

MOBUOY QUARTERLY MONITORING REPORT – Q1 2026



Abstract

Report summarizing the results and providing interpretation of the Environmental Monitoring Programme at the Mobuoy Road waste site between 1st January and 31st March 2026.

Mobuoy Remediation Project Team

Mobuoy Remediation Project - Environmental Monitoring – Quarterly Report – Q1 2026

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Executive Summary

Reporting Period:	01/01/2026 – 31/03/2026
Report Date:	21/07/2026
Monitoring Status:	Mobuoy EMP continues as per the agreed schedule.
Monitoring in Period:	Monitoring carried out at site – - Q1 Groundwater Monitoring round complete – March 2026. - Monthly Surface Water monitoring completed in January, February & March 2026. - Bi-weekly Organics monitoring @ SW6 & SW8 continues as per schedule. - MNA Monitoring – 1 x round completed in January 2026. - PFAS monitoring – 1 x round completed in March 2026. - The Technical Team continue to carry out weekly site inspections including field chemistry and visual inspection of surface water samples.
Mobuoy monitoring programme updates:	PFAS monitoring - 3No. monitoring rounds scheduled in 2026.
Surface Water Quality Issues:	No surface water quality issues attributed to the Mobuoy Rd waste site have occurred within the reporting timeframe.
Mobuoy On-Call Officer:	No incidents at site within the reporting timeframe.
Surface Water Quality Monitoring	
Qualitative Organics Screen:	No water quality issues identified through the Organics Screening programme in the reporting timeframe. No 'Medium' or 'Large' peaks were detected in Q1 2026.
Quantitative Organics monitoring of Surface Water:	No water quality issues identified through the Quantitative Organics monitoring in the reporting period. All Organic parameters detected to date belong to the class of chemicals known as "PAHs" (Polycyclic Aromatic Hydrocarbons). In Q1 2026, Benzo(a)pyrene, Fluoranthene and Benzo(ghi)perylene were detected in exceedance of their respective Environmental Quality Standard (EQS) at SW6 (upstream of the Mobuoy site). At SW8 (downstream of the Mobuoy site), Benzo(a)pyrene & Fluoranthene were detected in exceedance of their respective EQS. PAH concentrations at SW8 (d/s) are comparable with those at SW6 (u/s), indicating a source upstream from the Mobuoy site.
Surface Water Monitoring – Metals and Inorganic Parameters:	No water quality issues identified. - Ammoniacal Nitrogen, Iron & Manganese are comparable between SW6 (u/s) & SW8 (d/s) monitoring locations. - Iron concentrations detected at SW6 (u/s) & SW8 (d/s) were above the Drinking Water Standard (DWS) but below the EQS in Q1 2026. - Manganese was detected at SW6 (u/s) in January at a concentration above the DWS but below the EQS (Bioavailable). Manganese concentrations detected at SW8 (d/s) exceeded the DWS but were below the EQS (Bioavailable) during Q1 2026.

	- Iron & manganese concentrations are known to be elevated in the Faughan catchment with elevated detections found historically upstream of the site at SW6. - Water quality is comparable between SW6 (u/s) and SW8 (d/s), no adverse impacts on water quality in the River Faughan attributable to the Mobuoy site were observed.
Field Chemistry:	No water quality issues identified in Q1 2026. 13 x site inspections were conducted by NIEA staff in Q1 2026. Site inspections involved a walkover of the River Faughan & tributaries that flow adjacent to the site where visual assessments are recorded and 'field chemistry' analysis carried out for a range of water quality parameters such as pH, Conductivity, Ammoniacal Nitrogen, Dissolved Oxygen & Turbidity. - Concentrations detected were comparable between SW6 (u/s) and SW8 (d/s).
Groundwater Quality Monitoring	
Groundwater Monitoring:	- Ammoniacal Nitrogen, Iron and Manganese were detected above their respective EQS in waste zones throughout the site. - Nickel was detected at concentrations above the EQS in Waste Zones 1, 6 & 8. - Cadmium was detected at concentrations above the EQS in Waste Zones 6 & 8. - Sodium was detected at concentrations above the DWS in Waste Zones 1 & 8. - Arsenic was detected at a concentration above the EQS in Waste Zone 1. - Chromium(III) was detected at a concentration above the EQS in Waste Zone 1. - Chloride was detected at concentrations above the DWS in Waste Zones 1 & 8. - Conductivity was detected above the DWS in Waste Zones 1, 3, 6 & 8. - Nitrite was detected at concentrations above the DWS in Waste Zones 1, 3 & 8. - Benzene was detected at concentrations above the EQS in Waste Zones 3, 5 & 8. - Toluene was detected at concentrations above the EQS in Waste Zone 8. - Ethylbenzene was detected at a concentration above the 'WHO Guideline for drinking water quality' in Waste Zone 8. - Concentrations of 'PAH' parameters (particularly Naphthalene, Anthracene, Fluoranthene, Benzo(b/k)fluoranthene, Benzo(g,h,i)perylene & Benzo(a)pyrene) detected above applicable EQS standards predominantly in Waste Zones 3, 5 & 8.

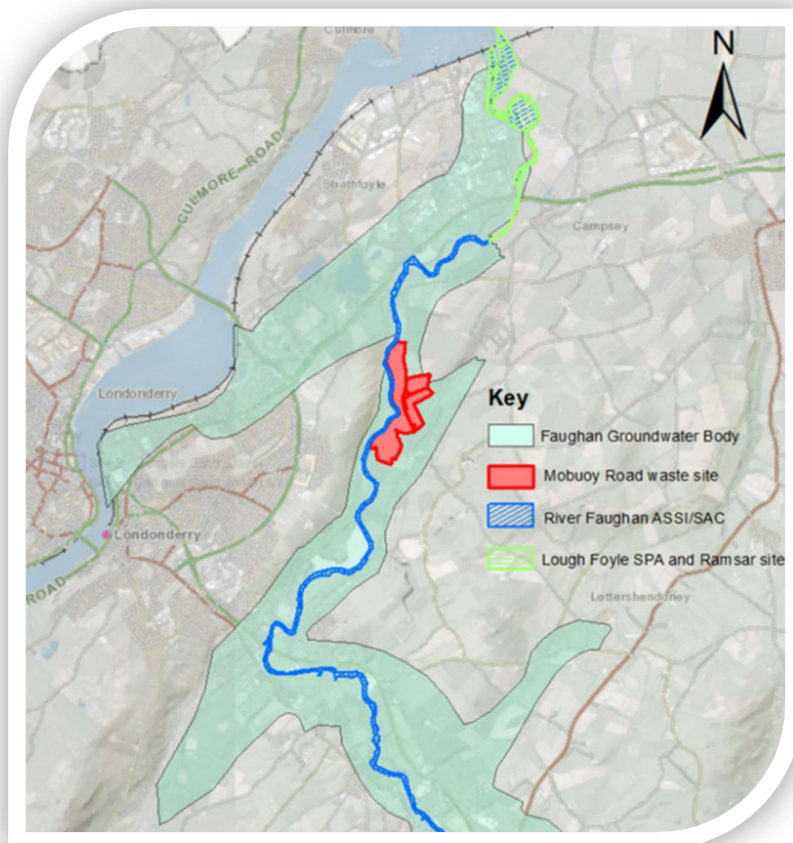
1.0 Introduction

The Mobuoy Road waste site contains deposits of uncontrolled waste that have impacted the groundwater beneath the site. The groundwater beneath the site flows towards the River Faughan and contributes to the flow in the river. The River Faughan flows to the north towards Lough Foyle and NI Water abstract water for public supply approximately 2km downstream of the site. The water abstracted by NI Water is then fully treated at the water treatment works, in line with the requirements of the Drinking Water Regulations, before going into the drinking water supply network.

