



MANITOBA ECO-NETWORK

Third Floor, 303 Portage Ave. Winnipeg, Manitoba R3B 2B4
Ph: (204) 947-6511 Fx: (204) 989-8476 info@mbeconetwork.org www.mbeconetwork.org

Ms. Tracey Braun
Director of Licensing and Environmental Approvals
Manitoba Conservation
123 Main Street
Winnipeg, Manitoba R3C 1A5

Comments regarding MR 164/88 – Classes of Development Regulation

Dear Ms. Braun:

While not a result of any extensive consultation exercise performed by the Manitoba Eco-Network, we offer you some recommendations in respect to the Classes of Development regulation. The recommendations are reflective of some of our members' direct involvement and experience with the Manitoba Environment Act of 1988.

What really needs changing is the Environment Act, which could be improved with amendments that would offer greater transparency, clarity and accountability into the environmental assessment and licensing process. However, it appears that the Environment Act will not be opened for public review in the distant future, so our comments will be limited to MR 164/88.

- 1) Intensive Livestock Operations must be classified as a development – The barns themselves are not regulated under the Environment Act even though they emit pollutants as defined under the Act. The temporary storage of untreated manure in the pits underneath the barns is exempt from the Livestock Manure and Mortalities Management regulation. These pits pose a severe environmental hazard when barns are inundated with floodwaters, such as the event in southeastern Manitoba (June 2002) and the Great Flood of 1997 (Red River Valley). These cement storage pits have the potential to crack and regulatory oversight must be provided to ensure their integrity.

ILOs emit hazardous pollutants such as hydrogen sulfide, ammonia, methane, odorous compounds, VOCs and particulate matter, which at certain concentrations, impact peoples' health and the surrounding environment. There are no air quality standards applied to the intensive livestock industry in Manitoba.

A recent study prepared for the Manitoba Livestock Manure Management Initiative (MLMMI) reports that under certain conditions, odor plumes from livestock operations can travel up to five to six kilometers.¹ Another study prepared for the MLMMI, which measured odors from hog operations in Manitoba, concluded that

¹ Reid Crowther & Partners Ltd., "Report on Determination of Areal Extent of Odour Plumes from Large Hog Facilities in Manitoba", Prepared for: Manitoba Livestock Manure Management Initiative, November 1999.

there was a positive correlation between the odor level and the H₂S (hydrogen sulfide) concentration for both barn exhaust and lagoon odors. Farm average H₂S levels from the barn exhaust varied from 148 to 927 parts per billion.²

This study cites work done in Minnesota, by Jacobson et al. (1999) that concentrations recorded in Minnesota hog barns are similar, ranging from 9 to 1156 parts per billion. Both reports, however, fail to measure odors and H₂S downwind from the immediate source (lagoon, barn exhaust and manure application) and suggest that further research should be conducted.

The Province of Manitoba has recognized hydrogen sulfide as being acutely and chronically toxic to human health and has set guidelines for maximum tolerable, maximum acceptable and maximum desirable levels of concentrations.³ The Drilling and Production Regulation (MR 116/2001) under the Oil and Gas Act regulates acceptable concentrations of H₂S within the oil and gas industry. Schedule G of the regulation states:

“1. The concentration of hydrogen sulfide beyond a well or battery site shall not exceed either of the following levels:

- a) one hour average – 15 micrograms per cubic metre/11 parts per billion;*
- b) 24 hour average – 5 micrograms per cubic metre/4 parts per billion.”⁴*

There is an obvious discrimination in favour of the agricultural industry, as H₂S emissions are not regulated as they are in the oil and gas industry in Manitoba.

Manitoba air quality guidelines also exist for ammonia and maximum acceptable levels of concentration are set at 200 parts per billion.

Environment Canada has declared ammonia to be toxic in the aquatic environment as defined in Section 64 of the Canadian Environmental Protection Act (CEPA 1999) and requirements for control through pollution prevention planning are forthcoming. However, there has been no indication to date that air born emissions of ammonia will be scheduled into CEPA over the near future. Yet, Environment Canada has identified agricultural operations and the fertilizer industry as the largest contributors of ammonia into the air with each contributing 474,000 and 12,000 tonnes/year respectively.⁵

² Q. Zhang, G. Plohman and J. Zhou, “Measurement of Odour Emissions from Hog Operations in Manitoba”, Prepared for: Manitoba Livestock Manure Management Initiative, University of Manitoba and Elite Swine, Inc. December 2000.

