Cyfoeth Naturiol Cymru Natural Resources Wales

Compliance Assessment Report

Report ID: CAR_NRW0033268

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	31/12/2018	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	21/01/2020		

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
	C3 - Suspended	3.1.2 Emissions to air
	C3 - Suspended	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	**7**	**Total compliance score** (see section 5 for scoring scheme)	16

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

Site description

Tata Steel UK Ltd (Tata Steel) 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). Tata Steel has several defined industrial 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 steel). The permit also covers coke making and the reception, stockpiling and blending of raw iron making materials. Four other companies – Cambrian Stone, Harsco Metals, Runtech and ICL – are contracted to undertake their own permitted activities at the steelworks on Tata Steel's behalf.

Purpose of visit/assessment

Condition 4.3.1(a) of permit BL7108IM requires the operator to inform Natural Resources Wales (NRW) in the event that the operation of the (permitted) activities gives rise to an incident or accident which significantly affects or may significantly affect the environment.

Condition 4.3.1(b) of permit BL7108IM requires the operator to inform NRW in the event of a breach of any permit condition.

Condition 4.3.2 specifies that any information provided under condition 4.3.1 where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in Schedule 5 to this permit within the time period specified in that schedule.

Schedule 5 of the permit outlines the information that the operator must provide 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 condition 4.3.1.

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

The following operator notifications have been received concerning breaches/exceedances, incidents or accidents which occurred or were notified to us during **Quarter 4 2018** (1 October – 31 December):

<u>Sinter Plant</u>

1. **S5N/18/97** received on 08/10/18 – A2 Sinter Plant Secondary De-dust
2. **S5N/18/102** received on 15/10/18 – A2 Sinter Plant Secondary De-dust
3. **S5N/18/104** received on 01/11/18 – A1 Sinter Plant Main Stack
4. **S5N/18/106** received on 03/12/18 – A1 Sinter Plant Main Stack
5. **S5N/18/111** received on 02/01/19 – A1 Sinter Plant Main Stack

<u>Ironmaking</u>

1. **S5N/18/98** received on 08/10/18 – A4A Blast Furnace 4 bleeders
2. **S5N/18/101** received on 11/10/18 – A4A Blast Furnace 4 bleeders

Surface waters

1. **S5N/18/99** received on 09/10/18 – W1 Long Sea Outfall
2. **S5N/18/100** received on 11/10/18 – W5 Cooling Water Discharge
3. **S5N/18/107** received on 11/12/18 – W1 Long Sea Outfall
4. **S5N/18/109** received on 02/11/18 – W1 Long Sea Outfall

Coke Ovens

1. **S5N/18/103** received on 31/10/18 – A55 Morfa Main Stack
2. **UR/18/105** received on 06/11/18 – A54 Morfa Coke Oven Batteries
3. **UR/18/108** received on 11/12/18 – A54 Morfa Coke Oven Batteries
4. **UR/18/112** received on 04/01/19 – A54 Morfa Coke Oven Batteries

Energy

1. **S5N/18/110** received on 17/12/18 – A50 Service Boilers 4 & 5
2. **S5N/18/113** received on 18/01/19 – A50 Service Boilers 4 & 5

Compliance assessment

A1: SINTER PLANT MAIN STACK

S5N/18/104: Schedule 5 Part A received 01 November 2018 (by email)

Daily mean (average) for particulates recorded at emission point A1:

01/10/2018: 48.85 mg/m3
03/10/2018: 41.74 mg/m3
18/10/2018: 42.85 mg/m3
22/10/2018: 56.81 mg/m3
25/10/2018: 49.94 mg/m3
29/10/2018: 43.83 mg/m3

A1: Sinter plant main stack

Permitted limit is 40.00mg/m3 as a daily mean

The operator has specified that a measurement uncertainty factor of +/- 30% should be applied to the reported results.

Schedule 5 Part A operator comment:

Dual fan operation 01st, 3rd & 18th

Single Fan operation 25th & 29th

22nd Both fans running until 6am, single fan operation for the remainder of the day.

