SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT:	**Rural Municipality of St. Clements**
PROPOSAL NAME:	**Community of East Selkirk Wastewater Treatment Lagoon**
CLASS OF DEVELOPMENT:	**2**
TYPE OF DEVELOPMENT:	**Wastewater Treatment Lagoon–Waste/Scrap**
CLIENT FILE NO.:	**5584.00**

OVERVIEW:

On May 7, 2012 the Department received a Proposal from GENIVAR on behalf of the Rural Municipality of St. Clements pursuant to *The Environment Act* for the construction and operation of a new aerated wastewater treatment lagoon located in the River Lots CLRL 89-95, Parish of Saint Clements. The proposed development will consist of the construction of two aerated primary treatment cells and two aerated secondary cells, a pump station and a truck dump station. Treated effluent from the wastewater treatment lagoon will be discharged between June 15th and October 31st of any year into a constructed ditch parallel to an existing railway track, which travels for approximately 600 metres before emptying into an existing natural drain that flows 300 metres to the Red River.

On June 4, 2012 Manitoba Conservation and Water Stewardship placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station), the Winnipeg Millennium Public Library, the Manitoba Eco-Network, and the Rural Municipality of St. Clements Municipal Office. Copies of the Proposal were also provided to the Canadian Environmental Assessment Agency (CEEA) and the Technical Advisory Committee (TAC) members. The Department placed public notification of the Proposal in the Selkirk Record on Thursday, June 7, 2012 and in the Selkirk Journal on Thursday June 21, 2012. The newspaper and TAC notifications invited responses until July 9, 2012.

On July 23, 2012, Manitoba Conservation and Water Stewardship forwarded requests for additional information from the TAC and the public to the proponent's consultant. On September 12, 2012, the consultant submitted responses to the comments and requests from the TAC and the public. On September 25, 2012 and September 27, 2012, the responses were distributed to the participating public and the TAC respectively, for review and comment.

On October 31, 2012, Manitoba Conservation and Water Stewardship forwarded requests for additional information from the TAC and the public to the proponent's consultant. On January 14, 2013, and February 7, 2013 the consultant submitted responses to the comments and requests from the TAC and the public. On January 21, 2013 and February 14, 2013 consultant's responses were distributed to the participating TAC and public for review and comment.

On March 20, 2013, Manitoba Conservation and Water Stewardship forwarded requests for additional information from the TAC and the public to the proponent's consultant. On

April 22, 2013, the consultant submitted responses to the comments and requests from the TAC and the public. On May 2, 2013, consultant's responses were distributed to the Public Registries.

All additional information necessary for the review was placed in the Public Registries

COMMENTS FROM THE PUBLIC:

The comments from the public are summarized in **Appendix A.**

Disposition of Public Comments

Regional system rather than lagoon

- Although Manitoba Conservation and Water Stewardship would support a Regional Wastewater System, the proponent has outlined the reasons why this wastewater treatment lagoon project was selected and submitted for Environment Assessment and Licensing. The project currently under review is the proposed wastewater treatment lagoon.

Proposed Lagoon is a Contaminated Site

- The proposed location for the East Selkirk wastewater treatment lagoon is not a contaminated site as defined by *The Contaminated Sites Remediation Act*, C.C.S.M. c. C205 in Manitoba. This site is not in the "Designated Contaminated Sites" list. This site is under the Manitoba Contaminated/Impacted sites list, which informs the public that Manitoba has information on the site. Once on the list, all sites remain on this list in perpetuity, regardless of status.

- An investigation and remediation program at the site was conducted from 2006 to 2011. Based on the laboratory results of the soil closure samples, the soil at the site was successfully remediated in accordance with the selected remediation criteria. The department has reviewed and accepted the remediation report and a closure letter was issued on September 13, 2012.

- As one of the purposes of remediation is to reuse the site, use of the site for industrial land use activities is appropriate. A lagoon is an appropriate activity on industrial zone site.

- To further address public concerns, a new investigation of the site for the proposed lagoon was completed. On January 10, 2013, soil samples were collected from the site and a total of 126 analyses were completed for laboratory analysis. GENIVAR's February, 2013 soil sampling report (based on the soil testing results) concluded that the concentrations of PAHs, PCBs, VOC, F2-F4

HC analyzed at the proposed lagoon site are below analytical detection limits and the concentrations of metals detected in the soil samples were well below Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environment and Human Health assessment criteria.

- An Environment Act Licence would require that if any contamination is identified during the construction it must be reported to the Director and remediated to the satisfaction of the Director.

Lagoon Could Leak

- An Environment Act Licence would require the installation of groundwater monitoring wells and the monitoring/reporting of the groundwater quality in the area surrounding the wastewater treatment lagoon.

- The proposed lagoon will be constructed in accordance with Manitoba Design Objectives for Standard Sewage Lagoons, including the requirement for a liner to prevent seepage. An Environment Act Licence would require post-construction testing of the liner.

Effluent Criteria

- The effluent of the proposed lagoon will be required to meet effluent quality in accordance with T*he Water Quality, Standards, Objectives and Guidelines Regulation*, under *The Water Protection Act*. The effluent will be required to meet effluent discharge limits prior to being discharged. The effluent of the proposed lagoon will also meet the requirements of the federal *Wastewater Systems Effluent Regulation,* as Manitoba's effluent discharge limits are more stringent. It will be the proponent's responsibility to meet all federal monitoring/reporting requirements.

- In order to protect fish in the critical springtime spawning season, when effluent un-ionised ammonia tends to be high, the lagoon has been designed for a 227-day storage period. The lagoon will not be permitted to discharge until after June 15th which will allow for significant conversion of toxic un-ionised ammonia into relatively benign nitrates. An Environment Act Licence would incorporate ammonia limits to be met prior to discharge.

- An Environment Act Licence would incorporate effluent discharge limits for $BOD_{5,}$ TSS, total coliforms, fecal coliforms, total phosphorus and ammonia.

- An Environment Act Licence would require the proponent to actively participate in any future watershed-based management study, plan and/or nutrient reduction

program, approved by the Director, for the Red River, Lake Winnipeg and/or associated waterways and watersheds.

Odours

- An Environment Act Licence would include the odour nuisance clause and be required to operate without creating an odour nuisance.

- An Environment Act Licence would require a minimum of 2 milligrams of dissolved oxygen per litre at all times to prevent the development of an odour nuisance.

Dumping of industrial wastewater

- An Environment Act Licence would require that truck haul discharge be required to be recorded and monitored and only domestic wastewater accepted at the lagoon. A lockable and controlled gate would be required to prevent any illegal or industrial dumping into the lagoon.

Overflow discharge

- An Environment Act Licence would require that the operating level/depth of the lagoon be monitored and that the Director be notified if the level is higher than the allowable depth, to prevent the need for emergency discharges.

Decommissioning/Biosolids

- An Environment Act Licence would require an assessment of available biosolids disposal options prior to disposal of biosolids.

- An Environment Act Licence would require the submission and approval of a decommissioning plan prior to decommissioning of the facility.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE (TAC):

Manitoba Conservation and Water Stewardship – Parks and Natural Areas Branch (June 28, 2012)

- *No concerns*

Manitoba Conservation and Water Stewardship – Wildlife Branch (June 25, 2012)

- *No concerns*

Manitoba Innovation, Energy and Mines, Mines Branch, Mining Engineering Section (June 19, 2012)

- *No concerns*

Manitoba Conservation and Water Stewardship – Sustainable Resource and Policy Management Branch (July 6, 2012)

- *No concerns*

Manitoba Conservation and Water Stewardship – Lands Branch (July 6, 2012)

- *Section 6.4 Species Impact indicates the plant survey was done on November 10 and 12th 2011. This would seem to be late for a plant survey.*

- *Section 7.0 Management Practice indicate that the initial effluent will be discharged soon after June 15th at a rate (not specified) that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Red River which is certainly appreciated considering the concerns of nutrient loading of Lake Winnipeg. There did not appear to be any information provided as to what vegetation is present in the constructed ditch (600 meters) or the existing natural ditch (300 meters) to the Red River. There is no information that indicates how the success or failure of the vegetation (in the discharge channel) to assimilate nutrient is determined. The second discharge date of October 31 will be after plant nutrient uptake takes place. Section 7.2 Record Keeping and Inspection Routine number 4 Discharge Records might want to consider including a comment on nutrient uptake under other pertinent data.*

Proponent Response (September 12, 2012)

- Nutrients (phosphorus) levels will be controlled in the secondary cells with alum addition and the ditch provides additional removal. In the constructed ditch (600 metres), there will be mostly regular grass present; in the existing natural ditch (300 metres) there are bushes and grass present. Vegetation harvesting will be implemented along the discharge ditch on Community land to promote nutrient removal. Samples can be taken in the discharge channel to determine the result of nutrient assimilation by the vegetation. Construction of an engineered / constructed wetland could be an alternative nutrient reduction strategy for the Community of East Selkirk if alum addition, trickle discharge and vegetation harvesting is not reducing

the nutrient levels to acceptable levels in a cost-effective, environmentally friendly manner.

- The facility will normally discharge in spring soon after June 15th, and again in fall prior to October 31st. No discharge will be allowed after the later specified date.

Further Comments (October 17, 2012)

- *The Lands Branch and the Sustainable Resource and Policy Management Branch defers comment to the surface water quality section with respect to the response provided by the proponent for accuracy in regards to nutrient removal.*

Disposition:
- After receiving the additional information from the proponent, no further comments were received from Lands Branch.

Manitoba Infrastructure and Transportation– Highway Planning and Design Branch, Environmental Services Section (July 4, 2012)

MIT has reviewed The Environment Act Proposal noted above and while we have no major concerns, we would like offer the following comments:

- *The proposed lagoon is adjacent to PR 509. The proponent should be informed that any new, modified or relocated access connections onto PR 509 will require a permit from Manitoba Infrastructure and Transportation (MIT), including change in use. A permit will also be required for any construction (above or below ground level) within 38.1m (125ft) from the edge of the right-of-way of PR 509.*

- *The proponent will need to provide information on the projected number of vehicles that will be accessing the site to determine if any on-highway improvements are required. If on-highway improvements are required, they will be at the expense of the proponent.*

- *Permission is required from the Department to allow the discharge of water into and across provincial highway ditches (PR 509 and PR 204). In addition, the Department would like to review any changes or increase of flows to the existing drainage pattern. The proponent will be responsible for any costs to upgrade the on-highway drainage works required to accommodate the lagoon if required.*

- *Agreements are required with the Department to allow installation of underground sewer and lines within the right-of-way and control areas adjacent to PR 509 and PR 204.*

- *It is strongly recommended that the proponent consult with the Department in the preliminary design stages to expedite the review and approval process, and prevent unwarranted project delays. For Policies, Standards and Procedures regarding Agreements for Underground Installations, please instruct the proponent to contact:*

  Warren Borgford, P. Eng.,
  Technical Services Engineer
  Manitoba Infrastructure and Transportation (warren.borgfordgov.mb.ca)

- *MIT prefers that an underground agreement be obtained prior to tendering any proposed installation. Detailed design drawings will be required to be submitted for the Department's review.*

Proponent Response (September 12, 2012)

- The facility will normally discharge in spring soon after June 15th, and again in fall prior to October 31st. Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 l/s.

Disposition:
- After receiving the additional information from the proponent, no further comments were received from Manitoba Infrastructure and Transportation.

Manitoba Local Government - Community & Regional Planning (July 9, 2012)

- *The subject lands are currently designated "Industrial Area" pursuant to the Selkirk and District Development Plan By-law 190/08 and zoned "M" Industrial Zone pursuant to the RM of St. Clements Zoning By-law. The land west of PR 204 and proposed as the discharge route for the lagoon is zoned "Hazard Land."*

- *"Waste Disposal Facilities" are listed as a conditional use in the "M" zone, and as such, a public hearing and conditional use order approved by council are required in order to establish the proposed use.*

- *Community and Regional Planning has concerns regarding the potential for flooding and overflow given the proximity of the lagoon site and discharge route to the Red River. The area is described as marshy, Central Lowland Area and local flood plain according to the report prepared by Genivar, and a portion of the discharge route is recognized as Hazard Land within the RM of St. Clements Zoning By-law.*

- *From a land use perspective, Community and Regional Planning cautions that the discharge route flows to a popular recreational fishing area along the riverbank, and is upstream from the City of Selkirk's waterfront development area. This discharge route may have potential to disrupt the longstanding recreational use of the area.*

Proponent Response (September 12, 2012)

- The earthen dykes around the proposed lagoon will have crest elevations of 229.39 metres (752.59 feet) G.S. of C. Datum, which is higher than the Flood Protection Level of 224.03 metres (735 feet) for this location by 5.36 metres (17.59 feet).

- The lagoon is designed for a 227-day storage period, November 1st to June 15th and effluent quality will meet licensing requirements for discharge. The fact that collection system is a low pressure sewer instead of gravity typically precludes excessive infiltration flows which could result in excessive flows or high lagoon level. Levels would be monitored by Public Works Staff and steps taken to prevent over flows.

- The new system will be using a complete aerobic wastewater treatment process with alum addition for phosphorus removal. The primary discharge should have a biochemical oxygen demand (BOD) of <25 mg/L and a total suspended solids (TSS) level of <25 mg/L, which meets the regulation requirements. After the primary treatment, the wastewater will receive the secondary treatment in the new aerated secondary cells. The secondary treatment will reduce BOD and TSS levels even further. Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 I/s that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Red River while not challenging the normal operation of the wastewater treatment lagoon.

- In order to protect any potential fish in the critical springtime spawning season, when effluent un-ionised ammonia tends to be high, the lagoon has been designed to the 227-day storage period. The lagoon will discharge after June 15th and will allow for significant conversion of toxic un-ionised ammonia into relatively benign nitrates.

Further Comments (October 16, 2012)

- *The Community and Regional Planning comments, dated July 9, 2012, identified concerns regarding the proposed lagoon location and discharge route in relation to flooding and overflow potential, and proximity to recreational fishing areas.*

- *The flooding and overflow potential concern was addressed in the Genivar report, which indicated that the earthen dyke (around lagoon) crest elevation would be 17.59 feet higher than the Flood Protection Level for this location, and further added that treated effluent would meet regulation requirements and lagoon levels would be monitored by staff to prevent overflows.*

- *However, the EAP circulation generated concerns regarding potential site contamination from the storage and manufacturing of commercial explosives between*

the mid 1930's and 1990's (Brainerd Facility). The 2011 report on the Brainerd Facility Closure by Dillon Consulting identified the presence of carcinogenic compounds, and concluded that exposure was "unlikely to result in unacceptable increases in life-time cancer risks." It is noted that the investigation was based upon selected criteria levels published by the United States Environmental Protection Agency that were "adjusted" to ensure consistency with Canadian screening guidelines. Assessment guidelines for energetic compounds in Canada were unavailable.

- *Remediation efforts reduced contamination to acceptable levels for future commercial or industrial lands uses. However, given the proposed land use is neither commercial nor industrial, but rather a sewage lagoon, it may be prudent to conduct a new investigation to address the safety of the site for the proposed lagoon.*

- *Finally, the proposed 900 metre discharge route to discharge effluent into the Red River remains in proximity to a very popular recreational fishing area along the river. Numerous public objections to the proposal and concerns from government departments were received. In an email to Rafiqul Chowdhury of October 15, 2012, area residents indicated that their concerns were not adequately addressed by Genivar's September 10, 2012 response. Community and Regional Planning suggests that further action be taken to address outstanding public and government department concerns prior to proceeding with the licensing process.*

<u>Proponent Response (January 14, 2013)</u>

- The new investigation to address the safety of the site for the proposed lagoon has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th, 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks.

- The proposed aerated lagoon will use advanced wastewater treatment technology and will replace the existing septic fields in the area, which receive untreated wastewater and effluent quality is usually unpredictable if not operating properly or leaking, which caused some problems with drinking water quality in the R.M. in the past. The effluent of the proposed lagoon will meet the Manitoba Conservation licence requirements and regulations for effluent water quality.

- The Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act stipulates that fecal coliform bacteria concentration in surface water (recreation) should not exceed 200 organisms/100 mL. The new system will be using a complete aerobic wastewater treatment process and the treated effluent should not have difficulties meeting this requirement. Treated effluent will be discharged from an isolated secondary cell for approximately 20-25 days at a rate of

approximately 51-64 l/s or slower to optimize the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Red River while not challenging the normal operation of the wastewater treatment lagoon.

