

April 24, 2008

To: Ms. Turner, Fraser Heath Authority and Patricia Ross, FVRD Air Quality and Environment Committee

From: Peter Hamilton, Lifeforce Foundation

Cc: Paulette Collier, School Principal; Abbotsford Mayor and Council; Abbotsford School Board

Re: Chicken Farm Pollution Poses Health Threat to School Children

I request that the Fraser Health Authority and the FVRD Air Quality and Environment Committee investigate the exposure of children at the Mt. Lehman Elementary to pollution originating from a poultry farm adjacent to the school and play field.

Pollution Studies

Studies have proven that intensive poultry operations can cause pollution. Particulate composition of dust from manure/barns includes nitrogen, potassium, calcium, magnesium and sulphur. Poultry operations are associated with emissions of aerial ammonia, volatile organic compounds and odour.

Health risks to children playing near these operations are of great concern. For example, nitrogen oxides causes 1) a measurable decrease in lung function, especially in asthmatics; 2) Lung irritation; 3)increased rates of lung disease and 4) destroyed lung tissue, leading to emphysema.

The school principle has told us that on one occasion she had to remove all kids from the play field because of noxious air.

BC Government Concerns

The BC government recognizes the necessity to prevent public exposure to “poultry dust” and are conducting studies to develop “filters” such as trees/plastic barriers.



They say that poultry bacteria could infect people who have reduced immunocompetence. Very young or old people may have less ability to resist infection from bacteria. “When the fan hoods are blown out clouds of dust are emitted which can drift several hundred feet.”(Management of Dust in Broiler

Operations, BC Ministry of Agriculture and Food, December 1999). Dust inside swine and poultry barns are smaller than 5 microns and can be taken deeply into the lungs (Air Quality Inside Livestock Barns, Ontario Ministry of Agriculture, Food and Rural Affairs, September 1997)

Federal CFIA Concerns

Since 2003, H5N1 has infected 322 people and killed 195 worldwide (CTV August 2007). The Canadian Food Inspection Agency reported on the avian influenza outbreak that occurred in the Lower Fraser Valley during the winter and spring of 2004. They recommend 1) The current evidence for the potential windborne dispersal of avian influenza suggests that development of an air inlet filtration system for barns would be prudent in the event of a second outbreak. (CFIA 2004)

New Statistics

Particulate matter emissions from chicken barns are up to 10 times greater than previously estimated, say University of Guelph researchers. Prof. Bill Van Heyst of the School of Engineering and graduate student Taylor Roumeliotis say the amounts of inhalable particulate matter expelled into the air from agriculture operations is significant.

“Previous estimations did not accurately reflect the emission levels,” says Van Heyst, “but with new technology we can accurately assess the concentrations of particulate matter so that effective comparisons with other industry sectors can be made.”

With increasing environmental awareness and the implications of smog and other pollutants becoming better understood, a need to know exactly how much pollution comes from various agricultural sectors is required. Fine particular matter, that not seen with the naked eye, is a major contributor to smog and is commonly emitted from animal facilities as well as many other sources, says Van Heyst. Air flow was measured along with the concentration of particulates with diameters less than 1, 2.5 and 10 micrometres, which were detected using optical sensors. A representative sample of fans were measured by forcing air through a single air hood in which the sensors were located. Using the concentration in the barn and the air exhaust level, the total amount of particulate matter released from the barn into the air could be estimated. The results were a staggering 10 times more than the previously projected Canadian levels.

“Fine particulates are problematic as when these particles are inhaled, they lodge into crevasses in the lungs, unlike large particles which are coughed out,” says Van Heyst. (Canadian Poultry and Science of the Total Environment 383 (2007) 174–182)

School Photos

The following are photographs of the proximity of children playing near the poultry farm outlet fans.



I hope that you will agree that immediate action must be taken to determine all health risks to the school children and how exposure to the pollution can be eliminated. This is probably not an isolated situation and other similar situations should be reviewed.

I look forward to your responses.