

# APPENDIX F SUPPLY SIDE OPTIONS

## ADDITIONAL INFORMATION

This Appendix includes information that was in the main part of the 2019 Drought Plan and the pre-existing Appendix D which included a summary of the drought permit screening process. The information has been moved to an Appendix following the suggestions of the EA Guidance December 2020 to make the plan more concise and easy to follow. Since we are only proposing one supply side option in our drought plan, we have moved all the information pertaining to the other options that were looked at in this Appendix. The Appendix provides a description of other options that were considered but not taken forward as options in the drought plan and a summary of the drought permit screening process.

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## 1 OPTIONS CONSIDERED FOR THE DROUGHT PLAN

As drought develops through the different stages, and our water supplies become more stressed, we will look to increase the volume of water available to us via a number of supply-side actions. These actions will supplement the demand management actions set out in our Drought Plan.

We have considered a selection of supply options for our Drought Plan, including:

- Lowering of borehole pumps to maintain source yields
- Recommissioning unused sources
- Recommissioning unused Portsmouth Water boreholes
- Recommissioning unused private boreholes
- Internal transfers
- Increasing the drought yields at existing sources
- Drought Permits or Orders

We have gone through an exercise where we investigated these supply options and have concluded that under a drought scenario our only supply-side option would be a Drought Permit for our North Arundel source, and potentially at Source J, subject to further investigation. All of the other possible permits were considered and screened out as drought options in the WRMP19 process alongside the associated Strategic Environmental Assessment (SEA) and Habitats Regulation Assessment (HRA).

### 1.1 Lowering of Borehole Pumps to Maintain Source Yields

The majority of our sources rely upon submersible pumps which are located in wells and boreholes. Since aquifer levels are lower during drought years, we maintain a small stock of additional 'rising mains' which may be needed to lower the level of pump intakes. This will ensure that pumps can continue to operate despite reduced groundwater levels.

### 1.2 Recommissioning Unused Portsmouth Water Sources

#### **Bishops Waltham**

The abstraction licence for our source at Bishop's Waltham was surrendered in 2003 due to environmental concerns affecting the Moors SSSI. The site has now been decommissioned and permanent plant removed. Provision has been made to enable the installation of temporary pumps, power supplies and disinfection equipment in the event that the source is needed. However, detailed environmental monitoring, modelling and testing would be required to determine the likely drought yield. The Environment Agency has a groundwater model of the area but no modelling has been carried out. It is highly unlikely that this source could be used in a drought and it is not considered to be a feasible option. It should be noted that the requirements of the Drinking Water Inspectorate must also be met before any source is returned to supply. This procedure typically takes a minimum of 3 months, although the regulations make provisions for the process to be undertaken more quickly in exceptional circumstances.

#### **Hayling Island**

Portsmouth Water had a source at Hayling Island which has not been used since the 1920s. Recommissioning would require new pumps, disinfection plant, a power supply and a reconnection to the distribution system. The extent of treatment required is unknown as are the likely yield and water quality. It is highly unlikely that this source could be used in a drought and it is not considered to be a feasible option. Water quality investigations would also need to take place by the DWI before any source can be used for public water supply, which can take up to 3 months, and the installation of temporary

pumps, power supplies and disinfection equipment will also add time to the process, so 3 – 6 months would be a likely time period.

#### **Source U**

Source U was converted into a raw water supply for augmenting the River Ems in dry conditions. This involved the removal of the chlorinators and physical disconnection from the distribution system. New pumps are due to be installed to match the raw water flow of 35 l/s which represents 3.0 MI/d. It would be possible to recommission the works in an Extreme Drought but this would require a package UV treatment plant and new chlorinators to ensure water quality compliance. The ability to supply potable water has been retained in the Licence but the DWI would require water quality testing prior to the source being recommissioned. It is highly unlikely that this source could be used in a normal drought and it is not considered to be a feasible option.

### **1.3 Commissioning Unused Portsmouth Water Boreholes**

Some of the existing source works contain shafts and boreholes that are not currently used. In an extreme drought it might be possible to increase the yield of a source by installing temporary pumping plant in these unused boreholes. The yield from such boreholes is untested and the WRMP does not consider these options to be feasible. It should be noted that any activity is subject to complying with the constraints of relevant abstraction licences. However, there is a presumption against further groundwater abstraction and Drought Permits would be required before increased pumping of these sources could be implemented. As set down by the DWI we must undertake assessments of the water quality from the source before water is supplied to customers and this could take up to 3 months. Constraints such as access are not an issue because we already own the land.

