

The Environment Agency
Eastern Area
Cobham Road
Ipswich
Suffolk
IP3 9BR

Our Ref: SMH/SCE/00049772.13

Your Ref:

Date: 4 October 2010

For the attention of [REDACTED]

Dear Sirs

**Our Client: Mr Andrew William Alston
Catfield Fen Irrigation**

We are solicitors to Mr Alston and write in connection with his water abstraction licences 7/34/09/*G/0141C ("Licence 0141C") and 7/34/09/*G/144B ("Licence 0144B").

The purpose of this letter is to draw to your attention some important matters in advance of your meeting with Mr Alston on the 8 October 2010 at Church Farm, Catfield. We understand from [REDACTED] email of the 16 September 2010 that the purpose of this meeting is to update our client on the Agency's investigation into the water levels at Catfield Fen and to discuss the future of our client's water abstraction licences. In the circumstances, Mr Alston considers it important that you are fully aware of the all the relevant background facts.

Hydrology of the site

Licence 0141C authorises maxima of 800m³/day and 22,700m³/annum to be pumped from a 33 metre deep bore into the crag aquifer. Licence 0144B authorises maxima of 1,090m³/day and 68,000m³/annum to be pumped from a 20.7 metre deep bore into the crag. The crag is separated from the fen peat by a thick layer of clay. The bores are lined to a depth of 6 and 10m to prevent any abstraction from the surface aquifer. The Agency undertook an investigation into abstraction from the bore now licensed under licence number 0141C. The resulting Determination Report by Adrian Green in 1998 states:

'The maximum predicted drawdown in the Crag due to abstraction is 0.11 metres at the fen margin and the predicted radius of influence is 900 metres.'

This was calculated on the basis of the Theis equation and was considered to be an 'over-estimate'. Mr Green concluded:

"These factors together with the absence of any upward gradients within the peat, suggest that any upward leakage across the clay will only wet the base of the peat and that the fen water table is controlled primarily by rainfall and horizontal movement of water from the dykes. The impact of abstraction on the fen water table is therefore likely to be

immeasurably small'.

Mr Alston's view is that a more realistic estimate of the radius of influence on water levels in the crag would be 100m metres from the bores due to the positive water pressure from the groundwater aquifer. This positive water pressure is maintained throughout the year and varies between 0.6-0.9m (technical note D11) It also shows the annual variance of the groundwater levels. Technical Note D13 shows a similar annual variance for the groundwater piezometer in the marsh, with the surface piezometers showing reactions to rainfall events and river levels. Licence 0144B is more than 1000 metres from the Fen, and licence 0141C is 650 metres from the Fen. On the basis of [REDACTED] report, and Mr Alston's own data, the effect of abstraction from these bores on the fen water levels in the Fen is insignificant. Mr Alston proposes to have the readings from the Plumsgate Road piezometers available at the meeting with the Agency on the 8 October 2010.

The Agency's request to temporarily halt abstraction.

On 4 July 2010 at the request of [REDACTED] our client stopped pumping from bore 0141C (only) and did not pump from the bore until 17 August. It follows that any decrease in fen water levels after 4 July cannot be attributed to Licence 0141C. We would be grateful if we could be provided with a copy of the water level data post 4 July 2010 as soon as it is available.

The Entec Report

In July 2010, the Agency commissioned a report by Entec UK Limited to review groundwater and surface water data, and make recommendations for any additional monitoring necessary to determine the effect of abstraction from the two bores in question. The fact that Entec's report contains three pages of monitoring recommendations strongly suggests that it regarded the existing data as inadequate. Mr Alston welcomes the provision of further data on water levels and will be pleased to learn that the Entec recommendations have been implemented. If any data has been produced from the recommended additional monitoring, Mr Alston would be pleased to see it. Mr Alston would also be pleased to see the 2010 monitoring data from the two EA piezometers situated near the bore 0141C.

