MANITOBA CLEAN ENVIRONMENT COMMISSION

HOG PRODUCTION INDUSTRY REVIEW

TRANSCRIPT OF PROCEEDINGS

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Held at the Recreation Centre

Whitemouth, Manitoba

TUESDAY, APRIL 10, 2007

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APPEARANCES:

Clean Environment Commission:

Mr. Terry Sargeant	Chairman
Mr. Edwin Yee	Member
Mr. Wayne Motheral	Member
Ms. Cathy Johnson	Commission Secretary
Mr. Doug Smith	Report Writer

INDEX OF EXHIBITS

NO EXHIBITS MARKED

Tuesday, April 10, 2007

Upon commencing at 1:02 p.m.

THE CHAIRMAN: Could we come to order, please? I ask you to take your seats.

Good afternoon. My name is Terry Sargeant. I'm the chair of the Manitoba Clean Environment Commission as well as the chair of this panel. With me on the panel are Wayne Motheral and Edwin Yee.

I would like to welcome you here this afternoon. I have a few opening comments to make, and then we will proceed with hearing from a number of people who have indicated they wish to make presentations this afternoon.

By way of opening comments, the Clean Environment Commission has been requested by the Minister of Conservation to conduct an investigation into the environmental sustainability of hog production in Manitoba. The terms of reference from the minister direct us to review the current environmental protection measures in place relating to hog production in Manitoba, in order to determine their effectiveness for the purpose of managing the

industry in an environmentally sustainable manner.

Our investigation is to include a public component to gain advice and feedback from Manitobans. This is to be by way of public meetings in the various regions of the province to ensure broad participation from the general public and affected stakeholders.

We have also been asked to take into account efforts under way in other jurisdictions to manage hog production in a sustainable manner. Further, we are to review the contents of the report prepared by Manitoba Conservation entitled "An Examination of the Environmental Sustainability of the Hog Industry in Manitoba."

At the end of our investigation, we will consider various options and make recommendations in a report to the Minister on any improvements that may be necessary to provide for the environmental sustainability of hog production in this province.

To ensure that our review includes issues of importance to all Manitobans, the panel has undertaken to hold 17 days of hearings in 14 communities throughout agri Manitoba. These meetings will continue through April. Today is

the ninth meeting that we have held. We have eight more after today. The final meeting is scheduled for Winnipeg on April 27th.

It is open to any groups or individuals to make a presentation to this panel on issues related to hog production in Manitoba. For the most part, presentations are to be limited to 15 minutes. Exceptions may be made in some cases where a presenter needs more time and where the presenter has arranged, made prior arrangements with the Commission secretary.

Anybody making a presentation will be asked to take an oath promising to tell the truth. Presentations should be relevant to the mandate given the Commission by the Minister and to issues described in the guide to public participation in this review. If a presentation is clearly not relevant, it may be ruled out of order, and if it is repetitive, it may also be ruled out of order.

Members of the panel may ask questions of any presenter during or after the presentation. There will be no opportunity for other presenters to question or cross-examine presenters.

In addition to the public meetings, the CEC has engaged a number of consultants to

assist us in this review. The results of those research endeavors will be posted on our website as they are received by us. For the most part, we expect that to be in late June.

Parties will be invited to provide comment on any of those reports, if they so wish. A reasonable, albeit brief period of time, will be allowed for such comment. Written submissions will also be accepted. Information as to how to submit written submissions is available on our website. The deadline for written submissions is May 7th.

We also realize that many people are reluctant to make presentations in public for a variety of reasons. To address this, we have engaged a University of Manitoba student to meet with or talk on the phone with people who would rather not speak at these meetings. Those conversations will be kept confident. Information as to how to contact her is available on our website as well as at the table at the back of the room.

Finally, some administrative matters. If you wish to make a presentation today, I would ask that you register at the table at the back of

the room. Also, as is our normal practice, we are recording these sessions. Verbatim transcripts will be available on line in a day or so. You can find the link from our website.

In respect of cell phones, I would ask that they be turned off, or the ring tone turned off. If you must take a call, please leave the room, although if you have the luck that we have had with our cell phones, we don't receive them out here.

Finally, I would ask that you not engage in any conversations while people are making presentations. If you must talk, I would ask you to please leave the room.

Okay. The first person that we have on the agenda for this afternoon is Mr. Cal Dirks. Would you please introduce yourself for the record?

MR. DIRKS: My name is Cal Dirks.

CAL DIRKS, having been sworn, presented as follows:

THE CHAIRMAN: You may proceed, Mr. Dirks.

MR. DIRKS: I would like to, first of all, thank the CEC, the Clean Environment

Commission, for an opportunity to make a presentation today.

I'm a pullet farmer in the RM of Hanover near Steinbach, and I'm making a presentation in Whitemouth today as I will miss the opportunity to present in Friedensfeld due to other commitments this week.

My farm is also on a small acreage, similar to farms in this municipality. Our farm was established by my father in 1962, when he received approximately 10 acres of land from the neighbour in lieu of wages. He then built a free run pullet barn in 1966. In 1974, he converted from floor raised pullets to cages, as this was a move to a cleaner environment for pullets resulting in less disease challenge and enhanced liveability.

After I purchased the family farm in 1987, I operated the farm until 2001, when I undertook another upgrade to a dry manure cage system. This resulted in another substantial cost for an entirely new manure handling system. I would just like to add that it was at my cost and without any funding assistance, i.e, APF funding and so on.

I now have the latest, most up-to-date pullet raising cages available. This new cage system meets the current code of practice standard of adequate growing space per bird, increased water and feed space, and superior air quality for the birds. We have recently adopted a national on farm safety food protocol which focuses on biosecurity, regular sampling of feed and water, and other best management practices related to the housing of pullets. This cage system has also reduced the volume of manure and odour, as it is dry manure with no water added like the previous liquid manure system. And we have constructed a large covered manure building to store up to 12 months of manure. As a result, we are able to spread in spring or fall, according to current manure management guidelines.

I have arrangements with the neighboring farms to take the manure and spread it appropriately, as my land base is too small for the 230 waste units of manure produced by my pullet operation each year. This is valuable organic fertilizer, and the neighbors recognize it as such and utilize it for their crops.

In order to address some questions we

had about farming on a small acreage, I took the sessions required to complete my Environmental Farm Plan and was certified in May of 2006. This has been a valuable exercise. We live close to our pullet farm, so our well is close to our barn. Our septic field is close to our house, and our fuel storage is on the farmyard next to the storage sheds. And as you can picture, my farm is like many other farms in Manitoba.

We have been challenged through the Environmental Farm Plan process to make best management practices a priority. These efforts on my farm should ensure sustainable farming while respecting the environment we live in. My family and whoever operates this farm in the future will benefit from the best management practices on my farm.

I would like to conclude by encouraging the CEC and the Province of Manitoba to consider the huge strides made by farmers who have embraced the Environmental Farm Planning process. This has been a substantial commitment financially, and sends the important signal to the public and the Government of Manitoba that we are concerned about the environment. We are willing

to do our part, along with cities and towns, cottage owners, and what I call ruralites, that is people who chose to live in the country, to ensure Manitoba water and environment are protected. Thank you.

THE CHAIRMAN: Thank you, Mr. Dirks. How much land do you use in spreading?

MR. DIRKS: We will use somewhere around 160 acres of land over the year, or over actually several years.

THE CHAIRMAN: So a total of 160?

MR. DIRKS: Yes, approximately.

THE CHAIRMAN: So you apply it on some one year --

MR. DIRKS: Yes, depending on what the crop rotation. There is some forage crops, mostly corn.

THE CHAIRMAN: Do you have, or do you anticipate having any trouble? Do you have a long term arrangement to apply your manure?

MR. DIRKS: Yes.

THE CHAIRMAN: So it is not a problem? Hanover, we know is fairly heavily populated with livestock operations.

MR. DIRKS: Yes. But I think

transporting manure is a challenge, the distance, because of the cost. So most of the farms are looking to work together and utilize the lands closest to the livestock production area farms and so on.

THE CHAIRMAN: But there is, at least to date there is enough land available in your area for --

MR. DIRKS: Yes, in my region, yes.

THE CHAIRMAN: -- for all of the farmers, at least to your knowledge?

MR. DIRKS: To my knowledge, yes.

THE CHAIRMAN: Thank you.

MR. MOTHERAL: Just to follow up on Terry's questioning, Mr. Dirks, on this 160 acres that your neighbour utilizes the chicken manure, do you know, does your neighbour soil test?

MR. DIRKS: I believe he does, yes.

MR. MOTHERAL: It is something that we have been noticing throughout the province, that the requirement with the new phosphorous regulations, et cetera, they require soil testing. The Environmental Farm Planning process, of course, this is just a comment, we have been getting good comments about that throughout the

whole province. It is something that you can self-evaluate yourself, you can self-evaluate your operation and there is good things coming from that. I think that is all I have. Yes.

THE CHAIRMAN: Edwin?

MR. YEE: Yes. Mr. Dirks, just one question. In terms of the proposed new phosphorous regulations, do you see a significant impact respecting your operation?

MR. DIRKS: I guess that will depend. It will depend on the, you know, if there is any expansion in our area. We are not expanding, but I'm totally surrounded by, or primarily I should say surrounded by beef, dairy farmers, and there will be some smaller hog operations in my immediate area, but predominantly we are beef and dairy. So it will depend, I guess, on the type of expansion in their industry. And they are going to have some challenges too, definitely, of how to handle their dry manure.

MR. YEE: Thank you.

THE CHAIRMAN: Thank you, Mr. Dirks.

Next is Eva Pip. Will you identify yourself for the record, please?

MS. PIP: My name is Dr. Eva Pip, and I'm from the University of Winnipeg. I am a full professor and my area is toxicology and water quality.

THE CHAIRMAN: Thank you.

EVA PIP, having been sworn, presented as follows:

MS. PIP: Ladies and gentlemen, Commissioners, we are here to address an issue that is a huge issue -- we are here to address a huge issue which will be a much greater concern as time goes on, especially with projected climate change and also the water resources in this province that are very, very important. And we are particularly blessed in this regard that we have these resources, whereas many other areas of the world and even of Canada do not. And therefore, it is morally incumbent on us to protect these resources as much as possible, and that any activities that we undertake have the most minimal possible impact on these resources.

So even though this is such a huge topic and we could do a week's worth of presentations on this, there are a few things that I would like to highlight for the Commission this afternoon. And the first thing that I would like

to speak about, I would like to first address the general impact that our human activities here in Manitoba have on our surface water quality.

Over a three-year period we did a large sampling survey of surface waters in all of Manitoba, and this went all of the way from the U.S. border, up as far as Churchill and Tadule Lake in Northern Manitoba. And basically what we did, we looked at 425 sites in Manitoba, and there sites were selected randomly using GPS. And then we identified the actual location at ground level, and whatever the nearest surface water was and also how accessible it was, that was what we sampled. And we also noted the kind of human impact that seems to be the most predominant impact affecting that particular water body. So we divided our human activity categories into minimal use, which was the least possible impact. Of course, in Manitoba we no longer have such a thing as pristine, there is no area of the province that is unaffected by our activities, but at least minimal use meant that there was no particular development, as such, in the vicinity. We also looked at cottages, recreation, crop land, livestock, poultry operations, logging, clearing,

mining, hydroelectric development, and urban effluent. And what we found, we divided up the province into the five major geographic areas which are very different in terms of physiography and also geology and soil chemistry. So we found that the two categories that we will be concerned with here today, namely crop land and livestock and poultry -- livestock and poultry, these were actually barns in the vicinity. Crop lands, of course, includes both inorganic fertilizer applied and manure. And we couldn't, short of going to interview the individual farmers, we really couldn't distinguish between the two, the inorganic fertilizer and the manure, and in some cases there were combinations of both. So we lumped them together into a single category.

So this table shows the per cent frequencies of these human activities that we encountered. Remember, this was randomly chosen sampling locations according to computer generated random GPS numbers. So we found that the greatest frequency of agriculture, as you would expect, was on the southern flood plain, primarily the Red River basin. And so in this area we also had the greatest frequency of livestock operations.

Now, when we are talking about livestock operations, these turned out to be roughly 60 per cent hog barns, and the remainder were cattle, chicken, poultry, sheep, bison. But the majority of them turned out to be hog operations, so we found quite a few of them in the southern flood plain area. And then we also had in Southwestern Manitoba, of course, a fair bit of crop land activity, and we also had a fair proportion of actual barns.

So when we looked at the primary impact categories among these 425 sites, we found, first of all for total dissolved solids, that all of our human activities -- I will just explain this number in a moment, this low number -- perhaps I will explain it now. This low number is a function of where hydroelectric development is located in our province, which means primarily in remote areas, northern areas, where it already is on the Precambrian shield. Precambrian shield waters inherently have low total dissolved solids, and so where these developments are located, of course, you would see these low values because of the underlying bedrock where we have the hydro dams. But other than that, we have the minimal

activity there. And so we found that in logging, same thing here, eastern Manitoba, we found for livestock and crops that we had a significantly demonstrable impact in terms of total dissolved solids.

Now, when we looked at nitrate, this was NO3 nitrogen, the most soluble and therefore directly assimilable form. Now, we found that the greatest impact on the surface waters in Manitoba was in areas where we had livestock operations. And then of course, well, we had urban effluent, here also another one of the two greatest impacts. So in terms of nitrate contamination of our surface waters, those two were identified as the two main impacts in terms of contributing nitrate to our surface waters. Of course, nitrate is a concern, because when you have excessive quantities of nitrate in drinking water, this can pose a health hazard because of the methemoglobinemia. And we know in areas in the Interlake, for example, where numerous wells have had to be taken out of commission because of excessive nitrate values. Currently that guideline level is 10 milligrams per litre of nitrate nitrogen. And also if you consume

drinking water over a long period of time with nitrate in it, it also significantly increases your risk of gastric cancer and other related -- so this is a problem from the health standpoint, but also it is one of the two major nutrients that contribute to algal blooms which I will talk about just in a few minutes.

Dissolved organic matter, here the minimal had a fairly high value, and the reason for this was simply because boggy areas where you have -- or wetlands which are characterized by normally occurring high levels of dissolved organic substances, those are also the areas which are considered least useful for other human activities. So we saw this reflected in that fairly high value for minimal, but other than that -- okay, for logging it went up, because again you have now increased erosion, especially with clear cut, so that contributed more dissolved organic matter. And then here about, sort of intermediate, we had the livestock and crop land. Urban effluent though significantly raised dissolved organic matter content. And of course dissolved organic matter is important because it ties into the dissolved oxygen levels and

therefore health of aquatic ecosystems.

