

Compliance Assessment Report for: NRW0037068

Permit number	BV7311IE	Operator name	Tata Steel (UK) Ltd.
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Site name	Morfa Non Hazardous Landfill
Site address	Morfa Landfill, Port Talbot Steelworks, Port Talbot, SA32 2NG
Type of assessment	Site inspection & check sampling

Date of assessment	8 th October 2020
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Parts of permit assessed	Site inspection of landfill, transfer station, check dip of leachate wells & BC document review.
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NRW Lead officer	Neil Herbert	Accompanied by	N/A
Report sent to – Name and position	Nathan Ace SHE Manager	Date	23 rd October 2020

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

Part of permitted activity assessed (use action criteria below)	Assessment result	Permit condition
A1 Specified by permit	C3 Minor	2.7.6
B1 Infrastructure – Engineering for prevention and control of emissions	Assessed or assessed in part (A)	
B3 Infrastructure – Site drainage engineering (clean and foul)	Assessed or assessed in part (A)	
B4 Infrastructure – Containment of stored materials	Assessed or assessed in part (A)	
C3 General management – Materials acceptance	Assessed or assessed in part (A)	
F1 Amenity – Odour	Assessed or assessed in part (A)	
F2 Amenity – Noise	Assessed or assessed in part (A)	
F3 Amenity – Dust/fibres/particulates and litter	Assessed or assessed in part (A)	
F4 Amenity – Pests/birds and scavengers	Assessed or assessed in part (A)	
F5 Amenity – Deposits on road	Assessed or assessed in part (A)	

Part of permitted activity assessed (use action criteria below)	Assessment result	Permit condition
G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events	Assessed or assessed in part (A)	

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

Total number of non-compliances recorded
1

2. What action is required?

Criteria	Action needed	Complete by
A1	Ref: 0037068.1 - TATA must complete (or partially complete) the construction of the new void extension area and - submit the CQA Validation Report to NRW for assessment.	7 th Dec 2020.
B3	Ref: 0037068.2 - Tata to undertake a review into the performance of the current flow meters used in the site's leachate collection system. - The review should also examine the accuracy of the flow meters for the purposes of leak detection.	31 st Jan 2021
B4	Ref: 0037068.3 Tata to check and seal all penetrations in the leachate tank's containment bund.	31 st Jan 2021
C3	Ref: 0037068.4 Tata to review the Level 1 Basic Characterisation for the waste stream assessed in this report and address the issues identified.	31 st Jan 2021
	Ref: 0037068.5 Tata to clarify disposal route for the waste pickle liquor/spent pickle liquor waste streams.	6 th Nov 2021
B2	Recommendation Tata to ensure prompt submission of the CQA plan for the capping and recharge trench infrastructure works scheduled for 2021	As soon as practicable but no later than April 2021

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 prosecutions and/or suspension or revocation of your permit.

You are non-compliant with your permit. We are currently considering taking enforcement action against you for the non-compliance recorded above. We will contact you in due course.

4. Details of our assessment

- I was escorted around the permitted installation by Rhys Lloyd and James Davies (Darlow Lloyd & Sons) and Ben Rees (Geotechnology).
- The purpose of the visit was a routine inspection of the Morfa Non Hazardous Landfill (see figure 1) and the landfill's associated treatment plant.
- The facility is an operational, non-hazardous waste, landfill that receives wastes primarily from Tata's Port Talbot Steelworks installation and Tata's Llanwern facility.
- The landfill currently consists of two engineered bio-cells and two engineered cells for non-hazardous (non biodegradable) wastes.
- The bio-cells are designed to accept biodegradable wastes and the remaining cells accept non hazardous industrial wastes from the steelworks. The latter forms the bulk of the wastes received at the site.
- In 2019 NRW issued a variation to the existing permit following an application from Tata. The variation permitted TATA to extend the western flank of the two bio-cells into the adjacent non-hazardous cell (i.e. cell 1).
- As void space in the existing bio-cells was critically low, the extension would free up new void space capacity for biodegradable waste.
- The variation also permitted the opportunity to recover some of the industrial wastes historically deposited within cell 1.
- In the last two years the volume of wastes deposited at the landfill continue to remain low. This reflects TATA's successful and continuous programme of waste minimisation, treatment and recovery within the steelworks.



