

Carr Bridge Brook Monitoring Programme - December 2016 to December 2018

Previous reports (Reports 1-6) have been archived and replaced by this summary report. The raw data is provided in a separate file on our Citizen Space page. This report summarises the data collected by the Environment Agency since December 2016.

Baseline Sampling, 2015

The Environment Agency document 'Water Quality at Cuadrilla's Preston New Road Site' presented baseline water quality data for Carr Bridge Brook for 2015. This brook was chosen for monitoring purposes because it runs close to Cuadrilla's Preston New Road drilling site. Two sample points were selected - an upstream site on Plumpton Lane (just north of Plumpton Hall Farm) and a downstream site on Moss House Lane (see attached map). The list of measured parameters is based upon the monitoring requirements of permit EPR/AB3101MW, Schedule 3, table S3.2.

Active Phase Sampling 2016 to present

In December 2016 a further programme of water quality analysis was commenced. This 2 weekly sampling programme uses the same chemical parameters and sample points as the baseline survey of 2015 and will enable us to see if the drilling site, during the active phase of Cuadrilla's work, is having any effect on the brook.

Data Interpretation

We have chosen to summarise the data in four graphs below. Chloride, methane and acrylamide would be an indication of pollution from the hydraulic fracturing process. Suspended solids is an indication of runoff from the site surface.

Suspended Solids: Indicates if there is an escape of standing surface water from the site.

Chloride: This is because the local aquifer is very strongly saline and therefore any flowback water would also be strongly saline.

Methane: This is generated by the hydraulic fracturing process.

Acrylamide: Poly-acrylamide is used in the hydraulic fracturing process.

The graphs and data also show that drilling activity has not had any measurable impact on the brook.

The collated data show that water quality in Carr Bridge Brook is strongly influenced by local weather conditions and the impact of runoff from the surrounding agricultural catchment. We have taken a detailed look at the variation in suspended solids and metals data which, especially upstream, closely matches bouts of wet and snowy weather. Also of note is that the most pronounced peaks in suspended solids all occur upstream of the wellpad.

Notes

13 June 2018, some downstream sample results unavailable due to a lost sample bottle.

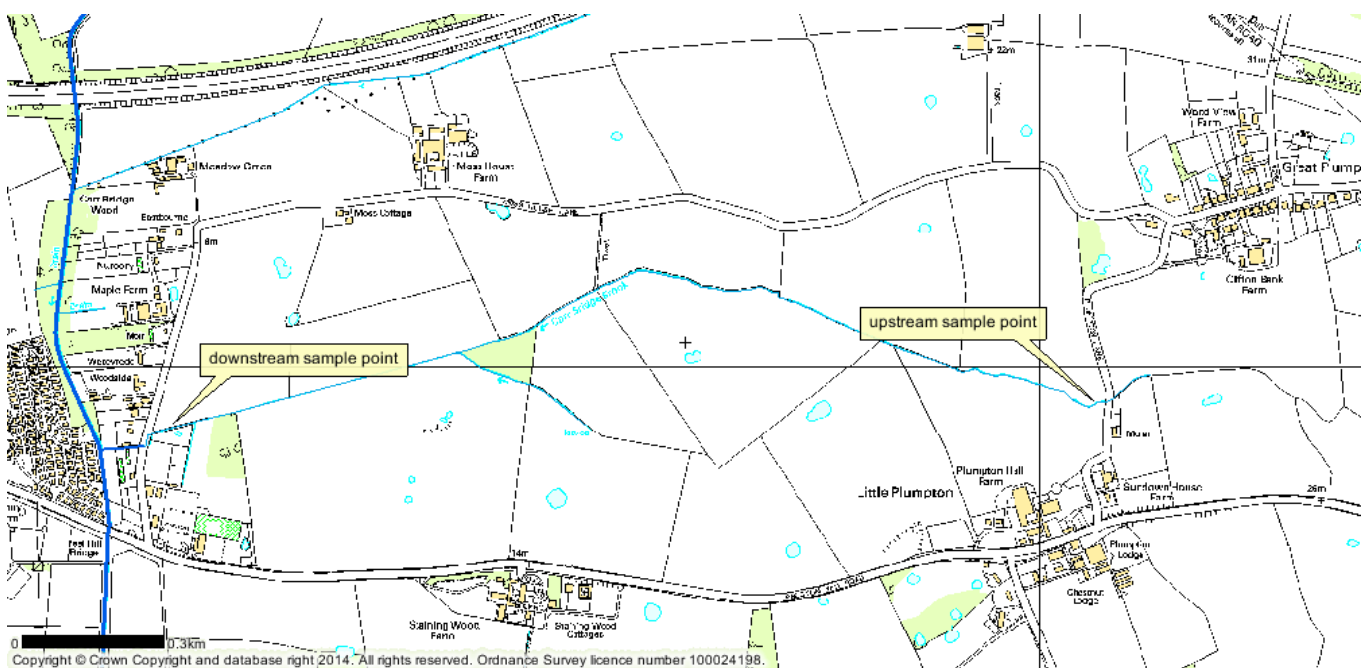
10 and 28 September, 8 October 2018 both upstream and downstream C banding data in the C5-44 range are unavailable as EA lab changes analysis methodology.

