



Environment
Agency

Standard Contract for Goods and/or Services - Order Form

1. Purchase Order Number	C27644 (Contract)	
2. Customer	[REDACTED] Environment Agency Alchemy House NW of Bessemer Road Welwyn Garden City Hertfordshire AL7 1HE	
3. Contractor(s)	[REDACTED] University of Sheffield School of Mechanical, Aerospace and Civil Engineering Room MezC5 Sir Frederick Mappin Building (Broad Lane Building) Sheffield S1 3JD Registration number: RC000667	
4. Defra Group Members	The following Defra Group members will receive the benefit of the Deliverables: [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	
5. The Agreement	<p>This Order is part of the Agreement and is subject to the terms and conditions referenced 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.	
6. Deliverables	Applicable Deliverables	Goods Only: <input type="checkbox"/> Services Only: <input checked="" type="checkbox"/> Good and Services: <input type="checkbox"/>
	Services	Title of Project: [REDACTED] [REDACTED] The Geoscience Training Programme is working to an approved business case for developing and delivering structured training

		<p>course packages to address skills shortages, maintain resilience and enhance professional development of staff, primarily in the Groundwater and Contaminated Land Teams, and also in other teams (Geoscience Operations Team, NPS, Regulated Industry, OCS, Land Quality Management, CSG, etc.) across the business where those skills are essential for their day job. The “Groundwater Flow and Contaminant Transport Modelling: Fundamentals and Applications for Risk Assessment” Course is essential for the effective decision-making in our groundwater protection and regulatory compliance function.</p> <p>See Appendix 2 for full Job Description Service Requirement.</p> <p>Date(s) of Delivery: 1st December 2024 until 31st March 2025</p>
7. Start Date	1 st December 2024	
8. Expiry Date	31 st March 2025	
9. Charges	The Charges for the Services shall be as set out in Appendix 3. The Charges are fixed for the duration of the Agreement.	
10. Payment	<p>Our preference is for all invoices to be sent electronically, quoting a valid purchase order number (PO Number), Accounts-Payable [REDACTED] Within 10 working days of receipt of your countersigned copy of this letter, we will send you a unique PO Number. You must be in receipt of a valid PO Number before submitting an invoice. To avoid delay in payment it is important that the invoice is compliant and that it includes a valid PO Number, PO Number item number (if applicable) and the details (name and telephone number) of your Authority contact (i.e. Contract Manager). Non-compliant invoices will be sent back to you, which may lead to a delay in payment. If you have a query regarding an outstanding payment, please contact our Accounts Payable section on [REDACTED]</p>	
11. Contractor’s Liability Cap (Clause 13.2.1)	[REDACTED]	
12. Customer’s Authorised Representative(s)	<p>For general liaison your contact will continue to be</p> <p>[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]</p>	
13. Contractor’s Authorised Representative	<p>For general liaison your contact will continue to be</p> <p>[REDACTED] [REDACTED]</p>	
14. Optional Intellectual Property Rights (“IPR”) Clauses	The Customer has chosen Option B in respect of intellectual property rights provisions for the Agreement as set out in the terms and conditions. Option B: Customer ownership of all New IPR with limited Contractor rights to all New IPR in order to deliver the Agreement.	
15. Progress Meetings and Progress Reports	See Appendix 2 for further details	
16. Address for notices	<p>Customer:</p> <p>[REDACTED] [REDACTED] [REDACTED] [REDACTED]</p>	<p>Contractor:</p> <p>[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]</p>

	<p>████████████████████ ██████████</p> <p>Sir Frederick Mappin Building (Broad Lane Building) Sheffield S1 3JD</p> <p>████████████████████</p>						
17. Key Personnel of the Contractor	<table border="0"> <tr> <td>Key Personnel Role:</td> <td>Key Personnel Name:</td> <td>Contact Details:</td> </tr> <tr> <td colspan="3">As per Section 16</td> </tr> </table>	Key Personnel Role:	Key Personnel Name:	Contact Details:	As per Section 16		
Key Personnel Role:	Key Personnel Name:	Contact Details:					
As per Section 16							
18. Procedures and Policies	<p>For the purposes of the Agreement:</p> <p>The Customer's Staff Vetting Procedures are ██████████</p> <p>The Customer's security / data security requirements are: ██████████ ████████████████████</p> <p>The Customer's additional sustainability requirements are: ██████████ ████████████████████</p> <p>The Customer's equality and diversity policy/requirements and instructions related to equality Law [and] environmental policy [is/are] ██████████ ████████████████████</p> <p>The Customer's health and safety policy is: ██████████</p>						
19. Special Terms	Special Term 1 – N/A						
20. Additional Insurance	N/A						
21. Further Data Protection Provisions	<p>The further data protection provisions contained within Annex 4 of the terms and conditions are applicable to this Agreement where indicated below:</p> <p>Yes: <input type="checkbox"/></p> <p>No: <input checked="" type="checkbox"/></p>						

