

Compliance Assessment Report CAR_NRW0041831

Permit being assessed: BL7108IM.

For: Port Talbot Steel Works , held by Tata Steel UK Limited

At: Tata Steel Strip Products UK , PORT TALBOT, PORT TALBOT,
WEST GLAMORGAN, SA13 2NG.

Type of assessment carried out: Site Inspection, Reason: Routine.

On 27/04/2023 between 09:00 and 17:00.

Parts of permit assessed: BOS Plant - Site Visit

NRW Lead Officer: Rhodri Morgan, accompanied by Jeremy Walters, Mark Broom.

Report sent to: Nathan Ace , Head of Environment TSUK Operations on 09/06/2023.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
A1 - Specified by permit	Assessed (A)	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	Assessed (A)	
C1 - General Management - Staff competency/training	Assessed (A)	
H1 - Resource Efficiency - Efficient use of raw materials	Assessed (A)	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	Action only (X)	
C2 - General Management - Management system and operating procedures	Action only (X)	

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
G4	Action 041831/01 – TSUK to provide a record of Molten Metal Plating Activities that occurred throughout FY 2023.	28/07/2023
C2	Action 041831/02 – TSUK to provide a copy of the slag pot tipping procedure and the Harsco Heavy Dust Process Red/Green System Standard.	28/07/2023

Action criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Tata Steel UK Limited (TSUK) operates the Port Talbot Steelworks in accordance with Permit BL7108IM. The Steelworks has several identifiable processes which are carried out sequentially across the site to convert raw iron ores and coal to semi-finished (slab) and finished steel products.

Four other companies – Tarmac, Harsco Metals Group (Harsco), Runtech and ICL – are contracted to undertake their own permitted activities at the steelworks on TSUK's behalf.

Introduction

NRW has initiated a targeted programme of compliance interventions; focusing on key areas of the Site which have the greatest ability to impact the surrounding community. This intervention focused on the Basic Oxygen Steelmaking (BOS) Plant; which is frequently identified as a potential source of fallout following the completion of root cause analysis on community complaints.

The site inspection was split into two distinct sessions. The morning session was held with members of the TSUK Sustainability & Environment Team and focused on the wider steelworks installation (the 'Site'). The afternoon session focused on the Steelmaking works area and was held with the management team of the BOS Plant.

Attendees

Tata Steel

Sustainability & Environment

- Peter Quinn – Director, Sustainability & Environment
- Nathan Ace – Head of Environment TSUK Operations, Sustainability & Environment
- Matthew Thomas – Environment Lead Governance, Sustainability & Environment
- Calum Hughes – Environment Lead Air Quality, Sustainability & Environment
- Gareth Goss - Environmental Engineer Air Quality, Sustainability & Environment
- Morgan Livingstone – Environment Liaison Officer, Sustainability & Environment
- Paul Dickenson – Technical Manager, Morfa Coke Ovens
- Jeff Ingham – Technical Manager, Purchasing

BOS Plant

- James Davies – Works Manager
- Matthew Bradwell – Fire & Environment Manager
- Ryan Doyle – Technical Specialist
- Grant Berni – Works Technical Manager
- Nick Layland – Works Production Manager
- Brinley Hewitt Thomas – Operational Support Manager

NRW

- Mark Broom – Senior Specialist Advisor, Industry & Waste Regulatory Approaches
- Jeremy Walters – Senior Specialist Advisor, Industry & Waste Regulatory Approaches
- Rhodri Morgan – Senior Officer, Industry & Waste Regulation

Sustainability and Environment Team (Morning Session)**Morfa Coke Ovens (MCO)**

TSUK provided an update on the operational challenges that have been experienced at MCO throughout 2023. A series of blockages within the gas collection system has resulted in elevated pressures and the activation of the bleeder valves.

Remedial works have prioritised the clearing of blockages to restore gas passage throughout the system. A site inspection of MCO has been scheduled for the 25th May 2023 where the operational challenges will be fully reviewed along with any non-compliances.

Sulphur In Coal

TSUK presented a series of slides on the Sulphur content of coals used at MCO, following an exceedance of the Sulphur content limit of 0.75% W/W for 2022 (S5N_23_18B).

The exceedances of the Sulphur limit have been associated with abnormal market conditions following the conflict in Ukraine; which caused the price of coking coal to triple in a short time. TSUK took actions to ensure the security of their supply chains including the sourcing of indigenous coal from local collieries.

