

Compliance Assessment Report CAR_NRW0044966

Permit being assessed: VP3935AT.

For: Tir John Landfill, **held by:** Enovert South Ltd

At: Wern Fawr Road, Off Fabian Way, Port Tenant, SWANSEA, West Glamorgan, SA1 8LN.

Type of assessment: Report/Data Review,

Reason: Routine.

On: 31/12/2024.

Parts of permit assessed: Q2 2024 Monitoring Returns..

NRW Lead Officer: Daniel Packer.

Report sent to: Lance Jones, Area Operations Manager, on 24/02/2025.

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

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR3A(1) - Installations - Emissions and monitoring - Emissions to water	C3 Minor	permit condition 3.1.2 and 3.1.5 Table S3.5
IR3A(1) - Installations - Emissions and monitoring - Emissions to water	C3 Minor	3.1.2 and 3.1.5 Table S3.5
IR3A(2) - Installations - Emissions and monitoring - Emissions to air	Assessed (A)	
IR2I - Installations - Operations - Leachate levels (only applicable to landfill)	C3 Minor	The limits for the level of leachate listed in schedule 3 table S3.1

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

Total non-compliances recorded	Total non-compliance score
3	12

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
IR3A(1)	Due to re-issue of report action carried forward and included	16/03/2025

Criteria	Action needed	Complete by
	in CAR_NRW0046071.	
IR3A(1)	Due to re-issue of report action carried forward and included in CAR_NRW0046071.	16/03/2025
IR2I	Due to re-issue of report action carried forward and included in CAR_NRW0046071.	16/03/2025

Compliance 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.

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

This Compliance Assessment Report (CAR) is an amended version of that originally produced on 14/08/2024.

This Compliance Assessment Report (CAR) is an assessment of the 2024 Q2 reporting submission required by the permit of the operator, Enovert Limited - Tir John Landfill.

The Q2 monitoring returns has been submitted to NRW in full, inside the reporting window as required by condition 4.2.3 of the permit. This represents a compliance with the environmental permit under permit condition 4.2.

Ground Water

From a review of the information submitted, ground water monitoring was undertaken. GDW18 shows elevated levels of Ammoniacal-N (mg/l) with a reported reading of 14 mg/l. This is significantly over the permitted level of 5 mg/l. This represents a non-compliance with the stipulated emission limit required by permit condition 3 Emissions and monitoring.

A category 3 (C3) non-compliance score has been applied against permit condition 3.1.2 and 3.1.5 Table S3.5 and consolidated for the quarter for GDW18.

The operator stated, "*The ammonia trend at GDW18 is discussed at length in the 2023 Annual Report and 2018 HRA Review, and chloride remains low, indicating that this is unlikely to be leachate seepage and more likely attributed to the recharge from waters originating in the Crymlyn Bog.*"

Whilst the above is acknowledged, until such time as an application is made to vary the permit and the variation is determined/approved the current limits apply.

ACTION - Due to re-issue of report action carried forward and included in CAR_NRW0046071.

The Cis-1,2-Dichloroethene levels, is being reported as all showing <3 ug/l. However,

the limit set within the permit is 1 ug/l. Until such time as an application is made to vary the permit the current limits apply.

The Tributyl Phosphate (ug/l) levels, is being reported as all showing <0.1 ug/l. However, the limit set within the permit is 0.02 ug/l. Until such time as an application is made to vary the permit the current limits apply.

ACTION - Due to re-issue of report action carried forward and included in CAR_NRW0046071.

Ortho Phosphate levels recorded above the permitted limit of 0.05 mg/l across several wells. This represents a non-compliance with the stipulated emission limit required by permit condition 3 Emissions and monitoring.