The River Faughan is designated as an Area of Special Scientific Interest (ASSI) and as a Special Area of Conservation (SAC) due to its Atlantic salmon and otter populations.

NIEA is developing plans for remediation of the Mobuoy Road waste site. Prior to any remediation, the environmental impacts of the waste deposits are closely monitored to assess any impact to the water environment through a comprehensive Environmental Monitoring Programme (EMP). Results are monitored and interpreted continuously by a dedicated project team. The purpose of this report is to provide a quarterly summary of the results, interpretations, and any resulting actions.

Figure 1 – Site Location and Setting



2.0 Our Current Understanding of the site – CSM

The risks of the waste on the environment have been thoroughly assessed in line with the Land Contamination Risk Management process (<https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>).

An updated Detailed Quantitative Risk Assessment (DQRA) was completed in October 2022 (<https://www.daera-ni.gov.uk/publications/mobuoy-remediation-project-industry-engagement-remediation-options>). Important components of the DQRA are the Conceptual Site Model (CSM), identification of Potential Contaminants of Concern (PCOCs); and modelling of those PCOCs to assess the risk to the both the groundwater underlying the site and the River Faughan.

The CSM is constructed on the '**Source-Pathway-Receptor**' model. In the case of the Mobuoy site the CSM divides the site into discrete 'source zones' based on the different waste types and therefore different PCOCs in each zone.

Figure 2 - Source Zones (DQRA)



Source Zones have common pathways by which contamination could migrate to receptors.

Two **pathways** are identified for the Mobuoy site:

1. Migration through the groundwater, and
2. Transport via a Tributary, which intersects part of the site, to the River Faughan.

The **receptors** sensitive to pollution from the site are the groundwater that underlies the site; the River Faughan and its ecology; and the drinking water abstraction at Cloghole.

Where the DQRA identifies a contaminant linkage, further detailed risk assessment has been undertaken using established modelling methodologies (Environment Agencies Remedial Targets Methodology using ConSim and Water Balance Modelling). This modelling has resulted in a risk rating for each contaminant in each source zone depending on the modelled concentrations at the receptor and the travel time to the receptor.

2.1 Review of Potential Contaminants of Concern

Potential contaminants of concern (PCOC) for the site per source zone are outlined in Figure 3 below. The Updated DQRA (Tetrtech, October 2022) divides the site into ten 'source zones' as presented in Figure 2 above. PCOCs are assigned a risk rating from negligible to moderate depending on the degree to which modelling predicts these contaminants exceed their respective screening criteria at the site boundary and the predicated travel time to the receptor. The ratings within the table are based on established modelling methodologies.

Figure 3 - DQRA table 12.3 – Summary of DQRA Results – Risk to River Faughan

Mobuoy Road Waste Site							Updated DQRA
Table 12-3 - Summary of DQRA Results – Risk to River Faughan							
Contaminant of Concern	Source Area 1,2,3	Source Area 3,8	Source Area 5	Source Area 6	Source Area 7	Source Area 8	Source Area 9
Metals							
Arsenic	Low						
Boron	Low	Low					
Cadmium			Moderate	Moderate	Moderate	Moderate	
Copper	Negligible						
Zinc	Low	Moderate	Moderate	Low	Moderate	Low	Low
Nickel	Low	Moderate	Negligible	Low	Low	Moderate	Low
Mercury	Negligible	Low					
PAHs							
Naphthalene	Moderate	Moderate	Moderate	Moderate			
Fluoranthene		Moderate	Moderate				
Anthracene		Moderate	Moderate				
BTEX							
Benzene		Moderate	Moderate	Low			
Toluene	Negligible	Moderate	Low		Negligible		
Ethylbenzene		Moderate	Moderate				
TPH (aromatic)							
C5 to C7 Aromatic		Moderate	Moderate				
C8 to C10 Aromatic		Moderate					
C10 to C12 Aromatic	Moderate	Moderate	Moderate				
C12 to C16 Aromatic		Moderate	Moderate				
C16 to C21 Aromatic		Moderate	Low				
C21 to C35 Aromatic		Low					
Other							
Ammonia	Moderate	Negligible	Negligible	Moderate		Moderate	Low
Chloride	Low			Low		Moderate	
Free Cyanide	Moderate			Moderate	Moderate		Moderate

It is of note that this is the risk rating at the boundary condition of the site but when dilution from the River Faughan is taken into account the DQRA concludes that impact to the Faughan is not likely.

3.0 Aims of the Environmental Monitoring Programme

The purpose of the Environmental Monitoring Programme (EMP) is to:

1. Protect the raw water quality and sufficiency at Cloghole abstraction point in the River Faughan where NI Water abstract raw water to Carmoney Water Treatment Works for full treatment for public drinking water supply.
2. Protect water quality of the River Faughan.
3. Inform remediation design of the Mobuoy Road waste site.

This is done by:

1. Monitoring the water quality in the River Faughan to detect any immediate risk to water quality in the River Faughan.
2. Monitoring groundwater wells (or boreholes), installed into waste and natural ground on-site for any changes in chemical concentration within the groundwater. Monitoring the groundwater gives an early warning of changing risk to the receptors. The Potential Contaminants of Concern (PCOCs) identified for 'source zones' have travel times ranging from <1yr to >17000 yrs. These travel times feed into the modelled risk rating in the DQRA. If we observe an increasing trend in concentration or a change in spatial extent this could mean changes in the risk to the receptors.
3. Biological monitoring is undertaken in the River Faughan. Biological monitoring detects changes in the population structures of living organisms that occur when an ecosystem is subjected to pollution or other types of environmental stress. Biological monitoring gives the best indication of the River health in the Medium term.

In addition to monitoring undertaken for protection of public health and surface water receptors, monitoring for purposes of informing remediation design is undertaken in the form of 'Monitored Natural Attenuation' monitoring and 'Tarry Waste' monitoring (further explanation in section 5.0)

4.0 Collaborative Working

The EMP is implemented and developed at the site alongside a collaborative partnership with NI Water, Loughs Agency, and NIEA Water Management Unit. Additional support and oversight of the EMP, including water quality testing results generated, is provided by other project stakeholders through quarterly meetings of the Mobuoy Water Quality Technical Advisory Group (WQTAG). The WQTAG promotes a collaborative working platform for (a) Data Sharing; (b) Sharing expert advice on surface water and drinking water quality matters, and (c) Sharing working knowledge of other water quality pressures in the Faughan catchment.