Future Monitoring

We intend to continue monitoring Carr Bridge Brook and aim to collect samples every two weeks as before. The programme is flexible to take account of the need to adjust the sampling frequency or occasionally collect ad hoc samples as necessary.

We will regularly update our Citizen Space page with the sampling data.

Carr Bridge Brook Sampling Points

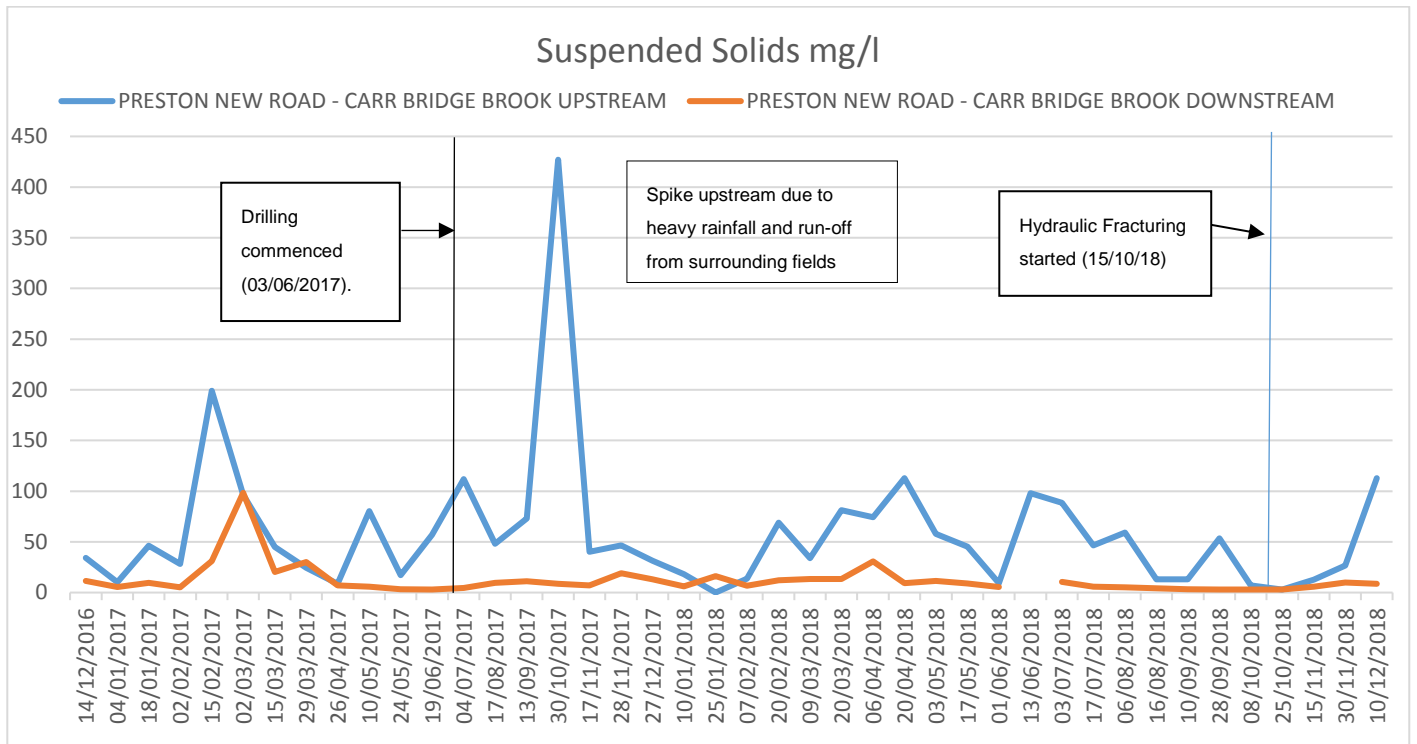


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