

Application number:

NPS/WR/029875

Licence number:

AN/034/0002/010

EA Region:

East Anglia (Essex, Norfolk and Suffolk)

Date of Application:

27 March 2019

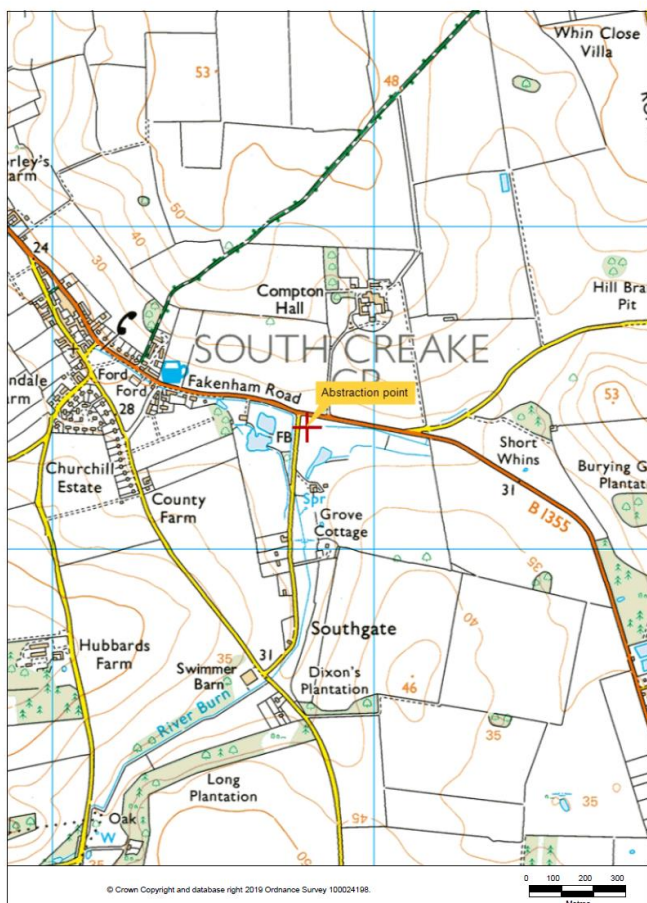
Applicant details:

William George Topham,
George Topham; and
Jean Papworth
trading as Woodhall Farm Partnership
North East Farm
Cambridge Road
Eltisley
St Neots
PE19 6TR

Summary of the proposal:

The applicant, Woodhall Farm Partnership, have applied for a new full abstraction licence for the purpose of reservoir storage and subsequent spray irrigation. Abstraction is from an unnamed tributary (drain) of the River Burn for the period 01 November to 30 April each year.

The position of the abstraction can be seen from the map below.



Source of Supply:

Tributary (drain) of the River Burn.

Points of abstraction and quantities:

TF 86793 35376

Between 01 November and 31 March

108 cubic metres per hour (m³/h)

2,592 cubic metres per day (m³/d)

200,000 cubic metres per year (m³/y)

At a maximum instantaneous rate of 30 litres per second (l/s)

Between 01 April and 30 April

108 m³/h

2,592 m³/d

60,000 m³/y

At a maximum instantaneous rate of 30 l/s

Total aggregate annual quantity shall not exceed 200,000 m³/y

Means of abstraction:

Side sump and floating pump.

Purpose of abstraction:

Reservoir storage for subsequent spray irrigation.

Abstraction period:

01 November to 30 April inclusive.

Case history:

A pre-application was submitted on 02 November 2018. The pre-application had two differences from the formally submitted application. These differences were:

1. The abstraction point was further upstream at National Grid Reference TF 86646 34570.
2. The applicant had not requested a split in quantities between 01 November to 31 March and 01 April to 30 April.

The pre-application advice letter was sent to the Applicant on 06 December 2018. A formal application was then received on 25 March 2019.

The application was accepted on 11 April 2019 and advertising was published in the Dereham & Fakenham Times on 25 April 2019.

Statutory notification was sent to the Water Undertaker (Anglian Water Services Ltd) on 17 April 2019 and formal consultations were sent to Norfolk Wildlife Trust and Natural England on 04 and 05 June 2019 respectively. Natural England responded on 15 July 2019 to confirm they had no objections to the proposal. No response was received from Norfolk Wildlife Trust.