5.0 Monitoring Programme Design

Current Monitoring Programme

The current monitoring programme consists of multiple complementary lines of monitoring:

- 1) **Mobuoy EMP** - The Environmental Monitoring Plan which is primarily aimed at risk management and the protection of sensitive receptors and encompasses:
 - Qualitative Screening for organic parameters in the River Faughan undertaken by NIEA and at the NI Water abstraction at Cloghole (raw water abstraction) and the treated water at Carmoney Water Treatment Works (WTW) by NIEA on behalf of NI Water.
 - Quantitative chemical analysis of site surface waters & the River Faughan.
 - Biological Monitoring of Surface Waters in the River Faughan.
 - Quantitative chemical analysis of site Groundwater.
 - PFAS analysis of River Faughan and site Groundwater – Analysis summary to be reported annually (Q4 report).
- 2) **MNA Monitoring** – Monitored Natural Attenuation Monitoring is for the purposes of remedial design to collect evidence of contamination attenuation processes in the site groundwater. MNA, where site conditions are suitable, has been shown to be effective in the remediation of Organics substances such as hydrocarbons. Subsequently, the MNA programme has been targeted towards areas where there is a greater concentration of organics impact. Serves a dual purpose for Tarry Waste monitoring.
- 3) **Tarry Waste Monitoring** - The greatest impact of organics on the site is associated with 'Tarry Waste' deposits. Additional 'Tarry Waste' specific parameters have been added to the MNA programme of monitoring rather than the EMP to maximise resource i.e. locations are already scheduled for MNA monitoring so some additional tarry waste parameters have been added.

Surface Water Monitoring Locations and Schedule

A summary of the surface water monitoring locations is presented in Figure 4 below with a summary schedule for surface water monitoring outlined in Table 1 below.

Figure 4 –Surface Water Monitoring Locations.

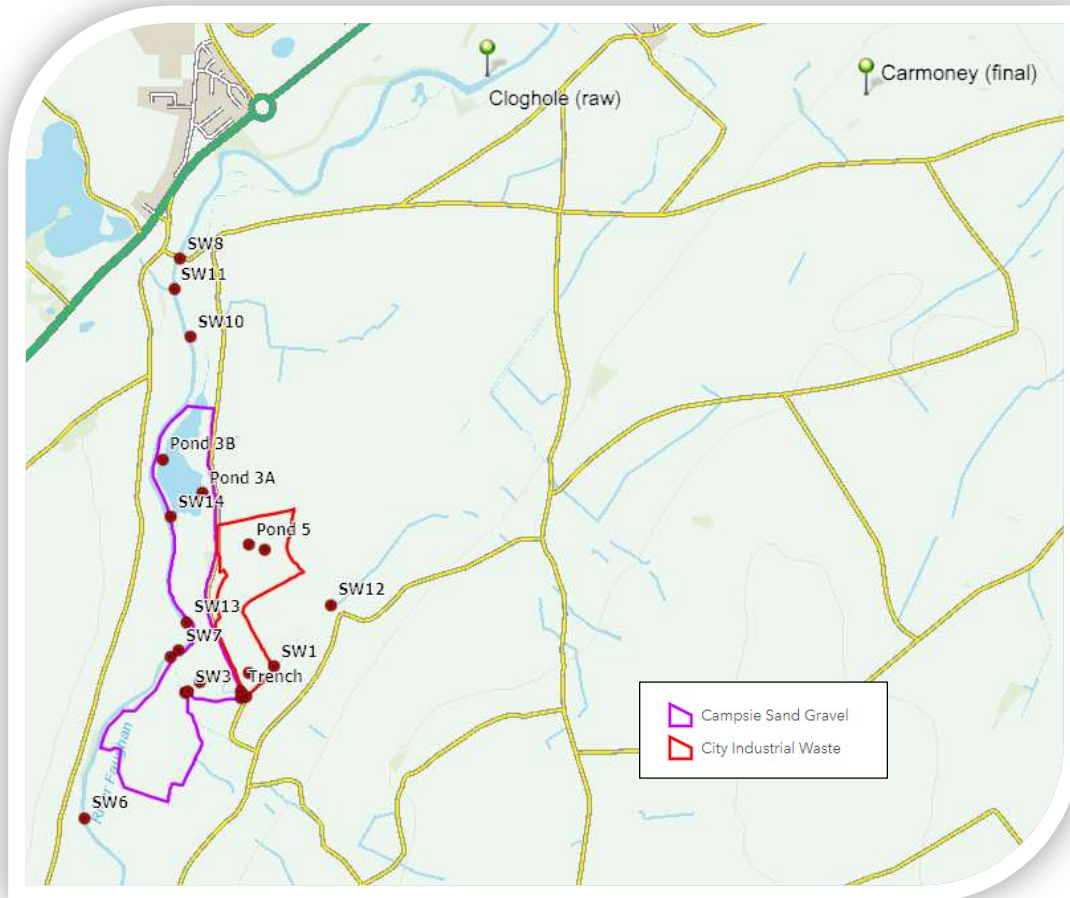


Table 1 - Summary of Surface Water Monitoring: Q1 2026 January - March

Quantitative - Metals and Inorganics	
Surface Water	Monthly (January, February & March) – Tributary (SW2, SW3, SW4, SW5, SW12); and River Faughan (SW6, SW7, SW8, SW10, SW11, SW14); and Site Standing Waters (Lagoon, Trench, Pond 3a) Quarterly (March) - Tributary (SW1, SW9) and Site Standing Waters (Pond 2, Pond 4 & Pond 5)
Quantitative - Organics	
Surface Water	Monthly - River Faughan (SW6/ SW8)
Raw Water and Treated Water at the Water Treatment Works	Monthly – Raw (Cloghole abstraction) and Final Water (Carmony Water Treatment Works). <i>*Note this is in addition to the sampling and analysis undertaken by NI Water.</i>
Qualitative Organics Screen	
Surface Water	Daily – NIW Raw (River Faughan @ Cloghole) and Treated (Carmony WTW) Monthly - SW6/ SW8 Monthly – SW5/SW12/SW10/Pond 3a

Groundwater Monitoring Locations and Schedule

A summary of the monitoring zones for groundwater are presented in Figure 2 in Section 2.0 of this report. The schedule by zone for the groundwater monitoring is outlined in Table 2 below.

The monitoring of site boreholes; both leachate (wells installed into waste) and groundwater wells (installed into natural ground) is split over two monitoring programmes; the Mobuoy EMP and the MNA monitoring programme. This is due to their slightly differing purposes. The EMP is primarily for the purposes of environmental protection, whereas the MNA programme is primarily for collection of evidence for remedial design.

Groundwater is sampled as per the monitoring schedule. Sampling frequency and suites of analysis are based on the risks identified in the detailed quantitative risk assessment (DQRA) for the site.

