

REPORT ON PUBLIC HEARINGS
VILLAGE OF TEULON
WASTEWATER STABILIZATION POND
AND PIPELINE
RURAL MUNICIPALITY OF ROCKWOOD

JANUARY, 1994

MANITOBA CLEAN ENVIRONMENT COMMISSION
Unit 5, 284 Reimer Avenue
PO Box 21420
Steinbach, MB R0A 2T3
Phone: 326-2395
Fax: 326-2472

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PREFACE

Report Structure

This report contains a summation of the evidence presented at the public hearings convened by the Manitoba Clean Environment Commission to hear evidence on a proposal for licensing under The Environment Act, filed by Wardrop Engineering Inc. on behalf of The Village of Teulon, for specific upgrading of the wastewater collection system currently servicing The Village of Teulon, and for the construction and operation of a new wastewater stabilization pond.

A detailed account of the evidence presented to the Commission is contained in the Verbatim Transcript of the hearing which is available for review at the offices of the Clean Environment Commission and at designated Public Registry locations. A list of individuals and organizations who participated in the hearing process, along with a list of the exhibits filed, is included in this report as Appendix A, and Appendix B, respectively.

Readers Note

During the course of the development and subsequent review of this proposal, a variety of titles were applied to the project. For the purposes of this report, the proposal shall be known as "The Village of Teulon - Wastewater Stabilization Pond and Pipeline". In addition, "wastewater stabilization pond" shall be used in place of "wastewater treatment lagoon".

The Village of Teulon is the project proponent. The agencies and firms assisting the Village with the presentation of evidence are considered to be the Village's representatives.

THE CLEAN ENVIRONMENT COMMISSION PUBLIC HEARING PROCESS

Public participation in Manitoba's environmental decision-making process is in part facilitated through the Clean Environment Commission hearings under The Environment Act (1988). The Commission conducts these hearings according to procedures that have been developed to encourage and facilitate public involvement. The Commission strives to ensure that the evidence and opinions of all participants is treated fairly and with due respect and consideration.

The Commission provides the Environment Minister with advice and recommendations concerning environmental issues and licensing matters.

Commission membership includes a full-time Chairperson and part-time Commissioners appointed by Order-in-Council. Members come from a wide variety of occupations and reside in different regions of the province.

COMMISSION TERMS OF REFERENCE

In a letter dated September 7, 1993, the Minister of Environment requested the Manitoba Clean Environment Commission to hold a hearing to review a proposal filed by Wardrop Engineering Inc., on behalf of the Village of Teulon, for specific upgrading of the wastewater collection system servicing the Village, and for the construction and operation of a new wastewater stabilization pond. In reviewing the proposal, the Clean Environment Commission was to consider public concerns and make recommendations respecting:

- the potential environmental impacts of the proposed wastewater stabilization pond on the drainage system in the area of the pond, and on the uses of Netley Creek;
- the potential environmental impacts of seepage to the groundwater in the area of the pond site and the adjoining land uses;
- the potential environmental impact on adjoining farm land from wildlife which may be attracted to the pond;
- a review of the site selection process, the alternatives considered and the adequacy of the proposed site;
- the environmental impact of odour from the stabilization pond system on adjoining land uses;
- the potential impact of the stabilization pond on the insect population in the area;
- the potential transmission of waterfowl disease from effluent waters (resulting from the processing of domestic geese), into the wild populations that use the Netley Marsh and that may use the pond on occasion; and
- the adequacy of measures proposed to mitigate adverse environmental impacts resulting from the development and subsequent operation of the wastewater stabilization pond.

The terms for the scope of the hearing also noted that the Commission recommendations were to incorporate, consider and directly reflect, where appropriate, the principles of sustainable development as contained in Towards a Sustainable Development Strategy for Manitobans.

PUBLIC HEARING

The hearing, scheduled for November 3 and 4, 1993, in The Village of Teulon, Manitoba was advertised in the *Winnipeg Free Press*, *The Stonewall Argus*, and *The Teulon Times*. The hearing took place in the Teulon-Rockwood Centennial Centre.

Commission panel members in attendance included, Maurice Blanchard, Edward Gramiak, and Jacob Schroeder. The Panel was chaired by Commission Chairman, Dale Stewart.

Commission staff in attendance included, Rory Grewar, Secretary to the Commission and Jim Potton, Senior Professional Officer.

BACKGROUND

The Village of Teulon is located in the Rural Municipality of Rockwood, in the Interlake region of Manitoba. Although the Village is currently serviced by a wastewater treatment pond, constructed in the mid 1970s, the existing pond design was based upon residential use only. Industrial development in Teulon (and in particular the establishment and expansion of the Northern Goose Processors Limited facility), coupled with increased residential water use and the continued growth of the community, has overloaded the existing wastewater service facilities. This has caused the existing wastewater stabilization pond to become organically and hydraulically overloaded, requiring the Village to seek approval from Manitoba Environment to allow wastewater to be periodically discharged before it has been adequately treated. In addition, the existing wastewater stabilization pond has been leaking, which has resulted in seepage problems.

In 1981, The Village of Teulon, concerned about the ability of the existing pond to properly handle future wastewater flows, began a series of consultations aimed at addressing the problems associated with the existing wastewater treatment system. In 1985, after studying several options, the relocation and expansion of the stabilization pond was recommended by the Manitoba Water Services Board. The site for the new pond was purchased in 1988. In 1991, the Village signed a partnership agreement with the province of Manitoba and the Government of Canada to improve the wastewater treatment system.

EVIDENCE SUMMARY

Manitoba Environment

Mike Van den Bosch, representing the Environmental Approvals Branch of Manitoba Environment, provided information on the process which set the stage for the Clean Environment Commission hearing.

Mr. Van den Bosch advised that, prior to the public notification process, Manitoba Environment had reviewed the proposal and concluded that it addressed the environmental concerns known at that point in time.

