

**EXPLANATORY MEMORANDUM TO**  
**THE PRIVATE WATER SUPPLIES REGULATIONS 2009**  
**2009 No. 3101**

1. This explanatory memorandum has been prepared by the Department of Environment, Food and Rural Affairs and is laid before Parliament by Command of Her Majesty.

2. **Purpose of the instrument**

2.1 To replace the Private Water Supplies Regulations 1991 with new Regulations that will meet the requirements of European Council Directive 98/83/EC in respect of private drinking water supplies. These new Regulations will provide improved health protection for consumers of private water supplies and consumers of food produced or prepared using private water supplies.

3. **Matters of special interest to the Joint Committee on Statutory Instruments**

3.1 None

4. **Legislative Context**

4.1 These Regulations implement the European Council Directive 98/83/EC (the 'new' Directive) relating to the quality of water intended for human consumption in respect of private supplies. A transposition note is attached at Annex A.

4.2 The existing Regulations (the Private Water Supplies Regulations 1991) transposed Council Directive 80/778/EEC. However these Regulations are insufficient to transpose, implement and enforce the new Directive in respect of private water supplies intended for human consumption.

4.3 The European Commission has already identified deficiencies in the transposition of the new Directive into national law in respect of private water supplies.

4.4 Defra has already transposed the new Directive into national law for public water supplies (the Water Supply (Water Quality) Regulations 2001 and the Water Supply (Water Quality) Regulations 2000 (Amendment) Regulations 2007) in England. These Regulations will transpose the new Directive for private drinking water supplies in England.

5. **Territorial Extent and Application**

5.1 This instrument applies to England.

5.2 Corresponding regulations have already been laid in Scotland and separate, similar Regulations are required in Wales and Northern Ireland.

6. **European Convention on Human Rights**

As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

## 7. Policy background

- *What is being done and why*

7.1 The objective of the new Directive 98/83 is to protect human health from the adverse effects of contamination of water intended for human consumption by ensuring that it is wholesome and clean. To achieve this the new Directive sets new and revised standards for drinking water quality and specifies new monitoring (sampling and analysis) requirements.

7.2 These Regulations will achieve the objectives of the new Directive through monitoring private drinking water supplies against the revised standards and other requirements for wholesomeness. Local authorities, who will be implementing these Regulations, will also investigate the cause of unwholesome supplies and ensure remedial action is taken to restore the quality of the water to protect human health and to make the supply wholesome again.

7.3 The World Health Organisation has recommended that the most effective means of consistently ensuring the safety of a drinking water supply is through the use of a comprehensive risk assessment. Consequently, although not required by the new Directive, these regulations have included requirements for risk assessment of private drinking water supplies as a means to overcome the deficiencies of infrequent monitoring programmes.

7.4 Implementation of the new Directive by administrative or non-regulatory means, such as guidance or a code of practice, would not transpose the new Directive into national law and would not achieve the controls and measures needed to monitor and enforce the new Directive's standards and other wholesomeness requirements.

7.5 There are approximately 42,000 private water supplies in England, providing approximately one third of a million people with water for their day to day domestic needs. However, there are also a large number of transient and occasional consumers of water derived from private supplies through food products and drinks made with water from private supplies such as holiday homes, bed and breakfast accommodation and campsites. These people are at greater risk of illness from contaminated private supplies because they have no acquired immunity which may develop within people who consume the supply on a daily basis.

7.6 There have been several reports of illness in the UK attributable to the poor quality of some private drinking water supplies, particularly some of the smaller supplies which are often untreated or not adequately treated to remove contamination. These Regulations ensure that all private supplies meet the same drinking water quality standards as public supplies and therefore provide consumers of private supplies, including food produced or prepared using private supplies, with a similar degree of health protection as consumers of public supplies.

## 8. Consultation outcome

8.1 There was a full public consultation between August and November 2008. 105 responses were received from a wide range of sectors including business, local authorities, government departments, members of the general public and the third sector. There was strong support for the broad themes of the Directive and the proposed transposition. There were however some concerns from two Government Departments regarding the proposal to include a duty to monitor (annually) and risk assess (every five years) small shared supplies. Further discussions resulted in amendments to the preferred policy option (to only monitor when the risk assessment is undertaken once every five years). This still meets the requirements of the new Directive, and was agreed by all Departments.

## **9. Guidance**

9.1 Defra will issue comprehensive guidance for local authorities, owners and users of such private water supplies. The guidance will explain the regulatory requirements in detail and will include advice on carrying out risk assessments, monitoring and investigations, will provide information for owners and occupiers on how they can protect and maintain their supplies, and will provide options for remedial actions that are available if supplies fail to meet standards.

## **10. Impact**

10.1 The impact on business, charities or voluntary bodies is set out in the Impact Assessment.

10.2 The impact on the public sector is set out in the Impact Assessment.

10.3 An Impact Assessment is attached to this memorandum at Annex B.

## **11. Regulating small business**

11.1 The legislation applies to small business.

11.2 To minimise the impact of the requirements on firms employing up to 20 people, the approach taken was to reduce the level of monitoring but which still met the requirements of the Directive. The inclusion of risk assessment will enable the range of parameters required for monitoring to be reduced.

11.3 There are no mandatory exemptions for small businesses in the new Directive. However, if the daily volume of water is less than 10m<sup>3</sup> and the water is not used for a commercial activity or is supplying public premises, monitoring will only take place every five years along with the risk assessment.

## **12. Monitoring & review**

12.1 There are no plans to review the policy unless amendments are made to the Directive. However the fees charged by local authority to enable it to meet the expenses that it incurs when fulfilling functions and discharging duties under the Regulations will be reviewed every two years.

## **13. Contact**

**Peter Jiggins** at the Department of Environment, Food and Rural Affairs. Tel: 020 7238 5897 or email: [peter.jiggins@defra.gsi.gov.uk](mailto:peter.jiggins@defra.gsi.gov.uk) can answer any queries regarding the instrument.

## Transposition Note

Article	Objectives	Implementation (Regulations)
<b>1.</b>	<b>Objective of Directive</b>	
1	Directive 98/83/EC concerns the quality of water intended for human consumption.	Regulation 2
2	The objective of the Directive is to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean.	Regulation 4 Regulation 5 Regulation 6 Section 93(1) of Water Industry Act (WIA)
<b>2.</b>	<b>Definitions</b>	
1(a)	Defines 'water intended for human consumption' as - water either in its original state or after treatment that is intended for drinking, cooking, food preparation or other domestic purposes.	Regulation 2 (a)
1(b)	Defines 'water intended for human consumption' as water used in any food-production undertaking, unless the national authorities are satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form. 'Food production' is the manufacturing, processing, preserving or marketing of products and substances intended for human consumption.	Regulation 2(b) Regulation 3(a) and (c) Section 93(1) of the WIA
2	Defines "domestic distribution system" as the pipework, fittings and appliances that are installed between taps normally used for human consumption and the distribution network but only if they are not the responsibility of the water supplier, in its capacity as a water supplier, according to national law.	Regulation 5 Regulation 8 Section 93 (1) of WIA
<b>3.</b>	<b>Exemptions</b>	
1(a)	Natural mineral waters (under Directive 80/777/EEC) are exempt.	Regulation 3(a)
	Waters which are medicinal products (under Directive 65/65/EEC) are exempt.	Regulation 3(b)
2(a)	Member States may exempt water where the quality of the water has no direct or indirect influence on consumers' health.	Regulation 3(c)
2(b)	Member States may also exempt an individual supply with average daily volume of less than 10m <sup>3</sup> or serving fewer than 50 persons, unless water is supplied as part of a commercial or public activity.	Not exempt – see Regulation 6(1) Regulation 10(1) and (3)
3	If the exemption in Article 3(2)(b) is used, population must be informed of exemption and promptly given advice on protecting their health.	Not required
<b>4.</b>	<b>General Obligations</b>	
1(a)	The minimum requirements for water to be wholesome and clean should be if it is free from any micro-organisms and parasites and from any substances which, in numbers or concentrations, constitute a potential danger to human health.	Regulation 4 Schedule 1
1(b)	Water should meet the minimum requirements set out in Annex I, Parts A and B. (Part A sets	Regulation 4 Schedule 1, Part 1

	values for the microbiological parameters and Part B sets values for the chemical parameters).	
2	Requires Member States to ensure that measures taken to implement the Directive must not cause any deterioration of the present quality of drinking water so far as that is relevant for the protection of human health or increase in pollution of waters used to produce drinking water.	Regulation 5 Regulation 6 Regulation 8 Regulation 9 Regulation 10 Regulation 15 Regulation 16 Regulation 17
<b>5.</b>	<b>Quality Standards</b>	
1	Requires Member States to set parametric values applicable to water intended for human consumption set out in Annex I.	Regulation 4 Schedule 1
2	The values set in paragraph 5(1) will be no less stringent than those set out in Annex I. And the values for indicator parameters in Annex I, Part C need be fixed only for monitoring purposes and to fulfil Article 8 obligations.	Regulation 4 Regulation 6 Regulation 7 Regulation 8 Schedule 1, Part 1 Schedule 1, Part 2 Schedule 2
3	Requires Member States to set values for additional parameters (not included in Annex I) if required to protect human health. Any such additional parametric values should satisfy the requirements of Article 4(1)(a) as a minimum.	Schedule 1, Part 1 (National Requirements)
<b>6.</b>	<b>Point of Compliance</b>	
	The parametric values set out in Article 5 shall be complied with;	
1(a)	In the case of water supplied from a distribution network, must comply at the tap that is normally use for human consumption.	Regulation 11(1)(a)
1(b)	In the case of water supplied from a tanker, it must comply at the point at which it emerges from the tanker.	Regulation 11(1)(c)
1(c)	In the case of bottles/containers of water for sale, it must comply at the point where it is put into the bottles/containers.	Separate Regulations (the Natural Mineral Water, Spring Water and Bottled Drinking Water (England) Regulations 2007)
1(d)	In the case of water used in a food production, it must comply at the point where the water is used in the food undertaking.	Regulation 11(1)(b)
2	Where it is established that non-compliance with parametric values is due to the domestic distribution system or its maintenance in premises, Member States will be deemed to have fulfilled their obligation under Articles 4, 6 and 8(2) except for in premises and establishments where water is supplied to the public such as hospitals, schools and restaurants.	Regulation 8 Regulation 9(b) Regulation 15 Regulation 16 Schedule 1
3(a)	Member States must ensure appropriate measures are taken to reduce or eliminate risk of non-compliance, for example advice to property owners about possible remedial action, and/or other measures e.g. appropriate treatments to change the nature or properties of the water to reduce or eliminate the risk of the water not complying.	Regulation 6 Regulation 14 Regulation 16(2) Regulation 16(3) Regulation 17 Regulation 18(2)(d)