Table 2 – Summary of Groundwater Monitoring programme: Q1 2026 January – March

Source Zone	NIEA – Mobuoy Environmental Monitoring Programme	Monitored Natural Attenuation Monitoring Programme
	Quarterly	Round 22
Zone 1	BH302; BH113; BH646	BH302; BH407; BH408; BH610D; BH646
Zone 2	-	BH649B
Zone 3	BH659D; BH649B; BH666	BH405; BH406; BH659D; BH666; BH679
Zone 4	-	BH114; BH121; BH122; BH616
Zone 5	BH07; BH102; BH627; BH629; BH631	BH07; BH102; BH626; BH627; BH628; BH629 BH630; BH631
Zone 6	BH101; BH104; BH119; BH201; BH623D; BH624D; BH653; BH654D	BH101; BH119; BH201; BH623D; BH624D; BH653; BH654D
Zone 7	BH205	-
Zone 8	BH06; BH106; BH107; BH206; BH402; BH403; BH404; BH409; BH410; BH411; BH633; BH634; BH636D; BH651	BH06; BH106; BH107; BH206; BH402D; BH403; BH404; BH410; BH633; BH634; BH636D; BH651
Zone 9	BH220; BH635D; BH637	BH111; BH635D; BH637
CIW Yard	-	-
Off-site	BH1 Drumahoe	-
Total	38 x Boreholes	45 x Boreholes

6.0 Surface Water Monitoring Results

6.1 Surface Water Monitoring Results Summary for Q1 2026.

Surface water quality results are screened against relevant Environmental Quality Standards (EQS) & Drinking Water Standards (DWS). The EQS are standards derived or set out by the 'Water Framework Directive (Priority Substances and Classification) Regulations (NI), 2015' designed to protect the water environment ecology and habitats. The DWS are standards derived or set out by the 'Water Supply (Water Quality) Regulations (NI) 2017'. For parameters where both an EQS & DWS are available, the most stringent value has been used for comparison. Long term trends in the data are monitored for any trends which may indicate an impact from the Mobuoy site. Trend analysis for key contaminants is presented in section 6.2 of this report.

Table 3 – Summary of Metallic Parameters (Trace Metals) in surface waters: Q1 2026 January - March

Parameter	Screening Value (EQS / DWS)	Tributary (SW1, SW2, SW3, SW4, SW5, SW9, SW12)		River Faughan (SW6, SW7, SW8, SW10, SW11, SW13, SW14)	
	Units (µg/l)	No. Detections Above DWS / EQS	Concentration Range (ug/l)	No. Detections Above DWS / EQS	Concentration Range (ug/l)
Arsenic	10 (2)	0	0.17 – 0.32	0	0.33 – 0.43
Cadmium	0.09 (1)	0	0.03 ^a – 0.07	0	0.03 ^a
Calcium	-	0	39,997 – 60,940	0	18,828 – 37,717
Chromium	50 (2)	0	0.13 ^a	0	0.13 ^a – 0.27
Chromium (III)	4.7 (1)	0	0.13 ^a	0	0.13 ^a – 0.27
Chromium (VI)	3.4 (1)	0	0.03 ^a – 0.15	0	0.03 ^a – 0.06
Copper	1 (Bioavailable*) (1)	0	1.13 – 8.05	0	0.25 – 1.76
Lead	1.2 (Bioavailable*) (1)	0	0.03 ^a – 0.05	0	0.03 ^a – 0.25
Nickel	4 (Bioavailable*) (1)	0	1.11 – 1.93	0	0.63 – 1.44
Mercury	0.07 (1)	0	0.0025 ^a	0	0.0025 ^a
Aluminium	200 (2)	0	0.05 ^a	0	0.05 ^a
Iron	200 (2)	2 @SW5	20 ^a – 427	2 @SW6 1 @SW7 3 @ SW8 1 @SW11 3 @ SW13 3 @ SW14	58 – 663
Magnesium	-	0	5,422 – 9,136	0	3,332 – 5,800
Manganese	50 (2)	1 @SW2 1 @SW3 1 @SW4 3 @SW5	13 ^a - 509	1 @SW6 1 @SW7 3 @ SW8 3 @SW10	40 – 94

				2 @ SW13 3 @ SW14	
Potassium	-	0	3,950 – 6,304	0	1,895 – 6,820
Vanadium	-	0	0.05 ^a – 0.12	0	0.05 ^a – 0.23
Selenium	10 (2)	0	0.32 – 0.82	0	0.10 ^a – 0.20
Sodium	200,000 (2)	0	12,230 – 18,392	0	10,652 – 19,756
Zinc	10.9AA+ABC (Bioavailable*)** (1)	0	0.87 – 8.54	0	0.25 ^a – 4.21
Sulphate	250,000 (2)	0	13,897 – 23,739	0	7,305 – 14,733
Sulphur	-	0	4,638 – 7,923	0	2,438 – 4,918

(1) EQS (The Water Framework Directive (Priority Substances and Classification) Regulations (NI) 2015)

(2) DWS (The Water Supply (Water Quality) Regulations (NI) 2017)

*Bioavailable – The fraction of the dissolved concentration likely to result in toxic effects as determined using the 'Metals Bioavailability Assessment Tool'.

**AA- Annual average, ABC – Ambient Background Concentration. ABC is an estimate of background levels of Zinc based on a low percentile of monitoring data. A figure of 1µg/l has been estimated for freshwaters in NI.

^a Where monitoring data received is below the laboratory 'Limit of Quantification' (LOQ), half the LOQ value is reported.

Metals results from Q1 2026 for the monthly and quarterly scheduled surface water monitoring in the River Faughan and the tributary adjacent to the site (Table 3), indicate that Iron & Manganese concentrations detected were in exceedance of the DWS but below the EQS at a number of surface water monitoring locations. Further interpretation is provided in Section 6.2 below. Concentrations of Copper reported are for the 'dissolved' concentration. The EQS for Copper is based on the concentration that is 'Bioavailable'. The concentration that is 'Bioavailable' is calculated using a model known as 'MBAT' (Metals Bioavailability Assessment Tool). Although the dissolved concentration range reported in Q1 would indicate an exceedance of the EQS, when the 'MBAT' model is applied, concentrations of Copper detected in Q1 are below the EQS.

All other parameters were below their relevant EQS/DWS. Overall, trace metal parameters monitored in Q1 2026 are comparable between the upstream (SW6) and downstream (SW8) monitoring locations in the River Faughan.

Table 4 – Summary of Inorganics Parameters in surface waters – Q1 2026 January - March

Parameter	Screening Value (EQS / DWS)	Tributary (SW1, SW2, SW3, SW4, SW5, SW9, SW12)		River Faughan (SW6, SW7, SW8, SW10, SW11, SW13, SW14)	
	Units (mg/l)	No. Detections Above EQS	Concentration Range (mg/l)	No. Detections Above EQS	Concentration Range (mg/l)
Alkalinity	-	0	76.0 – 99.0	0	41.0 – 99.0
Ammoniacal Nitrogen	0.3 (1)	1 @ SW5	0.04 – 0.32	0	0.02 ^a – 0.12
Biochemical Oxygen Demand	4 (1)	0	1.5 ^a	0	1.5 ^a – 3.1
Chloride	250 (2)	0	14.4 – 28.4	0	16.6 – 26.9
Conductivity	2500µS/cm (2)	0	328 – 377	0	204 – 317
Dissolved Organic Carbon	-	0	2.35 – 3.74	0	4.40 – 9.65
Nitrate	50 (2)	0	2.08 – 5.91	0	0.55 – 1.61
Nitrite	0.1 (2)	0	0.003 ^a – 0.029	0	0.005 – 0.011
pH	-	0	6.5 – 7.09	0	7.11 – 7.52
Total Oxidised Nitrogen	-	0	2.09 – 5.92	0	0.56 – 1.62
Total Phosphorus	-	0	0.03 – 0.16	0	0.04 – 0.14

(1) EQS (The Water Framework Directive (Priority Substances and Classification) Regulations (NI) 2015)

(2) DWS (The Water Supply (Water Quality) Regulations (NI) 2017)

^a Where monitoring data received is below the laboratory 'Limit of Quantification' (LOQ), half the LOQ value is reported.