³ Manitoba Conservation, “Objectives and Guidelines for Various Air Pollutants: Ambient Air Quality Criteria”, Air Quality Section, <http://www.gov.mb.ca/conservation/airquality>. 2002

⁴ The Oil and Gas Act (C.C.S.M. c.034), Drilling and Production Regulation, amendment, Regulation 116/2001, Registered July 17, 2001.

⁵ Environment Canada, “Synopsis of the Report of the Assessment of the substance Ammonia in the aquatic environment specified on the Priority Substances List”, August 2002

In June of 2001, Iowa (North America's leading hog producing jurisdiction), instructed the University of Iowa and Iowa State University to address the public health and environmental impacts of concentrated animal feeding operations (CAFO's (the equivalent of an ILO in Canada)). Involving over 40 scientists, most at the PhD level, their groundbreaking report is one of the most advanced reviews of current research and literature in North America. Their human health effects chapter concludes:

“Numerous occupational studies have documented significant increases in respiratory disease and other respiratory health effects, including CAFO-related deaths, acute and chronic respiratory diseases and associated symptoms and acute losses in exposure-related lung function and progressive respiratory impairment, among those who work in CAFO's. However, it is recognized that the CAFO workforce is generally healthy, while those in the general community, including children, the elderly, those with chronic impairments such as pre-existing asthma or chronic obstructive pulmonary disease, are expected to be much more susceptible to CAFO exposures. There is experimental and epidemiological evidence that very low levels of exposures to ammonia and hydrogen sulfide, known to be ambient air toxic gases arising from CAFO's, may result in adverse health effects among healthy volunteers and community residents. While limited in number and scope, the currently published, peer reviewed, community based studies of adverse health effects associated with CAFO exposures find an increased prevalence of similar symptom patterns, especially respiratory symptoms, and similar indicators of reduced quality of life. Taken together with other experimental and epidemiological observations of adverse health effects observed with low levels of exposures to chemical components (ammonia, hydrogen sulfide) of CAFO emissions, these findings support a conclusion that CAFO air emissions constitute a public health hazard, deserving of public health precautions as well as larger, well controlled, population-based studies to more fully ascertain adverse health outcomes and their impact on community health services.”⁶

The Iowa Study Group further recommends that:

“hydrogen sulfide, measured at the CAFO property line, not exceed 70 parts per billion (ppb) for a 1-hour time-weighted average (TWA) period and the concentration at a residence or public use area shall not exceed 15 ppb, measured in the same manner at the property line measurement.

“Ammonia, measured at the CAFO property line, not exceed 500 ppb for a 1-hour TWA period and the concentration at a residence or public use area shall not

⁶ Iowa State University and The University of Iowa Study Group, “Iowa Concentrated Animal Feeding Operations Air Quality Study”, February 2002.

exceed 150 ppb, measured in the same manner as the property line measurement.”⁷

On top of regulating hydrogen sulfide and ammonia, the Iowa Study group recommended regulating odor.⁸

Other pollutants discharged into the environment by ILOs include antibiotics and greenhouse gases.

Antibiotics

Mounting evidence is confirming the view, long held in the public health community, that antibiotic use in animals can substantially reduce the efficacy of the human antibiotic arsenal. The Union of Concerned Scientists (UCS) reports that important antibiotics used for human medicines, (tetracycline, penicillin, erythromycin and streptogramins) are used extensively in the absence of disease for nontherapeutic purposes (growth promoters) in today's livestock production. They estimate that every year livestock producers in the United States use 24.6 million pounds of antimicrobials in the absence of disease for nontherapeutic purposes. (10.3 million pounds in hogs, 10.5 million pounds in poultry and 3.7 million pounds in cattle) Over half of that amount used in the United States would have been prohibited for use in the European Union as they are classified as important for human use. The UCS research suggests that 8 times more antimicrobials are used for nontherapeutic purposes in the three major livestock sectors than in human medicine.⁹

The Iowa Study Group reached a similar conclusion in their review of the literature in that the sub-therapeutic use of antibiotics in food producing animals (in the form of medicated feed) has been identified as the key factor in the development of resistance among food borne pathogens.

This and other mounting evidence, has lead the American Medical Association to pass a resolution to,

“...oppose the use of antimicrobials at nontherapeutic levels in agriculture, or as pesticides or growth promoters, and urges that nontherapeutic use in animals of antimicrobials (that are also used in humans) should be terminated or phased out...”¹⁰

Similar findings are now surfacing in Canada. A report prepared for Health Canada by the Advisory Committee on Animal Uses of Antimicrobials and Impact

⁷ Ibid.

