of high A+N+N concentrations in treated wastewater.

Issues leading to insufficient dosing of caustic soda have now been rectified.

Further improvements to the control and optimisation of the still and the operation of the BET plant are planned and should further reduce the incidence of A+N+N breaches.

After applying the appropriate measurement uncertainty factor, the following exceedance recorded at W1 during Quarter 2 2019 and notified within **S5N/19/30** remains non-compliant with the permitted limit and Condition 3.1.2:

05/05/2019 – 11/05/2019: 73.08mg/l

One CCS Category 3 score has been recorded in response to this non-compliance.

We have assessed and consolidated all subsequent notified exceedances of this emission limit during Quarter 2 2019 under a single CCS3 score for **S5N/19/30** confirmed above, in line with our Compliance Classification Scheme [CCS]. The consolidated (or partially consolidated) notifications are listed below:

S5N/19/34 received on 23/07/2019

S5N/19/43 received on 10/09/2019

COKE OVENS

S5N/19/18: Schedule 5 Part A received 09/04/2019 (by email).

Annual mass release for sulphur dioxide (SO₂) recorded at emission point A55:

2018: 634.00 tonnes

A55: Morfa Main Stack

Permitted limit is 600.00 tonnes/year

The operator has not specified a measurement uncertainty factor for the reported annual mass release. However, the same figure has been reported by Tata Steel to the UK's Pollutant Release & Transfer Registry (PRTR), which is verified annually.

Schedule 5 Part A operator comment:

This figure has been taken from the 2018 mass release calculation undertaken to inform the annual Pollution Inventory.

Schedule 5 Part B operator comment:

The amount of sulphur dioxide emitted from Morfa Main Stack during 2018 was calculated to be 634 tonnes, against a permit limit of 600 tonnes.

This figure was derived during the completion of the annual Pollution Inventory, based on COG and BFG H₂S content and a total gas input.

An analysis of previous years data shows that a higher proportion of COG was used for underfiring the Coke Oven batteries than in years where the annual emission was below the permit limit. For example, in 2018 12% of the underfiring fuel was COG, compared to 6% in 2013.

Where conditions allow, the preferred fuel for underfiring is BFG, however during 2018 there was a period of rolling boiler outages for maintenance and restricted BFG supply during the BF5 reline. This may have further restricted options for beneficial use of COG resulting in a higher proportion of use in underfiring the Coke Ovens batteries throughout the year than if all COG end-users were operational, resulting in higher than normal emissions of SO₂ from A55 Morfa Main Stack.

The exceedance for SO₂ (2018 annual mass release) recorded at A55 is non-compliant with the permitted limit and Condition 3.1.2. **One CCS Category 3 score** has been recorded in response to this non-compliance.

We accept the explanation provided by the operator in respect of this permit breach, which aligns with the pattern of asset maintenance and/or repairs observed at the steelworks during 2018. The shutdown of Blast Furnace No.5 from mid-September 2018 onwards would be expected to have an impact on the availability of blast furnace gas fuel (with lower sulphur content) for the Coke

Ovens.

S5N/19/19: Schedule 5 Part A received 09/04/2019 (by email).

Weekly mean (average) for visible smoke obscuration recorded at emission point A55:

03/04/2019: 28.67% Obscuration

04/04/2019: 36.63% Obscuration

05/04/2019: 35.93% Obscuration

Weekly average: 26.17%

S5N/19/22: Schedule 5 Part A received 29/04/2019 (by email).

Weekly mean (average) for visible smoke obscuration recorded at emission point A55:

23/04/2019: 27.70% Obscuration

25/04/2019: 26.60% Obscuration

26/04/2019: 30.46% Obscuration

27/04/2019: 35.47% Obscuration

Weekly average: 25.75%

A55: Morfa Main Stack

Permitted limit is 20% obscuration (Ringelmann 1) over a maximum of 30 minutes in any day, expressed as a weekly mean value

The Ringelmann Smoke Chart (BS 2742) is used to measure the smoke density or opacity (obscuration) of stack emissions. The method allows visual comparison of emissions against a five-step graduated chart with progressively darker shades of grey between white and black. The method has limitations in that it relies on empirical measurements, the judgement of the observer and can be influenced by variations in physical conditions e.g. weather. Therefore, there is inherent uncertainty (which is difficult to quantify) when obtaining measurements using Ringelmann.

NRW understands that Ringelmann 1 corresponds to 20% obscuration according to the five-step scale outlined in the current published version of BS 2742 (2009).

Schedule 5 Part A operator comment:

S5N/19/19: Changed to Blast Furnace Gas firing on both batteries. Investigation ongoing.

S5N/19/22: Return to Blast Furnace Gas under firing as soon as reasonably practicable.

Schedule 5 Part B operator comment:

S5N/19/19: The issues began while the Morfa coke ovens were underfiring on Coke Oven Gas Fuel. The Fuel source was then changed to Blast Furnace Gas underfiring on 05/04/19 after 13:00.

A grouting programme is now underway to prevent further events.