Inorganic results for surface waters monitored in Q1 2026 (Table 4) show that Ammoniacal Nitrogen was detected outside the EQS (Water Framework Directive Regulations) classification for 'High' status. A sample collected at SW5 in March had an Ammoniacal Nitrogen concentration of 0.32mg/l which is classified as 'Good' status.

SW5 is a monitoring location situated along a tributary that flows adjacent to the western boundary of the site before intersecting the site and discharging to the River Faughan. Samples collected at monitoring locations in the River Faughan in March are comparable and classified as 'High' status as per the WFD EQS.

All other parameters were below their relevant EQS/DWS. Overall, inorganic parameters monitored in Q1 2026 are comparable between the upstream (SW6) and downstream (SW8) monitoring locations in the River Faughan.

Table 5 – Summary of Organics Parameters exceeding a screening standard in Q1 2026 January - March

	Parameter	EQS Units (µg/l)	No. of detections above EQS	Average concentration (µg/l)	Max concentration (µg/l)	Min concentration (µg/l)
SW6	Benzo(a)pyrene	0.00017 (1)	3	0.008	0.018	0.002
SW6	Fluoranthene	0.0063 (1)	1	0.010	0.025	0.001
SW6	Benzo(ghi)perylene	0.0082 (1)	1	0.008	0.016	0.003
SW8	Benzo(a)pyrene	0.00017 (1)	3	0.002	0.003	0.002
SW8	Fluoranthene	0.0063 (1)	1	0.004	0.007	0.001

(1) EQS (The Water Framework Directive (Priority Substances and Classification) Regulations (NI) 2015)

(2) DWS (The Water Supply (Water Quality) Regulations (NI) 2017)

(AA) – Annual average.

^a Where monitoring data received is below the laboratory 'Limit of Quantification' (LOQ), half the LOQ value is reported.

Organics quantitative analysis of surface waters conducted during Q1 2026 (Table 5) identified low-level detections of Benzo(a)pyrene, Fluoranthene and Benzo(ghi)perylene which belong to the class of chemicals known as Polycyclic Aromatic Hydrocarbons (PAHs). Although detections of Benzo(a)pyrene and Fluoranthene were found to exceed the EQS (Environmental Quality Standard) at both SW6 (upstream) and SW8 (downstream) in Q1, concentrations detected did not exceed the "Maximum Allowable Concentration" (MAC) (Benzo(a)pyrene – 0.27ug/l; Fluoranthene – 0.12ug/l). MAC is an environmental standard used to evaluate short term impacts. Benzo(ghi)perylene was detected above the EQS at SW6 (upstream) in the March monitoring round. While it was also detected at SW8 (downstream) in Q1, the concentrations detected were below the EQS.

When compared with relevant Drinking Water Standards (DWS), detections of Benzo(a)pyrene in Q1 2026 were generally below both the DWS (0.01ug/l) and the World Health Organisation (WHO) guideline for drinking water (0.7ug/l). The exception was a detection at SW6 in the March monitoring round, where a concentration of 0.016ug/l was found. A corresponding sample collected at SW8 on the same day had a detection of <0.003ug/l (below the laboratory LOQ) which is below the DWS. Detections of Benzo(ghi)perylene in Q1 were found to be below the relevant DWS (0.1ug/l). For Fluoranthene, there is no DWS or WHO guideline value available. However, an Operational 'Suggested No Adverse Response Level' (SNARL) of 10ug/l exists and no exceedances of this threshold were detected in Q1.

The detections of PAHs at both the upstream (SW6) and downstream (SW8) monitoring locations in Q1 indicate a source upstream of the Mobuoy site. PAHs are ubiquitous environmental pollutants, generated primarily through the incomplete combustion of organic materials. The EQS values for PAHs are highly conservative compared to the drinking water standards for these substances. No increasing trends or increase in the number of parameters detected were observed at SW6 & SW8 during Q1 2026, overall water quality is comparable between the upstream and downstream locations.

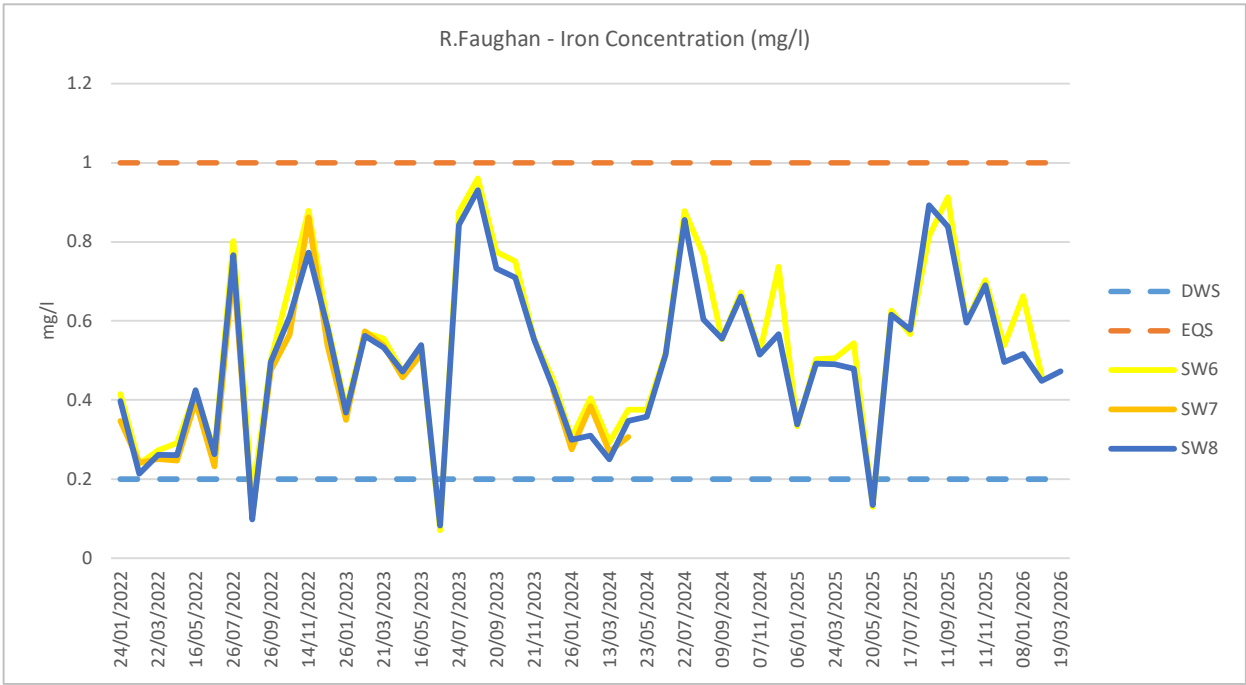
It should be noted that samples taken at SW6 and SW8 are reflective of the 'Raw' water quality in the river. Water abstracted by NI Water at Cloghole goes through a full treatment process at the Carmoney Treatment works, in line with the requirements of the Drinking Water Regulations, before going into the drinking water supply network.

