



Department
for Environment
Food & Rural Affairs

1. Purchase Number	Order	To be provided once contract is in place Assessment of the presence of aquatic antimicrobial resistance (AMR) across England – Lot 1
2. Customer		Environment Agency Horizon House Deanery Rd Bristol BS1 5AH
3. Contractor(s)		Enital Limited Aspley Close Enterprise Drive Four Ashes Wolverhampton WV10 7DE Registration number: 2589078
4. Co-Funder(s)		N/A
5. Defra Members	Group	The following Defra Group members will receive the benefit of the Deliverables: Environment Agency
6. The Agreement		<p>This Order is part of the Agreement and is subject to the terms and conditions appended at Appendix 1 and shall come into effect on the Start Date.</p> <p>Unless the context otherwise requires, capitalised expressions used in this Order have the same meanings as in the terms and conditions.</p> <p>The following documents are incorporated into the Agreement. If there is any conflict, the following order of precedence applies (in descending order):</p> <ul style="list-style-type: none">a) this Order;b) the terms and conditions at Appendix 1; andc) the remaining Appendices (if any) in equal order of precedence.
7. Deliverables		Goods: None
		Services: See Appendix 2: Specification
8. Milestone Delays (Clause 18.2.10)		N/A
9. Start Date		2 nd September 2024
10. Expiry Date		20 th December 2024
11. Extension Period (Clause 5.2)		N/A
12. Charges		The Charges for the Deliverables shall be as set out in Appendix 3 – Charges. Unless and to the extent otherwise expressly stated in Appendix 3, the Charges are fixed for the duration of the Agreement.

13. Payment including Payment by Co-funder(s)	<p>Payments will be made in pounds (GBP) by BACS transfer using the details provided by the supplier on submission of a compliant invoice.</p> <p>It is our preference that all invoices are sent electronically, quoting a valid Purchase Order number to [REDACTED]</p> <p>Any invoices that are submitted that do not meet the following criteria will not be processed:</p> <ul style="list-style-type: none"> • 1 PDF per invoice (no larger than 4mb in size) – all supporting documentation must be included in that PDF (no additional separate supporting documentation as a separate file). • Multiple invoices can be attached to one email; however, as above we can only accept 1 invoice per PDF (and no additional supporting files). • Invoices must be dated. • Invoices must quote a valid Purchase Order. • Invoices must have a breakdown of what is being billed. • Invoices must include the total before and after VAT. 																				
14. Customer's Authorised Representative(s)	<p>For general liaison your contact will continue to be [REDACTED]</p> <p>or, in their absence, [REDACTED]</p>																				
15. Contractor's Authorised Representative	<p>For general liaison your contact will continue to be: [REDACTED]</p>																				
16. Co-funder's Authorised Representative	<p>N/A</p>																				
17. Optional Intellectual Property Rights ("IPR") Clauses	<p>The Customer has chosen Option B in respect of intellectual property rights provisions for the Agreement as set out in the terms and conditions.</p>																				
18. Contractor's general liability cap	<p>The liability of the Contractor as set out in Clause 16.2.1 of the terms and conditions is limited to the greater of:</p> <p>(a) an amount equal to 150% of the Charges paid or payable to the Contractor; and</p> <p>(b) £5,000,000</p>																				
19. Progress Meetings and Progress Reports	<p>The Contractor shall attend progress meetings and provide reports to the Customer as outlined in the specifications</p>																				
20. Address for notices	<table border="0"> <thead> <tr> <th>Customer:</th><th>Contractor:</th></tr> </thead> <tbody> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> <tr> <td>[REDACTED]</td><td>[REDACTED]</td></tr> </tbody> </table>	Customer:	Contractor:	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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21. Key Personnel of the Contractor	Key Personnel Role: <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 120px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 110px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 140px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 130px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 80px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 150px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: black; width: 160px; height: 15px; margin-bottom: 2px;"></div>
22. Procedures and Policies	For the purposes of the Agreement: The Customer's security / data security requirements are: Contractor must comply with all UK legal requirements regarding GDPR, and data security and commercial confidentiality where applicable The Customer's additional sustainability requirements are: Environment Agency quality policy and commitment to sustainable business - GOV.UK (www.gov.uk) The Customer's equality and diversity policy/requirements and instructions related to equality Law [and] environmental policy is: Equality and diversity - Environment Agency - GOV.UK (www.gov.uk) The Customer's health and safety policy is: Contractor must comply with all UK Health and Safety legal requirements
23. Commercial Exploitation (Clause 11)	Clause 11 (Commercial Exploitation) shall apply to this Agreement: Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
24. Special Terms	N/A
25. Additional Insurance	N/A
26. Further Data Protection Provisions	The further data protection provisions as contained at Annex 1 of the Terms and Conditions are applicable to this Agreement where indicated below: Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>

