

Annexe 7 – Weecher Reservoir, DP2022-NE0270016031

A. Summary of the proposal

Yorkshire Water Services Limited (YW) is applying for drought powers under the Water Resources Act 1991 (as amended by Environment Act 1995) to replace the conditions under the Baildon Local Water Act 1890. The Act permits abstraction of water from Weecher Reservoir, Baildon, West Yorkshire.

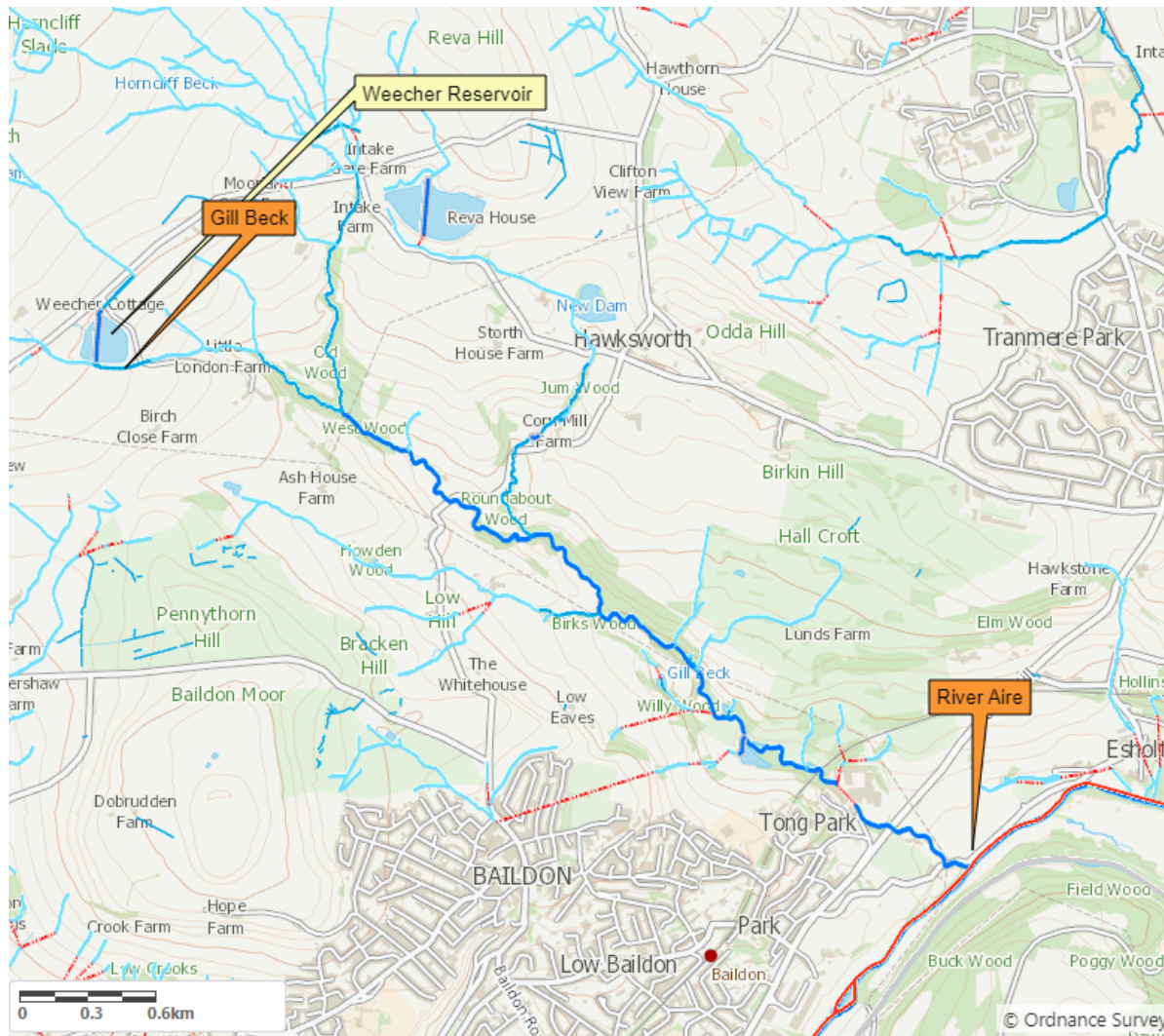


Figure 1: Weecher Reservoir (Compensation Water Source) and Weecher Brow Beck and the River Aire (Receiving Watercourse)