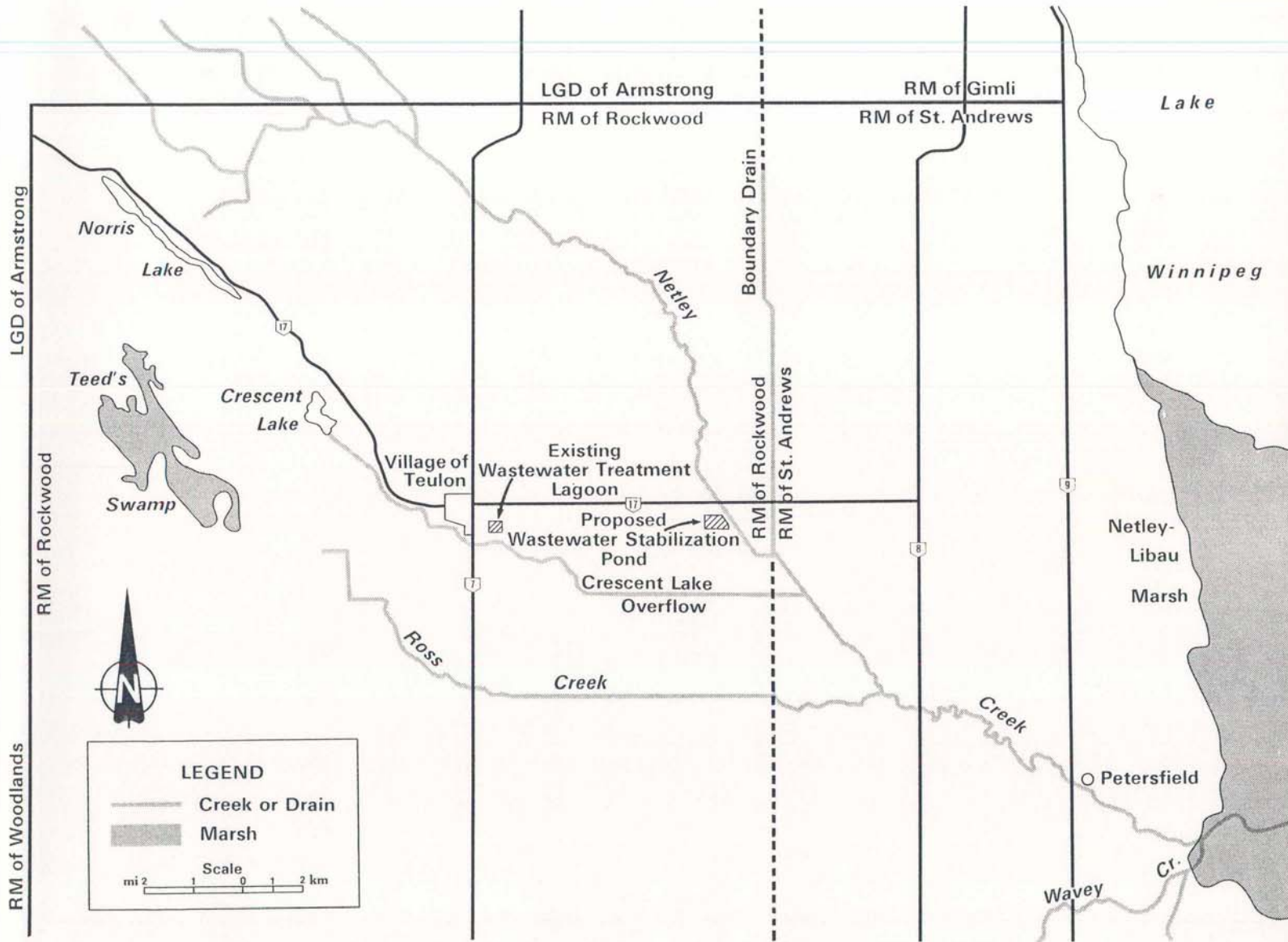
Mr. Van den Bosch then reviewed the concerns that were received by Manitoba Environment as a result of the public notification process. Based upon the public input, a decision was made to proceed to a hearing. The concerns raised by the public were incorporated into the *Terms of Reference* for the hearing, as issued by the Environment Minister.

Village of Teulon

Mike Maksymyk, Mayor of The Village of Teulon, provided background information respecting the need to replace the existing wastewater stabilization pond. He advised that in addition to seepage problems, the existing wastewater stabilization pond had become organically and hydraulically overloaded, requiring wastewater to be discharged before being adequately treated.

Teulon has proposed that the existing wastewater stabilization pond be replaced with a new pond to be located 8 kilometers (5 miles) east of the Village on the southwest quarter of Section 21-16-3 East of the Principle Meridian, within the Rural Municipality of Rockwood (Map - Figure 1).

Mayor Maksymyk introduced George Rempel and Dave Morgan from TetrES Consultants Inc., and Gord Steiss from Wardrop Engineering Inc., and advised that they would be making the presentation of the project details on behalf of The Village of Teulon. Other individuals introduced as members of the design team included, Dave Shwaluk of Manitoba Water Services Board (MWSB) and Tony Kettler of the Prairie Farm Rehabilitation Administration (PFRA).



AREA MAP SHOWING THE LOCATION OF EXISTING & PROPOSED STABILIZATION POND

FIGURE 1

Background information was provided on the various options available to the Village in responding to its wastewater treatment needs. These alternatives included expansion of the existing pond, construction of a replacement pond at a new location, and installation of a mechanical sewage treatment plant. The Village's representative provided a review of the pollutant handling and removal efficiencies of the alternative processes. The construction of a replacement wastewater stabilization pond was deemed to be the preferred option.

In reviewing the proposal, the Village stated that the site selected for the replacement wastewater stabilization pond met the requirements of the Manitoba Water Services Board. The representative stated that the Village had applied siting criteria that would be utilized today, if a site had not already been selected. The criteria had included land availability, soil suitability, ground water hazard sensitivity, distance from residences, and agricultural land capability. The representative concluded that the proposed site met the identified criteria and was, therefore, an appropriate selection. It is environmentally sound and superior to the existing pond site.