⁸ Ibid.

⁹ Union of Concerned Scientists, M. Mellon, C. Benbrook and K. Lutz Benbrook, “Hogging It – Estimates of Antimicrobial Abuse in Livestock” January 2001.

¹⁰ American Medical Association – House of Delegates, Resolution 508 (A-01), 5/8/01

on Resistance and Human Health highlight several points of concern with regard to uses of antimicrobial drugs in food animals.

“There are several points of concern with regard to resistance. First, most of the classes of drugs used in animals are also used in humans. Second, some of these are registered for use in feed as growth promoters or prophylactics. Third, some antimicrobials used in humans are administered routinely to large numbers of animals for treatment, prophylaxis or growth promotion. Such routine use is of special resistance concern because of the numbers of animals involved. Fourth, modern production methods dictate that even therapeutic treatments in some types of animals necessarily involve treatment of entire groups of animals through feed or water. This effectively increases the potential exposure to resistance selection pressure. Fifth, some drugs are registered for two or more of the following categories: growth promoters/improved feed efficiency; disease control/prophylaxis, or therapy. This could increase resistance selection pressure, eventually compromising efficacy in one or another category.”¹¹

The Advisory Committee issued 38 specific recommendations in their report and came to the general conclusion that,

“...antimicrobial resistance is an important problem for both human and animal health...and ...that these problems warrants changes to the ways that antimicrobials are regulated, distributed and used in animals. These changes include:

- consideration of resistance risks as a part of the regulatory review process for new and existing antimicrobials;*
- adoption of prescription only availability;*
- closure of own-use and imported in bulk loopholes;*
- development of an improved extra-label policy;*
- rapid phasing out of growth promoters that select for resistance in humans; and,*
- development of surveillance systems for antimicrobial use and resistance.”¹²*

Greenhouse Gas Emissions

The Manitoba Government released its Climate Change Action Plan in June of 2002. In that report, they describe some of the potential impacts relating to climate change in this region of the continent which includes, earlier spring runoff, low summer water flows and increased occurrence of drought conditions which would increase pollution levels in lakes and rivers.¹³

¹¹ Advisory Committee on Animal Uses of Antimicrobials and Impact on Resistance and Human Health, “Uses of Antimicrobials in Food Animals in Canada: Impact on Resistance and Human Health” prepared for Veterinary Drugs Directorate, Health Canada, June 2002.

¹² Ibid.

¹³ Province of Manitoba – Climate Change Action Plan, “Kyoto and Beyond – A plan of action to meet and exceed Manitoba’s Kyoto targets” 2002.

Canada's ratification of the Kyoto Agreement along with Manitoba's endorsement requires a 6 per cent reduction of greenhouse gas emissions from 1990 levels by 2012. At 33%, the agricultural sector in Manitoba has been identified as the largest sector contributor of greenhouse gas emissions.¹⁴ Manure stored under the barns and in lagoons and applied onto the land are a significant source of methane emissions. Methane is 21 times more potent at trapping heat than carbon dioxide and scientists have estimated that methane concentrations in the atmosphere are now at their highest levels in 420,000 years.¹⁵

Manitoba's Climate Change Action Plan is unclear as to how and if emission reductions will take place in the livestock sector. Manitoba's signing of the Federal government's Agricultural Policy Framework (APF) provides a venue for voluntary action where support will be provided to develop and implement environmental farm plans as well as incentive programs to adopt environmentally beneficial actions. With respect to targets relating to the environmental outcome goals, the Parties (Canada and Manitoba) have agreed to work towards the following: a reduction in agricultural greenhouse gas emissions by 22% from the 2008 business-as-usual baseline by 2008.¹⁶ (This corresponds to a reduction of almost 2,000 kilotonnes CO₂ equivalency from 2003 to 2008).

However, greenhouse gas emissions in Manitoba in carbon dioxide equivalency corresponded to 19,000 kilotonnes in 1990 and greenhouse gas emissions for 2003 (latest publicly available figures) equalled 21,300 kilotonnes. This represents a 12 % increase.¹⁷

This overall increase is attributable to greenhouse gas emissions in Manitoba's agricultural sector, where in 1990, 5,700 kilotonnes were emitted and in 2003 (latest available figures) 7,900 kilotonnes were emitted. This corresponds to a 39% increase¹⁸ within the agricultural sector.