Figure 1: Aerial photograph (Dec 2019) showing from left to right: cell 2 (operational), cell 1 (full) and the bio-cells.

- Surface water ponding was not observed in any of the areas within the landfill, that I inspected.
- No issues relating to malodourous emissions, pests, visible dust or any other amenity related condition was observed during my inspection.
- No evidence of any banned¹ or prohibited wastes were observed during the inspection.

Site Observations – leachate level compliance check

- There are several available leachate monitoring points in the bio-cells and one monitoring point in cell 1 and 2 respectively.

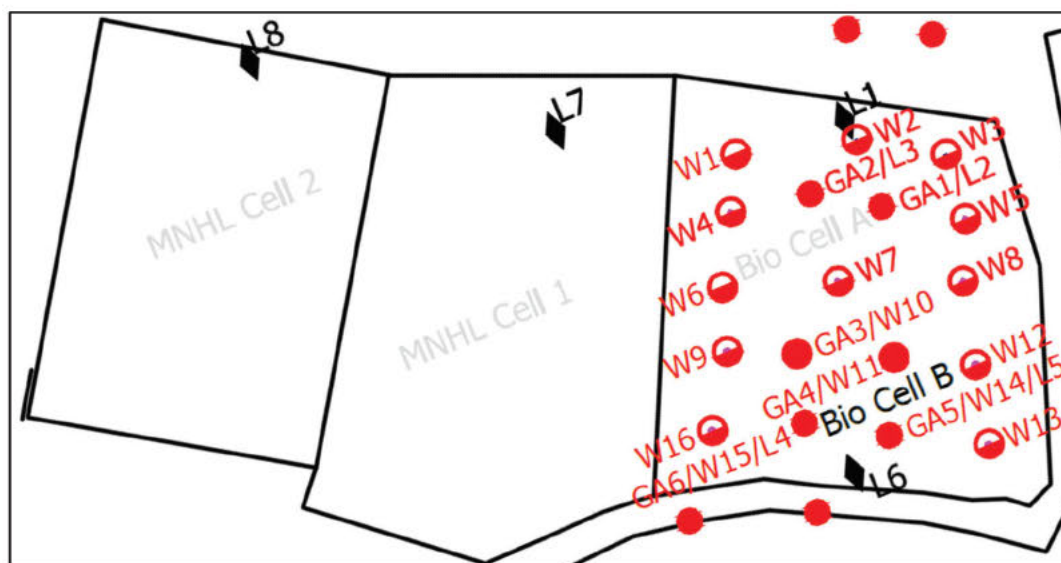


Figure 2: drawing showing location of primary² leachate monitoring points: L1; L6; L7 & L8. The Bio-cells also has additional dual purpose wells that function as leachate level monitoring points L2; L3; L4; L5; W10 & W11.

- Leachate level compliance has been problematic at the site over the last number of years, however this year the operator has succeeded in bringing all the cells within the landfill back into compliance³. This improvement is welcomed and is in part based on the operator's new leachate pumping system which was commissioned last year (see further details below).
- A check of the leachate levels in a random sample of the wells at the landfill was conducted by JD in my presence. Leachate levels were below the permit's compliance limits in all the monitoring wells that were dipped.

¹ Article 5(3) COUNCIL DIRECTIVE 1999/31/EC

² The labelling currently used by the operator does not correspond to the numbering system specified in the permit, however this will be corrected shortly when the TATA submit their application to update the permit's monitoring tables.