3(b)	Member States must inform consumers and advise them of any possible additional remedial action to take.	Regulation 14 Regulation 16(2) Regulation 17(6) Regulation 18(3)
<b>7.</b>	<b>Monitoring</b>	
1	Requires Member States to take all measures necessary to ensure that regular monitoring is carried out to meet the requirements of the Directive, particularly the parametric values, including samples that are representative of the quality of water consumed throughout the year. And to ensure the efficiency of any disinfection treatment is verified, and any contamination from disinfection by-products is kept as low as possible, without compromising the disinfection.	Regulation 7 Regulation 8 Regulation 9 Regulation 10 Regulation 11 Schedule 2
2	Requires the competent authorities to establish monitoring programmes for all water intended for human consumption that meet the minimum requirements set out in Annex II.	Regulation 7 Regulation 8 Regulation 9 Regulation 10 Regulation 11 Schedule 2
3	Requires that competent authorities should determine sampling points in accordance with Annex II.	Regulation 11 Schedule 3
4	Indicates that community guidelines on monitoring may be drawn up under Article 12.	Not required
5(a)	Requires specifications for analysis of parameters set out in Annex III to be met	Schedule 3, Part 2
5(b)	Permits Member States to use alternative methods of analysis for microbiological parameters, provided the results are at least as reliable as those obtained by using the specified methods set out in Annex III, Part 1.	Regulation 11(3) Schedule 3, Part 1
5(c)	For parameters listed in Annex III, Parts 2 and 3 any method may be used provided it meets the requirements specified in those Parts.	Schedule 3
6	Requires additional monitoring on a case by case basis for substances and micro-organisms for which no parametric value has been set, where they may be present in amounts or numbers which constitutes a potential danger to human health.	Regulation 6 Regulation 9 Regulation 10(2) Regulation 15
<b>8.</b>	<b>Remedial Action and Restrictions in Use</b>	
1	Member States will ensure that any failures to meet parametric values, set out in Article 5, will be investigated immediately to establish the cause.	Regulation 15
2	Requires Member States to take remedial action to restore quality as soon as possible, and give priority to enforcement measures where necessary to protect human health.	Regulation 16(3) Regulation 17(2) Regulation 18(1) Regulation 18(6) Regulation 20 Section 80 of WIA
3	Requires Member States to prohibit or restrict the use of the supply of water, or other such action that is necessary, if it is a potential danger to human health and in such cases consumers should be informed promptly and given the necessary advice.	Regulation 18(1) Regulation 18(3)
4	Requires the competent authorities considering	Section 79(3) of the WIA

	action under Article 8(3) to take account of the risks to human health associated with an interruption of supply or a restriction on the use of a water supply.	
5	Allows Member States to establish guidelines to assist competent authorities with Article 8(4).	Defra will produce guidance shortly.
6	Requires remedial action to be taken where a failure to meet an indicator parameter value (Annex I, Part C) poses any risk to human health.	Regulation 14 Regulation 15 Regulation 16(1) Regulation 16(2) Regulation 18(2)(d)
7	Consumers must be notified where remedial action is taken, unless the failure is trivial.	Regulation 17(2)(b) Regulation 17(6) Regulation 18(3)
<b>9.</b>	<b>Derogations</b>	
1	Member States may allow derogations from the parametric values set out in Annex I, Part B, or in accordance with Article 5(3) up to a maximum value set by them. Providing, however, such derogation does not constitute a potential danger to human health and the supply of water intended for human consumption cannot be maintained by any other reasonable means. A derogation must be for as short a time as possible and no more than three years. A second derogation not exceeding three years is permitted following a review, but copies of the review and the grounds for the decision must be sent to the Commission.	Regulation 17
2	In exceptional circumstances, a Member State may request the Commission for a third derogation not exceeding three years.	Do not propose to use and therefore do not propose to regulate.
3(a)	Any derogation granted should specify the grounds for the derogation.	Regulation 17(3)(c)
3(b)	Any derogation granted should specify the parameter concerned and the maximum permitted value and any previous relevant monitoring results.	Regulation 17(3)(d)
3(c)	Any derogation granted should specify the geographical area and population affected, the quantity of water and whether any food production premises would be affected.	Regulation 17(3)(e)
3(d)	Any derogation granted should specify an appropriate monitoring scheme with an increased monitoring frequency where necessary.	Regulation 17(3)(f)
3(e)	Any derogation granted should specify a summary plan of remedial action including a timetable, estimate of costs and provisions for reviewing progress.	Regulation 17(3)(g)
3(f)	Any derogation granted should specify the duration of the derogation.	Regulation 17(3)(h)
4	If the competent authority considers the non-compliance to be trivial and action taken can remedy the problem within 30 days, paragraph 3 need not apply.	Defra considers that formal provisions for competent authorities to grant authorisations for such short periods are not practicable.
5	If failure to comply with 1 parametric value has occurred on more than 30 days during the previous 12 months, paragraph 4 does not	Regulation 17

	apply.	
6	Requires that, unless the derogation is 'trivial', the affected population is promptly informed of the derogation and any necessary advice given to any group for which derogation could present a special risk.	Regulation 17(6)
7	With the exception of derogations granted under paragraph 4, Member States should inform the Commission within two months of any derogation concerning an individual supply of more than 1,000m <sup>3</sup> a day as an average or serving more than 5,000 persons.	Regulation 17(7)
8	This Article will not apply to water sold in bottles or containers intended for human consumption.	Regulation 3(a)
<b>10.</b>	<b>Quality Assurance of Treatment, Equipment and Materials</b>	
1	Member States to take all measures necessary to ensure no substances or materials or associated impurities for new installations, used in the preparation or distribution of water, remain in water in concentrations higher than necessary and must not reduce the protection of human health provided for in the Directive.	Regulation 5
<b>11.</b>	<b>Review of Annexes</b>	
1	Requires Commission to review Annex I at least every five years and amend in light of scientific and technical progress.	N/A
2	Requires Commission to review Annexes II and III at least every five years and amend in light of scientific and technical progress.	N/A
<b>12.</b>	<b>Committee Procedure</b>	
1	Provides for a Committee of representatives of Member States to assist the Commission., for example with review of Annexes II and III and monitoring issues to be decided.	N/A
2	The Commission representative will submit to the committee a draft of the measures to be taken and the committee will deliver its opinion within a set time scale.	N/A
3(a)	If the measures taken are not agreed by the committee, the Commission will delay implementation of the measures for three months.	N/A
3(b)	The council, by majority, may take a different decision with the three months.	N/A
<b>13.</b>	<b>Information and Reporting</b>	
1	Requires adequate and up to date information on water quality to be available to consumers.	Regulation 12 Regulation 13 Schedule 4
2	Requires a report on water quality to be published every three years covering, as a minimum, all supplies exceeding 1000 m <sup>3</sup> /day or serving more than 5000 people.	Regulation 12 Regulation 13 Schedule 4
3	Requires reports to be sent to Commission within two months of publication.	Regulation 12 Regulation 13 Schedule 4
4	The formats and minimum information shall be determined with regard to Articles 3(2), 5(2), 5(3), 7(2), 8, 9(6), 7 and 15(1) and amended, if necessary, by procedure laid down in Article 12.	Regulation 12 Regulation 13 Schedule 4



5	The Commission will examine Member States' reports and within nine months will publish a synthesis report.	Regulation 12 Regulation 13 Schedule 4
6	Requires Member States to produce a report on measures taken, or plan to take, to fulfil their obligations under Article 6(3) and Annex I, Part B, note 10.	Regulation 12 Regulation 13 Schedule 4
<b>14.</b>	<b>Timescale for Compliance</b>	
1	Requires Member States to take measures to ensure that the quality of water intended for human consumption complies with this Directive within five years of entry into force.	Regulation 1
<b>15.</b>	<b>Exceptional Circumstances</b>	
1	In exceptional circumstances and for geographically defined areas, Member States may submit a special request for a period longer (not exceeding three years) than in Article 14.	Not required.
2	Any such requests should include reasons for the extension and what difficulties have been experienced.	Not required.
3	The Commission will examine all requests in accordance with the procedures laid down in Article 12.	Not required
4	Any member States using this recourse must promptly inform the population affected, in particular groups for whom the request could present a special risk.	Not required.
<b>16.</b>	<b>Repeal</b>	
1	This repeals the previous Directive (80/778/EEC) five years after entry into force of this Directive (98/83/EC).	Not required.
2	As soon as Member States have brought into force the laws, regulations and administrative provisions needed to comply with this Directive, this Directive and not 80/778/EEC shall apply to the quality of water intended for human consumption.	Regulation 1 Regulation 19
<b>17.</b>	<b>Transposition into National Law</b>	
1	Member States are required to bring into force the laws, regulations and administrative provisions needed to comply with the Directive within two years of its entry into force.	Regulation 1.
2	Member States shall let the Commission know the texts of the provisions from the Directive which have been adopted into national law.	Defra will notify the Commission.
<b>18.</b>	<b>Entry into Force</b>	
1	The Directive enters into force 20 days after it was published in the Official Journal of the European Communities [O.J.].	N/A
<b>19.</b>	<b>Addresses</b>	
1	The Directive is addressed to Member States	N/A.

## Summary: Intervention & Options

Annex B

<b>Department /Agency:</b> <b>Department of Food and Rural Affairs (Defra)</b>	<b>Title:</b> <b>Impact Assessment of Private (Water) Supplies Regulations 2009</b>	
<b>Stage: Final</b>	<b>Version: Final</b>	<b>Date: 26 October 2009</b>
<b>Related Publications:</b>		

Available to view or download at:

Contact for enquiries: Peter Jiggins

Telephone: 020 7238 5897

### What is the problem under consideration? Why is government intervention necessary?

Consumers of private water supplies are at higher risk of contracting illness resulting from contamination of supplies because the requirements for monitoring laid down in current regulations do not reflect progress in public health protection. The Government is therefore required to transpose into legislation, implement and enforce the UK's obligations under the European Directive 98/83/EC on the quality of water intended for human consumption (the Directive) in respect of private water supplies. The current regulations implement a previous Directive, and are no longer adequate as there is no duty to enforce the standards in the current Directive. Furthermore, unless the Directive is fully transposed and enforced, the European Commission will continue with infraction proceedings.

### What are the policy objectives and the intended effects?

1. To protect the health of consumers of private water supplies and consumers of food and drink prepared from private water supplies without imposing unnecessary and unjustified costs
2. To replace the current regulations (the Private Water Supplies Regulations 1991) with Regulations which meet current requirements, without imposing unnecessary and unjustified costs.

### What policy options have been considered? Please justify any preferred option.

*Option 1 - do nothing - current 1991 regulations do not adequately transpose the Directive.*

*Option 2(a) - full transposition without risk assessment for large supplies (excluding small private supplies).*

*Option 2(b) - full transposition without risk assessment for large and small private supplies.*

*Option 3(a) - full transposition with risk assessment for large supplies (excluding small private supplies).*

*Option 3(b) - full transposition with risk assessment for large and small private supplies (annual monitoring of small supplies)*

*Option 3(c) - following consultation modification of option 3(b) to require risk assessment and monitoring every five years for small private supplies, preferred because fully protects health of consumers using small private supplies and use of risk*

### When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

January 2012

### **Ministerial Sign-off** For Final Impact Assessment:

On behalf of the Chief Economist, this IA has been reviewed and the overall approach to the cost-benefit analysis is approved. It is advised that the IA represents a reasonable view of the likely costs, benefits and impacts of the preferred option.

Signed by the responsible Minister:

Huw Irranca-Davies

.....Date: 24th November 2009

## Summary: Analysis & Evidence

<b>Policy Option:</b> 3(c)	<b>Description:</b> Full transposition with risk assessment for large and small private supplies with risk assessment and monitoring every five years for small private supplies
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<b>COSTS</b>	<b>ANNUAL COSTS</b>	Description and scale of <b>key monetised costs</b> by 'main affected groups'  Almost wholly for owners of private supplies (provided local authorities recover cost from owners)  Rest for local authorities (£0.124m one-off)
	<b>One-off</b> (Transition) <b>Yrs</b>	
	<b>£ 10.44m</b>	
	<b>Average Annual Cost</b> (excluding one-off)	
	<b>£ -0.51m negative</b>	<b>Total Cost (PV)</b> <b>£ 4.62m</b>
Other <b>key non-monetised costs</b> by 'main affected groups' Owners' costs of maintaining treatment equipment which are likely to be very small compared to other costs. Local authorities costs of training to carry out risk assessments are likely to be very small compared to other costs.		

<b>BENEFITS</b>	<b>ANNUAL BENEFITS</b>	Description and scale of <b>key monetised benefits</b> by 'main affected groups' Water from, and food and drink prepared from, poor quality private water supplies causes illness. This option benefits  Consumers – avoiding illness and morbidity  Health system – avoiding costs of treatment  Employers – avoiding absence from work
	<b>One-off</b> <b>Yrs</b>	
	<b>£ 0.0m</b>	
	<b>Average Annual Benefit</b> (excluding one-off)	
	<b>£ 6.76m</b>	<b>Total Benefit (PV)</b> <b>£ 80.61m</b>
Other <b>key non-monetised benefits</b> by 'main affected groups' Competitiveness of businesses using private supplies; increased consumer/public confidence; opportunities for water treatment businesses; increase in property values and no restriction on development when private supply satisfactory.		