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 2018 Q4 (October, November and December 2018)

Actions proposed to bring particulate emissions from emission point A1 to within 40 mg/Nm³ 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	[redacted]		Order raised for 18m section manufacture. Order being processed for installation
Windmain Double Cone Valves replacements (5 to be replaced out of 28)	03-Sep-18	12-Jun-19	[redacted]		Complete
ESP Hopper Conveyor repair / sealing	03-Sep-18	12-Jun-19	[redacted]		Planned change June 2019
North & South ESP Structural Repairs	03-Sep-18	12-Jun-19	[redacted]		Complete
ESP North and South Hopper Door Sealing	03-Sep-18	12-Jun-19	[redacted]		All South doors replaced.
North ESP Internal Repairs					
North ESP Field Repairs	03-Sep-18	30-Sep-18	[redacted]		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	[redacted]		Complete
North and South ESP Control Optimisation	11-Jun-18	31-Aug-19	[redacted]		Single fan south investigation into correlation with systems relating to dust emissions. South has different characterisations to North
Waste Gas System Maintenance Strategy					
Double Dome Valve Improved Maintenance Strategy Implementation	03-Sep-18	on-going	[redacted]		Ongoing planned change of DDV every 4 weeks. 951 changed 07/01/19
North and South ESP Improved Maintenance Strategy Implementation	03-Sep-18	on-going	[redacted]		Next outage planned for week 12/13
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	[redacted]		Trial completed report being prepared. Decision to be made if further trial required

Treatment of Sinter Plant ESP dusts and BF flue dusts - trial 2	12-Nov-18	01-Sep-21	Stuart Lloyd		Combined with trial 1
Subject to outcomes of trial and feasibility study: Full Scale Plant CAPEX Scheme	12-Nov-18	01-Sep-21	[redacted]		Awaiting results from trial(s) to formulate forward plan
Definition	12-Nov-18	30-Jun-19	[redacted]		Future work dependant on outcome of trials
Implementation of project	01-Oct-19	31-Mar-21	[redacted]		Future work dependant on outcome of trials
Commissioning and optimisation	01-Apr-21	30-Jun-21	[redacted]		Future work dependant on outcome of trials
Implementation of scheme and preparation of materials	01-Jul-21	01-Sep-21	[redacted]		Future work dependant on outcome of trials
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	[redacted]		Ongoing

We have discussed the emission limit for particulates at A1 during other compliance interventions in 2017 & 2018. NRW's findings are confirmed in the following reports:

CAR_NRW0032992

CAR_NRW0032993

CAR_NRW0032995

CAR_NRW0032996

CAR_NRW0033787

CAR_NRW0034062

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 exceedance recorded at A1 on 22/10/2018 remains non-compliant with the permit limit and Condition 3.1.2. **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 ELV at A1 during Quarter 4 (October – December) 2018 under a single CCS3 score for **S5N/18/104** confirmed above, in line with our Compliance Classification Scheme [CCS]. The notifications for A1 which have been consolidated during Quarter 4 are listed below:

S5N/18/106 received on 03/12/18

S5N/18/111 received on 02/01/19

Sinter Plant improvement plan

A Warning Letter has been issued to Tata Steel in response to repeated ELV breaches at emission point A1 during 2018. This concludes NRW's enforcement response to these specific permit non-compliances.

Tata Steel has submitted an improvement plan in response to an EPR Regulation 61 (Statutory) Information Notice issued by NRW on 18/07/2018. This plan was received on 18/08/2018 and

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 for a maximum of 6 months while an operator is working towards compliance (see Principle 5 and Annex 4 of our Compliance Classification Scheme [CCS] (version 3, 26 March 2013). Where a non-compliance is so complex that it requires longer than six months to rectify then we shall recommence active scoring after six months to reflect our ongoing effort at the site.

We have decided to **suspend** the CCS3 compliance score for the particulates ELV breach detected during Quarter 4 2018 at emission point A1. 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/18/97: Schedule 5 Part A received 8 October 2018 (by email)

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

04/10/2018: 50.16mg/m3

A2: Sinter Plant Secondary De-dust

Permitted limit is 50.00mg/m3 as a daily mean

The operator has specified that a measurement uncertainty factor of +/- 30% should be applied to the reported results.

Schedule 5 Part A operator comment:

Ongoing investigations into water supply issues.

Schedule 5 Part B operator comment:

On investigation no root cause was identifiable for the exceedances. Planning permission has been applied for replacement of the Electrostatic Precipitator with a Bag Filter plant on the Dedust System and a capital project scheme is being developed. The new bag filter plant on the Dedust System will lead to a positive step change in the emission levels being emitted.

