

## Conditions of Contract - Services

Ref: [REDACTED]

Title: Wessex Basin Groundwater Model update

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## 1. DEFINITIONS

1.1. In the Contract, unless the context otherwise requires the following words and expressions shall have the following meanings assigned to them.

1.1.1. Agency

The Environment Agency, its successors and assigns.

1.1.2. Agency Property

All property issued or made available for use by the Agency to the Contractor in connection with the Contract.

1.1.3. The Appendix

The Appendix to these Conditions.

1.1.4. The Contract

These Conditions including the Appendix, any Special Conditions, Specification, Pricing Schedule, Contractor's tender, acceptance letter and any relevant documents agreeing modifications exchanged before the Contract is awarded, and any subsequent amendments or variations agreed in writing.

1.1.5. The Contractor

The person, firm company or body who undertakes to supply the Services to the Agency as defined in the Contract.

1.1.6. Contract Period

The time period stated in the Appendix or otherwise provided in the Contract, for the performance of the Services.

1.1.7. Contractor Personnel

means all directors, officers, employees, agents, consultants and contractors of the Contractor and/or of any sub-contractor engaged in the performance of its obligations under this Contract

1.1.8. Contract Price

The price exclusive of VAT set out in the Contract for which the Contractor has agreed to supply the services.

1.1.9. Contract Supervisor

Any duly authorised representative of the Agency notified in writing to the Contractor for all purposes connected with the Contract. Any Notice or other written instruction given by or made to the Contract Supervisor, shall be taken as given by or made to the Agency.

- 1.1.10. Contracting Authority  
means any contracting authorities (other than the Environment Agency) as defined in regulation 2 of the Public Contract Regulations 2015 (SI 2015/102) (as amended).
- 1.1.11. Data Protection Legislation  
means: (i) the General Data Protection Regulation (Regulation (EU) 2016/679) or GDPR, the Law Enforcement Directive (Directive (EU) 2016/680) ("LED") and any applicable national implementing Laws as amended from time to time (ii) the Data Protection Act 1998 ("DPA 1998") and/or the Data Protection Act 2018 ("DPA 2018") to the extent that it relates to processing of personal data and privacy; (iii) all applicable Law about the processing of personal data and privacy
- 1.1.12. Data Protection Schedule  
The Schedule attached to this Contract describing how the Parties will comply with the Data Protection Legislation.
- 1.1.13. Intellectual Property Rights  
All Intellectual Property Rights including without limitation, patents, patent applications, design rights, registered designs, utility models, trade and service marks and applications for same, copyright know-how, rights in semi-conductor chip topography, and in each case whether protectable at law or not, and if protectable, whether an application has been made for such protection or not, and all similar industrial, commercial, monopoly or other intellectual property rights whether present or future, vested or contingent wherever protected.
- 1.1.14. Law  
means any law, subordinate legislation within the meaning of Section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of Section 2 of the European Communities Act 1972, regulation, order, regulatory policy, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements with which the Contractor is bound to comply
- 1.1.15. Notice  
Any written instruction or notice given to the Contractor by the Contract Supervisor, delivered by:
- i. fax, or hand delivery to the Contractor's registered office or other address notified for the purposes of the Contract and deemed to have been served at the date and time of delivery;
- First class post to the Contractor's registered office. Such Notices are deemed to have been served 48 hours after posting.

1.1.16. Results

All things produced in performing the Services including maps, plans, photographs, drawings, tapes, statistical data, experimental results, field data, analysis of results, published and unpublished results and reports, inventions, computer programmes and user documentation.

1.1.17. The Resulting Rights

All Intellectual Property Rights in the Results that are originated, conceived, written or made by the Contractor, whether alone or with others in the performance of the Services or otherwise resulting from the Contract.

1.1.18. Permission

Express permission given in writing before the act being permitted.

1.1.19. Services

All Services detailed in the Specification including any additions or substitutions as may be requested by the Contract Supervisor.

1.1.20. Regulations

Means the Public Contract Regulations 2015 (SI 2015/102) as amended.

1.2. Except as set out above and in the Data Protection Schedule, the Contract shall be interpreted in accordance with the Interpretation Act 1988.

1.3. All headings in these Conditions are for ease of reference only, and shall not affect the construction of the Contract.

1.4. Any reference in these Conditions to a statutory provision will include all subsequent modifications.

1.5. All undefined words and expressions are to be given their normal English meaning within the context of this Contract. Any dispute as to the interpretation of such undefined words and expressions shall be settled by reference to the definition in the Shorter Oxford English Dictionary.

## 2. PRECEDENCE

To the extent that the following documents form the Contract, in the case of conflict of content, they shall have the following order of precedence:

- Conditions of Contract including Appendix, Data Protection Schedule and any Special Conditions;
- Specification;
- Pricing Schedule;
- Drawings, maps or other diagrams.

### **3. CONTRACT SUPERVISOR**

The Contractor shall strictly comply with any instruction given by the Contract Supervisor concerning or about the Contract provided such instructions are reasonable and consistent with the nature, scope and value of the Contract. All such instructions shall be in writing. The Contractor is not obliged to comply with any verbal instruction from the Contract Supervisor that is not confirmed in writing within 7 working days.

### **4. THE SERVICES**

4.1. The Contractor shall provide all staff, equipment, materials and any other requirements necessary for the performance of the Contract using reasonable skill, care and diligence, and to the reasonable satisfaction of the Contract Supervisor.

4.2. The Contractor shall only employ in the execution and superintendence of the Contract persons who are suitable and appropriately skilled and experienced. The Contract Supervisor shall be at liberty to object to and require the Contractor to remove any person employed in or about the Contract who is unsuitable, misconducts himself, is incompetent or negligent in the performance of his duties or persists in conduct which could endanger the health or safety of others. Such persons shall not be employed again on the Contract without the Permission of the Contract Supervisor.

### **5. ASSIGNMENT**

5.1. The Contractor shall not assign, transfer or sub-contract the Contract, or any part of it, without the Permission of the Contract Supervisor.

5.2. Any assignment, transfer or sub-contract entered into, shall not relieve the Contractor of any of his obligations or duties under the Contract.

5.3. Nothing in this Contract confers or purports to confer on any third party any benefit or any right to enforce any term of the Contract.

### **6. CONTRACT PERIOD**

The Contractor shall perform the Services within the time stated in the Appendix, subject to any changes arising from Condition 10 (Variations,) and/or Condition 11 (Extensions of time.).

## **7. PROPERTY**

- 7.1. All property issued by the Agency to the Contractor in connection with the Contract shall remain the property of the Agency, and shall be used in the execution of the Contract, and for no other purpose whatsoever without the prior approval of the Contract Supervisor.
- 7.2. The Contractor shall keep all Agency Property in safe custody and good condition, set aside and clearly marked as the property of the Agency.
- 7.3. On expiry or earlier termination of the Contract the Contractor shall, if so required, either surrender such property to the Agency or otherwise dispose of it as instructed by the Contract Supervisor save that the Contractor shall be permitted to retain one copy of documents in order to maintain proper professional records, which shall not be used for any other purposes unless expressly agreed by the Agency.

## **8. MATERIALS**

- 8.1. The Contractor shall be responsible for establishing his own sources of supply for goods and materials and will be responsible for ensuring the reasonable and proper conduct by his suppliers and staff whilst on the Agency's premises.
- 8.2. The Contractor shall not place, or cause to be placed, any orders with suppliers or otherwise incur liabilities in the name of the Agency or any representative of the Agency.

## **9. SECURITY**

- 9.1. The Contractor shall be responsible for the security of all goods and equipment belonging to the Agency and used by the Contractor in the provision of the Services, belonging to the Contractor, or Contractors staff, or sub-contractors whilst on Agency premises.
- 9.2. This Condition shall not prejudice the Agency's rights under Condition 15.

## **10. VARIATIONS**

- 10.1. The Contract Supervisor may vary the Contract by adding to, deleting or otherwise modifying the Services to be supplied, by written order to the Contractor provided such variations are reasonable and consistent with the nature, scope and value of the Contract.
- 10.2. The value of any such variation, other than any variation arising out of Condition 10.3, shall be determined by reference to the rates contained in the

Pricing Schedule. Where the Services so ordered are not covered in the Pricing Schedule, they shall be valued at a fair and reasonable rate agreed between the Contract Supervisor and the Contractor.

