

**THE MANITOBA CLEAN ENVIRONMENT COMMISSION**

IN THE MATTER OF:                   The Manitoba Clean Environment Commission Technical Review and  
Public Hearing respecting the proposed Vivian Silica Sand  
Extraction Project

AND IN THE MATTER OF:           Section 6 of The Environment Act, CCSM c.E125

AND IN THE MATTER OF:           Section 88(1) of The Manitoba Evidence Act, CCSM c.E150

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NOTICE OF MOTION of the MUNICIPAL SILICA SAND ADVISORY COMMITTEE

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THE MANITOBA CLEAN ENVIRONMENT COMMISSION

IN THE MATTER OF: The Manitoba Clean Environment Commission  
Technical Review and Public Hearing respecting the proposed Vivian Silica Sand Extraction Project

AND IN THE MATTER OF: Section 6 of The Environment Act, CCSM c.E125

AND IN THE MATTER OF: Section 88(1) of The Manitoba Evidence Act, CCSM c.E150

**NOTICE OF MOTION of the Participants Susanne McCrae representing What the Frack Manitoba and D.M. LeNeveu**

**TAKE NOTICE THAT** a motion will be made on behalf of the participants Susanne McCrae representing What the Frack Manitoba and D.M. LeNeveu before the Manitoba Clean Environment Commission (the “CEC”, the “Commission”) on a day to be determined by the Panel of the Commission and at a location to be determined by the Panel of the Commission.

This motion is for:

1. An Order directing Sio Silica Corporation (the “Proponent”) to complete the attached list of six material actions rectifying the material deficiencies in its Application identified in the “Hydrogeology Technical Review”, “Geotechnical Technical Review” Reports and “Public Comments Received From Don Sullivan and D. M. LeNeveu of What the Frack Manitoba and other public comments for the Silica Sand Extraction Project Environment Act Proposal – File No. 6119.00” and complete and file documentation of the attached list of six material actions materials prior continuation of the Hearing.
2. Delay or suspension of hearings by the CEC until completion of Section 35 of the Canadian Constitution Indigenous Consultation to be conducted by Manitoba Natural Resources and Northern Development.

The grounds of this motion are:

1. What the Frack Manitoba and D.M. LeNeveu are a Participants in this matter.
2. The Participants have a responsibility to assist the Commission in developing its advice and recommendations through the examination of evidence, the making of submissions and serving of motions.
3. The deficiencies present in the Proponent’s materials and the failure impairs the ability of the Participants and the Commission to fully assess the risks of the Proponent’s project, preventing the Participants’ meaningful participation in this matter and their ability to assist the Commission in fulfilling its mandate.
4. The incompleteness of the Proponent’s submissions impairs the ability of the Commission to fulfill its mandate as set out in statute and the Minister’s Terms of Reference to develop evidence-based advice and recommendations for the Minister.
5. There are significant issues related to the geotechnical and hydrogeological analyses provided by the Proponent, as identified by the third-party experts retained by the Commission and public comments in the project registry 6119.00 that would be rectified in part by completion of the six material actions listed below.
6. The consideration of public comments is established by the hearing directive the CEC hearing that states. Until the Proponent fixes the deficiencies in its submissions and completes the six material actions the Participants and the Public will not be able to fully understand the project and participate in the process.

7. Section 35 indigenous consultation would provide information relevant to the advice and recommendations for licensing conditions and environmental and health impacts that the CEC is mandated to give. It is therefore essential that the separate section 35 indigenous consultation be completed before the CEC hearings commence.
8. Section 6(8) of The Environment Act, CCSM c E125 authorizes the Commission to “make rules governing its procedure,” including postponing any scheduled dates in the process.
9. Section 6(6) of The Environment Act, CCSM c E125 and section 88(1) of The Manitoba Evidence Act, CCSM c E150 grant the Commission the power to require the production of “such documents and things as the commissioners deem requisite to the full investigation of the matter into which they are appointed to inquire.”
10. The Commission can require the Proponent to provide information to address the deficiencies in its submissions.