6.2 Surface Water Monitoring Trends Analysis for Q1 2026.

6.2.1 Iron Trends in Surface Waters

Iron concentrations detected at SW6 (u/s - upstream of the site) & SW8 (d/s - downstream of the site) in Q1 2026 are above the DWS (0.2mg/l) but below the EQS (1.0mg/l). A sample was not collected at SW6 in March due to H&S constraints; however, a sample collected on the same day at SW7 (the nearest SW monitoring location on the River Faughan) also recorded Iron concentrations above the DWS but below the EQS. Monitoring data does not indicate an increasing trend at SW8, and concentrations observed are comparable between the upstream and downstream monitoring locations. Iron concentrations are generally high in the catchment and a seasonal trend can be observed in the data.

Figure 5 – Iron (dissolved) concentrations in the River Faughan - SW6 & SW8



Notes: Screening values; DWS - 0.2mg/l (Water Supply Regs 2017); EQS – 1.0mg/l (WFD Regs 2015)

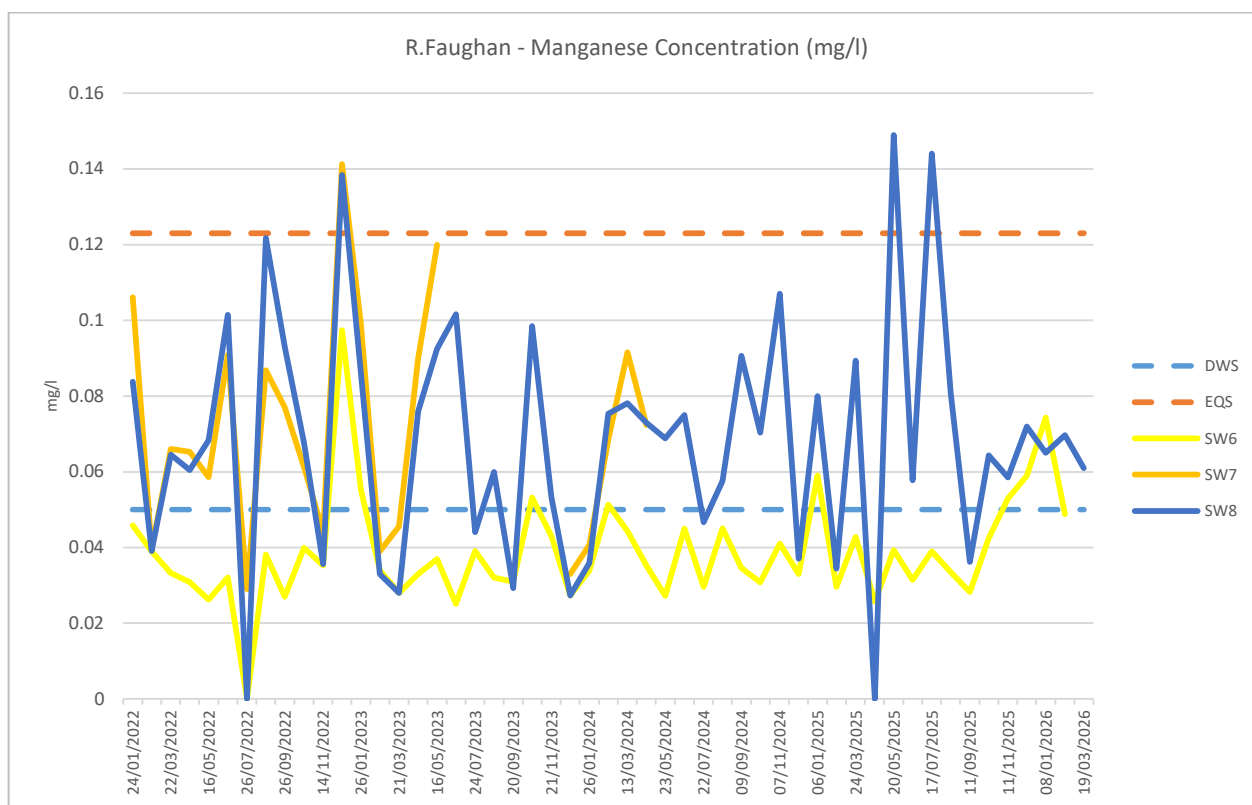
SW7: no sample collected September – December 2023, or May 2024 – Feb 2026 (no access to sampling point)

6.2.2 Manganese Trends in Surface Waters

Manganese concentrations detected at SW6 (upstream of site) during Q1 2026 exceeded the DWS (0.05mg/l) but remained below the EQS (0.123mg/l 'Bioavailable') in January and were below both the DWS and EQS in February. A sample was not collected at SW6 in March due to H&S constraints; however, a sample collected on the same day at SW7 (the nearest SW monitoring location on the River Faughan) recorded Manganese concentrations above the DWS but below the EQS. Manganese concentrations detected at SW8 (downstream of the site) in Q1 2026 exceeded the DWS but were below the EQS in January, February & March.

Monitoring data does not indicate an increasing trend at SW8 and detections are within the historical range. Concentrations observed are comparable between the upstream (SW6) and downstream (SW8) monitoring locations.

Figure 6 – Manganese (dissolved) concentrations in the River Faughan - SW6 & SW8



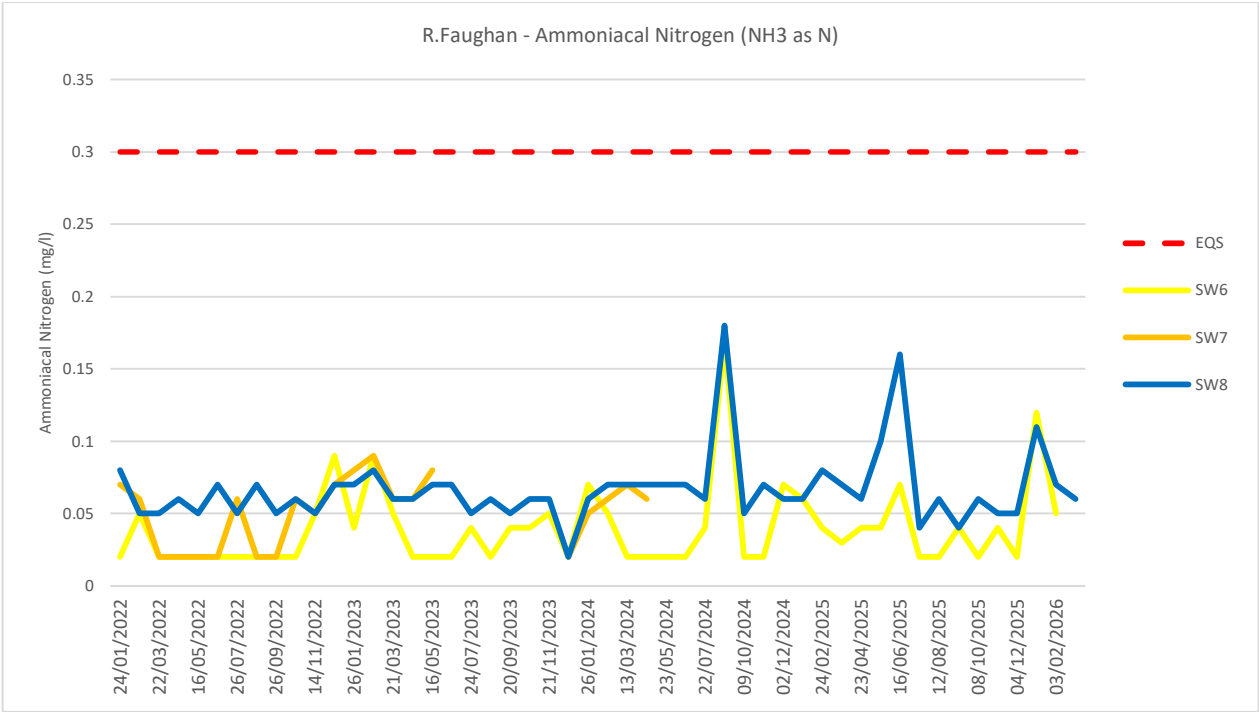
Notes: Screening values; DWS – 0.05mg/l (Water Supply Regs 2017); EQS – 0.123mg/l 'Bioavailable' (WFD Regs 2015)