Justification of quantities:

This application is for an annual quantity of 200,000 m³/y abstracted between November to April from a drain off of the River Burn and to be stored in an as yet to be constructed reservoir of 220,000 m³ capacity, for subsequent spray irrigation use.

The Applicant holds two other licences for spray irrigation use; Licence Nos; 7/34/02/*G/0024 and 7/34/02/*G/0177, which authorise abstraction of 136,500 m³/y and 55,900 m³/y, respectively. This gives a total abstraction of 392,400 m³/y across all 3 licences. The Applicant submitted calculations that that the crops they grow across the land (hectares) they farm would require 920,500 m³/y. Our own calculations using the Optimum Use Manual suggests 978,350 m³/y would be required.

The Applicant has been able to show that the water requirements for this new licence are justified.

Resource assessment:

The proposed abstraction is located on a tributary of the upper reach of the River Burn. The Catchment Abstraction Management Strategy (CAMS) assessment point for the Burn is located at the Burnham Overy gauging station approx. 9km downstream and drains a surface area of 80 km².

During low flows the River Burn exhibits characteristic Karstic (limestone) behaviour. When flows at Burnham Overy fall below 120 l/s (\approx Q91) a 2 km reach of the river between South Creake and North Creake may cease to flow. This is a natural phenomenon caused by groundwater levels declining below the bed level over a relatively flat reach of the river.

The abstraction point is within the Assessment Point (AP) 1 – River Burn, in the North Norfolk abstraction licensing strategy.

The water availability is as follows:

Q Percentile	Water Resources availability colour	Water resource status
Q30	Green	Water available for licensing
Q50	Green	Water available for licensing
Q70	Green	Water available for licensing
Q95	Yellow	Restricted water available for licensing

Therefore water is available more than 70% of the time for consumptive abstraction.

AP	Name	Water Resource Availability Colour	HOF Restriction (MI/d)	Number of days per annum abstraction may be available	Approximate volume available at restriction (MI/d)	Is there a gauging station at this AP?
1	River Burn	Yellow	8.04 (Q95)	347	1.56	Yes – at Burnham Overy

Assessment Point (AP) 1 – River Burn, in the North Norfolk abstraction licensing strategy. Reading across the columns you can see the potential HoF that may be applied to a licence, the number of days water may be available under this restriction and the approximate volume of water in MI/d that may be available etc. The Q95 flow at Burnham Overy equals approx. 93 l/s.

We have no historic flow gauge records for the abstraction point tributary. Flow modelling software (Qube) gives a catchment area of 15.3 km² to the point of abstraction and estimates the influenced mean flow and Q95 to be 90 l/s and 25 l/s, respectively. However this is very likely to be an overestimate given that we have a recorded mean flow and Q95 of 56 l/s and 12 l/s respectively at South Creake gauging station (Station No.34050, 1999-2019, catchment area = 26.6 km²), approximately 300 m downstream of the abstraction point.

A Hands-off Flow set at South Creake which when cross-referenced against Burnham Overy is greater than at least Q95 (93 l/s) at Burnham Overy means water is available for abstraction upstream of South Creake.

Impact assessment of proposal:

The licence will need to be conditioned in such a way to adequately protect the environment and prevent derogation of downstream water rights.

Park Farm Partners licence (AN/034/0002/003) downstream has a Hands-off Flow (HoF) condition, which is the flow that must be remain in the watercourse prior to and during abstraction. The HoF is 180 l/s at Burnham Overy gauging station and with a maximum abstraction rate of 46 l/s, a flow of 226 l/s needs to be protected.

The Southerland licence (AN/034/0002/006/R01) downstream is required to provide a compensation flow if Burnham Overy gauging station drops below 182 l/s.

To apply a HoF to the Woodhall licence that would protect the downstream abstractors and the environment, it was necessary cross reference flows at Burnham Overy gauging station against those at South Creake gauging station. Based on this analysis, a flow of 40 l/s at South Creake equalled a flow of 226 l/s at Burnham Overy. A flow of 40 l/s is approx. Q50 in the River Burn, therefore a HoF of 40 l/s at Woodhall will protect the downstream abstractors and will not affect flows less than Q50 in the River Burn.