- In order to protect any potential fish in the critical springtime spawning season, when effluent un-ionised ammonia tends to be high, the lagoon has been designed for a 227-day storage period. The lagoon will discharge after June 15th and will allow for significant conversion of toxic un-ionised ammonia into relatively benign nitrates.

Further Comments (February 4, 2013)

- *Community and Regional Planning made 3 observations: that further investigation of the proposed lagoon site may be prudent, that the concerns of the public and government departments were not adequately addressed and that the proposed point of discharge is in proximity to a popular recreational fishing area.*

- *In response, GENIVAR has taken steps to develop a sampling plan to test within the lagoon footprint, and has attempted to address objections or concerns. The proposed point of discharge, however, remains in proximity to a popular recreational fishing area. GENIVAR advises that treated effluent will be discharged for approximately 20-25 days at a slower rate to allow for nutrients to be assimilated in the discharge route prior to reaching the Red River. The lagoon will be discharged after June 15th in order to protect any potential fish in the critical springtime spawning* period.

Proponent Response (February 7, 2013)

- Provided Soil Sampling results.

Proponent Response (April 17, 2013)

- All general comments are noted

Disposition:

- After receiving the additional information from the proponent, no further comments were received from Manitoba Local Government.

- An Environment Act Licence would require that the operating level/depth of the lagoon be monitored and that the Director be notified if the level is higher than the allowable depth, to prevent the need for emergency discharges.

- An Environment Act Licence would require effluent criteria to be met prior to discharge.

Manitoba Conservation and Water Stewardship – Office of Drinking Water (July 9, 2012)

- *I reviewed the above noted EAP on behalf of Office of Drinking Water (ODW). The proposed development is an aerated-facultative wastewater treatment lagoon system to treat domestic wastewater from the community of East Selkirk to a standard of quality that will allow it to be discharged to the Red River. The proposal notes the lagoon will be constructed with an impervious compacted clay liner, to Manitoba Conservation Standards, to protect groundwater. The City of Selkirk no longer takes raw water from the Red River for its public water system and there are no other public water systems taking water from the Red River downstream of the proposed lagoon discharge point.*

- *Based upon this, ODW does not see any cause for concerns with the EAP or the proposed development.*

Disposition

No action required

Manitoba Conservation and Water Stewardship – Environmental Programs and Strategies Branch – Air Quality Section (July 9, 2012)

- *The potential for odour nuisance will be minimized provided that the aerobic condition of the wastewater lagoon is maintained. Hence, it is important to maintain the dissolved oxygen concentration at the desired level (as mentioned in page 15 of the proposal) to prevent the development of odour nuisance.*

- *While not mentioned in the submitted proposal, it is expected that construction best practices and appropriate control measures will be utilized during construction to minimize dust generation and vehicle/equipment emissions.*

Disposition

An Environment Act Licence would require a minimum of 2 milligrams of dissolved oxygen per litre at all times to prevent the development of odour nuisance.

Manitoba Conservation and Water Stewardship – Environmental Compliance and Enforcement Branch – Central Region-Interlake (July 6, 2012)

- *For your consideration, attached is a map showing the contamination areas where ICI Canada operated a commercial explosives manufacturing and storage facility from the mid 1930s until the 1990s. The footprint for the proposed municipal wastewater facility comes very close to where some contamination still exists.*

Proponent Response (September 12, 2012)

- In 2006-2011, Dillon Consulting Limited conducted a remediation program at the Brainerd site located in East Selkirk. The objective of the remediation program was to remove and properly dispose of nitroaromatic-impacted soil from the DNT skid area from the property. As stated in the "Akzo Nobel Canada Inc. - Brainerd Facility, East Selkirk Closure Report" prepared by Dillon Consulting Limited (December 2011), Section 4:

    - The risk assessment criteria developed for the site confirm that the site is suitable for commercial/industrial use of the property.

    - 702 tonnes of nitroaromatic-impacted soils were removed from the site and transported to Miller Environmental's facility in St. Jean Baptiste, Manitoba for treatment.

    - Based on the laboratory results of the soil closure samples, the soil at the site has been successfully remediated in accordance with the selected remediation criteria.

Disposition:

- After receiving the additional information from the proponent, no further comments were received from Environmental Compliance and Enforcement Branch

Manitoba Conservation and Water Stewardship, Fisheries Science and Fish Culture Section, Fisheries Branch (July 6, 2012)

- *Fisheries Branch has reviewed this request to construct two new aerated primary cells and two new secondary cells with clay based liners located in River Lots 89-95 in the Parish of Saint Clements. Treated effluent from the lagoon will be released between June 16th and November 1st and will flow along an existing railway track to an existing natural drain which enters the Red River for a total discharge length of ~900 m. While they expect the effluent to be well within the limits for BOD, TSS, coliform and other parameters it is anticipated that alum will be added for phosphorus removal as required.*

- *The Red River supports year round life stages for a number of large and small bodied fish species. While we have no information on the natural drainage that the effluent will travel through prior to discharging to the Red River, it may provide seasonal*

habitat for Red River fish species. Given the fishery values it is important that the effluent meet or exceed the Manitoba Water Quality Standards, Objectives and Guidelines therefore we defer to the recommendations of our colleagues in Water Science and Management on this proposal.

Disposition

An Environment Act Licence would require *The Manitoba Water Quality, Standards, Objective and guidelines (MWQSOG)* be met prior to effluent discharged.

Manitoba Conservation and Water Stewardship – Water Science and Management Branch – Water Quality Section (July 12, 2012)

- *The following effluent standards should be in place for Community of East Selkirk Wastewater Treatment Lagoon new wastewater lagoon as per the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011).*

    - *BOD_5 25 mg/L*
    - *TSS 25 mg/L*
    - *Fecal Coliforms 200 MPN / 100mL*
    - *TP 1 mg/L or required nutrient reduction strategy*

- *The Manitoba Water Quality Standards, Objectives and Guidelines Regulation requires new or expanding wastewater treatment facilities to meet a 1 mg/L phosphorus limit or implement a nutrient reduction strategy.*

- *Page 4 of the Proposal states 'The original concept for wastewater treatment was to send the wastewater to the City of Selkirk.' Can the community of East Selkirk provide details on the original concept to send wastewater to the City of Selkirk?*

- *Has the community of East Selkirk considered a best practical technology for beneficial use of valuable resources such as nutrients, organic matter, and energy contained within municipal biosolids and sludge? Chemically precipitated phosphorus leads to increased reliance on chemicals and an immobilization of valuable nutrients contained in biosolids and sludge.*

- *As per the supplemental guidelines for preparing an Environment Act proposal application (http://www.gov.mb.ca/conservation/eal/publs/info_eap_wwtl.pdf), in addition to chemical treatment the proponent should consider at minimum the following options for nutrient reduction to the receiving waterway:*

    a) effluent irrigation / land application;
    b) alternative lagoon design, operation and storage capacity including employing trickle
    discharge and vegetation harvesting;
    c) engineered/constructed wetlands;

The proponent should comprehensively consider and discuss each option as part of the Environment Act proposal.

- *The Water Quality Management Section is concerned with any discharges that have the potential to impact the aquatic environment and/or restrict present and future uses of the water. Therefore it is recommended that the license require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director.*

Proponent Response (September 12, 2012)

- The original concept to send the wastewater to the City of Selkirk consisted of a forcemain constructed from the Community of East Selkirk, under the Red River, to the City of Selkirk Wastewater Treatment Plant and construction of a new lift station. The Community of East Selkirk attempted negotiations with the City of Selkirk Council regarding this project. The agreement could not be reached due to various reasons and the cost of this option appeared to be much higher than the cost of the proposed aerated lagoon.

- As per the Nelson Environmental Inc. information, the OPTAER wastewater treatment process results in minimal organic bottom sludge accumulation. Because of low sludge production in the system, retention time is retained for long term BOD, removal. Over time accumulated sludge will be removed from the cells and disposed in landfills or through land application.

a) Effluent irrigation / land application:

Land application has been an ongoing problem for other communities in the last few years. Successive years of high precipitation made it impractical and harmful to add yet more moisture to land already saturated with natural rainfall.

Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 1/s that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Red River while not challenging the normal operation of the wastewater treatment lagoon.

b) Alternative lagoon design, operation and storage capacity including employing trickle discharge and vegetation harvesting.

Aerated lagoon option has been chosen to provide a better wastewater treatment to the community, to reduce odours and the lagoon footprint.

The new system will be using a complete aerobic wastewater treatment process. The primary discharge should have a biochemical oxygen demand (BOD) of <25 mg/L and a total suspended solids (TSS) level of <25 mg/L. The new secondary cells will also have aeration which will reduce BOD and TSS levels even further.

Two 50.0 hp positive displacement blowers will be used and the system will maintain minimum dissolved oxygen levels at 2.0 mg/L to prevent any odours from developing.

A typical conventional primary treatment cell is sized in accordance with a Manitoba Conservation guideline that requires one hectare of liquid surface area per 56 kg-BOD, daily loading. The size of the Community of East Selkirk primary treatment cell would be determined on the basis of a maximum BOD, loading of 216.3 kg per hectare per day and would require (minimum) primary cell liquid surface area of approximately 3.9 ha, which exceeds the two proposed aerated primary cells liquid surface area of 2.0 ha by a factor of 1.95. The bottom area of the conventional secondary cells would be approximately 75,000 m^2 each, which is greater than the bottom areas of the proposed cells by a factor of 4.

Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 1/s that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Red River while not challenging the normal operation of the wastewater treatment lagoon. Vegetation harvesting will be implemented along the discharge ditch on Community land to promote nutrient uptake.

c) Engineered / constructed wetlands

Construction of an engineered / constructed wetland could be an alternative nutrient reduction strategy for the Community if alum addition, trickle discharge and vegetation harvesting is not reducing the nutrient levels to acceptable levels. It could become part of a second phase of development once additional studies are undertaken to evaluate costs and efficiencies.

- Any party involved in a future watershed based management study, plan/or nutrient reduction program for the area are welcome to contact the R.M. of St Clements.

Further Comments (October 22, 2012)

- *Contaminants on this site may exist at levels which could negatively impact the function of a lagoon. This lagoon is designed to support bacteria which utilise the BOD and nutrients in the domestic wastewater.*

- *That the effluent from this site could negatively affect the aquatic life of the receiving stream. From USEPA (EPA 440/5-80-045 October 1980, http://water.epa.gov/scitech/swguidance/standards/upload/2001_10_12_criteria_ambientwqc_dinitrotoluene80.pdf) "the available data for dinitrotoluenes indicate that acute and chronic toxicity to freshwater aquatic life occur at concentrations as low as 330 and 230 µg/l, respectively, and would occur at lower concentrations among species that are more sensitive than those tested."*

- *That the effluent from this site could negatively affect fish tissue. If the above estimates are made for consumption of aquatic organisms only, excluding consumption of water, the levels are 91 µg/l, 91.1 µg/l, and 0.91 µg/l, respectively. The incremental increases in the levels correspond to the levels which may result in incremental increase of cancer risk over the lifetime are estimated at 10^{-5}, 10^{-6}, and 10^{-7}. From USEPA (EPA 440/5-80-045 October 1980, http://water.epa.gov/scitech/swguidance/standards/upload/2001_10_12_criteria_ambientwqc_dinitrotoluene80.pdf)*

- *The Proponent has provided insufficient information to provide a proper assessment of the proposed work. Can the Proponent collect and analyse the soil within the footprint of the lagoon to address the concerns above?*

- *Can the Proponent please describe the decommissioning of the lagoon including the disposal of sludge? The description should address what is being decommissioned, when it will be decommissioned, how it will be decommissioned, and where decommissioned materials will be placed.*

- *The original concept of sending the Community of East Selkirk wastewater to the City of Selkirk is considered a preferable option to the Water Quality Management Section.*

Proponent Response (January 14, 2013)

- The rate of biological oxidation of organic pollutants is largely determined by the population density and the activity of the microbes involved in the degradation process. Literature suggests that energetic compounds previously identified generally have a short half-life and are largely degraded by photolysis and microbial oxidation in soil conditions. Furthermore, remaining aqueous concentrations are also expected to be further reduced via several possible natural degradation mechanisms, such as photolysis, microbial degradation, and chemical oxidation pathways. As the lagoon is expected to be aerated and favorable to microbial growth conditions, possible reductions in BOD as a result of contaminants are anticipated to be conservative.

- The document EPA 440/5-80-045 notes that 2,3-dinitrotoluene is two orders of magnitude (LC_{50} 330 pg/L) more toxic to fish and invertebrate species than 2,4-dinitrotoluene (LC_{50} 31,000 pg/L). Previous testing results indicated the presence of 2,4-dinitrotoluene in the 200 ppm range, several orders of magnitude less toxic as the

LC_{50} suggests. EPA 440/5-80-045 suggests concern is minimal. 2,3- Dinitrotoluene was observed in a single borehole from a total of 29 bore and pit holes tested at a concentration of 37.4ppm, an order of magnitude less than the LC noted in EPA 440/5-80-045. Lastly, 2,3-dinitrotoluene was not previously observed in any of the boreholes located within the lagoon, as such, is not expected to form part of any potential discharge and not negatively affect aquatic life.

- Of the 29 bore hole and test pit sampled for energetic compounds, only two sites were observed to have the presence of dinitrotoluene derivatives. One site lies within the lagoon property and not within the lagoon itself, and the other is not on lagoon property at all. Bore hole and test pit data received from locations within the lagoon do not provide any substantial data quantifying the presence of dinitrotoluene derivatives. As such, additional concern regarding fish tissue toxicity from lagoon effluent discharge is not warranted.

- No dinitrotolunes derivatives were observed from previous testing within the lagoon footprint. Sourcing LC_{50} values stated in EPA 440/5-80-045, the above concerns do not warrant additional testing for 2,4-nitrotoluene. Based upon previous testing results, the lagoon footprint is not expected to contain 2,3dinitrotoluene. The concerns stated in this memorandum have not provided direct evidence to further evaluate soil conditions. Regardless, in our efforts to establish due diligence, GENIVAR has taken steps to develop a sampling plan to substantiate our EAP by strategically testing the presence of energetic compounds within the lagoon footprint. We anticipate testing soil samples in January of 2013 and receiving results in February of 2013 for dissemination.

- The proposed East Selkirk wastewater stabilization pond is specifically designed to provide wastewater treatment and storage capacity for the existing and proposed East Selkirk serviced area. The proposed lagoon will service the existing 270 residential units and 540 future residential units, which total 810 residential units. In addition to the serviced residents, the system will service two schools (773 bussed-in-students), a Recreation Centre, the R.M. of St. Clements Office, Hydro Building and a Maintenance Garage. The proposed wastewater treatment facility is designed to treat wastewater up to an average loading of 216.5 kg-BOD_5/d and store the treated effluent of 168,965 m^3 for 227 days for a 20-year design period. However, the system can be readily increased in organic capacity by constructing an aerated primary cell # 3 to the southeast of the proposed primary cell #2 as the proposed secondary cells can provide excess hydraulic capacity of approximately 52,760 m^3, which is good for additional 290 residential units. The lagoon will not be decommissioned until the site is no longer required in the overall wastewater management plan for the R.M. There is no definite time frame as long as the facility is properly operated and maintained.

- Typical lagoon decommissioning involves the following procedures:

    1) Discharging of the lagoon according to the clauses of the licence
    2) Dewatering of the accumulated sludge in the lagoon cells.

3) Removal of the sludge.
4) Disposal of the sludge may occur at a licensed waste disposal ground (WDG) (the sludge present in the bottom of all cells) or by incorporation into agricultural land (the sludge present in the bottom of the lagoon primary cells). If the sludge is disposed of at a licensed WDG, no further licensing or testing is required. However, if applied to agricultural land, additional licensing approval and a chemical analysis of the sludge and proposed land is required.
5) Levelling of the site, which includes removal of remaining wastewater collection and treatment systems equipment and piping.
6) The use of the site is usually restricted for growing root crops for three years after decommissioning.