**Key Assumptions/Sensitivities/Risks** Key assumptions are (i) that local authorities will recover all those costs from owners of private supplies that they will be permitted to recover under the regulations; and (ii) that use of risk assessments will substantially reduce the amount of monitoring (cautious assumption). Benefits will be realised over 15 years – reasonable assumption given the risk assessment, monitoring and enforcement requirements of the regulations. Benefits will be sensitive to number of failing supplies, number of persons likely to contract illness from these supplies and costs to health service, employees and employers – best estimates have been made from available data and evidence. Costs are also sensitive to the number of failing supplies. If the estimated number of failing supplies is inaccurate, the benefits and costs will change at the same rate.

Price Base Year 2008	Time Period Years 15	<b>Net Benefit Range (NPV)</b> <b>£ No range provided</b>	<b>NET BENEFIT (NPV Best estimate)</b> <b>£ 75.99m</b>
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What is the geographic coverage of the policy/option?	England				
On what date will the policy be implemented?	1 January 2010				
Which organisation(s) will enforce the policy?	Local Authorities				
What is the total annual cost of enforcement for these organisations?	£v small (costs recouped)				
Does enforcement comply with Hampton principles?	Yes				
Will implementation go beyond minimum EU requirements?	Yes				
What is the value of the proposed offsetting measure per year?	£ N/A				
What is the value of changes in greenhouse gas emissions?	£ N/A				
Will the proposal have a significant impact on competition?	No				
Annual cost (£-£) per organisation (excluding one-off)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro £100 - £500</td> <td style="width: 25%; text-align: center;">Small £500</td> <td style="width: 25%; text-align: center;">Medium £500</td> <td style="width: 25%; text-align: center;">Large 0</td> </tr> </table>	Micro £100 - £500	Small £500	Medium £500	Large 0
Micro £100 - £500	Small £500	Medium £500	Large 0		
Are any of these organisations exempt?	No      No      N/A      N/A				

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)		(Increase - Decrease)
Increase of    £ N/A	Decrease of    £ N/A	<b>Net Impact</b> <b>£ N/A</b>

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

### Final Impact Assessment of the Private Water Supplies Regulations 2008 (England)

#### Purpose and Intended Effect

##### Objectives

1. To protect the health of consumers of private water supplies and consumers of food prepared from private water supplies because their health is not adequately protected under the current regulations.
2. To transpose into legislation, implement and enforce the UK's obligations under European Directive 98/83/EC on the quality of water intended for human consumption (the Directive) in respect of **private water supplies in England**.
3. To replace the current regulations (the Private Water Supplies Regulations 1991) because they do not adequately transpose, implement or enforce the Directive.

*[Note on devolution: this is a devolved matter that affects all parts of the UK. This final IA covers England and has been prepared by the Department for Environment, Food and Rural Affairs (Defra). Separate, similar, but not necessarily identical legislation will be introduced in Wales and Northern Ireland. In Scotland, the corresponding regulations were laid before the Scottish Parliament on 20 April 2006 and came into force on 3 July 2006<sup>1</sup>].*

##### Background

4. The Directive (98/83/EC) was made following a fundamental review of the previous Directive (80/778/EEC) relating to the quality of water intended for human consumption (usually identified, for convenience as "drinking water"). The review took into account the current and developing understanding of medical, scientific and technological issues relating to the quality of drinking water. The Directive has set new or revised standards and identifies other quality measures for drinking water that were generally in line with the second edition of the World Health Organization's (WHO) guidelines for drinking water quality, published in 1993<sup>2</sup>.
5. The WHO guideline values represent the concentration of a parameter that does not result in any significant risk to the health of a consumer, usually over a lifetime of consumption. Where scientific research demonstrated that it was necessary, some new parameters were added to the Directive, but the overall total of parameters was reduced from 62 to 48 to include only those considered essential at the level of the European Union to ensure a continued high level of health protection.
6. The Directive has been transposed and implemented in England for the purposes of **public water supplies** by the Water Supply (Water Quality) Regulations 2000 (SI 2000/3184) as amended by the Water Supply (Water Quality) (Amendment) Regulations 2001 (SI 2001/2885), 2002 (SI 2002/2469), 2005 (SI 2005/2035) and 2007 (SI 2007/2734).
7. Directive 80/778/EEC was transposed and implemented through the Private Water Supplies Regulations 1991 (SI 1991/2790). However, these regulations are insufficient to transpose, implement and enforce the new Directive in respect of private water supplies and therefore new regulations are required. The Private Water Supplies Regulations 2009 ("the regulations") will transpose the Directive into domestic legislation for the purposes of **private water supplies in England**. Private supplies are described in more detail at paragraph 11 below. **The European Commission has already identified deficiencies in the**

<sup>1</sup> The Private Water Supplies (Scotland) Regulations 2006, Scottish Statutory Instruments 2006 No. 209, ISBN 0110702840. The Private Water Supplies (Notices)(Scotland) Regulations 2006, Scottish Statutory Instruments 2006 No. 297 [http://www.opsi.gov.uk/legislation/scotland/ssi2006/ssi\\_20060209\\_en.pdf](http://www.opsi.gov.uk/legislation/scotland/ssi2006/ssi_20060209_en.pdf)  
[http://www.opsi.gov.uk/legislation/scotland/ssi2006/ssi\\_20060297\\_en.pdf](http://www.opsi.gov.uk/legislation/scotland/ssi2006/ssi_20060297_en.pdf)

<sup>2</sup> Guidelines for drinking-water quality, Second Edition, Volume 1, Recommendations, World Health Organisation, Geneva, 1993.

**transposition of the new Directive into national law in respect of private water supplies in an Article 226 letter sent to the UK Government on 10 April 2006. An Article 226 letter is the first formal stage in possible infraction proceedings.**

8. The objective of the Directive is to protect human health from the adverse effects of contamination of water supplies by ensuring that they are wholesome and clean. The Directive defines a wholesome supply as one which meets the regulatory standards and does not contain anything that would constitute a risk to human health. **There have been many reports of illness in the UK attributable to the poor quality of some private water supplies<sup>3</sup>, particularly some of the smaller supplies which are often untreated or not adequately treated to remove contamination.** It is also likely that many cases of such illness are either not reported or are wrongly attributed to some other cause. This is because many private water supplies are used by transient populations, such as holidaymakers, and the symptoms and the causes of illness may not be readily apparent, often until after a consumer has returned home or moved elsewhere.

9. The WHO has continued to review its guidelines for drinking water quality and in 2004 issued a 3<sup>rd</sup> edition<sup>4</sup> which attaches greater emphasis to proactive measures, rather than carrying out monitoring for large numbers of parameters in drinking water supplies. These measures include identifying potential hazards and the risk of those hazards occurring, and measures to prevent or control those risks. **WHO describes this process of risk assessment as a 'water safety plan'.**

10. A water safety plan considers the risks to a source of a drinking water supply, the treatment facilities, the distribution infrastructure including pipes, reservoirs or tanks, and the internal pipe work within premises, and measures to prevent or control contamination from "catchment to tap". One of the key elements of a water safety plan is the identification of the hazards and the risks associated with those hazards. This element is described as a "**risk assessment**" and it is included in the regulations because it can assist the UK to comply with its obligations under the Directive.

11. The regulations do not define private water supplies. However, from the Water Industry Act 1991 **private water supplies** can be interpreted as:

- (a) all water supplies **not** supplied by a statutory water undertaker appointed under Chapter 1A of Part II of the Water Industry Act 1991;
- (b) all water supplies **not** supplied by a licensed water undertaker licensed under Chapter 1A of Part II of the Water Industry Act 1991; and
- (c) water supplies that **are** supplied by (a) and (b) above through "private distribution systems"

This definition includes private supplies to "**single dwellings**" where a dwelling is the only property supplied by a private supply and the dwelling is not a public premises and is not used for commercial activities.

12. Local authorities are responsible for implementing and enforcing the regulations. The regulations include all the provisions required to transpose the Directive fully in England. The regulations include drinking water quality standards, monitoring to check compliance with the standards and other wholesomeness criteria, investigation and remedial action when there is a failure to comply with a standard, and a requirement to enforce the standards through the issue of notices. Although risk assessments are not required by the Directive, the regulations require local authorities to carry out a risk assessment of each private supply (discretionary for supplies to single dwellings) in order to assist them to make decisions under the regulations and to reduce the monitoring and other costs.

13. Local authorities are able to recover most of their costs, normally from owners and occupiers of premises supplied by private supplies, and in some cases from those who exercise powers in relation to the management or control of the supply. It is reasonable for consumers of private supplies to meet monitoring and related costs to ensure that their supplies are safe, in the same way that consumers of public water supplies meet these costs when they pay their water bills. It would not be reasonable for these costs to be borne by all council tax payers

14. The Directive allows certain small supplies to be exempt from its provisions (see paragraph 24 below). Small supplies are those of less than 10 m<sup>3</sup>/day (serving less than 50 persons) that are not part of a

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<sup>3</sup> Communicable Disease Reports, Surveillance of Waterborne Disease and Water Quality (six monthly), Health Protection Agency, <http://www.hpa.org.uk>.

<sup>4</sup> Guidelines for Drinking-water Quality, Third Edition, Volume 1, Recommendations, World Health Organisation, Geneva, 2004

commercial or public activity (such as bed and breakfast). This recognised the fact that some member states have a significant proportion of their population supplied by a large number of small private supplies and that requiring a statutory monitoring and enforcement programme would introduce very significant costs burden for rural consumers. The Directive therefore allowed Member States flexibility in deciding the monitoring provisions for small supplies. In England there are relatively few small private water supplies (12,000 supplies). As the risk of contamination of these supplies is well known these supplies are currently monitored within the existing Private Water Supplies Regulations. Although there is no Directive requirement to monitor these supplies it was decided that focussed monitoring should be continued to be required within regulations and that the introduction of risk assessment would provide a much improved mechanism to secure improved public health protection. ***The regulations apply the Directive's water quality requirements to these small supplies (except supplies to single dwellings) because the people consuming water and food prepared from water from these small supplies are entitled to the same level of health protection as people served by larger private supplies and public water supplies.***

## Rationale for Government Intervention

15. ***The Government needs to intervene because of the potential of market failure as there is no economic incentive for others to manage the quality of private supplies. Under the current regulations, consumers of water from private supplies and food and drink prepared from private supplies are at considerable risk of contracting illness because many supplies do not meet the current quality standards and there is no power to enforce those standards and they will not meet the new quality standards.*** The Government is required by the Directive to implement legislation for public health protection of all drinking water supplies. Furthermore, unless the Directive is fully transposed, implemented and enforced in respect of private supplies, the European Commission will almost certainly decide to continue with infraction proceedings (see paragraph 7 above) and bring a case against the UK Government in the European Court of Justice.

16. New regulations are required to transpose, implement and enforce the Directive in respect of private supplies. The current Private Water Supplies Regulations 1991 will be revoked. ***The regulations achieve a consistent policy for all private supplies, large and small.*** The regulations will protect the health of consumers of private supplies and consumers of foods and drinks prepared from private supplies by ensuring that the supplies are wholesome and clean. This is achieved through risk assessment, monitoring against the standards and other requirements for wholesomeness; through investigation and remedial action, including enforcement where necessary, by local authorities. Regulations have been made and implemented for public water supplies (i.e. water supplied directly by statutory water undertakers and licensed water suppliers). ***These regulations ensure that all private supplies meet the same drinking water quality standards as public water supplies and ensure that consumers of all private supplies and food prepared from private supplies have the same degree of health protection as consumers of public water supplies.***

## Consultation

### Within Government

17. Defra has liaised and collaborated with the devolved administrations in the UK and other government departments in the preparation of the regulations. The purpose of this was to achieve a broadly consistent approach to policy and to the content of the regulations. Defra has also liaised with these administrations regarding technical guidance that is needed to assist local authorities to comply with their duties and powers under the proposed regulations. This guidance entitled "Private Water Supplies Technical Manual" is available online<sup>5</sup> and will be up-dated to reflect the regulations.

