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To whom it may concern:

Jerry Hannah from ClearFlow Group of companies has asked me to verify our working relationship and relay the findings regarding his polymers and their effects on freshwater fish. I have worked with Jerry and ClearFlow group for the past 6 years on a variety of research projects. As a toxicologist (SETAC Member), Jerry approached me at the University and asked me to determine if there were any longer term effects of his products and we tested the effects of 5 different products on juvenile rainbow trout (a sensitive species used in Canada for testing) for up to 30 days (long term exposure). We tested at levels that would be at or near application rates (3 mg/L), at levels far higher than application rates (100 mg/L) and at outrageously high levels (300 mg/L) that even produced viscous media (not environmentally realistic levels, those that might be indicative of local area around a spill). We compared the effects on fish with those of a standard product commonly used for dust control and water reclamation in the mining sector that we know has issues with toxicity. While the non-Clearflow product was extremely toxic at low concentrations (~0.4 mg/L) and as such, it is highly regulated for releases, concentrations of the Clearflow products even up to 300 mg/L did not result in significant issues in most cases. However, for a few of the products and a few histological parameters, the highest doses of 300 mg/L did produced some minor damage to the gills. These doses would never be seen in normal applications and this level of damage would generally not be considered strongly adverse or "toxic". The paper outlining these results has recently been returned after review at the Journal Environmental Toxicology and Chemistry. It should be accepted shortly after we address the few minor changes suggested. After this initial study, Jerry and I collaborated on a study on cleaning effluent from a fish farm and also on the capacity of his products to remove bacterial and organic load from municipal wastewater. Currently, we are in the process of submitting a grant application to demonstrate the long-term (5 year+) implications of his products when used for stormwater management in urban ponds and lakes.

In general, the products and formulations that I have tested to date have proved to be relatively environmentally benign to fishes and we are continuing to work with Gerry to demonstrate even longer term safety on other organisms. I have found ClearFlow to be genuinely concerned for sustainable development of the least toxic alternatives for water remediation and soil stabilization and believe in their products for environmental friendliness. Should you have any concerns, please do not hesitate to send me an email at greg.goss@ualberta.ca

Sincerely,

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