

ENVIRONMENT AGENCY WALES
SE AREA Environmental Monitoring Analysis &
Reporting Team

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SPMD Monitoring on the Rhymney and Nant Melyn
A summary of results to date

1. Introduction

A water quality survey has been undertaken as a follow-up from an investigation in where there were found to be Cypermethrin and Permethrin in the River Rhymney and Nant Melyn which was traced to a timber yard on the Tafarnaubach industrial estate. (Report 08-47)

Since July 2008 the source of Permethrin has ceased. This current survey was carried out to ascertain if Permethrin and Cypermethrin were still having an impact on the Nant Melyn and Rhymney.

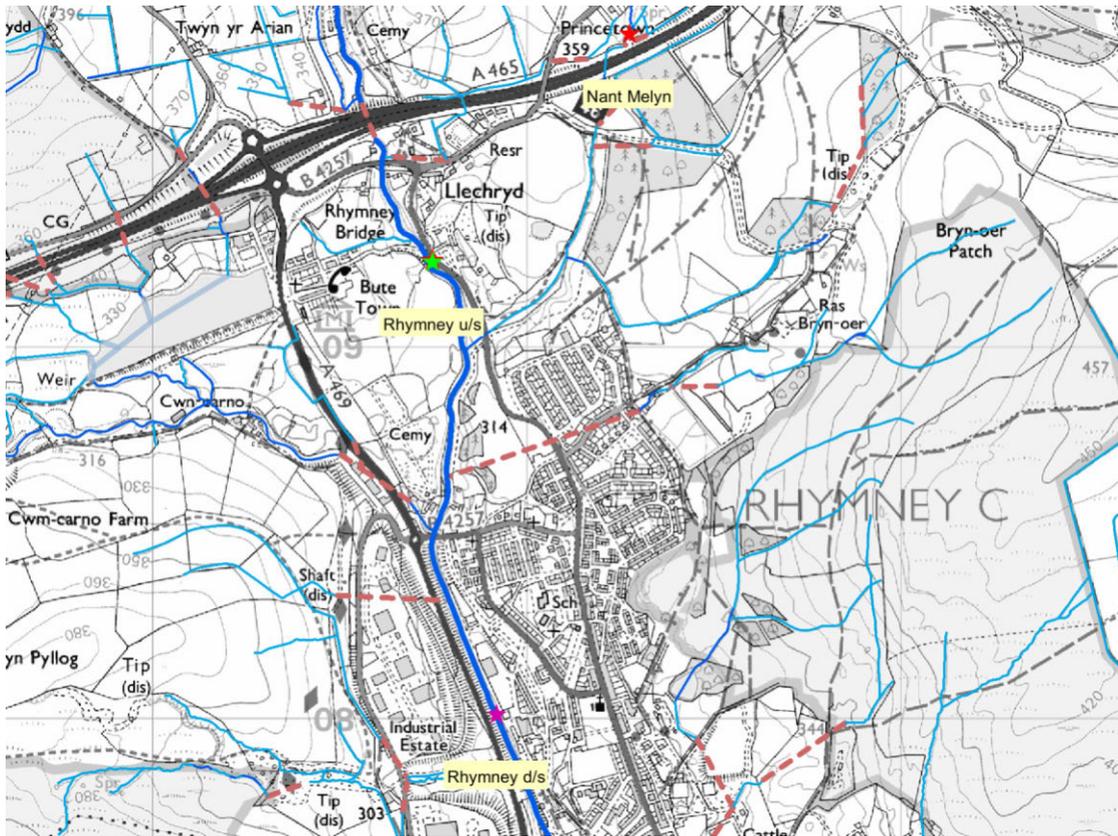
2. Method

SPMDs (Semi-Permeable Membrane Devices) were placed in the River Rhymney and Nant Melyn on the 3/11/09. An SPMD is a metal cage containing a membrane strip that over time absorbs chemicals through its outer membranes into a gel inside as water passes over it. On collection the SPMDs were sent to the EA's National Laboratory Service in Llanelli for analysis of Permethrin & Cypermethrin. Results were given in ng/SPMD or µg/SPMD; the SPMDs cannot provide fully quantitative results (e.g. ng/l) because of unknown variations in flow at the deployment sites.

SPMDs were deployed at the following three sites on the 3/11/2009 to 3/12/2009:

1. Melyn downstream (d/s) from Tafarnaubach drain in Princetown (SO11269 09839)
2. Rhymney upstream (u/s) of the confluence of the Nant Melyn and Rhymney (SO10750 09232)
3. Rhymney d/s of the confluence of the Nant Melyn and Rhymney (SO 10924 08011)

SPMD deployment sites



3. Results and Discussion

The Survey undertaken by SE Ecological Appraisal Team in 2008 (Report 08_47) found that high levels of Cypermethrin and Permethrin were detected in the Melyn and Rhymney compared to the Rhymney u/s. It was found that Permethrin was entering the Tafarnaubach drainage system from Kingspan's timber premises in the upper part of the industrial estate leading to the lower discharge into the Nant Melyn.

A follow-up investigation after the closure of the timber premises appeared to show decreases in Cypermethrin and Permethrin. (Report 08_47)

Site	Cypermetherin	Permethrin	NGR
Nant Melyn	<2	<20	SO11269 09839
Rhymney u/s Melyn	<2	<20	SO11269 09839
Rhymney d/s Melyn	<2	<20	SO 10924 08011

Survey 03/11/09-03/12/09 All results expressed in units of ng/SPMD

Results from the recent SPMD survey show that Cypermethrin and Permethrin are at undetectable limits both u/s and d/s of the Nant Melyn on the Rhymney and in the Nant Melyn u/s of the Rhymney.

4. Conclusion

Cypermethrin and Permethrin are below detection limits for lab analysis in the Nant Melyn and River Rhymney u/s and d/s of the Nant Melyn.

These results confirm there has been an improvement in water quality in the Nant Melyn and Rhymney since the closure of Kingspan.