Under the Baildon Local Water Act 1890 YW must release water from Weecher impoundment Reservoir to compensate the Weecher Brow Beck. YW do not hold a licence for this movement of water.

The Baildon Local Water Act 1890 currently states that YW must release not less than 110,273 gallons (0.501 MI) per working day Monday to Saturday to compensate the downstream water course, the Weecher Brow Beck. YW currently operate the compensation release under an agreement held with the Agency to discharge 0.43 MI/d.

YW are applying for a drought permit to reduce the compensation release required to 0.215 MI/d. There would be a further reduction to 0.143 MI/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

The Drought Permit has been applied for due to an exceptional shortage of rainfall in the area. The proposed reduction of the compensation release will help to conserve water levels in the Weechee Reservoir to maintain public water supply during winter 2022 – 23 and increase the chance of returning to normal reservoir levels by April 2023.

The proposed reduction in compensation release has been requested until 31 March 2023.

B. Details of proposal

Compensation release details	Existing details	Drought permit application changes
Location of discharge	Weechee Reservoir	No change
Duration of drought permit	N/A	Up to and including 31 March 2023
Point of discharge	SE 13819 41994	No change
Rate of compensation release	0.501 MI/day	0.215 MI/day <u>If reservoir levels below Drought Control Line:</u> 0.143 MI/day

Drought permit further conditions

See section G for recommendations of the drought permit.

C. Quantities

There are no abstraction quantities associated with this application for a drought permit. Please see sections A and B for details of the existing and proposed compensation release quantities.

D. WFD

This application is outside the Abstraction Licensing Strategy process. This is because it relies on drought powers to address exceptional circumstances. However, the proposal still needs to be Water Framework Directive (WFD) compliant. The proposal will be assessed against the WFD statuses, including identifying the risk of any temporary deterioration of status.

