Project Wind

Maw Burn and Cow Gut Dye Tests

QTS

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Project title	Project Wind	**Job number**
Report title	Maw Burn and Cow Gut Dye Tests	1043152
Classification	Client Confidential	

Document revision history

Revision ref	Issue date	Purpose of issue / description of revision
-	08 October 2025	First Issue

1.1 Summary

This report along with the two reports from Dynorod (See appendices) demonstrates the hydrological connectivity of two watercourses, Maw Burn and Cow Gut from the proposed development to their outfall points on Cambois beach and the River Blyth respectively.

The purpose of this report is to satisfy planning condition 31 as per the below text,

"Plans of the receiving downstream networks, showing routes and diameters. Information on the sources for this information shall be included. The routes should be verified by dye testing. Photographs of the inlets and outlets shall be provided."

1.2 Maw Burn Connectivity

1.2.1 Dye Test Methodology

To confirm the hydraulic connectivity between the Maw Burn and Cambois Beach, a dye tracing investigation was carried out in two phases. The testing was split across two separate site visits due to restricted internal access within the proposed development area. Once full access was granted, the second visit enabled completion of the Maw Burn assessment.

First Visit – 27th August 2025

- **Test Location:** Open watercourse within the D.A. Johnstone Plant Hire compound to the Cambois beach outfall.
- **Dye Application:** One tub of drain tracing dye was introduced directly into the Maw Burn watercourse within the plant hire site.
- **Flow Assistance:** A 10,000-litre tanker of clean water was discharged into the channel to assist dye movement.
- **Weather Conditions:** The test was conducted following a prolonged dry spell, resulting in a low base flow within the Maw Burn.
- **Observations:**
- Flow within the watercourse was notably low, which limited natural conveyance of the dye.
- The dye appeared to travel slowly to the outfall, suggesting the presence of lateral drainage connections beneath the plant hire yard.
- These subsurface connections likely contributed to dilution, reducing the brightness of the dye at the outfall. However, the dye was still clearly observed.

Second Visit – 15th September 2025

- **Test Location:** Open Maw Burn watercourse within the site development area.
- **Dye Application:** Two tubs of drain tracing dye were introduced to enhance visibility and traceability.
- **Flow Assistance:** A 10,000-litre tanker of clean water was discharged into the Maw Burn to assist dye movement.
- **Weather Conditions:** The test followed a rainfall event on the previous day, resulting in steady and sustained flow within the Maw Burn.

Observations:

- The increased flow conditions improved dye dispersion and visibility.
- The test confirmed consistent conveyance of dye through the watercourse.

Location and images below:

1.2.2 Conclusion

The dye tracing tests conducted on the Maw Burn have successfully demonstrated hydraulic connectivity between the proposed development site and Cambois Beach. The results satisfy the planning authority's requirements for surface water discharge verification.