Sample point	Date	Limit	Result
GDW04.	11/06/2024,	0.05,	0.14 mg/l
GDW05.	11/06/2024,	0.05,	2.70 mg/l
GDW06.	11/06/2024,	0.05,	0.42 mg/l
GDW07.	11/06/2024,	0.05,	1.30 mg/l
GDW08.	11/06/2024,	0.05,	0.91 mg/l
GDW10.	11/06/2024,	0.05,	0.38 mg/l
GDW16.	11/06/2024,	0.05,	0.13 mg/l
GDW18.	11/06/2024,	0.05,	0.20 mg/l

A category 3 (C3) non-compliance score has been applied against permit condition 3.1.2 and 3.1.5 Table S3.5 for the quarter for these results.

Several wells are also showing above permitted levels at the same result. Ortho Phosphate is being reported as showing <0.062. However, the limit set within the permit is 0.05 (mg/l).

Sample point	Date	Limit	Result
GDW9,	11/06/2024,	0.05,	<0.062,
GDW11,	11/06/2024,	0.05,	<0.062,
GDW12,	11/06/2024,	0.05,	<0.062,
GDW14,	11/06/2024,	0.05,	<0.062,
GDW15,	11/06/2024,	0.05,	<0.062,
GDW17,	11/06/2024,	0.05,	<0.062,

The operator stated. *"We switched to a new accredited laboratory in January 2021 and the permit limits set for Orthophosphate are lower than the laboratory can reach using accredited analytical methods, therefore many of the results are less than the limit of detection."*

Historical breaches of Orthophosphate have primarily occurred in the boreholes on the Northern perimeter of the Tir-John site. These are thought to be from non-landfill sources. We are planning to review the limits set on orthophosphate in the next permit variation application."

Whilst the above is acknowledged, until such time as an application is made to vary the permit and the variation is determined/approved the current limits apply.

ACTION - Due to re-issue of report action carried forward and included in CAR_NRW0046071.

Emissions to Air

From a review of the information submitted, engine gas, compound and flaring monitoring was undertaken, and the results for Nox (mg/m³), CO (mg/m³) were compliant with the stipulated emission limit required by permit condition 3 Emissions and monitoring.

Leachate

From a review of the information submitted, Leachate level monitoring was undertaken, and the results were non-compliant with the stipulated emission limit required by permit condition 3 Emissions and monitoring on the following sample points: LEW07, LEW09a, LEW09b, LEW13a, LEW14, LEW15a, LEW16, LEW20, LEW21, LEW22, LEW23, LEW24, LEW25, LEW26, LEW28, LEW29, LEW31, LEW32 and LEW33.

A C3 score has been applied for this quarter against permit conditions 3.1.2 and 3.1.5 and TableS3.5.

The operator has responded to previous CAR NRW0043075 dated 29/4/2024 referencing *“a substance recently recognised in the industry as ‘Black Goo’ or ‘Flubber’.*

The precipitate appears to be a complex organic polymer which grows where frothing occurs in the leachate. Within the monitoring boreholes this can occur where landfill gas bubbles through the leachate standing in the borehole.

Physically the precipitate has a slimy sticky consistency but can harden in air to form a latex sponge like material that is extremely elastic. Where this hardening occurs in boreholes it forms a thickening crust just above the highest historical level of leachate, even though subsequent levels may fall away, the ‘Flubber’ causing the blockage remains stuck at that level and can prevent further dip measurement.

Trials with hypochlorite as we have had limited success at Tir John so far as the hypochlorite needs to reach and interact with the ‘flubber’ which given the borehole depths (can be in excess of 20m) and lateral distortions, have possibly not been dosed with precision.

In the meantime, we are fitting the boreholes with much smaller diameter (32mm and 63mm) ‘Dip Tubes’ with which to punch through the ‘flubber’ blockages and allow (via a perforated end section) access for a dip tape to measure the leachate dips. This work will be completed by the end of April 2024.

Gas extraction efforts in Cells 15 and 16 have increased to maximise power generation for the newly installed gas engine in the last 12 months and this should have a positive impact, increasing negative pressure in the cells and reducing foaming in the boreholes.”