### **1.4 Commissioning Unused Commercial Boreholes**

There are a number of unused private boreholes within our area which might have spare licence capacity to augment public water supply sources in an extreme drought. We have obtained a list of these sites from the Environment Agency and, in the event of a developing extreme drought, will make contact with site owners to prepare plans to make use of any spare capacity for public water supplies. Any source must have DWI approval before being used to supply customers. The WRMP does not consider these to be feasible options and they were not included in the SEA or the HRA assessments.

### **1.5 Internal Transfers**

In general, we have a well-connected supply system with the ability to transfer water between different parts of our area. We do not anticipate the need for additional transfers even in an extreme drought. However, when operational problems occur at a particular site, it may be necessary to add new transfers or reverse the flow of existing transfers by emergency temporary works.

### **1.6 Other Drought Permits**

#### **Source H**

At Source H the peak licensed output is constrained when the flow in the adjacent River Meon falls below a certain level. We could apply for a Drought Permit to suspend the flow condition but this is not considered to be a feasible option.

#### **Source N**

The licence for Source N incorporates a condition requiring us to provide a compensation discharge to the nearby River Ems when the flow in the river is below a set level at Hampshire Farm, Westbourne. It

would be possible for the Company to apply for a Drought Permit to suspend this condition but this is not considered to be a feasible option.

### Source B

Source B Springs are our largest source and the abstraction licence has been modified to comply with the outcome of the Habitats Directive Review of Consents. The licence has Minimum Residual Flow (MRF) conditions on the Langstone Mill Stream and the Brockhampton Mill Lake. We could apply for a Drought Permit to suspend these conditions. However, the flow conditions were explicitly set to protect the environment under dry or drought conditions. The conditions are based on scientific research and the habitats are protected under European legislation. This is not considered to be a feasible option.

### 'LMNOP Group'

A group licence has been established for six West Sussex sources, the largest of which is Source N. One of the conditions of the individual licences that make up the group is for reduced abstraction at Source P between August and November. This condition is designed to protect freshwater flows into Chichester Harbour. The group licence and the abstraction limits are the outcome of the Habitats Directive Review of Consents. We could apply for a drought permit to exceed the abstraction limits at Source P. The limits are specifically designed to protect the environment in dry or drought conditions and so the application is unlikely to be acceptable to the Environment Agency. This is not considered to be a feasible option.

## 2 DROUGHT PERMIT SCREENING PROCESS SUMMARY

We have undertaken a screening exercise to comply with the Habitats Directive and to inform the selection of drought management options. A summary of the process is illustrated in Table 1 below.

Table 1 Drought Permit Screening Process Summary Table

Drought permit/order option	Conditions					Minimum residual flows (MRF) in place?	Overall
	RAMSAR Site potentially affected?	SSSI potentially affected?	SAC potentially affected?	SPA potentially affected?	Potential WFD impacts?		
Source H	Yes	Yes	Yes	Yes	No Portsmouth Water WFD Investigation but potential impacts on River Meon	MRF conditions at River Meon	A Drought permit is likely to impact the RAMSAR, SSSI. SAC. SPA and
Source N	Yes	Yes	Yes	Yes	Investigation completed March 2013 and Licence Varied. Potential impacts on River Ems	MRF condition in place at Westbourne	A Drought permit is likely to impact the RAMSAR, SSSI. SAC. SPA and MRF's
Source B	Yes	Yes	Yes	Yes	No impacts on WFD Waterbodies.	MRF conditions in place at Langstone Mill Stream and Brockhampton Mill	A Drought permit is likely to impact the RAMSAR, SSSI. SAC. SPA and MRF's

Source S	No	Yes	No	No	No WFD investigation. Waterbodies unlikely to be affected by abstraction.	No restrictions	Most feasible option due to no impacts on a RAMSAR site, SAC, SPA or MRF's and no WFD impacts.
Source A	Yes	Yes	Yes	Yes	Drought Permit likely to have an adverse affect on the WFD Waterbodies.	MRF conditions in place at Riverside Park	A Drought permit is likely to impact the RAMSAR, SSSI. SAC. SPA and MRF's
Source P	Yes	Yes	Yes	Yes	No WFD investigation. Waterbodies unlikely to be affected by abstraction.	A stepped licence is in place.	A Drought permit is likely to impact the RAMSAR, SSSI. SAC. SPA and MRF's