To protect the environment, the abstraction should comply with the CAMS Environmental Flow Indicator (EFI). The table below shows the percentages of natural flow that can be abstracted at certain flow percentiles under three different abstraction sensitivity band (ASB) scenarios.

Abstraction Sensitivity Band	Q30	Q50	Q70	Q95
ASB 1 low sensitivity	30%	26%	24%	20%
ASB 2 moderate sensitivity	26%	24%	20%	15%
ASB 3 high sensitivity	24%	20%	15%	10%

The River Burn has been given an ASB of 2 (moderate sensitivity). The ASB 2 flow targets above apply to the CAMS assessment point (AP) at Burnham Overy gauging station under a fully licensed abstraction scenario (all applicable licences taking the maximum quantities they are authorised to.)

Flow Statistic	Natural flow at South Creake (m ³ /s)	Fully Licensed flow at South Creake (m ³ /s)	Abstraction Impact (m ³ /s)	Abstraction % Impact
Mean	0.055	0.045	-0.010	-18
Q30	0.068	0.052	-0.016	-23
Q50	0.043	0.037	-0.007	-15

Including the Woodhall licence, the worst case fully licensed impact from the Table above shows a maximum deviation from the natural flow duration curve of -16 l/s (-23%) at the Q30. If South Creake gauging station were treated as a CAMS assessment point then the impact of the proposed abstraction would not cause a failure of an equivalent local EFI because the CAMS approach allows for 24% of the natural flow to be taken at the Q50 and 26% at the Q30 (for an ASB 2 river).

Our assessment of flows in the River Burn included gauged data and spot flow data, which suggested the flow dries up in the Burn at Burnham Thorpe (downstream of North Creake) when the flow at South Creake is 12 litres per second and less. A HoF of 40 l/s on the Woodhall licence would prevent the abstraction causing this issue, but a back-up condition to visually check the flow at North Creake has been included to give added protection. If there is no flow at North Creake, no abstraction at Woodhall can occur.

A Hands-off Flow set at 40 l/s at South Creake gauging station, or if there is no flow at North Creake, protects the rights of downstream abstractors and the needs of the environment.

The following Hands-off Flows were applied to the licence.

9.1	No abstraction shall take place unless the rate of flow in the River Burn, as gauged by the Agency at its flow gauging station at South Creake at National Grid Reference TF 86537 35464, is equal to or greater than 40 litres per second as may be notified by the Agency and the abstraction shall not cause the flow immediately downstream of the said reference point to fall below that rate. The Agency's said gauging of the flow shall be conclusive. This shall be known as the 'hands off flow.'
9.2	Abstraction shall not exceed 15 litres per second unless the rate of flow in the River Burn, as gauged by the Agency at its flow gauging station at South Creake at National Grid Reference TF 86537 35464, is equal to or greater than 55 litres per second as may be notified by the Agency. The Agency's said gauging of the flow shall be conclusive.
9.3	Abstraction shall not exceed 30 litres per second unless the rate of flow in the River Burn, as gauged by the Agency at its flow gauging station at South Creake at National Grid Reference TF 86537 35464, is equal to or greater than 70 litres per second as may be notified by the Agency. The Agency's said gauging of the flow shall be conclusive.
9.4	No abstraction shall take place when there is no flow in the River Burn at North Creake crossroads bridge at National Grid Reference TF 85394 38134 marked 'X' on the map.

Statutory Consultation:

The only statutory consultee was Anglian Water Services Ltd who did not respond to the statutory notification.

External Representations:

In total, 14 representations were received, all outside of the 28 day representation window following the publication of the advert. Due to the level of public interest a decision was taken to allow the representations to be considered 'out of time.' Thirteen of the representations objected to, or had concerns with the proposal, and one representation was in support of the proposal.

A number of themes were raised within representations. These are summarised below with reference made to how they have been addressed.

Theme 1: Concerns have been expressed regarding whether the abstraction is sustainable.

A Hands-off Flow of a minimum of 40 l/s at South Creake ensures the abstraction is sustainable for other protected rights and the environment.

Theme 2: Concerns have been expressed regarding the fact The River Burn can periodically dry in places and that increased abstraction from this licence could increase the potential for the River Burn to dry up.