³ A more detailed assessment and comment on leachate level compliance will be undertaken by NRW as part of their next assessment of the site's monitoring returns – due after the end of October 2020

Site Observations – leachate collection system

- In October 2019 Tata commissioned a new pumped leachate collection system to reduce reliance on the road tankering of leachate. The new system permitted leachate to be collected and removed via a network of pipes, with the leachate eventually transferred into the steelwork's effluent treatment plant. Most of the infrastructure is buried, except for the holding tank, flow meters, a few short runs of pipework and the non-return valves. The system allows leachate to be pumped from two non hazardous cells at the same time (i.e. either cell 1 or cell 2 can be pumped whilst bio-cell A or bio-cell B can be pumped). The operator also retains tankering capability to supplement the leachate pumping operation should the need arise. The holding tank is located within a bunded area within the landfill's transfer station facility.
- Some of the flow meters were inspected as part of this visit and of those inspected, they appeared to be functioning (i.e. recording flow). The flow meters installed in the leachate collection system are used by TATA to provide a simple leak detection system. Following some initial difficulties (primarily with air entering the system) which have since been resolved, the operator is now confident that the system will provide the necessary means of detecting a leak. NRW did not inspect the leak detection calculator as part of this visit due to Covid 19 social distancing restrictions.
- The flow meters at the landfill are Woltman (cold) water meters and a subsequent check of the specification for these units indicate that they are only designed for use with clean water, not necessarily aggressive leachates. Whilst it is acknowledged that site operatives routinely clean the mechanisms in the units, the manufacturer's statement does question the suitability of the unit for use on site. The manufacturer also suggests that a removeable filter element should be used to protect the mechanism. Given the aggressive nature of the leachates the suitability of the units needs to be reviewed. We also note that the flow meters accuracy is dependent on the flow rate. At very low flows the unit may record a flow, but it would not be accurate. At flows below 1.2m³/h it won't record any flow, it is only with flows over 8⁴ m³/hr that the unit is accurate. The operator needs to clarify how they can be confident that the meter will provide the accuracy needed to perform their leak detection function. **Action**
- Leachate is pumped to a sealed holding tank sited within the landfill's transfer station compound. The tank is located within an engineered concrete containment bund which was designed to provide the required secondary containment (i.e. providing a containment capacity equivalent to 110% of the tank – should a tank failure occur). The tank is fitted with a vented lid in the event of gas build up. No malodorous emission was detected in or near the tank during the visit.

⁴ Based on the manufacturer's specification for 80mm diameter unit.

- A concrete sump (fitted with a pump) has been built into in the bund floor and this keeps the bund free from rainwater build up. The bund has been constructed with no pipe penetrations through the bund wall, the leachate pipework passes over the bund. The bund appeared free of standing water with no visual evidence of leaks noted.
- An inspection of the bund wall surface reveals several penetrations, these appear to have been sealed to some degree. It is unclear whether these penetrations pass through the entire bund wall or only partially (plastic caps conceal the aperture on the inside surface). Eitherway the operator needs to check these carefully to ensure that they are properly sealed. Any holes, even partial⁵ ones should be sealed with suitable waterproof grout (flexible sealant or plastic caps are not normally considered suitable as they degrade). **ACTION**



Figures 3 and 4:

Photograph showing leachate storage tank and bunding. Close-up photograph showing suspected partial penetration through the bund wall (operator to check).

- All the pipework outside the bund area (that I inspected) appeared to be of robust solid construction (fusion welded).

⁵ Penetration points are considered potential weak points in any bunding system and can, over time, progress to cause failure.

Site Observations – Landfill Cell 2

- Cell 2 is the cell where industrial wastes from the steelworks are deposited. One area of this landfill cell is currently being used as a waste processing area, processing the wastes being generated from the cell 1 recovery operations.
- I inspected the waste flanks and the slope gradients appeared to be satisfactory.
- No evidence of leachate weeping, or breakouts were noted along any of the flanks inspected.
- No issues relating to malodorous emissions, pests, visible dust or any other amenity related condition was observed during my inspection.
- No evidence of any banned or prohibited wastes was observed during the inspection of the cell.