- 10.3. Where a variation is the result of some default or breach of the Contract by the Contractor or some other cause for which he is solely responsible, any additional reasonable cost directly attributable to the variation shall be borne by the Contractor.
- 10.4. The Contractor may also propose a variation to the Services but no such variation shall take effect unless agreed and confirmed in writing by the Contract Supervisor.
- 10.5. No variation shall have the effect of invalidating the Contract, or placing the Contract at large, if that variation is reasonably consistent with the nature, scope and value of the Contract. The Agency may vary the Contract to comply with a change in English Law. Such a change will be effected by the Contract Supervisor notifying the Contractor in writing.
- 10.6. The Agency may assign, novate or otherwise dispose of its rights and obligations under the Contract or any part thereof to:
  - 10.6.1. any Contracting Authority; or
  - 10.6.2. any other body established by the Crown or under statute in order substantially to perform any of the functions that had previously been performed by the Agency; or
  - 10.6.3. any private sector body which substantially performs the functions of the Agency, provided that any such assignment, novation or other disposal shall not increase the burden of the Contractor's obligations under the Contract.
- 10.7. Any change in the legal status of the Agency such that it ceases to be a Contracting Authority shall not affect the validity of the Contract. In such circumstances the Contract shall bind and inure to the benefit of any successor body to the Agency.

## **11. EXTENSIONS OF TIME**

- 11.1. Should the performance of the Contract be directly delayed by any cause beyond the reasonable control of the Contractor, and provided that the Contractor shall first have given the Contract Supervisor written notice within five working days after becoming aware that such delay was likely to occur, then the Contract Supervisor, if satisfied that this Condition applies:
  - 11.1.1. in the case of any delay of which the Agency is not the cause, may grant the Contractor such extension of time, as in his opinion is

reasonable, having regard without limitation, to any other delays or extensions of time that may have occurred or been granted under the Contract. The Contract Price shall not increase as a result of such an extension of time.

11.1.2. in the case of any delay of which the Agency is the cause, shall grant the Contractor a reasonable extension of time to take account of the delay.

11.2. No extension of time shall be granted where in the opinion of the Agency the Contractor has failed to use reasonable endeavours to avoid or reduce the cause and/or effects of the delay.

11.3. Any extension of time granted under this Condition shall not affect the Agency's rights to terminate or determine the Contract under Conditions 13 and 14.

## **12. DEFAULT**

12.1. The Contractor shall be in default if he:

12.1.1. fails to perform the Contract with due skill, care, diligence and timeliness;

12.1.2. refuses or neglects to comply with any reasonable written instruction given by the Contract Supervisor;

12.1.3. is in breach of the Contract.

12.2. Where in the reasonable opinion of the Contract Supervisor, the Contractor is in default, the Contract Supervisor may serve a Notice giving at least five working days in which to remedy the default.

12.3. If the Contractor fails to comply with such a Notice the Contract Supervisor may, without prejudice to any other rights or remedies under the Contract, take over for as such a period as is necessary the performance of the relevant part of the Contract and make other arrangements for its completion. Any extra costs arising from this action, will be paid by the Contractor or deducted from any monies owing to him.

## **13. TERMINATION**

13.1. The Agency may immediately, without prejudice to any other rights and remedies under the Contract, terminate all or any part of the Contract by Notice in writing to the Contractor, Receiver, Liquidator or to any other person in whom the Contract may become vested, if the Contractor:

13.1.1. fails in the opinion of the Contract Supervisor to comply with (or take reasonable steps to comply with) a Notice under Condition 12.2.

13.1.2. becomes bankrupt or insolvent, or has a receiving order made against him, or makes an arrangement with his creditors or (being a corporation) commences to be wound up, not being a voluntary winding up for the purpose of reconstruction or amalgamation, or has a receiver, administrator, or administrative receiver appointed by a Court.

'Termination under the Regulations'

13.2. The Agency may terminate the Contract on written Notice to the Contractor if:

13.2.1. the contract has been subject to a substantial modification which requires a new procurement procedure pursuant to regulation 72(9) of the Regulations;

13.2.2. the Contractor was, at the time the Contract was awarded, in one of the situations specified in regulation 57(1) of the Regulations, including as a result of the application of regulation 57(2), and should therefore have been excluded from the procurement procedure which resulted in its award of the Contract; or

13.2.3. The Contract should not have been awarded to the Contractor in view of a serious infringement of the obligations under the Treaties and the Regulations that has been declared by the Court of Justice of the European Union in a procedure under Article 258 of the TFEU.

#### **14. DETERMINATION**

14.1. Without prejudice to any other rights or remedies under the Contract, the Agency reserves the right to determine the Contract at any time by giving not less than one month's Notice, (or such other time period as may be appropriate).

14.2. The Agency shall pay the Contractor such amounts as may be necessary to cover his reasonable costs and outstanding and unavoidable commitments necessarily and solely incurred in properly performing the Contract prior to determination.

14.3. The Agency will not pay for any costs or commitments that the Contractor is able to mitigate and shall only pay those costs that the Agency has validated to its satisfaction. The Agency's total liability under this Condition shall not in any circumstances exceed the Contract Price that would have been payable for the Services if the Contract had not been determined.

#### **15. INDEMNITY**

15.1. Without prejudice to the Agency's remedies for breach of Contract, the Contractor shall fully indemnify the Agency and its staff against any legally enforceable and reasonably mitigated liability, loss, costs, expenses, claims or proceedings in respect of:

15.1.1. death or injury to any person;

15.1.2. loss or damage to any property excluding indirect and consequential loss;

15.1.3. infringement of third party Intellectual Property Rights

which arises as a direct consequence of the actions or negligence of the Contractor, his staff or agents in the execution of the Contract.

15.2. This Condition shall not apply where the damage, injury or death is a direct result of the actions, or negligence of the Agency or its staff.

## **16. LIMIT OF CONTRACTOR'S LIABILITY**

16.1. The limit of the Contractor's liability for each and every claim by the Agency, other than for death or personal injury caused by the Contractor's negligence, whether by way of indemnity or by reason of breach of contract, or statutory duty, or by reason of any tort including negligence shall be:

16.1.1. the sum stated in the Appendix;

16.1.2. if no sum is stated, the Contract Price or five million pounds whichever is the greater.

## **17. INSURANCE**

17.1. The Contractor shall insure and maintain insurance against liabilities under Condition 15 (Indemnity) in the manner and to the values listed in the Appendix to these Conditions. If no sum is stated, the value insured shall be £5M (five million pounds.)

17.2. Not used.

17.3. The Contractor shall, upon request, produce to the Contract Supervisor documentary evidence that the insurances required are fully paid up and valid for the duration of the Contract.

## **18. PREVENTION OF FRAUD AND CORRUPTION**

18.1. The Contractor shall not offer, give, or agree to give anything, to any person an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of the Contract or for showing or refraining from showing favour or disfavour to any person in relation to the Contract.

18.2. The Contractor shall take all reasonable steps, in accordance with good industry practice, to prevent fraud by the Contractor's staff and the Contractor (including its shareholders, members and directors) in connection with the Contract and shall notify the Agency immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.

18.3. If the Contractor or the Contractor's staff engages in conduct prohibited by this clause 18 or commits fraud in relation to the Contract or any other contract with the Crown (including the Agency) the Agency may:

18.3.1. terminate the Contract and recover from the Contractor the amount of any loss suffered by the Agency resulting from the termination, including the cost reasonably incurred by the Agency of making other arrangements for the supply of the Goods and any additional expenditure incurred by the Agency throughout the remainder of the Contract; or

18.3.2. recover in full from the Contractor any other loss sustained by the Agency in consequence of any breach of this clause.

18.4. The Contractor shall not, directly or indirectly through intermediaries commit any offence under the Bribery Act 2010 (as amended), in any of its dealings with the Agency.

## **19. MONITORING AND AUDIT**

19.1. The Contract Supervisor may inspect and examine the Services being carried out on the Agency's premises, or elsewhere at any reasonable time. Where the Services are being performed on other than the Agency's premises, reasonable notice to inspect shall be given to the Contractor. The Contractor shall give all such facilities as the Contract Supervisor may reasonably require for such inspection and examination.

## **20. CONTRACT PRICE**

20.1. The Contract Price will be paid by the Agency to the Contractor as amended by any Variations ordered under Condition 10 (Variations).