Sulphur levels within Coal can vary significantly between regions and within individual coal seams. Peaks in the Sulphur content were experienced throughout 2022 due to an indigenous coal source having higher Sulphur levels than expected.

The Sulphur in coal trend is now reducing and is expected to be compliant with the 0.75% W/W limit for 2023. NRW will formally compliance assess this non-compliance separately at a later date.

Management System Updates

The root cause of each incident/complaint is investigated by TSUK, with any identified improvement opportunities included within the management system to reduce the likelihood of similar incidents occurring.

TSUK provided two examples of a management system update following the completion of root cause investigations:

Blast Furnace Bleeder Openings

Management investigation following a series of bleeder releases throughout December 2022 and January 2023.

- Review of procedures relating to Off-Blast recovery, low bunker levels, high moisture ferrous stock and performing a furnace check.
- Trials of new systems
- Review of training material to ensure correct procedures are followed and revisit toolbox talks with shifts

Landfill Quarterly Monitoring Returns

Loss of water samples associated with the quarterly monitoring of Morfa Landfills.

- Updated chain of custody process to provide additional diligence for sample movements.
- Provision for the gathering of larger volume of samples.
- Contingency plans to use alternative TSUK laboratories if the primary laboratory is unable to accept samples.
- Investigations into the use of external UKAS accredited companies to be used when TSUK laboratories are unable to accept the samples.

It was clear to NRW that both incidents had been subjected to a detailed investigation and root causes identified. Procedures have been updated to minimise the likelihood of similar events occurring in the future.

The provided examples and discussion satisfied Action 041674/02 of CAR_NRW0041675.

Incident Updates

TSUK provided an update on three outstanding Schedule 5 Part B notifications (S5N/22/83B, S5N/22/86B and S5N/22/86B).

The notifications relate to breaches of the particulate matter (PM) emission limits for the following emission points:

- A39 New Mill Stack (GCI) (83B)
- A37 Fluidised Bed Dryer 1 bag filter plant stack (85B)
- A38 Fluidised Bed Dryer 2 bag filter plant stack (86B)

Each breach was associated with the poor condition of the individual bag filters which were found to be worn and allowing particulates to bypass the filtration system. Each bag filter was immediately replaced to restore the efficiency of the abatement measures.

The maintenance regime of the bag filters was discussed including the frequency of inspections. TSUK confirmed that the frequency of bag filter inspections throughout the site is under review to prevent a similar

occurrence. The non-compliances will be examined in further detail following the submission of the Part B notifications.

Air Quality

A brief discussion was held regarding the latest version (V13) of the Steelworks Air Quality Management Plan (AQMP), which is currently being reviewed by NRW. The latest version of the AQMP has been updated to include the full monitoring capabilities of the Site, including the following systems:

- PM 10 Concentrations
- Dust Deposition Measurement System (Aloa_ADA)
- CCTV Monitoring (Aloa_Detect)
- On – Vehicle Measurement Systems

TSUK personnel explained how the AQMP is utilised across the Site to manage air quality, limit potential atmospheric emissions and respond to air quality alerts regarding PM10 and fugitive dust emissions. Whilst a detailed examination of the AQMP was not undertaken, it was clear that TSUK understood their responsibilities. Suitable resources are provided to enable its effective implementation, including the providing of support to individual work areas and contractors.

The PM10 Breach Investigation Reports for 2023 were discussed, with 11 breaches of the 50 µg/m³ Daily Mean PM10 Concentration Limit recorded at the Margam AURN. A PM10 Breach Investigation Report has been submitted for each breach, in compliance with permit condition 3.7.1.

The breach investigation reports frequently identify the following Site activities which cannot be discounted as the cause of a PM10 breach:

- Iron Making – Blast Furnace Flue dust movement
- Harsco – Pot Slagging
- Harsco – Molten Metal Plating Activities
- Harsco – Pot Conditioning
- Morfa Coke Ovens – Black Push events

A series of breach days were recorded between the 21st and the 24th March 2023 which took the number of breach days to the point where action is considered under the Short-Term Action Plan (STAP). The situation has improved recently with the escalation model returning to the point where no further action is currently required.