Now, when we looked at cadmium, okay, we looked at three heavy metals, so cadmium, obviously here, okay, mining had the greatest impact, but otherwise not really a statistically difference. Urban effluent was somewhat elevated, but the agricultural values were in line with the other human activities.

Now, when we look at lead, however, compared to the minimal human impact sites, okay, minimal like hydro who were the lowest, we had urban effluent and logging contributed the most lead to surface waters, but we also saw significant elevation of lead compared to minimal impact sites for the agricultural areas, the livestock, the barn, the areas impacted by livestock barns, and also areas where you had fertilized crop land.

Now, when we looked at copper, here we had of course mining, the greatest impact; urban effluent, a fair amount; then we had livestock and crop land which were still higher than the minimal impact. So there was some contribution of copper from agriculture.

And so when we rank the importance of

the major human activities in the province on the quality of surface water in Manitoba, for total dissolved solids, we could still identify significant effects for livestock production. For dissolved organic matter again, livestock was a significant effect. For nitrate, the two most important human activities that impact on nitrate in our province are urban sewage effluent, followed by livestock production. In cadmium, livestock didn't really have much, didn't figure much here. For lead, though, we still had a statistically significant effect for lead. And then copper, livestock were not -- so nitrate was the most important factor of the parameters that we looked at.

Now, when we broke this down according to the five different physiographic regions of Manitoba, what we found was that you still had for nitrate, okay, when you look at these mean values, these are the ranges, these are the mean values, so we found that central Manitoba, which is your Interlake area, and followed by the southern flood plain and southwestern Manitoba, these were the three physiographic areas of Manitoba that were the most susceptible, that was showing the

greatest effects of nitrate contamination due to human activity.

So now when we broke this down even further, if we looked now at the importance, the relative importance of the human impacts in relation to individual physiographic regions, we found that in central Manitoba, which is primarily the Interlake area, the two most important determinants were livestock production and domestic sewage, and these contributed the most to nitrate. In the Red River basin again, livestock was an important contributor, in addition to land clearing and crop production, in terms of dissolved organic matter. And you can see that the statistical significance, very, very high in this physiographic region.

And then we found the most vulnerable waters to contamination were streams, so the small water bodies, in other words, were also the most vulnerable, the most susceptible to contamination in all regions except in Northern Manitoba where, of course, the main activity there was mining, so the other activities really we didn't have enough to do a statistically significant comparison. But unfortunately, even though streams were the most

susceptible to contamination, 63 per cent of the livestock sites that we encountered were located on streams, and these were the areas where they should least be, where it is least appropriate to locate them.

The most vulnerable region was the Precambrian shield because of the low total dissolved solids, low total alkalinity that is characteristic of this region. The rocks in this region don't contain a lot of soluble salts. So surface waters in the Precambrian shield will range in the order from 100 milligrams per litre all the way down to less than 10 milligrams per litre, which is as close to distilled water as natural waters can get. So these waters also have the least buffering capacity when it comes to being able to inactivate and bind with contaminants. So the Precambrian shield should be the last area that we should be considering when we allow these developments there.

Now, in terms of the soil types that we had at these sites, well, only just over half of all of the livestock operations sites were located on clay soils, which are, as we know, the most appropriate types of soils, but only half of

the developments were located on these soils; 26 per cent were located on sand and gravel which is highly, highly inappropriate for these types of operations, and yet they were still allowed there. Clay soils were the most likely to show high total dissolved solids and metal levels in overlying water. So what this means is when we do locate them on clay soils, we locate them on clay soils because they are the least permeable. They still are permeable, but at least they are the least permeable to leaching and water flow. But at the same time, when you have clay soils and water overlying, these kinds of soils also contribute a great deal of total dissolved solids and metal, so there is a great deal of transfer of these contaminants to overlying water, even when these operations are on clay soils.

Organic soils, of course, were highly correlated with dissolved organic matter and overlying water, this is what you would expect. And then nitrate showed the greatest elevation on clay soils on the Precambrian shield. And so again this tells us that we should not be locating operations that generate nitrate in the Precambrian shield area.

Now, when we did multi-area analysis of this, the most vulnerable were the small water bodies to contamination, streams and ponds. So we define ponds as ten, the cut-off was ten hectares. So these, again, the smallest water bodies show the greatest impact, because you have the least dilution volume available. On the Precambrian shield, streams were significantly vulnerable for all of the parameters that we looked at, no matter what it was, the streams showed contamination the most readily. In the Red River basin, streams were most vulnerable to nitrate and dissolved organic matter. In southwestern Manitoba streams were most vulnerable to dissolved organic matter. Regions with the greatest frequency of livestock production were also the regions where nitrate and dissolved organic matter contamination of surface water were most evident. So this indicated that livestock production has already had an impact on our surface water. With the current levels of production, we have already produced an identifiable impact. And so this should give us pause to think, if we are going to expand any more, that we have to think very, very hard how we are going to do this, if we are going to do this,

because we already have a demonstrable impact. And unfortunately, the impact cannot be reversed, you can not clean this water up once it is contaminated. And remember, this applies to surface water only. Okay. The groundwater is a whole other issue.

All right. So then we did another study, and what we did -- now, we were concerned, we had demonstrated that in normal years of precipitation there is an impact associated with livestock production on surface water in Manitoba. So then we were interested, in view of climate change and the projected increased frequency that we can expect for storm events and unusual precipitation events, what impact does this have on the water quality? And so what we did, we looked now this time just in Southern Manitoba, because this is, of course, where the livestock productions are found. And we compared so-called normal precipitation summer and high precipitation. So we took two normal years in order to have a wider comparison base. And so we combined 1998 and 2001, which were sort of normal years. So the precipitation in 1998 was 435; 2001, 497 ml from January to September, because we

stopped the sampling in September. This, of course, was at the Winnipeg airport where you can get these measurements, and so you have to appreciate that in different areas of the province this would have varied somewhat from these numbers, but still it was overall whatever you would consider as a normal precipitation year.

Our flood year was 2005 where it was 547 millimetres, that was again measured at the airport. And beautifully for our purposes, this precipitation was not in the form of snow, which then we would have to study the impact of snow melt, but it was actually concentrated in June and July as rainfall events. And, therefore, as rainfall events, you can really have a nice cause and effect relationship, that soon after it rains, that is when you should be able fairly soon to see, if there is any impact on the surface water, you should be able to see it fairly soon. So the impacts of high precipitation events, of course, they can be snowfall, followed by rapid spring melt, and I will address what happens in that just in a moment, or you can have what we had in this study, high summer precipitation and acute rainfall events. We have to remember that for the

immediate future, these sorts of events are likely to increase with the climate change cycle. And the most affected areas, of course, will be where you already have a high water table because high precipitation can raise the water table above the surface of the ground.

Such as in my area, for example, where I live it is quite low, the water table is just two to three metres below the surface, so when we have a wet year everything is in water and you have basically an island.

Where it slopes, where you have faster run-off, where you have drains, like municipal drains going across fields or where people have made their own drains to get the water off faster from their fields, where you have very little in the way of vegetated buffer zones to help retain the run-off, the intensity of it. Where you have shallow soils, especially here in eastern Manitoba this is a concern because we start to get now, the bedrock now starts to come quite close to the surface, so you don't have the depth there. And also where you have flood plains, because you have to remember that when you have high precipitation events, and especially if you have a flood like we

had in 1997, all of the barns, all of the lagoons get washed out and everything gets dumped into Lake Winnipeg. And so it doesn't matter how much we have dyked it or, you know, when you have a flood event like that, all of that material ends up eventually in the lake.

So what we did, now we looked at total dissolved solids where we compared the non-flood seasons and the flood season. I should mention here that the number of sites that we looked at was 106 sites. So we sampled these 106 sites in these years, and in this year, and so we found for the urban, okay, in the flood season, total dissolved solids went up. In cottage areas total dissolved solids went up. In crop land, total dissolved solids went up. These are the ranges here, by the way. So you had a big range here. And then livestock, again, it more than doubled in terms of total dissolved solids. And that was just a difference of just a little bit over 100 millimetres of precipitation between those two types of seasons, yet we more than doubled the total dissolved solid impact to the adjacent surface water.

Now, when we looked at nitrate, okay,

for the urban, this was the only one that actually went down. And the reason for that was that with increased storm water going into the sewers, you are actually diluting the nitrogen that was in the sewage, because you still had the same amount, actual amount of sewage going into the system. But it increased storm water, you diluted this a bit. But for recreational areas, this didn't work. You increased. For crop lands, so this -- I put here a note chemical and manure fertilizer, because we really couldn't distinguish enough between them -- so for crop land, big increase. And then for livestock, again, it actually doubled in the higher precipitation, the precipitation year compared to the so-call normal precipitation year. So precipitation is a very, very important factor in terms of escape of substances, dissolved substances into the adjacent surface waters.

So now we looked at soluble reactive phosphorous, which is orthophosphate, that is the most immediately uptakable form of phosphorous in terms of algal growth, and it is the most soluble form of phosphorous. So here we found, okay, this was not a statistically difference here, there was hardly any difference here between flood and

non-flood years for phosphorous. We increased a bit again here, but not statistically significant for cottages. This was statistically significant, so for crop land we did have a statistically significant increase in phosphorous. And for livestock operations, same thing, statistically significant increase in terms of the amount of phosphorous that was coming off into the surface water.

Dissolved organic matter increased, and this probably -- you had increased leaching of leaf litter and whatever with the higher precipitation; for the cottages, increased; for crops, increased quite a bit. And then we also had some increase here for the livestock operations. So all of the categories showed an increase when you had flood versus non-flood years.

So the results of flooding on adjacent surface water, high rainfall associated with increased nitrate soluble reactive phosphorous, total dissolved solids, and dissolved organic matter in adjacent waters. Smaller water bodies, and this again echoed the results of the first study, smaller water bodies showed higher

increases than larger water bodies, again because of the dilution capacity of the receiving water. And then this multi-variant, analysis of variants identified both land use and water body type as significant determinants for chemistry water impact. And this is something that is very important for us to bear in mind. When we do planning, where do we allow certain operations, where don't we allow? So we have to consider what water, what kind of water body type it is, in addition to the geographical region of Manitoba, where it is located.

Here is something that was of great concern. 10 per cent of our 106 sites actually showed more phosphorous than nitrogen in the surface water. And so this indicates that phosphorous is way in excess, and I mean really enormously in excess, to the point where when you are talking about its capacity to stimulate algal blooms that it no longer becomes the limiting factor in waters like this. So in 10 per cent nitrogen actually now becomes the limiting factor compared to phosphorous. So this again echos that we have to consider both nitrogen and phosphorous when we are talking about nutrient escape into our

surface waters.

And then, of course, the findings of this study were just about the same as these people, this was a European study. And so what we found was pretty well the same as what they found there in Europe.

Okay. Now, what can we do for reduction of nutrient escape? Of course, we have to have means of containment of run-off from barn property, and you would think this would be like a no brainer, but you would be -- well, maybe you wouldn't be surprised how many, you know -- well, I will show you in some of the slides later. Okay.

So we have to have dykes in place in the event of future lagoon overflow, liner failure, storage and rupture, so that we don't have these instances that we seem to have every year where you have the super giant spill and it, you know, makes its way right to the nearest stream, and people are running around because there have been no contingency plans in place to anticipate these events. There should be monitoring wells that are mandatory for intensive livestock operations, mandatory permanently

vegetated buffer zones around barns and spread fields. What this means is, like in a lot of the applications that have come forward, the operator, the proponent proposes to plant a shelter belt. Well, A, just a shelter belt won't do it; and B, it will take how many years for that shelter belt to actually grow to an appreciable size? So in the meantime you have to have some interim measures until that vegetated buffer zone becomes established. There should be no drains directly into ditches or municipal drains. But unfortunately this is something that we see far, far too frequently. We have -- again, I will show you some sides later.

Spreading setbacks from ditches and drains; currently we find that in many instances these are not respected. And again, I will show you some slides later where, you know, it is not at all unusual to see manure disposed directly in ditches.

Sediment traps in weirs and culverts to retain particulates, because a lot of nutrients are bound to the particulates in soil, and so when you are losing soil particles with erosion or run-off, you are also losing a fair proportion of

bound nutrients.

And no dribbling of manure on roadways, again, this is currently not respected. Again, you can run into this a lot. Okay. And that will come later, more in monitoring and enforcement.

Now, nutrient escape reduction, there should be more than one soil sample per quarter section of land. A lot of soil testing has just one sample, which is completely inadequate. I myself have a 40-acre piece, and I have like six different soil types on my own little bit of land. And so that is completely -- well, pretty well meaningless if you just use one soil sample to represent a whole quarter. There should be GPS location of soil samples so that the documentation indicates exactly where that soil sample was taken, and if verification is needed, that can then take place. If there is something strange -- for example, there have been instances that I'm aware of where a soil sample was taken before the manure was spread on the field, then another soil sample was taken after spreading, and the second soil sample showed levels, nutrient levels far below those of the first soil sample. And so that

obviously was something that would need to be verified. Periodic sampling should be done at stated depths below the surface, especially if manure is being applied repeatedly, again and again on the same piece of land.

This is the other thing that I wanted to mention, that I myself have seen instances where soil samples submitted for testing were taken from a completely different piece of land from the one that they were supposed to be. Soil sampling should be subject to random independent verification, so that goes back to the GPS there.

In a flood season the nutrients are not utilized by crops, so they escape to water. So we know that Manitoba Crop Insurance does have records of people who repeatedly claim for flooding year after year. I know in my area where I live, because it is so wet, they do this. And so these records can be used to identify these operators and maybe give them assistance with other options that they could pursue so that they don't have this, where they put on the fertilizer each year, and then it is gone because it was flooded out, because the area was inappropriate for that kind of activity in the first place.

Manure spreading on the same plot of land year after year should not be allowed, because eventually you have the build-up of the solids and metals and so that can permanently in some cases incapacitate the future production potential of that land. Surface water should be periodically monitored downstream, and this should be mandatory in order to promptly identify if there is going to be a problem, you can address it early on rather than years down the line when a lot of damage has already been done. This part, this relates to the current --

THE CHAIRMAN: Dr. Pip, about how much longer do you think you have in your presentation?

MS. PIP: Actually, the next, I'm informed that Mr. Hugh Arklie is not here.

THE CHAIRMAN: He will be here later.

MS. PIP: Would you like me to stop at this point?

THE CHAIRMAN: No. How much longer do you think it could be?

