

Licence Serial No:

SW/046/0005/001

Please quote the serial number in all correspondence about this licence



TRANSFER LICENCE TO ABSTRACT WATER

The Environment Agency ("the Agency") grants this licence to:-

Ms Julia Horne ("the licence holder")

The Mill House
Gara Bridge
Totnes
Devon
TQ9 7JT

This licence authorises the licence holder to abstract water from the source of supply described in the Schedule of Conditions to this licence and subject to the provisions of that Schedule. The licence commences from the effective date shown below and shall remain in force until the date of expiry shown below.

Signed

A handwritten signature in black ink, appearing to be "G Melhuish".

Graham Melhuish
Permitting Team Leader
Water Resources Permitting Support Centre
Environment Agency
Quadrant 2
99 Parkway Avenue
Sheffield
S9 4WF

Date of issue 28 April 2011

Date effective 28 April 2011

Date of expiry 31 March 2025

The licence should be kept safe and its existence disclosed on any sale of the property to which it relates. Please read the 'important notes' on the cover to this licence.

Note: References to "the map" are to the map which forms part of this licence.
References to "the Agency" are to the Environment Agency or any successor body.

SCHEDULE OF CONDITIONS

1. SOURCE OF SUPPLY

- 1.1 Inland water known as the River Avon at The Mill House, Gara Bridge, Totnes, Devon

2. POINT OF ABSTRACTION

- 2.1 At National Grid Reference SX 73182 53801 at the point marked 'A' on the map

3. MEANS OF ABSTRACTION

- 3.1 Gravity flow to a leat controlled by sluice gates

4. PURPOSE OF ABSTRACTION

- 4.1 (a) Transfer of water to leat for subsequent amenity use
(b) Transfer of water to leat for subsequent power generation using a 3 bladed Archimedean screw turbine

5. PERIOD OF ABSTRACTION

- 5.1 For purpose 4.1 (a) & (b): All year

6. FURTHER CONDITIONS

- 6.1 The hydropower scheme shall be constructed and operated so that a maximum flow of 1000 litres per second is allowed to pass through a 3 blade Archimedean screw turbine located at NGR SX 7297 5356 marked 'B' on the map.

- 6.2 The licence holder shall assess and record the quantity of water abstracted each day by reference to the kilowatt-hours generated as measured by a kilowatt-hours meter multiplied by the appropriate conversion factor. The conversion factor shall be approved in writing by the Agency.

The licence holder shall retain supporting documentation, including details of the methodology and calculations used to convert electricity generated to the quantities abstracted and make them available to the Agency as directed.

- 6.3 The abstraction of water for subsequent power generation shall only take place when the rate of flow in the River Avon immediately upstream of the authorised point of abstraction at point 'A' as specified in condition 2.1 above, is equal to or greater than 652 litres per second and the abstraction shall not cause the flow in the River Avon immediately downstream of the said point to fall beneath that rate. This rate shall be called the Hands off Flow.

- 6.4 Subject to the conditions above, no water shall be permitted to enter the 3 blade Archimedean screw turbine chamber until the minimum start up quantity for power production of 100 litres per second is available. This shall be known as the Start up Flow.

SCHEDULE OF CONDITIONS

6. FURTHER CONDITIONS (Cont'd)

6.5 Before any abstraction takes place the licence holder shall provide and install suitable electronic apparatus or devices at Gara Bridge marked 'C' on the map, or as otherwise directed by the Agency, to measure the Hands off Flow and Start up Flow in the River Avon as indicated in condition 6.3 and 6.4 above. The relevant apparatus/devices must be set up and working at all times when abstraction under this licence takes place. The licence holder shall maintain the apparatus/devices in such a condition, and if necessary replace it/them, so that it/they measure the Hands off Flow and Start up Flow accurately and efficiently.

6.6 No abstraction shall take place until the licence holder has provided and installed a calibrated gauge board, with clear visible markings, at Gara Bridge, or as otherwise directed in writing by the Agency, in the River Avon, indicating the water level required commensurate with the Hands off Flow as set out in condition 6.3 above.

The licence holder shall monitor and maintain the calibrated gauge board in such a condition, and if necessary replace it, so that it measures levels accurately, visibly and efficiently.

6.7 In the event of an electrical and/or mechanical failure of the operational automated control system, the 3 blade Archimedean screw turbine must shut down until the fault is rectified. The automated control system must default to shut down in a fail-safe mode.

6.8 Notwithstanding the purposes authorised for abstraction as described in condition 4.1(a) and 4.1(b) above, this licence shall only take effect so as to authorise the abstraction provided that the licence holder has constructed an Agency-approved fish passage notch structure in the weir, marked 'notch' on the map, or as directed by the Agency.

The notch shall be capable of measuring and maintaining a flow of 300 litres per second at all times that abstraction as authorised in condition 4.1(b) is taking place.