Community Complaints

TSUK provided an update on the number of complaints received from the local community throughout April 2023 (Figure 1). Several of the complaints relating to fallout have been associated with a series of bleeder openings from January 2023. It is common for TSUK to receive retrospective complaints from the community following high-profile events.

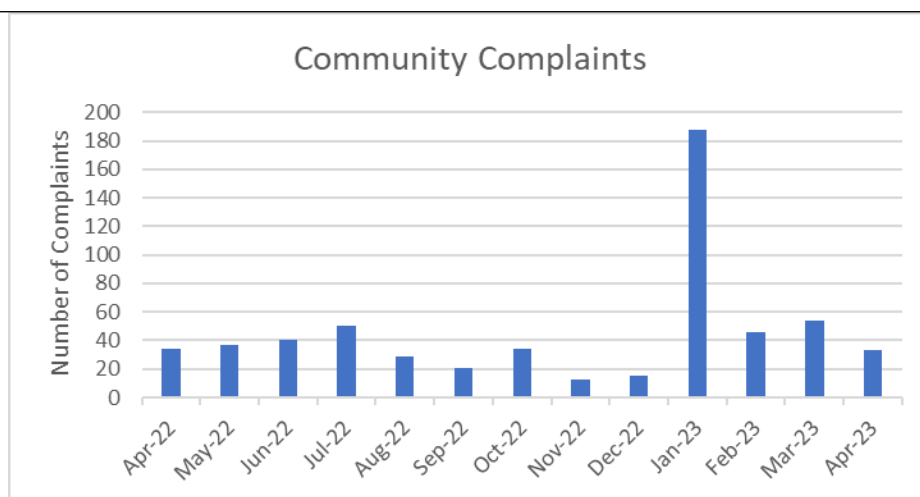


Figure 1 - Community complaints received by TSUK

Each visual emission complaint (6) has been associated with Molten Metal Plating Activities (shared with Harsco). A management Investigation has been initiated following a rise in complaints relating to these activities in recent months. NRW will formally assess the activity following receipt of the management investigation.

Root cause analysis on the 24 fallout complaints have identified the Blast Furnace as the root cause of 10 complaints. The remaining complaints are still being investigated to determine the root cause.

NRW Strategy & Forward Plan

NRW officers provided a board overview of NRW's updated corporate Plan which was launched in March 2023. NRW outlined how they intend on implementing the plan to meet the 2030 targets for climate and nature, and lay the groundwork for achieving the 2050 international targets, goals and milestones agreed at COP 15 and COP26.

The discussion was structured around the future regulation of industrial installations within Wales; including Port Talbot Steelworks. Technical experts from NRW's evidence, permitting and policy team provided a brief overview of future discussion points including decarbonisation and the circular economy.

BOS Plant – Site Inspection (Afternoon)

TSUK presented a series of slides to demonstrate the recent environmental and operational performance of the BOS Plant. Asset improvements were discussed along with some of the current improvement programmes such as the BOS Process Diffuse Emission Reductions scheme.

Disruptions in the BOS Plant and Blast Furnaces throughout FY2023 led to a significant rise in Molten Metal Plating Activities. The rise in plating activities has coincided with an increase in the number of complaints associated with the activity.

Action 041831/01 – TSUK to provide a record of Molten Metal Plating Activities that occurred throughout FY 2023.

Asset Improvement

The BOS Plant invested approximately £27 million in asset improvements throughout FY2023 across both the steelmaking and casting buildings, these include:

- Abatement system upgrades
- Crane upgrades
- Vessel flaring cameras & image analysis
- Slogging camera modernisation & new early detection systems
- Scrapyard Improvements
 - Hardstanding installation
 - CCTV Improvements

Improvements in the CCTV systems throughout the BOS Plant have provided evidence to justify several projects, including the removal of tin cans from the scrap menu.

Twelve new ladles have been ordered at a cost of over £6 million. The ladle fleet typically consists of 16 ladles but currently stands at 9 due to a delay in the manufacturing and delivery process. Delivery of the first batch of new ladles is expected in November 2023, the installation of the refractory material is required before they are brought into operation.

BOS Process Diffuse Emission Reduction

An overview of the Process Diffuse Emission Reduction scheme was provided. Diffuse emissions from the BOS Plant have been identified as a potential source of fallout in the community; with root cause analysis of FY22/23 complaints identifying approximately 21 complaints.