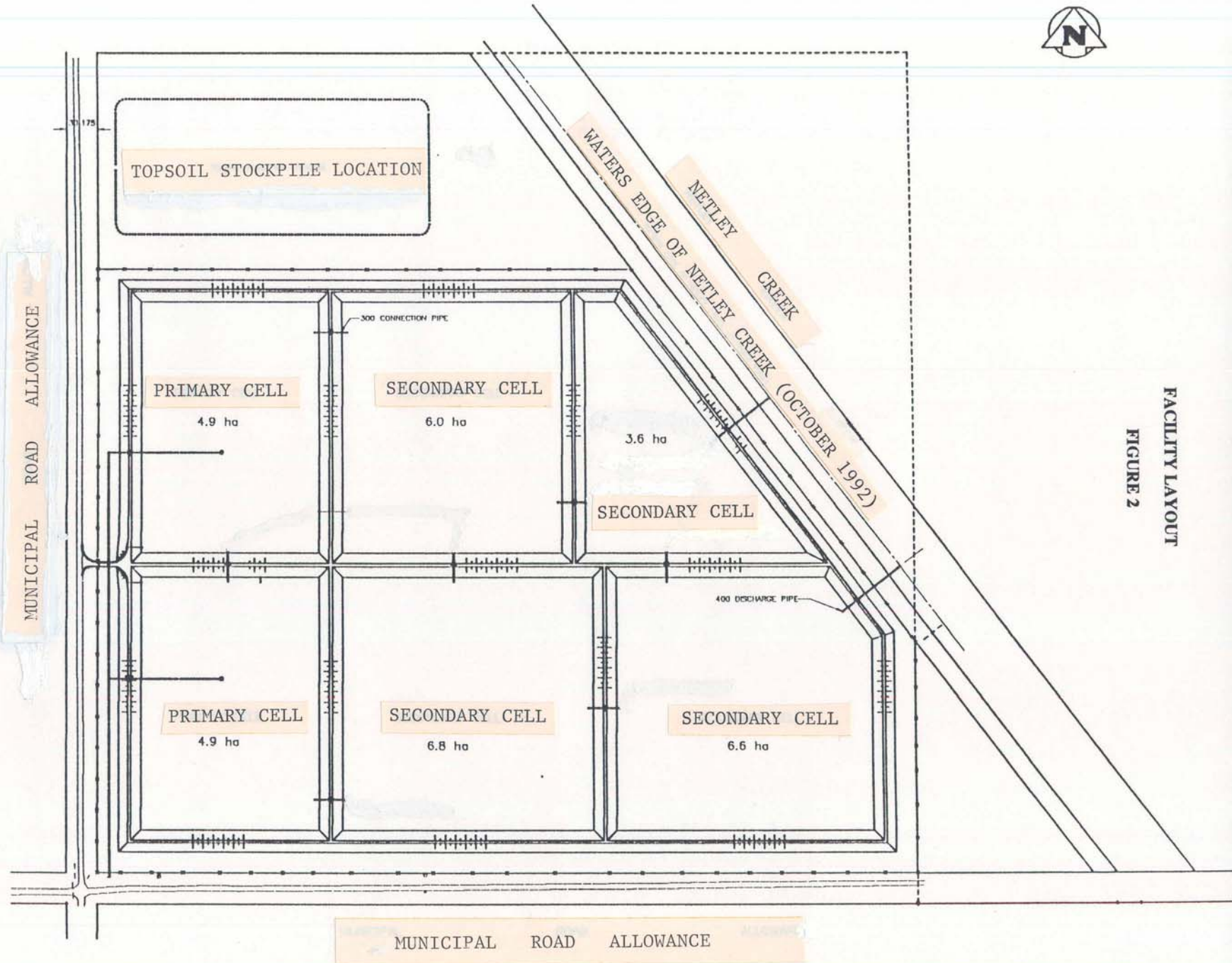
In response to public concerns respecting the new wastewater stabilization pond, the Village had held local information meetings to describe the project and the measures proposed to mitigate environmental impacts. Meetings were held in Petersfield on October 13, 1993 and Teulon on October 14, 1993.

The Village further advised that a *Conditional Land Use Approval*, for the use of the site, had been obtained from the Rural Municipality of Rockwood.

The new wastewater stabilization pond (see Figure 2) would discharge treated effluent, into Netley Creek in the spring and fall. Along with a lift station, an 8 kilometer pipeline would be installed from the site of the existing stabilization pond to the new pond location. The proposed new pond would have adequate hydraulic and organic capacity to handle the wastewater generated by the Village, and would be designed to allow for 20 years of community growth. The new wastewater stabilization pond was designed to ensure good overall pollutant removal efficiencies.

Seepage at the proposed pond site would be minimal because of the presence of an 18 meter depth of impervious clay at the site and an upward groundwater pressure.

The existing wastewater stabilization pond would be decommissioned, and the land returned to agricultural use, once the new pond was in operation.



FACILITY LAYOUT
FIGURE 2

The Village addressed all items identified in the *Terms of Reference*, as provided to the Commission by the Environment Minister. Particular emphasis was placed on the effluent discharges into Netley Creek, and the measures that would be taken to ensure that the Manitoba Surface Water Quality Objectives (MSWQO) for the effluent would be met. The Village stated that the wastewater stabilization pond was designed specifically to meet these objectives. In addition, the design would ensure that problems associated with odour would likely be minimal due to the longer than normal wastewater retention times. Prevailing wind conditions in the area, and the distance of the ponds from the nearest dwellings, would also assist in protecting adjoining land uses from the problems associated with odour.

The potential transfer of diseases from domestic to wild waterfowl populations, through the waste stream generated by Northern Goose Processor Ltd, was reported not to be a significant concern. Evidence was provided by the Village that the transfer of *Newcastle's Disease* and *Duck Viral Enteritis* were not at all likely to occur both because of the routine health inspections at the goose processing plant, and because such disease organisms are unlikely to survive in stabilization ponds for long periods of time.