20.2. In addition to the Contract Price, the Agency will pay to the Contractor such Value Added Tax (if any) as may properly be chargeable at rates ruling at the time of invoice.

## **21. INVOICING AND PAYMENT**

21.1. Invoices shall only be submitted for work already satisfactorily completed, and accompanied by such information as the Contract Supervisor may reasonably require to verify the Contractor's entitlement to payment. Such invoices will be paid in 30 days from receipt by the Agency.

21.2. If any sum is payable under the Contract by the Contractor to the Agency, whether by deduction from the Contract or otherwise, it will be deducted from the next available invoice.

21.3. If the Contractor enters into a sub-contract with a supplier for the purpose of performing its obligations under the Contract, it shall ensure that a provision is included in the sub-contract which requires payment to be made of all sums due from it to the sub-contractor within 30 days from the receipt of a valid invoice.

## **22. INTELLECTUAL PROPERTY RIGHTS**

22.1. All Prior Rights used in connection with the Services shall remain the property of the party introducing them. Details of each party's Prior Rights are set out in the Prior Right Schedule to this contract.

22.2. All Results shall be the property of the Agency.

22.3. The Resulting Rights in any Results, and any interim results shall, from the time they arise, be the property of the Agency and the Agency shall be free, should it so wish, to apply at its own expense for patent or other protection in respect of the Results or any interim results. The Agency's intention to apply for such patent or other protection shall be notified to the Contractor. Such applications for patents or other registered intellectual property rights shall be filed in the name of the Agency.

Unless otherwise agreed in writing between the Contractor and the Agency, the Contractor hereby:

22.3.1. assigns to the Agency all Resulting Rights

22.3.2. grants the Agency a non-exclusive, non-transferable (save for the purposes of sub-licensing, reorganisation or transfer to a successor body, for the purposes of all the successor body's normal business use), irrevocable, royalty free perpetual licence to the Agency in

respect of all the Contractor's Prior Rights necessary in order for the Agency to use or exploit the Resulting Rights.

- 22.4. The Contractor undertakes to the Agency not to use, exploit or deal with any of the Agency's Prior Rights, other than in the performance of the Contract unless the Contractor has first obtained a written licence from the Agency, in specific terms to do so.
- 22.5. The Agency undertakes to the Contractor not to use or exploit the Contractor's Prior Rights, save as provided in Condition 22.3.2.
- 22.6. The Contractor warrants to the Agency that the performance of the Services, the Contractor's Prior Rights and the Results shall not in any way infringe any intellectual property rights of any third party.
- 22.7. If the Contractor is prevented from carrying out his obligations under the Contract due to any infringement or alleged infringement of any Intellectual Property Rights, the Agency may without prejudice to any other rights and remedies under the Contract, exercise the powers and remedies available to it under Conditions 13 and 14, Termination and Determination respectively.
- 22.8. The Contractor shall not be liable if such infringement arises from the use of any design, technique or method of working provided by or specified by the Agency.
- 22.9. The Contractor waives in favour of the Agency its rights to object to derogatory treatment of the Results of the Work and the Contractor also agrees that he will not assert or seek to enforce against the Agency and/or any other person, firm or company any of its moral rights as defined in the Copyright Designs and Patents Act 1988 (as amended) without the prior agreement of the Agency.
- 22.10. The Contractor shall not be liable for any consequential losses, damage or injuries arising from third party misuse of the Results, of which the Contractor is not aware.

### **23. WARRANTY**

The Contractor warrants that the Services supplied by him will be discharged with reasonable skill, care and diligence.

### **24. STATUTORY REQUIREMENTS**

The Contractor shall fully comply with all relevant statutory requirements in the performance of the Contract, including, but not limited to the giving of all necessary notices and the paying of all fees.

## **25. ENVIRONMENT, SUSTAINABILITY AND DIVERSITY**

25.1. The Contractor in the performance of this Contract should adopt a sound proactive environmental approach, designed to minimise harm to the environment, to conserve energy, water, wood, paper and other resources, reduce waste and phase out the use of single-use plastic, ozone depleting substances and minimise the release of greenhouse gases, volatile organic compounds and other substances damaging to health and/or the environment, and be able to provide proof of so doing to the Agency on demand.

25.2. The Agency is committed to ensuring that workers employed within its supply chains are treated fairly, humanely and equitably. The Agency expects the Contractor to share this commitment and to understand any areas of risk associated with this and work to ensure they are meeting International Labour Standards. The Contractor ensures that it and its sub-contractors and its supply chain:

25.2.1. comply with the provisions of the Modern Slavery Act 2015;

25.2.2. pay staff fair wages (and pays its staff in the UK not less than the Foundation Living Wage Rate ); and

25.2.3. Implement fair shift arrangements, providing sufficient gaps between shifts, adequate rest breaks and reasonable shift length, and other best practices for staff welfare and performance.

25.3. The Contractor should support the Agency to achieve its Public Sector Equality Duty by complying with the Agency's policies (as amended from time to time) on Equality, Diversity and Inclusion (EDI). This includes ensuring that the Contractor (and their sub-contractors) in the delivery of its obligations under this Contract:

25.3.1. eliminates discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;

25.3.2. advances equality of opportunity between people who share a protected characteristic and those who do not; and

25.3.3. fosters good relations between people who share a protected characteristic and those who do not.

## **25. PUBLICITY**

The Contractor shall not advertise or publicly announce that he is supplying Services or undertaking work for the Agency without the Permission of the Contract Supervisor.

**26. LAW**

This Contract shall be governed and construed in accordance with the Law, and subject to the jurisdiction of the courts of England.

**27. WAIVER**

28.1. No delay, neglect or forbearance by the Agency in enforcing any provision of the Contract shall be deemed to be a waiver, or in any other way prejudice the rights of the Agency under the Contract.

28.2. No waiver by the Agency shall be effective unless made in writing.

28.3. No waiver by the Agency of a breach of the Contract shall constitute a waiver of any subsequent breach.

**29. ENFORCEABILITY AND SURVIVORSHIP**

29.1. If any part of the Contract is found by a court of competent jurisdiction or other competent authority to be invalid or legally unenforceable, that part will be severed from the remainder of the Contract which will continue to be valid and enforceable to the fullest extent permitted by law.

29.2. The following clauses shall survive termination of the Contract, howsoever caused: 13, 14, 15, 22, 23, 24, 27, 29, 30, 31, 32 and 33.

**30. DISPUTE RESOLUTION**

30.1. All disputes under or in connection with this agreement shall be referred first to negotiators nominated at a suitable and appropriate working level by the Agency and the Contractor.

30.2. If the parties' negotiators are unable to resolve the dispute within a period of forty five days from its being referred to them, the dispute shall be referred at the instance of either party to the parties' respective senior managers or directors (supported as necessary by their advisers).

30.3. If the parties' respective senior managers or directors are unable to resolve the dispute within forty five days the dispute shall be referred to the Centre for Dispute Resolution who shall appoint a mediator and the parties shall then submit to the mediator's supervision of the resolution of the dispute.

30.4. Recourse to this dispute resolution procedure shall be binding on the parties as to submission to the mediation but not as to its outcome. Accordingly all negotiations connected with the dispute shall be conducted in strict confidence and without prejudice to the rights of the parties in any future legal

proceedings. Except for any party's right to seek interlocutory relief in the courts, no party may commence other legal proceedings under the jurisdiction of the courts or any other form of arbitration until forty five days after the appointment of the mediator.

30.5. If, with the assistance of the mediator, the parties reach a settlement, such settlement shall be put in writing and, once signed by a duly authorised representative of each of the parties, shall remain binding on the parties.

30.6. The parties shall bear their own legal costs of this dispute resolution procedure, but the costs and expenses of mediation shall be borne by the parties equally.

30.7. Any of the time limits in Conditions 30 may be extended by mutual agreement. Such agreed extension shall not prejudice the right of either party to proceed to the next stage of resolution.

### **31. GENERAL**

31.1. Neither party to the Contract will be liable to the other for any delay in performing or failing to perform its obligations (other than a payment obligation) under the Contract because of any cause outside its reasonable control. Such delay or failure will not constitute a breach of the Contract and the time for performance of the affected obligation will be extended by a reasonable period.