1.3 Cow Gut Connectivity

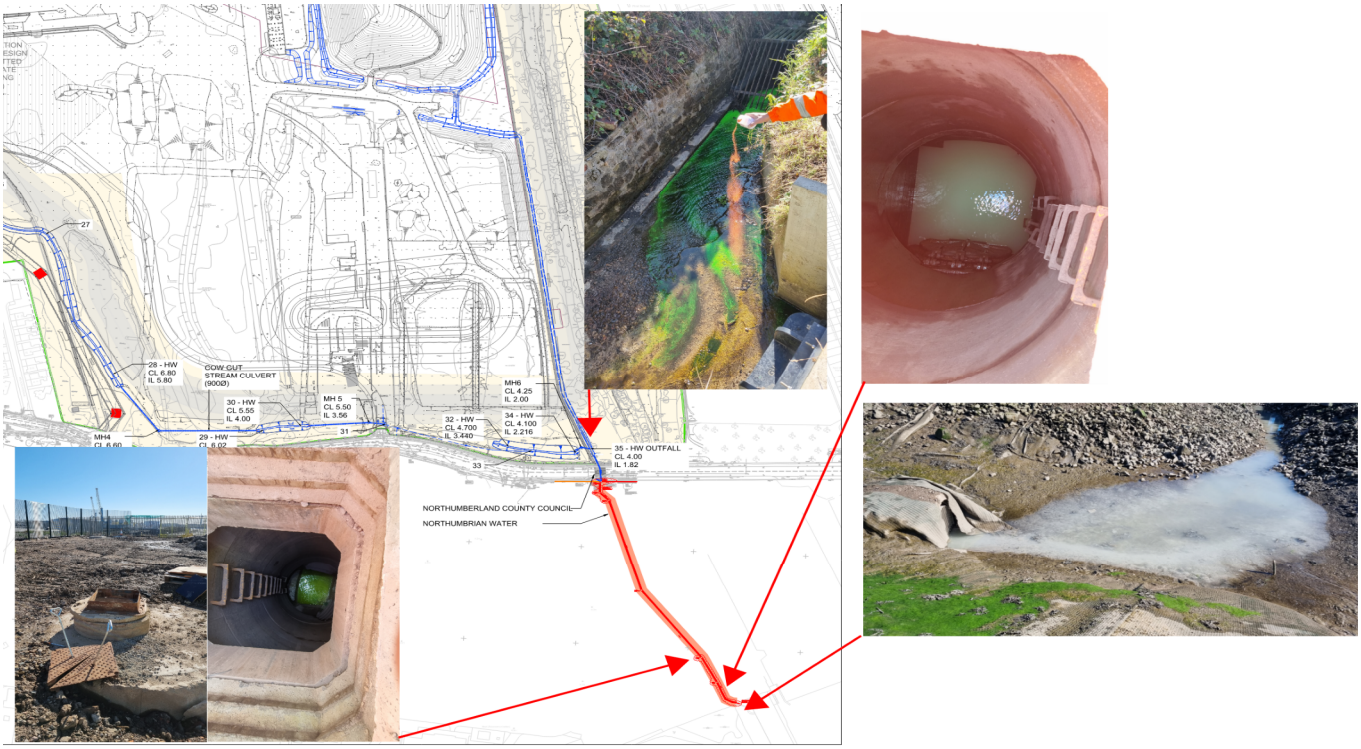
1.3.1 Dye Test Methodology

To verify the hydraulic connectivity between the Cow Gut watercourse and the River Blyth, a dye tracing exercise was conducted on 23rd September 2025. The test was designed to simulate realistic flow conditions and confirm the discharge pathway under tidal influence.

Test Details – 23rd September 2025

- **Test Location:** Cow Gut Open watercourse within the proposed development.
- **Dye Application:** Two tubs of drain tracing dye were introduced into the Cow Gut watercourse to ensure sufficient visibility and traceability.
- **Flow Assistance:** Two 10,000-litre tankers of clean water were discharged into the channel to replicate moderate flow conditions and assist dye transport.
- **Weather Conditions:** The test followed a heavy rainfall event over the preceding weekend, resulting in steady and sustained flow within the watercourse.
- The increased flow conditions were ideal for observing dye movement and confirming connectivity.
- **Tidal Conditions:**
- The test was timed to coincide with a spring tide, during which the outfall to the River Blyth was fully exposed.
- This ensured optimal visibility and minimised tidal backflow interference.

Location and images below



1.3.2 Conclusion

The dye tracing test conducted on the Cow Gut watercourse has demonstrated hydraulic connectivity to the River Blyth. These findings satisfy the planning authority's requirements for surface water outfall verification and support the development's compliance with drainage and environmental standards.

2.0 Appendices

- **Appendix A**: Dynorod Report No. 1, 4th September 2025
- **Appendix B**: Dynorod Report No. 2, 26th September 2025

4th September 2025

Client: Arcadis

Address: Watercourse survey and remediation (Cambois)

F.A.O: Laura Allwood

Thank you entrusting dyno rod with you valued enquiry.

We have been out to the culvert and have attempted to clean the culvert using a High-Pressure Water jetting unit, we have been unable to get the jet to travel and we suspect we have gone up into a chamber, access point to the culverts.

We have added dye into the culvert entrance in the plant hire depot; we then pumped 10 thousand litres of water behind it to push the dye through. The engineers then walked down to the beach to see if the dye has come to the outlet of the culvert, when they arrived, it was clear no dye had come through the drain. We then added more water until the tanker was completely empty and returned to the beach and still no sign of dye in the system.

We then attended site a few days later to check the outlet on the beach and it was clear to us that there was green dye showing in the water at the culvert, I have attached a photo I took whilst I was on site of the outlet of the culvert, this shows the water is dyed green.

Please see photos attached and method of works and cost below.

Runitem Ltd
5 Rosse Close, Parsons, Washington
Tyne & Wear, NE37 1ET
Tel: 0191 415 0415
Fax: 0191 417 4117
Email: info@dynorod.biz

DYNO-ROD

Please contact me if you require any further information.

Yours faithfully

Stewert McColl

Operations Manager.

Runitem Ltd
5 Rosse Close, Parsons, Washington
Tyne & Wear, NE37 1ET
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Fax: 0191 417 4117
Email: info@dynorod.biz

26th September 2025

Client: Arcadis

Address: Watercourse survey and remediation (Cambois)

F.A.O: Laura Allwood

Thank you entrusting dyno rod with you valued enquiry.

Maw Burn:

We have been back to the upstream section of the burn and we have put down 10,000 litres of water and a bright green drain tracing dye, after a few hours this drain dye has pushed through to the access point inside of the plant hire company and we have added the photos below.

Please see photos attached and method of works and cost below.

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Cow Gut Culvert:

We have also been back to the cow gut and we have added 20,000 litres of water with bright green drain tracing dye and we have then with permission we have entered the building site opposite (JDR Cables) and after a couple of hours we have identified the drain dye in the manhole chamber seen in the photos below.

We believe this then runs into the river and we have lifted a manhole chamber which is off the construction site and near the side of the river, this has a very large gate valve and we believe the silt in the drain is affecting the dye reaching this manhole chamber, we have looked down this drain for a number of hours and the water running through a dirty colour.

Please contact me if you require any further information.

Yours faithfully

Stewert McColl

Operations Manager.

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