Whilst the above is acknowledged, the current permitted limits apply.

ACTION – Due to re-issue of report action carried forward and included in CAR_NRW0046071.

Schedule 5 notification

Leachate Levels

The operator submitted to NRW on 2 July 2024 a Schedule 5 notification in line with the environmental permit for leachate levels recorded above the permitted limit. A consolidated C3 score has been applied for the quarter.

The operator submitted to NRW on 19 July 2024 a Schedule 5 notification in line with the environmental permit for leachate levels recorded above the permitted limit. A consolidated C3 score has been applied for the quarter.

Water Levels

The operator submitted to NRW on 19 July 2024 a Schedule 5 notification in line with the environmental permit for Ammoniacal-N levels and Ortho Phosphate levels recorded above the permitted limit. A consolidated C3 score has been applied for Ammoniacal-N levels in respect of the Schedule 5 submission for this quarter against permit conditions 3.1.2 and 3.1.5 (groundwater) TableS3.5.

Ammoniacal-N levels were exceeded at the following locations:

Sample point	Date	Result	Limit (mg/l)
GDW18,	11/06/2024,	14,	5

Ortho Phosphate levels were exceeded at the following locations:

Sample point	Date	Result	Limit (mg/l)
GDW04,	11/06/2024,	0.14,	0.05
GDW05,	11/06/2024,	2.70,	0.05
GDW06,	11/06/2024,	0.42,	0.05
GDW07,	11/06/2024,	1.30,	0.05
GDW08,	11/06/2024,	0.91,	0.05
GDW10,	11/06/2024,	0.38,	0.05
GDW16,	11/06/2024,	0.13,	0.05
GDW18,	11/06/2024,	0.20,	0.05

A C3 score has been applied in respect of the Schedule 5 submission for this quarter against permit conditions 3.1.2 and 3.1.5 (groundwater)

Several wells are also showing above permitted levels at the same result. Ortho Phosphate is being reported as showing <0.062. However, the limit set within the permit is 0.05 (mg/l).

Sample point	Date	Result	Limit (mg/l)
GDW09,	11/06/2024,	<0.062,	0.05
GDW11,	11/06/2024,	<0.062,	0.05
GDW12,	11/06/2024,	<0.062,	0.05
GDW14R,	11/06/2024,	<0.062,	0.05
GDW15R,	11/06/2024,	<0.062,	0.05
GDW17,	11/06/2024,	<0.062,	0.05

The operator stated "We switched to a new accredited laboratory in January 2021 and the permit limits set for Orthophosphate are lower than the laboratory can reach using accredited analytical methods, therefore many of the results are less than the limit of detection. However it is considered that the permit limits set are aspirational and

unnecessarily low.

Historical detections of Orthophosphate have primarily occurred in the boreholes on the Northern perimeter of the Tir-John site. These are thought to be from non-landfill sources. We are planning to review the limits set on orthophosphate in the next permit variation application.

The ammonia trend at GDW18 is discussed at length in the 2023 Annual Report and 2018 HRA Review, and chloride remains low, indicating that this is unlikely to be leachate seepage and more likely attributed to the recharge from waters originating in the Crymlyn Bog.”

Whilst the above is acknowledged, until such time as an application is made to vary the permit and the variation is determined/approved the current limits apply.

ACTION - Due to re-issue of report action carried forward and included in CAR_NRW0046071.

Note: This CAR report and assessment was undertaken on 24/02/2025. However to ensure that the CCS score is attributed to the correct financial year (for billing) the date on CARS system has been altered to 31 December 2024.

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.

If your assessment result in Section 1 is suspended, what does this mean?

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 compliance criteria (used in section 1 and 2):

1. Management

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

2. Operations

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

3. Emission and Monitoring

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

4. Information

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

Enforcement response

Any non-compliance with a permit condition 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 twenty 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 to 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.