Signed for and on behalf of the Customer	Signed for and on behalf of the Contractor

Appendix 1: R&D Terms and Conditions

The terms and conditions applicable to this requirement can be found on the website below

[Research and development terms and conditions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/procurement/r-and-d-terms-and-conditions)

Appendix 2: Specification/Description

1. Background to the requirement

The Environment Agency is undertaking a research project to understand the spatial presence and distribution of antimicrobial resistance (AMR) in the aquatic environment across in England.

In order to investigate the presence of AMR in the aquatic environment, sampling and analysis will be undertaken across a variety of surface waters in three co-aligned campaigns.

- Campaign A: A national survey of sample sites (rivers and streams) across England, sampled once.
- Campaign B: A focused study of selected coastal bathing waters in one area, sampled six times.
- Campaign C: A focused study of a stretch of the river Trent sampled in a single day at 18 closely located sites.

The procurement of this work is split into two lots:

- Lot 1: Sampling and distribution (SC240029) of surface waters, required to be conducted across England over the autumn from September – November 2024
- Lot 2: Lab analysis (SC240030) to be conducted by a laboratory based in mainland GB from September – December 2024

This specification relates to Lot 1: Sampling and distribution (SC240029). The contractor is required to provide the samples to the supplier procured for Lot 2: Lab analysis (SC240030).

2. Specific deliverables: Sampling and distribution

2.1. Sampling

Sampling will be grab samples of surface waters from freshwater rivers and streams as well as saline coastal waters.

Freshwaters should be sampled in the following preference: (i) from a bridge located at the specified sampling location (where available), (ii) from the riverbank using a long reach (3m) sample collection staff, or (iii) in the case of small streams from the watercourse directly. Coastal samples in Campaign B should be taken by wading into the water to the specified location co-ordinates.