31.2. The Contract contains the whole agreement between the parties and supersedes all previous communications, representations and arrangements, written or oral. It is accepted that the Contract has not been entered into on the basis of any representations that are not expressly contained in the Contract.

### **32. FREEDOM OF INFORMATION ACT**

32.1. The Agency is committed to open government and to meeting its responsibilities under the Freedom of Information Act 2000 (as amended) ('Act') and the Environmental Information Regulations 2004 (as amended) (Regulations').

32.2. The Contractor agrees that:

32.2.1. All information submitted to the Agency may need to be disclosed by the Agency in response to a request under the Act or the Regulations; and

32.2.2. The Agency may include information submitted (in whole or in part) in the publication scheme which it maintains under the Act or publish

the Contract, including from time to time agreed changes to the Contract, to the public.

32.3. If the Contractor considers that any of the information included in its tender, or that it has submitted to the Agency or that is otherwise contained in the Contract, is commercially sensitive, it shall identify and explain (in broad terms) what harm may result from disclosure if a request is received, and the time period applicable to that sensitivity. The Contractor acknowledges that if it has indicated that information is commercially sensitive, such information may still be required to be disclosed by the Agency under the Act or the Regulations. The receipt of any material marked 'confidential' or equivalent by the Agency shall not be deemed to infer that the Agency agrees any duty of confidentiality by virtue of that marking.

### **33. DATA PROTECTION**

33.1. In the event that the Contract requires data to be processed within the meaning of the Data Protection Legislation the Data Protection Schedule shall be completed by the Parties and provisions and definitions therein shall apply and bind the Parties as part of this Contract.

## Appendix to Conditions Services

Ref: [REDACTED]

Title: Wessex Basin Groundwater Model Update

		Condition
<b>1</b>	<b>Contract Supervisor</b> [REDACTED] [REDACTED]	<b>3</b>
<b>2</b>	<b>Contractor</b> [REDACTED] [REDACTED]	
<b>3</b>	<b>Completion</b> Contract Start Date                      «1 <sup>st</sup> October 2020» Contract End Date                         «31 <sup>st</sup> July 2021»	<b>6</b>
<b>4</b>	<b>Delivery</b> Address:-	<b>11</b>
<b>5</b>	<b>Insurance</b> Professional Indemnity Min. Cover    £1 million Third Party Minimum Cover            £1 million Public Liability Min. Cover             £1 million	<b>17</b>
<b>6</b>	<b>Limit on Liability</b> Limit on Contractors Liability    £1 million	<b>16</b>

## Specification

### [The Specification of Requirements](#)

## The Authorities Priorities

The Environment Agency (EA) works to create better places for people and wildlife and support sustainable development. EA is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs. EA is responsible for; regulating major industry and waste, treatment of contaminated land, water quality and resources, fisheries, inland river, estuary and harbour navigations, conservation and ecology. For further information please visit;

<https://www.gov.uk/government/organisations/environment-agency>

### [Scope](#)

### [Introduction](#)

The Wessex Basin Model is a regional coupled runoff-recharge (4R) and groundwater flow model (using Modflow 96 VKD), covering the Hampshire Avon, Stour and Frome & Piddle river catchments and associated Chalk and Upper Greensand groundwater system in southern England (Figure 1). It was originally developed in 2010-2011 combining the Bourne and Nine Mile model (c2002-204); Hampshire Avon Model (c2008-2010) and Frome and Piddle Conceptualisation (c2010-11).

The model currently runs from 1965- to 2016 (including 5 year warm up). It has an approximately 10 day time step with 3 stress periods per month. The groundwater model is built on a 250 metre regular grid, with 1 layer representing the Chalk, 1 layer representing the Upper Greensand and 1 layer for the Tertiaries. For a more detailed summary of the Wessex basin Model to be used and updated in this project, see pages 133 – 148 of

<http://www.hwa.uk.com/site/wp-content/uploads/2017/12/SWCD2.4-Soley-et-al-2012-Southern-Chalk-as-published.pdf>.

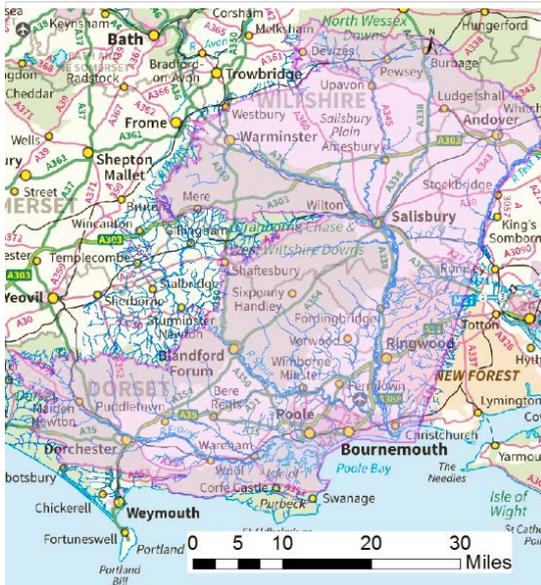


Figure 1 Wessex Basin Model coverage

The model has been used by the Environment Agency (EA) and main partner Wessex Water (WWS) for a variety of projects to date including Habitats Directive assessments, RSA schemes, WFD assessments, CAMS assessments, and most recently Source Protection Zone delineation. It has been used by South West Water (SWW) to support AMP investigations, Highways Authority to support the A303 Stonehenge tunnel application and Defence Infrastructure Organisation (DIO) for the water demand forecasting and impact assessment for different Army Re-basing scenarios.

Data from the model is used routinely by EA hydrologists and hydrogeologists to support water resources work within the model area. It is considered to be the best tool available to support strategic water resources decision making by the EA and Water Companies alike across the model

area.

Since its development, the model has been updated and enhanced as follows:

- Wessex Water update in 2013: Local refinement Bere Stream, Upper Hants Avon, Heytesbury and time period extended to 2013
- EA update 2014: Consolidation of local refinements into regulatory model
- WWS update in 2016: refine influences locations and update time period to December 2016
- WWS update in 2018: local refinement on Middle Stour and tributaries and Devils Brook
- EA update 2017: Consolidation of local refinements in the regulatory model
- MOD abstraction and discharge representation have also recently been refined.

## Aims and objectives

This tender is for a project with three main aims:

- To incorporate any updated understanding & conceptualisation that is not currently represented in the model.
- To update the model time period to 2020 with associated hydrometric and artificial influence data (this will include a complete length of record change to the Rainfall and Potential Evapotranspiration datasets used).
- To convert the model from the current 4R and MODFLOW-96 VKD software to an updated rainfall recharge code (SWAcMod or 4R6) and MODFLOW 6 achieving equal or improved model performance as the existing Wessex Basin Model and utilising the new functionality where appropriate for improved performance.

Key objectives of the project are as follows:

1. To build into the model updated geological understanding (in 3 Dimensions) and remaining conceptual / numerical improvements undertaken as part of the AMP 6, DIO Army Re-basing, A303 Stonehenge Tunnel application that used and developed the existing model.
2. To use the 1965 to 2020 HadUK rainfall data and new EA PET data as new inputs for the new model.

3. To update the abstraction and discharge input data to 2020 and ensure locations are well represented in MODFLOW 6
4. Convert the current 4R-MODFLOW 96 VKD model to SWAcMod or 4R6 -MODFLOW-6 code.
5. Update the new model using irregular grid geometry and enhanced aquifer layering in the model as appropriate.
6. Re – calibrate the model to 'match' or improve upon previous level of calibration for both river flows and groundwater levels. High priority areas for model calibration are around major abstractions and along rivers. (Appendix A provides acceptance criteria to be aimed for).
7. Run 3 Baseline predictive scenarios, as described in Appendix B.
8. Update ArcGIS viewer (currently called *ModelMap*) which spatially displays model input, output, parameters and results. Also to provide the other output as described in Appendix B.
9. To have a standalone conceptual and numerical model report.

## Project and timescale

We envisage that to achieve the above aims and objectives, the project will be undertaken as a series of 7 chronological tasks as defined in the *Task Specification* section of this scope. Bidders should advise in their tender submission and project proposals, where they propose an alternative set of tasks to achieve the same objectives and outcomes.

