

Operating Agreement May 2009

Wessex Water Services Limited and the Environment Agency

RESTORATION OF RIVER FLOWS IN THE RIVER WYLYE,
RIVER PIDDLE AND UPPER BRISTOL AVON

OPERATING AGREEMENT

This document sets out the terms of arrangements to progress the restoration of river flows in the River Wylfe, River Piddle and Upper Bristol Avon through the operation of sourceworks for public water supply and stream support for improving river flows made between:-

1. Wessex Water Services Limited (registered in England and Wales under number 2366648 whose registered office is at Claverton Down Road, Claverton Down, Bath BA2 7WW ("Wessex Water") and
2. The Environment Agency of Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol. BS32 4UD ("the Agency")

under Section 20 of the Water Resources Act 1991 and as amended by the Environment Act 1995 Schedule 22 and as amended by the Water Act 2003, Section 29.

WHEREAS:-

- (1) Wessex Water is the owner and operator of water sources (hereinafter called "the Sources") which were constructed and are operated by virtue of statutory provisions and licences and which are more properly described and referred to in Schedule 1 to this Agreement
- (2) The Agency has the duty by virtue of Section 6(2) of the Environment Act 1995 to take all such actions as it may from time to time consider necessary or expedient for the purpose of conserving, redistributing or otherwise augmenting water resources and of securing the proper use of water resources subject to the limitations set out in Section 6 of that Act
- (3) Wessex Water has a licence issued by the Secretary of State under the provisions of Section 6 of the Water Industry Act 1991 to supply water within its area

NOW THEREFORE IT IS HEREBY AGREED as follows:-

- 1 THIS Agreement shall take effect from the date of signature ('the Commencement Date')
- 2 WESSEX Water shall operate the Sources in accordance with the management rules set out in Schedule 2 to this Agreement
- 3 WESSEX Water shall keep such records and provide such information relative to the operation of the Sources as the Agency shall from time to time reasonably require.
- 4 EITHER party may give notice to the other calling for a review of the management rules contained in Schedule 2 Either party may seek to amend Schedule 1 or Appendix 1 in respect of descriptions and administrative changes to authorisations Either party may give notice to the other calling for a review of the operation of the Sources or any part of them referred to in Schedule 1 to this Agreement and the duties required of Wessex Water in Schedule 2 If either party requests a review the parties will meet with a view to attempting to agree on how the review will take place Any Notice given under this Clause requesting a review shall be given not less than six months prior to 31 March 2010 from which any change resulting from the review will be brought into effect unless the

Agency and Wessex Water agree otherwise Specific reviews of designated activities in Schedule 2 may be agreed and undertaken irrespective of the review process in this clause

- 5 WESSEX Water shall notify the Agency before varying the management of any land held in connection with the Sources if that variation involves any matter which is the subject of this Agreement
- 6 IN the case that Wessex Water seeks to dispose of the whole or any part of the Sources if the Agency so requires it shall make it a condition of any disposal that the person receiving the assets shall enter into a binding agreement with the Agency to the same intent as this Agreement mutatis mutandis
- 7 ANY dispute as to the terms of this Agreement shall be referred to and determined by the Secretary of State who shall consult the Director General of Water Services where appropriate
- 8 THIS document shall not impose on arrangements in the Wimbleball Operational Management Strategy Operating Agreement or its successor Agreements relating to the Wimbleball Reservoir Source owned by South West Water Limited but also used by Wessex Water as a source of supply
- 9 EITHER party may terminate the provisions of this Agreement which relate to the Chitterne Public Water Supply source and its associated monitoring and reporting requirements prior to 31 March 2010 by service of written notice on the other The notice shall not take effect before the expiry of 5 working days from the date in the notice and such notice shall include an explanation for requiring termination
- 10 This Agreement will cease on 31 March 2010

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AMENDMENT RECORD

SECTION	AMENDMENT	Version number	DATE

BACKGROUND

Wessex Water and the Environment Agency through their signing of a Statement of Intent with Ofwat and English Nature in 2002 signalled a common objective of restoring river flows in the River Wylfe, River Piddle and Upper Bristol Avon through Stream Support and reductions in Public Water Supply abstraction at Chitterne, Alton Pancras and Cowbridge. An Operating Agreement was developed between Wessex Water and the Environment Agency to facilitate this objective.

During the period 2002 to 2006 a potential solution to restore flows was trialled; the solution involved the provision of stream support to relevant watercourses and reductions in Public Water Supply abstraction at Chitterne, Alton Pancras and Cowbridge (one of Malmesbury Groundwater Scheme sources). The conclusions from the trialling of the solution were documented by Wessex Water in a Review Report (May 2007). The Review Report concluded that sustainable abstraction solutions were potentially feasible from the three sources, although the outcomes from AMP4 studies relating to the River Avon Special Area of Conservation (SAC) were awaited to confirm or otherwise the impact of the Chitterne Public Water Supply source operating at the proposed revised abstraction rates. It is hoped that these studies will inform whether a sustainable solution is feasible and at what operational rates. These studies are ongoing.

A revised Statement of Intent was signed by Wessex Water, the Environment Agency, Ofwat and Natural England in May 2007.

The intention was that during the period from 2008 to 2010 the revised Public Water Supply output and associated Stream Support for all three catchments as specified within the Review Report would be trialled to confirm or otherwise, the identified, potentially feasible sustainable solutions, facilitated by an Operating Agreement.

The trialling of the Chitterne Public Water Supply source will be more targeted, than the other Public Water Supply sources in this Agreement, to provide information on any impact that the source has on the River Till and the River Wylfe and therefore provide better information on any impacts likely to affect the SAC designated rivers.