2.2. Locations

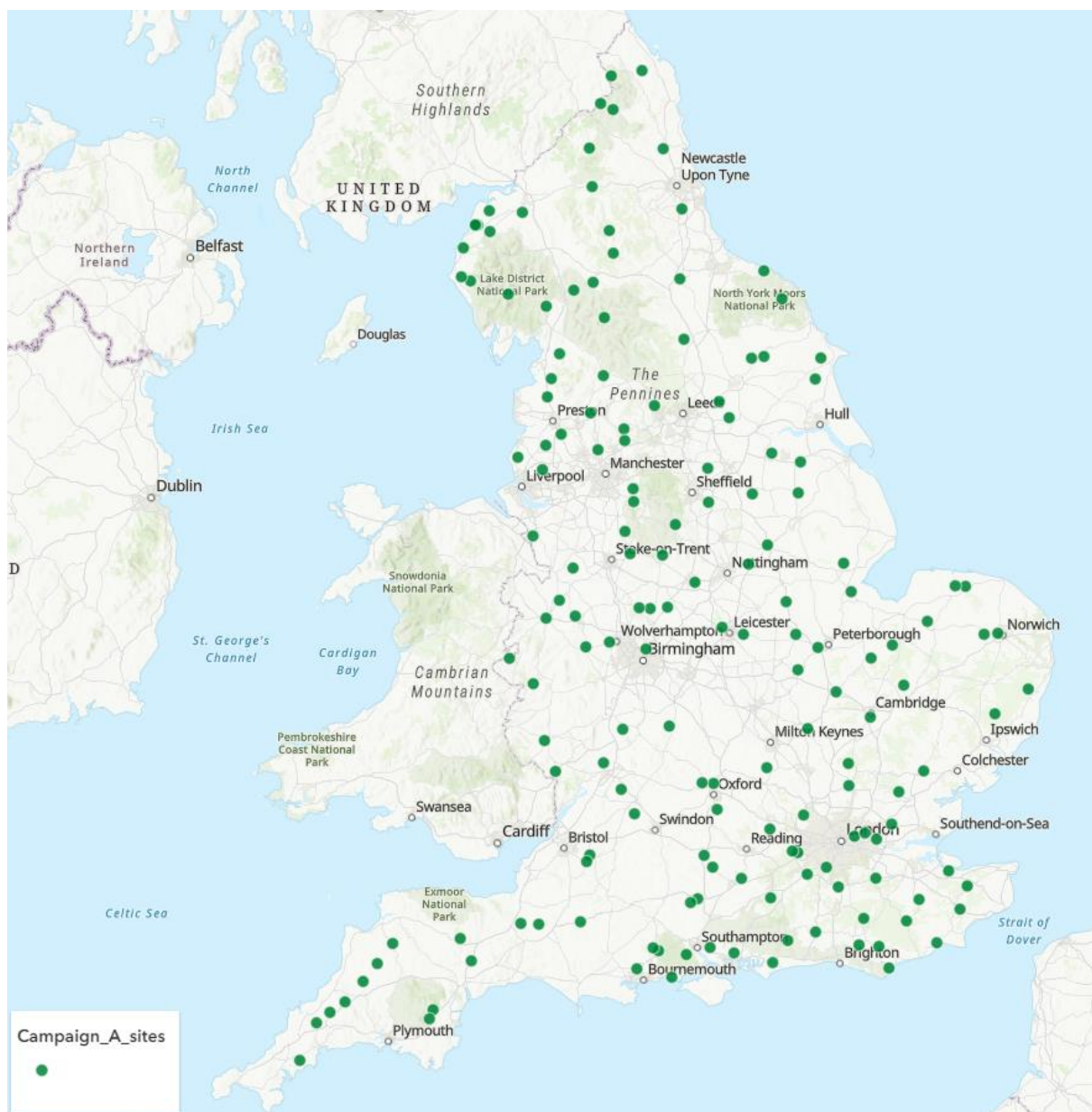
Three separate comma separated values (csv) files (one for each campaign) containing the locations (latitude and longitude coordinates) and details of each site to be sampled is included with this specification:

- Sampling_Campaign_A_sites.csv
- Sampling_Campaign_B_sites.csv
- Sampling_Campaign_C_sites.csv

Campaign A sample sites have largely been selected using the NCEA river surveillance network. Please see below an overview map showing the sampling sites for each campaign. In summary:

- Campaign A: 165 sites across rivers and streams in England to be sampled once.
- Campaign B: 6 coastal sites along the southern coast of England (from Portsmouth to Hastings) to be sampled 6 times each.
- Campaign C: 18 sites along a stretch of the river Trent to be sampled in a single day under non-flood conditions.