Further Comments (February 4, 2013)

- *Can the Proponent please provide their investigation into the levels of contaminants at the lagoon site?*

Proponent Response (February 7, 2013)

- Soil sampling results provided to the Water Quality Management Section on February 14, 2013.

Further Comments (March 15, 2013)

- *For now, Water Quality Management Section has no further comments on this file. When available, please send the Proponent's response to the questions/comments from public.*

Proponent Response to the questions/comments from public (dated April 17, 2013) were provided to Water Quality Management Section on May 7, 2013

No further comments from Water Quality Management Section (May 15, 2013)

Disposition:
- After receiving the additional information from the proponent, no further comments were received from Water Quality Management Section.

- The effluent of the proposed lagoon will be required to meet effluent quality in accordance with *Water Quality, Standards, Objectives and Guidelines* Regulations, under *The Water Protection Act*. The effluent will be required to meet effluent discharge limits prior to being discharged. The effluent of the proposed lagoon will also meet the requirements of the federal *Wastewater Systems Effluent Regulation*, as

Manitoba's effluent discharge limits are more stringent, It will be the proponent's responsibility to meet all federal monitoring/reporting requirements.

- In order to protect fish in the critical springtime spawning season, when effluent un-ionised ammonia tends to be high, the lagoon has been designed for a 227-day storage period. The lagoon will not be permitted to discharge until after June 15th which will allow for significant conversion of toxic un-ionised ammonia into relatively benign nitrates. An Environment Act Licence would incorporate ammonia limits to be met prior to discharge.

- An Environment Act Licence would incorporate effluent discharge limits for $BOD_{5,}$ TSS, total coliforms, fecal coliforms, total phosphorus and ammonia.

- An Environment Act Licence would require the proponent to actively participate in any future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Red River, Lake Winnipeg and/or associated waterways and watersheds.

COMMENTS FROM FEDERAL REPRESENTATION:

Canadian Environmental Assessment Agency (CEEA) (July 12, 2012)

- *Project information provided by Manitoba Conservation was shared with all federal departments with a potential interest. Based on the responses to the survey the application of the Canadian Environmental Assessment Act (the Act) by a federal authority will not be required for this project.*

- *Health Canada (HC) has indicated it is not a responsible Authority (RA) for the project. However, it could contribute expert knowledge in the area of human health to an RA if requested. The contact person for HC is Rick Grabowecky. He can be reached by email:*
  Rick.Grabowecky@ hc-sc.pc.ca.

- *The Department of Fisheries and Oceans (DFO) has indicated it has also reviewed the project information. DFO indicated that as long as none of the proposed project works are in or within 30 m of water DFO will not have a federal interest in the project.*

PUBLIC HEARING:

- Several members of the public requested a Clean Environment Commission (CEC) hearing. The basis for public concern is that the site is potentially a contaminated site and may be sensitive to ground and surface water pollution and risk to public health. Additional concerns were raised due to proximity to the Red River and potential

effects on fish and Lake Winnipeg. Concerns were raised regarding the site due to perceived effects on property value and potential odours.

- The concerns raised by the public have been considered through the environmental assessment and licensing process and can be mitigated through Licence conditions.

A public hearing is not recommended.

CROWN-ABORIGINAL CONSULTATION:

The Government of Manitoba recognizes it has a duty to consult in a meaningful way with First Nations, Métis communities and other Aboriginal communities when any proposed provincial law, regulation, decision or action may infringe upon or adversely affect the exercise of a treaty or Aboriginal right of that First Nation, Métis community or other Aboriginal community.

There is no aboriginal community nearby the lagoon and would be no infringement of aboriginal or treaty rights under Section 35 of the Constitution Act, 1982. Therefore, it is concluded that Crown-Aboriginal consultation is not required for the project.

RECOMMENDATION:

The Proponent should be issued a Licence for the construction and operation of the wastewater treatment lagoon in accordance with the specifications, limits, terms and conditions of the attached draft Licence. Enforcement of the Licence should be assigned to the Environmental Approvals Branch until the liner testing/inspection has been completed and the Development is commissioned.

PREPARED BY:

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Manitoba Conservation and Water Stewardship
July 24, 2013

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Appendix A

COMMENTS FROM THE PUBLIC:

Name	Date	Comment(s)/Concern(s)
Al and Bridget Prue, on behalf of North Henderson Developments and surrounding area residents	July 08/2012	▪ *The report only looked at 1 site and that environmental assessments of alternate sites were not included in the report (i.e. to see if a safer location, especially one that has no history of contaminants and a better clay base).* ▪ *Only a clay liner is being proposed instead of a membrane with monitoring under the membrane to ensure that no seepage occurs to risk ground water pollution given the high permeability of silt and gravel under the clay layer which is noted in the test hole data in the report.* ▪ *There was no testing that we noticed in the report for contaminants that may be present from the old CIL explosives plant that operated from 1935 to the 1970's.* ▪ *There is no mention in the Genivar report that this is an old contaminated site or that it is listed on Manitoba Conservations contaminated/impacted sites list.* ▪ *Proposed to use Alum to bind to the phosphorous, but does not provide a decommissioning plan of what would be done with the Alum and left over solids after the lagoon's life span is over (only 20 years).* ▪ *There are no significant industrial or high strength contributors in the East Selkirk Service area, however most of industries in the RM of St. Clements Industrial park are on holding tanks, and is only 5 miles from the site. Will truck dumping only be restricted to the East Selkirk service lots? or will all septic trucks that operate in the RM be allowed to dump here.* ▪ *A number of the test holes experienced caving and silt/sand/gravel deposits were also noted in the sample logs. This of course raises concern for ground water pollution, should seepage occur.*

		▪ *The report does not have any plans for emergency dumping, should excessive rainfall or other factors occur to necessitate discharging before the sewage has been properly treated.* ▪ *Westerly flow is a concern for the city of Selkirk's water supply, as well as the Henderson North sub-division, just south west of the proposed lagoon.* ▪ *The Selkirk Golf course is only 2000 feet away from the proposed lagoon, and given on-site truck dumping at the lagoon, odour can easily travel this distance especially during warm unwind days.* ▪ *This is a heavily travelled area, (corner of PR 509 and PR 204), and in addition this area of the Red River (1000 feet away), is a known recreational area for fishing, boating, Ice fishing and cross country skiing.* ▪ *There is concern that some of the test holes showed that there was a sand or sand and gravel layer encountered before the till layer (Page 2 of the Geotechnical report).* ▪ *The selected area, unfortunately, consist mainly of CL/CH clay followed by a silt or silty clay layer, which would not meet the specified hydraulic conductivity of 1 X 10 -7 cm/s.* ▪ *It is recommended that the proposed pond liner (base and interior) for the proposed site should be constructed with a clay core within the proposed dykes.* ▪ *The bentonite slurry mix wall will replace the trench backfilled clay and still have to be keyed into the underlying impervious high plastic clay. The slurry mix should be able to pass the Manitoba Conservation guidelines for a clay liner.* ▪ *Based on this information, we are asking that Manitoba Conservation not provide a license for this proposal and that Clean Environment Commission hearings be held and that no lagoon shall be constructed on the CIL contaminated site. We oppose 100% the construction of an open sewage lagoon in the Red River Basin.* <u>Proponent Response(September 12, 2012)</u> ▪ Since 2007, GENIVAR has conducted several studies for the R.M.

of St. Clements and assessed options available for wastewater treatment in the Community of East Selkirk. During these studies, 13 options, including treatment by the City of Selkirk Wastewater Treatment Plant and treatment by a new R.M. of St. Clements Wastewater Treatment Plant, and 5 possible sites were assessed. The assessment included site visits, testhole drilling, sample collection, laboratory testing, a topographic survey, and preliminary design. The results of the investigation were presented to the R.M. of St. Clements and after careful consideration the preferred site and treatment option have been chosen.

- For lagoon construction, Manitoba Conservation's Environmental guidelines require that the proposed dykes and bottom of the proposed cells be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s or lined with a synthetic liner. The proposed pond site consists mainly of an area where such clay is present.

  The general soil profile reveals a topsoil layer of about 150 mm to 300 mm followed by an upper clay layer over a thin silt layer. This thin silt layer is followed by a lower clay layer over a till layer, which extended to the bottom of the testholes at 7.6 m below grade. The thick clay layer was comprised of high plasticity clay over thin silty clay followed by a massive clay structure below an average of 1.8 m depth. The exception are some testholes where a sand or sand and gravel layer are encountered before the till layer.

  As classified during our field investigation, the clay material of the upper 1.5 m depths ranged from a CL to CH material based on Atterberg limit tests and visual description. The estimated hydraulic conductivity of this material should range between 10^{-8} to 10^{-9} cm/sec. The hydraulic conductivity of the in-situ clay obtained at 0.8 m and 2.3 m depths were 7.05×10^{-9} cm/sec and 1.39×10^{-8} cm/sec, respectively. These numbers are lower than the Manitoba Conservation's clay liner guideline of 1.0×10^{-7} cm/sec.

  For this reason, the proposed pond liner (base and interior) is to be constructed with a clay core within the proposed dykes. This will involve excavating a trench approximately two metres wide (minimum) around the inside perimeter of the bottom of the proposed pond and keying into the underlying impervious high plastic clay to an approximate depth between 0.8 m and 2.3 m below ground surface, average is between 1.5 m to 1.8 m depth. The trench will be backfilled with impervious clay in 150 mm to 200 mm lifts compacted by at least eight passes with a sheepsfoot roller to 95% Standard Proctor density.

The proposed secondary cells' depth is 5.57 m with bottom elevation approximately 2.96 m below ground surface and the proposed primary cells' depth is 4.66 m with bottom elevation approximately 2.05 m below ground surface, which is mostly below silt layer or silty clay within the lower clay layer.

Any unsuitable material such as sand or high percentage silt materials will be removed and replaced with the recommended liner and compacted to 95% Standard Proctor density. It will be ensured that the liner consists of at least one metre width of impervious clay compacted to at least a minimum of 95% Standard Proctor maximum density in 150 mm to 200 mm lifts.

A 1.0 metre clay liner within the dykes and under the base is considered superior to a synthetic liner for this project, especially as leaks are difficult to locate and repair in synthetic liners and the clay is readily available on site and more cost-effective.

- In 2006-2011, Dillon Consulting Limited conducted a remediation program at the Brainerd site located in East Selkirk. The objective of the remediation program was to remove and properly dispose of nitroaromatic-impacted soil from the DNT skid area from the property. As stated in "Phase II Environmental Site Assessment — ICI Brainerd Manitoba Site, Final Report", prepared by Dillon Consulting Limited, dated September 2, 2003,
"A total of fifty-five (55) boreholes were advanced on the subjected property along with thirteen (13) test pits. In total, two hundred and thirty-eight (238) soil samples were submitted to PSC for laboratory analysis of various parameters."

  As stated in the "Akzo Nobel Canada Inc. — Brainerd Facility, East Selkirk Closure Report", prepared by Dillon Consulting Limited, Section 4, dated December 2011,

  - The risk assessment criteria developed for the site confirm that the site is suitable for commercial/industrial use of the property.

  - 702 tones of nitroaromatic-impacted soils were removed from the site and transported to Miller Environmental's facility in St. Jean Baptise, Manitoba for treatment.

  - Based on the laboratory results of the soil closure samples, the soil at the site has been successfully remediated in accordance with the selected remediation criteria.

		- During GENIVAR's geotechnical investigation, no visible signs of contamination were found in the soil. ▪ Based on the above information, the soil at the site has been successfully remediated in accordance with the selected remediation criteria and will not affect the proposed lagoon operation. The specified area is located more than 17 metres to the northeast from the outside toe of the lagoon as indicated on the CO2 design drawing. ▪ As per the Nelson Environmental Inc. information, the OPTAER wastewater treatment process results in minimal organic bottom sludge accumulation. Over time accumulated sludge will be removed from the cells and disposed in landfills or through land application. The proposed lagoon can be used long after 20 years of time. The 20-year design period is not a lagoon life span, but the lagoon sizing is based on expected usage requirements (organic and hydraulic loadings) for 20 years before expansion. The proposed secondary cells' storage capacity is approximately 232,900 m^3, which exceeds the required 20-year design capacity of approximately 169,000 m^3 and allows expanding the lagoon's life time over 20 year design period with construction of a third aerated primary cell and/or a SAGR system to accommodate future organic loadings. A decommissioning plan of the proposed lagoon is not a part of the proposal. ▪ The proposed East Selkirk wastewater treatment lagoon is designed to accept and treat domestic wastewater only. ▪ For lagoon construction, Manitoba Conservation's Environmental guidelines require that the proposed dykes and bottom of the proposed cells be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s. The proposed pond site consists mainly of an area where such clay is present. The proposed pond liner (base and interior) is to be constructed with a clay core within the proposed dykes. Any unsuitable material such as sand, gravel or high percentage silt materials will be removed and replaced with the recommended liner and compacted to 95% Standard Proctor density. It will be ensured that the liner consists of at least one metre width of impervious clay compacted to at least a minimum of 95% Standard Proctor maximum density in 150 mm to 200 mm lifts.

- For the calculations used in assessing the wastewater loading, average daily water usage and infiltration are assumed to be 250 litres per capita per day and 230 litres per house / building per day, accordingly. The storage capacity of the proposed lagoon is approximately 232,900 m^3, which exceeds the required 20-year design capacity of approximately 169,000 m^3 and allows excepting extra flows if necessary.

  The new system will be using a completely aerobic wastewater treatment process with alum addition for phosphorus removal. The *primary* discharge should have a biochemical oxygen demand (BOD) of <25 mg/L and a total suspended solids (TSS) level of <25 mg/L, which meets the regulation requirements even before reaching the secondary treatment stage. The secondary treatment will reduce BOD and TSS levels even further.

  The lagoon is designed for a 227-day storage period, November 1st to June 15th and effluent quality will meet licensing requirements for discharge. The fact that collection system is a low pressure sewer instead of gravity typically precludes excessive infiltration flow which could result in excessive flow or high lagoon level. Levels would be monitored by Public Works Staff and steps taken to prevent over flows.

- With the construction of a new aerated lagoon facility, the treated effluent will be within the BOD_5 TSS, coliform and other requirements, as will be required in a new Environment Act Licence. From the discharge point into a drainage ditch the treated effluent will flow parallel to an existing railway track, which runs into an existing natural drain, which converges with the Red River. The distance of the route from the discharge point of the proposed lagoon to the Red River is approximately 900 metres (2,952 feet).

- To prevent any seepage and groundwater contamination, for lagoon construction, Manitoba Conservation's Environmental guidelines require that the proposed dykes and bottom of the proposed cells be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s. For this reason, the proposed pond liner (base and interior) will be constructed with a clay core within the proposed dykes and keying into the underlying impervious high plastic clay.