After applying the appropriate measurement uncertainty factor, this exceedance remains within the permitted limit of 50.00mg/m3. No non-compliance (CCS) score has been applied to this event.

S5N/18/102: Schedule 5 Part A received 15 October 2018 (by email)

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

14/10/2018: 76.90mg/m3

A2: Sinter Plant Secondary De-dust

Permitted limit is 50.00mg/m3 as a daily mean

The operator has specified that a measurement uncertainty factor of +/- 30% should be applied to the reported results.

Schedule 5 Part A operator comment:

Failure of field 3 precipitator – Investigation ongoing.

Schedule 5 Part B operator comment:

Dedust readings were running at an elevated level on 14/10/18. An investigation was carried out which found that field 3 in the Dedust Electrostatic Precipitator (ESP) had failed. Field 3 was split and Field 2 was put into manual operation. This brought the monitor readings down to below the limit of 50mg/m3 on the subsequent days. The (Original Equipment Manufacturers [OEM]) were contacted and attended site on the 17/10/18. The plant was brought off to allow the OEM to inspect the internal sections of the Dedust ESP. It was found that an Insulator had failed causing the frame to drop. The frame was lifted back into position and the Insulator changed on that day.

We have discussed the emission limit for particulates at A2 during other compliance interventions in 2018. NRW's findings are confirmed in the following reports:

CAR_NRW0032992

CAR_NRW0032993

CAR_NRW0032995

CAR_NRW0032996

CAR_NRW0034629

NRW issued an updated version of permit BL7108IM (V016) on 26 June 2018 following Tata Steel's successful application to extend the derogation period for particulate emissions at A2. This extended derogation took effect during Quarter 2 2018 and details are confirmed in the Annex to permit BL7108IM V016.

Verified exceedances of the derogated particulate daily mean ELV at A2 (50.00mg/m3) should be notified in accordance with the basic permit requirements i.e. Schedule 5 Part A within 24 hours of detection.

After applying the appropriate measurement uncertainty factor, the exceedance recorded at A2 on 14/10/2018 remains non-compliant with the permit limit and Condition 3.1.2. **One CCS Category 3 score** has been recorded in response to this non-compliance.

IRONMAKING

S5N/18/98: Schedule 5 Part A received 8 October 2018 (by email).

Release of particulates and blast furnace gas from No.4 Blast Furnace bleeder valves (emission point A4A)

05/10/2018 18:00hrs

A4A: Blast Furnace 4 bleeders

No emission limit values (ELVs) apply to emissions/releases from A4A

Schedule 5 Part A operator comment:

A4A Blast Furnace 4 bleeders opened on 3 separate occasions

Blast volume reduced to reduce furnace pressure to allow bleeder valves to close. Snort opened to relive face pressure.

Schedule 5 Part B operator comment:

On 5th October 2018, Blast Furnace 4 was operating with a stable process although with limited headroom throughout. The furnace was operating in this condition since the planned stop on the 2nd October. On the morning of the 5th October the coke blend was changed from imported stock coke to our own Morfa coke in line with the Blast Furnace 5 outage. As the Coke blend change came through the stack the differential pressure increased and resulted in a blow through. As the blow-down was reaching its final stages a surge of gas resulted in the Centre, Semi-clean and North bleeders opening at approximately 18:00 for 9 seconds. A further blow through after the disruption of the first one resulted in the same three bleeders opening again at 18:22 for 16 seconds.

The coke blend change was made after the stockout of the imported coke and the requirement to use our own Morfa coke. The transition of the two cokes altered the permeability of the furnace changing the gas flow through the furnace resulting in the blow through. The blast volume was reduced and coke rate increased to stabilise the process and avoid further bleeder openings.

Conclusions

1. Blast Furnace 4 bleeders opened during a coke blend change transition. The coke blend change was required after the stock out of imported coke.

2. The process team leader acted as expected, reducing blast volume to relieve furnace pressure, allowing the bleeder to close.

3. The semi-clean bleeder, center bleeder and North bleeder valves were the only bleeders that opened, for a period of 9 seconds and 16 seconds respectively.

We have discussed blast furnace operations with Tata Steel during permit compliance interventions between 2017 and 2019. NRW's findings are confirmed in the following reports:

CAR_NRW0031694

CAR_NRW0032248

CAR_NRW0034781

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

S5N/18/101: Schedule 5 Part A received 11 October 2018 (by email).