A Technical Working Group (TWG) will be set up to work with the successful bidder, oversee and sign off the results, findings and recommendations **after each task**, and at the end of the project. The TWG will consist of EA staff from Wessex Groundwater Hydrology and Contaminated Land team, water companies including Wessex Water and potentially SWW and Veolia. Additionally, it will include an external independent technical reviewer, who has already been appointed and will also assist with Tender evaluations (Technical quality only, cost redacted).

This contract is expected to be let by 17<sup>th</sup> September 2020 with work to commence on 21<sup>st</sup> September and is expected to be completed and invoiced, at least up to task 5 (below) by 31<sup>st</sup> March 2021. There is potential for Tasks 6 and 7 to be completed subsequent to this by 31<sup>st</sup> July 2021. Please clearly indicate proposed timings of task delivery in your submission.

The contractor's main modeller(s) and project manager should be available for a start-up meeting in the last week of September and subject to Government and EA restrictions, should plan (and price) to attend at least 2 further face-to-face TWG meetings in Wessex (or Exeter) and host at least 5 remote web/tele conferences to present work and receive sign off from the TWG **after each task**. The contractor should produce formal minutes for approval by the TWG within 3 days of each meeting/ web/tele conference.

## Task Specification

The high-level tasks described below, followed chronologically are expected to lead to the desired outcomes (see aims and objectives above). We expect tender responses to provide a detailed methodology of how these tasks will be achieved, however we welcome justified

suggestions, variation and innovation in tender responses which may recommend differences in the tasks identified or concurrent running of some tasks.

Exact format of material to be presented after each task to the TWG will be agreed with the successful bidder (e.g. maps, block diagrams, tables, text, or spreadsheets).

For a comprehensive picture of delivery expected from this contract, the outputs listed in this section under all tasks for presentation to the TWG should be considered in combination with items listed in the Key Deliverables section also specifics listed in appendix B.

### **Task 1 – Pull together the current understanding of how the flow system operates in the Wessex Basin model area, and consider how the structure of the new 3D model will be built**

#### Subtasks

- a. Review the existing Wessex Basin Model (conceptual and 4R and Modflow), new data available, new conceptualisation and any further information available for the study area, including review of geology and stratigraphic information relating to the model area (See Obtaining data and information section below).
- b. Recommend how this conceptual understanding for the study area shall be represented numerically and converted from the existing 4R and Modflow 96 to an updated rainfall recharge model (SWAcMod or 4R6) and MODFLOW 6.

Expected outputs to be presented to the TWG:

- Slides or written report identifying key elements of conceptualisation and any changes or updates to the conceptualisation as a result of the review of data available.
- Recommended grid structure to take into account key model stresses and receptors.
- Recommend starting 3D layering and layer elevations, their interconnection, outcrop and link to abstraction and observation wells and boreholes, springs etc.
- Slides or written report of recommendations for numerical model representation in SWAcMod or 4R6 – MODFLOW 6 including proposed interconnection.

### **Task 2- Data Preparation**

Collate, update, prepare and format input datasets and observed data for numerical representation and comparison (see Obtaining data and information section below). These need to be 'future proofed' i.e. easily updated by the Environment Agency or its subsequent contractors.

These datasets will include the new Rainfall and PET, to replace the existing products used. There will inevitably be some differences in totals in these datasets to the presently used ones. This should be borne in mind when thinking about the new calibration.

The EA & Water companies will hand over abstraction profiles from the current model that we will have reviewed and be comfortable with. Basic error- checking may still be required on these datasets.

Expected outputs to be presented and provided to the TWG:

- Slides or written report identifying method of collation, format of data inputs, anomalies identified and their resolution

- Slides showing proposed representations of abstraction and discharge locations in the model, how complex influences such as augmentation schemes, quarries and fish farms will be represented and assumptions made.
- A 'well file' holding the abstraction and discharge input data and profiles that is easily updated and owned by the Environment Agency. The file will convert itself into the necessary format to run with MODFLOW 6 when required.
- Other relevant information to develop a well calibrated 3D surface-groundwater model.

### **Task 3 – Model conversion and update**

#### Subtasks

- a. Update and calibrate the recharge runoff model using the new rainfall and PET data to a version that works with MODFLOW 6 (maintaining the daily timestep of the runoff recharge model)
- b. Conversion (without layering) and update of existing model to MODFLOW 6. (see link in introduction for a more detailed summary of the current model to be converted)
- c. Trial calibration
- d. Implement agreed initial model layering to produce a stable model which converges. Model layering should be as simple as possible but also adequate to allow a credible simulation of the impacts of groundwater abstraction on the receptors of interest.

#### Expected outputs to be presented to the TWG:

- Slides or written report summarising the updated runoff-recharge model, the success and/or issues encountered with the new model in MODFLOW 6
- Preliminary water balance calculations to show the viability of the conceptual model, runoff-recharge model and interaction in the 3D model.
- Review of impact of initial model layering on aquifer hydraulic and surface groundwater interaction, in comparison with conceptual model and required model acceptance criteria.

### **Task 4 – Calibration and refinement**

#### Subtasks

- a. Calibrate agreed numerical representation to credibly simulate historic groundwater and river flows to achieve the model acceptance criteria set.
- b. Resolve calibration issues that have fallen out of the conversion.
- c. Maintain audit of all refinement runs.

#### Expected outputs to be presented to the TWG:

- Slides or written report summarising the audit of all refinement runs and any problems and successes of calibration
- Spreadsheet comparing model results with observed and calibration for the existing model for, surface flow and groundwater level data as accretion and spatially across the model area for each key model run, to enable an assessment of model performance and refinement required.

### **Task 5 – Sensitivity analysis and validation**

#### Subtasks

- a. Rigorous sensitivity analysis of the behaviour of the model to determine sources and the influence of uncertainty
- b. Validation to test the calibration of the model on un-calibrated data
- c. Comparison of modelled results with the acceptance criteria (Appendix A)
- d. Production of model accuracy maps (high, medium, low) measured against qualitative and quantitative criteria.

Expected outputs to be presented to the TWG:

- Slides or written report summarising the influence which sources of uncertainty have on the modelled results, the results of validation and comparison with acceptance criteria (Appendix A) highlighting any areas where criteria are not met.

#### **Task 6 – Scenario runs and provision of modelled results**

Run Scenarios and produce useable numerical output for 'Natural', 'Recent Actual' and 'Fully Licenced' scenarios. Further detail on these scenarios and modelled output requirements is provided in Appendix B. (The scenarios may have already been run during refinement in task 4, however they should be revisited if necessary and reported in more detail under this task).

Expected outputs to be presented to the TWG:

- Slides or written report summarising and comparing the Historic (Calibration), Natural, Recent Actual and Fully Licensed Scenario results at CAMS assessment points in the model area.
- Spreadsheet of model v observed and existing model calibration for surface and groundwater modelling points spatially and temporally across the model area and for each model scenario that has been run.

#### **Task 7 Reporting and presentation of results**

Produce a standalone report in an accessible format detailing the whole model conceptualisation, conversion and numerical representation, model performance and scenario results (Tasks 1-6). The report should cover modelling decisions taken throughout the project with justification, and make use of appropriate appendices, maps and tables of results.

'Accessible format' here refers to the need for reporting without a heavy reliance on long, written text, rather making use of more innovative figures/ information that will convey the information required to the reader rapidly. Although it is acknowledged that some conventional written reporting will be required.

**The report needs to be standalone, so the user doesn't have to continually refer back to previous modelling reports and be able to be easily updated by future consultants and/or Environment Agency staff without the need to completely rewrite or produce the report.**

Given the requirement to present to and receive sign off from the TWG after each of the above tasks the report is expected to collate and consolidate output from the above tasks into an easily accessible 'one stop shop' format.

The final report is expected to be presented to the TWG at a final close out meeting, but the TWG will need to have had sight of a draft at least 2 weeks prior to such a meeting to enable feedback to be provided and acted upon for the final deliverable.

### Obtaining data and information

The Environment Agency and partners will provide relevant and useful data we hold including:

- The existing Wessex Basin Model files, data, associated relevant reports (see below)
- Hydrometric data required from our archives

- Abstraction licence and discharge consent data from the existing model, our archives & CAMS
- Length of record Potential Evapotranspiration and gridded rainfall data for the model area
- Pre-existing geological model(s) for the Wessex Basin area
- Any Existing LiDAR data required
- CAMS/ WFD boundaries & data, river stretches & Waterbody outflow points
- Mains leakage evidence that will need to be processed for suitable representation in the model
- Information of any refinements from the AMP 6, Army Rebasing and A303 Tunnel project that used the existing model.