SW7: no sample collected September – December 2023, or May 2024 – Feb 2026 (no access to sampling point)

6.2.3 Ammoniacal Nitrogen Trends in Surface Water

Ammoniacal Nitrogen results for Q1 2026 (January – March) indicate no detections above the EQS (0.3mg/l, ‘High’ status) at SW6 (upstream of the site) or SW8 (downstream of the site). Monitoring data does not indicate an increasing trend at SW8, and concentrations observed are comparable between the upstream and downstream monitoring locations.

Figure 7 – Ammoniacal Nitrogen concentrations in the River Faughan - SW6 & SW8



Notes: Screening values NH3 as N; EQS – 0.3mg/l (WFD Regulations, 2015); DWS – 1.0mg/l (Protection of Surface Waters Intended for the Abstraction of Drinking Water).

SW7: no sample collected September – December 2023, or May 2024 – Feb 2026 (no access to sampling point)

7.0 Qualitative Organics Screening Data

7.1 What is Organics Screening?

Organics screening is a rapid assessment tool designed by specialists in water quality for the protection of water quality. The screen provides an early warning of any changing risk from organics parameters to the raw water quality in the River Faughan at the point at which NI Water abstracts to the works for treatment. The screen can detect if organic parameters are present at extremely low levels and provides rapid results compared to traditional analytical techniques.

7.2 Benefits of screening over Quantitative Analysis

Organics Screening can return results within 48hrs, whereas traditional quantitative analysis results can take up to two weeks to return. The screen is referred to as 'non-targeted' analysis and can detect a very broad range of organics, whereas traditional quantitative analysis is tied to a specific suite of parameters. The screen will pick up parameters at very low concentrations, whereas traditional quantitative analysis will only pick up parameters that are higher than a 'limit of detection'. Therefore, **the screen is a sensitive, rapid, non-targeted technique** compared to traditional quantitative analysis.

7.3 Limitations of the screen

The screen cannot fully quantify the amount of an organic parameter but can provide a notional concentration which it categorises as a 'small', 'medium' or 'large' peak. It should be noted that a 'large' peak relates to a notional concentration >250ng/l which in most cases is well below any environmental or human health standards. If a large peak is detected then it is possible for expert geochemists to further infer a maximum notional concentration which can be compared to relevant human health or environmental standards.

7.4 How do we use the screen to manage risk from the Mobuoy site?

Groundwaters and surface waters on the Mobuoy site have been screened to provide a 'fingerprint' of parameters typical of the site. NIEA Geochemists provide expert interpretation in the form of a daily report which tells us if any organics parameters have been detected at significant concentrations which are likely to have originated from the Mobuoy Site.

Screening reports are returned on a daily basis for the abstraction point at Cloghole (Raw) and for the treated water at Carmoney Water Treatment Works (Final).

Criteria for significance of organics parameters are:

- Repeated detections of medium or large peaks that have been identified in screens of the Mobuoy site.
- Increasing numbers of parameters detected in screens of the Mobuoy site.

To date there have been no detections of significance.

Table 6 provides a summary of the medium and large peaks detected in Q1 2026 for substances that have potential to be related to the Mobuoy site.

Table 7 provides a summary of parameters detected as medium and large peaks.

Table 6 – Summary of Organics ‘Peaks’ in Q1 2026 – Cloghole Abstraction & Carmoney Water Treatment Works

Location Name	Large	Medium	Total
<i>Carmoney WTW (Final)</i>	0	0	0
<i>Cloghole Abstraction (Raw)</i>	0	0	0

A summary of the parameters detected as medium and large peaks is provided in Table 7 below.

Table 7 Medium and Large Peaks – Q1 2026

Parameter	Carmoney WTW (Final)		Cloghole Abstraction (Raw)		Grand Total
	Large	Medium	Large	Medium	
	-	-	-	-	-
Grand Total	-	-	-	-	-

Key

Substances Routinely Monitored on the Mobuoy Site

Substances Identified in Screens of Surface Waters on the Mobuoy Site

In Q1 2026, there were no ‘Medium’ or ‘Large’ peak detections of parameters classed as either ‘Substances Routinely Monitored on the Mobuoy Site’ or ‘Substances Identified in Screens of Surface Waters on the Mobuoy Site’. There were no detections of significance in Q1 2026.

8.0 Groundwater Monitoring Results

The groundwater at the Mobuoy site is known to be impacted by leachate generated by waste deposited on the site. Section 8.1 summarises the groundwater monitoring results and exceedances over a screening standard in Q1 2026.

8.1 Groundwater Monitoring Results Summary for Q1 2026

Groundwater monitoring results have been screened against relevant Environmental Quality Standards (EQS) and the number of detections above a standard are reported below. Where there is no available EQS then the Drinking Water Standard (DWS) or Suggested No Adverse Response Level (SNARL) have been used for comparison.

Table 8 - Summary of Dissolved Metallic Groundwater Parameters Exceeding a Standard in Q1 2026 January - March

Parameter	Screening Value (EQS / DWS) (µg/l)	No. of detections above a standard	Average concentration (µg/l)	Max concentration (µg/l)	Min concentration (µg/l)
Cadmium	0.09 (1)	4	0.07	0.20	0.03 ^a
Iron	1000 (1)	40	24,790	187,890	10.00 ^a
Manganese	123 (Bioavailable) (1)	54	5,990*	31,170*	1.00 ^{a*}
Nickel	4 (Bioavailable) (1)	6	17.68*	88.79*	0.48*
Sodium	200,000 (2)	2	106,130	610,000	10,070
Arsenic	50 (1)	1	10.22	91.11	0.13 ^a
Chromium III	4.7 (1)	1	0.69	4.78	0.13 ^a

(1) EQS (The Water Framework Directive (Priority Substances and Classification) Regulations (NI) 2015)

(2) DWS (The Water Supply (Water Quality) Regulations (NI) 2017)

* Dissolved concentration.

^a Where monitoring data received is below the laboratory 'Limit of Quantification' (LOQ), half the LOQ value is reported.

A review of Trace Metal groundwater monitoring data in Q1 2026 identified the following:

- Elevated concentrations of Cadmium were detected at monitoring locations within Waste Zone 6 & 8.
- Elevated concentrations of Iron and Manganese were detected in waste zones throughout the site.
- Elevated concentrations of Nickel were detected at monitoring locations in Waste Zones 1, 6 & 8.

- Elevated concentrations of Sodium were detected at monitoring locations in Waste Zones 1 & 8.
- An elevated concentration of Chromium(III) was detected at a monitoring location in Waste Zone 1.
- An elevated concentration of Arsenic was detected at a monitoring location in Waste Zone 1.