Statement of Facts:

1. The Minister of Conservation and Climate (now Environment, Climate and Parks) issued Terms of Reference on November 21, 2021 directing the Commission to undertake a technical review and a public hearing regarding the Proponent’s application for a license under The Environment Act;
2. The Commission retained Technical Advisors to prepare Technical Reports assessing the Proponent’s application, which were released to hearing Participants on September 26, 2022;
3. The Technical Reports characterize the application as containing material omissions and significant deficiencies, explaining that “the potential impacts [of the project] are many and not all the relevant issues were identified and resolved with the work described in the proposal;”
4. The Minister’s Terms of Reference and the Commission’s statutory mandate together require the Commission to assess the potential environmental impacts of the proposal and develop advice and recommendations for the Minister respecting the Proponent’s Application;
5. The Participants have a responsibility to assist the Commission in developing its advice and recommendations through the examination of evidence, the making of submissions, and serving of motions;
6. The Hearing Directive states; “*In developing advice and recommendations, the Panel will, among other things: review all elements of the Project proposal as well as Technical Advisory Committee and public comments and the Proponent’s responses,*” establishing the requirement to include consideration of public comments in the hearing.
7. The Hearing Directive states; “*The Clean Environment Commission plays a role in gathering input relevant to the consultation process*”
8. The facilitation of meaningful public participation is among the purposes of the statutory licensing regime and the Commission’s public hearing process; and
9. Such further and other grounds as counsel may advise and as the Commission may allow.

The following evidence is relied upon in this motion:

1. “Technical Review: Sio Silica Corporation’s Environment Act Project Proposal”, 19 September 2022, prepared by Dr. Hartmut Holländer, Dr. Allan Woodbury;
2. “Technical Review of Sio Silica Corporation’s Environment Act Project Proposal”, 13 September 2022, prepared by Arcadis Canada Inc.;
3. “Public Comments Received From Don Sullivan and D. M. LeNeveu of What the Frack Manitoba and other public comments for the Silica Sand Extraction Project Environment Act Proposal – File No. 6119.00”;
4. Manitoba Clean Environment Commission Process Guidelines Respecting Public Hearings;

5. Manitoba Clean Environment Commission Hearing Directive for the Vivian Silica Sand Extraction Project;
6. Two letters of Aug. 26, and Sept. 6, 2022, attached, sent to the CEC regarding indigenous consultation; and
7. Such further and other materials as counsel may advise and the Commission may permit.

DATED this 14th day of October, 2022.

## Additional Material Actions to be Completed, Documented and Submitted by Sio Silica to Address Material Deficiencies in its Application

	Material Action	References
1	<p>Pilot field tests of the treatment options for the removal of suspended particulate in process water for the UV treatment process and for disposal of wastewater and solids. Measurement of pH, dissolved oxygen, entrained air, amount of suspended and dissolved contaminants including heavy metals, and organics in the water separated for re-injection into the aquifer.</p>	<p>Sio Silica Supplemental Filing #3 Process Wastewater Treatment Options, Technical Memorandum by Matt Kowalski, PhD, P.Eng. Process Engineer, June 24, 2022  <i>“Due to uncertainty in the settling ability of the solids and unique characteristic of the wastewater it is recommended to pilot some of the recommended treatment options in order to assess the efficiency of the equipment treating the process water before proceeding with final equipment selection. It is especially recommended to pilot trial test the hydrocyclones and mobile/lamella clarifiers.”</i></p>
2	<p>Full scale field test of the latest Sio Silica well cluster design including, side sonar scans of the excavation cavity as a function of time for up to three months after the sand extraction, measurement of total sand extraction, total water extracted and as a function of extraction time, amount and location of air injection within production casing and directly into sandstone formation, water pressure measurements as a function of time at the top of the sandstone aquifer and in the carbonate aquifer during extraction, nearby test well water quality and microbial measurements before and after sand extraction at various distances from the well cluster, noise measurements as a function of distance from the extraction wells when all five extraction wells are operating, measurement of microbial content and organic content including diesel fumes, benzene, PAHs in injected air, and measurement worker’s respirable silica dust exposure using silica dust personnel monitors and area monitors.</p>	<p>Arcadis Canada Inc., p.14, <i>“Completing full scale extraction tests to confirm performance prior to advancing the full Project”</i></p> <p>Injection Well Permit # 2021.01.1 July 16, 2021, Manitoba Agriculture and Resource Development Water Branch for two injection wells Bru 92-8 and Bru 92-2            Condition 7: <i>“The injection well will be continuously monitored to ensure the formation is not over-pressured.”</i>            Condition 8: <i>“The use of the injection well must cease immediately if any local water supplies are negatively impacted as the result of the use of the injection well.”</i></p> <p>Arcadis Canada Inc. comments on noise, microbial contamination from air and water injection.</p>
3	<p>New three dimensional geotechnical modelling of the latest Sio Silica design for well clusters and silica sand extraction. The modeling must include slope stability and potential liquefaction of the supporting sand pillars between excavation cavities, the potential collapse of the carbonate aquifer and the collapse of the shale aquitard. The modelling must take into account the effect of asymmetric excavation on the sand pillar stability and evaluate the potential stability of all well clusters over the entire 24 year project area</p>	<p>Sand pillar stability: Hollander and Woodbury p. 7, 24 <i>“It also assumes that the limestone bridging material remains intact but does not mention if the sandstone itself may liquify and flow into the voids that are created by the mining operation. There is some indication this would occur (Betcher et al., 1995).”</i></p> <p>Shale aquitard collapse: Arcadis Canada Inc., Executive Summary, p.16-17, conclusion #5</p>