The contractor should carry out basic quality assurance of this data to ensure it meets the requirement of numerical model and to put it in an appropriate format for inclusion in the numerical model.

Data that may be required to be obtained from third parties by the contractor (Licenses are held by the EA):

- The most recent geological mapping, mineral assessment reports and memoirs for the model area (BGS)
- The most recent soil maps (Cranfield University/ LandIS.org)
- The most recent available land use data (CEH)

**REPORTS AND CONCEPTUALISATION DOCUMENTS WILL BE PROVIDED FOR THE CONTRACTOR TO GAIN AN UNDERSTANDING OF THE EXISTING WESSEX BASIN MODEL.**

The key reports to be provided and an indication of their size is indicated below to aid with bidders understanding the background reading required:

- **PHASE 4 FINAL REPORT (2011) – 279 PAGES + FIGURES**
- **PHASE 4 FINAL REPORT APPENDIX D – STOUR, FROME & PIDDLE CONCEPTUALISATION TEXT – 49 PAGES**
- **PHASE 4 FINAL REPORT APPENDIX E – CALIBRATION FOLLOWING CHITTERNE TRIAL – 21 PAGES**
- **PHASE 1 HAMPSHIRE AVON CONCEPTUAL MODEL REVIEW AND NUMERICAL MODEL PROPOSALS (2005) – PAGES TBC + FIGURES**
- **MODEL MAP ARCGIS PROJECT – 100+ LAYERS AND DISPLAYS OF CURRENT MODEL**
- **PHASE 5 MODEL USER MANUAL (2011) – 90 PAGES**
- Bere Stream AMP5 hydrological impact assessment (March 2013) - 147 pages
- Heytesbury Brook AMP5 Report: Hydrological, water quality and ecological investigation (draft) (Nov. 2013) - 49 pages
- AMP5 Western Arm Water Resources Investigation. Final report (July 2014) - 90 pages
- Middle Stour Tributaries Investigation. Final report (August 2019) - 90 pages
- Devil's Brook investigation Report. Final report (October 2019) - 45 pages

**THE CONTRACTOR SHOULD ALSO HOWEVER IDENTIFY ANY FURTHER INFORMATION, NOT LISTED HERE, WHICH WILL BE REQUIRED OR USED FOR THE PROJECT AND AGREE ITS PROVISION WITH THE TWG.**

**THE CONTRACTOR IS REMINDED THAT ANY DATA AND REPORTS OBTAINED AS PART OF THIS PROJECT SHALL REMAIN THE EXCLUSIVE PROPERTY OF THE EMPLOYER.**

## Key Deliverables

In order to sign off the model as complete, the Employer will need to have received all of the model input and output files (historic and scenario runs), the updated conceptual model and the updated recharge/numerical model(s). Each task will have been signed off as complete by the TWG and all of the outputs and reporting identified above will have been provided including those listed in Appendix B.

A GIS viewer compatible with ArcGIS 10.4.1 which allows for drilling down into data and modelled results across the whole modelled area will be required with relevant layers of data input to/ output from model, and including additional layers such as:

- Plots showing gaining and losing reaches of watercourses
- Confidence levels of calibration of flows (including wet/dry/average year comparisons)
- Groundwater on/off scenario impacts if run
- GW/SW interaction

Further specific modelled results as outlined in Appendix B will be required to be provided in spreadsheet format.

## Ownership

**FOR THE AVOIDANCE OF DOUBT TENDERERS NEED TO ENSURE THAT THE WESSEX BASIN MODEL WHOSE UPDATE FORMS PART OF THIS TENDER AND ANY MODEL RUNS, TOOLS DEVELOPED OR OTHER OUTPUTS THEREFROM WILL BE COMPLETELY USABLE BY THE EMPLOYER WITHOUT ANY RESTRICTION WHATSOEVER WHETHER AS A RESULT OF ANY CONTRACTOR INTELLECTUAL PROPERTY USED IN THE COURSE OF THE UPDATING WORK OR ANY OTHER POSSIBLE RIGHTS OF THE CONTRACTOR OR OTHER PERSON.**

## Appendix A – initial acceptance criteria

It would be reasonable to expect a well-constructed catchment scale groundwater model, based on a comprehensive conceptual model, to largely meet the following accuracy criteria with the aspiration that some would be surpassed. As a minimum the calibration should be as good as the existing model where this has not achieved the acceptance criteria below.

### Flow Acceptance Criteria

River and springflows at 52 gauging stations should be within about +/-10% of observed flows across the full range of flows and in every year of the simulation period. However greater scrutiny will be applied to the model fit over the medium to low flow range. The timing of simulated baseflow maxima and minima should also be within about +/- 20 days.

### Flow Accretion Acceptance Criteria

- The predicted pattern of timing and location of flow onset and cessation in winterbournes should be within +/- 30days and +/- 500 metres of the observed.
- For perennial reaches the simulated flow should be within +/-20% of observed at spot gauging sites.

### Groundwater Level Acceptance Criteria

Groundwater acceptance criteria will be agreed between the successful bidder and the TWG, as a minimum calibration should be as good as the existing model. Simulated groundwater head should match the timing, amplitude and recession characteristics of observed data. The spatial distribution of heads should also be realistic such that hydraulic gradients and groundwater catchments are well represented. A subset of the 342 observation boreholes in the model area will be used to test this.

## Appendix B – Further Information

### Task 6 – further information on Baseline predictive scenarios and model output required

- The three baseline scenario runs typically form the basis on which other predictive scenarios will be based, they test the performance and robustness of the model under conditions which differ from the historical period, and they are also designed to serve various operational drivers in the Environment Agency, such as the Water Framework Directive, CAMS and abstraction licensing resource availability.
- The three baseline runs all use the same climatic sequence of rainfall and potential evaporation inputs used for historic refinement purposes. However, they represent predictions of what the flows and heads might have been with annually repeated abstraction and discharge scenarios defined, as follows:
  - Natural Scenario: run to estimate the flow regime in the catchment in the absence of any human influence exerted via abstractions, discharges and main leakage.
  - Recent Actual Scenario (RA): The Recent Actual model run represents the current or contemporary level of anthropogenic influence within the model area, based on typical abstraction and discharge rates and patterns within the last 6 years.
  - Fully Licensed Scenario (FL): This model run uses Fully Licenced abstraction rates and constraints combined with sewage treatment works discharges (and mains leakage) which are held at Recent Actual rates.

### Outputs

The following outputs will be required from the model unless otherwise specified by the Employer:

- a) For historic, natural, recent actual and fully licenced scenarios, in both hydrograph and flow duration curve format:
  - i) Modelled flows at the downstream end of each water body
  - ii) Modelled flows at each CAMS assessment point
  - iii) Modelled flows at each gauging station
- b) Comparison of observed (at gauging stations or where many spot gaugings are available) vs new modelled historic run vs previous historic run (Run 493) – both as hydrographs and flow duration curves

- c) Comparison of modelled vs observed and previous historic run (Run 493) flow accretions –
  - i) Flow accretion profiles for each reach and the whole river at key flow percentiles Q95, Q70, Q50 and Q30
- d) Timeseries flow data for historic, natural, recent actual and fully licenced runs for every stream cell (ability to access data possibly through a tool rather than numerous spreadsheets, but Excel compatible)
- e) Simulated groundwater level hydrographs for historic, natural, recent actual and fully licenced runs throughout the catchment
- f) Maps and cross-sections of groundwater heads
- g) Annual and monthly water balances for all management units with details of the recharge and discharge components.
- h) Additional assessment of changes in distribution of groundwater impacts vs the existing CAMS impacts, with details explaining the why the changes occurred and recommendation of actions – this may require on/off scenario runs.

## Clarifications

[REDACTED]

Defra group Commercial (DgC)  
Submitted via Defra Bravo Portal

[REDACTED]

Dear Sir/Madam

### **Wessex Basin Groundwater Model Update – Contract ID: 30144 – Clarification Questions**

Thank you for the clarification questions (issued 17 September 2020) in response to our original submission for the above project (Proposal Reference: 43146-WOOD-ZZ-XX-PL-K-0001\_S0\_P01.1, dated 4 September 2020).

Please find below our response to these clarifications. We have included your clarification question in *italicised text*.