MS. PIP: Could I have another 15 minutes?

THE CHAIRMAN: Okay. And I say that because this is probably the first scientifically

based presentation we have had in opposition, so we will give you a little grace because of that.

MS. PIP: Thank you. So then I won't go into this in detail in terms of the suggestions that I have, in terms of how the nutrient calculations can be improved that we have. I will just move on here.

Manure application, this relates to applying, the problems, particular problems when we have applied to pasture land and also certain kinds of crops that tend to be nitrate accumulators and, therefore, can lead to toxic concentrations of things like cyanogenic lycosides, and also in cattle, excess nitrate levels that may cause nitrate toxicosis.

These are just some slides showing these heaps of -- this is in this case hog manure. There is the shoreline of Lake Winnipeg, and these heaps, every year the operator simply adds to them but does nothing at all in the way of spreading them.

Winter manure application; this is important because we still have quite a bit of this going on in our province, especially the smaller operators. My neighbour, for example, my

next door neighbour, every day of the year, because he doesn't have a lagoon. So no winter application should be allowed, period, because you may have a number of these smaller operations in an area and they can add up numerically in terms of their impact, they can add up to more than the impact say of a single larger operation might have.

The pathogens in swine waste -- I will move on here. So manure application in winter months, there is other research from other areas which showed now that besides the nutrient problem, the coliform problem, especially when applied on snow -- and so this is another reason why this should not be allowed.

This business of antibiotic resistant bacteria, again, this is other research that I will just go by here.

We have to plan for swine disease outbreak, because we know for a fact that sooner or later this is going to occur in our province, and so we have to be prepared for how we dispose of diseased animals -- or even large numbers of animals, like, for example, you have a barn fire or something like that, at present we don't have

any real -- well, we have to think about this. Okay.

These were studies done in Ontario with respect to livestock operations and well water contamination, so basically they found increased well water contamination, and particularly e. coli. So I will go past that.

Algae, as we know in Manitoba, big problem, nitrogen and phosphorous feeds the algal blooms, and this is a public health issue because there is no antidote. This is one of the most toxic -- these are among the most toxic compounds that there are. So, again, we have the prospect of climate change, this is something that we have to consider again in our longer range plans, and the ecological effects and so on.

So the deficiencies in current practices, I will just go past this too, and the need for restrictions. These are all just based on -- I have now been looking at this for more than 40 years, sampling water in Manitoba. So all of these ideas that I have here, they are a synthesis of what I have seen having traveled now through all areas of the province, and then where we should exercise special restrictions, and then

other issues such as, for example, greenhouse gases and so on.

Then what I would like to do is show you some 35 millimetre slides. And the reason I'm showing you slides rather than having scanned it into a digital image, this is so that -- the same as with forensics and crime scenes, for example, you still have to use film, you are not allowed to use -- so these are the actual negatives that you are viewing. They have not been altered in any way.

So we have in many areas of the province some of these very, very large barns, and we don't even know how many hogs are housed in these operations because, of course, there is no, nobody checks, and inspectors are not allowed to go inside for issues of biosecurity and so on. And we do know that a lot of hogs get sold not just through regular channels, but under other people's names and so on. So, in fact, we have hogs that we don't account for in the numbers that we give when we say how many hogs there are in the province.

Now, as I mentioned, these operations tend to be located near streams, which are the

worst possible place that they should be located. The other thing is that they are located in areas where there is a lot of good quality water because of the high water requirements of these operations, but unfortunately the water that they put back is quite different from the water that they take. And in many cases the technical review committee -- that is another whole issue that I had wanted to address but don't have time for -- the technical review committee routinely has approved projects where there was zero information in terms of hydrological data, aquifer size, what other demands were being made on these aquifers, and yet these projects still got approved.

Here is another one, when I had mentioned no direct drainage to surface water bodies, here we see -- this is a relatively smaller operation, but what this person has done, he dug a ditch straight from his barn door here, and it goes to the road side ditch which then goes to the nearest local stream. And so in terms of the impact on the surface water, we have -- we can clearly see that there are often large pieces of waste that end up in the local water. This one in particular, this happens to be Hazel Creek which

is not far from here. Hazel Creek is a particularly sad example because it contained many, many rare species originally that were not found elsewhere in Manitoba, but now we have allowed it to degrade to the point where not very much lives in there at all now.

Here is another example of just hog barn waste dumped into a neighboring stream. And then this is in the Interlake area, this is a ditch where hog waste is dumped, and this ditch goes directly to a wildlife refuge. So here is another example, this is a stream, again, just downstream from a hog barn, absolutely nothing lives in that water except for anaerobic bacteria. There is nothing else there, and the stench is horrible.

And here this is in the Fisher Branch area. So we have the hog manure right here beside the ditch, and again the flies and stench here, we see all of the algal blooms. And the problem with above ground storage tanks, that is a whole other issue that we have to look at more closely. This again, there is the shore of, the west shore of Lake Winnipeg, and we have the manure just dumped there and the ditch going by.

Okay. Here in this case, this is my next door neighbour, and the reason that I put this here is we see an abandoned well head here, and he generates so much manure that he piles it up around the abandoned well head. And as a result, therefore, I have had to boil my water now for years. It wasn't like that when I first came there.

And here we see, this is in the Rivers area in Southern Manitoba, here we see a manure tanker, and what he is doing is he is going along the roadway and he is dumping the manure in the ditch. Toughest regulations in the world, right?

So, again, this is where I live. Okay. The winter manure spreading, and there is so much of this that by March -- my house is in these trees here -- this is what it looks like by March, it is up to about a foot thick or so on there. And then this time of year now, okay, there is another shot of that field next to me. And so when this melts, this is the same field that we saw in the previous two slides, all of this simply rushes off into the ditch and into the Brokenhead River. Right, toughest regulations in the world.

And I just wanted here to show you some slides of the other problems that this ultimately causes down the line. And that is the algae, of course. This is what blooms look like, and they produce a variety of toxins that there is no antidote. Some of them are extremely fast acting. In fact, if you were to take a coffee mug and dip it into here and drink it, you would be dead in less than five minutes. And we have many, many livestock, many livestock deaths, hundreds of livestock deaths each year because of the algae in dugouts and ditches.

Here, this is a ditch just downstream from a hog barn. And what we see here, algal blooms at the end of October. Now, we know that blue greens normally don't bloom unless the temperatures are fairly warm, like more than 15 degrees, but here in this case, temperatures are near freezing, but there is so much nitrogen and phosphorous in this water that we see algal blooms even at this unseasonable time of year.

Now here, okay, where does this end up? Lake Winnipeg now, I will just go through this quickly here because a lot of you know about Lake Winnipeg. In some cases these algal blooms

are so extreme, here this is on the west side of Lake Winnipeg, so in this case now the eco-system, when you have something like that has collapsed completely, there is absolutely no oxygen in the water column below that. Again, here we see how dense these blooms are, okay. And another -- and so what happens then is we then inflict another problem to try to deal with the algal blooms. We treat the water with copper sulfate, even though that is supposed to be illegal, but we still do it anyway. So the copper sulfate kills off any of the aquatic organisms which the original algal hasn't managed to kill off. Here we see here, all the copper sulfate here, that is at Victoria Beach right next to their water intake, so the people are drinking that water there.

So, I guess I have to quit here now, even though I would have wanted to say so, so, so much more.

THE CHAIRMAN: Thank you very much, Dr. Pip. We may have one or two questions for you. Edwin?

MR. YEE: Yes, Dr. Pip, just a question. In your categories you had the minimum impact land use category. Can you give me an idea

of the types of land use? Would that be like Crown land?

MS. PIP: Yes, some of them would have been Crown land. The minimal land use was simply sites where we could see no obvious human activity. So they would have been things like back country areas, or areas in Provincial Parks that were away from the developed areas, and many bogs, like even around here, like the Julius bog and the Whitemouth bog and so on, where that kind of land, it is the least suitable anyway for other human activities. So, yes, therefore that kind of land tended to have a lot of dissolved organic matter in it simply by virtue of the bogs. But other than that, you could have demonstrated, like for the other parameters, that all of our human activities have identifiable impacts. And here is one of the other things that I wanted to say is, we can't just look at the livestock industry or the hog industry as though it was hanging by itself in space, because it isn't, it ties in with all the other activities that are present in that area, and that also have impacts on that same water. And so we have to consider everything in a comprehensive way, instead of looking at each

individual application as though that were the first application we ever had.

MR. YEE: Thank you.

THE CHAIRMAN: You noted earlier in your presentation that about 53 per cent of livestock sites are on clay land.

MS. PIP: Yes.

THE CHAIRMAN: And about 26 on sand and gravel. And then if I understood you, and I'm not a scientist, but then you seemed to indicate that where sites were on clay land, because of the clay there was more run-off into surface water. Is that --

MS. PIP: No. What that indicated is where you had adjacent surface water, it was also on clay sediment, it seemed that clay sediment, the clay particles are very fine, like they have colloidal particles and so on, they have very large surface area and a lot of them have ion exchange capacity, so a lot of these particles tend to bind nutrients that come off wherever they come from, the run-off or whatever. And, therefore, if this water stands in contact with the clay sediments that contain the bound nutrients, that you have an increased amount of

nutrients transferring across the clay water interface into the water in these areas simply because the sediment already contains more of the bound nutrients, therefore, the likelihood is greater that the nutrients will transfer to overlying water.

THE CHAIRMAN: So is it okay, considering all of the other regulations in place, is it okay to site livestock operations over clay based soil?

MS. PIP: Yes. Yes, that is the best option because of the least permeability of that type of soil. So here we are talking about groundwater potential for contamination. What I was looking at was overland run-off, which then is a completely different story. So that comes back again to one of my suggestions, that we have to make sure that the site is contained, so that there is no opportunity for overland escape of materials into the adjacent surface water.

THE CHAIRMAN: And it is your view that there should be no livestock operations on sand and gravel based --

MS. PIP: That is my view, yes.

THE CHAIRMAN: Thank you. Wayne.

MR. MOTHERAL: Thank you. Ms. Pip, I, being a former councillor, a former municipal official, I was curious, you say that the technical review committee approved a certain project. Well, if I'm on the understanding, I believe municipal councils have the final say as to where -- I don't want to, I'm not leading into anything here, but municipalities do have the final say, I believe, as to where hog operations would be.

MS. PIP: Okay. To answer your last comment first, theoretically, yes, they do, but when you actually speak to the municipal councils, they are under the impression that with the new planning act now, that once a project has been okayed by the technical review committee, that they are, if they then vote against this, if it has been okayed by the technical review committee, that they are then setting themselves up as liable for legal action by the proponent under this new planning act.

The other thing is that in my experience, I find that the technical review committee should have better qualifications to review, because I will cite as one example, well,

the most recent example was the night right before the municipal election last fall, there was, in Lac du Bonnet, there was a municipal council meeting to approve a proposal. And that proposal, first of all, it was on only about a 42-acre property to have these livestock barns. Secondly, he didn't have enough manure storage space there. Thirdly, he was proposing to apply manure. Four of his spread fields had municipal drains running across them, and he had indicated no plans to observe setbacks, not only from property lines, roadways. And the drains, he was indicating it was 160-acre field with a big municipal drain running across it. He had four of them like that. He indicated that he would be spreading the whole 160 acres. That still got approved. He indicated two of his parcels would be bog land, completely 100 per cent organic soil. And the technical review committee didn't blink with that. He was missing soil samples for some of those proposed spread fields. The technical review committee didn't blink with that. Well, that was just one single application. So what I'm saying is, the technical review committee process means nothing.

MR. MOTHERAL: That is all I have.

THE CHAIRMAN: Thank you very much for taking the time to come out here today, Dr. Pip. Excuse me a moment.

Next is Mr. Hugh Arklie.

MR. ARKLIE: Sorry, I just got here, so I think the process is to identify myself and then carry on. Is that correct? Did anybody want to swear me in first?

THE CHAIRMAN: Would you please state your name for the record?

MR. ARKLIE: My name is Hugh Arklie and I'm in the postal district of Dugald.

HUGH ARKLIE, having been sworn, presents as follows:

MR. ARKLIE: So, my presentation today is entitled "Factory Hog Industry Review Land Use Planning And Approval." As a result of the scoping process, the Commission sought input into those subjects that should be discussed at the eventual meetings, and a list of opportunities was presented from which we could choose, and I chose land use, planning and approval.

Introduction: K. William Kapp in 1971 defined social costs as direct and indirect costs suffered by third parties resulting from private

economic activities. Social costs include damage to health, property values and natural landscapes. The impacts of the industrialization of swine production on the environment, health and makeup of Manitoba's rural community fit Kapp's definition of social costs.

Manitoba's legislators were not insensitive to the concept of social costs when they wrote the Environment Act. In fact, its very first section describes the intent of the Act to

> "...ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development."

So the factory pig industry will be judged not only by its economic performance, but also on its social performance. This paper will show it failed miserably.

Furthermore, the Sustainable Development Act speaks clearly to the issues of health. It holistically defines health as being

> "Sound in body, mind and spirit."

The Canadian Public Health Association in 2000, the Canadian Medical Association in 2002, and the

American Public Health Association in 2004 have all adopted resolutions expressing concerns about health issues and industrialized hog operations. This paper will show why the mental health of Manitobans is at risk.

There are many routes that this discussion could take, but a focus on land use planning and approval will best highlight how the porcine industry and its confederates in the civil service have taken square aim at the social development and mental health of rural Manitobans.

The abuse of rural Manitoba by sunless hog factories has its genesis in the Lisoway v Springfield Hog Ranch Ltd. case. It was this court defeat of the hog industry in 1974 that caused the NDP government in 1976 to strip rural Manitobans of the ancient English common law right to sue for nuisance. For 31 years the industry has been favored by the courts, forcing its opponents to marshal widespread opposition during the land use and planning approval process. Typically, petitions are produced that clearly show massive public opposition. They are dismissed because apparently democracy ends at the ballot box and we are not allowed to participate

in the intervening four years. There is no shortage of examples, including my municipality, Springfield.

When large numbers of citizens assemble with the protection of their communities in mind, the civil service from urban Manitoba descends to convince them of their errors. In 2001, representatives of the government told the people of Shellmouth-Bolton that they had no legal right to oppose a new hog factory. That is, they had no right to protect their current way of life, social costs be damned, the Environment Act be damned. But the hog industry can participate.

In 2000, an operator tried to win the approval for a new factory by offering $100,000 to support the region's bid for the Manitoba Winter Games. All that the municipality had to do was stop blocking the company's expansion plans. To its everlasting credit, Bifrost said get lost.