### Public consultation

18. Defra issued a public consultation document in August 2008<sup>6</sup>. In preparing its consultation document, Defra took note of the public consultations in Scotland from November 2001 to February 2002, and from March 2005 to May 2005 as the problems with private supplies are similar throughout the UK, has been able

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<sup>5</sup> See Professionals Homepage and the Technical Manual at - [http://www.privatewatersupplies.gov.uk/private\\_water/21.html](http://www.privatewatersupplies.gov.uk/private_water/21.html)  
[http://www.privatewatersupplies.gov.uk/private\\_water/22.html](http://www.privatewatersupplies.gov.uk/private_water/22.html)

<sup>6</sup> Consultation on The Private Water Supplies (England) Regulations 2008 at – <http://www.defra.gov.uk/corporate/consult/private-watersupplies/>

to take the outcomes into account in preparing its own proposed regulations and consultation paper. It also took note of comments and suggestions made by various stakeholders, including local authorities, at national and regional conferences, workshops and seminars and other informal consultations on the proposed regulations.

19. Defra received 105 responses to the consultation – 41% from local authorities, 29% from private individuals, 14 % from business, 6 % from Government Departments and 10% from third sector (mainly associations). In general there was a large measure of support for the proposed regulations and the preferred option 3(b). There were three main areas of concern – the fees local authorities could charge for monitoring; the fees local authorities could charge for other activities such as risk assessments; and the proposed timescale for the collection and retention of records. Defra has taken into account these concerns in the final regulations (The Private Water Supplies Regulations 2009). A summary of the responses to the consultation was published by Defra in February 2009<sup>7</sup>.

20. The consultation impact assessment estimated the benefits (calculated from a Scottish study pro-rata to the number of supplies in Scotland and England) and the costs of Options 2(a), 2(b), 3(a) and 3(b) compared with Option 1 (do nothing). The consultation documents favoured Option 3(b). Following comments from Defra's Economists, BERR and Treasury, a review of the assumptions and calculations about the benefits and costs was carried out. This review concluded that:

- it is not necessary to re-calculate the benefits in England as there is no evidence that the assumptions used in the Scottish study are not applicable to England; and
- there is a case for re-calculating the costs primarily because the assumed failure rate for large supplies may have been underestimated and that re-calculation should await assessment of consultees' comments on the consultation documents.

21. One of the key issues raised by other Government Departments (BERR and Treasury) concerned the proposal in Option 3(b) to go further than required by the EU Directive on the quality of water intended for human consumption (including small supplies that the Directive allows Member States to exclude from their regulations). They noted that the additional benefit from Option 3(b) over Option 3(a) was about one-third the additional cost and they were concerned that the inclusion of small private water supplies was not sufficiently justified. It was noted that the existing regulations require monitoring of these small supplies (once a year or once every five years depending on size). **Following strong support for Option 3(b) in order to protect the health of consumers of small private water supplies in the consultation and subsequently from the Health Protection Agency, the Drinking Water Inspectorate and the local authorities and extensive discussions between Defra, BERR and Treasury, it was agreed that the regulations would include small private supplies (Option 3(b)) but with modification to require risk assessment and monitoring once every five years (new Option 3(c)).**

## Options

22. This consultation IA identified 5 options (options 1, 2(a), 2(b), 3(a) and 3(b) for transposing, implementing and enforcing the Directive. **The final agreed policy option 3(c) is identified in paragraph 21.**

1. **Do nothing**
2. **Full transposition without risk assessment**  
**(a) for large private supplies (excluding small private supplies)** (using the discretionary exemption in the Directive)  
**(b) for large and small private supplies**
3. **Full transposition with risk assessment**  
**(a) for large private supplies (excluding small private supplies)** (using the discretionary exemption in the Directive)  
**(b) for large and small private supplies** (monitoring small supplies annually)  
**(c) for large and small private supplies** (with risk assessment/monitoring every five years)

<sup>7</sup> Summary of Responses to the Consultation on The Private Water Supplies (England) Regulations 2008  
11 August – 3 November 2008 – <http://www.defra.gov.uk/environment/quality/water/pdf/private-water-summary-responses.pdf>

## Other potential options

23. Implementation by administrative or non-regulatory means, such as guidance or a Code of Practice, would not transpose the Directive into national law and would not achieve the controls and the measures needed to monitor and enforce the Directive's standards and other wholesomeness requirements. Also, such an approach would be insufficient to dissuade the European Commission from continuing with infringement proceedings, possibly leading to a judgment against the UK Government in the European Court of Justice.

### Exemption from the Directive

24. The Directive allows Member States discretion to exempt from their regulations small domestic supplies that provide an average daily volume of less than 10 cubic metres (< 10m<sup>3</sup>/day), or serve fewer than 50 persons<sup>8</sup>, provided the water is not supplied as part of a commercial or public activity. Hence, an individual supply of < 10m<sup>3</sup>/day, serving one or more dwellings and used solely to meet the daily domestic needs of the occupants could be exempt from the regulations. But it is a requirement that a supply to any dwellings, including a supply to a single dwelling, using < 10m<sup>3</sup>/day could not be exempt if there was any element of commercial (or public) use, such as bed and breakfast. Options 2 and 3 above cover whether to exclude (options 2(a) and 3(a)), or to include (options 2(b), 3(b) and 3(c)), these small private supplies. Therefore it is not possible to exempt small or medium enterprises' (SME's) who use private supplies as part of a commercial or public activity from the proposed Regulations. The agreed policy option 3(c) includes the small supplies of less than 10m<sup>3</sup>/day that are not part of a commercial or public activity (paragraph 21).

## Consideration of the options

### Option 1 - do nothing

25. The current regulations, the Private Water Supplies Regulations 1991, were intended to transpose the 1980 European Directive and do not adequately transpose, implement or enforce the 1998 Directive, primarily because -

- the 1998 Directive includes some new and some tighter standards for drinking water quality parameters, there are some new parameters and a number of parameters have been dropped;
- sampling and analysis ("monitoring") requirements have changed significantly, including new "check" and "audit" monitoring to assess compliance with the standards; and
- local authorities have no power or duty to enforce the standards in the current regulations, and have only a discretionary power (section 80, Water Industry Act 1991), to require owners and occupiers to take remedial action to deal with failing private supplies.

26. If nothing is done many people receiving private supplies will have inferior drinking water quality compared to people receiving public water supplies and will be at much greater risk of contracting water borne infections. For example in 1998/99<sup>9</sup>, 31.5% of samples from private water supplies failed the microbiological standards and 23% failed the chemical parameter standards in the 1991 regulations and in 1999/2000<sup>10</sup> the corresponding figures were 33% and 25%. Most of these failures are associated with small supplies. Failure of the microbiological standards, which are essentially the same in the new 2009 regulations, represents a significant risk of contracting waterborne disease. In 1999<sup>11</sup> for public water supplies, only 0.22% of samples failed the same microbiological and chemical standards. The most comprehensive and up to date information on the quality of private water supplies comes from a PhD thesis<sup>12</sup> in which the student analysed information from about 35,000 microbiological samples taken from about 11,000 supplies in England between 1996 and 2003. This showed that 18.87% of samples failed the microbiological standards, at least one sample from 32.39% of supplies failed and small supplies

<sup>8</sup> When assessing volume for monitoring, the normal presumption is that one person may "consume" about 200 litres per day (0.2m<sup>3</sup>/day). Hence, 5 persons may consume 1,000 litres (1 m<sup>3</sup>/day), and so on, up to the discretionary threshold for domestic use only, set at 10 m<sup>3</sup>/day (10,000 litres) or 50 persons.

<sup>9</sup> CIEH Annual Environmental Health Report 1998/99

<sup>10</sup> CIEH Annual Environmental Health Report 1999/2000

<sup>11</sup> Drinking Water Inspectorate, Drinking Water 1999

<sup>12</sup> Private communication



failed more often than large supplies. It was not possible to assess accurately the failure rates for the size categories in the new 2009 regulations because the size categories in the current 1991 regulations are different. However it was possible to estimate an average failure rate of 30% for the large supplies and an average failure rate of 40% for the small supplies and this information has been used in this final IA to assess some of the costs.

27. The European Commission has already issued an article 226 letter which has raised questions relating to the transposition of the Directive in the UK in respect of private supplies. Unless the UK makes new regulations which incorporate all the requirements of the Directive, the Commission is almost certain to continue with infraction proceedings and to bring a case against the UK Government in the European Court of Justice.

**For the reasons given above, it is not feasible for the UK to do nothing and option 1 is not a viable option.**

### **Options 2(a) and 2(b) Full transposition without risk assessment**

#### **2(a) for large private supplies (excluding small supplies)**

28. **Option 2(a) is the minimum that would comply fully with the requirements of the Directive.** It would involve meeting fully the Directive's monitoring requirements relating to all supplies that were not allowed to be exempt. When there was a failure to comply with a standard, the local authority would be required to investigate and to require the necessary remedial action through informal negotiation, an "authorised departure" or an "improvement notice"; and where necessary it would be required to take enforcement action in default of compliance. **However, this option does not deliver the policy objectives as it would not improve the quality of small supplies or protect the health of consumers using small supplies.**

#### **2(b) for large and small private supplies**

29. Option 2(b) is the same as option 2(a), except that it would include the "small" supplies (< 10m<sup>3</sup>/day, or serving fewer than 50 persons that are not used for commercial or public activity). Therefore this option goes further than required by the Directive because it does not apply the discretionary threshold below which smaller supplies may be exempt. Option 2(b) would ensure that **users of small private supplies enjoy the same degree of health protection** as consumers of larger private supplies or those of any average daily volume that provide water for use in a commercial or public activity. **Option 2b is a viable option as it would deliver the policy objectives, but with higher costs than required by the Directive.**

### **Options 3(a) and 3(b) Full transposition with risk assessment**

#### **3(a) for large private supplies (excluding small supplies)**

30. Option 3(a) would comply fully with the requirements of the Directive but because it includes risk assessments and the Directive does not, this option would go further in following Better Regulation principles than is required by the Directive. Carrying out risk assessments and taking the findings into account will assist local authorities in reducing the overall amount of monitoring. This is because the Directive allows parameters to be excluded from "audit" monitoring when it can be demonstrated that they are unlikely to be present at concentrations that would contravene the standards. Risk assessments would provide that demonstration. Furthermore, a risk assessment is a proactive procedure that should assist local authorities to identify where failures are likely to occur and to investigate failures and reach decisions on appropriate and proportionate remedial action under the proposed regulations. **However, this option would not deliver all the policy objectives as it would not improve the quality of small supplies or protect the health of consumers using small supplies.**

#### **3(b) for large and small supplies (with annual monitoring of small supplies)**

31. Option 3(b) is the same as option 3(a), except that it would include the smaller supplies that are not used for commercial or public activity. Therefore this option goes further than option 3(a) or as required by the

Directive and would ensure **that users of small supplies enjoy the same degree of health protection** as consumers of larger supplies or those of any average daily volume that provide water for use in a commercial or public activity. The risk assessments would allow local authorities to reduce the overall level of monitoring and concentrate monitoring on the important parameters which would assist them to identify where failures are likely to occur and to investigate failures and reach decisions on appropriate and proportionate remedial action under the proposed regulations. **Option 3b is a viable option as it would deliver the policy objectives but at a cost which is higher than required by the Directive (it was the preferred option in the consultation document).**

### **3 (c) for large and small supplies (with risk assessment/monitoring every five years)**

32. This option is a variation on option 3 (b) and as discussed in paragraph 21 **it is the agreed policy option**. The costs are reduced by requiring monitoring to be carried out every five years at the same time as the risk assessment instead of monitoring annually. **This is the option on which the 2009 regulations are based.**

#### **General duty to enforce notices**

33. Local authorities have no enforcement **powers** under the current 1991 regulations. They have a **discretionary power** to serve notices under section 80 of the Water Industry Act 1991 to require improvements to private supplies. However, local authorities have been reluctant to use these powers, possibly partly because of the complex procedures required, and this explains why many private supplies still fail the microbiological and chemical standards in the 1991 regulations (see paragraph 26 above). Under the regulations local authorities have a general duty to enforce the requirements of the regulations and a specific duty to serve a notice under Section 80 of the Water Industry Act to require improvements to failing large and small private water supplies. For supplies to single dwellings, enforcement is discretionary.