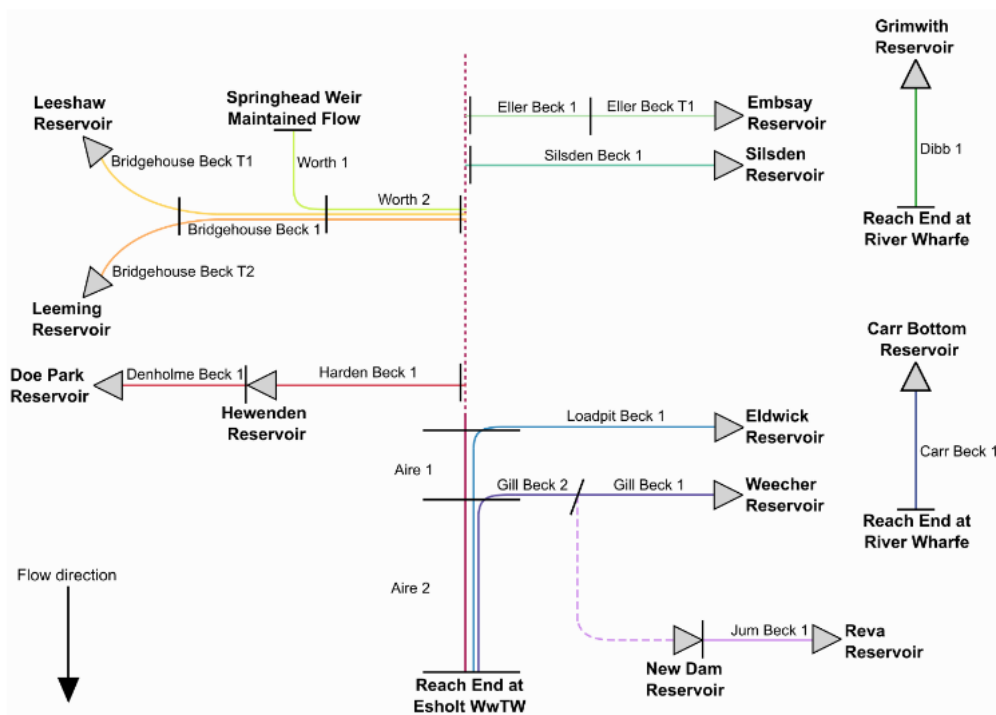


Figure 2: North West Area reservoirs drought permits reach schematic

Leeming Reservoir is hydrologically linked to the following reaches (as shown above in Figure 2):

- Gill Beck 1 - Gill Beck (Baildon) from Source to River Aire (GB104027062940)
- Gill Beck 2 - Gill Beck (Baildon) from Source to River Aire (GB104027062940)

The corresponding WFD waterbody has therefore been assessed in relation to the Weecher Reservoir drought option. Although Aire 1 and Aire 2 have been assessed with some of the reservoirs, we have followed Table 4.2 in YW's EAR which states that this drought permit does not significantly influence flow in those reaches.

Gill Beck (Baildon) from Source to River Aire (GB104027062940)

Weecher reservoir was not directly in a WFD waterbody, so we have used the waterbody supplied by YW in the EAR, which was the Gill Beck (Baildon) from Source to River Aire (GB104027062940). This is classed as a heavily modified waterbody. These are water bodies where there is a significant risk of failing to achieve a good ecological status because of modifications to their hydro-morphological characteristics. Therefore, they have a target of achieving Good Ecological Potential (GEP) rather than Good Ecological Status (GES). For heavily modified water bodies, flow is the first element assessed as part of the classification. If flow standards are passed, then potential is based on a combination of mitigation measures and 'non-sensitive' quality elements. For river water bodies, these consist of the physico-chemical, specific pollutants and phytobenthos elements. If flow standards fail, then potential is based on the worst result of either the mitigation measures assessment or any of the quality element assessments.

Consideration	Status		
	Baseline status (2015)	Cycle 2 current status (2019)	Cycle 2 Objective
Overall WB status	Moderate	Moderate	Good by 2027
Ecological potential	Moderate	Good	Good by 2027
Fish	Moderate (Quite Certain)	Good	Good by 2027
Invertebrates	High	High	Good by 2015
Macrophytes and Phytobenthos combined	High	High	Good by 2015
Phytobenthos	High	High	-
Hydrological regime	No data	Not assessed	Not set
Mitigation measures	Moderate/Less	Good	Good by 2027
Physico-chemical	High	Good	Good by 2015
Chemical	Good	Fail (Uncertain)	Good by 2015

Table 1: Gill Beck (Baildon) from Source to River Aire, GB104027062940 (Heavily modified)

Reasons For Not Achieving Good:

Hydrological regime – The hydrological regime element is not assessed for this surface water body, and therefore classification follows the pathway of flow conditions fail. Certain heavily modified waterbodies are no longer classified for hydrological regime where the hydrological regime test is not sufficient due to the nature of the waterbody. In this instance, ecological potential is based on the worst result of either the mitigation measures assessment or any of the quality elements.

Chemical – The chemical WFD status is classed as Fail (uncertain) due to the WFD status of mercury which is classed as fail but awaiting measures to address the reason for failure.