Release of particulates and blast furnace gas from No.4 Blast Furnace bleeder valves (emission point A4A)

11/10/2018 08:05hrs

A4A: Blast Furnace 4 bleeders

No emission limit values (ELVs) apply to emissions/releases from A4A

Schedule 5 Part A operator comment:

A4A Blast Furnace 4 bleeder opened

Blast volume reduced to reduce furnace pressure to allow bleeder valves to close. Snort opened to relive face pressure.

Schedule 5 Part B operator comment:

Blast Furnace 4 was blow-down on 11/10/18 to remove a build-up of fines that had adhered to the internal walls of the Blast Furnace. The build-up of fines was hindering process performance and restricting blowing volume. The process of "blowing-down" involves partially emptying the Blast Furnace of material to allow any internal accretions to be exposed, allowing them to fall into the process. This is a very disruptive operation but should result in a process performance improvement following safe recovery from this event. As the blow-down was reaching its final stages a surge of gas resulted in the Semi-clean and North bleeders opening at approximately 08:05am for 5 seconds.

The build-up of fines had occurred due to a deterioration in sinter quality in the days leading up to the blow-down. Visual inspections of the sinter at the stockpile and ferrous Stock House identified that the sinter was brown in colour and very brittle. This is typical of an un-sintered product. Actions taken to improve sinter quality involved increasing CaO / SiO2 ratio and FeO percentage.

Conclusions

Blast Furnace 4 bleeders opened during a blow-down. The blow down was required due to a deterioration in sinter quality, resulting in a build-up of fines on the internal furnace walls.

The process team leader acted as expected, reducing blast volume to relieve furnace pressure, allowing the bleeder to close.

The semi-clean bleeder and North bleeder valves were the only bleeders that opened, for a period of 5 seconds.

Fully investigate the root cause of the deterioration in sinter quality leading to the blow-down.

We have discussed blast furnace bleeder valve releases and raw material handling with Tata Steel during permit compliance interventions between 2017 and 2019. NRW's findings are confirmed in the following reports:

CAR_NRW0031694

CAR_NRW0032248

CAR_NRW0034781

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

SURFACE WATERS

S5N/18/99: Schedule 5 Part A received 9 October 2018 (by email)

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

06/05/2018 – 12/05/2018: 54.20mg/l
24/06/2018 – 30/06/2018: 65.36mg/l
15/07/2018 – 21/07/2018: 52.02mg/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:

To be investigated.

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.

During the period of 06/05/2018 to 12/05/2018, 24/06/2018 to 30/06/2018 and 15/07/2018 to 21/07/2018, there were multiple days of incinerator outage, which led to elevated A+N+N in the final treated effluent at W1.

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.

During June 2018, the Strong Liquor auto control flow valve was replaced which contributed further to improved incinerator stability.

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.

As the results between 06/05/2018 – 30/06/2018 were obtained during the previous calendar quarter, NRW has already consolidated these notified exceedances of the total inorganic nitrogen

ELV at W1 during Quarter 2 under a single CCS3 score for **S5N/18/61**. Our assessment is recorded in **CAR_NRW0033265**.

After applying the appropriate measurement uncertainty factor to the exceedance at W1 which occurred during Quarter 3 2018, the result on 21/07/2018 remains non-compliant with the permit limit and Condition 3.1.2. **One CCS Category 3 score** has been recorded in response to this non-compliance.

S5N/18/100: Schedule 5 Part A received 11 October 2018 (by email)

Notifiable failure of data collection and retention associated with a continuous emissions monitoring system (CEMS)

Parameter: temperature
Instrument: standard thermocouple

W5: Cooling Water Discharge

Permitted limit for discharge is 36°C (maximum)

Schedule 5 Part A operator comment:

Failure of data collection. Thermocouple output was transferred from one Process Control platform to another (Ferranti to DeltaV) during March 2018, and was disconnected from PI.

Live temperature monitoring was visible to operators through the new platform, but retention of historical from March 2018 onwards ceased when PI connection was cut.

Consequently, there is no evidence of compliance with W5 36˚C temperature limit from March to October 2018, although this was visible to operators through the Process Control platform.

We are also unable to complete the quarterly return data for Form I&S W5 for maximum and mean temperature of return waters to the Dock.