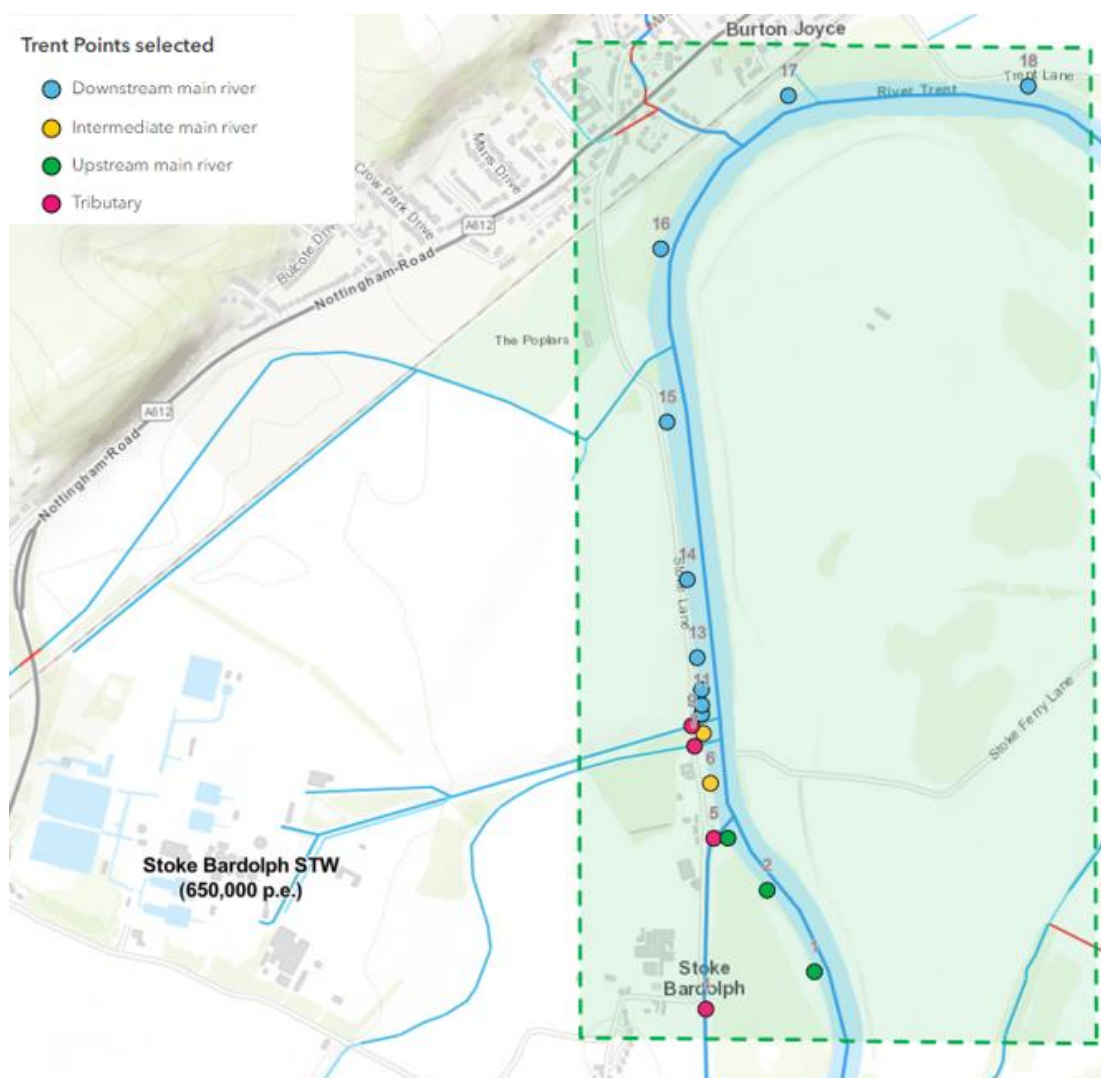
Campaign A: Sample site overview, 165 river sites across England



Campaign B: Sample site overview, 6 coastal sites from Portsmouth to Hastings



Campaign C: Sample site overview, 18 sites along the river Trent, Nottingham



2.3. Sample number, frequency and limits

Overall, 219 samples are to be collected across all three campaigns. Specifically:

Version 1.0 November 2023

- Campaign A: 165 samples
- Campaign B: 36 samples
- Campaign C: 18 samples

Sampling for any campaign is to take place between Sunday to Wednesday, with Monday and Tuesday sampling preferred. This is required to allow labs to receive and process samples.

Sampling for Campaign A is to commence from 15th September 2024 and complete within a maximum of 8 weeks (by 6th November 2024).

Sampling for Campaign B is to take place on the following dates at 6 sites each day:

- Mon 16th September 2024
- Tue 17th September 2024
- Mon 7th October 2024
- Tue 8th October 2024
- Mon 28th October 2024
- Tue 29th October 2024

Sampling for Campaign C is to take place at a stretch of the river Trent on a single day during the same period as Campaign A. However, it is required that the river is to be sampled during **non-flood conditions and not immediately following recent (heavy) rainfall**. Guidance on possible acceptable sampling dates in this period will be given from the Environment Agency project team once weather forecasts and river levels can be assessed closer to the sampling period.

This will be defined by the river level as recorded at Colwick level gauge being expected to be **below 1.8m** on the day of sampling, and there being **less than 5 mm** rainfall at the Colwick rainfall gauge in the preceding 24 hours (<0.2mm per hour on average).

- Live and predicted level data can be monitored here: <https://check-for-flooding.service.gov.uk/station/2102>
- Past flows and levels can be reviewed here: <https://environment.data.gov.uk/hydrology/station/0dcf81cb-5305-4e0b-b150-9b733ac44d0b>
- Colwick rainfall gauge can be monitored here: <https://check-for-flooding.service.gov.uk/rainfall-station/3771>

The contractor may decide on the number of simultaneous teams to operate across areas of England for Campaign A. Campaign B should ideally all be sampled by the same sampling team on the dates specified above. Campaign C should be sampled by a single team in a single day.