The Entec report also states (at page 7) that although Catfield Hall Estate has a surface water abstraction licence (number7/34/09*S/0084) which permits abstraction from Catfield Broad, no abstraction supposedly takes place. Of course, any abstraction under this licence would have a direct impact on the surface water level in the Fen. Mr Alston is understandably concerned that the Estate's surface water abstraction licence is permitted to be maintained (notwithstanding the fact that it is unused) while his licences are under such close scrutiny.

The Entec report at Figure D12 shows some water level data for the Fen from 2010. The data shows a drop in water levels of 7.5cms between 5 June and 2 July. This drop in water levels can sensibly be attributed in part; to photosynthesis/respiration by the reeds and other plant life and in part; to a significant lack of rainfall together with hot dry weather causing an increase in evaporation. If Mr Alston's abstraction was affecting Fen water levels you would expect to see a more significant drop in water levels than recorded.

Wider issues

Mr Alston appreciates and shares the concerns of the Agency and Natural England about the 'unfavourable condition' of parts of the Fen. He has a detailed working knowledge of the annual life cycle of the Fen which has been acquired over his lifetime. He grew up in the locality and has farmed there throughout his farming career. Mr Alston also undertakes his own monitoring of water levels around the fen and provides the resulting data to the Agency.

In his review of monitoring for the renewal of Mr Alston's licences in January 2010, the Agency's [REDACTED] noted that there was a lack of data on water levels at the Estate. This is, obviously, unhelpful and until the Agency is able to obtain a full compliment of data on water levels it is bound to consider more general indications as to the causes of the unfavourable condition of parts of the Fen. Mr Alston would draw attention in particular to the following matters.

A short history of Catfield Fen

It is important that the Agency has an appreciation of the recent history of the Fen, its ownership and management. The McDougal family owned the Catfield Hall Estate from around 1945. Mr Douglas McDougal and his son Keith were the last members of the family to own the Estate. They had a keen interest in the conservation and management of the Fen. Douglas was a member of the Norfolk Reed Growers Association (now known as the British Reed Growers Association). During Mr McDougal's ownership the Fen was reputed to provide top quality thatching reed. This reputation was achieved by the careful management of the Fen and it's the reedbeds. A key aspect of this management of the Fen concerned the maintenance and operation of the sluices. At this time the land now occupied by the Butterfly Sanctuary and the remainder of the Fen was in common ownership. Accordingly, correct water levels were maintained throughout the entire Fen. In the early 1990's the McDougal family sold off the land now occupied by the Butterfly Sanctuary to its current owners and then in 1993 a large part of the Catfield Hall Estate to Mr Harris (the current owner) including the Fen. Mr Alston is aware that on a recent visit to the Fen, Keith McDougal was devastated to find it in such a poor condition having spent his earlier years ensuring the Fen was managed correctly.

Sluice management

Mr Alston is concerned that the Fen sluice system has not operated effectively (or at all) for a number of years. There are two sluices in the Commissioners Rond which separates the internal system and external drainage systems. Sluice number 1 is controlled by the Butterfly Sanctuary and Catfield Hall Estate and Sluice 2 by the Estate only. The sluices are primarily used to control water levels in the summer months and during the reed and sedge cutting seasons. Mr Alston understands that it is a widely held belief among reed cutters that reedbeds should be subjected to post harvest shallow flooding in late March early April and then a cycle of water on, water off from mid to late May throughout the summer months. This cycle is designed to mirror a natural system where reedbeds would be flooded and drained with the flow of the river.