To demonstrate that the predesign report assembled by Wardrop Engineering Inc. was a well developed proposal, the Village emphasized the comment provided by Manitoba Natural Resources that, "For the most part, this report is very thorough and represents a significant advancement in the design of wastewater stabilization ponds. We feel that the level of detail and the mitigation measures noted, should be given consideration as a standard which such proposals should try to meet".

Village of Teulon's Concluding Remarks

The proponent's representative concluded by stating:

- the existing Village of Teulon wastewater treatment pond requires upgrading;
- the proposed new pond would provide effective treatment of the wastewater generated by the Village;
- the proposed site is sound from both an engineering and environmental perspective; and
- the proposed design exceeds normal guidelines, and incorporates significant and effective mitigation measures.

Accordingly, the Village asked the Commission to recommend a license be issued under The Environment Act.

QUESTIONS RELATED TO THE EVIDENCE

Responding to questions about the stated 20 year life expectancy of the new wastewater stabilization pond and what might happen either at the end of that time period, or earlier, if larger wastewater volumes were generated, the Village indicated that space for expansion of the proposed stabilization pond was available at the proposed site.

The ability of the proposed wastewater stabilization pond to accommodate the development of an additional "wet industry" in The Village of Teulon was raised. The Village advised that either through expansion of the proposed pond, or by implementing water conservation measures, an additional wet industry could be accommodated. The design of the stabilization pond took into consideration normal anticipated 20 year growth.

In response to questions as to the proponent's familiarity with the U. S. National Sanitation Foundation's recommended guideline of 22 kilograms of biochemical oxygen demand (BOD) per surface hectare of the stabilization pond per day, the representative suggested that the Foundation's guideline applied to the entire surface area of a pond whereas the stated 45 kg of BOD per hectare identified as a design parameter used in Manitoba, applied to the primary cell only.

Responding to questions about the source of the data used to evaluate and compare the operation and maintenance costs of sewage treatment plants with that of wastewater stabilization ponds, the Village advised that the source for the information utilized was the United States Environmental Protection Agency (U.S. EPA). They further advised that the Manitoba Water Services Board experience was consistent with the information provided by the U.S. EPA.

In response to a question regarding the cost comparisons between a mechanical treatment plant and the proposed wastewater stabilization pond, the Village suggested that the pond would cost an estimated 1 million dollars, whereas the mechanical treatment plant would cost an estimated 2 million dollars.

Responding to a question regarding construction supervision, it was stated that Wardrop Engineering Inc. would be responsible for this activity, and would have a qualified inspector on-site during the construction phase.

In response to a question regarding a possible financial contribution toward the stabilization pond from Northern Goose Processors Limited, The Village of Teulon advised that an *Industrial Use Agreement* between the Village and the company was currently being negotiated, and was intended to be concluded before the proposed wastewater stabilization pond was completed. (NOTE: Details on the contents of this agreement, including monetary provisions, were not discussed.)

A question was raised with respect to data and site information that might have been collected prior to the acquisition of the property for the new pond. The Village advised that in 1984, prior to the acquisition of the subject property, the Manitoba Water Services Board had conducted soil tests, and assessed other factors, to determine the suitability of the site for a wastewater stabilization pond.

The possible use of a plastic liner for the pond was raised, with the Village responding that good quality clay was normally preferred as a liner in the construction of stabilization ponds and that plastic liners were used as an alternate when clay was not readily available.

The duration of storage of wastewater in the pond was raised, with the representative responding that the combined holding time in the primary and secondary cells would be six to seven months.

The use of pond effluent for crop irrigation was explained to be suited only to areas with well drained agricultural soils. The soils in the Teulon area do not possess these qualities, and are subject to becoming water-logged. They were, therefore, not considered to be appropriate for effluent disposal.

In response to a question, the representative from Manitoba Environment, Mike Van den Bosch, advised that the proposal, as outlined, was acceptable. The option to relocate the stabilization pond, and the site chosen for the new pond, were considered appropriate by Manitoba Environment. It was further stated that Manitoba Environment would not anticipate a deterioration of Netley Creek due to nutrient loading from the wastewater stabilization pond effluent.

Mr. Van den Bosch stated that the concerns raised by the downstream users of Netley Creek appeared to have been addressed by the Village. He further stated that the performance of the proposed stabilization pond would be dependent upon the wastewater load not exceeding the design load, and that the design of the stabilization pond was based upon maintaining the current time table for goose processing, which provides for the completion of processing operations prior to mid November. Mr. Van Den Bosch suggested that processing of geese after this date would place a heavy organic load on the stabilization pond which would likely overload the facility.

A question as to whether Netley Creek was a flowing stream at the proposed outflow location was raised, with the Village advising that Netley Creek was a free flowing stream north of Petersfield, and an intermittent stream above the proposed pond location. The Village indicated that they were not sure of the streams status at the proposed wastewater stabilization pond site.

Responding to a question as to whether other wastewater stabilization ponds were currently discharging into Netley Creek, the Village advised that it was their understanding that there were several located upstream from the proposed site. It was pointed out that the existing pond is currently discharged into Netley Creek, (although it flows via a ditch and through the Crescent Lake overflow).

Responding to a question regarding the probability of Netley Creek flooding, the Village stated that flooding periodically occurs during periods of spring runoff. It was further stated, however, that this runoff would normally occur some time before the routine discharge of the stabilization pond and, therefore, would not be aggravated by the discharge from the pond. In addition, it was stated that in response to any flooding conditions, such as that caused by high rainfall, the timing of the discharge from the wastewater stabilization pond could be delayed.

A question was raised as to how the quality of the effluent in the proposed stabilization pond would compare to the effluent from the existing pond. The Village of Teulon advised that although measurements (samples) had been taken from the existing pond during the fall of 1992 and the spring of 1993, the data for the new facility was based to a great extent upon modeling and comparisons with other cold weather lagoons in Alberta and elsewhere. They further advised that effluent quality would be greatly improved in the proposed stabilization pond, particularly since it would be oversized to allow for longer retention times and a mid-June discharge.