Resolution

On identification of this issue, the connection between the Process Control platform and PI was restored and is now recording and retaining data.

To prevent a reoccurrence of this, the thermocouple and PI connection have been added to the list of Environmentally Critical Equipment for the Energy Department.

Schedule 5 Part B operator comment:

To prevent a reoccurrence the thermocouple and Plant Information (PI) internet system connection have been added to the site list of critical equipment. The status of the critical equipment is monitored daily and reports of the healthiness of the equipment are sent to the heavy end director, and all works managers, on a weekly basis. Key performance indicators are being developed in order to measure the healthiness of the identified critical equipment.

NRW is concerned about this unplanned loss of monitoring data collection and retention, which also prevents completion and submission of the relevant monitoring returns for W5. We recognise that the data connection has now been rectified and the process control platform used routinely by Tata Steel personnel appears to have been unaffected. Our final compliance assessment will be confirmed in a separate compliance assessment report (CAR) covering the relevant monitoring and reporting periods in 2018.

S5N/18/107: Schedule 5 Part A received 11 December 2018 (by email)

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

02/09/2018 – 08/09/2018: 51.36mg/l
07/10/2018 – 13/10/2018: 74.84mg/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:

Reported weekly averages since previous elevated week were within limit at 32.86 mg/l, 12.09 mg/l, 24.62 mg/l.

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.

During the period of 02/09/2018 to 08/09/2018 and 07/10/2018 to 13/10/2018, there were multiple days of incinerator outage, which led to elevated A+N+N in the final treated effluent at W1.

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.

During June 2018, the Strong Liquor auto control flow valve was replaced which contributed further to improved incinerator stability.

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.

As the result between 02/09/2018 – 08/09/2018 was obtained during the previous calendar quarter, NRW has already consolidated this notified exceedance of the total inorganic nitrogen ELV at W1 during Quarter 3 under a single CCS3 score for **S5N/18/99**. Our assessment is recorded above.

After applying the appropriate measurement uncertainty factor to the exceedance at W1 which occurred during Quarter 4 2018, the result on 13/10/2018 remains non-compliant with the permit limit and Condition 3.1.2. **One CCS Category 3 score** has been recorded in response to this non-compliance.

S5N/18/109: Schedule 5 Part A received 2 November 2018 (by email)

Weekly average for total hydrocarbons recorded at emission point W1:

21/10/2018 – 27/10/2018: 8.6mg/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:

Source under investigation. Daily values now below permitted limit.

Schedule 5 Part B operator comment:

Based on analysis of sump samples taken across site, ongoing operations and meteorological data, evidence suggests key contributors were Coke Ovens and Hot Mills areas.

This does not rule out 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, projects to identify sources of oil losses across and tracking of status of environmentally critical kit, including oil skimmers.

After applying the appropriate measurement uncertainty factor, the exceedance recorded at W1 on 27/10/2018 remains non-compliant with the permit limit and Condition 3.1.2. **One CCS Category 3 score** has been recorded in response to this non-compliance.

COKE OVENS

UR/18/103: Schedule 5 Part A received 31 October 2018 (by email).

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

26/10/2018: 30.13% Obscuration
28/10/2018: 25.26% Obscuration
29/10/2018: 33.07% Obscuration
30/10/2018: 27.27% Obscuration

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:

Due to reduced Blast Furnace availability there was a reduction in Blast Furnace gas which resulted in increased Coke Oven gas being used in the batteries underfiring system.

Changed to Blast Furnace Gas firing on both batteries.

Schedule 5 Part B operator comment:

Due to reduced Blast Furnace availability there was a reduction in Blast Furnace gas which resulted in increased Coke Oven gas being used in the batteries under firing system.

During the period between 25/07/18 and 30/07/18 there was a large number of walls being under-fired on Coke Oven Gas under-firing conditions. The waste gas drafts were checked on these walls, then after carrying out waste gas analysis and visually checking individual heating flues on these walls, it was evident that there was "flooding" of rich gas across most walls and flues, all contributing to smoke in the heating flues leading to high smoke density readings. To combat this issue the following actions have been carried out: Both (Battery 1 & 2) stack draught settings increased from 4.35 mbar to 5 mbar, both Battery 1 & 2 Coke Oven Gas main controllers closed to reduce the side main pressure to approx. 20 mbar, and finally the Finger bars in both the Gas side and Air side on all Battery 1 Air-intake boxes have been adjusted to allow more air flow.