Site Observations – Landfill Cell 1

- My inspection of this cell was limited to a leachate level check (compliant) and a visual check of some of the flanks (satisfactory).
- This cell is full, although the eastern flank is being re-profiled as part of the void space extension project for the bio-cells (see later discussion). This re-profiling operation is presently suspended. However, about half of the work on the flank appears to have been completed (see figure 5). This prepared surface will form the formation layer for the barrier system which, once installed, will be used to separate the Biocell wastes.



Figure 5 Photograph showing eastern flank of cell 1. Left hand side shows area of flank already re-profiled.

Site Observations – Landfill Bio-cells A & B - waste levels

- Waste deposited in this landfill is baled (in the site's transfer station).
- During this visit it appeared that waste levels in the two bio-cells were above the levels permitted in the permit. It appears that in some areas the waste may be between 2 and 2.5m above the permitted waste levels. Furthermore, the standoff between the waste bales and the crest of the slope is no more than 2m.
- Tata originally sought and received permission⁶ to temporarily store baled wastes, but only for a period of six months, only on bio-cell B and only to levels up to 2m (with a 5m standoff from the edge of the crest).

⁶ On the 20th December 2019 – Permit Variation V006 - issued (BV73111E).

- It is unclear why TATA have not pressed ahead and completed the re-profiling and lining works within the timeframes (or limits) specified. Eitherway the site is now exceeding the waste limits specified in the permit.
- Given the situation the operator will need to consider phasing the re-profiling works into two distinct phases. This will at least allow half the void to be freed up quickly, whilst the remaining area is re-profiled⁷.

Compliance: the failure to maintain waste levels in accordance with the levels set out in the permit is contrary to condition 2.7.6. A compliance classification score of 3 has been allocated to this failure (against the a1 criteria heading).

Action: TATA must complete (or partially complete) the construction of the new void extension area and submit the CQA Validation Report to NRW for assessment by the 7th of December 2020. If TATA are unable to comply with this deadline then waste may need to be taken for off-site disposal.

Site Observations – Landfill Bio-cells A and B – other comments

- Leachate level checks were conducted at several random leachate monitoring wells. The results indicate compliance with the leachate limit.
- This cell is full, although the eastern flank is being re-profiled as part of the void space extension project for the bio-cells. This re-profiling operation is presently suspended. However, we understand that about half of the work on the flank appears to have been completed (see figure 5). This prepared surface will form the formation layer for the barrier system that will be used to separate the bio-cell wastes.
- No evidence of leachate weeping, or breakouts were noted along any of the flanks inspected.
- No issues relating to malodorous emissions, pests, visible dust or any other amenity related condition was observed during my inspection.
- No evidence of any banned or prohibited wastes were observed during the inspection.
- No wastes were received or deposited whilst I was present at the tipping area and I was therefore unable to check the operator's Level 3 waste acceptance checks.

Site Observations – Landfill Transfer Station

- We undertook a brief inspection of the waste transfer station.
- No prohibited waste were noted during the inspection and the impermeable pavement within the transfer compound appeared satisfactory.
- No waste were being stored outside the transfer building, which in accordance with the permit.
- Potentially contaminated surface water, from within the building is collected in a sealed sump, which is periodically emptied. I checked the site's records as part of

⁷ This delay cannot impact the capping programme for the bio-cells (Improvement Condition 3)

this visit. The record inspected indicated that the sump was being checked and levels were low.

- Clean water from the yard and roofed areas is meant to be discharged into stone drains situated outside the site. It appears that water should also drain to a third French drain near the access gate. The drainage plan should be updated to reflect this (see figure 6 - taken from the working plan).