#### **Cost and benefits**

##### **Sectors and groups affected**

34. Local authorities implement the regulations by carrying out the monitoring and requiring action to achieve compliance with the standards. They have the power to recover from the owners or occupiers of premises supplied by private supplies, the costs of carrying out risk assessments, monitoring (sampling and analysis) and investigations of failures. They will not be able to recover the costs of enforcement that is the preparation, serving and enforcement of “notices”.

35. The regulations primarily affect owners and occupiers of premises supplied by private supplies, including supplies used in commercial or public activities, and in some circumstances those with powers of management or control over private supplies as they are responsible for meeting the required standards. Most private supplies are in rural areas and they may supply individual properties, and premises that are situated close together or are dispersed. The sectors affected will include private estates, campuses, small groups of dwellings that are served by the same private supply, farms and food production undertakings, and any catering businesses, including establishments or dwellings where bed and breakfast facilities are provided, other recreational and holiday premises such as camp-sites, hotels or guest houses.

##### **Numbers of private water supplies**

36. There is no reliable contemporary data on the precise numbers and uses of private supplies in England. However, it is necessary to estimate numbers to enable a quantitative and qualitative assessment of benefits and costs of each option to be carried out. A comparison of returns from local authorities to Defra, the Drinking Water Inspectorate (DWI)<sup>13</sup> and their predecessors in the former Department of the Environment, indicates that there are about 42,000 private supplies in England. Some 25,000 are supplies to single dwellings, and of the remaining 17,000 private supplies, it has been assumed for the purposes of this final IA that some 12,000 are small supplies and 5,000 are large supplies. These numbers are derived from best available data on the numbers of all private supplies, as identified by their classification under the current 1991 Regulations, assuming that for the classification of domestic supplies that provide a volume of 5 m<sup>3</sup>/day to 20 m<sup>3</sup>/day, some 50% are large supplies of 10 m<sup>3</sup>/day or more (and are therefore above the discretionary

<sup>13</sup> Drinking Water 1998: A Report by the Chief Inspector of Drinking Water.

threshold that permits domestic supplies to be exempt from the Directive). This assumption is regarded as reasonable because these numbers of supplies are also reasonably consistent with the information supplied by local authorities to the DWI for a survey on pesticides in private supplies in England, Wales and Scotland.

37. However, some of the 25,000 supplies to single dwellings and some of the 12,000 small supplies are used for commercial or public activities (mainly bed and breakfast and associated activities). The classifications under the 1991 regulations did not distinguish between solely domestic supplies and supplies used for commercial or public activities. Therefore there is no good information from local authorities on how many are used for commercial or public activities. The number is likely to be small and therefore it is assumed that in England there will be some 1,000 additional such small supplies which are required to meet the Directive and under the regulations are treated as large supplies. Therefore for this final IA, it is assumed that there are 6,000 large supplies (including 1,000 small supplies and supplies to single dwellings that are used for commercial or public activities) and 12,000 small supplies. As there was insufficient information available to estimate the proportion of small supplies and supplies to single dwellings that are used for commercial and public activities no reduction was made to the estimate of 12,000 small supplies.

## Benefits

### General approach

38. Estimates of the benefits of the options in the consultation IA were informed by the partial Regulatory Impact Assessment (RIA) (March 2005<sup>14</sup>) and by the final RIA published with the Scottish Regulations<sup>15</sup>. These RIAs were informed by, and developed from, a report of a study carried out on behalf of the Scottish Executive by EnviroCentre, Glasgow<sup>16</sup>. The methodology used and the assumptions made in that study for estimating the benefits were assumed to be relevant to, and apply in, England. The proportion of failing supplies for microbiological parameters used in the Scottish study was between 24 and 58% depending on the size of the supply. The figures estimated for England (paragraph 26) are 30% on average for large supplies (estimated range between 25 and 35%) and 40% on average for small supplies (estimated range between 30 and 50%) for microbiological parameters. In view of the similar failure rates, there is no reason to suppose that the illness rates, duration of illness and costs of illness are likely to be significantly different in England than Scotland. Therefore it is judged reasonable for the benefits identified in Scotland to be scaled up for England in proportion to the best available evidence on the relative numbers of large and small supplies in England. The Scottish study assumed that the benefits would be realised over a 15 year period.

39. The Scottish Study used contraction and reporting rates for illness based on data provided by the Scottish Centre for Infection and Environmental Health (SCIEH) on outbreaks of illness resulting from microbiological quality of private water supplies between 1988 and 2000) from existing failing samples from private supplies. These assumptions used include -

- the proportion of failing supplies (initially, 24% – 58%, depending on size of supply),
- the probability of a supply failing on any one day (20%),
- illness (diarrhoea) rates (1%),
- reporting of illness rates (10%),
- duration of illness (2 days), and
- costs of illness (economic loss factor, cost of treatment, loss of income and morbidity factor):
  - economic loss factor (1.3 or 30% of daily wage reflecting the overall economic loss per work day lost)
  - cost of treatment (£150 per reported case taking account of travel, doctor's time and treatment)

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<sup>14</sup> The Draft Private Water Supplies (Scotland Regulations 2005 and Proposals for a Private Water Supplies Grant Scheme – A Consultation issued in March 2005.

<sup>15</sup> Final Regulatory Impact Assessment, The Private Water Supplies (Scotland) Regulations 2006, issued in April 2006.

<sup>16</sup> Economic Assessment in Support of the Partial Regulatory Impact Assessment for Possible Regulations for Private Water Supplies and Public Buildings in Scotland, the Scottish Executive Central Research Unit 2004.

- loss of income (opportunity cost to employer - average daily wage £87.36 from Scottish New Earnings Survey)
- morbidity factor (decrease in quality of life when affected by illness - £50 per illness)

40. Following comments on the consultation IA (see paragraph 20), a review of the assumptions and benefits was carried out which concluded that it is not necessary to re-calculate the benefits in England for this final IA as there is no evidence that the assumptions used in the Scottish study are not applicable to England.

41. The health benefits have been estimated from the Scottish Study assuming 6,000 large supplies (including small supplies used commercially) in England (compared to 1,935 in Scotland) and 12,000 small supplies in England (excluding supplies to single dwellings) compared to 18,735 in Scotland (including supplies to single dwellings). It was decided to exclude supplies to single dwellings when assessing health benefits in England because application of the proposed regulations to such supplies is largely discretionary. As in Scotland the benefits have been assumed to be realised over 15 years. This assumption is reasonable and practical because the risk assessment, monitoring and enforcement provisions will allow all failing private water supplies to be identified and improved within a 15 year period. ***The health benefits estimated in the Scottish study have been increased by 8.3% to allow for inflation since 2003 when the costs for the Scottish study were obtained.***

#### **Option 1 - do nothing**

42. No benefits.

#### **Option 2(a) – large supplies without risk assessment (excluding small supplies)**

43. The main benefit of option 2(a), the minimum required to implement the Directive, compared to option 1 will be to ensure that an estimated 6,000 private supplies (large supplies and all supplies used for commercial or public activities irrespective of size) will be wholesome, clean and safe for human consumption. From the available information about the quality of these supplies, it is estimated that on average 30% (1,800) of them do not comply and this figure has been used for the calculation of the costs. This estimate is considered reasonable in view of the overall failure rate for all private supplies (see paragraph 26). ***But this option will not ensure that 12,000 small supplies are wholesome and safe for human consumption.***

#### **Option 2(b) – large and small supplies without risk assessment**

44. The benefit for option 2(b) compared to option 1 will be to ensure the 6,000 large supplies and the 12,000 small supplies will all be wholesome, clean and safe for human consumption. This will result in reduced numbers of adverse health impacts, including transmission of waterborne pathogens, among the populations who depend on, or who make occasional use of, large and small private supplies. It is estimated that this will result in improvements to 1,800 “large” supplies and 4,800 small supplies (based on the estimated 40% failure rate). ***This will ensure that all private supplies (except supplies to single dwellings) are wholesome and safe for human consumption.***

#### **Options 2(a) and 2(b)**

45. Options 2(a) and 2(b) do not involve risk assessments. Consequently, failures of supplies to comply with the standards would have normally only been detectable by routine monitoring under the regulations. While the health benefits for options 2(a) and 2(b) may be of the same value as those for options 3(a), 3(b) and 3(c), they are liable to be delivered to a slower profile over the 15 years than for options 3(a), 3(b) and 3(c). This is because the risk assessments lead to earlier detection of risks of contamination of supplies and therefore earlier implementation of remedial action. It is not known how much slower these benefits will be delivered as there is no experience of operating risk assessments in this field and there is no methodology for dealing with the slower profile, therefore this has not been taken into account in the calculation of the health benefits.

46. ***This gives an estimated health benefit of £47.86m for option 2(a) over option 1 (£44.19m for 6,000 supplies in England based on £14.25m at 2003 prices for 1,935 supplies in Scotland, then inflated by 8.3%) and an estimated health benefit of £80.61m for option 2(b) over option 1 (an additional £30.24m over option 2(a), inflated by 8.3% to £32.75m, for an additional 12,000 small supplies in***

England based on £47.21m at 2003 prices for 18,735 small supplies in Scotland), **all benefits discounted over 15 years at 3.5%.**

**Option 3(a) – large supplies with risk assessment (excluding small supplies)**

**Option 3(b) – large and small supplies with risk assessment (monitoring small supplies annually)**

**Option 3 (c) - large and small supplies with risk assessment (with risk assessment/monitoring every five years)**

47. The benefits and the estimated value of the benefits of option 3(a) are identical to those for option 2(a) and those for options 3(b) and 3(c) are identical to those for option 2(b). However, options 3(a), 3(b) and 3(c) include risk assessments and failures of supplies to comply with standards may be detected by risk assessments earlier than by monitoring without risk assessment. The findings of risk assessments are also liable to make it easier and quicker for local authorities to investigate failures than for options 2(a) and 2(b). This is likely to mean that options 2 and 3 may deliver the same health benefits, but the benefits under options 3(a), 3(b) and 3(c) will probably be delivered to a faster profile over 15 years than for options 2(a) and 2(b). It is not known how much quicker these benefits will be delivered as there is no experience of operating risk assessments in this field and there is no methodology for dealing with the quicker profile, therefore this has not been taken into account in the calculation of the health benefits.