WFD objectives assessment:

- The objective for hydrology regime has not been set as the waterbody has not been assessed for flow.
- The objectives of Good by 2027 indicates the long-term ambition for the waterbodies as it is technically feasible to fix the issues, but these were not funded in the Cycle 2 plan. In the Cycle 3 plan these objectives will be revised and if the required fixes are still not funded the deadline could be extended again.
- Where we have a baseline (2015) status of 'Good' then our objective has been set as Good by 2015. This is because the waterbody is already meeting its default objectives, and nothing less than good can be predicted as this would go against the directive.

Risk of deterioration of elements:

Gill Beck 1 - Gill Beck (Baildon) from Source to River Aire (GB104027062940)

Fish – YW's EAR states that the combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a major risk to the fish component of the WFD GB104027062940 Gill Beck (Baildon) from Source to River Aire (associated with Gill Beck 1). The duration of impacts could be up to 6 months. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be **moderate** however, there are uncertainties relating to the fish community within the impacted reach as limited survey data is available.

Invertebrates – YW's EAR states that the combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a major risk to the macroinvertebrate component of the GB104027062940 Gill Beck (Baildon) from Source to River Aire waterbody (associated with Gill Beck 1). The duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be **moderate**.

Macrophytes and Phytobenthos – This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Hydrological Regime – Not assessed.

Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Physico-chemical – There is one sample point in this reach, Gill Beck at Potter Brow Bridge (NE-49405107), however the data is highly limited, as such the first location in the downstream reach (Gill Beck 2), Gill Beck (Baildon) At Otley Road Bridge (NE-49400999), has been used. There are no significant continuous or intermittent discharges into Gill Beck 1. There is a minor risk to total ammonia and oxygen in this reach due to the drought option. There is a **moderate** risk to phosphates as a result of this drought option associated with a change in dilution of pollution pressures.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a risk to physico-chemical parameters then it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Gill Beck 2 - Gill Beck (Baildon) from Source to River Aire (GB104027062940)

Fish – Considering the hydrological impacts and the moderate risk of water quality deterioration in the reach, the risk to the WFD status of the fish elements of waterbody WFD GB104027062940 Gill Beck (Baildon) from Source to River Aire (associated with Gill Beck 2) is considered to be **moderate**.

Invertebrates – The combined physical environment changes (river flows, river habitat and water quality) as a result of the implementation of the drought option are predicted to present a major risk to the macroinvertebrate component of the GB104027062940 Gill Beck (Baildon) from Source to River Aire waterbody (associated with Gill Beck 2). The duration of impacts could be up to 6 months. However, the macroinvertebrate community recovery is expected to be relatively quick due to effective re-colonisation strategies in macroinvertebrates. Therefore, the risk to deterioration of the WFD status of the waterbody is considered to be **moderate**.

Macrophytes & Phytobenthos - This element is screened out of the impact assessment as neither are deemed to be impacted by changes in flow. Wetted width reduction would not result in a deterioration of status due to the way monitoring is carried out. Reduced dilution of phosphate caused by drought option implementation may have an impact if P deterioration is predicted but would be temporary and unlikely to impact on either status. We don't believe this drought option poses any risk to the deterioration of macrophyte or phytobenthos status.

Hydrological Regime – Not assessed.

Mitigation Measures – The drought permit will not exacerbate this particular classification as it will not result in changes to the physical modification structures.

Physico-chemical – There is one sample location in Gill Beck 2, as such Gill Beck (Baildon) At Otley Road Bridge (NE-49405107), has been used. There are no significant continuous or intermittent discharges into Gill Beck 2. There is a minor risk to total ammonia and oxygen in this reach due to the drought option. There is a **moderate** risk to phosphates as a result of this drought option associated with a change in dilution of pollution pressures.

Chemical – The EAR has not assessed the specific chemical parameters that are the cause of failure in the EA's catchment planning system. However as there is a risk to physico-chemical parameters then it is reasonable to state there may be a risk to chemical parameters due to the same pathway. Although there is a risk of potential further deterioration to this element, it's considered that the mitigation measures will be sufficient to protect against this.