The sorry history of the intensive hog industry in Manitoba is replete with examples of conflict of interest. Individuals are allowed to sit on technical review committees, while relatives apply for factory approvals. Municipal staff offers advice to relatives on how to avoid

the spirit of the rules. Councillors do not absent themselves from debate concerning individuals with whom they have business dealings. Councillors compromise their integrity by approaching applicants during public hearings. But the best or worst examples include senior public servants who made the rules and guidelines for the hog industry. I remember them well. They would utterly ignore the public upon showing up at council meetings where they would, with clinical precision, support a new factory proposal. They were and are hog industry servants, not public servants. Too bad that the pigs cannot pay their salaries and pensions. Some senior public servants have graduated beyond supporting the industry while being paid by the public. Now they are in the employ of the industry and get to benefit from the work of their earlier careers when they made the regulations and guidelines under which they now operate. They also get to interact on an informed basis with the current crop of public servants, an advantage that no rural citizens enjoy.

Speaking of the public service, it enjoys a virtual monopoly over membership on

technical review committees. They set the rules in their offices, then they analyze the proponent's application. The analytical work, the so-called analytical work is usually done in the cozy confines of those same offices. It is then forwarded to the rural municipalities who in their wisdom confer environmental assessment status on this junk.

In the RM of Strathclair and in the RM of Turtle Mountain, TRCs missed the presence of water bodies that were crucial to the assessment of hog factories. In a classic example of carelessness, a TRC failed to pick up glaring errors in a proposal that went before the RM of Portage la Prairie. In these examples it was citizens who took the trouble to analyze the work of the TRCs. How many more bungled TRC reports have been relied upon by municipalities in the absence of citizens who volunteer their time and costs to check on the work of the TRCs?

None of this is surprising. It is disgusting, but it is not surprising, since the public service is squarely in the corner of the porcine industry. The so-called work of the TRCs is illegitimate and unprofessional. There is no

requirement of a TRC to visit the field, to consult with experts, or to gather local knowledge. The result of the TRC process is to diminish the spirit and intent of the Environment Act and the Sustainable Development Act. The environment is given short shrift, and the social costs mount.

Land use planning and approval is irrelevant in Manitoba because that is the way the industry and the public service wish it to be. The proof is in the pursuit of offenders. In the RM of Hillsburg a lagoon was built in flagrant disregard to the regulations. A video taken by a neighbour proved that it could not handle a subsequent rainfall. It was porous and all the rain, every cupful, leaked right through.

Four million litres of pig manure spilled near Morden in 2000. The public was told three years later. Hog slurry is about 100 times more toxic than raw human sewage. In 2002, a steel manure storage tank near MacGregor exploded its way into infamy. It dumped four million litres of hog slurry in a heartbeat, contaminating local wells. Near Cypress River in 2005, a lagoon failed, poisoning the surrounding area with more

millions of litres of the hog industry's curse upon us. These tragic events were understated by the Department of Conservation. No meaningful penalty was assessed by the department, much less paid by the operators, who did not even seem to be embarrassed.

Government oversight is ineffectual. Bill 33, the new Planning Act, appears to have been written to make straight the path of the hog industry. The Farm Practices Protection Act, which replaced the infamous Nuisance Act of 1976, makes provision for a Farm Practices Protection Board. Unfortunately, the board is regularly scorned by operators who apparently need multiple notifications and warnings before they acknowledge their social responsibilities as embodied in the Environment Act and the Sustainable Development Act. What is the point of a speed limit if there are no traffic cops? Indeed, if there is no traffic enforcement at all, why issue driver's licences? The hog equivalent of a driver's license is land use planning and approval. In fact such planning and approval is about as meaningful as a driver's licence in Baghdad.

The industrial porcine business has

run rough shod over this province. It has stained the rural countryside with its presence by introducing foul odours, heavy metals, noxious gases and residual antibiotics, all while it abuses dumb animals in factory enclosures. The industry has caused social costs that it can never hope to repay, even if it felt the obligation to do so.

The CEC should bring down the hammer on this industry and recommend a permanent closure on its expansion. In doing so it will invoke the precautionary principle which ensures that future harm will not be done by taking precautionary actions to prevent a threat to human and environmental health. This can only be done if you believe that nine million pigs are enough.

That, Mr. Chairman, is the end of my presentation. I do have a note here that says the material that you have following my presentation in your binder is a series of scientific studies on the hog industry. Some of them are taken from Manitoba research, some are from the U.S., one is from France. The one from France is interesting. It shows that pig manure can now be fingerprinted so they can tell pig manure from other animal

manure. I know that the hog industry will object to the use of non-Manitoba studies, but the last time I looked, H2O was water everywhere.

Thank you very much.

THE CHAIRMAN: Thank you, Mr. Arklie. Edwin?

MR. YEE: I'm not sure if I have a question for you, Mr. Arklie. I guess just for clarification, though, I realize what you are asking us to look at and your position is, continue the moratorium. But I'm thinking in terms of on the positive side, would you have suggestions, given your statements about the technical review committee, how that process could be improved, if it were to continue?

MR. ARKLIE: I think the standard should be ratcheted up a significant amount. There is a general misconception on the landscape that a technical review, and if you read some of the rural papers that have reported on your meetings, you will find that rural participants that have I have read in some of the rural papers are equating a technical review with an environmental assessment. It simply isn't the case. There is no requirement for the TRC members

to actually get their feet dirty by walking on to a field and have a look at what is going on. They can do whatever they want from the corner of Portage and Main. It is not an environmental assessment, but the public thinks it is an environmental assessment. So if you want to earn that type of respect from the public, then you better perform the work and actually do environmental assessments as contemplated by the Environment Act.

Technical review is just, it is nonsense. There is no substance to any technical review that I have ever seen. It is a matter of checking off boxes, and apparently putting into that as much care and concern as the average consumer doing a corporate survey puts out.

The real tragedy, though, is that people are being allowed to give the public the misconception that these are environmental assessments, and once the approval goes through, then everyone assumes that the environment has been protected because of the documentation that has been tabled. It is fraudulent. The process is useless. I think Dr. Pip said the same thing.

THE CHAIRMAN: What do you base that

on, that it is fraudulent, that they don't have very high standards to meet?

MR. ARKLIE: Because I think the industry is quite happy to have the public confused over what is an environmental assessment and what is not. I think the hog industry in Manitoba knows full well that a TRC -- because they are smart people. Some of them have had the opportunity of actually working on environmental assessments, and they know, as well as you and I, that these are not environmental assessments in the sense of the Environment Act, which is the impression they are giving to the public and the public embraces it. To avoid that, we have to tell the public either these aren't environment assessments so don't get your hopes up, or actually do environmental assessments.

THE CHAIRMAN: Thank you.

MR. MOTHERAL: I'm not sure whether -- you had this quotation here, Mr. Arklie -- whether you were trying to bring forth a point, or do you know from research, is hog slurry 100 times more toxic than human slurry?

MR. ARKLIE: Pardon me?

MR. MOTHERAL: I am just wondering if

you were just using that to put a point out or did you have any research at all?

MR. ARKLIE: I think you will find that referred to in at least one of the studies I have in there. It might be Bill Payton's study. It might be another one.

THE CHAIRMAN: Thank you very much, Mr. Arklie. Thank you for all of the reading material.

David Young. State your name for the record, please?

MR. YOUNG: My name is David Young.

DAVID YOUNG, having been sworn, presented as follows:

THE CHAIRMAN: Proceed please, sir.

MR. YOUNG: Mr. Chairman, distinguished members of the Commission, the Clean Environment Commission, my name is David Young and I appear to present to you a report on water quality in the Whitemouth River watershed on behalf of the Whitemouth-Reynolds Soil and Water Conservation Association. The Whitemouth-Reynolds Soil and Water Conservation Association is an unincorporated syndicate of persons interested in soil and water conservation in the municipalities

of Reynolds and Whitemouth. The association includes members of the councils of both municipalities and is supported by the municipalities. The association is supported by Manitoba Agriculture, Food and Rural Initiatives, and has also received support and advice from other agencies of the Government of Manitoba and from PFRA. Financial support is provided by the municipalities and, from time to time, by several agencies of the Government of Manitoba. I would mention peripherally, sir, that the budget of this association is approximately $7,000 per year. It is a small amount, but it comes from many sources.

We are presenting to you today a report which summarizes the results of six years of methodical testing of water quality in the Whitemouth River. The report shows that nutrient levels in water discharged from this watershed are within Provincial water quality guidelines. It also shows that the levels of concentration of phosphorous and nitrogen in the Whitemouth River do not increase as the river flows through the agricultural and residential areas of the watershed, and the levels of concentration have not increased during the last six years.

In brief, the report shows that agriculture and other human activities in this watershed are not contributing to increased levels of nutrients in Lake Winnipeg or other downstream waters.

Sir, if I may digress just for a moment at this point, I must apologize, I had completely missed the highlighted point in the letter received from your Commission asking that I submit ten copies of our report to you. I submitted one, plus an electronic copy, and of course I realize, gentlemen, that you do not have our report before you. It is 18 pages long, consisting mainly of data, and it has appended to it some 15 pages of all of the water test results from the previous six years. I'm sorry that you have not got that in front of you. Perhaps when I finish you may wish to raise some questions that I have not included in my address because of my misunderstanding. The fault was entirely mine.

The report which we are submitting to you today includes and summarizes the results of 301 sets of water quality tests. As we are presenting you with a complete record of these tests, I shall, with your approval, sir, confine

myself to a brief summary of some of the salient results and concentrate my presentation on the rationale for the collection of this information and on the mythology -- on the methodology, that was a very unfortunately mistake, sir -- on the methodology of the testing process.

Most of the population of the municipalities of Reynolds and Whitemouth live in the Whitemouth River watershed, and almost all of the farmyards are located in this watershed, often near the rivers. A small area of land and a few farms are in the Brokenhead watershed that is over towards the Molson area, and another small area drains directly into the Winnipeg River, that is in the Rennie area and just in the east side of the Rural Municipality of Whitemouth.

We use river water for recreation, for stock watering, and sometimes, after treatment, for household uses. Water quality is vitally important to all of us. We recognize and understand the widespread concern for the extent to which Lake Winnipeg is being contaminated by excessive nutrients, nitrogen and phosphorous, and recognize that agriculture is sometimes blamed for contributing to this problem by allowing excess

run-off from fertilized fields or for contamination of rivers with manure.

To discover and report the extent to which we might be affected by contamination of water in our rivers, and to learn to what extent we might be contributing to contamination of downstream lakes or rivers, the Whitemouth-Reynolds Soil and Water Conservation Association decided in 2001 to begin monitoring water quality in our rivers. We have received financial and technical assistance in this undertaking from both municipalities, from Manitoba Agriculture, Food and Rural Initiatives, and from the Sustainable Development Fund, from PFRA and from Manitoba Water Stewardship. All laboratory tests have been conducted by Enviro Test Laboratories. Test protocols were established in consultation with and under the advice of officers of the Manitoba Water Management Agency, now known as the Department of Water Stewardship. Eleven parameters are measured from each set of samples. We concentrate on total phosphorous, total caldol nitrogen, faecal coliform and e. coli. We are advised that these protocols are in harmony with those used by the

province.

During the first year, 2001, sample sets were collected at four sites on the Whitemouth River. In the second year a collection site was established on a tributary known as Kelner Creek, and a third year an additional site was established on the Whitemouth. Since that time samples have been collected at five sites on the Whitemouth and one on Kelner Creek. I would mention peripherally, sir, that in the way we have presented the data in the report which we are submitting to you, the Kelner Creek appears in the tabulated forms and in the graphics in the same sets of tables and graphs as the tests on the Whitemouth River, but those tests are for Kelner Creek upstream its confluence with the Whitemouth and do not reflect water quality in the Whitemouth River at that point. This is significant because water, the phosphorous and nitrogen levels, for example, in the Kelner Creek watershed, which is a small intermittent stream, tend to be about 50 per cent higher than the concentration levels in the Whitemouth at that point. We are measuring it separately because we are concerned about this particular one.

Site one, our first site, is located a few kilometres upstream, that is south of highway 1, south and east of Hadashville. The point was established to measure the quality of water draining from the lake, forests and bogs upstream of virtually all residents and farms. Site two is located several kilometres downstream on provincial trunk highway 506 to measure any changes which might occur as a result of drainage of the Hadashville, Medika areas. Site three is located on highway 44, a few kilometres east of Whitemouth, where we are just at the moment. The boggy Birch River, which drains more than one quarter of the watershed, joins the river in this reach. And the boggy Birch drains more than one quarter of the watershed, joins in this reach.

And site three was established to measure any changes which might be attributable to that source, or to the fairly extensive agricultural area surrounding Elma. Any changes in quality attributable to intermittent flow from the Kelner Creek would also be reflected in differences between sites two and three.

Site four is located downstream of Whitemouth in order to measure any changes

attributable to this community.

The final site, site five is located close to the confluence of the Whitemouth and the Winnipeg River and measures the quality of water discharged from the watershed.

In 2001 we collected 13 sets of samples at each of the four locations for a total of 52 sets. Eleven sets were collected between mid April and late October, and the other two were collected in the winter. In 2002, 13 sets were collected at the same points on the river, and six sets were collected at Kelner Creek for a total of 58 sets. In 2003, an additional collection point was established and the frequency of sampling was reduced. A total of 60 sets were collected; 54 sets were collected in 2004. The frequency of collection was reduced again in 2005, and 39 sets of samples were collected. And in 2006, 38 sets were collected. In total, 301 sets were collected during the six year period. Results of all of these tests are appended to the report which we are submitting to you today.

Our analysis of the data derived from laboratory tests of the 301 sets of samples has focused on three parameters, the concentration of

total phosphorous, total caldol nitrogen and e. coli. During the six year period the geometric level of total phosphorous measured at site one was .0408 parts per million. This measurement point is upstream of the agricultural area in the watershed and upstream of almost all permanent residences. It reflects the quality of water draining from Whitemouth Lake and a region of forest and bog located south of highway 1. The highest mean level at this point was recorded in 2001, on one of the occasions when we tested, and it was .049 parts per million. The lowest annual mean was .0286 in 2005. I mention in this context, and of course you will realize that the provincial guideline is .05 parts per million or below. Now, this is at our upstream point, the point where the river is flowing from the forests and the bogs.