Other metal parameters analysed such as Aluminium, Calcium, Chromium, Chromium(VI), Copper, Potassium, Magnesium, Mercury, Lead, Vanadium, Selenium, Sulphur, Sulphate, Sulphide and Zinc did not exceed the relevant screening values, where applicable, in Q1 2026.

Table 9 – Summary of Inorganic Groundwater Parameters Exceeding a Standard in Q1 2026 January - March

Parameter	Screening Value (EQS / DWS) (mg/l)	No. of detections above a standard	Average concentration (mg/l)	Max concentration (mg/l)	Min concentration (mg/l)
Ammoniacal Nitrogen	0.3 (1)	19	52.16	344.00	0.20 ^a
Chloride	250 (2)	2	138.26	962.60	20.40
Conductivity	2500 (2)	4	1817.08	5696.00	367.20
Nitrite	0.1 (2)	3	0.02	0.22	0.01 ^a

(1) EQS (The Water Framework Directive (Priority Substances and Classification) Regulations (NI) 2015)

(2) DWS (The Water Supply (Water Quality) Regulations (NI) 2017)

^a Where monitoring data received is below the laboratory 'Limit of Quantification' (LOQ), half the LOQ value is reported.

A review of Inorganic groundwater monitoring data in Q1 2026 identified the following:

- Elevated concentrations of Ammoniacal Nitrogen were detected at monitoring locations within Waste Zones throughout the site.
- Elevated concentrations of Chloride were detected at monitoring locations within Waste Zone 1 & 8.
- Elevated Conductivity was detected at monitoring locations within Waste Zones 1, 3, 6 & 8.
- Elevated concentrations of Nitrite were detected at monitoring locations within Waste Zone 1, 3 & 8.

Other inorganic parameters analysed such as pH, Alkalinity, Nitrate, Biochemical Oxygen Demand, Chemical Oxygen Demand, Dissolved Organic Carbon, Total Oxidised Nitrogen and Total Phosphorus did not exceed the relevant screening values, where applicable, in Q1 2026.

Table 10 – Summary of Organic Groundwater Parameters Exceeding a Standard in Q1 2026 January - March

Substance Name	Screening Value (EQS / DWS) (µg/l)	No. of detections above a standard	Average concentration (µg/l)	Max concentration (µg/l)	Min concentration (µg/l)
Benzene	10 (1)	13	345.64	3,569.70	0.50 ^a
Toluene	74 (1)	4	19.73	450.00	0.50 ^a
Ethylbenzene	300 (4)	2	30.12	507.00	0.50 ^a
Naphthalene	2 (1)	13	72.35	2406.40	0.05 ^a
Acenaphthylene	10 (3)	4	7.81	150.55	0.0025 ^a
Fluorene	10 (3)	5	12.62	468.50	0.0025 ^a
Phenanthrene	10 (3)	3	16.18	631.20	0.0025 ^a
Anthracene	0.1 (1)	7	0.11	1.82	0.0025 ^a
Fluoranthene	0.0063 (1)	36	0.18	3.94	0.0025 ^a
Benzo(b)fluoranthene	0.017 (1)	9	0.05	0.80	0.0005 ^a
Benzo(k)fluoranthene	0.017 (1)	9	0.04	0.80	0.001
Benzo(a)pyrene	0.00017 (1)	29	0.14	3.11	0.001 ^a
Indeno(1,2,3-cd)pyrene	0.1 (2)	5	0.09	1.97	0.0005 ^a
Benzo(g,h,i)perylene	0.0082 (1)	22	0.13	3.22	0.001 ^a

(1) EQS (The Water Framework Directive (Priority Substances and Classification) Regulations (NI) 2015)

(2) DWS (The Water Supply (Water Quality) Regulations (NI) 2017)

(3) Operational SNARL (Suggested No Adverse Response Level)

(4) World Health Organization – Guidelines for drinking-water quality (2022)

A review of Organic groundwater monitoring data in Q1 2026 identified the following:

- Elevated concentrations of Benzene were detected at monitoring locations within Waste Zones 3, 5 & 8.
- Elevated concentrations of Toluene were detected at monitoring locations within Waste Zone 8.
- Elevated concentrations of Ethylbenzene were detected at monitoring locations within Waste Zone 8.
- Elevated concentrations of 'PAH' parameters (particularly Naphthalene, Anthracene, Fluoranthene, Benzo(b/k)fluoranthene, Benzo(g,h,i)perylene & Benzo(a)pyrene) were detected predominantly at monitoring locations within Waste Zones 3, 5 & 8.

9.0 Summary and Conclusions

Surface water monitoring was completed as per the monitoring schedule in Q1 2026. Iron concentrations were detected in exceedance of the Drinking Water Standard (DWS) but below the Environmental Quality Standard (EQS) at multiple locations in the River Faughan in Q1 2026. Manganese concentrations were detected in exceedance of the DWS but below the EQS at SW6 (upstream of the site) in January and at SW8 (downstream of the site) in January, February and March. Elevated Iron and Manganese are known to occur within the Faughan catchment with elevated detections found historically upstream of the site at SW6. Concentrations detected are comparable between upstream (SW6) and downstream (SW8) monitoring locations in the River Faughan. No increasing trends in Iron or Manganese are evident in monitoring data recorded from 2015 to date.

Benzo(a)pyrene, Fluoranthene & Benzo(ghi)perylene were detected above the EQS at SW6 (u/s) in Q1 2026. At SW8 (d/s), Benzo(a)pyrene & Fluoranthene were also detected above the EQS. These detections, although above the EQS, were generally below the MAC, the DWS and the World Health Organisation (WHO) guideline for drinking water quality (where applicable). An exception was a sample collected at SW6 in the March monitoring round, where Benzo(a)pyrene was detected at a concentration of 0.016ug/l. A corresponding sample collected at SW8 on the same day had a concentration of <0.003ug/l (below the laboratory LOQ), which is below the DWS (0.01ug/l). PAH detections are low level and present at both the upstream sample (SW6) and the downstream sample (SW8) indicating a source upstream of the Mobuoy site. The Environmental Quality Standard for PAHs are highly conservative compared to human health-based standards for these substances. All other surface water monitoring parameters were found to be below the applicable standards in Q1 2026. Water quality is comparable between SW6(u/s) & SW8 (d/s), no adverse impacts on water quality in the River Faughan attributable to the Mobuoy site were observed.

Results from the daily organics screen at Cloghole abstraction point and Carmoney Water Treatment Works final water found no detections of significance during Q1 2026. The notional concentration of parameters detected were below relevant standards and have therefore been classified as not significant.

Groundwater monitoring was completed as per the schedule in Q1 2026. Results from groundwater monitoring found multiple detections above the relevant standard (Environmental Quality Standards & Drinking Water Standards) in Q1 2026.

Groundwater monitoring results have been broken down by waste zone as defined in the updated DQRA (October 2022). Groundwater is known to be impacted by leachate generated from waste on the site. Trends are monitored on an on-going basis in order to assess any changes in the risk. The data has been examined for trends both spatially and temporally. No trends have been identified within the Q1 2026 period that would indicate that the risk to the surface water or the drinking water supply has increased. Full interpretation will be provided annually.