During the period between 26/10/18 and 30/10/18, again there was a high number of walls being under-fired on Coke Oven Gas under-firing conditions. Coke Oven Gas was found to be "burning" in the Bus flue of No 64 heating wall, which was contributing to the high smoke density readings. The heating wall was changed back to Blast Furnace Gas under-firing conditions, prior to be taken out of service for a Regenerator repair.

Although the operator has provided an explanation for this exceedance and a description of the measures taken to prevent a recurrence, in our opinion the results initially notified to NRW (Schedule 5 Part A) do not provide a reliable indicator of compliance against the weekly mean limit.

Comparison of this notification with the relevant monitoring data for the same period (Morfa Q4 returns 2018) has revealed discrepancies between the reported data for October 2018 and the notified Schedule 5 results. These discrepancies require further investigation. Permit compliance cannot be fully assessed at this time and will be captured separately.

As previously highlighted in **CAR_NRW0033267**, 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.

UR/18/105: Schedule 5 Part A received 6 November 2018 (by email)

Monthly mean (average) Door Leakage Control Factor (DLCF), Top Leakage Control Factor (TLCF) and visible emissions from coke oven charging recorded at emission point A54:

October 2018: 93.38% (Doors)*

October 2018: 98.50% (Tops)

October 2018: 43.98 seconds (Charging)

A54: Morfa Coke Oven Batteries

Permitted limit for DLCF is at least 90% of coke oven doors with no leaks as a monthly mean (BAT-AEPL percentage of visible emissions is <10%)

Permitted limit for TLCF is at least 99% of coke oven tops with no leaks as a monthly mean (BAT-AEPL percentage of visible emissions is <1%)

Permitted limit (BAT-AEPL) for coke oven charging emissions is <30 seconds visible emissions per charge expressed as a monthly mean

*The notified result for doors (DLCF) is compliant with the permitted limit.

The current DLCF and TLCF method employed by Tata and agreed with NRW is a simple binary assessment i.e. leak/no leak which does not involve grading individual emissions. The scope for error is therefore minimised and it is not necessary for the operator to specify monitoring uncertainty when reporting these parameters.

The current method for assessing visible emissions from charging employed by Tata and agreed with NRW is a modified version of the *US EPA Method 303*. Under *Method 303*, measured charging emissions are recorded to the nearest 0.5 seconds. Incomplete charges (visual interference) should be excluded from the assessment. For compliance purposes, we have rounded up the reported results to the nearest 0.5 seconds before assessing them against the BAT-AEPL (ELV).

Schedule 5 Part A operator comment:

During this reporting period Doors percentage limit have been met.

Schedule 5 Part B operator comment:

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

Please see a copy of the plan attached to this notification covering CY18 Q4 (October, November, December)