- The new system will be using a complete aerobic wastewater treatment process; two 50.0 hp positive displacement blowers will be used and the system will maintain minimum dissolved oxygen levels

		at 2.0 mg/L to prevent any odours from developing.
	October 15, 2012	▪ *Dissatisfied with response from the proponent* ▪ *A complete and thorough investigation has to be done.* ▪ *The preferred plan was to use an existing wastewater treatment plant in Selkirk and we believe that this is a proper and more regional approach to the wastewater treatment for East Selkirk. We personally spoke with the Mayor of Selkirk recently, who did not recall any discussions or negotiations with the R.M. of St Clements during his six years on Council.* ▪ *The proposed lagoon site is a contaminated site.* ▪ *The EAP states the discharge route is 900 metres, Google Earth shows 700 metres maximum. Discharge is also directly into a prime recreational fishing area.* ▪ *Plant assessments were done in November, which is late.* ▪ *A file search alone determined that there was no endangered species to be effected. What about the deer, the coyotes, the bald eagles, the frogs, the birds, etc., that currently reside in that location?* ▪ *There will be odour coming from truck dumping of solids.* ▪ *With regard to the emergency dumping, should excessive rainfall or other factors occur, GENIVAR did not answer the question. They only state that it will not exceed the demand, but so do other municipality lagoons, and they have exceeded their banks and had emergency dumping?* ▪ *Most of the EAP report and answers to questions simply regurgitated information concerning Manitoba Government guidelines on how to construct a sewage treatment lagoon. Very little effort was gone into answering most questions in general and especially our questions on the contaminated site or alternative options.* ▪ *Concerned with regard to the emergency dumping, should excessive rainfall or other factors occur* ▪ *Do not agree with and do not support it, and will continue to oppose the construction of a sewage lagoon on the contaminated CIL site, or a build within the Red River Corridor and/or in our immediate neighborhood.*

		Proponent Response(January 14, 2013) ▪ A new investigation to address the safety of the site for the proposed lagoon has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th, 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks. ▪ As it has been stated in our previous response, the original concept was to send the wastewater to the City of Selkirk. The R.M. of St. Clements attempted negotiations with the City of Selkirk Council regarding this project. We are not sure what was the source of misunderstanding that has arose during your conversation with the Mayor of Selkirk, as we have attached the official letter-response from the City of Selkirk to the R.M. of St Clements regarding this project. The agreement could not be reached due to the following reasons: 1. The initially proposed lift station and gravity sewer system were to be installed in the Community of East Selkirk, under the Red River and connected to the existing lift station in the City of Selkirk. 2. The cost of the gravity sewer installation was too high and the R.M. of East Selkirk proposed installation of a low pressure sewer instead. 3. The City of Selkirk refused connection of the proposed low pressure system to the gravity system in the City and required a direct connection to the plant. The cost to connect to the plant appeared to be much higher than the cost of the proposed aerated lagoon. ▪ An investigation and remediation program at the Brainerd site located in East Selkirk was conducted from 2006 to 2011. The result of the remediation program was to remove and properly dispose of nitroaromatic-impacted soil from the DNT skid area from the property. As a result of the program, 702 tonnes of nitroaromaticimpacted soils were removed from the site and transported to Miller Environmental's facility in St. Jean Baptise, Manitoba for treatment. Based on the laboratory results of the soil closure samples, the soil at the site was successfully remediated in accordance with the selected remediation criteria. Nevertheless, a new investigation to address the safety of the site for the proposed lagoon has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th, 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks.

		▪ We confirmed the proposed discharge route length as per your request. The discharge route length from the discharge point into the proposed discharge ditch to the discharge point into the Red River is approximately 976 metres. The proposed aerated lagoon will use advanced wastewater treatment technology and will replace the existing septic fields in the area, which receive untreated wastewater and effluent quality is usually unpredictable if not operating properly or leaking, which caused some problems with drinking water quality in the R.M. in the past. The effluent of the proposed lagoon will meet the Manitoba Conservation licence requirements and regulations for effluent water quality. The Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act stipulates that fecal coliform bacteria concentration in surface water (recreation) should not exceed 200 organisms/100 mL. The new system will be using a complete aerobic wastewater treatment process and the treated effluent should not have difficulties meeting this requirement. Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 l/s that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Red River while not challenging the normal operation of the wastewater treatment lagoon. In order to protect any potential fish in the critical springtime spawning season, when effluent un-ionised ammonia tends to be high, the lagoon has been designed to the 227-day storage period. The lagoon will discharge after June 15th and will allow for significant conversion of toxic un-ionised ammonia into relatively benign nitrates. The lagoon will not likely discharge again until the fall. ▪ If required in the new licence, an additional plant survey will be scheduled prior to construction of the proposed lagoon. ▪ As it has been stated in your comment and in the Environment Act Proposal, a file search with the Biodiversity Conservation Wildlife and Ecosystem Protection Branch of Manitoba Conservation determined that there were no endangered animals to be effected by the construction. The species such as deer, frogs, birds, etc. that could currently reside in the location of the proposed site would be affected by this construction as much as by any other construction in the area including construction of such dwelling residences as your house.

		▪ The truck dump station is proposed to be installed at the proposed East Selkirk lagoon since the proposed wastewater collection system is a low pressure sewer system, where all wastewater is collected in septic tanks. The solids will be captured in the first compartment of the tanks for annual disposal and the liquid will be pumped through low pressure sewer lines to a local lift station, which in turn will pump the wastewater to the wastewater treatment lagoon. The proposed truck dump station will have a smooth concrete surface that can be washed down if required. This will prevent solids that are usually saturated and have moisture content of approximately 80-90%, from remaining on the concrete surface of the dump station. Therefore, the solids will be immediately mixed with the aerated water in the receiving primary cell and treated. It is expected that the proposed lagoon aeration system will prevent odour from developing. The proposed East Selkirk lagoon is the property of the R.M. of St. Clements and all trucked hauling will be recorded and monitored by the R.M. Public Works Office. To prevent any illegal or industrial dumping into the lagoon, a lockable and controlled gate will be installed at the entrance. ▪ Our experience has been that emergency discharges usually result from inadequate hydraulic capacity of a lagoon and/or poor decisions, such as connection of weeping tiles and/or storm sewer to the wastewater sewer that result in extreme infiltration flows into a lagoon. The fact that the proposed collection system is a low pressure sewer instead of gravity typically precludes excessive infiltration flows, which could result in excessive flows or high lagoon level. Levels would be monitored by Public Works Staff and steps taken to prevent over flows. The proposed lagoon is designed for a 227-day storage period, November 1st to June 15th and effluent quality will meet licensing requirements for discharge. The proposed wastewater treatment facility is designed to store the treated effluent of 168,965 m^3 for 227 days for a 20-year design period, including some infiltration into the lagoon. In addition, the proposed secondary cells can provide excess hydraulic capacity of approximately 52,760 m^3, which should be enough to store excess water in the event of excess flow into the lagoon. ▪ In the EAP report, Section 2.5 (p. 4-5) there is information on the previous studies done by GENIVAR regarding this project including "St. Clements & St. Andrews Wastewater Treatment Study Draft Report" prepared by GENIVAR for the R.M. of St. Clements in 2009 and "R.M. of St. Clements East Selkirk Wastewater Treatment Study" prepared by

		GENIVAR for the R.M. of St. Clements in 2010. These reports discussed several treatment systems and options, showing advantages and disadvantages of each one and initial construction costs for comparative purposes. These reports are available for your information at the R.M. of St Clements office. As it has been previously stated in this letter and in our preceding letter, an investigation and remediation program at the Brainerd site located in East Selkirk was overseen by Dillon Consulting Limited from 2006 to 2011. The result of the remediation program was to remove and properly dispose of nitroaromatic impacted soil from the DNT skid area from the property. As a result of the program, 702 tonnes of nitroaromatic-impacted soils were removed from the site and transported to Miller Environmental's facility in St. Jean Baptise, Manitoba for treatment. Based on the laboratory results of the soil closure samples, the soil at the site was successfully remediated in accordance with the selected remediation criteria. To address the safety of the site for the proposed lagoon, an additional investigation has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th, 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks.
	January 29, 2013	▪ *Dissatisfied with response from the proponent* ▪ *Not to use the contaminated CIL site. That site should be properly assessed and remediated and returned to nature. To support Manitoba Conservation (785-5030) in the proper and up-to-date full assessment of that site, prior to anything being proposed.* ▪ *Opposition to an open sewage lagoon concept for raw sewage treatment.* ▪ *Deny environmental license for an open sewage lagoon and pursue a proper water and waste water treatment plant to save our lakes and rivers.* ▪ *Did not answer the questions regarding the contaminated site and its full remediation. Test hole drilling and soil samples done on January 10, 2013 for a small specific area does not constitute an environmental analysis. Proper analysis is covered in such documents, but not limited, the Guideline 98-01 Environmental Site Investigations in Manitoba, June 1998, revised May 2002. There has never been a certificate of compliance or a closure letter issued by Manitoba Conservation regarding the CIL site.*

- *The EAP states the discharge route is approximately 900 metres*
- *Removing 702 tonnes from one area does not constitute remediation of the entire CIL site? This was only one small area of the whole site.*
- *Don't plant assessments and impacts to species have to been prior to a license being granted.*
- *Still no actual assessment on wildlife or any species has been done.*
- *Washing a concrete slab will not deter odour. Of course a truck dumping waste solids will smell, have they ever had septic tank pumped!*
- *A proposed secondary cell "should be enough"? What happens if it's not and the sewage goes directly into the Red River and Lake Winnipeg?*
- *They seem to be talking about one energetic compound and we suggest that there are much more contaminants on that original site.*
- *Property values may be reduced*
- *We look forward to the cancellation of this entire process and a proper treatment plant created for the good of our environment.*

Proponent Response - Soil Testing Results Report (February 7, 2013)

- The concentrations of PAHs, PCBs, VOC, F2-F4 HC analyzed at the proposed lagoon site did not exceed analytical detection limits for analysis. Specifically, samples taken at both two feet and seven feet did not exhibit detectable contaminants within the analytical means of detection.
- The concentrations of metals detected in the soil samples are well below respective CCME Soil Quality Guidelines for the Protection of Environment and Human Health assessment criteria, and therefore do pose minimal risk to the environment.
- After thorough sampling and analyses, the proposed lagoon site contains nondetectable concentrations of PAHs, PCBs, VOC, F2-F4 HC and energetic compounds. The site remains viable option for further development without further remediation for the tested

		compounds. **<u>Proponent Response (April 17, 2013)</u>** ▪ Questions/concerns were answered in GENIVAR's previous letter-response dated January 14, 2013. ▪ The purpose of the sampling program was to screen the area intended for lagoon construction and to determine if additional sampling and testing is required. It was anticipated that if additional surface or vertical delineation was required, collection of samples from additional location and depth intervals as necessary to achieve a representative concentration would take place. Manitoba Guideline 98 01 refers to Environmental Site Assessments which has been previously carried out. ▪ Several energetic analytes (125) were tested for. ▪ The Saltscapes article presented is not a peer-reviewed article or study. Discussions have already taken place in regards to EPA 440/5-80-045, please review previous TAC comments and responses. ▪ Drilling test holes is considered a satisfactory field investigation method. ▪ All general comments are noted.
	March 31, 2013	▪ *We received credible information that, approximately 6 -7 of the 17 original buildings used in the manufacturing of high-end explosives were demolished and directly buried on the CIL site and that during the RM of St. Clements's excavation work this winter, that the RM encountered an old CIL building that was buried below the surface, and that they discovered an old sewage line heading directly to the Red River.* ▪ *This is disturbing as many of the 17 buildings "may" have had asbestos hard board insulation and pipe wrapping.* ▪ *A fact that is well documented, is that the site "did" contain 3600' of magnesia 85 90 pipe insulation. This was used in the heating system and boiler operation which is highly likely to be Magnesia/Asbestos pipe insulation during the timeframe of the plant's construction. This may be a significant, and concerning the amount of asbestos, that is extremely dangerous and could be waiting to be released into the environment*

		▪ *By December, 1934 the company had constructed 17 buildings in all. Most of the buildings with the exception of the office were constructed of galvanized iron, the latter being specially prepared and having a two-ounce zinc coating.* ▪ *Decommissioning not addressed on the heritage link or in the Proposed EAP – could this be the buildings that were buried?)* ▪ *This recent information is significant. This reinforces us asking that this risky proposal NOT be approved.* **Proponent Response(April 17, 2013)** ▪ Please provide credible source for additional investigation. Available drill data has not provided any evidence of buried building waste. The site has been extensively reviewed, sampled, and excavated. ▪ Although no drilling reports make note of building materials subsurface, if any such materials are uncovered during construction, proper guidelines and best practices will be followed for its removal. ▪ GENIVAR observed an average concentration of approximately 69 mg/kg of zinc in soils sampled. This value is less than that observed by Dillion in 2003 (91 mg/kg). Literature notes that the zinc content of soils in southern Manitoba ranges from 8 to 230 ppm with a median concentration of 65 ppm. Furthermore, this range of concentrations falls within the range in concentration for zinc in soil established on a world-wide basis. A search through peer-reviewed literature clarifies that as the clay content of soils increases, the average concentration of zinc gradually increases, from approximately 32 ppm in coarse textured soils to 105 ppm in fine-textured soils, such as those of the Red River Plain. ▪ GENIVAR observed an average concentration of approximately 23,620 mg/kg of magnesium in the soils sampled. Most metals in rocks and minerals occur in trace amounts; this is in contrast to elements such as silicon, aluminum, calcium, magnesium, and iron which are dominant in the earth's crust as consist of the mineral fabric of soil. Magnesium is a fundamental precursor to a multitude of environmental processes, and is generally abundant in soils. Concern for magnesium soil concentrations do not warrant continued discussion or concern in regards to potential contamination.

		Although no drilling reports make note of building materials subsurface, if any asbestos based materials are uncovered during construction, proper guidelines and best practices will be followed for its removal.
	May 5, 2013	▪ *The United States, our geographical neighbors to the south, has significantly more explosive sites and based on their research has decided to <u>not allow</u> construction of sewage lagoons on contaminated sites such as the CIL site. This is <u>even if</u> that site has been fully remediated and cleaned up. The US has much more expertise in this area with significantly more contaminated land than us. We believe their example is one we should follow in Canada. Our understanding is that the CIL site would be the first explosives contaminated site in Canada to be used as a sewage lagoon.* ▪ *The testing that has been done on this site falls <u>significantly short</u> of the guidelines in the US on similar sites. In addition, the results of the soil tests done by the RMs consultant Genivar in 2013, reported non-detectable levels of contaminants while the Dillon reports in 2011 (i.e. just prior to the RM expropriating the property) reported contaminants at a level that the Manitoba Department of Water Science said the effluent that is discharged from the lagoon into the river could cause damage to fish and aquatic life (see attached pdf).* ▪ *This leads us to believe that the lower level of contaminants found in their testing is due to insufficient testing as compared to the more advanced and comprehensive testing methods required in the US. We find this insufficient testing to be extremely concerning.* ▪ *The site is very close to the Red River, and only 400' from a natural ravine that feeds directly into the river. Further, the proposed site is next to the most popular winter and summer recreational fishing area along the Red River, and is coined "Miracle Mile" by Stu MacKay with Cats on the Red.* ▪ *The plan for the lagoon is very short sighted and does not address the long term planning needs of the area as we see happening in West St. Paul, St. Andrews, and even in south St. Clements.* ▪ *The RM's plan of spreading Alum over the entire lagoon to bind to Phosphorous, which will be left at the bottom of the lagoon is not an environmentally sound solution and will leave an environmental problem for our children once the lagoon is decommissioned in roughly 30 -40 years.*

		▪ *The lagoon will not meet the [new federal regulations] that become effective January 1, 2015, since the RM wishes to start construction before that date. This is alarming that this could happen.* ▪ *The background report in these [new federal regulations] enacted by Federal Fisheries and Oceans documents that Manitoba already has the worst record of what is considered "at risk" lagoons in Canada. The report notes that of the provincially regulated lagoons that Manitoba has 81 "at risk" lagoons compared to 30 in Saskatchewan, 35 in Alberta and 12 in BC. It does not make sense to add further future risk to this record.*
Pauline & Lawrence Malzahn	July 9, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
D & I Stark	July 9, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
	May 7, 2013	*Same as Al and Bridget Prue's May 5, 2013 comments*
Curtis & Irene Williamson	June 28, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
Christa and Mike Denoon	June 28, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
Mike Denoon	June 28, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
	May 6, 2013	*Same as Al and Bridget Prue's July 8, 2012 comments*
Wendell & Lynette Koop	June 28, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
Brenda Dillabough (Four E-mails)	June 26, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
Reg Luining (Five E-mails)	June 26, 2012	▪ *Same as Al and Bridget Prue's July 8, 2012 comments* ▪ *The proposed site is only 1000 feet away from a recreational portion of the Red River, that is frequented often by families for fishing, ice fishing, boating and cross-country skiing.* ▪ *Concern for the risk of odours especially from septic truck dumping.* ▪ *In addition, we have a serious concern that this is the former site of the C-I-L high-end explosives manufacturing facility that operated from*