Across all sampling teams, on a given day a maximum of 20 samples and minimum of 6 samples may be taken, this is subject to lab capacity which will be confirmed upon contract award (lot 2, SC240030).

Therefore, based on these limits and the dates available (between 15th Sep and 6th Nov), this programme will require a minimum of 11 and maximum of 32 sampling days depending on team sampling effort.

An approximate sampling plan should be submitted with this quotation with indicative sample numbers per day and for which campaign(s). Upon award a detailed sampling plan with specific dates, teams, sites and sample numbers should be submitted by **12PM on 6th Sep 2024** to ensure that the lab can be made aware when to receive samples.

2.4. Sample volume

- At each site, sample bottles are to be filled with surface waters for various AMR analyses – see below table.
- In total 6 litres will be collected from each site.
- Each day a maximum of 20 collections of 6 litres are to be collected (120 litres per day).
- In total across all 3 campaigns, 219 collections of 6 litres are to be collected (1,314 litres in total).

Bottle	Type	Volume to collect	Purpose	Destination
WQ	Plastic	1 litre	Water quality analyses	Analysis Lab
Bac	Sterile, plastic	2 litres	Bacterial phenotypes	Analysis Lab
DNA	Sterile, plastic	3 litres	DNA analyses	Analysis Lab

2.5. Sampling information

At each sampling site the following additional information is required to be recorded:

- exact sampling time (HH:MM)
- date
- exact GPS coordinates (where different than the planned site) (as latitude and longitude and [what3words](#) address).
- In-field spot measurements should also be taken of water temperature (in °C)

In addition, supplementary site information, such as a photograph at each site of the sampling location and surroundings (once per site and only to be repeated at sites if notable changes occur) and any other notable site characteristics, e.g. low/ high water levels, animals present, birds present, debris (every sample).

For *Campaign A*, a single-point water flow (in m³/s) should be recorded. Only a spot measurement at the point where the sample is taken is required. Please note that no transects are required for *Campaign A*.

2.5.1. Hydrometry

For *Campaign C sites*: at four (4) tributary sites (sites C004, C005, C007, C009) at the same time as taking water samples, a flow gauging observation sheet should be filled out with the following information:

- River profile width
- Transect across the stream width in 20-30cm intervals (10-20 points) with depth (in mm) and velocity (in m/s) recorded at 20%, 60% and 80% depth (facing upstream)

Campaign C sites C004, C005, C007, C009 required for flow gauging observation, shown below with previous observations summarised.



C004 Width: 2.8m / Depth: 0.54m



C005 Width: 2.2m / Depth: 1.58m



C007 Width: 2m / Depth: 1.50 m



C009 Width: 5m / Depth: 1.05 m

2.6. Sampling

- Samples will be taken by competent staff trained in environmental sampling in freshwater and coastal waters.
- Sample equipment should be cleaned (e.g., rinsing) between sample points to avoid contamination. Samplers will need to take appropriate biosecurity measures, such as [check clean dry](#).
- Samples at each site should be taken at a recorded time each day.
- So that any significant weather events do not impact all samples taken within certain regions, samples for *Campaign A* should ideally not be all taken in an east-west or north-south sweep across the country.
 - Whilst it is accepted within sampling weeks (Sun/Mon/Tue/Wed) it will be practical to sample nearby locations.
 - This will depend on contractor choices on the number of sampling teams to operate and can be agreed with the project team, if necessary. It may be the case that several simultaneous teams in different parts of the country eliminate this effect.
- For *Campaign B* samples should be taken following the coastline starting from the most westerly site (B_001, Eastoke) to the most easterly site (B_006, St Leonards).
- For *Campaign C* on the river Trent, samples should be taken starting with site C_001 (the most upstream site) and sampled in order down to site C_018 (the most downstream site).

