



## TYNE CATCHMENT PARTNERSHIP

### Minutes of Tyne Catchment Working Group on Metal Contamination of Watercourses: 25<sup>th</sup> April 2017

#### Attendees:

Clare Deasy (Northumbrian Water: Catchment coordinator);  
Andrew Moore (Northumbrian Water: Waste water research and development);  
John Gray (Northumbrian Water: Water resources specialist);  
Susan Mackirdy (Tyne Rivers Trust: Trust director)  
Jack Bloomer (Tyne Rivers Trust: Project manager)  
Hugh Potter (Environment Agency: National senior advisor, pollution from abandoned mines);  
John Collins (Environment Agency: Groundwater & Contaminated Land Technical Officer);  
Rob Carr (Environment Agency: Catchment coordinator);  
Adam Jarvis (Newcastle University: Reader in Environmental Engineering);  
Phil Hartley (Newcastle City Council: Contaminated land specialist).

#### Introductions and interest in metals issues

**JG:** Northumbrian water have no known issues for metal contamination throughout the Tyne. However, other treatment works such as at Mosswood and the Derwent have issues with metal pollution. Sediment Issues are present in Tyne. Pumping station in Ovingham affected by fine sediment infiltration. Removal of fine sediments from pumps costs approximately £150 000/year. Sediments are removed upstream of pumping station and disposed of off-site. No metals analysis is currently conducted on sediments.

General discussion of potential metal analysis of sediments in future.

**CD:** As this meeting is under the auspices of catchment working, could check whether there are other metals issues for Northumbrian Water.

**AM:** Metals are becoming an increasingly important issue in terms of waste water, so keen to keep the working group going. Metals are, however, predominantly a legacy issue and only to a lesser extent arising due to current sewage works discharges. It is unclear where the EA will direct any new investment by the water industry into metals or other micropollutants. NW wishes to be a good corporate citizen and work with EA and other environmental organisations to make the north east a better, cleaner environment. However, major support to reduce metal contamination needs EA/OFWAT and customer support.

The UK is one of the European countries that relies on re-cycling sewage sludge to land. AM expressed concern that tighter standards on metals in sewage sludge could approach a level where only a small change in metal limits would prevent this form of sludge recycling. Most metals in sewage sludge come from trade effluents, not river water.

**AJ:** Gave background of his research, particularly on the River Tyne sediments project and the source and deposition of metal contaminated sediments throughout the catchment. Discussion of treatment works constructed and challenges faced at e.g. Nenthead. Also discussed future research regarding the effect of high flow events (e.g. Storm Desmond) on metal flux transport in the catchment.

**RC:** Had only been in role of catchment coordinator for past 2-3 weeks, so beginning to understand major issues facing the Tyne catchment. Keen to be involved in works.

**SM:** Has been involved in the Tyne Steering Group. Previous focus has been on the estuary but recognition that the problem lies further upstream. Metals are recognised as a major issue by the Tyne Catchment Partnership (which is hosted by TRT). There is recognition that Storm Desmond caused metal-rich sediments to be deposited throughout the catchment. Historically farmers have reported spontaneous sheep abortions linked to grazing on floodplains contaminated with metal enriched soils.

General discussion of difficulties of demonstrating causation between metals and impacts on animals. Something worthy of further investigation.

**JB:** Discussion of project with EA on remediation of metal mine deposits in the South Tyne catchment. Proposed use of (mostly) small-scale 'green-engineering' to limit solid-phase input to watercourses. Document circulated for further discussion. EA will be reviewing in May 2017 and prioritising which recommendations to take forward in conjunction with the Coal Authority and Tyne Rivers Trust.

**HP:** Outline of the Water and Abandoned Metal Mine (WAMM) programme in the Tyne. Estimated financial benefits of cleaning up water quality in the Nent and South Tyne are £30m over 25 years to £40m over 40 years; additional benefits will be generated from cleaning up the River Allen and other rivers impacted by abandoned metal mines. Currently the River Nent contributes approximately 50% of zinc entering the Tyne estuary.

General discussion examining clear benefits associated with preventing diffuse metals entering watercourses.

### **Actions**

**HP:** Circulate the Coal Authority/EA programme for the Northumbria River Basin District.

**SM:** Discussed key issues that require further research:

- Impacts of flooding and metal deposition in floodplains on agriculture in terms of metals entering the food chain and causing the loss of grazing land. Possibly threatening farmers livelihoods;
- Potential effects for human health, although evidence is currently lacking;
- If flooding occurs and metals are deposited on land, could be significant impacts for businesses;
- Benefits of natural flood management – slowing flow could limit input of fine sediments;
- Potential effects of metal pollution on businesses;
- Effects on calaminarian grasslands;
- Improved understanding of metals on aquatic life e.g. fish/invertebrates. (**HP:** Investigations by EA taking place this year).

**CD:** To coordinate next meeting.