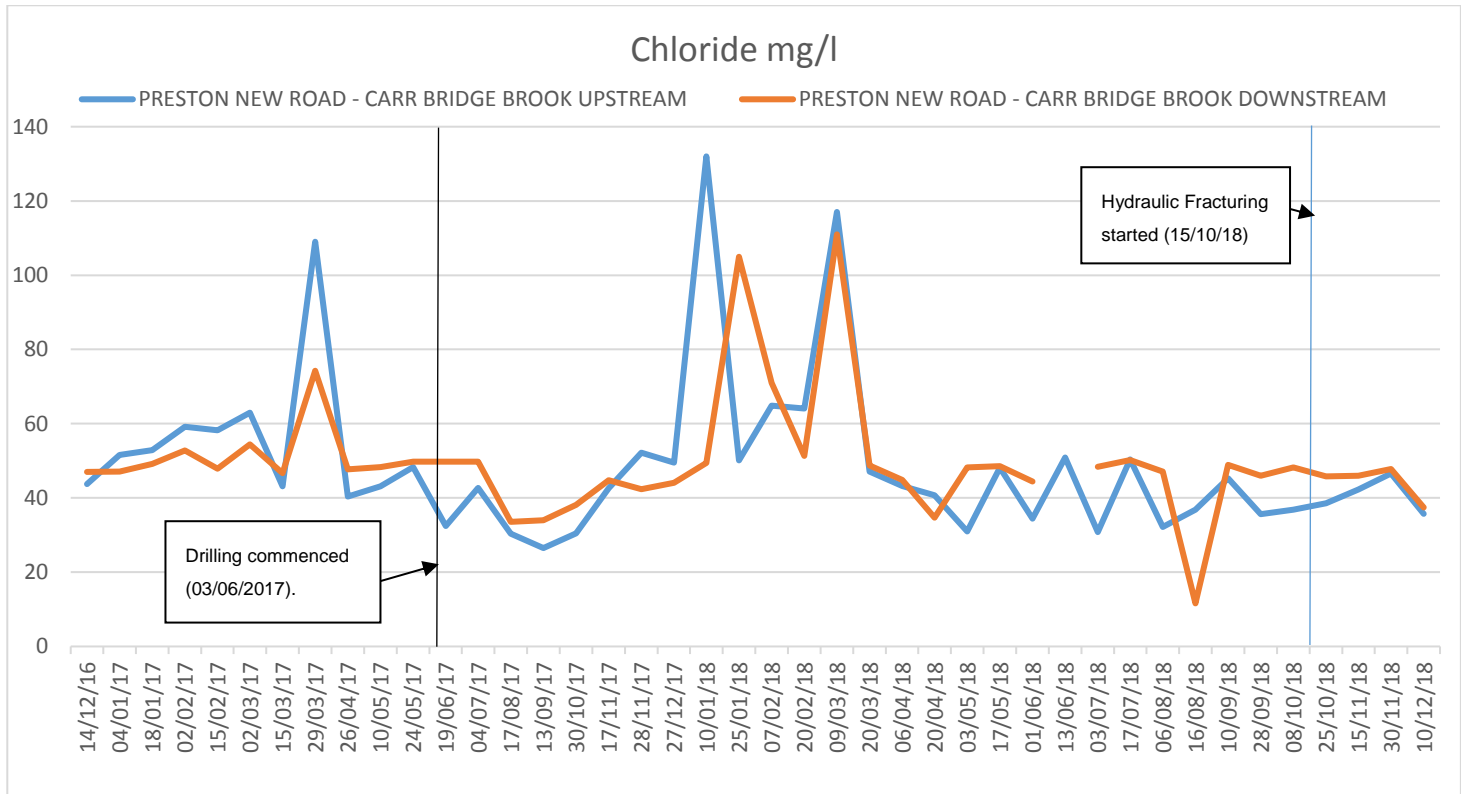
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floodline
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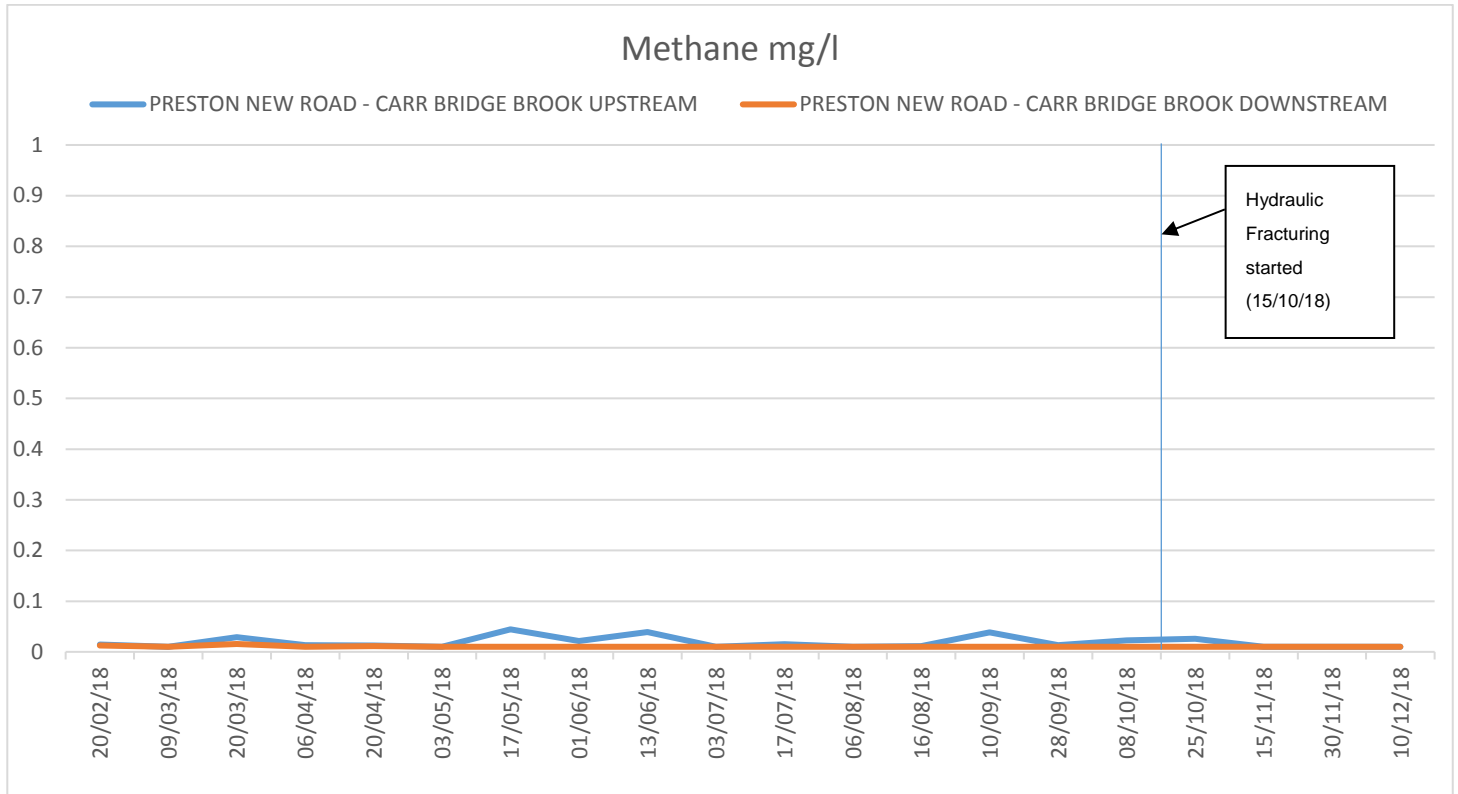
Suspended Solids