2.7. Sample storage and labelling

- Samples will be stored in appropriate containers for microbiological, molecular & nutrient analysis.
- Sample bottles should be provided by the contractor.
- Samples will be labelled with a unique barcode, identifying location (site ID), date and sample ID.
- If any label sample IDs will be different to ID numbers supplied by the Environment Agency, this information must be submitted in spreadsheet format (lookup table) at least 1 week prior to sampling commencing so that the onward (receiving) lab can be informed.
- Please use the sample ID format:
 - PSSS_N_X
 - Where “P” is the sampling Campaign program (A, B or C)
 - Where “SSS” is the 3-digit sampling site ID with leading zeroes (e.g. 001, 002, ..., 018, ..., 165, etc.)
 - Where “N” corresponds to the n^{th} time this site has been sampled in the campaign.
 - For all samples in Campaign A and C, the N value will be 1 as they are only being sampled once.
 - For samples in Campaign B, N will range from 1-6 (because 6 samples will be taken at each site).
 - Where “X” is a code corresponding to the label of the sampling bottle series (i.e. “WQ” for water quality analysis, “Bac” for Bacteria, “DNA” for DNA extraction).

For example, in *Campaign A* at site A018, the site is sampled once, the 2-litre bottle for bacterial phenotypic analysis would be labelled: A018_1_Bac

- Once grab samples are taken, they will be refrigerated.
- Samples will be transported for analysis in refrigerated transport to a mainland GB lab(s).
- Samples will arrive for analysis within 24 hours (i.e., to arrive by morning of next day) at the lab.

2.8. Sampling notifications and reporting

At the end of each sampling day, the contractor will aim to notify the Environment Agency (by email or phone) with an update if samples have been collected successfully and that they are with the courier for delivery to lab(s).

Sampling data will be reported on a weekly basis to the Environment Agency.

Reports will be in spreadsheet format prescribed by the Environment Agency. Where recorded, any raw data (scanned in-field record sheets, data files, image files) should also be provided.

2.9. Distribution of samples to a UK lab for analysis

All samples will be analysed at a lab based in mainland GB (lot 2, SC240030). Following award of contracts, details and location of this lab will be made available to the sample & delivery contractor.

- At the end of each sampling day, each sampling team must ensure samples are transported to the lab for sample analysis.
- The sample & delivery contractor will be responsible for arranging and paying for the transport of samples to the analysis lab.
- This will likely require to be via courier, with the exception of any sampling in the vicinity of the lab (once the location is confirmed) which can be delivered directly subject to lab operating hours.
- Samples will arrive at the lab for analysis within 24 hours (i.e. to arrive by 12PM the next day). For example, samples collected on a Monday should be at the lab by 12PM Tuesday.
- Samples will be transported for analysis in refrigerated transport.

3. Timeframes and deadlines

Task No.	Deliverable	Responsible party	Format / Compatibility Requirements	Date of completion, end:
1	Attend kick off meeting	Contractor & Environment Agency	Virtual meeting (1 x 1 hrs)	By 2 nd September 2024
2	Detailed sampling plan to be shared (e.g. sample dates and locations, to be shared with lab)	Contractor	In advance of sampling	By 12PM 6 th September 2024
3	Attend pre-sampling meeting	Contractor & Environment Agency	Virtual meeting (1 x 1 hrs)	By 13 th September 2024
4	Sampling	Contractor with guidance by Environment Agency (for sample sites)	Sampling points sampled in accordance with sampling plan	By 6 th November 2024
4b	Hydrometry transects (campaign C, 4 sites)	Contractor	4 sites (on 1 sampling day)	By 6 th November 2024
5	Distribution of samples to UK lab for analysis	Contractor (Environment Agency will supply lab address)	Samples for each lab will be sent onwards in order to arrive within 24 hours of first samples taken (i.e. to arrive by morning of next day).	By 6 th November 2024

6	Sample reports (sample collection, in-field measurements & site info) and raw data	Contractor (Environment Agency will supply report template)	Results will be reported to Environment Agency on a weekly basis.	Weekly and final reports by 14 th November 2024
7	Attend project closure meeting/debrief	Contractor & Environment Agency	Virtual meeting (1 x 1 hrs)	By 22 nd November 2024



Sampling_Campaign
_A_sites.csv



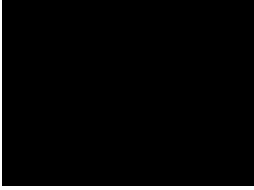
Sampling_Campaign
_B_sites.csv



Sampling_Campaign
_C_sites.csv

Appendix 3: Charges

Costing table attached:



Appendix 4: Processing Personal Data

Authorised Processing Template

N/A