Quarter 4

Morfa Coke Ovens Regulation 61 Action Plan							
Actions proposed to bring Battery Top emissions to within 1% and compliant with emission point A54	Start	Finish	Owner	Status	Progress	Actions	Comments
Complete change out of remaining ascension pipes	01-Feb-17	01-Feb-20	[redacted]			107/168	Ongoing
Campaign spigot repair programme	01-Jun-18	01-Aug-19					Ongoing – 100% Completed
Battery Top Collector main control						Worked on extra l cleaing, fitted positing corectly. More of a control of the system	Ongoing
Forward view system. Upgrade of transmitters to provide quicker response during charging							
Upgrade Controllers (Kent / Askania equipment)	01-Feb-17	01-Jan-20				Fitted position idication if suceseful will be rolled out	Ongoing
Improve Exhauster control parameters	01-Feb-17	01-Jan-20					Ongoing
Collector Main Configuration							
Feasibility study on operating with single collector main	01-Jul-18	01-Feb-20				Feasibility underway with TCE. Discussion made with suppliers three different companies	Ongoing
Execute transition to single collector main if applicable post survey	01-May-20	01-May-23					After feasability
Sustained Compliance with Limit Value. It is envisaged Battery Top emissions will be compliant with emission point A54 periodically from January 2020 onwards, but not sustained until full understanding of transition towards single collector main operation. May 2023							
Actions proposed to sustain Battery Door emissions to within 10% & compliant with emission point A54.							
Upgrade and Improve Reliability of door cleaning equipment on machines	01-Aug-18	01-Feb-20					Ongoing
Purchase and Install Automatic small door cleaning device for RAM machines	01-Jun-18	01-Feb-20				Had design and waiting for Capex prices have been given	Ongoing
Door Design						Currently with TCE	Ongoing
Purchase and trial x10 blue sky doors (spring sealing).	01-Nov-18	01-May-19					Ongoing
Run 12 months to assess effectiveness of new doors and emission levels	01-May-19	01-May-20					Ongoing
If trial successful convert battery to new doors	01-Jul-20	01-Jul-23					Ongoing
Sustained Compliance with Limit Value. It is envisaged Battery Door emissions will periodically be compliant with emission point A54, but not sustained until transition to new spring sealed door arrangement . July 2023							
Actions proposed to sustain Visible Charging emissions to within agreed levels outlined in emission point A54							
Correct all charge hole frames identified with misalignment	01-Aug-18	01-Feb-20	[redacted]				Complete
Charging Machine							
Change machine Telescopes (x4), seals and inspection covers	01-Aug-18	01-Aug-19					90% Complete
Refurbishment of all charge oscillators (x4)	01-Aug-18	01-Aug-19					100% Complete
Auto charge hole lid sealing system on charger	01-Sep-18	01-Sep-20					Ongoing
Auto charge hole carbon cleaning on charge machine	01-Sep-18	01-Sep-20				Drawings for Carbon scraper in principle	Ongoing
Sustained Compliance with Limit Value. Battery charging emissions will be compliant with emission point A54 September 2020							

We have discussed the introduction of the DLCF, TLCF and Charging limits at A54 during other compliance interventions in 2017 and 2018. NRW's findings are confirmed in the following reports:

CAR_NRW0032992

CAR_NRW0032993

CAR_NRW0032995

CAR_NRW0032996

CAR_NRW0033787

CAR_NRW0034062

CAR_NRW0034629

The exceedances for TLCF (tops) and Charging recorded at A54 during October 2018 are non-compliant with the permit limits and Condition 3.1.2. **Two CCS Category 3 scores** (suspended:

see below) have been recorded in response to these non-compliances.

We have assessed and consolidated all subsequent notified exceedances of these ELVs at A54 during Quarter 4 (October – December) 2018 under two CCS3 scores for **UR/18/105** confirmed above, in line with our Compliance Classification Scheme [CCS]. The notifications for A54 which have been consolidated during Quarter 4 are listed below:

UR/18/108 received on 11/12/18 (November 2018 tops & charging)

UR/18/112 received on 04/01/19 (December 2018 tops & charging)

Coke Ovens improvement plan

A Warning Letter has been issued to Tata Steel in response to repeated ELV breaches at emission point A54 during 2018. This concludes NRW's enforcement response to these specific permit non-compliances.

Tata Steel has submitted an improvement plan in response to an EPR Regulation 61 (Statutory) Information Notice issued by NRW on 18/07/2018. This plan was received on 18/08/2018 and outlines the steps Tata Steel will take to achieve compliance with the relevant ELV for particulates at emission point A54.

NRW can suspend CCS scores for a maximum of 6 months while an operator is working towards compliance (see Principle 5 and Annex 4 of our Compliance Classification Scheme [CCS] (version 3, 26 March 2013). Where a non-compliance is so complex that it requires longer than six months to rectify then we shall recommence active scoring after six months to reflect our ongoing effort at the site.

We have decided to **suspend** the CCS3 compliance scores for the ELV breaches detected during Quarter 4 2018 at emission point A54. Compliance with these ELVs 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.

ENERGY

S5N/18/110: Schedule 1 Part A received 17 December 2018 (by email)

Monthly mean (average) for sulphur dioxide recorded at emission point A50:

November 2018: 590.00mg/m3

S5N/18/113: Schedule 1 Part A received 18 January 2019 (by email)

Monthly mean (average) for sulphur dioxide recorded at emission point A50:

December 2018: 599.00mg/m3

A50: Service Boilers 4 & 5

Permitted limit is 500.00mg/m3 as a monthly mean

The operator has not specified a measurement uncertainty factor, therefore the default value of

+/- 20% for gaseous measurements has been applied to the reported results.