Diffuse emissions from the BOS Plant can occur during charging or “slop” events. The fumes from these events can overwhelm the primary and secondary fume collection/extraction systems, resulting in highly visible but temporary orange smoke emissions from the roof of the BOS plant.

The number of emissions from the BOS Plant has reduced; with 465 Level 3 roof emissions recorded in FY20/21 compared to 116 in FY22/23 (Figure 2). The aim of the emission reduction scheme is to continue this decreasing trend, reducing the figure to below 75 Level 3 emissions a year.

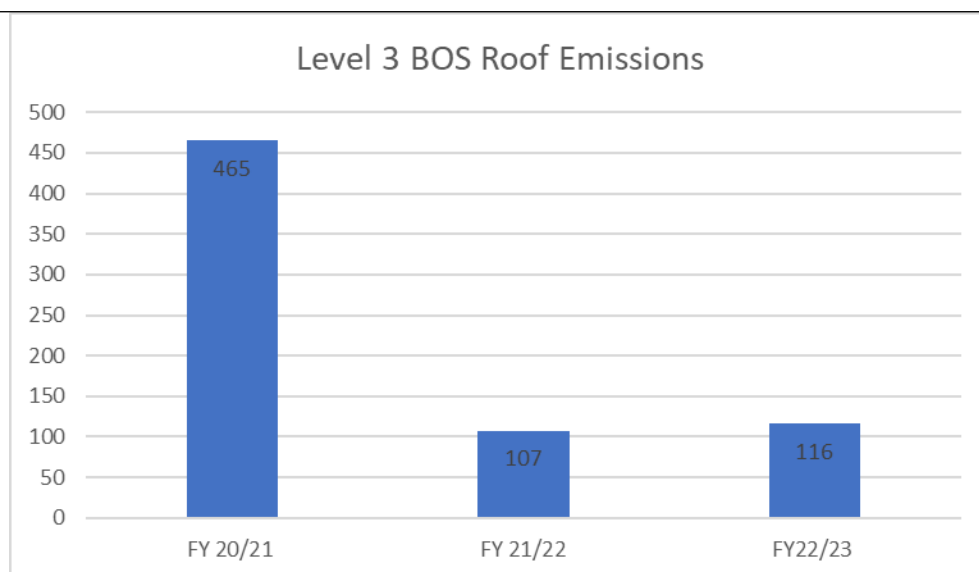


Figure 2 - Reduction of Level 3 BOS Roof Emissions

Slop Control

TSUK has initiated a “Slopping Reduction Project” which has reviewed available data; looking at trends to identify key factors which impact slopping. A clear distinction between early and late slops was identified, with peaks identifiable at around 400s (early) and 800s (late) into the blow time.

The work has allowed TSUK to create a tracker to help review Early and Late slops as well as identify the key variables linked to the slopping events. New decision trees have been created which allow the shift teams to act against the root causes identified. The key root causes identified include the following:

- Early Slops:
 - Vessel Life – Early vessel life
 - Hot Metal quality – High Si
 - Scrap additions – High volumes of dirty scraps
 - Doloflux
- Late Slops:
 - Refining – Lance position too high
 - Vessel Life – Late vessel life
 - Doloflux

Procedures have been amended to address some of the key variables linked to the slopping events. A procedure has been developed for the use of newly relined vessels which includes communication with the Blast Furnaces to lower the incoming Si content of the hot metal.

The next stage of the project is the commissioning of a programme which will allow shift teams to identify root cause(s) much quicker and act in a timely manner.

Charging Emissions

Scrap specifications have recently been reviewed following trials which revealed the use of tin cans (bales and shredded) and some other types of scraps resulted in unacceptable levels of flaring.

Since the removal of these scrap types, a significant reduction in the amount of charging emissions has been experienced; with the number of emissions now below the annual plan target (Figure 3).