Notwithstanding the requirement to maintain 300 litres per second in the notch there is no obligation on the licence holder to augment the flow in the notch if the river flow above the weir is naturally so low (below 300 litres per second), that no abstraction under 4.1(b) is taking place

6.9 No abstraction shall take place until the licence holder has provided and installed a calibrated gauge board, with clear visible markings, in the weir notch as required in condition 6.8 above, or as otherwise directed in writing by the Agency, indicating the water level required commensurate with the 300 litres per second flow providing clear visible evidence of compliance with condition 6.8 above.

The licence holder shall monitor and maintain the calibrated gauge board in such a condition, and if necessary replace it, so that it measures levels accurately, visibly and efficiently.

SCHEDULE OF CONDITIONS

6. FURTHER CONDITIONS (Cont'd)

- 6.10 Unless otherwise directed in writing by the Agency, and before any water is abstracted under this licence the licence holder shall install a screen that will ensure that all water entering the turbine intake at National Grid Reference SX 72973 53557 shall be protected against the ingress of fish. The standard of screen protection shall be equivalent to that achieved by a 10mm aperture screen. The licence holder shall construct, maintain and repair or replace the screen in such a manner to provide the necessary standard of protection.
- 6.11 Unless otherwise directed in writing by the Agency, and before any water is abstracted under this licence the licence holder shall ensure that all water discharging from the turbine via the tailrace into the River Avon at National Grid Reference SX 72973 53557 shall be protected against the ingress of fish.
- The standard of protection shall be equivalent to that achieved by a 20mm aperture screen. The licence holder shall construct, maintain and repair or replace the screen in such a manner to provide the necessary standard of protection.
- 6.12 The licence holder shall undertake a fish monitoring programme as directed by the Agency and within the period of validity of this licence. The licence holder shall discuss the need, content, extent and duration of a fish monitoring programme with the Agency prior to any abstraction taking place. The Agency will confirm the need, content, extent, timing, duration and analysis requirements in writing with the licence holder.
- 6.13 Notwithstanding the abstraction authorised under this licence, the licence holder shall suspend the operation of the 3 blade Archimedean screw turbine if, upon confirmation in writing by the Agency, a significant impact on fish migration and welfare is identified as a result of the fish monitoring programme. The licence holder shall not recommence power generation until the licence holder has confirmed in writing that appropriate remedial action has been taken.
- 6.14 No water shall be abstracted for the transfer of water to use the Archimedean screw turbine unless fish protection modifications have been made to the hydrodynamic turbine, as detailed in drawing 1 attached to this licence.
- The licence holder shall maintain, repair or replace the fish protection modifications so they remain effective and prevent physical damage to fish.

SCHEDULE OF CONDITIONS

6. FURTHER CONDITIONS (Cont'd)

- 6.15 Notwithstanding the subsequent purpose for the abstraction of water as set out in condition 4.1(a) the licence holder is further authorised to maintain an amenity flow in the leat of up to 35 litres per second to maintain the integrity of the leat between point 'A' and point 'D' on the map.

The licence holder shall provide, install, monitor, maintain and if necessary renew, suitable calibrated apparatus/device approved by the Agency and be capable of continuous measurement to ISO748 or other such standards as are agreed in writing by the Agency before any abstraction takes place.

The licence holder shall maintain the apparatus/device in a condition so as to monitor the amenity flow of up to 35 litres per second accurately and efficiently and shall calibrate it regularly and replace it as necessary.

- 6.16 Notwithstanding that the licence may otherwise remain in force until revoked, the modification and refurbishment works to infrastructure necessary for abstraction authorised under this licence shall cease to be of any effect if said works and abstraction for subsequent power generation have not commenced within 3 years of the date of issue of this licence.

- 6.17 The licence holder shall notify the Agency in writing within 5 working days after the transfer of water under this licence for subsequent power generation first starts.

ADDITIONAL INFORMATION

Note: the following information is provided for information only. It does not form part of the licence.

REASONS FOR CONDITIONS

The licence is time-limited to a date to reflect the timing of a future review of the catchment resources availability.

The licence includes a hands off flow condition to protect the environment and the interests of existing upstream and downstream lawful users of water.

The licence includes a 'self-destruct' condition in order to secure the proper use of water resources and to avoid commitment of water resources to an abstraction right which can not be exercised.

The licence includes environmental monitoring conditions to allow further assessments of the impact of the abstraction at the end of the time-limited period.

IMPORTANT NOTES

The Agency may have regard to its *Screening for Intakes and Outfalls*

– *A best practice guide (WR-103TR)* in directing where the screens should be located or the type and standard of screen to be installed so that the screens protect against the ingress of fish to the required standard.