Signed for and on behalf of the Customer	Signed for and on behalf of the Contractor
Name: ██████████ ████████████████████	Name: ████████████████████ ████████████████████
Date:	Date:
Signature:	Signature:

Appendix 1: Terms and Conditions

The Customer's Standard Good & Services Terms and Conditions which can be located on the [Environment Agency Website](#) and which are called 'Standard Goods & Services Terms and Conditions (EA)'

Appendix 2: Specification/Description

CPD Short-Course Proposal

[Course Title] Groundwater Flow and Contaminant Transport Modelling:
Fundamentals and Applications for Risk Assessment

1. Background

During a recent meeting with the Environment Agency (EA) representatives, the need for a Continuing Professional Development (CPD) module on groundwater flow and contaminant transport modelling was discussed. This module aims to address the skill gaps among some EA employees, many of whom have less than three years of experience and limited hydrogeological expertise.

2. Course Objectives

The course will focus on the analysis of the land contamination and landfill leachate impact on groundwater resources for purposes of risk assessment and compliance evaluation. The primary learning outcome will be to convey an understanding of the groundwater modelling process, including how model and input parameter selections influence simulation outputs and how these should be conducted.

The course will be developed to provide the modelling skillsets and foundational experience needed to apply the Remedial Target Methodology (RTM). The course will focus on system conceptualization, the importance of simplifications, model and model parameter selection, and quantifying uncertainty.

The pillars of the course include:

- (a) Fundamental Processes of Flow and Transport, that is, covering basic principles and processes essential for understanding system dynamics.
- (b) Procedure for construction of Flow and Transport Models, with particular emphasis on analytical models that incorporate key processes such as natural attenuation and source depletion.
- (c) Model applications for risk assessment, probabilistic and sensitivity analyses, and uncertainty quantification.

3. Delivery and Assessment

- Course timeline: Lectures should take place in March 2025.
- Assessment: should be in the form of a Coursework assignment to be completed by June 2025 (within three months from the handout date).
- Review sessions by Trainers (6) should be held to provide formative feedback and support coursework development before the final report is turned in.
- Coursework deliverables: 1500-word report following a “permit assessment” format.
- Uniform Assessment: coursework will be based on a common real-world dataset to be used for consistency of evaluation.

4. Long-Term Vision: The course should be eventually accessible to the public, targeting in particular the consultancy sector, with the overarching goal to increase the expertise of participants and support professional chartership.

5. Endorsement: Course to be endorsed by GeoSoc.

COURSE CONTENT

1. Introduction (2 hrs – DB&SFT equal split)
 - a. Groundwater Resources and UK Outlook
 - b. Drinking water standards, [Environmental Quality Standards \(EQSs\) for the protection of aquatic life](#), [Minimum Reporting Values](#) and Risks
 - c. Groundwater Contamination
 - i. Sources and Pathways
 - ii. Contaminant types
 - iii. Aqueous vs. Non-Aqueous Phase Liquids

2. Fundamentals of Groundwater Flow
 - a. Basic Properties of Porous media (3 hrs - DB)
 - i. Porosity, Water saturation, Water content.
 - ii. Head, Darcy's Law, Hydraulic Conductivity and Permeability.
 - iii. Aquifer Types (confined vs. unconfined).
 - iv. Aquifer Storage properties.
 - v. Homogeneity vs Heterogeneity, Isotropy vs. Anisotropy.
 - vi. In-class exercises on flux and pore velocity calculations.
 - b. Groundwater Flow Equation (Saturated vs. Unsaturated¹) (3 hrs - DB)
 - i. Analytical Solutions.
 - ii. Flow to wells (Thiem, Theis solutions, Superposition).
 - iii. In-class exercises on drawdown calculations.