48. **Thus the estimated health benefit is £47.86m for option 3(a) over option 1** (£44.19m for 6,000 supplies in England based on £14.25m at 2003 prices for 1,935 supplies in Scotland, inflated by 8.3%) **with an estimated health benefit of £80.61m) for options 3(b) and 3(c) over option 1** (an additional £30.24m over option 2(a), inflated by 8.3% to £32.75m, for an additional 12,000 small supplies in England based on £47.21m at 2003 prices for 18,735 small supplies in Scotland), **all benefits discounted over 15 years at 3.5%.**

**Options 2(a), 2(b), 3(a), 3(b) and 3(c)**

49. The above paragraphs estimate the quantifiable health benefits from options 2(a), 2(b), 3(a), 3(b) and 3(c) over option 1. These are avoiding loss of income, loss of economic activity, medical treatment costs and morbidity through avoidance of illness associated with consumption of contaminated water from private supplies. However, there are a number of other benefits that are not quantifiable but are recorded here qualitatively. A summary of these is given in Tables 1 to 5

**Table 1 – additional qualitative benefits of option 2(a) compared to option 1**

<b>Factor</b>	<b>Benefit</b>
All 6,000 “large” supplies will comply with the standards in time	No adverse health effects from an estimated 1,800 of these supplies.
	Economic competitiveness of commercial activities using these supplies.
	Reduced burden on local health services and industry.
	Increased confidence of consumers using these supplies
	Likely slight increase in value of properties supplied by these supplies (increasingly private supplies and their quality is an issue with property sales)
	Opportunities for companies supplying treatment and other equipment to improve these supplies.
	No restriction on development because of unsatisfactory private supplies (local authorities can refuse planning permission because there is not a wholesome water supply).
Improved environmental quality	Improved management at the source of a private supply will also create conditions for improvements in the quality of the surrounding environment such as avoiding pollution of water bodies.
EU legal action	Infraction proceedings will be avoided

**Table 2 – additional qualitative benefits of option 2(b) compared to option 1**

<b>Factor</b>	<b>Benefit</b>
All 6,000 “large” supplies and 12,000 small supplies will comply with the standards in time	No adverse health effects from an estimated 1,800 of the “large” supplies and an estimated 4,800 of the small supplies
	Economic competitiveness of commercial activities using these supplies.
	Reduced burden on local health services and industry.
	Increased confidence of consumers using these supplies
	Likely slight increase in value of properties supplied by these supplies (increasingly private supplies and their quality is an issue with property sales)
	Opportunities for companies supplying treatment and other equipment to improve these supplies.
	No restriction on development because of unsatisfactory private supplies (local authorities can refuse planning permission because there is not a wholesome water supply).
Improved environmental quality	Improved management at the source of a private supply will also create conditions for improvements in the quality of the surrounding environment such as avoiding pollution of water bodies.
Social justice	Consumers of small supplies will have good quality drinking water and the same degree of health protection as consumers of “large” supplies.
EU legal action	Infraction proceedings will be avoided

**Table 3 - additional qualitative benefits of option 3(a) compared to option 1**

<b>Factor</b>	<b>Benefit</b>
All 6,000 “large” supplies will comply with the standards in time	No adverse health effects from an estimated 1,800 of these supplies.
	Economic competitiveness of commercial activities using these supplies.
	Reduced burden on local health services and industry.
	Increased confidence of consumers using these supplies
	Likely slight increase in value of properties supplied by these supplies (increasingly private supplies and their quality is an issue with property sales)
	Opportunities for companies supplying treatment and other equipment to improve these supplies.
	No restriction on development because of unsatisfactory private supplies (local authorities can refuse planning permission because there is not a wholesome water supply).
Timing of improvements	Use of risk assessments will mean improvements completed to shorter timescale than option 2(a)
Improved environmental quality	Improved management at the source of a private supply will also create conditions for improvements in the quality of the surrounding environment such as avoiding pollution of water bodies.
Social justice	Consumers of small supplies will have good quality drinking water and the same degree of health protection as consumers of “large” supplies.
EU legal action	Infraction proceedings will be avoided

**Table 4 – additional qualitative benefits of option 3(b) compared to option 1**

<b>Factor</b>	<b>Benefit</b>
All 6,000 “large” supplies and 12,000 small supplies will comply with the standards in time	No adverse health effects from an estimated 1,800 of the “large” supplies and an estimated 4,800 of the small supplies
	Economic competitiveness of commercial activities using these supplies.
	Reduced burden on local health services and industry.
	Increased confidence of consumers using these supplies
	Likely slight increase in value of properties supplied by these supplies (increasingly private supplies and their quality is an issue with property sales)
	Opportunities for companies supplying treatment and other equipment to improve these supplies.
	No restriction on development because of unsatisfactory private supplies (local authorities can refuse planning permission because these is not a wholesome water supply.
Timing of improvements	Use of risk assessments will mean improvements completed to shorter timescale than option 2(b)
Improved environmental quality	Improved management at the source of a private supply will also create conditions for improvements in the quality of the surrounding environment such as avoiding pollution of water bodies.
Social justice	Consumers of small supplies will have good quality drinking water and the same degree of health protection as consumers of “large” supplies.
EU legal action	Infraction proceedings will be avoided

**Table 5 – additional qualitative benefits of option 3(c) compared to option 1**

<b>Factor</b>	<b>Benefit</b>
All 6,000 “large” supplies and 12,000 small supplies will comply with the standards in time	No adverse health effects from an estimated 1,800 of the “large” supplies and an estimated 4,800 of the small supplies
	Economic competitiveness of commercial activities using these supplies.
	Reduced burden on local health services and industry.
	Increased confidence of consumers using these supplies
	Likely slight increase in value of properties supplied by these supplies (increasingly private supplies and their quality is an issue with property sales)
	Opportunities for companies supplying treatment and other equipment to improve these supplies.
	No restriction on development because of unsatisfactory private supplies (local authorities can refuse planning permission because these is not a wholesome water supply.
Timing of improvements	Use of risk assessments will mean improvements completed to shorter timescale than option 2(b)
Improved environmental quality	Improved management at the source of a private supply will also create conditions for improvements in the quality of the surrounding environment such as avoiding pollution of water bodies.
Social justice	Consumers of small supplies will have good quality drinking water and the same degree of health protection

	as consumers of “large” supplies.
EU legal action	Infraction proceedings will be avoided

## Costs

50. Local authorities are responsible for discharging the functions and duties under the regulations and have a discretionary power to recover their costs up to prescribed maxima for certain specified individual functions. Local authorities can recover costs from the owners or occupiers of premises supplied by a private supply or other persons with a responsibility for the supply (who exercise powers of management or control) for carrying out risk assessments, monitoring (sampling and analysis) carrying out investigations into failures and granting an authorisation to continue supply whilst remedial action is taken. A local authority may not recover costs of repeat sampling intended solely to clarify a result of an analysis of a previous sample or for serving any notices to improve or restrict supplies.

51. Under the regulations, the local authority may make a charge where an owner or occupier asks the authority to monitor or to carry out a risk assessment on a supply to a single dwelling that is not used for commercial or public activity. If the authority chooses to carry out a risk assessment or to monitor such a supply without a request from the owner or the occupier, the authority cannot recover its costs under the regulations. It is not known to what extent users of supplies to single dwellings will make such requests to local authorities but the number of requests is likely to be low (most likely when the ownership or occupancy of the dwelling changes). Supplies to single dwellings have not been included in the calculation of the benefits and therefore have not been included in the costs because there is no obligation under the regulations for the local authority to monitor them or enforce the standards in them.

52. In the following sections the total costs for options 2(a), 2(b), 3(a), 3(b) and 3(c) are calculated and compared with the costs for option 1 and the extra cost over option 1 is given (in some cases the extra cost is negative; that is cost of the option is actually less than option 1). The costs are broken down into who pays based on the reasonable assumption that local authorities will recover all the costs that they are allowed to recover under the regulations.

53. Following the consultation some of the maximum prescribed charges in the regulations have been modified, particularly the maximum charge for carrying out a risk assessment of £500. Local authorities are allowed to recover the actual costs and most risk assessments will cost considerably less than the maximum charge and this has been taken into account in the costs used. Following the consultation further information has been obtained from suppliers of treatment equipment on the likely cost of supplying and installing typical treatment processes.

54. The following assumptions have been made on costs:

- **Number of supplies**

**Large supplies:** number - 5,000 (10 m<sup>3</sup>/d and over); and  
number - 1,000 (≤ 10 m<sup>3</sup>/d commercial/public use)

In tables 7 to 11 below these are referred to:

**Largest supplies:** number - 1,000 (100 m<sup>3</sup>/d)

**Medium large supplies:** number – 4,000 (10 m<sup>3</sup>/d - ≤ 100 m<sup>3</sup>/d)

**Small large supplies:** number – 1,000 (≤ 10 m<sup>3</sup>/d commercial/public use)

**Small supplies:** number - 12,000 (≤ 10 m<sup>3</sup>/d non commercial/public use)

- **Cost of risk assessment**

**Largest supplies:** average - £150

**Medium large supplies:** average - £125

**Small large supplies:** average - £100

**Small supplies:** average - £100

- **Cost of sampling visit**

**All large and small supplies - £100**



- **Cost of analysis**

**Check monitoring** (all large supplies) - £100

**Audit monitoring**

**All large supplies without risk assessment** - £500

**Large supplies with risk assessment** (assumes reduces number of parameters to be monitored)-

**Largest supplies:** average - £200

**Medium large supplies:** average - £150

**Small large supplies:** average - £100

**Small supplies:** £25

- **Cost of remedial action**

**Largest supplies:** average - £10,000

**Medium large supplies:** average - £2,000

**Small large supplies** average - £1,000

**Small supplies** average - £1,000

- **Cost of investigation of failures**

**All large supplies:** £100

**Small supplies** (annual monitoring): £100

**Small supplies** (risk assessment/monitoring every 5 years: £0 (RA will cover investigation)

- **Cost of notices**

**All large and small supplies:** £50

- **Cost of authorising departures**

**All large and small supplies:** £100

- **Administration (for owners)**

**All large supplies:** average £40

**Small supplies:** average £20

- **Overall failure rates**

**Largest supplies:** 25% )

**Medium large supplies:** 30% )- average 30%

**Small large supplies:** 35% )

**Small supplies:** 40%

**Option 1** (do nothing)

55. Local authorities have the power to recover costs associated with the monitoring (sampling and analysis) that they are required to carry out under the current 1991 regulations. These can be recovered from the owners or users of the private supplies. The maximum costs that local authorities may charge were fixed in 1991 and have not been revised since. The costs for sampling and analysis for option 1 have been based on the maximum charges in the 1991 regulations. They have not been inflated because although costs have risen considerably since 1991, laboratory analysis efficiency has improved substantially and it is assumed that these two factors cancel out. The maximum charges in the 1991 regulations for sampling include the costs of taking the sample, analysing it and the associated administration for local authorities. The only other cost is administration for owners and it is assumed that this is the same as set out in paragraph 54. It is assumed that there would be no further improvements to private water supplies under the 1991 regulations.

56. The costs for option 1 are estimated at **£5.98m/a** as shown in table 6.

**Table 6: costs for option 1 (do nothing)**

Type of supply and number	Category/class 1991 regulations	Volume of supply m <sup>3</sup> /d	Type of analysis, no of supplies, average frequency/a and cost (£)	Cost (£m/a) to owners
Largest 1,000	1(A), 2(1) 1(B), 2(2)	□ 1,000 101 – 1,000	Part I – 1,000 x 9 x 20	0.18
			Part II – 1,000 x 4 x 40	0.16
			Part III – 1,000 x 4 x 270	1.08
			Part IV – 1,000 x 1 x 350	0.35
			Part V – 1,000 x 18 x 20	0.36
				<b>2.13</b>
Medium large 4,000	1(C), 2(3) Part 1(D), 2(4)	21 – 100 11 - 20	Basic – 4,000 x 1.5 x 40	0.24
			Addn – 4,000 x 1.5 x 300	1.80
			Colif – 3,000 x 3 x 20	0.18
				<b>2.22</b>
Small large 1,000	Part 2(4) 2(5) Mainly 1(F)	5 to 10 < 5	Basic – 1,000 x 1 x 40	0.04
			Addn – 1,000 x 1 x 300	0.30
				<b>0.34</b>
Admin	All	All	6,000 x 40	<b>0.24</b>
<b>All large supplies</b>				<b>4.93</b>
Small supplies	Part 1(D)	5 to 10	Basic - 3,000 x 1 x 40	0.12
	1(E)	< 5	Addn – 3,000 x 1 x 300 Basic – 9,000 x 0.2 x 40	0.90 <0.01
				<b>1.03</b>
Admin	All	All	3,000 x 1 x 20	0.01
			9,000 x 0.2 x 20	<0.01
<b>All small supplies</b>				<b>1.05</b>
<b>ALL SUPPLIES</b>				<b>5.98</b>

**Options 2(a) and 2(b)** (without risk assessments)

57. The main costs for owners and occupiers of premises supplied by private supplies associated with the proposed regulations will be –

- the maximum charge that local authorities may make for a sampling visit;
- the maximum charge that local authorities may make for carrying out, or arranging to carry out, the analysis (note the full monitoring requirements have to be carried out under these two options);
- the new charge that local authorities may make for carrying out investigations into a failure to determine the cause and the appropriate remedial action and for informally negotiating with the owners or occupiers to get the remedial action taken
- the new charge that local authorities may make for processing applications from the owners or occupiers for an authorisation to continue supply whilst remedial action is being taken;
- the cost of carrying out any required remedial action, including any charge that the local authorities may make for carrying out the remedial action themselves; and
- the administrative costs of dealing with local authorities and others (for example water treatment equipment suppliers).