This programme of trialling will be facilitated by this Operating Agreement which details how the Public Water Supply and Stream Support sources tabled in Schedule 1 will be used from the date of this Agreement to March 2010.

SCHEDULE 1 - DESCRIPTION OF THE SOURCES

1.1 The Sources

This Agreement covers the operation of Wessex Water's sources listed in Table 1 in the context of trialling reduced abstractions at Chitterne, Alton Pancras and sources within the Malmesbury Groundwater Scheme which includes Cowbridge, with their associated stream support provision. It covers the detailed operation of the Sources listed in Table 1 below which are located at Chitterne, Alton Pancras and those which comprise the Malmesbury Groundwater Scheme (MGS) and it may affect the operation of other sources / transfers listed in Appendix 1 to this Agreement.

TABLE 1 - LIST OF THE SITES AND AUTHORISATIONS

1a - Public Water Supply sources

SOURCE NAME	NGR	PUBLIC WATER SUPPLY OR STREAM SUPPORT	ABSTRACTION LICENCE NUMBER	SUMMARY OF RULES IN SCHEDULE 2
Milbourne	ST 9 8	Public Water Supply	17/53/001/G/203	Source now included within the term 'Malmesbury Groundwater Scheme' (MGS). No change to individual source output but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Rodbourne	ST 9 8	Public Water Supply	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Reduced individual maximum source output and to be included within the overall increased daily but decreased annual aggregate output for the MGS
Cowbridge	ST 9 8	Public Water Supply	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Reduced individual maximum source output and to be included within the overall increased daily but decreased annual aggregate output for the MGS
Charlton	ST 9 8	Public Water Supply	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) No change to individual source output but to be included within the overall

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				increased daily but decreased annual aggregate output for the MGS
Park Road	ST 9 8 8	Public Water Supply	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Individual source output for this purpose to be ceased
Chitterne*	ST 9 4	Public Water Supply	13/43/023/G/212	Daily and annual output to be reduced
Alton Pancras – 2 Boreholes	ST 7 0	Public Water Supply	13/44/041/G/005	No change to daily maximum but reduction in annual Public Water Supply quantity,

*Codford public water supply groundwater source also appears on the same licence but Codford itself is included within the Appendix 1 table of other sources for the purposes of this Agreement

1b – Stream Support (SS) Sources

SOURCE NAME	NGR	PUBLIC WATER SUPPLY OR STREAM SUPPORT	ABSTRACTION LICENCE NUMBER	SUMMARY OF RULES IN SCHEDULE 2
Luckington SS Borehole No 1	ST 8 8	Stream Support	17/53/001/G/410 Section 32 (3) Consent required for this groundwater investigation. A variation to Licence 17/53/001/G/410 will be required for permanent use	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Individual source output to be increased but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Luckington SS Borehole No 2	ST 8 8	Stream Support	Section 32 (3) Consent required for this groundwater investigation. A variation to Licence 17/53/001/G/410 will be required for permanent use	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Stream support following rules in this Agreement in aggregate with and as for Luckington SS Borehole No 1
Tetbury STW SS Borehole No 1	ST 8 9	Stream Support	17/53/001/G/410 Section 32 (3) Consent required for this groundwater investigation. A variation to Licence 17/53/001/G/410 will be required for permanent use	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Individual source output to be increased but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Tetbury STW SS Borehole No 2	ST 8 9	Stream Support	Section 32 (3) Consent required for this groundwater investigation. A variation to Licence 17/53/001/G/410 will be required for permanent use	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Stream support following rules in this Agreement in aggregate with and as for Tetbury STW SS Borehole No 1

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Stanbridge SS	ST 8 8	Stream Support	17/53/001/G/410 Section 32 (3) Consent required for this groundwater investigation.	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Individual source output to be increased but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Hullavington	ST 8 8	Stream Support	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) No change to individual source output but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Charlton	ST 9 8	Stream Support	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) No change to individual source output but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Lower Stanton St. Quintin	ST 9 8	Stream Support	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) No change to individual source output but to be included within the overall increased daily but decreased annual aggregate output for the MGS
Cowbridge	ST 9 8	Stream Support	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Individual source output for this purpose to be ceased
Park Road	ST 9 8	Stream Support	17/53/001/G/410	Source included within the term 'Malmesbury Groundwater Scheme' (MGS) Individual source output for this purpose to be ceased
Chitterne Road Chalk Stream Support Boreholes (A) and (B)	ST 9 4 (Borehole A) and ST 9 4 (Borehole B)	Stream Support	Section 32 (3) Consent required for this groundwater investigation. New licence will be required for permanent use	Stream support to the Chitterne Brook following rules in this Agreement
Alton Mill Stream Support	ST 7 0	Stream Support	Section 32 (3) Consent required for this groundwater investigation. Either a new licence or a variation to Licence 13/44/041/G/005 will be required for permanent use	Stream Support following rules in this Agreement

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Morningwell OB 1	ST 70 00	Stream Support	Section 32 (3) Consent required for this groundwater investigation. Either a new licence or a variation to Licence 13/44/041/G/005 will be required for permanent use	Constant rate input of 5.0 l/s to maintain pool water levels at 108.55mAOD commencing when spring inflow to Morningwell Pool ceases
Morningwell Pool Support Borehole	ST 70 00	Stream Support	Section 32 (3) Consent required for this groundwater investigation. Either a new licence or a variation to Licence 13/44/041/G/005 will be required for permanent use	Constant rate input of 6.0 l/s to maintain pool water level at at 108.55mAOD commencing when spring inflow to Morningwell Pool ceases. This will usually allow a small overflow from the pool. If the overflow from the pool into the cress beds falls below 1 l/s then a direct feed into the cress beds of 1 l/s will be provided (controlled via a valve off-take from the pipeline). Under these conditions 5 l/s will be fed into the pool and 1 l/s into the cress beds. This is to ensure that the pool is kept full and an adequate flow through the cress beds is maintained.