	<p>taking into account the geological information from all Sio Silica Manitoba Groundwater Section well information reports of glacial till overburden, limestone and shale aquifer thicknesses and the documentation in the public comments by What the Frack Manitoba that all limestone thicknesses in Sio Silica wells east of highway 302 are less than the Stantec stability limit of 15 meters. The Sio Silica well information reports are available from What the Frack Manitoba or the Manitoba Groundwater Section. Additional well logs for Sio Silica EIS Hydrogeological Report are documented in the project registry 6119.00</p>	<p>Asymmetric excavation – Arcadis Canada Inc., memo p. A-4 <i>“The results of the trial work did report a different cavity expansion with the BRU 92-8 having a cavity expansion in a SW/NE direction.”</i></p> <p>Silica Sand Extraction Project-Environment Act Proposal – File No. 6119.00 Public Comments Received From Don Sullivan p. 10-15</p>
4	<p>New state of the art three-dimensional hydrogeological and contaminant transport modeling of the full scale sand mining operations including using point source water injection at the top of the sandstone aquifer to model 100% re-injection of water and simultaneous point source withdrawal near the bottom of the aquifer to model sand and water extraction for the number of wells to be operating simultaneously in a well cluster. Transport of dissolved and entrained air, iron and manganese precipitates, dissolved selenium, acid, heavy metals in the sandstone and carbonate for a collapsed shale aquitard must be modelled The model must include the initial conditions of hydraulic head and ongoing recharge that is responsible for the initial hydraulic head distribution, heterogeneity of material properties, sensitivity studies with respect to model boundary conditions, hydraulic properties within the excavation cavity consistent with sand removal, salinity induced dependent flow, migration of saline waters into freshwater zones east of the Red River and other necessary hydrogeology modelling conditions documented in the hydrogeology technical report of Holländer and Woodbury.</p>	<p>Holländer and Woodbury hydrogeology report p.5 <i>“None of the analysis investigated groundwater quality changes due to the mining operations”</i></p> <p>Appendix A Notice of Motion of the Manitoba Eco-Network and Our Line in the Sand</p> <p>Silica Sand Extraction Project Environment Act Proposal – File No. 6119.00 Public Comments Received From Don Sullivan and D. M. LeNeveu p. 17  <i>“The groundwater model simulations using the finite-element code FEFLOW v.7.3 were unrealistic. Only zero and fifty percent re-injection of water was modelled. The fifty percent re-injection scenarios were actually drawdown simulations with about ½ the withdrawal pumping rate of the zero percent re-injection. No water re-injection actually occurred either in the modelling or in the field tests.”</i></p>
5	<p>Comprehensive geochemical re-testing of the glacial till overburden, carbonate aquifer, shale aquitard and sandstone aquifer throughout the entire 24 year project area using at least 30 separate samples from representative locations. The samples in the sandstone must include silica sand, interbedded shale, oolite and concretions. The samples must be protected from air exposure and analyzed as soon as possible after collection. Air lift methods must not be used to extract samples as this exposes the samples to air that may oxidize any sulphide in the samples during extraction. Sonic drilling methods may be required to obtain</p>	<p>Holländer and Woodbury, p. 9 <i>“The analysis for acid mine drainage, aqueous geochemistry and stable isotopes were carried out at one location only and limited samples (e.g., related to acid mine drainage) were taken.”</i></p> <p>Holländer and Woodbury, p. 42 <i>“Some of the samples (Winnipeg Sandstone) were even grab samples from a stockpile (p. 34). Such sampling is inadequate to be used for the geochemical analysis described later on.”</i></p>