As the feedlot industry will expand substantially upon the construction of a 130 million litre/year ethanol plant, and additional finishing barns will be built as a result of a new hog slaughterhouse plant in Winnipeg, it is clear that there will be an increase of pollutants entering the environment.

In the absence of adequate regulatory oversight within the intensive livestock industry, ILOs must be classified as a development under the

¹⁴ Ibid.

¹⁵ Jouzel, J and Raynaud, D., "CO₂ and Temperature over the Last 420,000 Years: Present and Projected Climate Changes in Perspective. USGCRP Seminar, 1999

¹⁶ Canada-Manitoba Implementation Agreement of the Federal-Provincial-Territorial Agreement on Agricultural and Agri-Food Policy for the Twenty-First Century. Effective April 2003.

¹⁷ Environment Canada. *Canada's Greenhouse Gas Inventory: Overview 1990 – 2003*, (October 2005) Available at: http://www.ec.gc.ca/pdb/ghg/ghg_home_e.cfm

¹⁸ *ibid.*

Classes of Development regulation and thus subject to environmental assessment.

- 2) Classify cottage lot developments as a class of development – Manitoba has increased its cottage lot draw over the last few years. Many cottage developments take place in environmentally pristine areas and along side water bodies (lakes and rivers) on the riparian zone. Environmental assessment can be used as a planning tool to ensure that any new cottage development area would minimize impacts to the environment.
- 3) As per comment 2 above, classify large suburban/exurban subdivisions (or secondary plans or sub-divisions) as a class of development – New large urban developments such as Waverly West can be licensed to include green targets and environmentally appropriate technologies. This will ensure that the municipality and developer adhere to these conditions.
- 4) Currently new two lane roads at new locations are exempt from being a class development if approved in a plan for a sub-division. This exemption should be removed in the current regulation and expanded to include any associated infrastructure such as bridges and overpasses.
- 5) Wetlands are important as they improve water quality, recharge groundwater, decrease flood occurrences, act as a carbon sink and provide important habitat for fish and wildlife. Manitoba has one of the highest densities of wetlands of any province, but does not have a no-net loss policy. In the absence of any law or policy to protect them, any artificial (man-made) disturbances in wetlands should be classified as a development.
- 6) Water withdrawal developments between 25,000 liters per day and less than 200 cubic dam per year are given water licenses under the Water Rights Act. These licenses are granted without any public knowledge or scrutiny of the proposal. There may be regional instances whereby cumulatively, the licensed withdrawal rate of many developments between 25,000 l/day and 200 dam³ exceed the instream flow of a particular river or the sustainable yield of a groundwater source. We recommend that water withdrawals between 25,000 l/day and 200 dam³ per year be classified as a development.
- 7) Forest Management License agreements are granted to forestry companies before an environmental assessment is conducted on the forest management plan. A forest management license agreement legally binds the government to allocate wood fibre to the forestry company. It is common practice to sign the forest management agreement first and then assess whether or not a sustainable yield of wood fibre exists in the area. This situation can be fixed in one of two ways. First, forest management license agreements could be designated as a class of development, or secondly, forest management license agreements could be signed after an

environmental assessment is performed and be subject to the conditions set in the Environment Act license.

- 8) Riparian zone disturbances (ie, dykes, cottage developments, housing sub-divisions, wetlands). As an alternative to classifying new categories, such as cottage lot development, sub-divisions etc., perhaps a broader classification category termed “riparian zone disturbance” can be created as a class of development. Manitoba has identified water protection as a high priority. Limiting environmental impacts within the riparian zone would help achieve these water protection goals.
- 9) Provincial monies granted towards any project - This “trigger” would harmonize Manitoba’s environmental assessment regime with the federal government and the Canadian Environmental Assessment Act. Publicly funded projects, such as bridges, airports and sport complexes would therefore fall under the Environment Act and licensing procedure regulation.

Other developments for possible inclusion: oil well batteries; gravel quarries.

Suggestions on definitions:

- a) A pipe line should be defined as a pipe line regardless of what substance it carries.
- b) The manufacturing and industrial plant definition should be broadened to include the expanding life sciences industry in Manitoba (ie, pharmaceuticals, medicine, biotechnology) and include a clause that defines a manufacturing plant or industrial plant as one that utilizes a (natural) resource.

Thank-you for your consideration.

Glen Koroluk
Water Caucus Coordinator, (on behalf of the Steering Committee),
Manitoba Eco-Network

Cc

Minister of Conservation
Minister of Water Stewardship