SCHEDULE 2 - MANAGEMENT RULES

2 Use of Chitterne, Alton Pancras and Malmesbury Groundwater Scheme for Public Water Supply

2.1 General Principles

The names of the Public Water Supply and Stream Support sources used are as described and referred to in Schedule 1.

With the aim of restoring river flows in the River Wylfe, River Piddle and Upper Bristol Avon through Stream Support and reductions in Public Water Supply abstraction at Chitterne, Alton Pancras and the Malmesbury Groundwater Scheme, it has been agreed that Wessex Water will, subject to the detailed management rules in this schedule:

- Test operational robustness of the revised Public Water Supply outputs for Chitterne, Alton Pancras and Malmesbury Groundwater Scheme as set out in this Agreement
- Test Environmental sustainability of the revised Public Water Supply source outputs as set out in this Agreement
- Test appropriateness of Chitterne Public Water Supply operating rules to meet Habitats Directive requirements which are to protect the river flows of the River Avon SAC
- Continue from the previous Operating Agreement the specified trigger flows, target flows and augmentation rates for the use of the stream support to help maintain acceptable flows in the rivers whilst testing the operational robustness and environmental sustainability of the sources.
- Have arrangements for addressing environmental impacts should they arise during the Chitterne Public Water Supply source trialling under this Operating Agreement.

In addition the Agreement defines:

- the use of Chitterne, Alton Pancras and Malmesbury Groundwater Scheme Public Water Supply sources during significant operational emergencies
- monitoring and reporting arrangements

The indicative timetable is set out in Appendix 2. It is expected that implementation of actions will begin as soon as is practicable. Any reference to a year means a fiscal year unless otherwise stated.

Unless otherwise documented through this Agreement, all agreed rules and procedures will be operated in accordance with the authorisations relating to the abstraction of water by Wessex Water from the sources identified and listed in Schedule 1.

Nothing in this Agreement should require Wessex Water to do anything that needs a statutory authorisation that has not been granted.

2.2 Chitterne Public Water Supply Operating Rules

Abstraction from Chitterne Public Water Supply source will be limited to a peak of 13 MI/d with an annual total not exceeding 2072MI.

Within these maxima:-

- a) up to 2.0 MI/d will be used as a base load abstraction all year to meet local area demand requirements (generally less than 1.0 MI/d) and to ensure that the transfer mains are kept disinfected and therefore available for operational use without delay.
- b) abstraction above 2.0 MI/d will be used to test the potential worse case environmental impact of abstraction. To meet this testing objective, the higher rates of abstraction will usually need to be taken during the summer and early autumn, subject to prevailing and antecedent weather conditions. The following is an indicative pattern for this testing but due to climatic unpredictability, the actual seasonal detail of exact start and finish times and rates of abstraction will be subject to consultation with the Agency close to the times of operation
June 1 to 31 Oct abstract at 13 MI/d
Nov 1 to 31 May abstract at 2 MI/d:
- c) there will be a requirement to operate at least one 'signal' test within the June to October operation period to produce an identifiable hydraulic signature (by swift rate change) which needs to be capable of detection in the monitoring network. This test may be repeated if climatic conditions dictate.
- d) if there is scope within the 2072 MI annual abstraction to abstract up to 13 MI/d after October this will be available as required operationally or if specifically requested by the Agency to attempt to ensure a full uptake of the 2072 MI

In the event that material concerns arise with regard to environmental impacts caused by or predicted to be caused by the abstraction quantities specified in the trialling regime above, Wessex Water and the Agency will meet to discuss the environmental impacts and the water supply needs. If the Agency¹ cannot be confident that there is no adverse effect on the integrity of the River Avon SAC, an appropriate regime will be determined by the Agency, having regard to the context of the trialling, alternative solutions and imperative reasons of overriding public interest² including those of a social or economic nature.

¹ Habitats Regulation 48 states that:

- 1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which:
 - a) is likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects) and
 - b) is not directly connected with or necessary to the management of the site, shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

² Habitats Regulation 49 provides so far as relevant:

- 1) If they are satisfied that, there being no alternative solutions, the plan or project much be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2)), may be of a social or economic nature), the competent authority may agree to a plan or project notwithstanding a negative assessment of the implications for the site.
- 2) Where the site concerned hosts a priority natural habitat type or a priority species, the reasons referred to in paragraph (1) must be either: a) Reasons relating to human health, public safety or beneficial consequences of primary importance to the environment, or b) Other reasons which in the opinion of the European commission are imperative reasons of overriding public interest.

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The Agency will separately consult Natural England over any proposed modifications to the trialling regime

Wessex Water will establish a groundwater and surface water monitoring network to capture data on any impacts from operation of the trialling. Details of requirements are as specified in Appendix 3.

2.3 Alton Pancras Public Water Supply Operating Rules

Abstraction from Alton Pancras will be limited to 4.5MI/d at any time of the year with an annual abstraction not exceeding 890 MI. This annual figure equates to a daily rate taken evenly throughout the year of 2.44 MI.