The six year mean level of phosphorous measured at Seven Sisters, this is at the point where the river is discharging into the Winnipeg River, was .0394, or slightly lower than the levels measured at the highest upstream point. That is .0394 as compared to .0408. I know these are tedious, they are four decimals, four point

decimals, and we have had to go to four point decimals in order to show the variation from point to point and from year to year. It is that small, sir, and we are not exaggerating. This is for our own use.

A review of the detailed report will reveal that this contrast represents a consistent pattern through the six year period. The levels at both points fluctuated over a narrow range throughout the period, and the level of concentration of phosphorous was consistently lower at Seven Sisters than at the upstream point, where there is no opportunity for the level to be influenced by agricultural activity.

Levels at intermediate points varied slightly from those at the upstream and downstream measuring stations. The highest six year mean level was at a point downstream of Hadashville. At this location, a mean level of .0440 was recorded. Again, sir, .0440 as compared to .0408, we are getting down to pretty fine variations here.

We note that North/South Consultants, in a report to the Lake Winnipeg consortium, reports a mean level of phosphorous in the south

basin of Lake Winnipeg in 2005 at slightly more than .16 parts per million, some four times the level of concentration in water discharged from the Whitemouth River. The concentration of nitrogen in the waters of the Whitemouth River, as measured at site one, the upstream site, fluctuated around one part per million during the six year period. The six year mean level was .9229 parts per million. That is below one part per million at this point. The comparable level of nitrogen at Seven Sisters was .8698, or slightly lower than at the upstream point. A review of the documents, which we are submitting today, will show that this pattern is consistent over the six year period and throughout the watershed. Levels of concentration vary within a fairly narrow range from point to point and from time to time, but remain at levels which we consider satisfactory.

Departing for just one moment before I read the last paragraph, departing for just one moment from my written presentation here, sir, I would note that the report that we are providing to you focuses particularly on the years 2005/2006. It is a report prepared for local use

within the community, of course.

2005, as noted in an earlier presentation, was a year of high rainfall. We do not have a hydrological monitoring station which allows us to compare river flows from year to year or from one reach of the river to another. However, from casual observation from all of us in the association, we know that '05 was a year of high water flows. By the same method of observation, 2006 was a very dry year, and we had, well, the lowest levels of water in the rivers that I had seen in 30 years of living on the river bank.

Now, 2005, the mean levels of phosphorous and of nitrogen were lower than the six year mean. 2006, the dry year, the mean levels were higher for both phosphorous and nitrogen than the six-year mean, contradictory of information which has been presented to you here today, and we make -- we are not here as advocates, we are simply here to present factual information for your consideration and use. But in fact -- and this you will see from the documents that we have submitted -- in fact, in periods of high water flow, high precipitation,

and believe me we have had some really high years in those six years, the levels of concentration are somewhat below, of both phosphorous and nitrogen, are somewhat below the levels in the drier years. We offer no explanation for that, sir, just this is a fact.

The Whitemouth-Reynolds Soil and Water Conservation Association wishes to express to you, Mr. Chairman, and to members of your Commission, our gratitude for this opportunity to present this information to you. We are submitting for your consideration our water quality report for 2001 to 2006 period, and we are appending reports of analysis of the 301 sets of samples collected during the six year period. Perhaps you have some questions, sir.

THE CHAIRMAN: Thank you, Mr. Young.

MR. YEE: Yes, Mr. Young, you mentioned that your analytical methodology, and I would imagine your collection methodology, you had some discussions with Manitoba Water Stewardship on. Does this also include where you established your sampling sites?

MR. YOUNG: Yes, it did, sir. And we had a very thorough discussion of this, because

this is very important to us. Now, obviously there are a couple of things that are obvious. One, we want to know what it is at the point of discharge, and the upstream site, well, we were measuring after all for these municipalities, and we went towards the southern boundary of Reynolds, which is a large municipality. We also went south of the place where there are -- there are virtually no houses, residences, and there is almost no agriculture upstream of our first point. The exception to that is there is a small area which drains into Whitemouth Lake, which is the origin of the Whitemouth River, that has a little bit of I think forage land. I have never seen it, sir, but there is a little bit there. So, those gave us upstream and downstream, and then we set another point at 506 because that would tell us what was happening in the Hadashville Medika area. And remember that we are doing this knowing nothing about what results we are going to get as the results start to come in. This is before we began.

We then came downstream to highway 44. There is an obvious location, there is an old hydrological monitoring station there, and that

would take into account the flow from the Birch River and from the Kelner Creek, which we hadn't become suspicious of at that point, and also include the Medika area, and then finally the downstream one.

Now, after one year, we had a couple of people approaching us saying, well, you should be monitoring Kelner Creek, and we have been doing so at five years and we haven't arrived at any fine, firm conclusions about that yet. And it was also suggested that maybe there might be bacterial contamination, which is one of our major concerns, coming from Whitemouth, because of a lagoon here and so on. And we established an additional station then in the third year of testing downstream from Whitemouth. By the way, we haven't found anything to cause us to believe that that was really necessary. However, we continue with those stations.

Now, the decisions as to where they would be located were a combination of local knowledge, common sense, and of course the technical advice of, and I will name specifically Miss Wendy Raleigh from the water agency, which changed its name three times during the six years

I believe.

MR. YEE: Thank you. Just one other question, Mr. Young. You mentioned that you did change your sampling frequency. I would also ask, unfortunately because I don't have your report, were the sample events occurring each of the successive years taken at certain times of the year, i.e., in the springtime, in the fall, that kind of thing?

MR. YOUNG: Yes, sir. There are really two questions there. I would like to answer your question in two parts. First of all, we established the frequency at the beginning because we didn't have any idea what we would find. Money is always a problem for us. And so as time went on, we discovered that we weren't finding much fluctuation over time, and so we reduced from 13 tests the first two years, to 11 tests, to 7 tests. I think I'm right about the 11. If anything I just said about the number of tests is contradictory of what we have submitted, then what we have submitted is correct. I'm going from memory here.

So the first thing was the frequency of the tests. The timing we set at the beginning

of the year, and originally we were testing intervals of about two and a half weeks, and now we are testing more at four weeks. We did do tests through the ice in the winter time. They weren't producing anything that we could interpret usefully, and we have abandoned those in favour of summer open water period testing, particularly in the light of, you know, argument concerning run-off from farmlands and whether or not there is a big flush in the spring and so on. By the way, we haven't found any such pattern, as you will see from the figures. The numbers fluctuate within narrow ranges. They go up and down for reasons that we can't understand, but they go up and down so very little. Like when I say it is around .04 parts per million and we go to four decimal points in order to try to track that, we are finding that, I think on one occasion we found one that was up about .06, and one that was about .025, but they are always between 3 and 5. Very narrow.

MR. YEE: Thank you.

MR. MOTHERAL: Thank you, Mr. Chairman. Mr. Young, are there -- do you have many intensive livestock operations in your soil association area?

MR. YOUNG: Well, sir, first of all, I'm not a farmer. And secondly, we had not done a particular assessment of the farms in the area. And finally, I'm never quite sure what intensive livestock operation -- sometimes that has definitive meanings. In our report we have from the Department of Agriculture obtained the agricultural census data for the most recent one available, which is, unfortunately, at the time this was prepared was 2001. And the cattle and calves totaled 5,924 at that time, in the two municipalities. Hogs were just under 30,000. There were a few sheep and there are about 350,000 chickens and hens. Now, I have been informed by farmers, and this is just informally and casually, that the number of farms has probably declined a little, and that the populations of livestock is probably about the same or maybe up a little. And this is just, again, we are waiting for the current agriculture census. Now, I don't know how fully that answers your question.

MR. MOTHERAL: No, it is fine. You lead to my next question too. I was going to ask, has there been any expansion of hog operations during your six year study?

MR. YOUNG: Certainly, I know from personal knowledge that some hog operations have been expanded, I think some have been abandoned. They are others that are more competent to speak to you on that issue, sir, than I.

MR. MOTHERAL: Will there be some of that information in our forthcoming -- in your presentation? Will it be more in the written report?

MR. YOUNG: No, sir, we are reporting to you on water quality. And as to the actual numbers of farms and so on, we don't have that information.

MR. MOTHERAL: You are answering my question. Thank you.

MR. YOUNG: We don't have that information, that has not been part of our --

THE CHAIRMAN: Thank you very much, Mr. Young. We look forward to reviewing your report.

Victor Wohlgemuth, please state your name for the record?

MR. WOHLGEMUTH: My name is Victor Wohlegmuth.

VICTOR WOHLGEMUTH, having first been duly sworn, presented as follows:

MR. WOHLGEMUTH: As I already said, my name is Victor Wohlgemuth. I farm in the RM of Reynolds. I would like to take a moment and thank the board of the Clean Environment Commission for listening to what the farmers in Southeastern Manitoba are doing to clean up the environment. I would like to thank Dave Young for his presentation and for the hard work he has been doing in gathering all of the data. I'm here on behalf of myself and the farmers in my area.

I am here to tell you how us farmers are doing our best to have a clean environment on our farms. Most farms have taken environmental farm plan workshops and have identified the risks on their farms. There used to be a lot of small farms along the river, with livestock roaming on the river banks and manure from those farms was spread in an area not far from the barns. Today those farms are almost all gone. The families have moved to the cities for better jobs, and now we have people moving back to the rural areas complaining about animal waste and the smell of our livestock. And some of those people are

pleased with the way we manage our livestock. Our manure is not waste, it is fertilizer for our crops. Some of those same people have told us how the river water used to smell when there were farms in the old days. We know today our rivers and streams that flow into the Whitemouth River are clean, and we have the data to prove it.

I'm a farmer and I do not want our river being polluted by our waste nor anybody else's, for we and our children fish, swim, canoe and play in our rivers. May I add here too that there are people from Winnipeg that come and fish in the river too and there is many fish in there.

Many people get their water from the Whitemouth River. When it comes to manure and odour issues, we as farmers don't like the smell and if we could raise pigs with no smell, we would.

Some hog producers cover their lagoons with straw covers to reduce odours. This costs money and creates problems when pumping the lagoon, but is done to be a better neighbour. When it comes to manure, the farmers within 300 animal units are required to complete manure management plans, but many smaller producers are

following the guidelines anyway.

In the past, manure was just spread on the surface, and now most manure is injected into the soil. This helps reduce odours and conserves nitrogen and reduces run-off of nutrients. Myself and other farmers in my area have hired consultants such as AgriTrend to develop a nutrient management program. This includes testing manure and soil testing. And may I add here, we don't just do one test per field, it is many tests per field. The results are used to determine the amount of nutrients in manure to know if any commercial fertilizer is needed to grow crop. And may I add here too that at least for myself, I have started putting fertilizer on at different times in the growing season when plants can use it most, so we do the best that we can for the environment to have as little leaching into the soil as possible.

If it is a wet year, there is not need to put extra fertilizer on if it is just going to leach away. With the price of fertilizer, farmers do not want to have to purchase any more than they have to. With nitrogen and phosphorous priced at over $500 per ton, it will not be overapplied in

our area. Most of our land in our area is deficient in phosphorous.

Rural depopulation is an issue. The hog industry is important in the area for producers to have their children stay in the area. The hog and cattle farms in the area are family farms. The margins in the hog industry are very tight, and it is important to have the possibility to expand to make a living.

We have seen what is happening in the cattle business. The margins are tight, the farmers are diehards, they just don't give up, but when we have to work with mother nature, markets that get slammed shut because of BSE, rising inputs, a government that stops all hog expansion overnight, some farmers are just giving up.

What will be required of farmers in the future? Manitoba hog farmers are the most regulated. We as farmers are doing our best for the environment and something has to change so we do not lose any more farms. Statistics Canada reports that Manitoba has lost 750 beef farmers in the last two years. We cannot be like Winnipeg and dump our manure straight into the river when we have had too much rain to empty our lagoons.

May I add here, I wish I had a little input with what Winnipeg was doing with their manure.

Farmers in Manitoba are being unfairly targeted for the phosphorous amount that hog farmers are contributing to Lake Winnipeg, something that they have had a very small impact on.

In conclusion, your honour, when the Clean Environment Commission makes its ruling, remember Dave Young has supplied all of the data for the last six years on the Whitemouth River, and we know the river is clean and we are doing a good job in keeping our river clean. If there is going to be any credits, our area should be getting extra credits for diluting the amount of phosphorous in Lake Winnipeg. If the rules are too stringent, we will see a large exit from the farms that still exist, and then we will see more corporate farms with larger amounts of manure stored in one location and the risk of a larger spill. Rural depopulation is an issue and the hog industry is important in the area for producers to have their children stay in the area, and hog and cattle farms in the area are family farms. We do not want to see farmers moving to the city for

jobs and to see our children's schools and towns disappearing.

Thank you for taking the time to listen to the farmers who work in the industry on a daily basis. Farmers care about the environment and we want our children to have a clean environment with clean water.

And may I add too, we saw on that slide that truck was supposedly spreading manure on the road, I didn't know that the RM spread manure when they were actually putting on calcium.

MS. PIP: That was a Hutterite Colony.

MR. WOHLGEMUTH: I stand to be corrected.

THE CHAIRMAN: Thank you, Mr. Wohlgemuth. What type of farm operation do you have?

MR. WOHLGEMUTH: I have cattle, grains and hogs.

THE CHAIRMAN: How many cattle and how many hog?

MR. WOHLGEMUTH: 130 cows and I have 2500 hogs.

THE CHAIRMAN: The hogs, are they feeders or --

MR. WOHLGEMUTH: They are isoweans.

THE CHAIRMAN: Isoweans, and how much land?

MR. WOHLGEMUTH: I farm approximately 1400 acres.

THE CHAIRMAN: So you have enough of your own land for spreading the manure?

MR. WOHLGEMUTH: That's right. And most of the farmers in the area, if not all, have plenty of land.

THE CHAIRMAN: Thank you. Gentlemen?

MR. YEE: Yes, Mr. Wohlgemuth, you mentioned that your soil characteristics are low in phosphate. But does the changes or amendments to the phosphate regulation have significant impacts to your operation?

MR. WOHLGEMUTH: Not for me. For one thing, I grow lots of alfalfa so that can pull a lot of phosphate out of the soil. But we spread, our manure is spread maybe once every three years on the same land. I mean, that is really strict guidelines.

MR. YEE: Again, just on that same thing, you mentioned in your presentation that you are concerned about the amount of regulations. Do

you foresee impacts on your particular operation should there be additional regulatory requirements in the future?

MR. WOHLGEMUTH: Well, if there is too much, I mean, especially smaller farmers, you just can't -- they don't have the margin to work with to have to incur a bunch of large expenses.

MR. YEE: Thank you.