		1934 to 1974. ▪ *Does not make any reference that this is CIL's former explosives manufacturing property, especially given its 40 year history in manufacturing and storing explosives, and that in the 1930's there would have been very little environmental regulations. CIL and the other companies that have since purchased CIL's assets have all kept the site vacant and likely would not sell it in fear of additional contaminants being found that they would be liable for. Therefore, by going to expropriation, their responsibility in this area may have been removed.* ▪ *That given this manufacturing history and high probability of contaminants on-site, we question why Genivar did not conduct any testing for contaminants. Given that 23 test holes were drilled by Genivar (Page 11 of the Proposal under the heading – "5.1.4 Site Investigation"), it seems reasonable to expect that these soil samples should have also been tested for known contaminants that were on the site, as detailed by the reports by Dillon Consulting, which are open for the public in the Environment office in Selkirk.* ……. ▪ *We strongly feel that for the purposes of building a lagoon, that there should have been soil testing for contaminants related to the explosives industry, especially in the areas outside of the fenced area, where Dillon did not test.* ▪ *The proposal on page 11 reads that "Based on the drainage map of the area, shallow groundwater flow at the site is towards the north". However the proposal does not comment on the deep water ground flow. We find it of grave concern that one of the reports at the Manitoba Conservation office in Selkirk – ": The ICI (C-I-L) Brainerd Site, East Selkirk Closure Report – Phase 1" study by Dillon Consulting – File # 05-5157-1000' reads as follows: "The major regional aquifer in Selkirk is the Carbonate Aquifer, located in bedrock." "Groundwater flow in the aquifer near the property (i.e. the proposed sewage lagoon) is towards the west.....(Betcher, 1986)." Not only is this a concern for residents in St. Clements, but also for the 10,000 residents of the city of Selkirk.* ……. ▪ *We are very concerned that in the summer of 2011, the RM placed all the infrastructure and pipe lines to the proposed lagoon site prior to environmental testing being conducted on-site in June 2011 as reported in the Genivar report. We are concerned that Manitoba Conservation may be swayed by this strategy of placing the "horse in front of the cart". There is further suspicion towards this concern with the following report in The Selkirk Record newspaper, where on page 11 of*

		their March 15th issue when they reported on the February 29th RM meeting about the sewage lagoon, it reads: "St. Clements Mayor Steve Strang said the process must be followed through on, and if rejected, however unlikely, alternative spots could be considered. "This site has been tested and reviewed, and there is no reason we would be denied building it there', Strang said." ▪ *In addition, we are very concerned that this is the only site that was evaluated in the report, given the large quantity of agricultural land east of Highway 59. In addition this specific site is an old (1935) explosives manufacturing site that operated during World War II. We question why there was no comparison site evaluation process reported in the Genivar report.* ▪ *This is contrary to previous environmental proposals in the RM, as we know that when the RM of St. Clements looked for a new sewage lagoon at Grand Marais with ID Engineering Inc., that they did a comparative site assessment/evaluation of five potential sites.* ▪ *In addition, we noticed that although the Genivar report, on page 4 and 5 makes reference to some previous studies, that there is no mention of the results of the former study that we understand that the RM commissioned through Stantec Engineering in the mid 1990's, where they looked at number of potential lagoon sites for East Selkirk. Why was this comparative site evaluation not included in the "Previous Studies" section of the Genivar proposal? Might there be a site that may have been a more suitable environmental site, but one that may have been politically influenced?* ▪ *Finally we are concerned that the proposed location is not suitable for excavating a sewage lagoon due to the risks associated in disturbing this soil that may have contaminants from the former CIL explosives manufacturing plant that operated since the early 1930's to the mid 1970's, and the inconsistency in the clay on site that does not meet hydraulic conductivity guidelines, as noted on page 5 of Generar's Geotechnical report.* *……* ▪ *With the continued concerns of algae on Lake Winnipeg, the annual summer discharging of lagoon effluent will not help improve the health of Lake Winnipeg. We feel it is imperative that new waste water projects should not be planned as the simplest and lowest-cost budget item with a short-term ad hoc solution that may be approved. The expected life span of this facility is only 20 years, and then disposal and another lagoon will need to be planned! Also the report does not include a decommissioning plan for the lagoon. We feel that longer term environmental planning is critical and that a more comprehensive regional solution that can more*

		easily accommodate newer and future technologies that can assist in phosphorus and nitrogen/ammonia reduction are a more practical solution. ▪ *A regional solution is more in line with the report "Reducing Nutrient Loading to Lake Winnipeg and its Watershed - Our Collective Responsibility and Commitment to Action - Report to the Minister of Water Stewardship - Lake Winnipeg Stewardship Board - December 2006"* ▪ *Specific recommendations that we feel should be followed are:* o *Options for regionalization need to be fully explored by the proponent prior to receiving funding through the Manitoba government.* o *Comprehensive sewage management plans should be developed for areas of the province where existing sewage treatment practices such as septic fields and holding tanks are releasing excessive nutrients.* o *There is a need to consider regional wastewater treatment services for new rural residential developments.* o *Environment Act licence proposals for municipal lagoons need to comprehensively consider effluent irrigation, or an equivalent treatment process, as a means of effluent disposal.* o *The Province of Manitoba and rural municipalities should consider the conversion of lagoons to wastewater treatment plants with nutrient removal capabilities, perhaps through the development of regional wastewater treatment facilities. Larger communities may want to consider the option of converting their lagoons to wastewater treatment plants with nutrient removal capabilities on their own* o *Proponents applying for an Environment Act licence for a new or upgraded municipal lagoon should be required to evaluate alternative wastewater treatment technologies which recycle nutrients as a method of effluent disposal, such as effluent irrigation, which involve zero discharge.* o *There is a need to implement regional sewage treatment plants with nutrient removal capabilities, prioritizing areas such as those with high rural residential density, and those with close proximity to waterbodies and aquifers.* o *The Province of Manitoba, through the Manitoba Water Services Board should accelerate the development of regional wastewater treatment facilities.* o *In addition we are concerned for the potential risk of any contaminants that may be on site from the old CIL explosives manufacturing plant.*

		▪ *Due to this long term concern for Lake Winnipeg and concern that Genivar did not do on-site testing for contaminants, we are recommending that Clean Environment Hearings be held to provide a more comprehensive environmental revie.* <u>Proponent Response(September 12, 2012)</u> ▪ With the construction of a new aerated lagoon facility, the treated effluent will be within the BOD_5, TSS, coliform and other requirements, as will be required in a new Environment Act Licence. It is expected that the proposed lagoon will be discharged twice a year, after June 15th and prior to October 31st for approximately 20-25 days at a rate of approximately 51-64 1/s, which will not be noticeable in this portion of the Red River. No discharge will occur in winter. ▪ The proposed lagoon will be discharged twice a year, after June 15th and prior to October 31st. Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 1/s. In the event of a big storm or flooding during the discharge period, the discharge valves of the lagoon can be closed to prevent overflowing of ditches if a problem during a rainfall event. This can be monitored by Public Woks personnel. ▪ A remediation program at the Brainerd site located in East Selkirk was conducted by Dillon Consulting Limited from 2006 to 2011. The objective of the remediation program was to remove and properly dispose of nitroaromatic-impacted soil from the DNT skid area from the property. As a result of the program, 702 tones of nitroaromatic-impacted soils were removed from the site and transported to Miller Environmental's facility in St. Jean Baptise, Manitoba for treatment. Based on the laboratory results of the soil closure samples, the soil at the site was successfully remediated in accordance with the selected remediation criteria. It took until 2011 to complete the process. ▪ All other responses are noted above
Gary and Jody Quilty	July 8, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
Andrew Lindsay	July 9, 2012	*Same as Al and Bridget Prue's July 8, 2012 comments*
	May 6, 2013	▪ *Same as Al and Bridget Prue's May 5, 2013 comments* ▪ *I think that caution needs to be taken and we must investigate all possible*

		problems for the environment not just for today but for many generations down the road. ▪ *My two biggest concerns are any effects this project will have on the Red River as I fish there and any effects on local groundwater which is an important local resource.*
Doug Chorney	July 5, 2012	▪ *The current lagoon proposal does not adequately address the issue of excessive nutrient loads entering the Red River.* ▪ *The creation of this lagoon will substantially decrease the value of the surrounding farm land.* ▪ *It is possible to use an existing waste water treatment plant in Selkirk as an alternative to constructing a new lagoon.* ▪ *Same as Reg Luining's June 26, 2012 comments* **Proponent Response(September 12, 2012)** ▪ The proposed system will be using a completely aerobic wastewater treatment process with alum addition for phosphorus removal to ensure that treated effluent contains less than 1 mg/L of phosphorus. Treated effluent will be discharged from the isolated secondary cell for approximately 20-25 days at a rate of approximately 51-64 Vs that optimizes the opportunity for nutrients in the effluent to be further assimilated in the discharge route prior to reaching the Red River while not challenging the normal operation of the wastewater treatment lagoon. Vegetation harvesting will be implemented along the discharge ditch on Community land to promote nutrient uptake. Construction of an engineered / constructed wetland could be an alternative nutrient reduction strategy for the Community if alum addition, trickle discharge and vegetation harvesting is not reducing the nutrient levels in the discharge ditch to acceptable levels. ▪ The original concept was to send the wastewater to the City of Selkirk and consisted of a forcemain constructed from the Community of East Selkirk, under the Red River, to the City of Selkirk Wastewater Treatment Plant and construction of a new lift station. The Community of East Selkirk attempted negotiations with the City of Selkirk Council regarding this project. The agreement could not be reached due to various reasons and the cost of this

		option appeared to be much higher than the cost of the proposed aerated lagoon. ▪ All other concerns are addressed above
Dan Monnin	July 5, 2012	▪ *Same as Reg Luining's June 26, 2012 comments* ▪ *The expected life span of this facility is only 20 years, and then disposal and another lagoon will need to be planned. Also, the report does not include a decommissioning plan for this lagoon.* ▪ *Concerned about the long term health of the Red River and Lake Winnipeg* ▪ *New wastewater project should not be planned as the simplest and lowest-cost budget item.* ▪ *Options for regional solutions* ▪ *Consider effluent irrigation or an equivalent treatment process, as a means of disposal* ▪ *Potential risk of any contaminants that may be on site from the old CIL explosives manufacturing plant* ▪ *Due to this long trem concern for Lake Winnipeg and concern that Genivar did not do on-site testing for contaminants, we are recommending that Clean Environment Hearings be held to provide a more comprehensive environmental review.* **<u>Proponent Response(September 12, 2012)</u>** ▪ The proposed lagoon can be used long after 20 years of time. The 20-year design period is not a lagoon life span, but the lagoon sizing is based on expected usage requirements (organic and hydraulic loadings) for 20 years before expansion. The proposed secondary cells' storage capacity is approximately 232,900 m^3, which exceeds the required 20-year design capacity of approximately 169,000 m^3 and allows expanding the lagoon's life time over 20 year design period with construction of a third aerated primary cell and/or a SAGR system to accommodate future organic loadings. ▪ A decommissioning plan of the proposed lagoon is not a part of the proposal.

		▪ All other concerns are addressed above
R.L.(Bert) Innes	July 4, 2012	▪ *Concerned at the lack of alternative sites, and think that other options should have been explored, for example a location east of Hwy 59 farther from the river. Another alternative could take into account the rising population in the south part of St. Clements, and more centrally locate the lagoon to account for the increasing needs of this area. We should be thinking of teh future when planning such a large capital project.* ▪ *Concerned about disturbing the proposed contaminated site. I am concerned about the release of contaminated dust into the air during construction, and other releases of contaminants into the environment, specifically teh water table. I have not seen the issue of presently stable contaminants sufficiently addressed.* ▪ *concerned also about the possibility of emergency dumping in the event of heavy rainfall. The area has pockets of sand and gravel, and other highly permeable soils, allowing possible contamination of the water table.* ▪ *Based these concerns, we are encouraging that Manitoba Conservation not provide a license for this proposal and that Clean Environment Commission hearings be held.* <u>Proponent Response(September 12, 2012)</u> ▪ Concerns are addressed above
Pat and Angela Neskar	July 3, 2012	▪ *Same as Reg Luining's June 26, 2012 comments* <u>Proponent Response (September 12, 2012)</u> ▪ Concerns are addressed above
Eric & Meriana Brown	July 5, 2012	▪ *Same as Reg Luining's June 26, 2012 comments* <u>Proponent Response (September 12, 2012)</u> ▪ Concerns are addressed above
Gord Froehlich	June 30,2012	▪ *I am a resident of St. Clements living on Bunns Road and strongly oppose the development of the East Selkirk lagoon. The municipality needs to*

		hold itself to a higher environmental standard as any discharge into the Red River both intended and unintended is not acceptable. There are other options such as building a treatment plant or hooking up with Selkirk that the municipality can afford and needs to consider. ▪ *Henderson highway is a gateway to our community and on a regular basis we see numerous cyclists, runners and even marathons are starting in this area. This plus geo cashing, eagles nests and bed and breakfasts in the area require that we as a community show our best side....not our worst.* ▪ *We need to set environmental standards that we can all be proud of to create a more welcoming environment for new residents and businesses.* ▪ *Thanks for considering the needs of the citizens of the municipality.* <u>Proponent Response (September 12, 2012)</u> ▪ Concerns are addressed above
Andrew Dewar	June 30, 2012	▪ *The report that has been filed by Genivar did not disclose that this is a former contaminated site, where CIL Industries started operating an explosives manufacturing facility back in 1935. Although we do understand that Dillon Consulting did remedial action on behalf of CIL's parent company Akzo Nobel (files on-site at Manitoba Conservations'' Environmental office in Selkirk), we strongly feel that for the purposes of building a lagoon, that there should have been soil testing for contaminants related to the explosives industry, especially in the areas outside of the fenced area, where Dillon did not test.* ▪ *The proposal on page 11 reads that "Based on the drainage map of the area, shallow groundwater flow at the site is towards the north". However the proposal does not comment on the deep water ground flow. We find it of grave concern that one of the reports at the Manitoba Conservation office in Selkirk – ": The ICI (C-I-L) Brainerd Site, East Selkirk Closure Report – Phase 1" study by Dillon Consulting – File # 05-5157-1000' reads as follows: "The major regional aquifer in Selkirk is the Carbonate Aquifer, located in bedrock." "Groundwater flow in the aquifer near the property (i.e. the proposed sewage lagoon) is towards the west.....(Betcher, 1986)." Not only is this a concern for residents in St. Clements, but also for the 10,000 residents of the city of Selkirk.* ▪ *For these reasons, we strongly recommend that Manitoba Conservation recommend that Clean Environment Commission hearings be held and*

		more detailed environmental information is investigated and shared. <u>Proponent Response(Letter dated September 12, 2012)</u> ▪ Concerns were addressed above
Danielle Veenstra	July 1, 2012	▪ *Same as Reg Luining* June 26, 2012 *comment* ▪ *We recommend that a Clean Environment Hearings be held.*
Karen Connors	June 26, 2012	▪ *Same as Reg Luining* June 26, 2012 *comments* ▪ *We recommend that a Clean Environment Hearings be held.*
GlenVeenstra	July 5, 2012	▪ *Same as Reg Luining* June 26, 2012 *comments* ▪ *We recommend that a Clean Environment Hearings be held.*
Darren Holder	July 6, 2012	▪ *Same as Reg Luining* June 26, 2012 *comments* ▪ *We recommend that a Clean Environment Hearings be held.*
Susan Petaski	July 2, 2012	▪ *My property is located on Lot A Plan No. 23570, in RL 94 to 97 Parish of St. Clements. It is an 80-acre parcel west of the CNR tracks.* ▪ *Current environmental regulations restrict the installation of septic fields within a prescribed area along the Red River to reduce possible contamination into the Red River. The proposed lagoon is within the restricted area.* ▪ *The RM of St. Clements is proposing to build a sewage lagoon and discharge effluent June 15th and October 31st each year into a natural drainage ditch ultimately into the Red River from the Village of East Selkirk and any future expansion of the area.* ▪ *Lagoons do fail and leakage into already contaminated soil can only cause increased damage to the aquifers, Red River and ultimately Lake Winnipeg.* ▪ *The proposed lagoon is blatantly defiant to environmental regulations.* ▪ *The proposed lagoon will restrict/reduce any future development and ultimately the value of our property.* **<u>Proponent Response(September 12, 2012)</u>**