S5N/19/22: Due to reduced Blast Furnace availability there was a reduction in Blast Furnace Gas (BFG) being utilised which resulted in increased Coke Oven Gas being used in the batteries

under firing system.

April 23rd: There were some issues with our Calorific Value (CV) control (due to low incoming CV on the BFG). Work was done to change a BFG mixer box on this date as well which may have had an impact

April 24th: Air-intake box was removed to install bus flue frames after regenerator repairs. Also issues with No 42a Waste gas valve sticking open.

We note that the weekly mean obscuration value has been included in accordance with the permit reporting requirements. This value has been used to assess compliance with the permitted limit.

The following exceedance recorded at A55 and notified within **S5N/19/19** remains non-compliant with the permitted limit and Condition 3.1.2:

Weekly average: 26.17%

One CCS Category 4 score has been recorded in response to this non-compliance.

We have assessed and consolidated all subsequent notified exceedances of this emission limit during Quarter 2 2019 under a single CCS4 score for **S5N/19/19** confirmed above, in line with our Compliance Classification Scheme [CCS]. The consolidated notifications are listed below:

S5N/19/22 received on 29/04/19

In our previous reports we highlighted that the monitoring and reporting arrangements for visible smoke obscuration at emission point A55 require clarification. Table S3.1 of the installation permit and Form Coke CEMS Smoke may also require updating to ensure this emission limit and monitoring standard is accurately and correctly reflected in the permit. A targeted compliance intervention will be arranged to address this issue initially, with any agreed changes being incorporated in a future permit variation.

Summary and actions required

Permit compliance

Natural Resources Wales (NRW) has consolidated permit compliance scores within this calendar quarter where appropriate and in line with our Compliance Classification Scheme (CCS).

Our assessment of notifications received during Quarter 2 2019 has concluded **five CCS Category 3 breaches** and **one CCS Category 4 breach** of the operator's permit conditions have occurred in response to notified exceedances of permitted emission limit values (ELVs) at the following emission points:

- A1 Sinter Plant Main Stack (particulates)
- A55 Morfa Main Stack (visible smoke)
- A55 Morfa Main Stack (sulphur dioxide – annual mass release)
- W1 Long Sea Outfall (total hydrocarbons)
- W1 Long Sea Outfall (total inorganic nitrogen)

Of the five CCS3 breaches, one score has been suspended (see A1 below).

The EC Industrial Emissions Directive (IED) introduces a stricter environmental compliance regime for Tata Steel's operations at Port Talbot and reflects a wider effort to improve the environmental performance of industry across Europe. NRW has a duty to enforce these new emission limits (BAT-AELs and BAT-AEPLs) in Wales, but we remain committed to working with Tata Steel to improve the environmental performance of Port Talbot steelworks.

Emission point A1

Tata Steel currently has an agreed improvement plan in place in relation to ongoing breaches of the permitted emission limit (ELV) at A1. This plan outlines a pathway towards sustained compliance with the limit for particulates. Progress against this plan has been captured and recorded in subsequent inspection reports during 2018-19.

We have **suspended** the CCS3 score identified in this report while the operator's improvement plan is active.

If there is slippage or unjustified deviation from this plan, or we detect any sustained deterioration in emissions at A1, existing CCS scores will be unsuspended, and further CCS scores may be applied. We will also consider enforcement action in line with NRW's published Enforcement & Prosecution Policy.

Emission points A55 & W1

This CAR form includes a **Warning** in response to the four CCS3 breaches and single CCS4 breach identified at emission points A55 and W1.

Emission point A5A

Targeted compliance interventions are undertaken periodically by NRW to understand the root cause(s) of any notifiable blast furnace bleeder valve releases. The outcomes from these interventions are confirmed separately.

Torpedo rail car incident 26 April 2019

This incident remains the subject of ongoing formal investigations and therefore the updated information normally provided within a Schedule 5 Part B notification is not yet available. We will review this incident with Tata Steel and/or the HSE once the relevant investigation findings become available.

Areas requiring further attention/action

In our previous reports we highlighted that the monitoring and reporting arrangements for visible smoke obscuration at emission point A55 require clarification. Table S3.1 of the installation permit and Form Coke CEMS Smoke may also require updating to ensure this emission limit and monitoring standard is accurately and correctly reflected in the permit. A targeted compliance intervention will be arranged to address this issue initially, with any agreed changes being incorporated in a future permit variation. **(Action carried forwards)**

[END OF SECTION 2]

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0034619**

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

Site	Port Talbot Steel Works	Permit Ref	BL7108IM
Operator/Permit holder	Tata Steel UK Limited	Date	30/06/2019

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

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.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			
E3	C3	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	31/03/2020
E3	C3	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	31/03/2020
E3	C3	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	31/03/2020
E1	C3	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	31/03/2020
E1	C3	Compliance plan submitted and agreed. SCORE SUSPENDED. IGNORE ACTION DATE - not applicable.	31/03/2020
E1	C4	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	31/03/2020

Section 5 – Compliance notes for the Operator

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

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

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

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

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

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

Non-compliance scores and categories

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

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

Section 6 – General information

Data protection notice

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

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

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

Customer charter

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

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.