Abstraction will be used firstly to meet local needs (approximately 1.8 – 2.0 MI/d) the remaining daily balance and up to approximately 233 MI annually will be used for export at any time.

2.4 Malmesbury Groundwater Scheme Public Water Supply Operating Rules

For the purposes of this part of the Agreement, the Malmesbury Groundwater Scheme Public Water Supply sources are Cowbridge, Charlton, Milbourne and Rodbourne.

Abstraction from Cowbridge for Public Water Supply will take place in accordance with currently authorised licensed conditions for the source at a rate up to a maximum of 7.5 MI/day at any time during the year, with a maximum annual total not exceeding 2737.5 MI (daily x 365). Charlton and Milbourne will be operated in accordance with their currently authorised licence source conditions. Rodbourne will be operated in accordance with the current licence source conditions but with its maximum daily limited to 13.0 MI. These four sources will however be subject to the constraints on aggregate Public Water supply and overall licence aggregates as listed below.

The Malmesbury Groundwater Scheme shall be constrained by the following quantities:-

Overall aggregate maximum total daily abstraction from all sources, all purposes = 77.3 MI

*Overall aggregate maximum annual abstraction from all sources, all purposes = 18975 MI

Overall aggregate maximum Public Water Supply daily abstraction from all sources = 39.8 MI

*Overall aggregate maximum Public Water Supply annual abstraction from all sources = 12775 MI

*annual figures are reductions over existing authorised quantities under the licences.

2.5 Significant Operational Emergencies

WW will make all reasonable endeavours using the existing treatment and distribution network to operate all its sources in a manner to ensure that use of Chitterne, Alton Pancras and the Malmesbury Groundwater Scheme Public Water Supply sources in excess of the rates detailed above, is not required. If, despite this, additional abstraction is required from these sources,

- a) this will only be to the extent of – at Malmesbury Groundwater Scheme and at Alton Pancras Public Water Supply sources – remaining within the existing Licensed quantities, and at Chitterne Public Water Supply source – operating in accordance with the limits stated later in this section, and
- b) this will only occur after:-

- all other licensed sources that could in any way assist in delaying or obviating the need for increased use of Chitterne, Alton Pancras and Malmesbury Groundwater Scheme Public Water Supply sources are being operationally maximised and in particular
- the Bristol Water import is occurring in excess of 10 MI/d provided that the water is available from Bristol Water and to the extent that the use of the Bristol Water Import can reduce operational requirements for the output from Chitterne, Alton Pancras and the Malmesbury Groundwater Scheme Public Water Supply sources.

For the purposes of this Agreement, significant operational emergencies are the loss of source output due to unplanned events such as pollution, power failure, or system failure, that could not reasonably and promptly be mitigated by using the existing treatment and distribution network and all other sources within the supply network. Significant operational emergencies do not include planned events such as maintenance of source works when any necessary timely arrangements will be made with the Agency.

If there is a significant operational emergency Wessex Water will inform the Agency regarding the issue as soon as is practicably possible and discuss the longevity of the situation and the ability to use alternative sources, including the Bristol import. Issues of environmental sustainability at Chitterne, Alton Pancras and Malmesbury Groundwater Scheme Public Water Supply sources, and in particular the need to ensure that there is no adverse effect on the integrity of River Avon SAC, will inform this discussion and any subsequent decision as to use of the sources, having regard to Wessex Water's water supply needs.

Chitterne Public Water Supply source should be viewed as the abstraction of last resort in these circumstances. During a significant operational emergency up to 16 MI/d may be abstracted from the Chitterne Public Water Supply source. Wessex Water shall ensure that any such use of Chitterne Public Water Supply source shall not cause more than an annual total of 2072 MI to be abstracted.

2.6 Drought

Drought related issues and how the Company will operate Public Water Supply leading up to and during a drought are addressed within the Wessex Water Statutory Drought Plan and not within this Operating Agreement.

3 Stream Support Operating Rules

3.1 General Principles

The operating rules for stream support for the Chitterne Brook, River Piddle and Upper Bristol Avon are set out in the sections below.

Unless otherwise documented through this Agreement, all agreed rules and procedures will be operated in accordance with the authorisations relating to the abstraction of water by Wessex Water from the sources identified and listed in Schedule 1

Nothing in this Agreement should require Wessex Water to do anything that needs a statutory authorisation that has not been granted.

For each stream support site, there is a number of protective actions that need to be in place. These actions are given below and there will be written arrangements either within the individual Section 32(3) Consents detailing these matters or as appropriate through other Agency issued authorisations.

- Erosion control
- Pollution Prévention
- Significant Operational Emergencies

Erosion Control:- Wessex Water is responsible for preventing the augmentation causing any scour damage to the riverbed at the discharge point.

Pollution Prevention:- Wessex Water is responsible for ensuring that when operating the augmentation scheme and any drain-down of pipework that there is no ingress of polluted water from the augmentation pipes into the receiving watercourse.

Note: Any stream support works may require prior authorisation through a Consent to Discharge.

Significant Operational Emergencies:- There will be written arrangements within the individual Section 32(3) Consents detailing the required actions if stream support pumps fail, unplanned shut downs are required or if there is a pollution or a water quality incident.

3.2 Chitterne Brook Stream Support Operating Rules

Stream support to the Chitterne Brook will be provided from the boreholes known as Chitterne Road Chalk Stream Support Boreholes A and B.

Stream support abstraction will be trialled and monitored under a Consent issued under Section 32(3) Water Resources Act 1991 as amended by Water Act 2003. The aim is to test the sustainability of achieving seasonal target flows set for specified purposes as detailed in the Table below.