	<p>samples from unconsolidated sandstone. Acid base accounting tests, trace metal analysis, shake flask tests and other comprehensive geochemical tests must be done on all samples. The sulphide sources in the sandstone aquifer such as concretions, oolite and interbedded shale that were not analyzed for the Sio Silica Hydrogeological Report of the EIS are documented in primary references of Watson (1985) and Schieber and Riciputi (2005) and in the public comments from What the Frack Manitoba in the project registry 6119.00.</p>	<p>Silica Sand Extraction Project Environment Act Proposal – File No. 6119.00 Public Comments Received From Don Sullivan and D. M. LeNeveu p. 2-9, p. 15 and 16</p> <p>Pyrite and Marcasite Coated Grains in the Ordovician Winnipeg Formation, Canada, Jurgen Schieber and Lee Riciputi, Journal of Sedimentary Research, 2005, v. 75, 907–920, <a href="https://www.semanticscholar.org/paper/Pyrite-and-Marcasite-Coated-Grains-in-the-Winnipeg-Schieber-Riciputi/c7260c14eefc435745019d169ed8f741ed4da6df">https://www.semanticscholar.org/paper/Pyrite-and-Marcasite-Coated-Grains-in-the-Winnipeg-Schieber-Riciputi/c7260c14eefc435745019d169ed8f741ed4da6df</a></p> <p>Economic Geology Report ER84-2 Silica in Manitoba By D.M. Watson Manitoba Energy and Mines Geological Services Report, 1985 <a href="http://www.manitoba.ca/iem/info/libmin/ER84-2.pdf">http://www.manitoba.ca/iem/info/libmin/ER84-2.pdf</a></p>
6	<p>Under the topic of accidents and malfunctions, not included in the Sio Silica EIS submissions, modelling of the accumulation of the highly toxic polyacrylamide monomer, selenium, acid, and heavy metals in the recycling slurry line loop loaded at the silica sand extraction site. The methods established in a study of polyacrylamide monomer accumulation in the Great Plains Sand Plant of Jordan Minnesota closed loop system can be used for the modelling. The modeling must include the effects of injection into the slurry loop of drainage water from the French style drain under the sand stockpiles at the processing plant documented in the NOA and public comments on the NOA of April 8, 2021 in project registry 6057.00. The consequences of a malfunction associated with a large deluge and the subsequent transfer of collected drainage water from the French drain style system into the recycling slurry line loop must be analyzed. The consequences of a malfunction allowing backflow from the slurry line into the aquifer water re-injection system must be assessed. The presence of dissolved selenium (selenate) in the solids transported in the slurry line has been established in the Sio Silica Hydrogeological Report on the project registry 6119.00. The presence of shale fragments that can generate acid and heavy metals in the transported slurry line solids has been established by the documentation of the potential collapse of the shale</p>	<p>Technical Memorandum, Great Plains Sand, T.Holstrom, March 9,2012 <a href="https://www.scottcountymn.gov/DocumentCenter/View/880/Exhibit-M-PDF?bidId=">https://www.scottcountymn.gov/DocumentCenter/View/880/Exhibit-M-PDF?bidId=</a></p> <p>Silica Sand Extraction Project Environment Act Proposal – File No. 6119.00 Public Comments Received From Don Sullivan and D. M. LeNeveu p. 9-10</p> <p><i>“A spill from the CWS slurry lines that would carry selenium, fluoride, arsenic, other toxic heavy metals, and harmful microbes could drain into fish-bearing water bodies such as the Brokenhead River and Cook’s Creek. The slurry line would be expected to carry the extremely toxic acrylamide monomer from the clarifier tank. The contaminants would be ever increasing in the slurry lines as water is recycled and fresh extracted sand and flocculent is added to the slurry line and the recycled water loop.”</i></p> <p>Arcadis Canada Inc., p 26, Conclusion #14 <i>“The Project Proposal and supporting documents do not include an assessment of impacts that would be caused by accidents and malfunctions.”</i></p>

<p>aquitard in the Arcadis and the Holländer and Woodbury technical reports. The presence of other sources of sulphides that would generate acid and heavy metals in the silica sand transported in the slurry lines has been documented in Public Comments received from Don Sullivan and D. M. LeNeveu in the project registry 6119.00 and in the primary references of Watson (1985) and Schieber and Riciputi (2005)</p>	<p>Public Registry 6057.00 Vivian Sand Processing Facility Sio Silica Corporation Proponent Response and Public Comments filed on Notice of Alteration Apr.8, 2021 and Notice of Alteration Feb. 16, 2021</p>
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Aug. 26, 2022