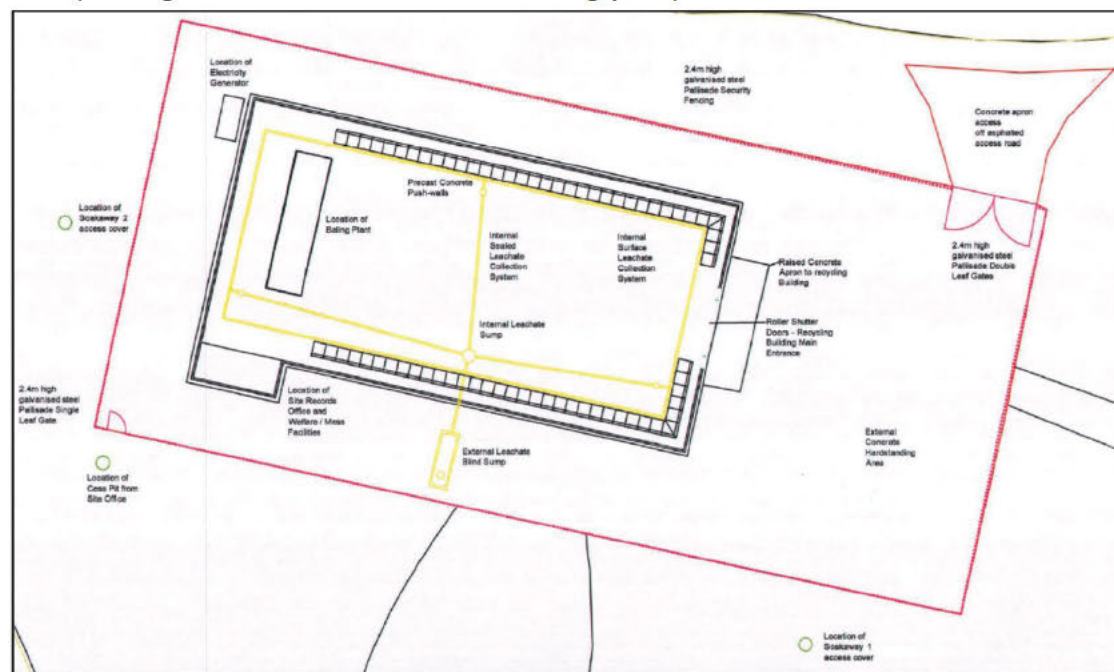


Figure 6. Working Plan drawing of site drainage

- Note: this suspected third drain requires some maintenance as water is not draining freely from the yard. It should further be noted that the daily inspection records indicate that no issues with the surface water drainage system was identified during the daily inspection. This is not likely and staff should be reminded of the requirement to keep accurate records.

Waste Acceptance Documentation

Whilst on site I collected copies of Tata's Level 1 Basic Characterisation (BC) documents for Neutralised Pickle Liquor Filtercake waste. This non-hazardous waste stream is generated by Tata at their Port Talbot and Llanwern steelworks and copies of assessments for both sites were provided. These were then assessed on my return to the office. A detailed summary of the assessment is attached to this report; however, the key observations include:

- The BC does not identify a **key** (Level 2) **testing variable**, despite being a mirror entry;
- It is unclear whether Level 2 compliance checks have been undertaken by the waste producer (in this case the waste producer is TATA):

- There is also a statement in the BC document that suggests that waste pickle liquor or spent pickle liquor are disposed of at the *on-site landfill*. This is presumed to be an error as liquids are banned from landfill, however the operator will need to clarify.
- There are some minor omissions or correction required in the documents noted – see attachment.

Improvement Condition 3 – Capping

- This improvement condition requires the capping of areas of the bio-cell by the end of 2021. As part of this work the completion of the next recharge trenches (C & D), will also be required⁸. In order to minimise any risk of delay the operator is urged to submit the CQA plan for the construction of this infrastructure as soon as possible. This will allow NRW the opportunity to review and hopefully approve the design well in advance of the works. This will reduce the risk of delays to construction. **Action**

Pending Permit Variation

- The operator is currently preparing a permit variation application to update and in some case amend the monitoring tables for this landfill.

If you have any queries about this report please contact the NRW officer named above.

⁸ As specified in the permit's operating techniques (Table S1.2).

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 in the aspects assessed.
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

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

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, formal caution or warnings. We may also take a protective response to a permit non-compliance and this can include 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.