#### **1. Implementation of MODFLOW 6 and the 4R6 recharge code for Wessex Basin Model:**

*For the new model, please advise on the greater functionality, benefits, feasibility and costs of an additional optional task to allow for change in land use with time function to 4R6? In doing so, also consider SWAcMOD as an alternative option to be used.*

[REDACTED]

[REDACTED]

[REDACTED]

[Redacted text block]

[Redacted text block]

[Redacted text block]

**2. Conceptualisation:**

*Although it is recognised the need for an open mind on conceptualisation as well as experience. We need to stress the importance of only needing to change things which were wrong/fudged/where there's new data and understanding now.*

[Redacted text block]

- [Redacted list item]

[REDACTED]

[REDACTED]

### 3. HadUK rainfall data and new EA PET data:

To confirm, as per DgC Bidder Pack it is a requirement to use the 1965 to 2020 HadUK rainfall data and new EA PET data as inputs for the new model and it's calibration. As such there is no judgement to be made about whether to use this sequence or not. Whilst some comparisons with previous PET sequences could be useful for guiding the new calibration, a comparison exercise between the two sequences to judge a favoured sequence to use is not required. To confirm, if the model needs more calibration in using the 1965 to 2020 HadUK rainfall data and new EA PET data this will be at the consultants risk and not the Environment Agency.

[REDACTED]

[REDACTED]

[REDACTED]

### 4. Model conversion and update:

Should Wood be successful, it's important to note that throughout the lifetime of the project we want you at all times to be agile and flexible in your approach. This so as to be able to move time (hours) between tasks if one can be delivered more rapidly or the Technical Working Group and Wood think less time should be spent on certain tasks and more on others. For example, the Evaluators in their assessment of Wood's technical proposal think there are already significant time savings and opportunities to quickly move the project on during Task 3. Model conversion and update. Lesson learnt from Woods work on the neighbouring MODFLOW 96 VKD model upgrade showed that conversion of the current model to MODFLOW 6 lead to time delays in delivery of the project. Particularly as it didn't include the improvements to the conceptual model and good features of MODFLOW 6. Through choosing not to convert the current model to MODFLOW 6 (skip this task) it will then allow time, effort and budget savings to be used elsewhere. Perhaps allowing the off-setting against some of the Optional tasks like the Batched Abstraction Modelling (BAM) process? Please can Wood now review Task 3, in light of the above points and recommend a way forward, highlighting where time, effort and budget savings can be made and incorporated into the programme elsewhere.

[Redacted]

**5. Model calibration:**

*We anticipate the final model calibration should be better than the current model, but does need to be compared with observed data and not just the current model results (or MODFLOW 6 version of the current model). During the evaluation, one of the Evaluators thinks that 51 calibration runs, then sensitivity analysis is not enough. Particularly, if the HadUK rainfall data and new EA PET data changes the overall water balances for the model, which have always been good. What contingency has Wood built in to the programme if the model calibration is still not right after 51 runs and how will you manage this risk?*

[Redacted]

[Redacted]

[Redacted]

**6. Optional tasks:**

*Should Wood be successful, we anticipate Optional tasks needing to be commissioned during the lifetime of the project. Please now provide us with additional information for the Batched Abstraction Modelling (BAM) process so we can consider this in the interim.*

[Redacted]

[Redacted]

**7. Programme and Project Management:**

*Based on forecast delays to the project start date (now 28/09/20), please review your programme. Outline how you would deliver a calibrated model with sensitivity analysis and validation by 31/03/21, and completion of the whole project before 31/07/2021. How will this programme look and with the impact of the Optional tasks to be assessed too?*

[Redacted]

**8. Understanding the requirement and risk management:**

*During the evaluation, one of the Evaluators has highlighted the risk of internal communications for delivery of the project. Describe your internal communications procedures and how you will manage this for the project and its successful delivery with a team that is based across no fewer than 5 different locations?*

[Redacted]

**9. Conditions of Contract:**

*Bearing in mind the previous clarifications sought during the ITT phase, please now confirm that you have both read and understand the conditions of the contract and that the summary of accepted/ rejected changes is sufficient for acceptance. Subject to your response, there will be no further discussion relating to this or any subsequent questions beyond this point.*

[Redacted]

[Redacted]

**Close**

[Redacted]

Yours faithfully

[Redacted]

[Redacted]

[Redacted]

## Pricing Schedule and Invoice Schedule

### Contract Price

The contract price is **£130,302.50**, which includes the options described in the Pricing Schedule below. The Contract Supervisor shall decide which options will be utilised under this contract and has no obligation to utilise any of the options should they not be required.

## Pricing Schedule: Wessex Basin GW Model Update (30144) (18/09/20)

Tenderers must complete the following pricing schedule. All prices must be quoted in pounds sterling,

exclusive of VAT. All prices are to remain fixed for the duration of the contract.

Pricing schedule must be completed and returned in the following format.

I/we.....

offer to supply under this contract, the services as described in the specification and throughout the tender

document, in accordance with the Environment Agency Terms and Conditions of Contract, for the following sums;

### Resource and Pricing Schedule

Activity	Resource		Hourly Rate		Total
(please list the activities required to meet this commission)	(please add the name of the person carrying out the activity, use a new line for additional people required for the same task)	Grade/Job Title	(£)	No of hours to complete activity	(£)

<b>Task: 1</b>	<b>Collate current understanding &amp; consider model structure</b>
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	Name	Staff Grade	Rate	Hours	Total
Task: 1	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
					[REDACTED]
<b>Task: 2</b>		<b>Data preparation</b>			
	Name	Staff Grade	Rate	Hours	Total
Task: 2	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
					[REDACTED]
<b>Task: 3</b>		<b>Model conversion and update</b>			

	Name	Staff Grade	Rate	Hours	Total
Task: 3	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<b>Task: 4</b>		<b>Calibration and refinement</b>			
	Name	Staff Grade	Rate	Hours	Total
Task: 4	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Task: 4	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
				[REDACTED]	[REDACTED]

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<b>Task: 5</b>		<b>Sensitivity analysis and validation</b>				
<b>Name</b>	<b>Staff Grade</b>	<b>Rate</b>	<b>Hours</b>	<b>Total</b>		
Task: k: 5	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
				[REDACTED]		
<b>Task: 6</b>		<b>Scenario runs and modelling results</b>				
<b>Name</b>	<b>Staff Grade</b>	<b>Rate</b>	<b>Hours</b>	<b>Total</b>		
Task: k: 6	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
				[REDACTED]		
<b>Task: 7</b>		<b>Reporting and presentation</b>				

