

From: [REDACTED] <[REDACTED]@ucl.ac.uk>
Sent: 24 April 2025 14:18
To: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Subject: Brockham injection plans and monitoring

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Dear [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

I have been looking at the Newdigate Earthquakes and was wondering if the BGS have plans to monitor the Brockham injection site and the Balcombe unconventional well. One of the problems we had with the timeline at Newdigate was because the seismometers were installed after the first earthquakes and after activity at the well began. It would be good if these sites were monitored before activity began.

Many thanks for all the work the BGS do to maintain these networks and ensure that the data are all easily accessible!

All the best,

[REDACTED]

From: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Sent: 18 June 2025 15:01
To: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Subject: Re: Seismicity at Brockham BGS Ref - IDA 303771

Yes, I'll do that.

Thanks

[REDACTED]

From: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Sent: 18 June 2025 13:33
To: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Subject: RE: Seismicity at Brockham BGS Ref - IDA 303771

Looks fine to me. Could emphasise that the regulator needs to ask the operator. [REDACTED] needs to contact the NSTA (or EA, I guess) not us.

From: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Sent: 18 June 2025 10:20
To: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Subject: RE: Seismicity at Brockham BGS Ref - IDA 303771

Hi [REDACTED]

Could you please check this reply before I sent it?

[REDACTED]

Dear [REDACTED]

Thank you for message and attached letter, and apologies for the considerable delay in my reply. I have also read [REDACTED] article in Geological Magazine with interest.

I understand your concern about high pressure injection and the potential for this to induce seismicity, however, the need for seismic monitoring is really a question for the regulator, the NSTA, and the operators themselves, rather than BGS. While it could be interesting, we currently don't have the resources to be able to monitor hydrocarbon exploration and production in this way. Similarly, while all our data is available for academic use, it's not really our role to collect data for specific academic studies.

In the case of the previous seismic activity near Horse-Hill in 2018-2019 and documented in <https://doi.org/10.1785/0220190125> as well as [REDACTED] article, we already had NERC funding that allowed us to deploy a temporary network to study the activity in more detail, and there was also a strong public interest argument given the activity itself.

I'm sure you are aware, but seismometers are available from the UK Geophysical Equipment Facility, SEIS-UK (<https://seis-uk.le.ac.uk/>), for such studies. This can often be made available at short notice if the loan is part of a NERC Urgency Grant.

I hope this reply is helpful.

Best wishes,

[REDACTED]

From: [REDACTED] <[REDACTED]@ucl.ac.uk>
Sent: 25 June 2025 17:27
To: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>
Cc: [REDACTED] <[REDACTED]@ucl.ac.uk>
Subject: Re: Seismicity at Brockham BGS Ref - IDA 303771

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Dear [REDACTED]

Thank you very much for getting back to me.

I wonder if the BGS could provide some further information to planners about the nature of the local geology. This is the quote from the Angus Energy to the Planning Group at Surrey County Council.

"...Angus Energy intends to inject water at 754 m TVD by raising the Bottomhole Injection Pressure (BHIP) to 1535 psi, where the fracturing pressure is 1635 psi. Therefore this is 100psi below the fracturing pressure of the formation. "

I would expect the uncertainty on the fracture pressure to be very large given the nature of the geology.

Here is the link to the Freedom of Information request. https://www.whatdotheyknow.com/request/communications_with_angus_energy_2?nocache=incoming-3002497#incoming-3002497

All the best and thanks again,

[REDACTED]

From: [REDACTED] - BGS <[REDACTED]@bgs.ac.uk>

Sent: Thursday, June 19, 2025 8:18 AM

To: [REDACTED] <[REDACTED]@ucl.ac.uk>

Cc: enquiries <enquiries@bgs.ac.uk>; [REDACTED] <[REDACTED]@ucl.ac.uk>

Subject: RE: Seismicity at Brockham BGS Ref - IDA 303771

⚠ Caution: External sender

Dear [REDACTED]

Thank you for message and the attached letter, and apologies for the considerable delay in my reply. I have also read [REDACTED] article in Geological Magazine with interest.

I understand your concern about high pressure injection and the potential for this to induce seismicity, however, the need for seismic monitoring is really a question for the regulator, the NSTA. I believe current regulations allow the NSTA to ask the operators to carry out or improve monitoring. While it could be interesting, we currently don't have the resources to be able to monitor hydrocarbon exploration and production in this way. Similarly, while all our data is

available for academic use, it's not really our role to collect data to enable such specific research.

In the case of the previous seismic activity near Horse-Hill in 2018-2019 and documented in <https://doi.org/10.1785/0220190125>, we already had NERC funding that allowed us to deploy a temporary network to study the activity in more detail, and there was also a strong public interest argument given the activity itself.

I'm sure you are aware, but seismometers are available from the UK Geophysical Equipment Facility, SEIS-UK (<https://seis-uk.le.ac.uk/>), for such studies. This can often be made available at short notice if the loan is part of a NERC Urgency Grant.

I hope this reply is helpful.

Best wishes,

[REDACTED]

From: [REDACTED] <[REDACTED]@ucl.ac.uk>
Sent: 13 May 2025 19:49
To: enquiries <enquiries@bgs.ac.uk>
Cc: [REDACTED] <[REDACTED]@ucl.ac.uk>
Subject: Seismicity at Brockham

Attachment 1

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To whom it may concern,

[REDACTED]

Please find attached our letter highlighting our concerns about the risk of earthquakes as a result of injection of wastewater fluids at Brockham. The proposed injection pressure is 93% the quoted fracture pressure, but the variability of the sandstone is unexplored. We suggest that a seismic network be installed by the BGS as soon as possible so that the cause of any seismicity can be identified.

Sincerely,

[REDACTED]

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