58. The main costs for local authorities that they cannot recover from owners or occupiers will be:
- the cost of preparing and serving notices when restriction of supply is required or when the owners are unwilling to take remedial action following informal negotiation.

**Options 3(a), 3(b) and 3(c)** (with risk assessments)

59. The main costs for owners and occupiers of premises supplied by private supplies associated with the proposed regulations will be –

- the maximum charge that local authorities may make for a sampling visit;
  - the reasonable charge that local authorities may make for carrying out risk assessments (in most cases well below the maximum – see paragraph 54);
  - the maximum charge that local authorities may make for carrying out, or arranging to carry out, the analysis (note that the findings of a risk assessment will allow a reduction in the number of parameters for audit monitoring and therefore reduce the costs for both these options);
  - the new charge that local authorities may make for carrying out investigations into a failure to determine the cause and the appropriate remedial action and for informally negotiating with the owners or occupiers to get the remedial action taken;
  - the new charge that local authorities may make for processing applications from the owners or occupiers for authorisations to continue supply whilst remedial action is being taken;
  - the cost of carrying out any required remedial action, including any and charge that the local authorities may make for carrying out the remedial action themselves; and
  - the administrative costs of dealing with local authorities and others (for example water treatment equipment suppliers).
60. The main costs for local authorities that they cannot recover from owners will be:
- the cost of preparing and serving notices when restriction of supply is required or when the owners or occupiers are unwilling to take remedial action following informal negotiation; and
  - training of staff to undertake risk assessments.

61. Note that the annual operating and maintenance costs (over option 1) for any new or additional treatment processes have not been included for options 2(a), 2(b), 3(a), 3(b) and 3(c). Most of the costs of new or additional treatment are the one off capital costs of the equipment and these have been included for each of these options. The additional annual operating and maintenance costs of new or additional treatment are difficult to estimate but are likely to be small compared to the annual costs of monitoring.

62. Tables 7, 8, 9, 10 and 11 respectively summarise the estimated costs of options 2(a), 2(b), 3(a), 3(b) and 3(c) that would be incurred by owners and local authorities over the estimated costs of option 1, based on the assumptions in paragraph 54.

63. **Table 7 (Option 2(a)): costs for large supplies – without risk assessments**

Item	Unit cost	Calculation	Cost
Sampling visit	£100	Large - 1,000 x 4/year Medium - 4,000 x 2/year Small - 1,000 x 1/year = 13,000 visits	£0.40m/a £0.80m/a £0.10m/a <b>£1.30m/a</b> for owners
Check analysis	£100	Large - 1,000 x 4/year Medium - 4,000 x 2/year Small - 1,000 x 1/year = 13,000 analyses	£0.40m/a £0.80m/a £0.10m/a <b>£1.30m/a</b> for owners
Audit analysis	£500	Large - 1,000 x 2/year Medium - 4,000 x 2/year Small 1,000 x 1/year = 11,000 analyses	£1.00m/a £4.00m/a £0.50m/a <b>£5.50m/a</b> for owners
Investigation	£100 for visit plus limited analysis plus informal negotiation	Large 25% of 1,000 = 250 fail Medium 30% of 4,000 = 1,200 fail Small 35% of 1,000 = 350 fail 1,800 total failing supplies requiring investigations	£0.025m £0.12m £0.035m <b>£0.18m one-off</b> for owners
Notices	£50 each	Assume 75% fail for microbiological parameters = 1350 failing supplies Assume 50% of 1,350 solved by informal negotiation = 675 Notices = 675	<b>£0.034m one-off</b> for local authorities
Authorise departures	£100	Assume 25% fail for chemical parameters = 550 failing supplies Assume 50% solved by informal negotiation = 225 Authorisations = 225	<b>£0.023m one-off</b> for owners
Remedial action	£10,000 (ave) £2,000 (ave) £1,000 (ave)	Large – 250 fail Medium – 1,200 fail Small – 350 fail	£2.50m £2.40m £0.35m <b>£5.25m one-off</b> for owners
Administration	£40	6,000 large supplies	<b>£0.24m/a</b> for owners
<b>Total for owners</b>			<b>£8.34m/a</b> <b>£5.453m one-off</b>
<b>Total for LAs</b>			<b>£0.034m one-off</b>
<b>TOTAL COST</b>			<b>£8.34m/a</b> <b>£5.487m one-off</b>
Option 1			£5.98m/a
<b>Extra cost of option 2(a) over option 1</b>		<b>Annual costs</b>	<b>£2.36m/a</b>
		<b>One-off costs</b>	<b>£5.487m</b>
		<b>Present value of these costs discounted over 15 years at 3.5%</b>	<b>£33.698m</b>

64. **Table 8 (Option 2(b)): costs for large and small supplies – without risk assessments**

<b>Item</b>	<b>Unit cost</b>	<b>Calculation</b>	<b>Cost</b>
Sampling visit	£100	12,000 x 1/year	<b>£1.20m/a</b> for owners
Small supplies analysis	£25	12,000 x 1/year Assumes risk assessment does not require additional analysis	<b>£0.30m/a</b> for owners
Investigation	£100	40% of 12,000 supplies fail = 4,800 total failing supplies requiring investigations	<b>£0.48m one-off</b> for owners
Notices	£50 each	Assume 75% fail for microbial parameters = 3,600 failing supplies Assume 50% of 3,600 solved by informal negotiation = 1,800 Notices = 1,800	<b>£0.09m one-off</b> for local authorities
Authorise departures	£100	Assume 25% fail for chemical parameters = 1,200 failing supplies Assume 50% solved by informal negotiation = 600 Authorisations = 600	<b>£0.06m one-off</b> for owners
Remedial action	£1,000 average	For 4,800 failing supplies	<b>£4.80m one-off</b> for owners
Administration	£20	For 12,000 supplies	<b>£0.24m/a</b> for owners
<b>Total for small supplies for owners</b>			<b>£1.74m/a</b> <b>£5.34m one-off</b>
<b>Total for small supplies for LAs</b>			<b>£0.09m one-off</b>
<b>Total for small supplies</b>			<b>£1.74m/a</b> <b>£5.43m one-off</b>
<b>Total for large supplies</b>			<b>£8.34m/a</b> <b>£5.487m one-off</b>
<b>Total for large and small supplies</b>			<b>£10.08m/a</b> <b>£10.917m one-off</b>
Option 1			£5.98m/a
<b>Extra cost of option 2(b) over option 1</b>		<b>Annual costs</b>	<b>£2.10m/a</b>
		<b>One-off costs</b>	<b>£10.917m</b>
		<b>Present value of these costs discounted over 15 years at 3.5%</b>	<b>£36.209m</b>

65. **Table 9 (Option 3(a)): costs for large supplies – with risk assessments**

Item	Unit cost	Calculation	Cost
Risk assessments	£150 (average) £125 (average) £100 (average)	Large - 1,000 RAs/5 years Medium – 4000 RAs/5 years Small – 1000 RAs/5 years	£0.15m = £0.03m/a £0.50m = £0.10m/a £0.10m = £0.02m/a <b>£0.15m/a</b> for owners
Sampling visits	£100	Large - 1,000 x 4/year Medium - 4,000 x 2/year Small - 1,000 x 1/year = 13,000 visits	£0.40m/a £0.80m/a £0.10m/a <b>£1.30m/a</b> for owners
Check analysis	£100	Large - 1,000 x 4/year Medium - 4,000 x 2/year Small - 1,000 x 1/year = 13,000 analyses	£0.40m/a £0.80m/a £0.10m/a <b>£1.30m/a</b> for owners
Audit analysis	£200 (average) £150 (average) £100 (average)	Large - 1,000 x 2/year Medium - 4,000 x 2/year Small 1,000 x 1/year assume that risk assessment reduces substantially number of parameters monitored to reduce from maximum cost of £500	£0.40m/a £1.20m/a £0.10m/a <b>£1.70m/a</b> for owners
Investigations	£100 for visit plus limited analysis plus informal negotiation	Large 25% of 1,000 = 250 fail Medium 30% of 4,000 = 1,200 fail Small 35% of 1,000 = 350 fail 1,800 total failing supplies requiring investigations	£0.025m £0.12m £0.035m <b>£0.18m one-off</b> for owners
Notices	£50 each	Assume 75% fail for microbiological parameters = 1350 failing supplies Assume 50% of 1,350 solved by informal negotiation = 675 Notices = 675	<b>£0.034m one-off</b> for local authorities
Authorise departures	£100	Assume 25% fail for chemical parameters = 550 failing supplies Assume 50% solved by informal negotiation = 225 Authorisations = 225	<b>£0.023m one-off</b> for owners
Remedial action	£10,000 (ave) £2,000 (ave) £1,000 (ave)	Large – 250 fail Medium – 1,200 fail Small – 350 fail	£2.50m £2.40m £0.35m <b>£5.25m one-off</b> for owners
Administration	£40	6,000 large supplies	<b>£0.24m/a</b> for owners
<b>Total for owners</b>			<b>£4.69m/a</b> <b>£5.453m one-off</b>
<b>Total for LAs</b>			<b>£0.034m one-off</b>
<b>TOTAL COST</b>			<b>£4.69m/a</b> <b>£5.487m one-off</b>
Option 1			£5.98m/a
<b>Extra cost of option 2(a) over option 1</b>		<b>Annual costs</b>	<b>-£1.29m/a</b> this is negative because option 3(a) costs less than option 1
		<b>One-off costs</b>	<b>£5.487m</b>
		<b>Present value of these costs discounted over 15 years at 3.5%</b>	<b>-£9.811m</b>



66. **Table 10 (Option 3(b)): costs for large and small supplies – with risk assessments** (with annual monitoring for small supplies)

Item	Unit cost	Calculation	Cost
Risk assessments	£100	12,000/5 years	<b>£0.24m/a</b> for owners
Sampling visit	£100	12,000 x 1/year for small supplies = 12,000 visits	<b>£1.20m/a</b> for owners
Small supplies analysis	£25	12,000 analyses/year (assumes risk assessment does not reduce requirements no additional analyses required)	<b>£0.30m/a</b> for owners
Investigation	£100	40% of 12,000 supplies fail = 4,800 total failing supplies requiring investigations	<b>£0.48m one-off</b> for owners
Notices	£50 each	Assume 75% fail for microbial parameters = 3,600 failing supplies Assume 50% of 3,600 solved by informal negotiation = 1,800 Notices = 1,800	<b>£0.09m one-off</b> for local authorities
Authorise departures	£100	Assume 25% fail for chemical parameters = 1,200 failing supplies Assume 50% solved by informal negotiation = 600 Authorisations = 600	<b>£0.06m one-off</b> for owners
Remedial action	£1,000 average	For 4,800 failing supplies	<b>£4.80m one-off</b> for owners
Administration	£20	For 12,000 supplies	<b>£0.24m/a</b> for owners
<b>Total for small supplies for owners</b>			<b>£1.98m/a</b> <b>£5.34m one-off</b>
<b>Total for small supplies for LAs</b>			<b>£0.09m one-off</b>
<b>Total for small supplies</b>			<b>£1.98m/a</b> <b>£5.43m one-off</b>
<b>Total for large supplies</b>			<b>£4.69m/a</b> <b>£5.487m one-off</b>
<b>Total for all supplies</b>			<b>£6.67m/a</b> <b>£10.917m one-off</b>
Option 1			£5.98m/a
<b>Extra cost of option 3(b) over option 1</b>		<b>Annual costs</b>	<b>£0.69m/a</b>
		<b>One-off costs</b>	<b>£10.917m</b>
		<b>Present value of these costs discounted over 15 years at 3.5%</b>	<b>£19.401m</b>