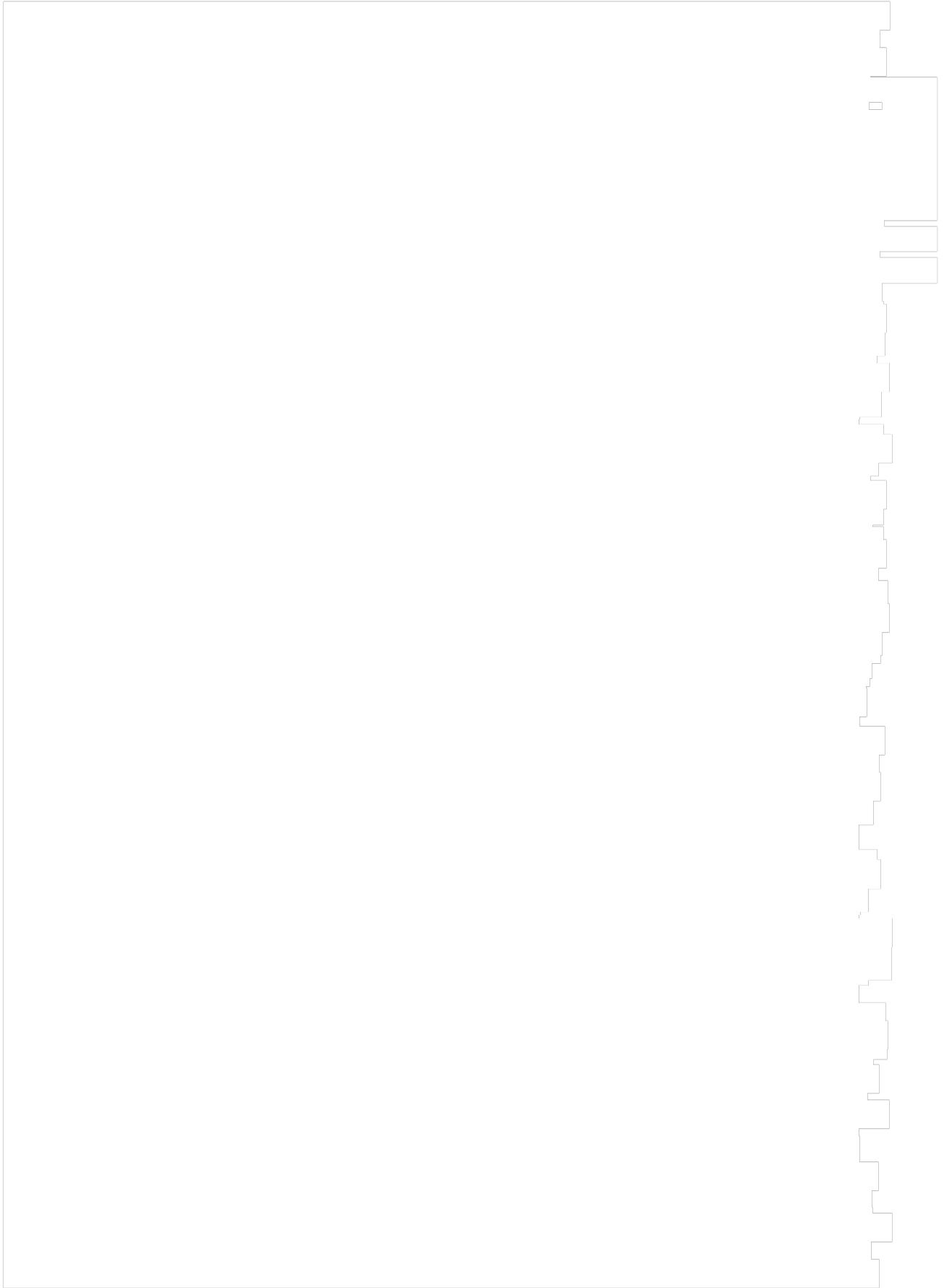






Payment Schedule	Tasks	Measure	Date	Value (£) exc. VAT
		agreed from the TWG.		
Milestone 2	Task 4 – 5 (including all sub tasks)	Payment due after quality checks have been made against the original objectives and sign off agreed from the TWG.	29.03.2021	████████
Milestone 3	Task 6 – 7 (including all sub tasks and the standalone final report)	Payment due after quality checks have been made against the original objectives and sign off agreed from the TWG.	28.06.2021	████████

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## GDPR Schedule

### Processing, Personal Data and Data Subjects

1. The Processor shall comply with any further written instructions with respect to processing by the Controller.
2. Any such further instructions shall be incorporated into this Schedule.

Description	Details
Subject matter of the processing	<ul style="list-style-type: none"> <li>• To update the Wessex Basin Model time period to 2020 with associated hydrometric and artificial influence data (this will include a complete length of record change to the Rainfall and Potential Evapotranspiration datasets used). This will be provided under licence by the Environment Agency to Wood. Data will be provided in an excel spreadsheet format for the area of the Wessex Basin Model and to include; Length of record Potential Evapotranspiration and gridded rainfall data for the model area (1965 to 2020 HadUK rainfall data and new EA PET data as new inputs for the new model). ; Abstraction licence and discharge consent data from the existing model, our archives &amp; CAMS, River Flows, Groundwater levels.</li> <li>• Pre-existing geological model(s) for the Wessex Basin area</li> <li>• Any Existing LiDAR data required</li> <li>• CAMS/ WFD boundaries &amp; data, river stretches &amp; Waterbody outflow points</li> <li>• Mains leakage evidence that will need to be processed for suitable representation in the model</li> </ul> <p>Information of any refinements from the AMP 6, Army Rebasng and A303 Tunnel project that used the existing model.</p>
Duration of the processing	<i>01/10/2020 (Contract Start Date) to 31/07/2021 (Contract End Date)</i>

<p>Nature and purposes of the processing</p>	<p>Purpose is to deliver the following project <b>Aims and objectives:</b></p> <ul style="list-style-type: none"> <li>• To incorporate any updated understanding &amp; conceptualisation that is not currently represented in the model.</li> <li>• To update the model time period to 2020 with associated hydrometric and artificial influence data (this will include a complete length of record change to the Rainfall and Potential Evapotranspiration datasets used).</li> <li>• To convert the model from the current 4R and MODFLOW-96 VKD software to an updated rainfall recharge code (SWAcMod or 4R6) and MODFLOW 6 achieving equal or improved model performance as the existing Wessex Basin Model and utilising the new functionality where appropriate for improved performance.</li> </ul> <p><b>Key objectives</b> of the project are as follows:</p> <ul style="list-style-type: none"> <li>• To build into the model updated geological understanding (in 3 Dimensions) and remaining conceptual / numerical improvements undertaken as part of the AMP 6, DIO Army Re-basing, A303 Stonehenge Tunnel application that used and developed the existing model.</li> <li>• To use the 1965 to 2020 HadUK rainfall data and new EA PET data as new inputs for the new model.</li> <li>• To update the abstraction and discharge input data to 2020 and ensure locations are well represented in MODFLOW 6</li> <li>• Convert the current 4R-MODFLOW 96 VKD model to SWAcMod or 4R6 -MODFLOW 6 code.</li> <li>• Update the new model using irregular grid geometry and enhanced aquifer layering in the model as appropriate.</li> <li>• Re – calibrate the model to 'match' or improve upon previous level of calibration for both river flows and groundwater levels. High priority areas for model calibration are around major abstractions and along rivers. (Appendix A provides acceptance criteria to be aimed for).</li> <li>• Run 3 Baseline predictive scenarios,</li> <li>• Update ArcGIS viewer (currently called <i>ModelMap</i>) which spatially displays model input, output, parameters and results. Also to provide the other output as described in Appendix B.</li> </ul> <p>To have a standalone conceptual and numerical model report.</p>
<p>Type of Personal Data</p>	<p>None collected</p>

Categories of Data Subject	Hydrometric and artificial influence data
Plan for return and destruction of the data once the processing is complete UNLESS requirement under union or member state law to preserve that type of data	<p><i>The supplied data will be incorporated into the groundwater model as part of the update process. The groundwater model as and when it is signed off by the Technical Working Group, will be then be handed over to the Environment Agency. It will then be used by the Environment Agency and its Contractors to predict the impacts of different water abstraction scenarios on the environment. This forecast information will then be used to help inform future decisions for water resources management.</i></p> <p>No personal data will be collected or held as part of this contract.</p>

**Change Control Note**

**10. Contract Change**

**Contract Change Note (“CCN”)**

<b>CCN Number</b>	01
<b>Contract Reference Number &amp; Title</b>	
<b>Variation Title</b>	
<b>Number of Pages</b>	

WHEREAS the Contractor and the Authority entered into a contract for the (title of contract) dated (date) (the "Original Contract") and now wish to amend the Original Contract

IT IS AGREED as follows

1. The Original Contract shall be amended as set out in this Change Control Notice:

Change Requestor / Originator									
Summary of Change									
Reason for Change									
Revised Contract Price	<table border="1"> <tr> <td>Original Contract Value</td> <td></td> </tr> <tr> <td>Previous Contract Changes</td> <td></td> </tr> <tr> <td>Contract Change Note</td> <td></td> </tr> <tr> <td>New Contract Value</td> <td></td> </tr> </table>	Original Contract Value		Previous Contract Changes		Contract Change Note		New Contract Value	
Original Contract Value									
Previous Contract Changes									
Contract Change Note									
New Contract Value									
Revised Payment Schedule	No change to costing schedule.								
Revised Specification	The specification will change from that drafted in the original contract to the text drafted in the summary section above.								
Revised Contract Period									
Change in Contract Manager(s)	N/A no change to contract manager								
Other Changes	N/A no other changes								

2. Save as amended all other terms of the Original Contract shall remain effective.
3. This CCN takes effect from the date on which both Parties communicate acceptance of its terms via Bravo.

Authorised Authority Representative

Name:

Date: 2020

Defra Commercial Officer  
(FSOD Sign off up to £500k)

Name .....

Date.....

Authorised Contractor Representative.....

Name.....

Date.....