		▪ Septic fields receive untreated wastewater and effluent quality is usually unpredictable if not operating properly or leaking. The proposed wastewater treatment facility is an aerated lagoon with 227-day storage capacity. To prevent any seepage, for lagoon construction, Manitoba Conservation's Environmental guidelines require that the proposed dykes and bottom of the proposed cells be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s. For this reason, the proposed pond liner (base and interior) will be constructed with a clay core within the proposed dykes and keying into the underlying impervious high plastic clay. The proposed system will be using a completely aerobic wastewater treatment process with alum addition for phosphorus removal. The primary discharge should have a biochemical oxygen demand (BOD) of <25 mg/L and a total suspended solids (TSS) level of <25 mg/L, which meets the regulation requirements even before reaching the secondary treatment stage. The secondary treatment will reduce BOD and TSS levels even further. The BOD, TSS, bacteriological, phosphorus and any other samples required in the new Environment Act Licence will be collected from the secondary cell to be discharged prior to every discharge. If all parameters meet the discharge requirements, the secondary cell will be discharged. If one or more parameter does not meet the requirements, re-testing will be required. ▪ All other concerns are addressed above
Joe Petaski	July 2, 2012	▪ Same as Susan Petaski's above July 2, 2012 comments.
	Oct.8, 2012	▪ *Dissatisfied with responses from the proponent* ▪ *Manitoba Conservation and Water Stewardship has a moratorium on installation of private septic fields within the Red River Corridor. How does a lagoon fit within the Manitoba Conservation and Water Stewardship mandate to protect our waterways?* ▪ *No back up plan or costs have been presented for the possible breach or removal of harmful nutrients should the alum and aeration of lagoon fail to remove all harmful nutrients.*

		▪ *Concerned with nutrition uptake* ▪ *Concerned with property value* <u>Proponent Response(January 14, 2013)</u> ▪ The Environment Act (C.C.S.M. c. E125), Onsite Wastewater Management Systems Regulation, amendment says: **"Restrictions on disposal fields — Red River Corridor Designated Area** 6.1(1) Subject to subsections (2) and (3), no person shall construct, install, site, locate, replace, expand or modify a disposal field on land within the Red River Corridor Designated Area. 6.1(2) Upon the submitting of a proposal under subsection 8(1) by a person wishing to construct, install, site or locate a disposal field in the Red River Corridor Designated Area, the director may approve the proposed activity, subject to any terms and conditions consistent with the intent of the Act that the director considers necessary, if (a) the parcel of land on which the disposal field will be constructed, installed, sited or located (i) is at least 0.8 ha (2 acres) in area, and (ii) has a frontage of at least 60 m (198 feet); and (b) the disposal field as constructed, installed, sited or located will receive wastewater only from a secondary treatment system; and the director is satisfied that the proposed activity, as approved, will not adversely affect environmental quality." Based on the above, prior to installation of a private septic field within the Red River Corridor, a septic field should meet the requirements of The Environment Act (C.C.S.M. c. E125), Onsite Wastewater Management Systems Regulation and receive the Director approval. The proposed East Selkirk lagoon is designed in accordance with the Province of Manitoba Design Objectives for Standard Sewage Lagoons (1985) and the Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act. ▪ Construction of an engineered / constructed wetland could be an alternative nutrient reduction strategy for the Community if alum

		addition, trickle discharge and vegetation harvesting is not reducing the nutrient levels to acceptable levels. It could become part of a second phase of development once additional studies are undertaken to evaluate costs and efficiencies. ▪ An aerated lagoon will reduce potential for any odours and the presence of the lagoon should not reduce property values. ▪ All other concerns are addressed above
	March 3, 2013	▪ *Concerns have not been addressed* ▪ *Manitoba Conservation and Water Stewardship has a moratorium on installation of private septic fields within the Red River Corridor. The RM of St Clements proposes a lagoon for 250 plus homes, with a discharge twice annually within the Red River Corridor. (as witnessed by the installation of pipes up to and onto the abandoned CIL site).* ▪ *No back up plan or costs have been presented for the possible breach or removal of harmful nutrients should the alum and aeration of lagoon fail to remove all harmful nutrient.* ▪ *The property prevents my land from ever having a residential development. This will reduce it's potential value.* ▪ *Sewage line constructed to site* **<u>Proponent Response(April 17, 2013)</u>** ▪ Questions/concerns were addressed in GENIVAR's previous letter-response dated January 14, 2013. ▪ Lagoons treat the wastewater to an acceptable quality before discharge is allowed and do not discharge continuously, while septic fields are very dependent on soil conditions and are not allowed in certain areas where clay is very tight and experience has shown there are many field failures. <u>(CAO's Letter dated April 15, 2013)</u> ▪ The devaluation of neighbouring properties is raised in 4 of the 9 letters received. It is the position of the RM that no property devaluation will occur as a result of this WW Lagoon, on the contrary, future access to wastewater treatment facilities could be considered an enhancement to the value of the property. The argument of those opposed is that the buffer zone required cuts into their property, thus reducing the ability to subdivide and sell that land in the future. The RM counters that buffer does not affect industrial use as it does residential. This is an important

		point as the perceived loss of value is largely based on a property owner successfully rezoning their property. The neighbouring properties are all zoned industrial. The RM of St. Clements has a severe shortage of industrial assessment. This current Council is firm on the fact the the surrounding land best serves the RM zoned as industrial, as it has been for decades. The surrounding land is near a rail line and PTH #59, optimal for industry. Regardless of the lagoon location, Council has no intention of rezoning this land. ▪ This lagoon utilizes aeration, which substantially reduces odors. One resident, Denis Petaski has supplied the TAC with documentation of other jurisdictions in Canada having much smaller buffer zones when aeration is in place. All residences are beyond the 300 meter buffer zone, therefore odour should not be an issue. It should be noted that Council is supportive of Mr. Petaskis request to reduce the buffer zone to 90 meters. ▪ All other concerns were addressed above
	May 6, 2013	▪ Same as Mike Denoon's May 6, 2013 comments
Dave Crabb	July 5, 2012	▪ *The land and area area around the proposed site is classified as contaminated and impacted by Manitoba Conservation.* ▪ *Before any consideration is given to the project, there must be a study to be absolutely sure that there is no possible hazard.* ▪ *There is no plan to deal with the remediation within the proposal.* ▪ *There is no mention of prevention of people coming in contact with effluent while it is being discharged through the open ditches.* ▪ *There are no lists of animals, mammals, or other life documented.* ▪ *There is no mention of hearings or consultation with local residents.* **Proponent Response(September 12, 2012)** ▪ It is common practise to discharge through open ditches once effluent quality meets licensing requirements. To prevent any unauthorised access to the facility, a perimeter fence and a lockable access gate will be installed as part of the construction activities. Signage identifying the nature of the facility will be placed around the lagoon perimeter fence, as well as one main entrance sign identifying the contact information for the R.M. of St Clements.

		For surface recreational water, the *Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act* (2011) requires treated effluent to have fecal coliform MPN of <200 organisms/100 mL. The proposed facility will not have difficulty meeting this requirement. ▪ A file search with the Biodiversity Conservation Wildlife and Ecosystem Protection Branch of Manitoba Conservation resulted in no rare or endangered animals found in the area. ▪ Section 6.9 of the Environment Act Proposal says: "Comments from concerned members of the public will be solicited as part of Manitoba Conservation review prior to issuing a licence." This letter-response is a part of this process. ▪ All other concerns were addressed above
	Oct. 18, 2012	▪ Dissatisfied with responses from proponent ▪ Concerned with contaminated site ▪ The intended site involves the history as an explosives manufacturing facility. Additional study is required. ▪ Overland flooding and drainage problems. Overflow / flooding corrosion of outside dykes. ▪ Synthetic liner vs. clay core. ▪ CMGA are requesting the process be completely redone with all reports and information regarding the history and nature of the land. ▪ Concerned with leakage **<u>Proponent Response(January 14, 2013)</u>** ▪ To address the safety of the site for the proposed lagoon, an additional investigation has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th , 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks. ▪ The proposed lagoon site is poorly developed at present which causes some drainage problems. During the lagoon construction, a perimeter drainage ditch will be constructed around the lagoon to provide drainage

		on the site. The ditch will provide positive drainage and prevent any possibility of surface water ponding near the lagoon dykes. Also, a discharge ditch will be constructed, which will run into an existing natural drain, and converge with the Red River. Perimeter dykes of the proposed lagoon will be constructed with compacted in-situ material, which is mostly consisted of clay and will have width of approximately 29 metres at the ground elevation and crest elevations of 229.39 metres (752.59 feet) G.S. of C. Datum, which is higher than the Flood Protection Level of 224.03 metres (735 feet) for this location by 5.36 metres (17.59 feet). Based on the above, we believe that the dykes will be capable of withstanding water from the outside if a flooding event occurs in the area. If water / wind erosion occurs during a flood event, it could be easily repaired afterwards without disturbing lagoon operation. ▪ For lagoon construction, Manitoba Conservation's Environmental guidelines require that the proposed dykes and bottom of the proposed cells be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s or lined with a synthetic liner. The proposed pond site consists mainly of an area where such clay is present; therefore, after careful consideration and cost assessment, a clay liner within the dykes and under the base was considered superior to a synthetic liner for this project. Moreover, leaks are difficult to locate and repair in synthetic liners. As classified during our field investigation, the clay material of the upper 1.5 m depths ranged from a CL to CH material based on Atterberg limit tests and visual description. The estimated hydraulic conductivity of this material should range between 10^{-8} to 10^{-9} cm/sec. The hydraulic conductivity of the in-situ clay obtained at 0.8 m and 2.3 m depths were 7.05×10^{-9} cm/sec and 1.39×10^{-8} cm/sec, respectively. These numbers are lower than the Manitoba Conservation's clay liner guideline of 1.0×10^{-7} cm/sec. As the clay is readily available on site, it was considered more cost-effective to construct the proposed lagoon with a clay liner.
Ron and Barbara Petaski	July 7, 2012	▪ *The proposed site for the lagoon would greatly affect the land values of our property.* ▪ *The emptying of the septic trucks would cause a foul odour.* ▪ *The septic trucks could easily contain industrial waste disguised by mixing the load with residential sewage.*

		▪ *If any leakage occcurred from this lagoon, the water supply could be affected to the point where our livelihood could be affected.* ▪ *Sewage lines constructed to site in the summer of 2011.* ▪ *The GENIVAR letter does not indicate whether a permit was applied for before the construction of the lines from the Village of East Selkirk to the proposed site across PR 509 occurred in June 2011.* ▪ *Regional solution to tie into the City of Selkirk's regional wastewater treatment plant.* ▪ *There is a lot of land to the north of the village of East Selkirk that is not suitable for agriculture. Location of the lagoon in this area would have little negative impact on the community.* ▪ *The drainage of this lagoon into the Red River will not only effect both the recreational elements located so close to where the lagoon is to be emptied but also the Red River itself.* <u>Proponent Response(September 12, 2012)</u> ▪ Concerns are addressed above
	Oct.17, 2013	▪ *Dissatisfied with responses from proponent* ▪ *Does not agree with location* **<u>Proponent Response(January 14, 2013)</u>** ▪ An aerated lagoon will reduce potential for any odours and the presence of the lagoon should not reduce property values. ▪ The truck dump station is proposed to be installed at the proposed East Selkirk lagoon since the proposed wastewater collection system is a low pressure sewer system, where all wastewater is collected in septic tanks. The solids will be captured in the first compartment of the tanks for annual disposal and the liquid will be pumped through low pressure sewer lines to a local lift station, which in turn will pump the wastewater to the wastewater treatment lagoon. The proposed truck dump station will have a smooth concrete surface that can be washed down if required. This will prevent solids that are usually saturated and have moisture content of approximately 80-90%, from remaining on the concrete surface of the dump station. Therefore, the solids will be immediately mixed with the aerated water in the receiving primary cell and treated. It

		is expected that the proposed lagoon aeration system will prevent odour from developing. The proposed East Selkirk lagoon is the property of the R.M. of St. Clements and all trucked hauling will be recorded and monitored by the R.M. Public Works Office. To prevent any illegal or industrial dumping into the lagoon, a lockable and controlled gate will be installed at the entrance. ▪ To prevent any seepage and groundwater contamination, for lagoon construction, Manitoba Conservation's Environmental guidelines require that the proposed dykes and bottom of the proposed cells be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s. For this reason, the proposed pond liner (base and interior) will be constructed with a clay core within the proposed dykes and keying into the underlying impervious high plastic clay. ▪ The R.M. of St. Clements has looked at different site locations and all possible wastewater treatment options available, including treatment by the existing City of Selkirk wastewater treatment plant. In the EAP report, Section 2.5 (p. 4-5) there is information on the previous studies done by GENIVAR regarding this project including "St. Clements & St. Andrews Wastewater Treatment Study Draft Report" prepared by GENIVAR for the R.M. of St. Clements in 2009 and "R.M. of St. Clements East Selkirk Wastewater Treatment Study" prepared by GENIVAR for the R.M. of St. Clements in 2010. These reports discussed different systems and options, showing advantages and disadvantages of each one and initial construction costs for comparative purposes and available for your information at the R.M. of St Clements office. After careful consideration and cost analysis, the decision was made to construct a lagoon facility as the best practical option for wastewater treatment. The location of the lagoon on the unused and abandoned land close to Hydro lines, which would never be used for residential construction, was chosen over the location on prime farm land. Therefore, the sewage lines have been constructed after careful consideration and cost analysis of available treatment options, which lead to the proposed site. ▪ The Agreement number 10150 regarding construction of the lines from the Village of East Selkirk to the proposed site across PR 509, which occurred in June 2011 was issued on April 26, 2011 by Manitoba Infrastructure and Transportation. A copy of the Agreement is available in the R.M. of St. Clements office for your information. ▪ As it has been stated in our previous response, the original concept was to send the wastewater to the City of Selkirk. The R.M. of St. Clements

		attempted negotiations with the City of Selkirk Council regarding this project. The agreement could not be reached due to the following reasons: 1. The initially proposed lift station and gravity sewer system were to be installed in the Community of East Selkirk, under the Red River and connected to the existing lift station in the City of Selkirk. 2. The cost of the gravity sewer installation was too high and the R.M. of East Selkirk proposed installation of a low pressure sewer instead. 3. The City of Selkirk refused connection of the proposed low pressure system to the gravity system in the City and required a direct connection to the plant. The cost to connect to the plant appeared to be much higher than the cost of the proposed aerated lagoon. ▪ After careful consideration of several site locations within a reasonable distance, the location of the lagoon on the unused and abandoned land close to Hydro lines, which would never be used for residential construction, was chosen over other locations.
	March 11, 2013	▪ *Dissatisfied with responses from proponent* ▪ *Concerns remain same* ▪ *Too many inconsistencies in the testing repot* ▪ *Best solution to this problem would be to hook up to the City of Selkirk waste water treatment facility.* <u>Proponent Response(April 17, 2013)</u> ▪ Mr. and Mrs. Petaski do not appear to be interpreting or understanding the data correctly. No contaminants have been found on site in concentrations which are expected to cause environmental impacts.
Ryan Petaski.	July 7, 2012	▪ *If in future, these lands were to be sold the land values would be greatly effected by the lagoon.* ▪ *Our potato operation relies on clean water and the location of this proposed site could effect the ground water if leakage occurred in the lagoon.* ▪ *I am of the opinion that the best solution to this lagoon problem is to join*

		forces with the City of Selkirk and have the waste treated in their facility. ▪ *The waste is to be spilled into the Red River just a stones throw away from a prime recreational area.* ▪ *The City of Selkirk would agree to handle the waste from East Selkirk and consequently eliminate the problem of building a lagoon.* <u>Proponent Response(September 12, 2012)</u> ▪ Concerns are addressed above
Brent Verheul	July 8, 2012	▪ *Sewage is to be treated and disinfected* ▪ *Lagoons don't work it smells like sewage everywhere and that red river really stinks* <u>Proponent Response(Letter dated September 12, 2012)</u> ▪ Concerns are addressed above
Diane Novakowski	July 9, 2012	▪ *As a resident of #471 C.I.L. Road I am seriously concerned with the RM of St. Clements above proposal to install a sewage lagoon.* ▪ *The vast majority of residents within a 3 mile radius of the aforementioned rural site, have surface water wells (many under 100 feet in depth).* ▪ *A lagoon be installed on an abandoned dynamite site in extreme proximity to a hughly popular tourist fishing site on our Red River, is a questionable plan.* <u>Proponent Response(September 12, 2012)</u> ▪ Concerns were addressed above
Kristin Krut, P.Eng.	July 9, 2012	▪ *The proposed site is a former high-end explosives manufacturing and storage site that operated from 1934 to 1974 by C-I-L Industries.* ▪ *Testing be conducted for known contaminants that were previously found in the Dillon reports.* ▪ *A rubber liner be installed with monitoring to ensure safety of the site.*

