

DEFRA LOGO

PROPOSED DRAFT DROUGHT ORDER

Section 73 Water Resources Act 1991 as amended by the Environment Act 1995

THE ENVIRONMENT AGENCY
(UPPER BLACK MOSS AND LOWER BLACK MOSS RESERVOIRS)
DROUGHT ORDER 2022

The Secretary of State for the Environment, Food and Rural Affairs grants this drought order to:-

Environment Agency
Horizon House
Deanery Road
Bristol
BS1 5AH

This drought order modifies condition 9.1 of licence 26 71 322 033 so that in condition 9.1 for the words 'shall make a continuous release of compensation water of not less than 2,682 cubic metres per day' there be substituted the words 'shall make a continuous release of compensation water of not less than 1,341 cubic metres per day'.

Note:

2,682 cubic metres is the equivalent of 2.682 Megalitres/ 31.04 litres per second
1,341 cubic metres is the equivalent of 1.341 Megalitres/ 15.52 litres per second
A day means any period of 24 consecutive hours

The water company shall use a meter that is capable of continuous measurement of the compensation flow from Black Moss Reservoir to Black Moss Water at National Grid Reference SD 82356 40997.

The Licence Holder shall record readings of the compensation flow every 48 hours during the whole of the period of the order, or at such other intervals as may be approved by the Agency in writing.

The water company shall ensure that environmental monitoring is undertaken as set out in Appendix 1, attached to this order.

This drought order commences from the effective date shown below and shall remain in force, unless revoked, until the date of expiry shown below.

All other provisions of full abstraction licence 26 71 322 033 relating to the Upper Black Moss and Lower Black Moss Reservoirs remain in full force and effect.

Signed

Date of issue.....<day/month/year>

Secretary of State
Department for Environment, Food
& Rural Affairs

Date effective

Date of expiry.....
(date not exceeding six months from the date of
becoming effective)

Appendix 1 Monitoring schedule

Fisheries Monitoring	
Assessment Type	<p>Visual monitoring “walkover surveys” of Black Moss Water, Barley Water, White Hough Water and Pendle Water to its confluence with Colne Water. National Grid Reference SD 82356 40997 to National Grid Reference SD 85907 39071. This is to identify environmental impact that may be affected or caused by the lowering compensation of flows. For each site specified (sites 1-5) a distance of a minimum of 500 metres upstream and 500 metres downstream from the stated National Grid Reference shall be surveyed.</p> <p>Monitoring shall take place at the 5 sites specified or at any other suitable location as agreed between the Environment Agency and United Utilities.</p>
Duration of Monitoring	<p>A baseline walkover undertaken prior to reduction of the compensation flow as per this order. This should be as close to the reduction of the compensation flow as possible. This is to establish pre-drought order baseline conditions.</p> <p>Surveys shall then take place weekly from the first day that the compensation flow to Black Moss Water from the Lower Black Moss Reservoir is reduced until the drought order expires or is revoked. Weekly reviews between United Utilities and the Environment Agency shall take place to determine whether weekly is the right frequency for surveys.</p>
Environmental Impact	<p>The following are suggested signs of environmental impact that the monitoring surveys shall look for but are not exhaustive.</p> <ul style="list-style-type: none">• Fish in distress, for example gasping at the surface or leaping out of the water.• Dead fish.• Concentration of fish in restricted areas/pools which could increase susceptibility to predation.• Inhibition of movement of fish past river structures or other barriers.• Reduced habitat availability for adult and juvenile life stages (including spawning/nursery areas).• Reduced depth of flow over brown trout redds.