In response to a question regarding tank trucks depositing septage into the system, the Village stated that the deposits would be made directly into the primary cells of the proposed pond.

Manitoba Environment was questioned regarding the possible setting of parameters in the license to ensure compliance. The Environment representative advised that the normal practice was to license effluent "discharges", however, influent limits, terms, and conditions would also be a requirement for this particular license, in order to control the quality of the effluent entering Netley Creek. An effluent monitoring station would be required at the stabilization pond site.

Responding to a further question as to whether a monitoring plan would be put in place to verify the modeling predictions, the Village stated that such a suggestion was an "excellent idea".

In response to questions about waterfowl diseases, and the possible transfer of diseases from domestic geese to wild waterfowl populations via the waste stream, the representative provided copies of letters on the subject that had been obtained from the Manitoba Veterinary Services Branch, from the Canadian Cooperative Wildlife Health Centre, and a Doctor Of Veterinary Medicine from Pur-A-Tone Corporation, stating that disease transfer via the wastewater stabilization pond should not pose a significant risk to wild waterfowl populations.

Questions were raised about the ability of wastewater stabilization ponds to operate in cold climates and whether Manitoba Environment was considering the suggestion, made some time ago by the Clean Environment Commission, that a study be undertaken in Manitoba to ensure that the design and operational requirements of these ponds adequately protected the environment. Environment indicated that they were interested in reviewing the standards that had been established, and that such a study was a consideration. They were not, however, actively planning the review at the present time. The Department representative further advised that an ongoing review was underway in Alberta on the operation of wastewater stabilization ponds in cold climates, and that Manitoba Environment would be monitoring the results.

Questions were asked regarding the location for the collection of samples of wastewater in the cells, and whether a series of layers occurred with higher quality wastewater at the top level, and poorer quality wastewater in the lower levels. The Manitoba Environment representative indicated that collection of samples could occur either at the upper level, lower levels, or at the effluent discharge pipe. The representative further indicated that the wastewater in the secondary cell would be fairly homogeneous due to mixing of the solution caused by wind. During calm

periods, better quality wastewater would be present in the upper layers of the cells. Heavy solids would settle out in the primary cell.

Responding to questions regarding the location of effluent discharge pipes, the Environment representative advised that the pipe location would be 300 millimeters above the base of the pond and that such a location was appropriate. Environment further stated that discharge pipes at different levels would not interfere with the operation of the pond.

Responding to a question on the criteria for the development of wastewater stabilization ponds that would be provided by the department to those inquiring, the representative from Manitoba Environment indicated that interested parties would be advised to utilize the "Water Quality Objectives" document for Manitoba, and to follow the guidelines for the construction and operation of wastewater stabilization ponds provided by Manitoba Environment.

PUBLIC PRESENTATIONS

Ron Dalmyn, Private Citizen

Mr. Dalmyn stated that he had been involved with wastewater stabilization pond research for about five years. He provided material suggesting that lagoons were designed and intended for use in warm climates, and that they did not operate properly in cold climates. Mr. Dalmyn suggested that Manitoba Environment had not provided scientific proof that wastewater stabilization ponds in Manitoba are capable of discharging properly treated effluent. He suggested that The Village of Teulon requires a properly designed sewage treatment plant system.

Mr. Dalmyn advised that properly treated effluent should be colorless and odourless. He also stated that discharge pipes at the bottom of ponds did not allow for discharge of properly treated effluent which is limited to the uppermost several feet of the wastewater in a stabilization pond.

He also suggested that the amount of funds identified by the proponent for ongoing maintenance of the wastewater stabilization pond was insufficient.

Mr. Dalmy suggested that with regard to the operation of stabilization pond facilities, potential disease transmission, such as Avian Cholera and Botulism, from domestic birds to wild populations, is a potential problem which has been reported at other locations.

Mike Masters, Petersfield Residents Association

Mr. Masters stated that he was the spokesperson for a group of citizens from Petersfield. Mr. Masters provided copies of a petition signed by in excess of 200 residents of the Rural Municipality of St. Andrews requesting that The Village of Teulon's new stabilization pond not be discharged into Netley Creek. He provided a copy of a letter from the Rural Municipality of St. Andrews to the Rural Municipality of Rockwood requesting that no effluent be discharged into Netley Creek. Mr. Masters also provided a copy of a resolution from the Council of the Rural Municipality of St. Andrews suggesting that an alternate discharge route be investigated, and that effluent discharge not be received by any of the waterways in the Rural Municipality of St. Andrews.

Mr. Masters indicated that there were a number of environmental pressures and potential contamination sources that the Netley and Wavey Creek watersheds were subjected to, in addition to the effluent from the proposed Teulon wastewater stabilization pond.

Mr. Masters indicated that 15 to 20 percent of all the sports fishing in Manitoba takes place in the Netley Marsh area and that water quality in the Netley-Wavey area was extremely important. In addition, he advised that for a two year reporting period, 21,500 recreational hunter days were spent in the marsh areas, and that Netley Marsh was identified in a Selkirk Tourism study as unique to tourism development and "one of the great waterfowl nesting areas in North America".

Mr. Masters stated that viable alternatives to the stabilization pond adjacent to Netley Creek had not been given adequate consideration. These alternatives included alternate locations for the pond, as well as the alternative treatment option of a wastewater treatment plant.

CLEAN ENVIRONMENT COMMISSION CONCLUSIONS

Following a complete review of the evidence presented at the public hearings, the Panel reached the following conclusions related to the application for the development of a new wastewater collection and treatment system for The Village of Teulon:

- Public uncertainty persists with respect to the effectiveness of wastewater stabilization ponds in cold weather climates. The public continues to raise concerns regarding the ability of these systems to meet the objectives established for their design and operation. The Panel concludes that further investigation into the use of these systems in Manitoba will be important in order to address concerns regarding their appropriateness of their use in wastewater treatment in Manitoba.
- The Panel was convinced that an urgent need exists with respect to the replacement of the existing wastewater stabilization pond currently servicing The Village of Teulon.
- The development of a replacement stabilization pond should proceed.