A Hands-off Flow of a minimum of 40 l/s at South Creake ensures the abstraction is sustainable for other protected rights and the environment and includes a condition not to abstract if no flow is witnessed in the River Burn at North Creake.

Theme 3: There are concerns relating to declining flows within the River Burn as a result of other abstraction licences, mainly from multiple borehole abstraction.

A Hands-off Flow of a minimum of 40 l/s at South Creake ensures the abstraction is sustainable for other protected rights and the environment and includes a condition not to abstract if no flow is witnessed in the River Burn at North Creake.

Theme 4: The potential for impact upon, ecosystems, protected species, and insect and invertebrate populations (particularly eel and trout).

A Hands-off Flow of a minimum of 40 l/s at South Creake ensures the abstraction is sustainable for the environment and includes a condition not to abstract if no flow is witnessed in the River Burn at North Creake. There will also be a condition that will require the applicant to include a screen on the abstraction pump to prevent the entrapment of eels or fish.

Theme 5: Concerns have been expressed regarding potential to impact water quality.

A Hands-off Flow of a minimum of 40 l/s at South Creake ensures the abstraction is sustainable for other protected rights and the environment, including water quality and includes a condition not to abstract if no flow is witnessed in the River Burn at North Creake.

Theme 6: Potential to impact upon Creake Abbey Scheduled Ancient Monument.

Historic England were consulted on 12 September 2019 in this regard. No response was received from Historic England. As a result this has been deemed as a 'no comment' response and therefore not a concern for Historic England.

Theme 7: The impact this abstraction could have on the Environment Agency's Biodiversity Action Plan dated 01 April 2019 for chalk streams.

A Hands-off Flow of a minimum of 40 l/s at South Creake ensures the abstraction is sustainable for the environment and includes a condition not to abstract if no flow is witnessed in the River Burn at North Creake. These conditions ensure this proposal will not be a barrier to the Biodiversity Action Plan.

Theme 8: Statements indicating that the applicant should be using a storage reservoir and that there should be no further borehole abstractions within the catchment.

This appears to be a misunderstanding of the proposal? This is an application to include a storage reservoir and will be from surface water rather than groundwater.

Theme 9: Request to put the application on hold to give local parties an opportunity to put forward representations.

As indicated above, this request was agreed and representations have been considered outside of the 28 deadline.

Theme 10: Request for a public meeting to discuss the application.

As indicated above, the Environment Agency agreed to attend a public engagement meeting and this took place on the 4th September 2019.

Theme 11: Concerns that riparian property owners along the River Burn were not directly contacted to inform them of the application.

The Environment Agency is not required to contact potentially interested local parties by direct means. Notification of an abstraction licence application is set out in legislation and is carried out by advertising in a local newspaper that covers the point of abstraction, and preferably with the best circulation figures. In this case the local community were not aware of the application until after the 28 day representation period. It was therefore agreed that we would accept representations 'out of time.'

Theme 12: Concerns have been expressed that the Environment Agency will not be setting a Hands Off Flow for the licence, if issued.

The licence will include a base Hands-off Flow, a stepped Hands-off Flow above this and also a cessation condition if no flow in the River Burn at North Creake.

Theme 13: There has been objection to the choice of publication used for advertising this application. It is claimed that the publication has a very low readership base and that the Environment Agency placed the advert in this publication on purpose to avoid public scrutiny.

As explained under Theme 11, the publication is chosen based on coverage at the point of abstraction and circulation figures. No attempt was made to avoid public scrutiny. The advertising is carried out in this way with the aim to reach as many within the local community as possible.

Individual comments noted i) low flows encourage weed grow and subsequent flood risk following heavy rain, ii) low flows will impact natural scour/flush processes of sediment, and iii) the applicant may use their two boreholes licences to fill their reservoir if this application is refused with a negative impact on the aquifer. Points i) and ii) are covered off in the same way as Themes 1, 2, and 4 via the base Hands-off Flow, stepped Hands-off Flow and the cessation condition maintaining low flows in the watercourse. Additionally, and the impact of the abstraction at typical sediment flushing flows (>Q5) is minimal. For point iii), only one of these two licences could legally be used to fill a reservoir for subsequent spray irrigation use and the source, quantities and period etc. was appropriately assessed at the time of application (2018) and issued with suitable conditions to protect the aquifer/environment.