Risk of Deterioration: A summary for all Reaches

Although YW EAR identifies that there is a possible moderate or major risk to certain WFD elements as a result of this drought option (Fish, Invertebrates, Physico-chemical, Chemical), we are satisfied that the monitoring and mitigation conditions included within the drought permit mitigates any possible risk of deterioration in the status of WFD elements (Fish, Invertebrates, Physico-chemical, Chemical). If the monitoring schedule identifies any impacts to the WFD elements as a result of this drought permit, then reactive mitigation will be carried out, dependent on the problems identified. Additionally, should any environmental problems be identified, YW will increase their compensation flows as laid out in the relevant permit.

E. Impact on ecology and conservation sites

Conservation sites

The sites, species and habitats listed in the table below are within the 5km reach from the point of the compensation release at Weecher Reservoir to the cumulative reach of the River Aire.

The River Aire downstream of that confluence has potential to be cumulatively affected by reservoirs in YW's North West area reservoir group. Please refer to the main determination report for this group of reservoirs for further details.

Nearest conservation sites (distance searched – 5 km downstream)			
Designation types	Name of site	Distance downstream	Potential Impact
Special Areas of Conservation (SACs)	None	N/A	N/A
Ramsar sites	None	N/A	N/A
Special Protection Areas (SPAs)	None	N/A	N/A
Sites of Special Scientific Interest (SSSIs)	None	N/A	N/A
Groundwater Dependent Terrestrial Ecosystems (GWDTEs) that are not designated as SSSIs	None	N/A	N/A
National Nature Reserves (NNRs)	None	N/A	N/A
Local Nature Reserves (LNRs)	None	N/A	N/A
Ancient Woodland	Old Wood – West Wood – Great Wood	0.6 km	Assessed under the LWSs below.
	Hawksworth Spring	2.0 km	
Scheduled Ancient Monuments (SAMs)	None	N/A	N/A
Local Wildlife Sites (LWSs)	Great Wood – West Wood	0.6 km	Assessed in Environmental Assessment Report (EAR) Table B2.68 and Table B2.69 - unlikely to be in connectivity with impacted reach or support aquatic receptors. Not

	Tong Park with Hawksworth Spring Wood	2.0 km	sensitive. Likely to be in connectivity with impacted reach and support aquatic receptors. Low sensitivity. Risk to Tong Park LWS deemed to be negligible or minor and no mitigation required. Risk to Hawksworth Spring Wood LWS deemed to be moderate on the aquatic receptors and has been included in the monitoring and mitigation plan Appendix A2.
National Parks	None	N/A	N/A
Areas of Outstanding Natural Beauty (AONBs)	None	N/A	N/A
Heritage Coast	None	N/A	N/A
Restoring Sustainable Abstraction (RSA) Programmes	None	N/A	N/A
Protected Species	Brown/sea trout *	3.9 km	Impact on these species has been assessed in YW's EAR and appropriate monitoring and mitigation has been included in Appendix A.2.
	Bullhead *	3.9 km	
Protected Habitats	Deciduous woodland *	0.6 km	Unlikely to be in connectivity with impacted reach or support aquatic receptors.
Invasive Non-native Species	Northern River crangonyctid *	1.6 km	The implementation of this drought option is not anticipated to increase the spread of Invasive non-native species.
	Himalayan balsam *	1.6 km	
	Fringed water lily	3.2 km	

Table 2: Conservation screening results

* There are several records of this feature within the screening distance, but only the closest record to the discharge point has been included in this table.

Local wildlife sites

There is likely connectivity between the Tong Park and Hawksworth Spring Wood local wildlife site (LWS) and the impacted reach. The risk to Tong Park LWS is considered negligible or minor and no mitigation is required. The risk to Hawksworth Spring Wood LWS is deemed to be moderate and the site has been

included on the monitoring and mitigation plan Appendix A2. These recommendations will be included in the proposed drought permit.