3. Fundamentals of Contaminant Hydrology
 - a. Solute Transport Processes (3 hrs - SFT)
 - i. Soil concentration and Water concentration (partition calcs).
 - ii. Advection (flux and mass rate calcs).
 - iii. Chemical diffusion (Fick's law).
 - iv. Mechanical Dispersion and Hydrodynamic Dispersion).
 - v. Sorption (retardation, sorption isotherm models).
 - vi. Chemical Reactions (main types, biodegradation, NA).
 - vii. In-class exercises on mass distribution and partitioning, solute transport and mass balances.
 - b. Solute Transport Equations (2hrs - DB)
 - i. Basic forms (DE, AE, DE, ADE, ADRE, ..).
 - ii. Multi-species + Reaction Kinetics.
 - iii. Groundwater Flow and Solute Transport Modelling Framework.

¹ Needed as soil contamination is included in RA.

4. Review of Solute Transport Analytical Solutions (4hrs + 2 hrs for exercise - DB @ 4 hrs and SFT @2 hrs)
 - a. Focus on underlying 1D/2D/3D conceptual models, simplifying assumptions, boundary conditions and initial conditions in practical applications.
 - b. Focus on governing model parameters, ranges of variability and what affects them.
 - c. Model output sensitivity to input model parameters:
 - i. Practical implications of parameter uncertainty on model output
 - d. Overview of analytical and numerical models used for contaminated land and groundwater with analysis of parameter values on results.
 - e. In-class modelling exercise.

5. Risk Assessment (RA) (3 + 3 hrs for exercise – DB&SFT equal split)
 - a. Basics of Statistics and Probability Review, Risk Definition.
 - b. Overview of Remedial Target Methodology (RTM) Framework.
 - i. Multi-tier process:
 1. Soil Contamination.
 2. Groundwater Contamination.
 - ii. Selection of Conceptual Models:
 1. Sources --> Pathways --> Receptors.
 2. Remedial Targets and compliance points.
 3. Analytical Model Applications for RA.
 4. Dilution and Attenuation factor calculations.
 - c. Uncertainty quantification and its impact on RA - conceptual model and parameters.
 - d. Deterministic vs. probabilistic analysis - rationale and implications.
 - e. Model Selection, Parameter Selection and Sensitivity Analysis (RTM context).

6. Coursework assignment (1hr – DB&SFT equal split)
 - i. Introduction
 - ii. Case study
 - iii. Approach followed
 - iv. Data sources
 - v. Assessment (1500-word summary report with model)
 - vi. Review

Cost Description

The following table provides a detailed breakdown of the anticipated cost of the course.

[REDACTED]	[REDACTED]

The course will involve:

- 26 hours of contact time, including lectures and tutorials over 4 days;
- 6 1-hr long Q&A sessions for coursework support (twice per month for 3 months).

Course Delivery & Assessment, which includes contact time, Q&A sessions, and coursework marking, is estimated based on 15 students. This cost is approximately [REDACTED] with adjustments for inflation and student numbers. If the number of students exceeds 15, the cost will increase by [REDACTED] additional student to account for the extra time required for assessment.

Appendix 3: Charges

Cost Description

The following table provides a detailed breakdown of the anticipated cost of the course.

[REDACTED]	[REDACTED]

The course will involve:

- 26 hours of contact time, including lectures and tutorials over 4 days;
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Course Delivery & Assessment, which includes contact time, Q&A sessions, and coursework marking, is estimated based on 15 students. This cost is approximately [REDACTED], with adjustments for inflation and student numbers. If the number of students exceeds 15, the cost will increase by [REDACTED] additional student to account for the extra time required for assessment.

Appendix 4: Processing Personal Data

Contract:	[XXXX]
Date:	[XXXX]
Description of authorised processing	Details
Identity of Controller and Processor for each category of Personal Data	
Subject matter of the processing	
Duration of the processing	
Nature and purposes of the processing	
Type of Personal Data	
Categories of Data Subject	
Plan for return and destruction of the data once the processing is complete UNLESS requirement under law to preserve that type of data	
Locations at which the Contractor and/or its subcontractors process Personal Data under this Agreement	
Protective Measures that the Contractor and, where applicable, its subcontractors have implemented to protect Personal Data processed under this Agreement against a breach of security (insofar as that breach of security relates to data) or a Personal Data Breach	