Chloride

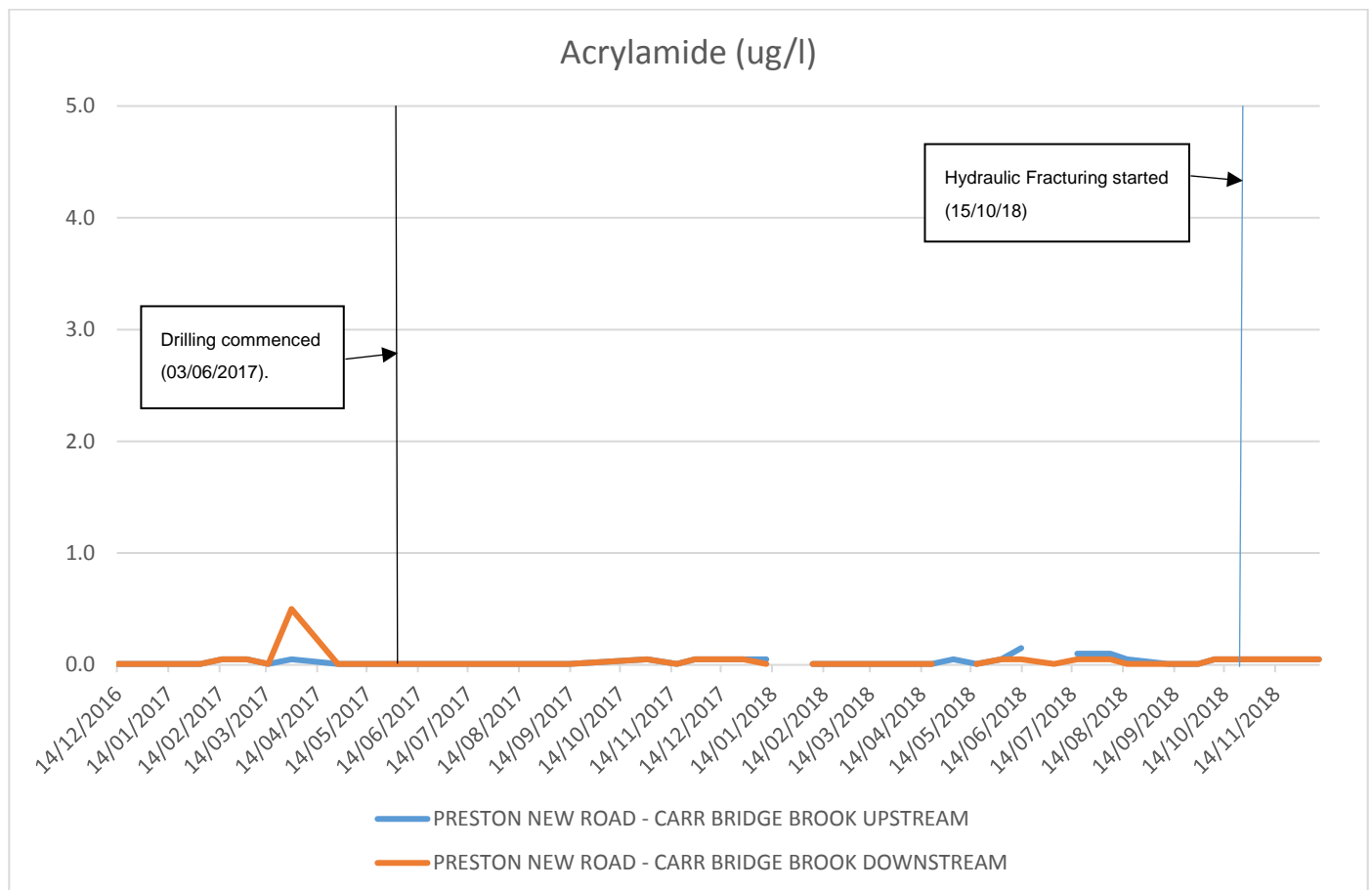


Methane



All results prior to 20 February 2018 were less than 0.5 mg/l which was the limit of detection at the time.

Acrylamide



Limit of detection was 0.5 ug/l or below depending on quality of the sample received. Spike shown on 29 March 2017 was a poor quality sample and therefore the limit of detection was compromised. No Acrylamide was being used on site at the time. As a reference, the drinking water standard is 0.1 ug/l.