Figure D2 in the Entec report purports to show that the sluices have been opened 5 times since January 2004 with the last opening occurring 1 January 2009. The report does not disclose the source of this information but Mr Alston seriously doubts its accuracy. In his view the sluices have not been opened for 3 or 4 years. We attach photographs taken in August this year which show Sluice 2 to be in a very poor condition. Uniquely with Sluice 1, water is able to flow over the sluice board; therefore the effects of not operating the sluice are less damaging for the Fen. The only source of additional water for the Fen (excluding the Butterfly Sanctuary) would appear to be precipitation and drainage water from the Catfield School area east of the Fen. This reliance on these sources of water alone is unique to the Fen as other sites with water control in the Broads utilise the river or broad water for post harvest flooding. It is important to note that in 2009 and 2010 the critical periods for reed growth of March to June saw below average rainfall. Without the additional water being allowed in through the sluices the reedbed would most probably have dried out, restricting the growth of the reeds and sedge. Mr Alston appreciates that there is a management requirement within the HLS agreement to not allow high levels of nutrient rich water into the Fen, however he is also aware that the water within the external system is not nutrient rich. In comparison the

water allowed to enter the Fen through the drainage system will be polluted with hydrocarbons from spent car fuel and road gritting salt.

Reed Bed Management

Maintenance of the reedbeds is a requirement under the Estate's HQ3 HLS agreement with Natural England. Mr Alston is aware that the local reed cutters have a very low opinion of the quality of reed on the Fen and the management. The reeds cannot be sold commercially and the cuttings are usually burnt on site. Because the reeds have no commercial value there is no incentive for the reeds to be properly cut or managed in a historic manner. The result is that the beds are now growing out of the fen. Poor management produces undesirable growing conditions for the reeds, which require around 20cm of clean water in which to grow. A build up of composting material will produce nutrient rich dirty water causing the base of the reed stems to rot. Figure A3 of the Entec report shows the Topographic Survey taken in 1989; this shows the levels of the different marshes at Catfield Fen. Approximately 10 years ago North Marsh was cleared by excavators to remove excess composting material and return the marsh to historic levels where reed and sedge beds can be managed effectively. Mr Alston suggests that the Agency's current investigation into water levels would be assisted by undertaking a new topographic survey to determine the current ground levels of the fen. Mr Alston believes the survey would show a significant increase in the height of the marsh from the levels recorded in 1989. One effect of this is that water levels may appear lower in parts of the Fen than is desirable. In comparison the Butterfly Sanctuary adjacent to the fen is described by Natural England as "favourable". Richard Starling a member of the British Reed Growers Association has told Mr Alston that a likely cause of the Fen's 'unfavourable' status is the change in the management of the reedbeds and sluice system together with climate change.

The Commissioners Rond

The Commissioner's Rond is a 200 year old structure which follows the original path of the river. It is designed to protect the water levels within the man-made drainage system within the Fen. The sluices in the Rond then control the inflow and outflow of water from this system. Mr Alston is aware of a possible leak in the Rond close to Sharpe Street as this area is surprisingly wet. This area would have been the natural river flood plain prior to the river's course being altered, it is therefore possible that the water is following the river's natural course and escaping from the man made system. The Entec report at Technical Note 3 also notes that '*there was sometimes some flow in to the area near Sharp Street*'. Mr Alston would like to suggest that this potential leak is investigated by the Agency and consideration given to rectifying the problem.

In summary, it is apparent to Mr Alston that all the currently available data and other evidence points to the fact that Catfield Fen is being adversely affected by the poor management of the Fen and its reed and sedge beds. Mr Alston would very much like to see the condition of the Fen improved but is confident that restricting his abstraction will have no possible bearing on that objective whilst the current management continues. Mr Alston would like to suggest that Natural England consider the constructing an additional Rond between Catfield Hall Estate and the Butterfly Sanctuary together with a bank at the Sharpe Street end of Catfield Hall Estate to enable the Estate to manage water levels effectively. He looks forward discussing these issues with the Agency at the meeting on the 8 October 2010.

We are sending a copy of this letter to [REDACTED] of Natural England, Norman Lamb MP, Geoff Mason of Entec and Richard Starling of the British Reed Cutters Association. We will suggest to Natural England that in the light of its obligations under the Natural Environment and Rural Communities Act 2006 and the EU Habitat Directive to conserve and enhance the landscape it should investigate the issues highlighted above and take appropriate action.

Yours faithfully

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