		▪ *Hydraulic conductivity testing be conducted on the southern side of the proposed lagoon if a rubber liner is not installed.* ▪ *Manitoba Conservation and the public be provided with the opportunity to review the Stantec report that was conducted for a sewage lagoon for East Selkirk in the mid 1990's.* ▪ *A Hydro Carbon detector be installed at the septic truck dumping location of the proposed lagoon.* ▪ *Genivar complete a report for the decommissioning plan of the proposed lagoon facility for the end of its lifespan.* ▪ *A Nitrogen/Ammonia reduction be incorporated into the proposed lagoon.* <u>Proponent Response(September 12, 2012)</u> ▪ Concerns are addressed above
	Oct.16 & 22, 2012	▪ *Dissatisfied with responses from proponent* ▪ *The reply in the letter indicates that the sludge (supposedly with the Alum) will be disposed of in landfills, the letter does not indicate if there are other solutions, what the costs of those solutions are, if they are more beneficial, etc. I suggest that this is a significant waste of valuable nutrients and alternative solutions should be investigated.* ▪ *I would recommend that a more thorough study be completed on suggestion of investigating effluent irrigation.* ▪ *Risk of Contaminants - I would recommend that further testing of the site be completed over the entire footprint of the lagoon.* ▪ *Concerned with potential for overflows* ▪ *Concerned with decommissioning of the sewage lagoon* ▪ *A hydro-carbon detector be installed or solution developed so that the public is assured that industrial waste does not enter the lagoon.* ▪ *Sewage lines constructed to site in June 2011*

		▪ *The GENIVAR letter does not indicate whether a permit was applied for before the construction of the lines from the Village of East Selkirk to the proposed site across PR 509 occurred in June 2011.* ▪ *The City of Selkirk was not approached about this project.* ▪ *Regional Solution to tie into the City of Selkirk's regional wastewater treatment plant* ▪ *I would recommend that Manitoba Conservation request the RM of St. Clements and the City of Selkirk to provide any recent minutes or documentation related to the "attempted negotiations with the City of Selkirk regarding this project."* ▪ *Concerned with Nitrogen/Ammonia reduction technology for sewage lagoons.* ▪ *I would recommend that the reduction of ammonia be implemented into the design of the proposed lagoon.* ▪ *The proposed lagoon is a short term solution, especially with the increased growth that St. Clements has received.* **<u>Proponent Response(January 14, 2013)</u>** ▪ The best currently known practical solution available in Manitoba for the proposed East Selkirk lagoon sludge disposal is its disposal at a licensed waste disposal ground (the Alum sludge from the proposed secondary cells) or by incorporation into agricultural land (the sludge from the proposed primary cells). Other solutions could include retrieving Aluminum from sludge, making biodiesel or agricultural fertilizer out of sludge or turning sludge into raw materials to be used by paper and plastic industries. Unfortunately, all these technologies are currently unavailable Manitoba and to transport sludge to another province / country for treatment would be neither economical nor practical. ▪ To consider use of irrigation as a treated effluent discharge option, the R.M. of St. Clements would require dedicated land suitable for irrigation close to the lagoon. It was pointed out in our previous letter that land application has been an ongoing problem for other communities in the last few years. Successive years of high precipitation made it impractical and harmful to add yet more moisture to land already saturated with natural rainfall. Since surficial deposits in the area are composed of mainly lacustrine clay and alluvial deposits, which range from a few metres to 17 or more metres in thickness, and thin veneers of glaciolacustrine clays, the area is not suitable for discharge by irrigation, especially in wet periods.

- To address the safety of the site for the proposed lagoon, an additional investigation has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th , 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks.

- The proposed lagoon has an excess hydraulic capacity of approximately 52,760 m^3 at this time that will help to prevent lagoon from overflowing. As we previously stated, the fact that the East Selkirk collection system is a low pressure sewer instead of gravity sewer should preclude excessive infiltration flows, which could result in excessive flows or high lagoon level. Levels would be monitored by Public Works Staff.

  Although, if an emergency situation appears, an acceptable method for preventing overflow is to have the excess sewage hauled by a licensed septage hauler to another facility.

- The proposed East Selkirk wastewater stabilization pond is specifically designed to provide wastewater treatment and storage capacity for the existing and proposed East Selkirk serviced area. The proposed lagoon will service the existing 270 residential units and 540 future residential units, which total 810 residential units. In addition to the serviced residents, the system will service two schools (773 bussed-in-students), a Recreation Centre, the R.M. of St. Clements Office, Hydro Building and a Maintenance Garage. The proposed wastewater treatment facility is designed to treat wastewater up to an average loading of 216.5 kg-BOD_5/d and store the treated effluent of 168,965 m^3 for 227 days for a 20-year design period. However, the system can be readily increased in organic capacity by constructing an aerated primary cell # 3 to the southeast of the proposed primary cell #2 as the proposed secondary cells can provide excess hydraulic capacity of approximately 52,760 m^3, which is good for additional 290 residential units. The lagoon will not be decommissioned until the site is no longer required in the overall wastewater management plan for the R.M. There is no definite time frame as long as the facility is properly operated and maintained.

  Typical lagoon decommissioning involves the following procedures:

  1) Discharging of the lagoon according to the clauses of the licence
  2) Dewatering of the accumulated sludge in the lagoon cells.
  3) Removal of the sludge.
  4) Disposal of the sludge may occur at a licensed waste disposal ground (WDG) (the sludge present in the bottom of all cells) or by incorporation into agricultural land (the sludge present in the bottom of the lagoon primary cells). If the sludge is disposed of at a licensed WDG, no further licensing or

		testing is required. However, if applied to agricultural land, additional licensing approval and a chemical analysis of the sludge and proposed land is required. 5) Levelling of the site, which includes removal of remaining wastewater collection and treatment systems equipment and piping. 6) The use of the site is restricted for three years after levelling occurs. ▪ The proposed East Selkirk lagoon is the property of the R.M. of St. Clements and all truck haul solids will be recorded and monitored by the R.M. Public Works Office. To prevent any illegal or industrial solids dumping into the lagoon, a lockable and controlled gate will be installed at the entrance. ▪ The R.M. of St. Clements has looked at different site locations and all possible wastewater treatment options available, including treatment by the existing City of Selkirk wastewater treatment plant. In the EAP report, Section 2.5 (p. 4-5) there is information on the previous studies done by GENIVAR regarding this project including "St. Clements & St. Andrews Wastewater Treatment Study Draft Report" prepared by GENIVAR for the R.M. of St. Clements in 2009 and "R.M. of St. Clements East Selkirk Wastewater Treatment Study" prepared by GENIVAR for the R.M. of St. Clements in 2010. These reports discussed different systems and options, showing advantages and disadvantages of each one and initial construction costs for comparative purposes and available for your information at the R.M. of St Clements office. After careful consideration and cost analysis, the decision was made to construct a lagoon facility as the best practical option for wastewater treatment. The location of the lagoon on the unused and abandoned land close to Hydro lines, which would never be used for residential construction, was chosen over the location on prime farm land. Therefore, the sewage lines have been constructed after careful consideration and cost analysis of available treatment options, which lead to the proposed site. ▪ The Agreement number 10150 regarding construction of the lines from the Village of East Selkirk to the proposed site across PR 509, which occurred in June 2011 was issued on April 26, 2011 by Manitoba Infrastructure and Transportation. A copy of the Agreement is available in the R.M. of St. Clements office for your information. ▪ As it has been stated in our previous response, the original concept was to send the wastewater to the City of Selkirk. The R.M. of St. Clements attempted negotiations with the City of Selkirk Council regarding this project.

		▪ The agreement could not be reached due to the following reasons: 1. The initially proposed lift station and gravity sewer system were to be installed in the Community of East Selkirk, under the Red River and connected to the existing lift station in the City of Selkirk. 2. The cost of the gravity sewer installation was too high and the R.M. of East Selkirk proposed installation of a low pressure sewer instead. 3. The City of Selkirk refused connection of the proposed low pressure system to the gravity system in the City and required a direct connection to the plant. The cost to connect to the plant appeared to be much higher than the cost of the proposed aerated lagoon. ▪ We have attached the official letter-response from the City of Selkirk to the R.M. of St Clements regarding this project, which shows that the City of Selkirk was approached about this project and negotiations were attempted. If you have any questions or concerns regarding this letter please do not hesitate to contact the R.M. of St. Clements office. ▪ We understand and appreciate your concern regarding nitrogen concentration in lagoon effluent and suggestion to install a nitrogen reduction system (SAGR) at the lagoon. However, nitrogen removal to 15 mg/L is currently required on a site- specific basis for new and expanded wastewater treatment facilities serving more than 10,000 people or the equivalent load. Since the proposed lagoon is designed to service a projected population of 2,812, nitrogen removal is not required by the Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act. In the future, the R.M. of St. Clements will consider installation of a nitrogen removal system such as SAGR if required. As it was stated in our previous response, construction of an engineered / constructed wetland could be an alternative nutrient reduction strategy for the Community if alum addition, trickle discharge and vegetation harvesting is not reducing the nutrient levels to acceptable levels. It could become part of a second phase of development once additional studies are undertaken to evaluate costs and efficiencies. ▪ Generally, wastewater collection systems, including wastewater treatment lagoons and wastewater treatment plants, should be designed to provide for projected 20 years population. Phased construction of wastewater facilities is usually considered in rapid growth areas. The proposed East Selkirk wastewater stabilization pond is specifically designed to provide wastewater treatment and storage capacity for the existing and proposed East Selkirk serviced area. The proposed lagoon will service the existing 270 residential units and 540 future residential units, which total 810 residential units. In addition to the serviced residents, the system will service two schools (773 bussed-in-students), a Recreation Centre, the R.M. of St. Clements Office, Hydro Building and a Maintenance Garage.

		The proposed wastewater treatment facility is designed to treat wastewater up to an average loading of 216.5 kg-BOD,/d and store the treated effluent of 168,965 m^3 for 227 days for a 20-year design period. However, the proposed facility can be readily increased in organic capacity by constructing an aerated primary cell # 3 to the southeast of the proposed aerated primary cell designed to provide excess hydraulic capacity of additional 52,760 m^3, which is good for additional 290 residential units. This demonstrates that the proposed East Selkirk lagoon is not a short term solution and could handle loadings higher than projected for the 20-year design period. In the years to come, wastewater treatment will likely be reviewed again looking to the future to see what will best suit the area.
	March 10, 2013	▪ *Dissatisfied with responses from proponent* ▪ *The reply in the letter indicates that the sludge (supposedly with the Alum) will be disposed of in landfills, the letter does not indicate if there are other solutions, what the costs of those solutions are, if they are more beneficial, etc.* ▪ *Potential for overflows* ▪ *The regional solution to tie into the City of Selkirk's regional wastewater treatment plant.* ▪ *Nitrogen/Ammonia reduction technology for sewage lagoons.* ▪ *Decommissioning of the Sewage Lagoon* ▪ *Uncontaminated Industrial Zoned Property located near Proposed Lagoon* ▪ *Will the proposed Future Expansion require more remediation?* ▪ *Genivar's Soil Test Results - Feb 2013 report* ▪ *Laboratory Analysis Results* ▪ *Dramatic inconsistencies...* ▪ *"The Nitrotoulenes, were mentioned as a concern by TAC member Joy Kennedy..."* ▪ *"I have highlighted some of these inconsistencies below..."* ▪ *..vapour concentrations were measured in soil I samples taken every 2.5*

		feet... ▪ *...missing documentation...* *...tests be conducted for the Dinitrotoulene Mixture and HMX...* ▪ *...problems that RDX has caused...* ▪ *Given the precautions and safety that our neighbors in Minnesota and North Dakota take when it comes to minimizing risk by not allowing sewage lagoons on contaminated sites, remediated or not; and Manitoba's current status of "At Risk" lagoons in the province, I would strongly recommend that the license for this proposal be denied.* **Proponent Response(April 17, 2013)** ▪ Questions/concerns were addressed in GENIVAR's previous letter-response date January 14, 2013. ▪ Please see the attached response from the R.M. of St. Clements. ▪ Please see the attached response from the R.M. of St. Clements. ▪ Please provide details specifying "increased levels of contamination", attachment 4 does not denote such an area. The proposed lagoon area noted, including expansion area was sampled in the GENIVAR Lagoon Screening Program (February 2013). No contaminants have been found on site in concentrations which suggested increased contamination. ▪ The information provided is intended for use as a general description of the soil in the area, as denoted by the much larger depths discussed. For a detailed analysis of the soil characteristics using a smaller delineation of depth, please refer to any of the other previous reports carried out. ▪ Laboratory chain of custody documentation has been included in this response. ▪ The table provided does not exhibit any inconsistencies. It is unclear what Ms. Kurt suggests is inconsistent. Please read the GENIVAR report titled Lagoon Screening Program, dated February 2013 to provide an understanding of the data. ▪ To date, there have been no concerns for nitrotoluene concentrations presented by TAC Member Ms. Kennedy. Please refer to GENIVAR's response to Ms. Kennedy's comments for additional information.

		▪ The table generated exhibits a poor understanding of the data by Ms. Kurt. Tabulated data is of the analytical detection limits for the method employed. Differences in the limits of detection can largely be attributed to the advancement of analytical methods and instrumental detection over the last decade, the availability of superior analytical instruments, the advancement in laboratory accreditation, and a multitude of other analytical instrumentation development. The laboratory's detection limits are well below guidelines for acute or chronic toxicity, and is less than that of Dillion's. This is not an inconsistency. In this context, calculating the percent difference of a detection limit provides no meaningful analysis or discussion. ▪ Field screening was not carried out as all samples taken were analyzed under laboratory settings. This ensures precision and accuracy, as well as quality control. ▪ Laboratory chain of custody documentation has been included in this response ▪ It appears Ms. Krut is unfamiliar with IUPAC nomenclature. Please familiarize and read the GENIVAR report titled Lagoon Screening Program, dated February 2013. All analytes of concern were tested. ▪ Please read the GENIVAR report titled Lagoon Screening Program, dated February 2013. RDX has not been detected on site.
Dennis & Kim Petaski	July 9, 2012	▪ *Testing be conducted on the old CIL explosives manufacturing for the known contaminants used by the company.* ▪ *The proposal includes a rubber liner along with monitoring devices placed under the liner in order to warn of any leakages that could potentially occur.* ▪ *All potential entry points under the railway be permanently blocked to ensure that any accidental breach of the lagoon does not allow untreated effluent to enter the ravine, as it is located only 350 feet west of the proposed lagoon site.* ▪ *The proposal includes the installation of a Hydro-Carbon detector at the septic truck dumping location of the proposed lagoon in order to ensure no industrial wastes are knowingly or accidently dumped into the lagoon.* ▪ *Manitoba Conservation develops guidelines for all sewage lagoons to ensure that Alum is applied effectively to protect the health of Lake Winnipeg.*