MR. MOTHERAL: No, I really don't have anything. I think it has been covered. Except I wasn't going to call you by your last name, I was going to say Victor, it is easier.

MR. WOHLGEMUTH: That is no problem. It is not the first time.

MS. PIP: Mr. Chairman, if the Commission wishes to review that slide, on the door of that truck it says Grand Valley Farms.

THE CHAIRMAN: Okay. We thank you for that.

MS. JOHNSON: Mr. Chairman, can we take a break? We have got tired fingers here.

THE CHAIRMAN: Okay. We will take our break now and reconvene in 15 minutes.

(PROCEEDINGS RECESSED AT 3:15 AND RECONVENED AT 3:30 P.M.)

THE CHAIRMAN: Could I ask you to take your seats, please? We have four more people who have indicated that they wish to speak this afternoon. First is Carol Clegg.

MS. CLEGG: Good afternoon, Mr. Chairman, members of the review panel, ladies and gentlemen. My name is Carol Clegg and I'm a resident of the Rural Municipality of Lac du Bonnet.

CAROL CLEGG, having first been sworn, presented as follows:

THE CHAIRMAN: Please proceed.

MS. CLEGG: This is not an intellectual treatise. It is an appeal from the heart with the hope that someone will listen to the people of rural Manitoba whose communities cannot sustain a further onslaught of intensive hog operations, in future referred to as ILOs.

I grew up on a farm in southern Manitoba. I understand the farmer's connection to the land.

In July 1988, a hog sewage lagoon situated on the Whitemouth River broke open during a rain storm, spewing its contents into the river and killing all of the fish along a six mile

stretch to the confluence of the Whitemouth and the Winnipeg. Several residents drawing drinking water from the river fell ill. With no objections from either the Rural Municipality or the Department of Environment, a new and larger lagoon was constructed on the same location. Subsequently, the lagoon was emptied by means of a walking gun with sewage sprayed on a small field alongside the river and adjacent to our acreage.

When we formed a citizen's action group, we began receiving calls from desperate people across the province. All were concerned about contamination of ground and surface water by a rapidly expanding hog industry. Most lived near malodorous barns and lagoons, imprisoned in their houses in the summer, and unable to move because their property was worthless. That is when I realized that intensive hog operations had nothing to do with farming. The idea of a confined animal operation could have never originated with a farmer. Farmers practice animal husbandry, which is quite a different concept.

At some time in our recent history, provincial politicians and bureaucrats became convinced that pork would be the engine to drive

the Manitoba economy forward.

The Pork Council was established with public funding to accomplish that end. The Agriculture, Conservation and Municipal Affairs departments went into action to implement the agenda. The first step was to eliminate single desk selling of pigs. All of the stops were pulled to locate Maple Leaf Processors in Brandon, in spite of grave concerns for the Assiniboine River. Rural municipalities with no planning bylaws were targeted as locations for barns. Rural councils were wooed with promises of jobs and tax revenue. Soon barns were clustered along Manitoba's rivers and lakes, or where aquifers could supply copious quantities of water the slurry system of manure handling required.

The stench from barns and lagoons in hot summer evenings, persistent odour from manure saturated fields thawing in spring, dead pigs floating down rivers, piles of decomposing mortalities in the fields, spills, leaks, and hordes of flies swiftly convinced rural Manitobans that intensive hog operations were not quite as neighborly as the guy with the few pigs rooting in the pasture.

When they banded together to try and arrest the blight on their landscape, the province counter attacked. The Farm Practices Protection Act gave agriculture operations virtual immunity from court injunctions and denied the neighbors their civil rights to sue hog factories for persistent and noxious odour. Technical review committees, appointed by the province, sat in urban offices writing reports based on information supplied by the proponent. Their reluctance to venture out in the field to determine the lay of the land sometimes left rural folks laughing. In the technical review of a recently approved hog operation in Lac du Bonnet, sizeable acreage of spread lands was listed as tree covered.

When rural councils began to use municipal planning to control ILO expansion, they were badgered by provincial land use planners to agree to minimal setbacks from the Farm Practices Guidelines.

When some councils mentioned ILO bylaws, the government rewrote the Planning Act. This eviscerated the conditional use process and removed all control of manure management from local government.

In 2000, I appeared before the Livestock Stewardship Review Panel, calling for an immediate ban on liquid manure storage lagoons and a moratorium on ILO expansion. In the interim, the panel reported, and with only a few cosmetic changes, the hog industry grew apace. But the ruthless chase for the pork dollar resulted in a fatal mistake.

Olymel and its partners were invited to locate a processing plant in the City of Winnipeg. All hell broke loose. Trucks hauling pigs make noise. Pigs stink. They also scream on their way to slaughter. This would be altogether too unpleasant for delicate city folks. City and province saw votes slipping away daily as the OlyWest imbroglio continued. Something had to be done. A moratorium was imposed, but not before a number of hog barn applications on the books were hastily approved.

How much further will our government sponsored pork industry go to ensure that expansion proceeds? An article, Friday, April 6, 2007 in the Morden Times states: On March 5th, the Commission, Clean Environment Commission, began an eight week series of 17 public hearings

scheduled for 14 communities. Meanwhile, in an effort to get more information out to the general public about the industry, Manitoba Pork Council has launched a multi-media education campaign which will run until May. The multi-pronged approach includes television commercials, radio spots and inserts into the newspapers.

This four page piggy spread, "Straight Talk On Pork," Winnipeg Free Press, March 4, '07 is the coup de grace. Methinks they do protest too much. Since this feature, costing approximately $75,000, was at least partially paid for by my tax dollar, I feel I have the right to offer my perspective on it. I will comment section by section.

The water we drink: The liquid manure system used in most ILOs is a colossal waste of water. Staggering amounts of clean water are drawn from ground and surface sources to service the industry. Once the water is run through the hog or used to wash manure from the barn, it is no longer available for human use. Untreated slurry containing pathogens, growth hormones, antibiotics, chemical disinfectants and excessive amounts of nitrogen and phosphorous overspread on

inappropriate lands pretty well assures that some of it ends up in our waterways.

The RM of Whitemouth, Seven Sisters Falls, and RM of Lac du Bonnet are just a few of our rural communities with boil water orders. Lake Winnipeg is dying. We depend on our rivers and wells for drinking water. City residents are guaranteed clean water. To us it seems as though industrial agriculture is guaranteed the right to pollute our water. When the Conservation Department endorses open pit hog sewage lagoons, how can we believe the water strategy is serious?

The air we breathe: I invite you to spend a summer evening outdoors anywhere within five miles of a hog lagoon and you will understand why I'm here. Odour is the number one complaint about the hog industry. Emission from barns and lagoons is a well known heath hazard. Citing health concerns in 2002, the Canadian Medical Association called for a moratorium on factory hog farms. When the nearby hog operation expanded, I voiced my concerns, and was intimidated and threatened. Eventually, I was forced to give away my comfortable home and move out of the area.

The economy that we create and the

jobs we need: Is this the type of economy Manitoba needs to become a "have province?" Would you want your sons and daughters to spend their entire lives working on the killing floor, or as technicians in a stinking confined animal operation? I think you should find out who takes the wretched jobs in the Brandon plant. I would classify them as exploitation of labour rather than highly desirable jobs. Surely Manitobans are resourceful enough to do better for ourselves.

The food we eat: I heard an announcement recently that Wal-Mart plans to go organic. I notice that all of the big grocery chains are expanding their organic sections. This tells me that consumers are becoming more discriminating in their food choices. The time is rapidly approaching when they will refuse to eat pork laden with antibiotics and growth hormones and produced in inhumane conditions. Why would a province, which purports to value its food industry, voluntarily lag behind prevailing consumer opinion? With rising energy costs and increasing concern for feed safety and security, thinking people are turning back to local and smaller food suppliers. Small farmers are coming

back into the picture.

Laura Rance, the associate editor of the Farmer's Independent Weekly, in an analysis of the Canadian pork industry concludes,

> "Why, when big isn't working, is the only solution to prop up the system so it can keep getting bigger?"

Winnipeg Free Press, October 7, '06.

If an industry really is sustainable, it should not require so many adjustments to make it fit into the landscape. Its footprint on the land should be barely discernible. Unfortunately, Manitoba is not the only place where factory hog barns have left big tracks. Let me refer to North Carolina because the situations are parallel.

North Carolina is a coastal plain with streams emptying eastward into a large estuary. Manitoba is a flood plain with waterways and wetlands draining into Lakes Winnipeg, Manitoba and Winnipegosis. In the last decade swine production soared to over 10 million in North Carolina and over 8 million in Manitoba. In North Carolina nutrient overload from the swine industry contaminated ground and surface water causing major eutrophication and species kill in the

estuary. We are all here because Lake Winnipeg is covered with algae.

The North Carolina House Committee on Agriculture recently approved a three year extension to its ten year moratorium on new barns and lagoons. Manitoba too declared a moratorium on expansion. What will happen next?

Will this government go down in history as the one that abandoned Manitoba's waterways and rural communities to the ravages of the corporate hog industry, or will it learn from sad experience in other jurisdictions and use this moratorium to begin the long process of restoring agriculture to the sustainable activity it once was.

As an already cynical rural Manitoban, I fear the moratorium is only a brief interlude while the government concentrates on an election. I suspect that it will be swiftly repealed, Hytec will be refinanced with public money, and the processing plant will be built outside the City of Winnipeg. I will be delighted if you prove me wrong.

THE CHAIRMAN: Thank you, Ms. Clegg.

MR. MOTHERAL: I just have one

question, Ms. Clegg. When you said small farmers are coming back into the picture, do you have any stats on that at all?

MS. CLEGG: I don't have statistics, but I know people who are now buying their meat from small farmers because of the BSE crisis. And I do know that the younger generation of consumers are going to the organic stores, in the city I see this. I see more people going to farmer's markets to buy their vegetables.

There are even experts, if you take John Aiker from the University of Missouri, he is now talking that farming is going to have to turn around and go back to smaller. I know that with rising costs of simply shipping food long distances, it doesn't make sense, you know, to keep bringing food from far away places. People are going to have to go back to buying local.

THE CHAIRMAN: Edwin?

MR. YEE: Just a point of clarification, Ms. Clegg. I think I understand what you say in terms of the amendments to the Planning Act, because you mentioned it eviscerated the conditional use process and removed all control of manure management. The removal of

manure management I understand, but I wasn't sure I understand what you mean by eviscerating the conditional use process?

MS. CLEGG: At conditional hearings in the rural municipality, if you can't talk about manure, which is the crux of the whole matter, then the process is a sham.

MR. YEE: Thank you.

THE CHAIRMAN: You also said with respect to the insert in the Free Press, that it was paid in part by taxpayer's dollars?

MS. CLEGG: Yes, I understand that the Pork Council receives public money.

THE CHAIRMAN: I'm not certain of that so I can't comment on that. Thank you very much, Ms. Clegg, for coming out this afternoon.

MS. CLEGG: Thank you.

THE CHAIRMAN: Rick Vaags. Will you please state your name for the record?

MR. VAAGS: I am Rick Vaags.

RICK VAAGS, having been sworn, presented as follows:

MR. VAAGS: My name is Rick Vaags. I guess had I known about the telephone interview portion, I might have gone that route instead of

this, but here I am.

My name is Rick Vaags and my father Bill Vaags and myself are from the Dugald area. For 45 years we have been involved in both grain and hog production. I would like to talk about the history of our farm in relation to the topics of this hearing.

When my dad started out in the '60's, we had 480 acres and 200 pigs. The scale of economics have dictated to expand by purchasing land and local barns when they became available. Today our farm has expanded to 1200 sows, farrow to 50 pounds, and farm just under 4000 acres. We employ five full time staff members outside of the family. We are considered a small producer for feeder pig sales, and consequently our available pigs per week are not as attractive to a buyer as the larger groups would be.

We have gone from 1500 gallon tank broadcasting manure for three weeks from one barn to presently hiring custom applicators and injecting the entire operation's annual manure volume, over 400 acres, in three days. This transformation has taken us from 1500 to 4000 gallon tankers, to big gun sprinklers, to building

our own injector, and finally to hiring custom applicators. We use crops that can utilize manure nutrients effectively, so manure injections are followed by canola, corn or winter wheat. Other crops used to go deeper in later rotations are sunflowers and alfalfa.

Manure management plans have been recorded since becoming mandatory to both the municipality and as well as the Conservation Department. Annual water sampling was done with the feed company long before it became compulsory by the province, and have not noticed any changes in the reports from previous years.

If I look back over the last 30 years, what we did for manure application was similar to the small farms we took over. We do soil testing on every field, every year, and we know what livestock farms used to do was spread manure as close to the yard as possible. Over time this has evolved to be much more of an awareness of the balance of the nutrients from manure and the crop removal rate. The quality of our soil has improved as our best crops are always on manure injected land. We have 2100 acres within pumping distance of our farm and want to bring all of

those acres into the manure management area.

Odour from our operation I believe has decreased over the years as application and agitation times have been drastically reduced. I am convinced that most hog farms, as ours, have been educated and evolved over the years and are concerned about being good stewards of the land and water. We live within 400 feet of the barns and drink the same well water. I want to leave this soil and water in as good a condition, should one of my four sons or anyone else taking over this farm after me.

As attitudes change towards manure storage, I would hope that the government will assist in the cost of improvements to a greater extent than currently for existing operations. Through the environmental farm plan there is provision for 30 per cent funding, as well as the Conservation Department adding $5,000. In neighboring provinces I understand the amount of funding to be closer to 90 percent.

I'm very concerned about the direction the province has taken their so-called pause in the hog industry. I don't hear of a pause in any other phosphorous producing sector, whether it be

agricultural, residential or recreational. Why should the most proactive agriculture sector be continually scrutinized while others are not even on the radar. As a U of M soil scientist wrote in a recent letter to the editor, "the phosphorous issues has been contributed to by a lot of areas, let's stop pointing fingers and work together to resolve the issues." Thank you.

THE CHAIRMAN: Thank you, Mr. Vaags. The 90 per cent, could you elaborate a bit on that?

MR. VAAGS: From talking to some of the environmental farm planning people, they tell me that Ontario is up to 90 per cent funding for covering of lagoons or something of that nature.

THE CHAIRMAN: For covering lagoons?

MR. VAAGS: For manure storage improvements, what they deem to be an improvement, it could be a lagoon cover, I'm not sure what, but that was given to me by the environmental farm planning people.

THE CHAIRMAN: What would a typical lagoon cover cost?

MR. VAAGS: It is about a buck ten a square foot.

THE CHAIRMAN: Okay. How many square feet?