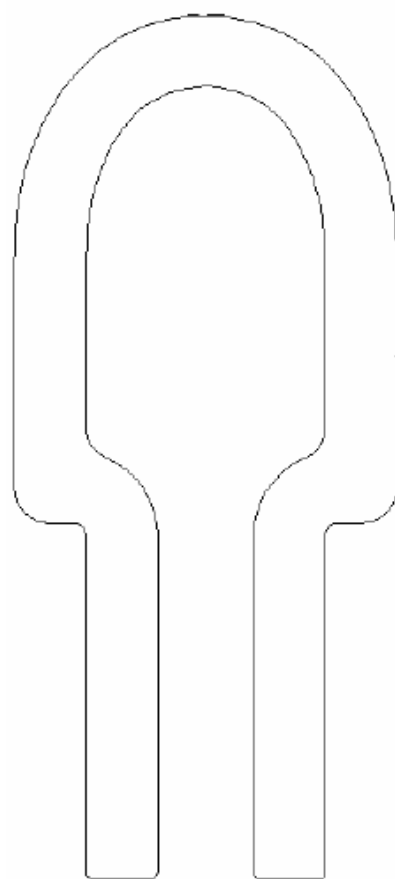
Water efficiency note

The licence holder should use water abstracted under the terms of this licence in an efficient manner. The Environment Agency may refer to its Guidance on water efficiency (or equivalent guidance) in determining whether water is being used efficiently and may offer advice on any measures considered necessary to meet particular recommendations.

Drawing 1

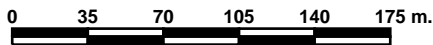
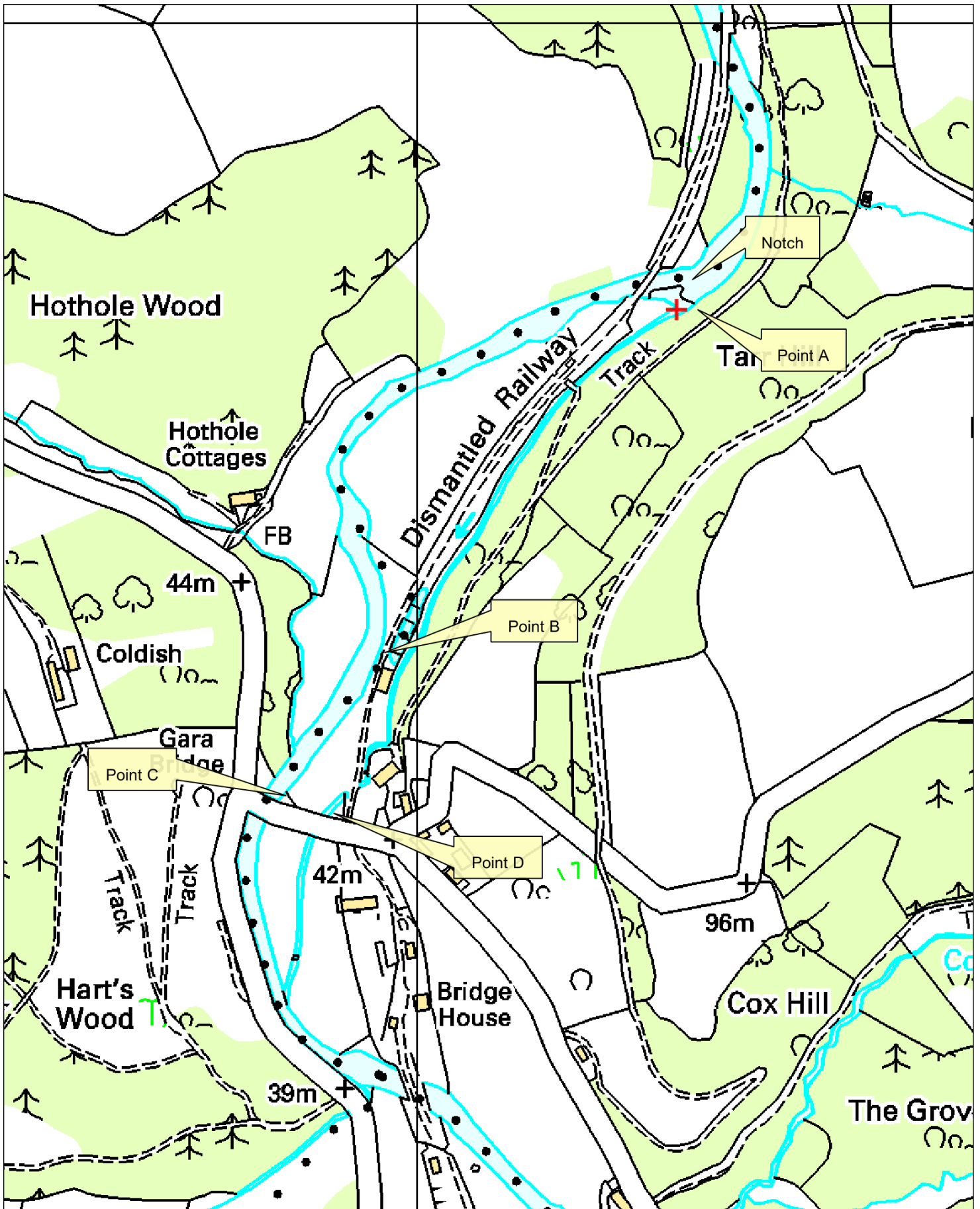
Required profile for a compressible bumper to fit the leading edge of the Archimedes Screw hydropower turbine.

Not to scale



Specification of EPDM rubber extrusion

35mm of compression with a force of 2Kg per cm² applied. All fixing bolts must be sub flush to the clamp plates.



**MAP ACCOMPANYING LICENCE NUMBER
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Scale 1:3,500



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