The reported results have been obtained after excluding all measured values where hourly fuel input is < 35% Blast Furnace Gas (BFG), in accordance with Tata Steel's agreed procedure for defining 'abnormal' operating conditions – also known as Other Than Normal Operating Conditions (OTNOC) – for its large combustion plant.

Schedule 5 Part A operator comment:

For the period of the Blast Furnace 5 outage, BFG supply to the Coke Ovens has been prioritised to maintain cleaner production at the batteries.

As a consequence, Service Boilers 4 & 5 are running mostly on Coke Oven Gas (COG).

This exceptional period of low BFG supply to the boilers will end when BF5 is brought back into production in January.

Schedule 5 Part B operator comment:

Abnormal operating conditions data exclusion rate was 74%

The exceptional period of low Blast Furnace Gas (BFG) availability for the boilers has ended as Blast Furnace 5 has been relit.

In the event that similar planned Blast Furnace outages occur, distribution will again be prioritised to avoid breaches or to limit breach conditions to as few boilers as possible.

After applying the appropriate measurement uncertainty factor, these exceedances remain within the permitted limit of 500.00mg/m3. No non-compliance (CCS) score has been applied to these events.

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 4 2018 has concluded **seven CCS Category 3 breaches** 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)
- A2 Sinter Plant Secondary De-dust (particulates)
- A54 Morfa Coke Oven Batteries (TLCF & Charging)
- W1 Long Sea Outfall (total inorganic nitrogen)
- W1 Long Sea Outfall (total hydrocarbons)

Of these seven CCS3 breaches, three scores have been suspended (see A1 & A54 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 points A1 & A54

On 18 July 2018, NRW issued two EPR Regulation 61 (Statutory) Information Notices to Tata

Steel UK Ltd in response to persistent emission limit breaches at the following permitted emission points:

- A1 Sinter Plant Main Stack (particulates)
- A54 Morfa Coke Oven Batteries (DLCF, TLCF & Charging)

Tata Steel UK Ltd responded to both Information Notices on 18 August 2018. The company has supplied two improvement plans (with timescales) which outline a pathway towards sustained compliance with the relevant emission limits. Progress against both plans has been captured and recorded in subsequent inspection reports during 2018-19.

NRW has issued a **Warning Letter** in response to these persistent emission limit breaches (permit non-compliances) at A1 and A54. We expect Tata Steel to adhere to the improvement plans and the timescales outlined in its response(s) dated 18 August 2018. We have **suspended three CCS3 scores** identified in this report while the operator's improvement plans are active.

If there is slippage or unjustified deviation from these plans, or we detect any sustained deterioration in emissions at A1 or A54, existing CCS scores will be unsuspended, and further CCS scores may be applied. We will also consider further enforcement action in line with NRW's published Enforcement & Prosecution Policy.

Emission points A2 & W1

This CAR form includes a **Warning** in response to the four CCS3 breaches identified at emission points A2 and W1.

Emission point A4A

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.

Derogated emission limits

From Quarter 3 2018 onwards, the derogated emission limit value (ELV) for particulates at A2 is 50.00mg/m3. This derogated limit applies until 31 October 2020.

Verified exceedances of the derogated ELV at A2 should be notified in accordance with the basic permit requirements i.e. within 24 hours of detection.

Areas requiring further attention/action

As previously highlighted in **CAR_NRW0033267**, 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. **(Action carried forwards)**

[END OF SECTION 2]

Cyfoeth Naturiol Cymru Natural Resources Wales	**EPR Compliance Assessment Report**	**Report ID: CAR_NRW0033268**

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	31/12/2018

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	28/02/2019
E3	C3	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	28/02/2019
E3	C3	Bring permitted operations back into compliance with ELV. IGNORE ACTION DATE - not applicable	28/02/2019
E1	C3	Bring permitted operations back into compliance with (derogated) ELV. IGNORE ACTION DATE - not applicable	28/02/2019
E1	C3	Compliance plan submitted and agreed. SCORE SUSPENDED. IGNORE ACTION DATE - not applicable.	28/02/2019
E1	C3	Compliance plan submitted and agreed. SCORE SUSPENDED. IGNORE ACTION DATE - not applicable.	28/02/2019
E1	C3	Compliance plan submitted and agreed. SCORE SUSPENDED. IGNORE ACTION DATE - not applicable.	28/02/2019

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.