Action is required by Wessex Water when flow in the Chitterne Brook as gauged at Codford Gauging station is less than a prescribed flow. In accordance with any issued Consent, any

Stream Support will be operated in accordance with the rates of Stream Support specified, the prescribed flows for periods during the year and the target flows. These are detailed in the tables below. The maximum abstraction for Stream Support shall not exceed 5.0 MI/d, with an annual total not exceeding 1466 MI.

TABLE of periods, prescribed flows and target flows

Period	Prescribed Flow (acts as trigger for Stream Support)	Maximum rate of Stream Support Water for target Flow	Main Purpose and target flow
From 1 st April to 31 st March inclusive (All year)	0.035 m ³ /s (equates to 3 MI/d)	Up to 3 MI/d	To maintain at least 10 cm of water in the channel by seeking to achieve a target flow of 3 MI/d for amenity purposes in Codford St Mary
From 1 st April to 31 st July inclusive	0.058 m ³ /s (equates to 5 MI/d)	Up to an additional 2 MI/d if abstraction from Chitterne for PWS has exceeded an average of 2 MI/d since the 1 st April in the preceding calendar year	To mitigate for the impact of abstraction \geq 2 MI/d to safeguard juvenile salmonid production in the perennial reach (based on PHABSIM results:- the target flow of 5 MI/d provides for around 35% of maximum potential habitat for fry/juvenile fish in m ² /1000m)
From 15 th November to 15 th January inclusive	0.104 m ³ /s (equates to 9 MI/d)	Up to an additional 2 MI/d if abstraction from Chitterne for PWS has exceeded an average of 2 MI/d since the 1 st April immediately preceding	To safeguard salmonid spawning potential in the perennial reach (based on PHABSIM results:- a flow of 9 MI/d supports a satisfactory spawning habitat i.e. 40% of maximum physical habitat.
1 st February	0.45 m ³ /s (equates to 39 MI/d) at Norton Bavant Gauging Station	If flows at Norton Bavant Gauging Station* are less than or equal to 0.45 m ³ /s on the 1 st February and stream support has been operating on the Chitterne Brook, the stream support will be reduced to zero over the period up to 28 th February in a staged manner. Not including any stream support that may be being operated	To allow the affects of a natural two year groundwater drought to occur. In the event of a two-year groundwater drought the impact of abstraction is outweighed by the effects of the drought and the ecology of the stream should not be artificially maintained by stream support.

		from Kingston Deverill or Brixton Deverill.	
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Units conversion table

Units of m³/sec are used operationally for telemetered river flow values

Gauging Station	National Grid Reference	target flows m ³ /sec	target flows MI/d
Codford	ST 9709 4006	0.035	3
		0.058	5
		0.104	9
Norton Bavant	ST 9085 4275	0.45	39

3.3 River Piddle (Upper section) Stream Support and protected rights support Operating Rules

Stream Support to the River Piddle will be provided from the Alton Mill Stream Support borehole.

Stream Support abstraction will be trialled and monitored under a Consent issued under Section 32(3) Water Resources Act 1991 as amended by Water Act 2003. The maximum daily abstraction for Stream Support shall not exceed 27.94 l/sec (which equates to a maximum of 2.414 MI/d, with an annual total not exceeding 270 MI). The aim is to test the sustainability of maintaining target flows of 2.16 MI/d at South House gauging station and 1.55 MI/d at Little Puddle gauging station by abstraction from the **Alton Mill Stream Support borehole**. These target flows are designed to secure amenity flows in sections of the upper section of the River Piddle below Alton Pancras to the stretch of the river around Waterston below Little Puddle gauging station.

Protected rights will be safeguarded through pond/pool support provided as follows:-

Support to Alton Mill pond will be trialled and monitored through abstraction authorised under a Consent issued by the Agency under Section 32(3) Water Resources Act 1991 as amended by Water Act 2003. The aim is to test the sustainability of providing a fixed rate of 1 litre/sec (which equates to a maximum of 0.0864 MI/d, with an annual total not exceeding 30 MI) to the pond from the **Alton Mill Stream Support Borehole** via a dedicated pipeline from the borehole at all times when stream support to the River Piddle is active. Wessex Water will own and operate Alton Mill Stream Support borehole.

The principle of local groundwater support to Morningwell Pool and the downstream redundant cress beds will be trialled and monitored through abstraction authorised under a Consent issued by the Agency under Section 32(3) Water Resources Act 1991 as amended by Water Act 2003. The aim is to test the sustainability of providing a fixed rate of 5 litres/sec (which equates to a maximum of 0.432 MI/d, with an annual total not exceeding 157.68 MI) to the pool from the local aquifer using **Morningwell OB No 1** via a temporary pipeline. Pool support is to start when natural spring discharge into the pool ceases, and is to continue to

operate until natural spring discharge into the pool returns. Wessex Water will operate Morningwell OB No 1.