Specific scope for the hearing relative to the Teulon wastewater stabilization pond application was provided to the Commission by the Minister of Environment. The Panel evaluated the proponents proposal, and the other evidence presented at the hearing, using these *Terms of Reference* (shown in **bold print**).

The potential environmental impacts of the proposed wastewater treatment pond on the drainage system in the area of the stabilization pond and the uses of Netley Creek.

The proposed wastewater stabilization pond was designed to ensure good overall pollutant removal efficiency. This seems particularly evident given the longer than normally designed for retention time planned for the secondary cells, and the scheduled mid-June effluent discharge.

Accordingly, providing the wastewater stabilization pond is constructed, and operated as intended, effluent into Netley Creek (the receiving stream) is expected to meet the Manitoba Surface Water Quality Objectives (MSWQO). The Panel recognizes, however, that the quality of water in Netley Creek is not well known at this time.

Given that the stabilization pond cells will be discharged twice annually into Netley Creek, and in acknowledgment of the high level of concern with respect to the impact of these effluent discharges on downstream users, the Panel recognizes the need to ensure that the quality of the effluent discharged will continue to meet or exceed the Manitoba Surface Water Quality Objectives.

The potential environmental impacts of seepage to the groundwater in the area of the stabilization pond site and the adjoining land uses.

The site selected is not in a groundwater pollution hazard area. In addition, in excess of 18 meters of good quality impervious clay was found to be present at this site. The direction of the groundwater flow was reported to be "excellent" with respect to mitigating groundwater pollution because the natural water pressure at the new pond site would cause the water to flow up toward the ground surface. The Panel, therefore, concludes that seepage into the groundwater from the pond would be unlikely.

The potential environmental impact on adjoining farm land from wildlife which may be attracted to the stabilization pond.

Any future waterfowl problems associated with the construction and operation of the stabilization pond will be addressed through waterfowl damage prevention measures, and waterfowl damage compensation activities.

The Panel concludes that any measures to manage waterfowl populations should be developed in consultation with the Village of Teulon, the Rural Municipality of Rockwood, and the Department of Natural Resources. The various strategies to be employed to reduce the attraction that the stabilization pond may have for waterfowl, should be orchestrated by the Village of Teulon, as managers of the wastewater stabilization pond.

A review of the site selection process, the alternatives considered and the adequacy of the proposed site.

Expansion of the existing stabilization pond would be unwise, given its location and the soil conditions surrounding the facility.

The Panel was satisfied that an appropriate criteria had been developed upon which to evaluate various potential locations, and that the criteria had been applied rigorously to all identified sites. Nine candidate sites, in addition to the existing Teulon pond location, were evaluated. Clearly, the site selected addressed the criteria, including the protection of groundwater, suitability of soil, and distance from dwellings.

The Panel concludes that the site selected for the new stabilization pond is an appropriate site for the construction of a new facility.

The environmental impact of odour from the stabilization pond system on adjoining land uses.

The proximity of dwellings with a guideline requiring a 457 meter (1500') buffer were identified as site selection factors intended to minimize any nuisance associated with odour. The prevailing spring wind condition was also taken into consideration. All dwellings were well outside the identified buffer. In addition, the large size of proposed wastewater stabilization pond, longer than normally required retention times, mid-June release of effluent, and the suspension of goose processing operations by mid-November, were identified as measures that would all help to ensure no odour problems would be associated with the operation of the stabilization pond.

The Panel concludes that odour from the wastewater stabilization pond would not be a problem on adjoining land uses.

The potential impact of the stabilization pond on the insect population in the area.

The Panel concludes that wastewater stabilization ponds are generally poor breeding habitat for mosquitoes. Any shoreline vegetation that might provide suitable mosquito habitat could be controlled.

The Panel further concludes that with proper management and maintenance, the pond would not contribute to an increase in problematic or undesirable insect populations.

The potential transmission of disease from effluent waters (resulting from the processing of domestic geese), into the wild populations that use the Netley Marsh and that may use the stabilization pond on occasion.

Evidence was provided by the Village suggesting that both Newcastle's Disease and Duck Viral Enteritis posed no threat to wild waterfowl populations. Any potential outbreak caused by possible disease organisms reaching the wastewater stream could be mitigated by health inspections at the goose processing facility. Disease transmission would also be minimized because any such disease organisms were reported to be unable to survive for any length of time in the stabilization pond environment.

Information was provided by a participant which suggested that possible disease transfer into wild bird flocks could occur from lagoons servicing poultry operations.

The Panel concludes that some potential could well exist for disease transmission from domestic poultry into wild populations. Since Northern Goose Processors Limited could be the source of such disease organisms, the Panel believes that the identification of *effluent criteria* for this facility would be appropriate. Furthermore, in order to ensure the effective operation of the wastewater treatment system in The Village of Teulon, a testing and reporting program, along with an emergency response mechanism, should be in place, to respond to problems that might occur at the goose processing facility. The Panel further concludes that The Village of Teulon, in managing its wastewater treatment system, would require information respecting any significant changes in product processing which might occur at the processing facility.

The adequacy of measures proposed to mitigate adverse environmental impacts resulting from the development and subsequent operation of the stabilization pond.

Evidence was provided by the proponent respecting measures to mitigate adverse environmental impacts resulting from the development and subsequent operation of the stabilization pond. This included environmental concerns regarding the proposed stabilization pond discharge and drainage, the impact of discharge on water quality, and the ability of effluent discharges to meet Manitoba Surface Water Quality Objectives for aquatic life, ammonia, and fecal coliform. Waterfowl damage and waterfowl diseases, insect population increases, odour and construction impacts could be mitigated.

The Panel concludes that the measures outlined to mitigate environmental concerns are adequate.