67. **Table 11 (Option 3(c): costs for large and small supplies – with risk assessments** (with risk assessment/monitoring every 5 years for small supplies)

Item	Unit cost	Calculation	Cost
Risk assessments	£100	12,000/5 years = 2,400 RAs/year	<b>£0.24m/a</b> for owners
Sampling visit	£100	12,000/5years for small supplies = 2,400 visits/year	<b>£0.24m/a</b> for owners
Small supplies analysis	£25	12,000 analyses/5years = 2,400 analyses (assumes risk assessment does not reduce requirements and no additional analyses required)	<b>£0.06m/a</b> for owners
Investigation	£100	Assume risk assessment at same time as monitoring will obviate need for investigation	<b>£0.0</b>
Notices	£50 each	40% of 12,000 supplies fail = 4,800 Assume 75% fail for microbial parameters = 3,600 failing supplies Assume 50% of 3,600 solved by informal negotiation = 1,800 Notices = 1,800	<b>£0.09m one-off</b> for local authorities
Authorise departures	£100	Assume 25% fail for chemical parameters = 1,200 failing supplies Assume 50% solved by informal negotiation = 600 authorisations = 600	<b>£0.06m one-off</b> for owners
Remedial action	£1,000 average	For 4,800 failing supplies	<b>£4.80m one-off</b> for owners
Administration	£20	For 12,000 supplies	<b>£0.24m/a</b> for owners
<b>Total for small supplies for owners</b>			<b>£0.78m/a</b> <b>£4.86m one-off</b>
<b>Total for small supplies for LAs</b>			<b>£0.09m one-off</b>
<b>Total for small supplies</b>			<b>£0.78m/a</b> <b>£4.95m one-off</b>
<b>Total for large supplies</b>			<b>£4.69m/a</b> <b>£5.487m one-off</b>
<b>Total for all supplies</b>			<b>£5.47m/a</b> <b>£10.437m one-off</b>
Option 1			£5.98m/a
<b>Extra cost of option 3(b) over option 1</b>		<b>Annual costs</b>	<b>-£0.51m/a</b> this is negative because option 3(c) costs less than option 1
		<b>One-off costs</b>	<b>£10.437m</b>
		<b>Present value of these costs discounted over 15 years at 3.5%</b>	<b>£4.617m</b>

## Comparison of Summary Costs and Benefits

68. A comparison of the estimated additional costs (over option 1) and estimated value of benefits for options 2(a), 2(b), 3(a), 3(b) and 3(c) are presented in Table 12 below. The present value of costs is discounted over 15 years at 3.5%. The benefits have not been discounted because they were derived from the Scottish RIA published in 2006 in which benefits had already been discounted over 15 years. For the purpose of this impact assessment these benefits were inflated to 2008 prices. Note that these are the quantifiable costs and benefits and there are also some costs and benefits that it was not possible to quantify.

**Table 12: estimated additional costs and benefits over option 1**

Option	Costs £m	Benefits £m	Net Benefits £m
2(a) – large supplies without risk assessment (excluding small supplies)	33.70	47.86	14.16
2(b) – large and small supplies without risk assessment	36.21	80.61	44.40
3(a) – large supplies with risk assessment (excluding small supplies)	-9.81	47.86	57.67
3(b) – large and small supplies with risk assessment (with annual monitoring of small supplies)	19.40	80.61	61.21
3 (c) - large and small supplies with risk assessment (with risk assessment/monitoring of small supplies every 5 years)	4.62	80.61	75.99

69. When risk assessment is not included, the estimated value of the benefits exceed the estimated costs by **£14.16m** for option 2(a) and **£44.40m** for option 2(b) and the additional benefit against the costs of including small supplies (option 2(b)) over not including them (option 2(a)) is **£30.24m**. When risk assessment is included, the estimated value of the benefits greatly exceed the estimated costs by **£57.67m** for option 3(a), **£61.21m** for option 3(b) and **£75.99m** for option 3(c) and the additional benefit against the costs of including small supplies (option 3(b) and option 3(c)) over not including them (option 3(a)) is **£3.54m and £18.32m** respectively.

## Public Sector Threshold Test

70. Local authorities can recover the majority of their costs from the owners or occupiers of premises supplied by private water supplies or persons who have responsibility for private supplies. The only costs that local authorities are unable to recover are the costs associated with enforcement of the regulations (the issue of notices restricting supplies or requiring improvements to supplies). These costs are very small being less than 1% of the costs that they can recover. Thus, a Public Service Threshold Test is not required.

## Competition Assessment

71. It may be expected that the impact of the regulations may put businesses that rely on private supplies at a disadvantage to businesses that use public water supplies because of the costs to businesses associated with monitoring, and where necessary improvements to, private water supplies. However, businesses that rely on public water supplies have to pay for the costs of meeting the public supply regulations through their water bills and this includes the cost of monitoring the public supplies and the costs of improvements. It is concluded that there will be no significant effect on competition, especially as most businesses relying on private supplies are small, are in rural areas and serve local areas where competition is unlikely to be a major concern. Once a private supply to a business meets the standards in the regulations this could be used as a marketing point, particularly for the accommodation, food and drinks industries.

## Small Firms Impact Test

72. The proposed regulations will affect businesses that rely on private supplies. Most businesses who use private water supplies are already subject to monitoring and meeting water quality standards under the

existing regulations. The new regulations have similar requirements for monitoring and introduce small changes to the requirements for water quality. It is therefore anticipated that many businesses will have satisfactory arrangements for source protection and appropriate water treatment systems to secure wholesome supplies. The main change in the regulations is the adoption of risk assessment of supplies as a means to identify and manage the risk to public health associated with contamination or inadequate treatment of private supplies. A small firms impact test has been undertaken to assess the impact of these new regulations on businesses. It was not possible to use the small business service database to assess the impact on businesses because there were insufficient numbers on private water supplies. The potential adoption of a more flexible approach for small businesses was considered along with scope for simplified inspection and less frequent reporting. However, the Drinking Water Directive does not provide for any exemption on the basis of size for business where the private water supply is used for a commercial activity. The Directive requires monitoring based on the amount of water supplied so the cost of monitoring (sampling and analysis) and remedial action is likely to be approximately proportional to water used. Where the Directive does allow discretion in the monitoring requirements they have been set at the minimum levels compatible with public health protection. Some costs (risk assessments, authorisations and remedial action) are likely to have a slightly greater proportional impact on small businesses. It is concluded that the proposals are likely to have a small disproportional impact on small businesses compared to large businesses. However, many of these small businesses are likely to be involved in food production or provision of accommodation services (hotels, guest house and bed/breakfast establishments) in local areas. The new regulations will secure further improvements to the quality of their private water supplies which will result in increased public confidence. This may result in some increase in their business to offset the small increase in costs of complying with the regulations.

## **Legal aid**

73. Local authorities will be responsible for implementing and enforcing the requirements of the regulations in terms of monitoring and other requirements. Those responsible for a private supply will need to implement any remedial action required to meet the revised drinking water quality standards.

74. Where improvements to private supplies are needed, local authorities will try to get these made through informal negotiation with the owners. It is assumed that informal negotiation will be successful in at least 50% of cases. The other 50% of cases will require notices to improve supplies. It is anticipated that in most cases the owners will comply with notices. Therefore very circumstances are likely for objection and it is concluded that legal aid is not a significant issue.

## **Sustainable development**

75. The paragraphs below demonstrate that the regulations will have no significant impact on carbon or other environmental concerns. By bringing private water supplies up to the same standards as public water supplies with the same degree of health protection to users, the regulations ensure a strong, healthy and just society and achieve a sustainable economy, particularly in rural areas. Thus the regulations, which are based on sound science, represent good governance. Therefore the regulations satisfy the five principles of the Government's sustainable development strategy.

## **Carbon assessment**

76. The industries and commercial and public activities that use private supplies are not one of the key sources of greenhouse gas emissions and there will be no significant increase in emissions associated with the regulations. There may be a very slight increase in transport associated with the monitoring provisions and a very slight increase in energy consumption associated with operation of new or additional treatment equipment to improve private water supplies to meet the regulations and to protect the health of users. Therefore it is concluded that there will be no significant impact on carbon and no need to assess beyond this step 1.

## **Other environmental issues**

77. None of the policy options, including the agreed option, will:

- lead to a significant change in the emission of greenhouse gases (see above paragraph);
- be vulnerable to the predicted effects of climate change;

- lead to a change in the financial costs or the environmental and health impacts of waste management;
- impact significantly on air quality;
- involve any material change to the appearance of the landscape or townscape;
- change the degree of water pollution, levels of water abstraction or exposure to flood risk;
- enhance or disturb habitat or wildlife; or
- affect noise pollution

Therefore none of the policy options considered will have any effect on other environmental issues.

## **Race, disability and gender equality**

78. None of the policy options, including the agreed option, will have any effect on race, disability or gender equality.

## **Human rights**

79. The regulations raise no issues with respect to the Human Rights Act 1998. By including small private supplies in the regulations (options 2(b), 3(b) and 3(c), it could be argued that this benefits the human rights of the users of small supplies by giving them greater health protection than options 2(a) and 3(a) which exclude small supplies.

## **Rural proofing**

80. The majority of private supplies are in rural areas serving rural communities and rural businesses. The greatest impact will be on small communities and businesses.

81. For a private supply to a single dwelling, the regulations will have no effect and no costs unless the owner or occupants request a risk assessment or monitoring of their private supply by the local authority. If the owner requests these the local authority might charge £100 for a risk assessment and £25 for monitoring. As a consequence the local authority may advise the owner to install treatment at the owner's cost to meet the standards and safeguard the health of the occupants.

82. The owner of a small private supply to a rural community of two or more houses, but serving less than 50 persons, that is used solely for domestic purposes and not part of a commercial or public activity (such as bed and breakfast) will be charged as a minimum for a risk assessment and one monitoring occasion (sampling and analysis) every five years at a cost of £125 (£25 per year). In addition there would be the one-off cost of any treatment that is necessary to comply with the standards and safeguard the health of the occupants and the cost of maintaining any treatment equipment. The greater the number of houses served by the private supply the lower the cost for each house. Generally these costs are broadly comparable to the cost each householder pays for a public water supply from a water undertaker. These small supplies could have been excluded from the regulations under options 2(a) and 3(a) using the discretionary exemption from the Directive but the occupants would not have their health safeguarded if the supply was unsatisfactory. The agreed policy option 3(c) includes these small supplies and therefore safeguards the health of occupants.

83. The owner of a private supply to a single property that is used for commercial purposes (such as a farm or bed and breakfast) has to meet the standards in the Directive as there is no exemption permitted. The frequency of monitoring is not specified in the Directive and is left to the Member State to decide. A minimum of one check and audit monitoring (sampling and analysis) is required each year. The use of risk assessment should enable the number of parameters in audit monitoring to be reduced and therefore the cost of audit monitoring reduced considerably. The cost of risk assessment (£20/year), one sampling occasion (£100/year), one check monitoring occasion (£100/year) and one limited audit monitoring occasion (£100/year) makes a total estimated cost of £320 per year. In addition there would be the one-off cost of any treatment that is necessary to comply with the standards and safeguard the health of the occupants/visitors and the quality of the products and the cost of maintaining any treatment equipment. These costs are probably slightly higher than for a comparable property using a public water supply from a water undertaker. However such commercial enterprises could use the fact that they have a safe private water supply that meets regulatory requirements as a marketing strategy for their business.

84. There will be proportionately less effect on larger businesses in rural areas served by private supplies.

## Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

**Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.**

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	Yes	No
Sustainable Development	Yes	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	Yes	No
Rural Proofing	Yes	No