In addition, Freedom of Information (FOI) requests were made as follows:

- A list of abstraction licences on the River Burn.
- What impact assessments have been undertaken by the Environment Agency to confirm there will be no environmental impact.
- Provision of the application documents.
- How often do the Environment Agency ensure that licences remain compliant with abstraction rates.

The FOI requests were dealt with separately and do not form part of this statement.

As a result of the level of public interest this application received, the Environment Agency was invited to attend a public engagement meeting. This took place on 4th September 2019. This provided the local community and organisations to air their concerns and for the local Environment Agency representatives to address these concerns.

Protected Rights:

The licence will need to be conditioned in such a way to adequately prevent derogation of downstream protected rights (abstractions.)

Park Farm Partners licence (AN/034/0002/003) downstream has a Hands-off Flow (HoF) condition, which is the flow that must remain in the watercourse prior to and during abstraction. The HoF is 180 l/s at Burnham Overy gauging station and with a maximum abstraction rate of 46 l/s, a flow of 226 l/s needs to be protected.

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Conservation Issues:

Several designations have been identified downstream of the proposed abstraction reach within the river estuary and on the coast including:

- The Wash and North Norfolk Coast SAC
- North Norfolk Coast SAC
- North Norfolk Coast SPA
- Greater Wash SPA
- North Norfolk Coast Ramsar
- North Norfolk Coast SSSI

As these designations are located within the estuary and on the coast, they are therefore located within areas containing a large amount of water. The proposed abstraction will have almost no impact upon the quantity of water available to these designations. The designations are also further protected by the inclusion of the HOF condition within the licence.

Natural England have been consulted in respect of the above designations in the form of an Appendix 4, and Habitats Regulations Assessment Stage 1 and Stage 2. Natural England are of the opinion that this abstraction will not have an impact on the North Norfolk Coast.

In addition to the above, the River Burn is a BAP Chalk Stream (with chalk stream features and an ephemeral reach) and three Local Wildlife Sites have also been identified within the vicinity or downstream of the abstraction. The Norfolk Wildlife Trust was consulted on 04 June 2019. No response was received therefore we do not believe they have any concerns.

Several protected species have been identified within the River Burn including European eel, European water vole, bullhead, and brown/sea trout.

There would be potential for abstraction at low flows to impact upon protected species and invertebrates. HoF conditions will be put in place to ensure that abstraction cannot take place at low flows therefore removing any risk to the ecology of the River Burn.

In addition to the above, there will be a requirement for the applicant to install a 2 millimetre screen on the abstraction pump to provide protection for eels and fish.

Costs/ Benefits:

The abstraction allows a benefit to the applicant by providing water to be able to irrigate their crops without entailing excessive costs.

Biodiversity and sustainable development:

The licence accords with local Water Resources policy and is sustainable. Hands-off Flow and eel/fish screening conditions have been included to protect the habitat and/or species with the River Burn.

Social and Economic welfare of rural communities:

No adverse effects on the social and economic wellbeing of local communities in the area are perceived as a result of this proposal.

Conclusion and recommendation:

Conclusion

Full and due consideration has been given to any comments or representations made, and due regard has been taken of protected rights and other lawful uses.

The conditions incorporated on the licence are considered to be necessary and reasonable in the light of the available and presented evidence. The conditions are also considered to be clear enough to be enforced by us and understood by the Licence Holder.

Recommendations

It is recommended that the application is approved as modified and licence number AN/034/0002/010 should be issued with the conditions as drafted.

A HOF condition will be required in order to provide protection to flow in the River Burn when equal to, or less than Q50.

A stepped HOF condition will be required to provide additional protection to the River Burn.

A cessation condition will be required to provide additional protection to the River Burn.

An eel/fish screening condition will be required in order to prevent the entrapment of eels.

A 3 year self-destruct condition if the reservoir isn't built and/or abstraction has not started within 3 years of issue.

Contact the Environment Agency team responsible for this decision:

Water Resources Team, 99 Parkway Avenue, Sheffield, S9 4WF
Email: PSC-Water Resources@environment-agency.gov.uk