If the trialling at Morningwell OB No 1 proves successful, then Wessex Water will develop, trial and monitor a potential permanent mitigation measure comprising a new borehole in the vicinity, to be called Morningwell Pool Support Borehole. Development trialling and monitoring will be authorised under a Consent issued by the Agency under Section 32(3) Water Resources Act 1991 as amended by Water Act 2003. The aim of the development and trialling will be to test the sustainability of providing a fixed rate of 6 litres/sec (which equates to a maximum of 0.5184 ML/d, with an annual total not exceeding 189.216 ML) to the pool from the new borehole (Morningwell Pool Support) via a dedicated pipeline. If the overflow from the pool into the cress beds falls below 1 l/s then a direct feed into the cress beds of 1 l/s will be provided (controlled via a valve off-take from the pipeline). Under these conditions 5 l/s will be fed into the pool and 1 l/s into the cress beds. This is to ensure that the pool is kept full and an adequate flow through the cress beds is maintained. Testing would start when natural spring discharge into the pool ceases, and continue until natural spring discharge into the pool returns. Wessex Water will own and operate Morningwell Pool Support Borehole. Morningwell OB No 1 would not be operated whilst pumping tests are carried out on Morningwell Pool Support Borehole unless the new source fails to meet the mitigation needs of the pool. If successful, Morningwell Pool Support Borehole will become the permanent arrangement for mitigation at this site. WW will operate this source.

Units conversion table

Units of m³/sec are used operationally for telemetered river flow values

Gauging Station	National Grid Reference	Target flows m ³ /sec	Target flows ML/d
South House	SY 7074 9907	0.025	2.16
Little Puddle	SY 7185 9646	0.018	1.55

3.4 Upper Bristol Avon Stream Support Operating Rules

For the purposes of this part of the Agreement, the Malmesbury Groundwater Scheme stream Support sources are Luckington SS Boreholes 1 and 2, Tetbury STW SS Boreholes 1 and 2, Stanbridge SS, Hullavington, Charlton and Lower Stanton St Quintin.

Under the current licence 17/53/001/G/410 Stream Support is switched on when the flows in the River Avon fall below pre-defined target or trigger flow rates (whichever is reached first). Charlton, Hullavington and Lower Stanton St Quintin sources will continue to operate in accordance with conditions contained within the current licence. The only amendment to these sources brought about by this Agreement is to constrain their use in conjunction with other sources to the overall purpose and licence aggregates listed towards the end of this section.

Luckington SS Borehole 1, Tetbury STW SS Borehole 1 and Stanbridge SS, will operate under the current licence 17/53/001/G/410, as amended by the Groundwater Consent issued by the Agency under Section 32(3) Water Resources Act 1991 as amended by Water Act 2003. Stream Support is switched on when the flows in the River Avon fall below pre-

defined target or trigger flow rates (whichever is reached first). The Consent also covers new Stream Support boreholes at Luckington SS 2 and Tetbury STW SS 2 which have been developed to act as backup to the existing licensed boreholes. The aim of the Stream Support trialling is test the sustainability of the proposed operation of the sources.

River flows are continuously monitored by the Agency at specified Gauging Stations and the data made available to Wessex Water. When river flows approach target flows Wessex Water notifies the Agency and the stream support is switched on. Conversely, as river flows increase, the Stream Support augmentation is switched off when the flows are considered adequate to meet targets under natural conditions.

Those boreholes currently licensed for Stream Support and subject to change through consented operation and those consented to abstract as new sources for the purpose of investigating the sustainability and impacts of Stream Support are listed in the Table below. Where relevant, the consented quantities are in addition to the licensed values shown.

Stream Support Borehole Table

Tributary	Borehole	National Grid Reference	Quantity Licensed 17/53/01/G/410 in MI/d	Additional Quantity Consented in MI/d
Sherston Avon	Luckington SS Borehole No 1	ST 8 8	2.5	7.5)) agg 7.5
	Luckington SS Borehole No 2	ST 8 8	*	7.5)
	Stanbridge SS Borehole	ST 8 8	2.5	7.5
Tetbury Avon	Tetbury STW SS Borehole No 1	ST 8 9	2.5	7.5))) agg 7.5
	Tetbury STW SS Borehole No 2	ST 8 9	*)) 7.5)

* covered by Consent, not licensed, so no licensed quantity quoted

All of this Stream Support water will contribute to increased flow at Great Somerford, which is down stream of the confluence of the Sherston Avon and Tetbury Avon. The increased rate of consented Stream Support is to be delivered at a variable rate to meet target flow rates on the River.

For these same sources, the current trigger flows, target flows and their locations, together with the rates of Stream Support available to meet those target flows, are detailed in the table below.

TABLE of the Trigger and Target River flows

Units of m³/sec are used operationally for telemetered river flow values

Trigger Flows	Maximum Rate of Stream Support Water for Target Flow	Target Flows and Target Points	Main Purpose
Stream Support will be operated when flows at St Johns Bridge Gauging Station recede below 0.083 m ³ /s (equates to 7.2 MI/d)	At a rate not exceeding 20 MI/d from Luckington SS Boreholes and Stanbridge SS borehole	Stream Support will be operated with the aim of achieving a target flow at St Johns Bridge Gauging Station of 0.083 m ³ /s	To mitigate for Public Water Supply abstraction impacts on flows in the Sherston Avon through Malmesbury and to restore the amenity value of the river.
Stream Support will be operated when flows at Brokenborough Gauging Station recede below 0.079 m ³ /s (equates to 6.8 MI/d), or when flows at Abbey Weir flow reference point recede below 0.079 m ³ /s; whichever occurs first,	At a rate not exceeding 10 MI/d from Tetbury STW SS boreholes	Stream Support will be operated to try and maintain a target flow at Abbey Weir of 0.079 m ³ /s.	To mitigate for Public Water Supply abstraction impacts on flows in the Tetbury Avon through Malmesbury and to restore the amenity value of the river.
Stream support will be operated when flows at Great Somerford Gauging Station recede below 0.324 m ³ /s (equates to 28.0 MI/d).	At a rate not exceeding 30 MI/d from Luckington SS Boreholes, Stanbridge SS Borehole and Tetbury STW SS boreholes.	Stream support will be operated to try and maintain a target flow at Great Somerford Gauging Station of 0.324 m ³ /s.	To mitigate for Public Water Supply abstraction impacts on flows in the main Avon and to increase the number of days available for salmonid fishing.