The Panel further concludes that the Village must maintain control over access to the facility in order to restrict the uncontrolled dumping of contaminants. Security and fencing around the stabilization pond would be necessary, and records of the volume and content of trucked septage must be maintained.

The Commission recommendations shall incorporate, consider and directly reflect, where appropriate, the principles of sustainable development as contained in Towards a Sustainable Development Strategy for Manitobans.

The Panel members are pleased the Village assessed the proposal under the principles of sustainable development, although little discussion took place on this assessment during the hearing. Assessment was made against the principles of Stewardship, Prevention, Integration of Environmental and Economic Decisions, Shared Responsibility, Enhancement, and Rehabilitation and Reclamation.

In addition, the Panel acknowledges the assessment of the proposal made by the Village against the Water Quality Policies of the Land and Water Strategy.

CLEAN ENVIRONMENT COMMISSION OBSERVATIONS

As a result of the public hearing process, the following general observations are made by the Panel. These observations do not form part of the specific recommendations concerning the proposal. They are identified as matters of interest and concern that the Panel believes warrant consideration.

1. Information remains inconclusive on the performance of sewage lagoons in Manitoba during cold weather. In 1992, the Commission recognized this circumstance during a hearing concerning the application for a wastewater treatment facility proposed by the Good Hope Holding Company located near Portage La Prairie, and concluded that the issue should be addressed through a study of design, construction and operation of sewage lagoons in the Manitoba climate. The Panel advises that there remains an urgency to address the questions surrounding the performance of wastewater stabilization ponds in Manitoba, and urge that the study recommended previously by the Commission be undertaken by the Provincial Government in the near future.
2. The Panel observed that there was a lack of baseline data respecting the quality of water in Netley Creek both upstream and downstream of the current point of effluent entry, as well as the proposed point of discharge from the new stabilization pond. Baseline data would enable an assessment of the impact of change due to the operation of the new system.
3. There was a divergence of opinion concerning the possibility of disease transfer from poultry processing plants to wild bird populations through effluent discharge. There are a number of poultry processing industries in Manitoba. The Panel suggests a thorough review of this concern to ensure any problems are effectively managed in any wastewater treatment facility in Manitoba receiving effluent from poultry processing facilities.
4. The Panel members noted that there was very little objection to the proposal received during the course of the hearing. None of those who had objected in written form to Manitoba Environment appeared before the panel. The opportunity for Netley Creek residents to participate in an open house, prior to the public hearing, appeared to have provided an opportunity for the public to question and receive explanations from the proponent regarding the proposal, which may have reduced the anxieties of those residents who had originally expressed concerns.

CLEAN ENVIRONMENT COMMISSION RECOMMENDATIONS

The Panel recommends that:

1. A license be issued to The Village of Teulon for the construction of a wastewater collection system and wastewater stabilization pond, as proposed.
2. The stabilization pond shall be operated in accordance with a plan submitted to and approved by Manitoba Environment. The effluent from the facility shall be of a quality equal to, or better than, that specified in the Manitoba Surface Water Quality Objectives. Specific criteria for release of the effluent are to be established to protect Netley Creek quality and dependent natural resources downstream.
3. An effluent sampling procedure will be specified in the license. The quality of the influent entering the stabilization pond and the effluent quality discharged shall be sampled and reported to Manitoba Environment on a planned regular basis. Effluent will not be discharged until it meets the Manitoba Surface Water Quality Objectives for Netley Creek.
4. A sampling program in Netley Creek upstream from the point of effluent discharge and downstream from the discharge is to be designed and implemented to determine the impact of the effluent discharge on the water quality and natural resources of Netley Creek.
5. The Village of Teulon shall enter into *Industrial Use Agreements* with all companies utilizing the Village's wastewater system, with the exception of those discharging only domestic wastewater. These agreements shall clearly specify an industry's obligation to inform the Village of Teulon as to the quality, quantity and timing of discharges into the wastewater system. The agreements shall also include an effluent testing program to establish baseline information and monitor changes.

Contingency plans are to be designed to effectively manage discharge changes that Manitoba Environment considers a threat to the safe operation of the wastewater management system.

6. The new stabilization pond site shall have an operational plan that will ensure adequate security fencing and other measures to ensure public safety including appropriate information and warning signage. The plan will also provide for the management of unwanted vegetative growth, and a program for the management of migratory bird populations. The migratory bird mitigation plan should be developed with assistance from the Department of Natural Resources and the Rural Municipality of Rockwood.
7. The wastewater system shall include adequate facilities for the discharge of septage from trucks. Records of the volume, time, and contents of trucked septage are to be maintained by The Village of Teulon.
8. Decommissioning and reclaiming the existing wastewater stabilization pond will be undertaken within one year of the date that the new wastewater stabilization pond commences operation.

APPENDIX A: LIST OF PARTICIPANTS

Alan Baron
Box 623
Carberry, MB
R0K 0H0

Ted Balcaen
Petersfield, MB
R0C 2L0

Amy Dellebeau
Teulon, MB

Ron Dalmyrn
101 - 1874 Portage Avenue
Winnipeg, MB
R3J 0H2

Matt Ewankiw
Box 77
Teulon, MB
R0C 3B0

B. Fedorchuk
Petersfield, MB
R0C 2L0

Bob Foster
Wardrop Engineering
400 - 386 Broadway Avenue
Winnipeg, MB
R3C 4M8

Doug Grantham
Box 1400
Stonewall, MB
R0C 2Z0

Ken Humbert
Box 69
Teulon, MB
R0C 3B0

Laura Humbert
Box 69 Teulon, MB
R0C 3B0

Barry L Jeskis
Teulon, MB
R0C 3B0

Gwen & Albert Jones
Box 162
Petersfield, MB
R0C 2L0

Anthony Kettler
PFRA
238 - 240 Graham Avenue
Winnipeg, MB
R3C 0J7

Debbie Kozera
Box 76
Teulon, MB
R0C 3B0

Kelly Langevin
Box 190
Stonewall, MB
R0C 2Z0

Michael Maksymyk
Village of Teulon
Box 69
Teulon, Manitoba
R0C 3B0

Ray Marquette
Teulon, MB
R0C 3B0

Mike Masters
Petersfield Area Residents
General Delivery
Petersfield, MB
R0C 2L0

Pat McGarry
PFRA
238 - 240 Graham Avenue
Winnipeg, MB
R3C 0J7

P. & J. Morrison
592 Jessie Avenue
Winnipeg, MB
R3L 0P9

Harold Priestley
Teulon, MB
R0C 3B0

George Rempel
TetrES Consultants Inc.
603 - 386 Broadway Avenue
Winnipeg, MB
R3C 3R6