MR. VAAGS: An acre is 43,000 square feet, so if a lagoon is a couple of acres, you are looking at $80,000 to $100,000 for the cost of the lagoon.

THE CHAIRMAN: Okay.

MR. YEE: Mr. Vaags, I don't want to put you on the spot or anything, but you mentioned in your presentation the scale of economics is dictated to expanding by purchasing land and local barns. Can you just explain that in terms of, is it because of the margins involved in livestock operations today?

MR. VAAGS: Yes, it is definitely the margins. As I went on further to mention there that an operation of our size selling 50-pound feeder pigs is just on the edge of where they find it attractive to -- a lot of these farms would rather have 2000 feeder pigs to fill a barn, it is all in, all out process, and we are just on the edge of being viable. I'm looking down the road saying, I am not sure if that will be viable in 10 years. There is a $2 to $4 premium right now if you have a group of 500 per week or 200 per week.

MR. YEE: And I guess an associated question I would have then is, if there would be additional regulatory requirements, this would obviously be a financial burden, given your operation?

MR. VAAGS: It is definitely a burden to anybody, yes.

MR. YEE: Thank you.

MR. MOTHERAL: Yes, thank you, Mr. Chairman.

Mr. Vaags, in your operation, what would be the cost of your custom application? You say you have custom applicators come and inject your --

MR. VAAGS: We would probably pay them somewhere between $25,000 to $35,000 a year, depending on how many gallons. The custom application rate is probably in the range of .07, like three quarters of a cent to maybe 1. something, 1.2, if you start doing it with tankers. All of our manure is done through pipeline so there is no impact on the roadway. So that is a little bit cheaper than if you start using tankers to haul manure.

MR. MOTHERAL: We heard over our

travels in the province there is getting to be quite a few operations are moving towards custom application. Do you feel as though custom application, do you do it because of cost, do you do because of environment, you think they are more environmentally friendly?

MR. VAAGS: We did all of our manure application for many years, as I mentioned in my speech here, and I would like to do it myself but the cost is so prohibitive. When these people come into your property, they are coming in with probably half to three quarters of a million dollars worth of equipment. So that puts it out of the range of average producers. Plus they come in, and like I say, within three days they can do an annual amount of manure on the land. So to me it is a lot more environmentally friendly and a lot more neighborly to have that amount of odour reduced then, to spread it. If I did it myself, then it would take longer, plus you are involved with harvesting or, you know, there is other things on the farm, so you wouldn't be putting in the long days that these guys do. And also as the farms go to high health, there is a biosecurity standpoint, you don't want to have workers going

in the barn and out of the barn to take care of that job, so we decided to farm that out.

MR. MOTHERAL: One more question, do you do your own soil sampling or does that particular operation do the soil sampling also?

MR. VAAGS: No, we farm that out to another independent body.

MR. MOTHERAL: Okay.

THE CHAIRMAN: When you say 25 to 35,000, is that for three days of work?

MR. VAAGS: Yes.

THE CHAIRMAN: It sounds like a good business.

MR. VAAGS: Yes.

THE CHAIRMAN: So you say that your operation at 1200 sows is borderline?

MR. VAAGS: Yes, for what we are doing it is borderline. For, like I say, if you can't put together 500 feeder pigs -- it is all about single source, they don't want to commingle pigs, so it is about single source. So if we can't produce more -- a semi-load is about 500 pigs per week of 50 pounders, small animals. And that is kind of just -- like I alluded to earlier, I mean, there is a $2 to $4 premium if you have bigger

groups.

THE CHAIRMAN: Can you expand?

MR. VAAGS: That would be a challenge.

THE CHAIRMAN: Because of the costs or just the work?

MR. VAAGS: Well, like I mentioned here, we have 4000 acres, I have 2100 acres within pipeline reach. We have clay soils. We have everything in our favour there. The municipality is not very friendly to expanding livestock, so I would say even though in my mind we have everything necessary to expand, it would be quite a challenge to expand.

THE CHAIRMAN: It would be largely the municipality that would be the roadblock in that regard?

MR. VAAGS: Definitely.

THE CHAIRMAN: Okay. I don't have any further questions. Thank you very much, Mr. Vaags.

John Steendam. Please state your name for the record?

MR. STEENDAM: John Steendam.

John Steendam, having been sworn, presented as follows:

MR. STEENDAM: Thank you for providing me the opportunity to address the Clean Environment Commission. My name is John Steendam, and I'm the owner/manager of Springfield Fertilizer in Dugald, Manitoba.

While this Commission is specifically focused on the hog sector, I am here today because I believe that the agriculture industry is a complex matrix of inputs and outputs, and some of the areas being deliberated by this Commission must be viewed in the context of the whole, rather than the individual parts.

I have been involved in the nutrient industry for the past 25 years. Over that period of time many changes have occurred in the agriculture industry in Manitoba, and the economic balance of agricultural production between field crops and livestock has certainly changed. Even the mix of grains and oilseeds grown has seen a dramatic change. New crops have been introduced and there is now a much stronger emphasis on feed grain production to support the growing livestock industry than there was 25 years ago.

For someone like myself, in the farm service industry, there is a constant challenge to

stay ahead of these changes and to assist farmers in making the right decisions for the right reasons with the best available information.

The biggest area of growth has been in the science and technology behind crop input management and in good stewardship practices. It has been said that agriculture is second only to medicine in adopting new technology, and in my experience this would certainly be true. For example, 25 years ago farmers chose the crops they were going to grow on a given field based on the year of rotation. The farmer knew approximately how much nutrient it would take to grow that crop according to a chart and experience, and they would purchase that amount of fertilizer and spread it out on the field as evenly as they could.

Today crop rotation is only one of the factors used to determine what should be grown on a particular field. Generally speaking, that determination is also made by what options are available based on the results of a soil sample, economics, and a much wider variety of cropping choices. The farmer and his dealer then determine the amount of nutrient already available in the

field from the soil sample and calculate the top-up nutrient and micro nutrient required to grow that crop. Once that has been assessed, the dealer then uses a computer calibrated blending system to ensure that the farmer receives exactly the right mixture. This mixture is then weighed with equipment that is checked by the province to ensure that the calibration is accurate. From there it is transferred to a fertilizer spreader where it is spread across the field on a grid. The grid is created by a GPS unit in the machine that actually steers itself across the field. Meanwhile, the onboard computer constantly calculates and controls the amount of product being applied to ensure that no more nutrient than is absolutely required is put down in any one area of the field. While not everyone is using the full extent of this technology yet, it is becoming much more common.

It is interesting to note that five years ago GPS technology was a fairly new concept that had been adopted by a few dealers. Now most dealers incorporate it in their spraying and spreading operations. Five years has radically changed what is done and how it is done. By

contrast, a study commissioned for regulatory purposes is considered relatively current if it is five years old. There is often a disconnect between the length of time it takes to study a problem and make conclusions, and the change within the industry and advances over that same period of time.

To get back to my point, the use of new technologies and more accurate assessment in placement of nutrients reduces the potential for over fertilization and potential contamination, and ensures that the farmer is not wasting money on unneeded inputs. For some reason, our customers see that economic factor as being very important.

Seriously though, given the extremely tight margins in grain production over the past several years, the economic reality is that farmers cannot afford mistakes. They must be extremely vigilant in calculating the cost of their inputs. In addition, their land is their livelihood. Farmers don't want to create an environmental liability by contamination or by oversupplying nutrients to the land and water. The good news is that when a mistake has been made

and there is a high nutrient load, it can be remedied by reducing the requirements with the next crop.

As a supplier, a serious error in nutrient placement could mean the loss of a customer, or it could damage your local reputation. This is not a risk that would be taken lightly by anyone who intends to be in the business for the next 25 years. Our business is very much dependent on doing it right and protecting our local reputation.

The commercial fertilizer industry has been working hard through the Crop Nutrients Council to help farmers adopt best management practice that encourages responsible crop production, disseminates information on new technologies and techniques, and provides guidance on good environmental stewardship. While this council is only a few years old, it has made some gains and continues to gather acceptance.

The Canadian Association of Ag Retailers, of which I am a member, has been an active participant in this council. I would encourage the Clean Environment Commission to involve the Crop Nutrients Council in their

deliberations to ensure that all factors are carefully considered before any sector specific recommendations are made. With the growth in the livestock industry, manure management, and the mix between commercial fertilizer and nitrogen byproducts from manure has become a larger area of interest. As the commercial industry continues to drive toward more sophisticated processes in determining nutrient needs, and more site specific land placements of those nutrients, we must be careful to ensure that the same processes are used to determine the nutrient value of manure spread on the land and be equally careful about the placement procedures. The balance between the two sources needs to be maintained to ensure that the livestock industry is able to continue to thrive and that the grains and oil seed industry continues to have access to the nutrient and micronutrient supplies they require.

The livestock sector cannot provide all of the required fertilizer. For example, the hog sector can only supply six per cent of what is required. In addition, there may be agronomic reasons why manure cannot be substituted in place of commercial fertilizers in particular instances

or for particular crops.

Lastly, and this is important, there is always a temptation to make broad assumptions about how problem areas got to be that way, and sometimes a desire to embrace regulation as the most expedient way to resolve it. Often there are more creative ways to resolve issues without damaging the environment, the provincial economy, and the livelihoods of the people involved in the industry.

The point is that every action has an equal and opposite reaction. It is important that when this Commission deliberates on their final recommendations, they earnestly evaluate more than just the perceptions and concerns at this point in time. They must also look at the ramifications of any decision on the future realities of Manitoba's environment and the hog industry, and also on the larger agricultural matrix. It must consider what new technology is on the horizon, and whether the needs can be met by fostering rapid adoption of better science or stewardship practices. Any future regulations or recommendations need to be flexible enough to foster a vision of a healthy environment and industry in Manitoba 25 years from

now, not just focus on the current perceptions and realities.

This not only benefits the agricultural sector, but also all Manitobans. The future standard of living in Manitoba depends on agriculture's ability to continue to provide a healthy economy, and in the end, it is Manitobans who pay for the regulatory environment, both good and bad. We all have a vested interest in doing our best to work together to make prudent decisions. Thank you.

THE CHAIRMAN: Thank you, Mr. Steendam. When you talk about this great leap forward in technology, and then you specifically focus on GPS technology, at what point does it become cost effective for a farmer to use that and how big do you have to be to afford that?

MR. STEENDAM: Well, there is varying degrees of GPS use. For instance, we can do custom application with a sprayer and use GPS, and it doesn't really involve nearly as much as if you actually go to grid soil testing, which becomes a lot more costly. So there is, you know, if you really want to know what is in the soil, grid sampling is the way to go. But like you say, it

costs extra money.

THE CHAIRMAN: So, what percentage of farmers nowadays are using some of this high tech stuff?

MR. STEENDAM: I would say probably 80 per cent, at least 80 per cent of farmers are using some type of GPS technology.

THE CHAIRMAN: And that has basically all come in the last five years?

MR. STEENDAM: It hasn't come in five years, but it has become prevalent in five years.

THE CHAIRMAN: The growth, yes.

MR. STEENDAM: I would say probably at least ten years ago I had our first GPS unit.

THE CHAIRMAN: Okay. So a lot of it, an individual farmer -- would an individual farmer have his own GPS unit or would he hire custom?

MR. STEENDAM: No, they are getting them now.

THE CHAIRMAN: I guess on their tractors.

MR. STEENDAM: And they are becoming a lot more cost effective. I think 10 or 15 years ago when I bought our first GPS unit, it cost something like, that to outfit our sprayer it cost

40,000 bucks. Today you can buy probably a better unit for around 5.

THE CHAIRMAN: 5,000?

MR. STEENDAM: Yes.

THE CHAIRMAN: You talked about there often being more creative ways to resolve issues, you sort of went into it a little bit, but what did you have in mind when you talked about more creative ways to resolve issues?

MR. STEENDAM: It is just that if you -- what concerns me is perceptions. As soon as you say that the waterways in our province are contaminated, and the first thing you think of is it has to be the farmer because they have manure. That is the perception, and then immediately, as soon as that hits the newspaper, that becomes reality. And I think we have to be a little broader minded than that and see what else is causing the problem. That is what I had in mind. And if there is ways to use up, you know, some of that water or change the way we do things a little bit.

THE CHAIRMAN: Thank you. Edwin?

MR. YEE: Yes, Mr. Steendam, you mentioned the balance between the two sources of

fertilizer, chemical fertilizers and the use of manure as a fertilizer. With the new phosphorous amendments in the regulations, and knowing that there is a different ratio or content of nitrogen phosphorous in manure, do you see this playing a more important role in the future in terms of this combination of using chemical and manure fertilizers?

MR. STEENDAM: I can see it becoming a more important role for us as suppliers of fertilizer, because again it will become more important to do a better job in interpreting the soil test and knowing exactly how much has to go on for top up.

MR. YEE: Do you feel that the level of testing right now is sufficient or is there a need to increase the level of soil testing?

MR. STEENDAM: When I started in the fertilizer business, the odd person did a soil test. Like when I say that, and then it was kind of like, well, we will see what is in there, that kind of thing. But it really wasn't looked at very seriously. Like, you know, Joe Farmer, you know, I know what I'm going to put on that crop because I know what it takes. Do you know what

I'm saying? So there was a little bit of soil testing happening. Today there is a lot of soil testing happening. I would say that 95 per cent of our customers soil test every year. So I think that has gone -- or drastically improved. I think there will be a move toward more grid testing. Like so if there is an improvement, I can see it going that way.

MR. YEE: Thank you.

MR. MOTHERAL: Yes, Mr. Steendam, I still have connections with the farm and I'm probably, I belong to that 20 per cent that don't have GPS, I still drive crooked.

MR. STEENDAM: It looks so nice when you drive straight, though.

MR. MOTHERAL: I know, and I am just wondering, when you said 80 per cent, I think probably what you meant is 80 per cent of the farmland was being farmed with GPS, because I would imagine still the majority of the farmers do not have it as far as the number of farmers. Is that fair enough?

MR. STEENDAM: I can live with that.

MR. MOTHERAL: I'm interested in the Crop Nutrients Council. You have asked that

possibly this association, maybe contact them in further research or whatever. Who else -- you cited the Agriculture Retailers Association as being a member -- who else would be members? Like are there farm organizations, et cetera?

MR. STEENDAM: Yes. I actually brought a little information on it just in case you asked that question. Can I just -- do you want me to read off some of these?

MR. MOTHERAL: Some of the major ones. Obviously there is quite a few.