		▪ *The proposed lagoon implements nitrogen/ammonia reduction to improve the health of Lake Winnipeg.* ▪ *The Province of Manitoba provide financial assistance to St. Clements in order to allow them to hook up to Selkirk's waste water treatment facility. This will follow the recommendations from the Province to develop regional solutions for waste water treatment. This solution in turn would help to improve the health of Lake Winnipeg.* ▪ *The set-back for aerated lagoons, which are constructed in a similar manner as the proposed East Selkirk Lagoon with the Nelson Environmental aeration technology, be reduced to 90 metres in order to allow improved flexibility in community planning.* <u>Proponent Response(September 12, 2012)</u> ▪ The current Manitoba Conservation minimum setback distance requirement is 300 metres to the closest residence. The closest residence to the lagoon is located more than 300 metres away, which meets the requirements. ▪ Other concerns are addressed above
	Oct. 16, 2012	▪ *Still remain concerned of potential contaminants on site* ▪ *We would like to recommend that testing for known contaminants be done by Genivar or other 3rd party.* ▪ *This, additional testing, will hopefully validate the results of the Dillon report and will provide both public confidence and a more complete scientific based approach to the safety of using this site as a sewage lagoon for many years.* ▪ *With the increased population growth, a sewage lagoon may not be the best solution for the future of this area.* ▪ *we would like to recommend that a regional approach be investigated as a means to provide a better, safer and a more environmentally friendly long-term solution.* ▪ *The set-back for the aerated lagoons should be reduced to 90 metres in order to allow improved flexibility in community planning.* ▪ *If the 300 metres is a requirement or is a significant factor that Manitoba Conservation wants to maintain, then we would recommend that the lagoon be located a minimum of 300 metres from the home we are*

		building, which is situated approximately 500 feet (152 metres) from the footprint of the proposed lagoon. We've also attached Attachment 1 that shows the other 2 closest houses to the proposed lagoon. **<u>Proponent Response (January 14, 2013)</u>** ▪ A new investigation to address the safety of the site for the proposed lagoon has been scheduled for the beginning of January 2013. Testhole drilling has occurred on January 10th, 2013 and laboratory testing results of the soil samples within the lagoon footprint will be available in approximately 3 weeks. ▪ Generally, wastewater collection systems, including wastewater treatment lagoons and wastewater treatment plants, should be designed to provide for projected 20 years population. Phased construction of wastewater facilities is usually considered in rapid growth areas. The proposed East Selkirk wastewater stabilization pond is specifically designed to provide wastewater treatment and storage capacity for the existing and proposed East Selkirk serviced area. The proposed lagoon will service the existing 270 residential units and 540 future residential units, which total 810 residential units. In addition to the serviced residents, the system will service two schools (773 bussed-in-students), a Recreation Centre, the R.M. of St. Clements Office, Hydro Building and a Maintenance Garage. The proposed wastewater treatment facility is designed to treat wastewater up to an average loading of 216.5 kg-BOD_5/d and store the treated effluent of 168,965 m^3 for 227 days for a 20-year design period. However, the proposed facility can be readily increased in organic capacity by constructing an aerated primary cell #3 to the southeast of the proposed aerated primary cell #2 since the proposed aerated secondary cells are designed to provide excess hydraulic capacity of additional 52,760 m^3, which is good for additional 290 residential units. This demonstrates that the proposed East Selkirk lagoon is not a short term solution and could handle loadings higher than projected for the 20-year design period. In the years to come, wastewater treatment will likely be reviewed again looking to the future to see what will best suit the area. ▪ As it has been mentioned in our previous letter-response, the current Manitoba Conservation minimum setback distance requirement is 300 metres to the closest residential unit. This requirement does not apply to industrial or commercial units, which could be located closer, but that request should go to Manitoba Conservation. ▪ As per the Selkirk and District Area Planning Board information and our recent site investigation, there is no structure on the property and it zoned industrial.

	March 10, 2013	▪ *The set-back for the aerated lagoons should be reduced to 90 metres in order to allow improved lfexibility in community planning.* ▪ *If the 300 metres is a requirement or is a significant factor that Manitoba Conservation wants to maintain, then we would recommend that the lagoon be located a minimum of 300 metres from the home we are building.* ▪ *The science and environmental safety of this proposed location for a sewage lagoon, as we have provided supporting documentation in our submission, shows with reasonable certainty that this site is not safe and that we should not risk the exposure of these contaminants any further into our environment. Given the historical use of this site to manufacture explosives from 1929 to the 1970's, why would such a location be selected for a sewage lagoon? Why would anyone consider massive earth moving and soil disturbance knowing that contaminants are on this site, not to mention the unknown contaminants that may also be there?* ▪ *We are concerned and feel that the contaminants on-site pose a serious concern:* o *due to the long-term contamination history of the site* o *the contaminants that Dillon Consulting have indicated that are on-site* o *the risk posed by these contaminants as indicated in the letter by TAC member Joy Kennedy* o *the negative effects that these contaminants may cause to birds and other wildlife that are attracted to the lagoon* o *"...that if the lagoon was built and the contaminants harmed fish, this may contravene international waters agreement with the United States."* ▪ *The reports did not provide the detail that the reports completed by Dillon Consulting provided. In particular the following information, which was provided by Dillon was not included in Genivar' s report* o *The soil test results that were summarized by Genivar (January2013) had significant inconsistencies over the results previously provided by Dillon in December 2011.* o *We also noticed that Genivar did not provide the results for any testing of HMX or Dinitrotoulene Mixture, which is deleterious substance to fish.* o *The first concern (of Dr. Wong) is the inconsistencies, as noted below, on nitroaromatic concentrations in test holes samples between the above Dillon December '11 report, and that reported*

		by Genivar." o *These numbers are very different than the 0.078 ug/g quoted for Genivar by Dennis Petaski below* o *"I can't tell if the two sets of data are from the same holes, or different ones. Or..."* o *The same data in the Genivar data has "ppm" units, which ambiguous as that can refer to water concentrations (i.e., ppm mg/L) or soil concentrations (i.e., ppm ug/ g)."* o *"If the Genivar data in their 1/14/13 data is in water concentration units of mg/L..."* o *"Unfortunately, with the information available to me, I can't make any firm conclusions."* o *This short drainage path may not allow for the plants in the drainage area, to effectively absorb the nutrients that continue to threaten Lake Winnipeg.* o *Stu McKay, owner of Cats on the Red, indicates that tagging of fish shows that fish from the Selkirk area and even as far as the north basin of Lake Winnipeg swim south into the United States. Should the contaminants on this proposed site cause harm to fish, there may be international water agreements that the province may contravene.* o *There are new federal Wastewater regulations which were proclaimed in June 2012 and will become effective January 1, 2015.* **<u>Proponent Response(April 17, 2013)</u>** ▪ Questions/concerns were answered in GENIVAR's previous letter-response dated January 14, 201. ▪ As a residence was not apparent, the Planning District was checked. ▪ GENIVAR's team has extensive experience in planning, designing, and executing environmental sampling programs. The RM of St. Clements sampling program was strategically developed with the aid Visual Site Plan version 6.3 (Pacific Northwest National Laboratory). This software supports the development of a defensible sampling plan based on statistical sampling theory and the statistical analysis of sample results intended to support confident decision making. GENIVAR coordinated the environmental screening program with the Rural Municipality (RM) of St. Clements in response to concerns about fugitive compounds. The purpose of the sampling program was to screen the area intended for lagoon construction and to determine if additional sampling and testing is required.

		It is unclear what scientific fact has been provided by the Petaski's which "shows with reasonable certainty that this site is not safe". Scientific findings and observations conducted suggests that of the fugitive compounds identified, concentrations were well below the Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for the Protection of Environment and Human Health (1999) as the basis for assessment of environmental impacts to the soil. In addition to this fact, Ms. Kennedy's concerns regarding dintirotoluene concentrations are considered minimal. Please see previously discussed TAC documents on this matter for additional detail. o Samples biased toward hotspots previously suggested by Dillon were identified. Consideration for these testing results provide for a composite sampling profile at two depth measurements. It was anticipated that if additional surface or vertical delineation was required, collection of samples from additional location and depth intervals as necessary to achieve a representative concentration would take place. o Site capacity for the attenuation of noted analytes is a function of soil sorption, biodegradation, transformation and chemical interactions with soil organic matter and clay. As results indicate non-detectable concentrations, it is expected that any remaining significant concentrations within the soil not observed in this program have undergone the process of in-situ biodegradation, in combination with dilution via transport processes. Consequently remaining concentrations of fugitive compounds are anticipated to have been largely reduced since initial introduction to the soil. o In reference to TAC member Ms. Kennedy's comments: previous testing results indicated the presence of 2,4-dinitrotoluene in the 200 ppm range (pg/g, soil), several orders of magnitude less toxic as the LC_{50} suggests. EPA 440/5-80-045 suggests concern is minimal. 2,3-Dinitrotoluene was observed in a single borehole from a total of 29 bore and pit holes tested at a concentration of 37.4 pg/g, an order of magnitude less than the LC noted. EPA 440/5-80-045 suggests concern is minimal. o 48 hour EC_{50} values for daphia magna for 2,4-dinitrotolunene is 35,000 pg/L (aqueous). Assuming such species are more sensitive than avian wildlife, negative affects to potential avian wildlife is considered negligible.

		o Testing results for acute and chronic toxicity of 2,3-dinitrotoluene and 2,4 dinitrotoluene are well below limits as suggested by EPA research. As the EPA is an American organization, the potential to contravene international waters agreement with the United States is considered negligible. ▪ Laboratory chain of custody documentation has been included in this response. o The table provided does not exhibit any inconsistencies. It is unclear what the Petaski's feel is inconsistent. Please read the GENIVAR report titled Lagoon Screening Program, dated February 2013 to provide an understanding of the data. The table generated exhibits a poor understanding of the data by the Petaski's. Tabulated data is of the analytical detection limits for the method employed. Differences in the limits of detection can largely be attributed to the advancement of analytical methods and instrumental detection over the last decade, the availability of superior analytical instruments, the advancement in laboratory accreditation, and a multitude of other analytical instrumentation development. The laboratory's detection limits are well below guidelines for acute or chronic toxicity, and is less than that of Dillion's. This is not an inconsistency. In this context, calculating the percent difference of a detection limit provides no meaningful analysis or discussion. o HMX and dinitrotoluene results were indeed tested. Please read the GENIVAR report titled Lagoon Screening Program, dated February 2013 to provide an understanding of the data. o Comments are unclear, please provide a specific question. o Mr. Petaski appears to have provided Dr. Wong misleading information regarding the Screening Program's results. Mr. Petaski appears to be referring to the analytical detection limit as the detected concentration, i.e. 0.078 pg/g versus <0.078 pg/g, which is incorrect and therefore lead to questions of such nature. o It is not clear what is the context for comparison. Sampling conditions were dramatically different (i.e. temporal scale, depths, laboratories, seasonal, etc.)- as many years have passed

		since the Phase II ESA concluded. Consequently it is expected that any analytes present have undergone significant in-situ biodegradation, in combination with dilution via various transport phenomena. To account for the potential of spatial variability, samples biased toward hotspots were identified. Consideration for previously suggested positive testing results provided for a composite sampling profile. The lack of detectable concentrations within the strata suggests concern is minimal. o Please read the reports titled: Phase II Environmental Site Assessment-ICI Brainerd Manitoba. Site. Final Report (September 2, 2003) by Dillon Consulting and the Lagoon Screening Program (February 2013) by GENIVAR. Units of analysis are clearly denoted as pg/g throughout. o Please read the reports titled: Phase II Environmental Site Assessment-ICI Brainerd Manitoba. Site. Final Report (September 2, 2003) by Dillon Consulting and the Lagoon Screening Program (February 2013) by GENIVAR. Units of analysis are not mg/L. o Based on the above questions and responses, it is suggested that Dr. Wong was not provided all documentation, assessments and TAC discussion articles. o Phosphorus levels will be controlled by the addition of the alum prior to discharge; testing will be required to confirm levels before discharging. Slow discharge combined with the discharge ditch will provide for additional reduction of phosphorus. o It is expected that any analytes present have undergone significant in-situ biodegradation, in combination with dilution via various transport phenomena. This, among lagoon dilution, microbial degradation, and phase transfer process provide little scientific claim that fugitive compounds tested will threaten the river, none the less, Lake Winnipeg. o No contaminants have been found on site in concentrations which are expected to cause harm to fish. o Operation of the lagoon will follow all regulations applicable.
	May 2, 2013	▪ *Minnesota and North Dakota would not allow the construction of a sewage lagoon on a previously contaminated site, whether it had been remediated or not.*

		▪ *Multi-increment soil testing, as recommended by EPA, USACE and recent Canadian reports should have been done on the proposed site instead of the old and less accurate method of discreet soil testing that was conducted by Genivar in January 2013.* ▪ *Based on EPA and USACE guidelines, there were far from sufficient soil samples taken for the size of the proposed lagoon site.* ▪ *The Genivar report did not test for contamination of the following common contaminants found on explosives' sites: Percholate, 3.5-Dinitroaniline, Nitrotolunene (3 Isomers), Nitroguanidine, Nitrocellulose and Ammonium 2,4,6-Trinitrophenoxide/2,46-Trinitrophenol, Picrate, Dinitroglycerin and Mononitroglycerin.* ▪ *The majority of contaminants from explosives are found in the top six inches of soil, yet Genivar conducted their surface soil test at 2 feet.* ▪ *EPA guidelines note that the surface soil testing within the first 2 feet of surface soil, should be sampled in 3 depth zones rather than a single 2 feet depth as conducted in the January 2013 tests by Genivar.* ▪ *The EPA specialist noted that the surface soil (top 6 inches) is where most of the contaminants would be the highest concentration and that this is the actual soil that would most likely make up the clay liner at the bottom of the lagoon. The EPA official further noted that it would not be prudent to have constant hydraulic pressure on this soil.* ▪ *We are concerned that proper testing was not addressed in the areas of the 14 buildings that were on site, the 7 buried building on the site, the open burn areas and the area of the old spur track where rail cars were loaded since 1934 and accidental spills may have occurred.* ▪ *We request that Manitoba Conservation confirm if Genivar conducted soil testing to meet this standard.* ▪ *We respectively recommend that Manitoba Conservation not allow a sewage lagoon to be constructed on this site.*
Stu MaKay President, Cats on the Red	March 12, 2013	▪ *The site is clearly contaminated as noted by the Dillon Closure report and the letter by Joy Kennedy.* ▪ *The site is simply in too close a proximity to the Red River should leakage from over excessive moisture occur.* ▪ *It has been brought to my attention, that our neighbors to the south, in Minnesota and North Dakota do not allow sewage lagoons to be built*

		on contaminated property, even if the property is remediated – Why would Manitoba Conservation even think of allowing this to happen here? ▪ *Our Lake Winnipeg was recently "awarded"! , the MOST threatened lake in the WORLD!, why would we even think of adding to that risk?* ▪ *I have followed the tagging of fish projects that have occurred in the past and know that fish as far as the Lake Winnipeg north basin swim into tributaries in of the Red River in North Dakota and Minnesota. Why would we want to put at risk an international disaster?* ▪ *In addition to the contamination concerns, this area of the Red River is the most heavily concentrated area of the Red River in Manitoba and the US for fishing 10 months of the year!* ▪ *In closing, I am against this proposal, and I think it is inconceivable to consider putting a lagoon on in such close proximity of our Heritage River Destination, let alone on a contaminated site!* **<u>Proponent Response(April 17, 2013)</u>** ▪ The conclusion that the site is clearly contaminated is misleading. Please read the GENIVAR report titled Lagoon Screening Program, dated February 2013. ▪ Previous testing results indicated the presence of 2,4-dinitrotoluene in the 200 ppm range (pg/g), several orders of magnitude less toxic as the LC50 suggests. EPA 440/5-80-045 suggests concern is minimal. 2,3-Dinitrotoluene was observed in a single borehole from a total of 29 bore and pit holes tested at a concentration of 37.4 pg/g, an order of magnitude less than the LC50 noted. EPA 440/5-80-045 also suggests concern is minimal.
Vicki Burns Outreach Coordinator Lake Winnipeg Foundation	February 6, 2013	▪ *The site is very close to the Red River with the discharge route being only 900 metres from the river.* ▪ *The site was considered contaminated due to dynamite manufacturing that occurred there several decades ago.* ▪ *There are new federal regulations re; sewage effluent that will be relevant to this lagoon in 2015 and we are under the impression that the lagoon will not be meeting those regulation.* ▪ *Lake Winnipeg is considered to be seriously threatened now due to excess*

		phosphorus entering the lake and this lagoon will no doubt add, even minutely, to that load. ▪ *The Lake Winnipeg Foundation is requesting that a Clean Environment Commission hearing be held into the proposed sewage lagoon near East Selkirk. We understand that this is possible under current regulations and we believe that there are enough issues with this proposal that a CEC hearing could offer the opportunity to provide the public with full information about the proposal.* **Proponent Response(April 17, 2013)** ▪ The site has been well studied and characterized. Please read the reports titled: Phase II Environmental Site Assessment- ICI Brainerd, Manitoba, and Final Report (September 2, 2003) by Dillon Consulting. No contaminants have been found on site in concentrations which are expected to cause environmental impacts. ▪ All other general comments are noted.