The trigger flow at Fosseway GS is currently set at 14 MI/d to meet the amenity needs of the upper reaches of the Sherston Avon.

Flows on the Tetbury Avon at Abbey Weir in Malmesbury will be gauged at weekly intervals by Wessex Water during the summer months to monitor compliance with the target flow of 6.8 MI/d until the obvious end of the need for stream support for the season.

Within the existing Abstraction Licence (17/53/001/G/410) there are prescribed flows of 8 MI/d set for Fosseway Gauging Station on the Sherston Avon, 6.5 MI/d set for Brokenborough Gauging Station (Tetbury Avon) and 28 MI/d set for Great Somerford Gauging Station, all of which are still in force.

There is no linked prescribed flow or linked Stream Support in respect of the Milbourne PWS Abstraction Licence (17/53/001/G/203).

Although authorised under the current Abstraction Licence (17/53/001/G/410), during the above arrangements, Stream Support will not routinely take place from the Park Road or Cowbridge borehole sources unless a significant operational emergency arises in which case there will be discussions with the Agency before any use of these sources takes place. Stream Support from both these sources is almost immediately at the expense of river flows and therefore rarely offers any significant net benefit.

As with the operation of the Public Water Supply sources, the operation of the Stream Support shall be constrained to maximum quantities. These are detailed below:-

Overall aggregate maximum total daily abstraction from all sources, all purposes = 77.3 MI

*Overall aggregate maximum annual abstraction from all sources, all purposes = 18975 MI

Overall aggregate maximum Stream Support daily abstraction from all sources = 37.5 MI

*Overall aggregate maximum Stream Support annual abstraction from all sources = 6200 MI

*annual figures are reductions over existing authorised quantities under the licences.

The table below shows the annual quantity constraints for each of the individual Stream Support boreholes

Borehole	Annual Quantity in MI	Comments
Luckington SS Borehole No 1	1800**	total in aggregate with Luckington SS Borehole No2 ** subject also to aggregate total of 3500 MI
Luckington SS Borehole No 2	1800**	total in aggregate with Luckington SS Borehole No1 ** subject also to aggregate total of 3500 MI
Stanbridge SS Borehole	1800**	** subject also to aggregate total of 3500 MI
Tetbury STW SS Borehole No 1	1000**	total in aggregate with Tetbury STW SS Borehole No 2 ** subject also to aggregate total of 3500 MI
Tetbury STW SS Borehole No 2	1000**	total in aggregate with Tetbury STW SS Borehole No1 ** subject also to aggregate total of 3500 MI
Charlton	900	as on licence
Hullavington	900	as on licence
Lower Stanton St Quintin	900	as on licence
Cowbridge	0	source not in use
Park Road	0	source not in use

Unit conversion table

Units of m³/sec are used operationally for telemetered river flow values

Gauging Station	National Grid Reference	Target flows m³/sec	Target flows MI/d
St Johns Bridge	ST 936 868	0.083	7.2
Brokenborough	ST 914 893	0.079	6.8
Great Somerford	ST 966 832	0.324	28***
		0.521	45
		0.637	55
		0.868	75
Flow reference point	National Grid Reference	Target flows m³/sec	Target flows MI/d
Abbey Weir	ST 933 874	0.079	6.8
		Rate of Stream Support Water for target Flow	
		flows m³/sec	flows MI/d
		0.029	2.5
		0.087	7.5
		0.116	10
		0.232	20
		0.374	30

*** this is also a prescribed flow condition within the associated Wessex Water Public Water Supply Abstraction Licence.

4 Liaison and Reporting Arrangements and Data Provision/Exchange

4.1 Liaison Arrangements

Both parties to this Agreement shall keep the other informed of any material changes as and when they occur.

4.2 Provision and Exchange of Data

Wessex Water will provide the Agency with sufficient information to demonstrate their operation of the Sources covered by this Agreement has been in accordance with the revised Statement of Intent and this Operating Agreement. The frequency of such reporting shall be agreed in writing from time to time between the parties.

Information required via Section 32(3) consenting arrangements will be made in accordance with those Consent conditions.

Routine data will be exchanged and provided on an annual basis unless a tighter frequency is agreed by both parties (most usually driven by climatic or operational concerns). By exception if the Agency becomes aware of unexpected abstractions from Chitterne, Cowbridge and Alton Pancras immediate contact will be made with Wessex Water seeking supporting information. The contact arrangements and details are given in Appendix 4.

4.3 Amendment of Agreement

Any proposed amendments to this Operating Agreement by either party shall be agreed and documented. Any changes which are suggested and cannot be agreed between the parties shall be subject to referral as documented earlier in this Agreement

4.4 Annual Reporting

Reporting will follow the timetable below:

- An annual report will be prepared for Defra by 1 June each year. Wessex Water will take the lead in preparing this report but with assistance from the Agency.
- There will be a formal review of the operation of this Agreement prior to 31 March 2010 and a Phase 2 closing report produced by 1 January 2010

In addition to the requirements of any authorisations, the annual reports will detail:

- the volume of water abstracted from Chitterne, Alton Pancras and the Malmesbury Groundwater Scheme Public Water Supply sources
- explanation of any amounts taken in excess of the rates which are detailed in Schedule 2, sections 2.2, 2.3 and 2.4.
- the volume of Stream Support water abstracted (for those Stream Support sources and pond / pool support covered by this Agreement)
- the river flows that resulted

- groundwater
- climate
- demands
- leakage
- the ecological monitoring results
- commentary on operational robustness and ecological sustainability, hydrological and hydrogeological conceptualisation and any resulting conclusions / recommendations for future operation

4.5 Environmental Monitoring Programme

Wessex Water will undertake a programme of environmental monitoring in conjunction with existing Agency monitoring for the River Wylye, the River Piddle and the Upper Bristol (Malmesbury) Avon. The agreed programme of monitoring and reporting is set out in Appendix 5. The programme may be amended by agreement at any appropriate time in the programme period.