MR. STEENDAM: There is. The AAFC Environment Bureau, Agricore United, Agricultural Institute of Canada, Agrium Inc., Atlantic Fertilizer Institute, Canadian Association of Ag Retailers, Canadian Cattlemen's Association, Canadian Federation of Agriculture, Canadian Fertilizer Institute, Canadian Pork Council, Canadian Seed Growers Association, Canola Council of Canada, Cargill Limited, Certified Crop Advisor.

MR. MOTHERAL: That is fine.

MR. STEENDAM: It is pretty far reaching. It involves a lot of the input people into agriculture, so it is, I think it is very--

MR. MOTHERAL: I think that is all I have right now.

THE CHAIRMAN: It is a national body obviously?

MR. STEENDAM: Yes.

THE CHAIRMAN: Where is it based?

MR. STEENDAM: You have got me. I think it is in Winnipeg.

THE CHAIRMAN: We can certainly find that out.

MR. STEENDAM: You can have this.

THE CHAIRMAN: Thank you very much, Mr. Steendam, for your presentation today.

MR. STEENDAM: Thank you for your time.

THE CHAIRMAN: John van Aert, would you please introduce yourself for the record?

MR. VAN AERT: I am John van Aert.

JOHN VAN AERT, having first been sworn, presented as follows:

MR. VAN AERT: Good afternoon committee members of the Clean Environment Commission. I have a couple of comments about what I do on my farm.

My name is John van Aert and I farm

along with my brother Joe and father George, and our families, along with four employees in the East Selkirk area. Our farm consists of 3500 acres of annual cropland and an 800 sow operation. We market 75 per cent of our hog production as 50-pound weanlings and 25 per cent are marketed at slaughter weight.

My father started the farm in 1964 purchasing 127 acres. He quickly added a hog operation to add cash flow to the farm. He continued to expand the hog operation, adding concrete manure pits and a liquid manure handling system to simplify waste management and better utilize nutrients in manure for crop production. He was one of the first producers in the area to directly inject manure into the soil using a manure wagon and a tool bar.

My brother and myself started farming in the 1980s, and in 1990 started the development of a new hog farm site to expand our sow herd to support three families. We worked with our local rural municipality and planning district to site these barns in the proper location. Over the next 16 years these are some of the things that we have done to make our hog farm environmentally

sustainable.

In 1997 we constructed a 400 day storage earth and manure structure to eliminate any winter spreading. Shelter belts are planted around the earthen manure structures to reduce and deflect winds from over the surface.

We were also involved with an experimental project developing a negative air pressure cover to help reduce odours. The cover has proved to be very effective. We file our manure management plans annually, testing the manure and soil to maximize the efficient use of the nutrients in the manure. We apply manure by direct injection by custom applicators every fall to different fields, rotating our manure application to each field a minimum of once every three years. This takes advantage of the various nutrients and organic matter of the manure as it breaks down. The phytase enzyme is added to all of our rations to reduce phosphorous use in the feed, thus reducing phosphorous nutrient excretion in the manure. Studies have shown that phytase can reduce phosphorous excretion by 25 to 40 per cent. There are other advantages in feeding management, such as better balancing amino acid

levels and rations to reduce the inclusion of crude protein in order to lower nitrogen excretion.

Maintaining the wells on our farm is also very important. We make sure that water cannot pond near the well casing and the well caps are properly sealed. Water tests are done annually to monitor water quality. One of our wells that feeds our barn also feeds my house, so water quality is very important for my family as well as the livestock.

I believe the hog industry is already highly regulated and environmentally sustainable. There are several regulations in place such as the Livestock Manure and Mortalities Management Regulations, Environment Act, Planning Act, et cetera, that we follow, and I believe that my farm meets or exceeds the current Manitoba regulations. We are doing our part in regards to nutrient management. It is important for a hog operation, or any farm for that matter, to expand or upgrade their facilities to remain viable, and in my case, give my children an opportunity to continue hog farming into the future. Thank you.

THE CHAIRMAN: Thank you. Edwin?

MR. YEE: Mr. van Aert, just one question in terms of future regulations, should there be additional future regulatory requirements, do you see that impacting your operation?

MR. VAN AERT: We always kept up with the regulations as they came forward and sometimes, like our lagoon cover, it was a prototype at the time that we felt that it was a good thing to do and a neighborly thing to do that, yes, it would be, we would keep up with the regulations.

MR. YEE: This cover, does it significantly reduce the odours as well?

MR. VAN AERT: Yes, it does.

MR. YEE: Do you know if it is being employed by any other operators?

MR. VAN AERT: The Department of Agriculture had tours at our farm over the last several years, and there are some hog farms that are in more highly populated areas that have installed that cover.

MR. YEE: Thank you.

MR. MOTHERAL: Yes, Mr. Van Aert, this is a personal question, but have you had any

complaints about your hog operation?

MR. VAN AERT: No. When we started our new site in 1988, I built a little house on the site first. And before I started that site, I went to all of the neighboring property owners and to the rural municipality that that was a good site to eventually start a hog operation on.

MR. MOTHERAL: And on your operation you say 25 per cent, you finish 25 per cent of your hogs?

MR. VAN AERT: Yes.

MR. MOTHERAL: The other 75 per cent go to feeder market. Do those go, again, are those locally or do they have to be transported far?

MR. VAN AERT: Right now we are exporting our pigs, our 50 pound pigs.

MR. MOTHERAL: You are exporting, they are going to North Dakota or --

MR. VAN AERT: Yes, Minnesota.

MR. MOTHERAL: That is all I have, thanks.

THE CHAIRMAN: Thank you very much Mr. van Aert, thank you for coming here today.

That brings us to the end of the list

of people who have indicated that they wish to make a presentation. If anybody else in the audience wishes to make a presentation at this time, you are welcome to do so. If not, we will adjourn. We will be here until 5:00 five o'clock, which is the time that we indicated we would take a supper break. We will be back here after supper, although nobody has indicated that they wish to make a presentation this evening, we will come back here and be here for a short time to accommodate any walk-ins. So I thank you for coming out here this afternoon. We are adjourned.

(PROCEEDINGS RECESSED AT 4:30 AND RECONVENED AT 7:00 P.M.)

THE CHAIRMAN: Good evening, you wish to make a presentation, or one of you?

MR. WRUCK: Yes, I probably should.

THE CHAIRMAN: Take a chair up at this table, please. Could you introduce yourselves for the record, please?

MR. WRUCK: I'm Gus Wruck, I'm presently a Councillor for the RM of Lac du Bonnet. That is G-U-S, W-R-U-C-K.

MR. BRUNEAU: I'm Bob Bruneau, a Councillor in the RM of Lac du Bonnet.

THE CHAIRMAN: We will ask you to take an oath promising to tell the truth.

GUS WRUCK AND BOB BRUNEAU, having been sworn, presented as follows:

THE CHAIRMAN: Go ahead.

MR. WRUCK: I should give you a little bit of my background first of all. I retired from Manitoba Agriculture in August, and during my career with Manitoba Agriculture I was a swine specialist, as well as an administrator of the Animal Care Act. I'm a veterinarian by training. I have been in veterinarian practice in Lac du Bonnet, as well as in Selkirk, dating back to the 1970s. So I have a little bit of experience in livestock and animal production. And obviously, as you might guess, my support is for the swine industry, irregardless of what else has been said.

Since my election to council of the RM of Lac du Bonnet, I have taken a considerable interest in the water, the water situation and what is going on. One of the first things that stood out to me very clearly is the great interest from the general public with respect to livestock and livestock handling, and particularly with particular focus on the hog industry. And it is

well known that the hog industry has already got quite a few regulations to it. But we don't seem to be taking near enough attention and focusing it on some of the other sources of contamination.

I'm quite aware that you are probably aware of the Lake Winnipeg Water Stewardship Board's report to government back in December, and I think there is a fair bit of information in that to recommend and focus on, and particularly recommendation, or the series of recommendations under item 24 which talk about septic field maintenance and alternatives to septic fields.

In the RM of Lac du Bonnet, we have a portion of Lac du Bonnet that is limited in terms of drainage that goes through it, and that is the Pinawa Bay area of that lake. And Pinawa Bay, towards the end of the summer, gets extremely green and it is entirely due to, we believe, leaching from the numerous cottage septic fields that are surrounding the lake, and many of the septic fields are old or purposely maligned to drain their effluent straight into the water. And it galls me to know that this is happening, and up to this point very little has been done about it. It is an issue that I think cannot ever be blamed

on livestock or any other species of animals.

It is my understanding, based on this report, that the main emphasis is phosphorous. And even in the report it is suggested that only about 15 per cent of the phosphorous loading is coming from agriculture. And that would include all of the phosphorous that is added as fertilizer, from cattle, as well as from pigs. But to single out pigs as the major source is a little bit illogical to do that.

In addition, another 17 per cent comes from undefined sources, and of course undefined sources also includes those septic fields that I mentioned just now. And we know where there is considerable problems with those septic fields and we think it will probably be remiss not to start focusing on these. As I said, the recommendations in this report provide plenty of activities that can be done in terms of correcting some of these problems. I think, Bob, that concludes my concerns and what I had to say.

THE CHAIRMAN: Bob, do you have anything to add?

MR. BRUNEAU: I just want to add that, you know, since I got on the council over eight

years ago they spoke about riparian areas and keeping cattle and animals of grazing on river banks. And you go anywhere off the major highways, off 44, 11, you know, wherever there is a farm, you see many, many cattle right in the creek bed --

MR. WRUCK: Even on the way down tonight.

MR. BRUNEAU: -- right in the creek bed with the manure pile there. What happens to that in the springtime when that all runs back into these creeks and into the river? Why isn't something done that is obvious? You get a hog operation that is five miles away from any river or stream, I don't think they do as much pollution into the river as a manure pile right on the river bank. So I think, you know, if they want to get serious about keeping the manure out of the water, they can start by what is obvious.

MR. WRUCK: I guess to sum up, at least from my perspective and I think from the RM of Lac du Bonnet's perspective, is the recommendations about everything that really has to be done are in here. We have already got manure management plans for livestock producers

with the idea of not putting on any more phosphorous or nitrogen than is going to be taken off by the crops. We have to make it work.

As a concluding remark, three years ago I visited a swine producer in Holland, southern Holland in a little village called Mariahout. And if you understand Holland and how they raise pigs, you understand that we really don't have a problem. In Holland they raise as many pigs as all of Canada, and they fit into an area about the size of our Interlake. To raise pigs in Holland you have to buy a manure quota, and that allows you so much manure to be produced. All of the manure is picked up and hauled away by commercial haulers to manure processing plants, and this is processed very much like human sewage in terms of removing the water and using the end product for fertilizer in Holland or other countries in Europe. So if you look on any map of Holland, you will see that the swine operations are very, very close together with other livestock operations. They are able to make it work. Why can't we? So that is basically my comments.

MR. BRUNEAU: In our municipality we have 300 animal units, and anything over that is

conditional use, so we put the conditions on. And we like them to follow the regulations of the government too.

THE CHAIRMAN: Have you added stricter requirements in your conditions, stricter than the Provincial regulations?

MR. BRUNEAU: No.

MR. WRUCK: I think it is important to understand that Lac du Bonnet municipality is right on the interface, if you will, between agriculture and the Laurentian shield, so we have two sets of criteria that we have to apply, one for the agricultural area and one for the Laurentian shield.

MR. YEE: I guess the only question I would ask, are there a number of hog operations in the municipality of Lac du Bonnet?

MR. WRUCK: Yes, there is. In fact, I had the privilege of speaking at a hearing for an application for a hog producer the night before the election. I was speaking as a private citizen and, of course, I was pretty much in support of it. And I knew it was going to cost me a few votes, but I can't care. We do have a major Hutterite Colony, Brightstone Colony, that is in

our municipality as well that produces pigs.

MR. YEE: Has the municipal council received a large number of complaints about the hog operation in the municipality?

MR. BRUNEAU: We received complaints when this fellow applied for this conditional use last fall. Then we had a place full of people from different, other municipalities, bordering municipalities who were against it.

MR. YEE: Thank you.

THE CHAIRMAN: That was for a hog operation?

MR. WRUCK: Yes, Graham Reid was the name.

THE CHAIRMAN: Wayne?

MR. MOTHERAL: I don't think so, I think the couple of questions I was going to ask, you asked already. The fact that you seem to be pleased with the municipality's ability to put your own conditions on, and that you feel is probably an asset to the municipality and you have that right to do that.

MR. BRUNEAU: The only condition that we have in our zoning that is a little more rigid than agriculture, we want to keep animals half a

mile away from our main river. We have the two rivers, the Lee River and the Winnipeg River.

MR. MOTHERAL: Is your municipality a contributor-- sorry, that was Reynolds and Whitemouth Soil and Water Association, I guess it was called the Whitemouth Soil and Water Association. Do you have any local organizations like that in your municipality?

MR. WRUCK: We are a member of Northeast Agassiz Water Management Association, as well as the north chapter of the Red River Valley, Red River Basin I guess it is.

MR. MOTHERAL: And that includes -- how many municipalities would that include? Quite a few?

MR. WRUCK: All of the ones in the northeast for the Northeast Agassiz, right from Springfield to Alexander.

MR. MOTHERAL: You don't have the pleasure of having conservation districts there yet, do you?

MR. WRUCK: No. Do we want one?

MR. MOTHERAL: Well, I guess I should reword that. We belong to one and it has been very beneficial. I shouldn't say that it would be

for you, but there is a lot of soil and water associations work the same way as they do anyway.

MR. WRUCK: Are they going to have an influence on our resident cottage owners that are leaking all of their stuff into the river?

MR. MOTHERAL: I'm not going to answer that, I don't know that. That would be up to the association when it is formed, you put in a mandate of what you want to do.

MR. WRUCK: Because that is probably one of the biggest areas that we would have concern about is the leakage from these inadequate septic systems.

MR. MOTHERAL: We have been made aware of that in other areas of Manitoba too. So that is all I have.

THE CHAIRMAN: Thank you, gentlemen, thank you for coming out this evening. Is there anybody else, any of you gentlemen want to make a presentation this evening? No.

We will wait a few more minutes, but it doesn't appear that we are going to get -- we had a full afternoon, but it doesn't appear like the evening is going to be the same. Okay. We are going to finish now.

(Proceedings concluded at 7:16 p.m.)

CERTIFICATE

I, CECELIA REID, a duly appointed Official Examiner in the Province of Manitoba, do hereby certify the foregoing pages are a true and correct transcript of my Stenotype notes as taken by me at the time and place hereinbefore stated.

Cecelia Reid