	<ul style="list-style-type: none"> • Signs of polluting discharges during walkover surveys, impacts exacerbated during lower flows and/or reduced dilution. • Algal blooms. • Establishment and/or expansion of invasive non-native species. <ul style="list-style-type: none"> • upon finding any signs of environmental impact caused by the reduction in flow authorised by this Drought Order the water company shall notify the Environment Agency in writing and by telephone immediately on 0800 80 70 60 and shall provide details of the signs of impact and the location. • the water company shall undertake a remedial course of action to address the signs of environmental impact caused by the reduction in flow authorised by this Drought Order, as directed in writing by the Environment Agency. Any direction made verbally will be followed up in writing by the Environment Agency.
Monitoring Method & Standard of Assessment	<p>The following information shall be measured and recorded:</p> <p>For all environmental impact identified:</p> <ul style="list-style-type: none"> • The location of the site of environmental impacts observed. • A photo or photos shall be taken of any signs of environmental impact. • Weather conditions at the time of the observations. <p>Where relevant to the environmental impact observed:</p> <ul style="list-style-type: none"> • Approximate number of dead fish. • Any signs of damage or disease. • Approximate number of fish in distress, gasping at the surface or leaping out of the water. • Whether the fish are being stranded in shallow pools. • Depth of water over brown trout redds • Description of structures and stretches of any watercourses that have no flow or significantly reduced flow. • Approximate size of the fish affected. • The species affected. • Signs of pollution. • Presence of algal blooms/scums. • Species, location and extent of invasive non-native species.
Frequency of monitoring	Weekly (but not within three calendar days of the previous survey)
Location of Monitoring	<p><u>Black Moss Reservoir to Ogden outflow</u> (Black Moss Water and Barley Water) <u>Site 1</u> Black Moss Water downstream of Black Moss Reservoir, EA ID 72525, National Grid Reference SD 82134 40639 This is the downstream site closest (~0.5 km) to the Lower Black Moss Reservoir and where the lowest river flows are likely to be experienced, as it is prior to the confluence with the Ogden Reservoirs outflow. <u>Site 2</u></p>

	<p>Barley Water, prior to confluence Pendle Water, EA ID 37747, National Grid Reference SD 82215 40337</p> <p>This site is downstream of Barley village but prior to the confluence with Ogden_Reservoirs outflow, hence is also in the reach where lowest river flows are likely to be experienced with a minor influence of urbanisation.</p> <p><u>Ogden Outflow to Blacko Water confluence</u> (White Hough Water and Pendle Water)</p> <p>No existing Environment Agency sites</p> <p><u>Site 3 :</u></p> <p>In White Hough Water between Ogden outflow and a weir located at SD 82813 40286 (Obstruction ID 19776)¹⁵</p> <p><u>Site 4</u></p> <p>In White Hough Water between the weir above and another weir located at SD 83974 40006 (Obstruction ID 20167)</p> <p><u>Blacko Water confluence to Colne Water confluence</u> (Pendle Water)</p> <p>No existing Environment Agency sites</p> <p>This reach will experience the best flow conditions due to the accretion of tributaries to this point, particularly Black Water, the main tributary of Pendle Water. Hence it is the lowest priority in terms of fish monitoring. As this reach contains at least 7 potential obstructions resources should be focused on one monitoring site.</p> <p><u>Site 5</u></p> <p>In Pendle Water between the confluence with Blacko Water and a weir located at SD 86096 40622 (Obstruction ID 22386)</p>
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Water Quality monitoring

<p><u>Scope of monitoring</u></p>	<p>Black Moss Reservoirs</p> <ul style="list-style-type: none"> • Spot measurements of the following key water quality parameters shall be taken: <ul style="list-style-type: none"> ○ Dissolved Oxygen (milligrams per litre and percentage saturation) ○ temperature ○ conductivity ○ pH ○ salinity • No more than 12 and no less than 6 locations shall be monitored per reservoir per survey • At each site in situ water quality monitoring data shall be collected using a multiparameter water quality meter. • Measurements shall be recorded at depth intervals of at least 0.5 m from the surface to the bed. This will enable any stratification to be determined • Monitoring shall take place at least once prior to reduction of the compensation flow • Monitoring shall take place once during the period when the compensation is reduced to 1.341 MI/d. This is to be reviewed depending on conditions
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Black Moss Water

- A water quality meter (e.g. sonde) measuring dissolved oxygen, turbidity and temperature shall be installed below Black Moss Reservoir at National Grid Reference SD 82348 40981
- The water quality meter (e.g. sonde) shall measure the following water quality parameters every 15-minutes
 - temperature
 - turbidity
 - dissolved oxygen
 - pH
 - ammonium
 - chlorophyll
- The water quality meter (e.g. sonde) shall alarm at pre-set triggers as agreed by either an expert ecologist or the Environment Agency. The water company shall regularly review the data set in agreement with an expert ecologist and regular review of the data by the Environment Agency. Triggering of alarms in parallel with signs of fish in distress may implement the fish rescue plan.
- At a minimum of 30 minutes prior and a minimum of 30 minutes after the period when the compensation flow is reduced to 1.341 Ml/d, the water quality meter (e.g. sonde) shall record the water quality parameters listed above every 5 minutes.