Signed on behalf of Wessex Water (Wessex Water Services Ltd)

M + Muri

Director of Planning and Asset Management

Date..... *11th May 2009*

Signed on behalf of the Agency (Environment Agency, South West Region)

Drayson

Regional Director

Date..... *7/5/09*

Appendix 5

Environmental Monitoring Programme

NGR is National Grid Reference. A is Agency. WW is Wessex Water

CHITTERNE BROOK

DATA REQUIRED	MONITORING SITES	FREQUENCY	PERIOD	METHOD	BY
Macroinvertebrate Surveys	Monitoring sites at NGR: ST972 398 ST971 401 ST969 404 ST974 415	Survey every year	Spring and autumn before and after stream support operation	BT001 Standard family level kick samples	WW
River Macrophyte Surveys	Monitoring sites at NGR: ST969 403 ST974 415 ST990 438	Survey every year	Spring and autumn before and after stream support operation	Repeat of Nigel Holmes Survey of 1992 to 1995 using 100m MTR methodology	WW
Qualitative Electric Fishing Surveys	Monitoring sites as established in previous surveys	Survey every year	May/June and September/October	Electric Fishing	WW
Trout Spawning Success Surveys	The flowing length of Chitterne Brook	Survey every year	Winter Dec/Jan	Recording presence of redds when flows permit	WW

RIVER WYLYE

DATA REQUIRED	MONITORING SITES	FREQUENCY	PERIOD	METHOD	BY
Macroinvertebrate Surveys	Monitoring sites at NGR: ST836372 ST841371 ST847372 ST861387 ST869410 ST873431 ST878437 ST892441 ST910427 ST942402 ST975394 SU001384 SU037371 SU084345 SU107308	Survey every year	Spring, summer and autumn	BT001 Standard family level kick samples	WW
River Macrophyte Surveys	Reaches in Upper, Middle and Lower Wylye	Survey every year	Summer	'Allen method' extended macrophyte survey	A
River water quality Surveys (GQA)	Established sites	Ongoing	Monthly	Spot sampling	A

RIVER TILL

DATA REQUIRED	MONITORING SITES	FREQUENCY	PERIOD	METHOD	BY
Macroinvertebrate Surveys	Monitoring sites at NGR: SU035478 SU059454 SU068446 SU068432 SU078411 SU069370	Survey every year	Spring, summer and autumn	BT001 Standard family level kick samples	WW
River Macrophyte Surveys	Monitoring sites at NGR: SU062 450 SU069 432 SU077 412 SU076 396 SU072 386	Survey every year	Spring and autumn	Repeat of Nigel Holmes Survey of 1992 to 1995 using 100m MTR methodology	WW
Qualitative Electric Fishing Surveys	Monitoring sites as established in previous surveys	Survey every other year	May/June	Electric Fishing	WW
Trout Spawning Success Surveys	The flowing length of River Till	Survey every year	Winter Dec/Jan	Recording presence of redds when flows permit	WW
River water quality Surveys (GQA)	Established sites	Ongoing	Monthly	Spot sampling	A

RIVER PIDDLE

DATA REQUIRED	MONITORING SITES	FREQUENCY	PERIOD	METHOD	BY
Macroinvertebrate Surveys	Monitoring sites at NGR: ST700023 ST703007 SY705997 SY708988 SY711982 SY714971 SY719964 SY727957	Survey every year	Spring, summer and autumn	BT001 Standard family level kick samples	WW
Macrophyte surveys	Monitoring sites at NGR: ST703012 SY707994 SY719964 SY727957 SY749949	Survey every year	Spring and autumn	100m MTR macrophyte survey	WW
River water quality survey (GQA)	Established sites	Ongoing	Monthly	Spot sampling	A

MALMESBURY AVON

DATA REQUIRED	MONITORING SITES	FREQUENCY	PERIOD	METHOD	BY
Macroinvertebrate Surveys	Monitoring sites at NGR: ST838 839 ST843 859 ST856 857 ST889 871 ST929 872 ST897 920 ST911 903 ST922 882 ST942 861 ST964 832	Survey every other year – last done 2008	Spring, summer and autumn	BT001 Standard family level kick samples	WW
River Macrophyte Surveys	Monitoring sites at NGR: ST838 839 ST843 859 ST856 857 ST889 871 ST929 872 ST897 920 ST911 903 ST922 882 ST942 861 ST964 832	Survey every other year – next 2008	Summer	100m MTR macrophyte survey	WW
Blanket Weed monitoring	Monitoring sites at NGR: ST842861 ST836835 ST853856 ST866868 ST881874 ST903863 ST928872 ST936871 ST911913 ST915893	Prior to and during operation of stream support	Summer	Record percentage cover of different types of blanketweed (<i>Cladophora</i> , <i>Vaucheria</i> , <i>Enteromorpha</i> , Epibenthic diatoms)	WW
River water quality survey (GQA)	Established sites	Ongoing	Monthly	Spot sampling	A