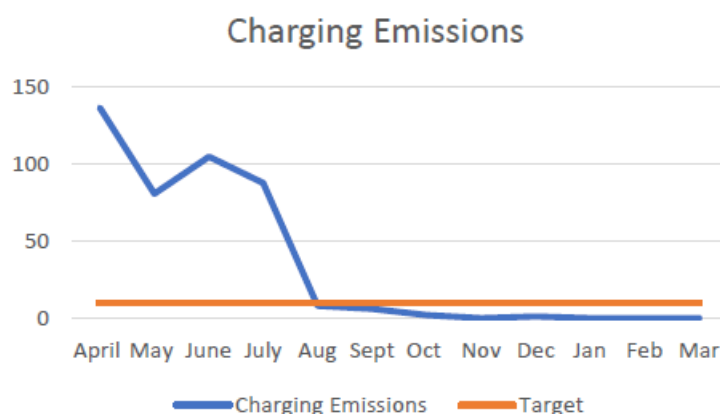


Figure 3 - Reduction in charging emissions throughout 2023

The performance of the Diffuse Emission Reduction scheme will be reviewed by NRW during subsequent audits.

BOS Plant Feedstock

A variety of scrap metals are utilised at the BOS Plant; the accurate and consistent management of which is vital in ensuring TSUK can produce the required quality of Steel. Harsco manage the delivery of prepared scrap metal to the BOS Plant on behalf of TSUK, including initial scrap acceptance checks.

TSUK are exploring opportunities to increase the recycling rates of downstream scraps; including the purchasing of material from customers. This has the added benefit of generally producing a higher quality scrap. NRW welcomes this initiative which is a good example of a circular economy project.

Recent improvement activities in the handling of scrap materials were discussed including:

- Management of the timings of scrap deliveries to reduce oxidation of the material.
- Investments in the CCTV monitoring of the scrap handling areas which have facilitated a higher quality of scrap.
- Quarterly reviews and weekly contact with suppliers to feedback on quality issues.

TSUK are also looking into improvement opportunities for the raw materials (alloys etc.) used at the BOS Plant, including the use of sustainable/ greener materials and greater stock control.

Slag Pot Management

Molten slags from the iron desulphurisation and BOS (primary) steelmaking processes are moved in large pots to the slag pits for tipping. The activity is undertaken by Harsco, but TSUK retain ownership of the pot fleet and closely manage the activity.

A tipping procedure has been developed to reduce the amount of fugitive emissions generated by tipping activities. Fugitive emissions from slag pot activities can include fumes, dust and carbon platelets known as 'kish'. The tipping procedure links with the Harsco Heavy Dust Process Red/ Green System Standard, which utilises a localised air quality monitor to prevent certain high-risk activities when the PM10 hourly average exceeds 100 µg/m³.

Action 041831/02 – TSUK to provide a copy of the slag pot tipping procedure and the Harsco Heavy Dust Process Red/ Green System Standard.

Community Engagement

The BOS Plant is working to develop relationships with the local community; with management personnel engaging with local clubs and providing a presence at community events.

Visits have been undertaken to residents who have submitted complaints associated with emissions from the BOS Plant. During the visits personnel explain the operational challenges which can lead to fugitive emissions and describe the work which is being undertaken to reduce the likelihood of them occurring.

A programme designed to educate staff on the potential environmental impact of the Plant has been developed and has been incorporated into local orientation days which all members of staff attend. Staff are empowered to report any environmental incidents which they witness while offsite and to share the TSUK complaint process with members of the community.

NRW welcomes the relationship that the work area is building with the local community and encourages other areas of the Site to follow suit.

Site Visit

A site visit was undertaken throughout the plant where we witnessed several aspects of the Steelmaking process including:

- Arrival and pouring of torpedo at the pouring pits.
- Iron Desulphurisation
- Scrap being charged into the BOS Vessel
- Ladle transportation to the secondary steelmaking unit

A visit was also made to the continuous casting (Concast) plant where we observed the final stages of the steel making process. Slabs are cut to the required lengths before being sold directly or further processed at the Hot Rolling Mill.

Whilst a detailed inspection was not undertaken, observations made during the site tour did not identify any apparent permit breaches. The abatement measures utilised throughout the plant appeared to be functioning

correctly; with good capture of fume by the fume extraction systems. No slops or charging emissions were observed during the visit.

Throughout the visit it was clear that the environmental impact of the BOS Plant is considered and communicated at various levels, with KPI's displayed in several communication zones throughout the plant. A brief discussion was held with a BOS Vessel control room operative who without prompt conveyed the key aspects to avoid "slopping" which had been covered earlier in the site visit.

Note: Not all potential breaches have been assessed or scored.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

What are suspended scores?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry and Waste action criteria (used in section 1 and 2):**A: Permitted activities**

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.