Protected fish species

There is a pathway for the drought permit to impact on fish species in the identified impacted reach. This has been assessed in YW's EAR and we agree with this assessment and the proposed monitoring and mitigation plan. Mitigation is set out in YW's EAR Appendix A.2 and this will be included on the drought permit.

Monitoring and mitigation

YW will be required to carry out the following monitoring and mitigation measures (which will be included in Appendix 1 and 2 of the Drought Permit):

Monitoring:

- IDMON_1: Surveillance walkover surveys of habitat quality and ecological stress, recording signs of environmental problems at:
 - Weecher Brow Beck between SE 15150 41384 and SE 15490 41207.
 - 500m located between SE 16199 40664 to SE 16444 40377
- Upon finding any signs of environmental problems the water company shall:
 - i) notify the Agency in writing and by telephone on 0800 80 70 60 and shall provide details of the signs of distress and the location;
 - ii) the water company shall undertake a remedial course of action to address the signs of environmental problems, as directed in writing by the Agency.

Mitigation:

- If, upon being notified of any signs of environmental problems, the Agency gives written notice that there is a disruption to the ecology, the water company shall increase compensation flow from Weecher Reservoir to Weecher Brow Beck and the River Aire at National Grid Reference SE 13819 41994 to a rate of not less than 430 cubic metres per day, or a lesser quantity if agreed in writing by the Agency.
- The increase in compensation flow to Weecher Brow Beck and River Aire shall continue until the Agency serves a subsequent written notice stating that the reduction in compensation flow in accordance with conditions of this drought permit may be resumed.
- The changes to the compensation water specified in the conditions of this drought permit shall be made in a steady and controlled manner at a rate so as not to cause any flooding of land or disturbance to water users downstream or any adverse effects on the quality of water in the inland water or any adverse impacts on the ecology of the inland water or dependent ecosystems.
- If, upon being notified by the Agency, or upon discovering by environmental monitoring, or through other evidence, that an increase in compensation flow is needed to support riverine ecology/trout and salmon species and/or improve water quality, as identified in the Water Company Environmental Monitoring Plan North West Area Appendix termed IDMIT_9 and IDMIT_17 the Water Company shall increase compensation flow at a time, to a rate and for a duration, as agreed in writing by the Agency, and release from Weecher Reservoir to Weecher Brow Beck and the River Aire at National Grid Reference SE 13819 41994, or other location as agreed in writing by the Agency.

F. Measurement

The discharge from Eldwick Reservoir is authorised under the Baildon Local Water Act 1890. There will be no change to the way the discharge is measured as part of this drought permit.

G. Recommendations

Based on the conclusions of the main determination report (section 14), the Agency has decided to grant a drought permit under section 79A of the Water Resources Act 1991 subject to conditions, as drafted and attached to this report. The drought permit will suspend the provisions of the Baildon Local Water Act 1890 during any period in which YW can abstract under the conditions of the drought permit.

The drought permit will be time limited to 31 March 2023 and will include the following conditions along with appendices detailing the monitoring and mitigation requirements.

Condition	Source of the condition wording
1.1 (i) Compensation Flow	Compensation flow reduced. Condition has been legally approved.
1.1 (ii) Compensation Flow	Compensation flow when regional reservoir stocks are below the Drought Control Line (as defined in YW Drought Plan 2022) for more than four consecutive weeks. Condition has been legally approved.
The following conditions will be included for environmental monitoring and mitigation. They have all been legally approved.	
2.1	Condition requiring YW to follow the monitoring set out in Appendix 1 of drought permit.
2.2	Mitigation actions to be undertaken by YW if environmental problems identified.
2.2.1 (i)	YW must notify Agency of any environmental problems.
2.2.1 (ii)	YW must formulate remedial course of action to address problems.
2.2.2	YW must increase compensation flow.
2.3	All changes to compensation flow must be made in a steady and controlled manner.
2.4	Freshet flows condition.
3.1	Drought permit only relied upon if Temporary Use Ban restrictions imposed and in force.

Table 3. Recommendations for permit.