R. Rodregez
Box 225
Petersfield, MB
R0C 2L0

Don Salkeld
Box 510
Teulon, MB
R0C 2Z0

D. J. Schmid
Box 326
Petersfield, MB
R0C 2L0

Irene Schmid
Box 326
Petersfield, MB
R0C 2L0

David Shwaluk
2022 Currie Blvd.
Brandon, MB
R7A 6Y9

Donna Smiley
Manitoba Environment
102 - 235 Eaton Avenue
Selkirk, MB
R1A 0W7

Gord Steiss
Wardrop Engineering
400 - 386 Broadway Avenue
Winnipeg, MB
R3C 4M8

Harold Syrett
Box 28
Argyle, MB
R0C 3B0

Mike Van den Bosch
Manitoba Environment
Bldg. 2, 139 Tuxedo Avenue
Winnipeg, MB
R3N 0H6

K. Waraksa
Teulon, MB

Bruce Webb
Manitoba Environment
Bldg. 2, 139 Tuxedo Avenue
Winnipeg, MB
R3N 0H6

Pat & Earl Wood
P.O. Box 412
Petersfield, MB
R0C 2L0

APPENDIX B: LIST OF EXHIBITS

1. Environment Act Proposal Form - "Village of Teulon - Wastewater Treatment Lagoon" (File # 3627.00) Submitted by Mike Van den Bosch, **Manitoba Environment**.
2. Letter, dated July 16, 1993 from G. Steiss, C.E.T., Wardrop Engineering Inc. to L. Strachan, Director, Environmental Approvals, Manitoba Environment. Submitted by Mike Van den Bosch, **Manitoba Environment**.
3. Letter, dated August 4, 1993 from L. Strachan, Director, Environment Act, Manitoba Environment to G. Steiss, C.E.T., Wardrop Engineering. Submitted by Mike Van den Bosch, **Manitoba Environment**.
4. Memorandum, dated August 27, 1993 from Mike Van den Bosch, Environmental Engineer, Municipal & Industrial Approvals, Manitoba Environment to Doug Peterson, Chief, Municipal and Industrial Approvals, Manitoba Environment. Submitted by Mike Van den Bosch, **Manitoba Environment**.
5. Letter (with attachments), dated September 7, 1993 from Honourable J. Glen Cummings, Minister of Environment to Dale Stewart, Chairperson, Clean Environment Commission. Submitted by Mike Van den Bosch, **Manitoba Environment**.
6. Letter, dated September 9, 1993 from Mike Van den Bosch, Environmental Engineer, Municipal & Industrial Approvals, Manitoba Environment to Dale Stewart, Chairperson, Clean Environment Commission. Submitted by Mike Van den Bosch, **Manitoba Environment**.
7. Letter, dated September 9, 1993 from Mike Van den Bosch, Environmental Engineer, Municipal & Industrial Approvals, Manitoba Environment to Gord Steiss, C.E.T., Wardrop Engineering. Submitted by Mike Van den Bosch, **Manitoba Environment**.
8. Letter (with attached *Distribution List*), dated September 10, 1993 from L. Strachan, Director, Environment Act, Manitoba Environment to "List of Objectors". Submitted by Mike Van den Bosch, **Manitoba Environment**.
9. Letter, dated October 1, 1993 from L. Strachan, Director, Environment Act, Manitoba Environment to G. Steiss, C.E.T., Wardrop Engineering. Submitted by Mike Van den Bosch, **Manitoba Environment**.
10. Correspondence, various dates, from individuals expressing concerns with respect to the *Village of Teulon - Wastewater Collection System and Treatment Lagoon* proposal to Manitoba Environment. Also, Memorandum, dated August 3, 1993 from G. Baker, Director, Policy Coordination Branch, Manitoba Natural Resources to Mike Van den Bosch, Environmental Approvals, Manitoba Environment. Submitted by Mike Van den Bosch, **Manitoba Environment**.
11. Village of Teulon - Wastewater Stabilization Pond and Pipeline: Predesign Report. Wardrop Engineering Inc. Submitted by George Rempel, **TetrES Consultants Inc./Wardrop Engineering Inc.**

12. Presentation to the Clean Environment Commission: Village of Teulon Proposed Wastewater Stabilization Pond and Pipeline. Wardrop Engineering Inc. & TetrES Consultants Inc. Submitted by George Rempel, **TetrES Consultants Inc./Wardrop Engineering Inc.**
13. Letters/Memorandums (3), various dates, regarding *disease transfer to wild waterfowl from Teulon lagoon*, to Pat McGarry, Regional Environment Officer, Manitoba Region, PFRA. Submitted by David Morgan, **TetrES Consultants Inc.**
14. Brief, untitled, submitted by **Ron Dalmyn**.
15. Brief, untitled, submitted by **Mike Masters**.
16. Letter (with attachment), dated October 29, 1993 from Marilyn Regiec, Secretary-Treasurer, Municipality of St. Andrews to Mayor and Council, Village of Teulon. Submitted by **Mike Masters**.
17. Resolution (not numbered), dated October 26, 1993, of the Rural Municipality of St. Andrews. Submitted by **Mike Masters**.
18. Petition: Against Teulon's New Sewage Lagoon Being Dumped into Netley Creek (copy), with attached signatories. Submitted by Mike Masters.