Participant: D.M. LeNeveu  
Participant: Don Sullivan on behalf of  
What the Frack Manitoba

**Sent By Electronic Mail**

Manitoba Clean Environment Commission  
305-155 Carlton Street  
Winnipeg MB R3C 3H8

Attention: Ms. Cathy Johnson  
Secretary of the Commission

**Re: Completion of Indigenous Consultation under the Section 35 of the Constitution Act before the Start of the CEC Hearings**

Dear Ms. Johnson:

The CEC Hearing declaration of February 2022 states;

*“Governments have a duty to consult and, if appropriate, to accommodate the concerns of Indigenous peoples prior to acting in a manner (for example issuing licenses or permits) that may have adverse consequences for treaty or Indigenous rights. This duty arises out of Section 35 of the Canadian Constitution. The provincial consultation process is being led by Manitoba Natural Resources and Northern Development. The Clean Environment Commission plays a role in gathering input relevant to the consultation process; however, the provincial Crown retains ultimate responsibility to ensure that the necessary consultation and accommodation has occurred.”*

(<http://www.cecmanitoba.ca/cecm/hearings/pubs/silicasandextractionproject/backgroundinformation/hearingdirectivefebruary18final.pdf>)

The necessity of indigenous consultation and the required timing of the consultation with respect to the CEC hearings must be established.

The necessity of section 35 indigenous consultation has been determined by the Federal Minister of Environment and Climate Change (the Minister) following the analysis by the Impact Assessment Agency of Canada (IAAC) of the requests to designate the Vivian Sand Project. (<https://iaac-aeic.gc.ca/050/evaluations/proj/80974>)

The Brokenhead Ojibway Nation (BON) in their request of Aug. 24, 2020 for IAAC designation stated;

*“This is to advise that we have also formally requested the Environmental Approvals Branch, Manitoba Conservation and Climate to suspend its environmental approval of the CWS’ EAP until such time as (a) the appropriate federal authorities (your departments) have required information from Canwhite Sands Corporation to determine the adverse impacts from the proposed project will have with respect to federal jurisdiction; and (b) such time as the crown engages BON in full, proper meaningful consultation under section 35 of the Constitution Act.”*

The Manitoba Métis Federation in their IAAC designation request of Sept. 8, 2020 also requested consultation under section 35 of the Constitution Act.”

The IAAC designation requests by BON and the Métis establish indigenous groups are concerned that traditional lands may be impacted and that indigenous consultation is required. Other indigenous groups with traditional interests in the area that must be consulted include Sagkeeng, Roseau River and Peguis First Nations.

On Nov. 16, 2020, the Minister denied the initial four requests for designation. On Dec. 7, 2021 the Minister denied a new request by What the Frack Manitoba for designation following the receipt of new information in the Canwhite Sands EIS for the Vivian Sand Extraction Project. The Minister's response for the new request states;

*“The Minister has reached the decision that the designation of the Vivian Sand Extraction Project is unwarranted for the following reasons:*

*There is limited information available to assess whether the Vivian Sand Extraction Project has the potential to cause adverse effects within federal jurisdiction or adverse direct or incidental effects. However, potential adverse effects within federal jurisdiction as understood based on this limited information are expected to be appropriately managed by existing legislative mechanisms, including:*

- *a complete assessment of the potential environmental impacts and proposed mitigation measures through regulatory review processes under Manitoba's The Environment Act, including an assessment of potential impacts to groundwater and surface water.*
- *Provincial Crown consultation **will be carried out** for this project in order to understand the potential impacts to Indigenous peoples and their rights as recognized and affirmed under section 35 of the Constitution Act, 1982”*

The Minister's response to the new request for designation unambiguously establishes that indigenous consultation under section 35 of the Constitution Act “**will be carried out.**”

The Minister has deferred the required indigenous consultation to the provincial government. The CEC Hearing Directive for the Vivian Sand Extraction Project confirms the necessity of the section 35 indigenous consultation to be undertaken by Manitoba Natural Resources and Northern Development. The necessity for indigenous provincial crown consultation under section 35 of the Constitution Act is unambiguously established by the Minister and the CEC hearing Directive. The only remaining issue is the timing of the section 35 indigenous consultations.

The hearing directive states that the indigenous consultation must take place prior to issuing a licence for the project. The Directive also states;

*“Based on the information submitted by the Proponent, government departments and the public through the provincial environmental licensing process and information collected during the hearing process, the Panel will produce a report to the Minister. The report will provide an overview of the proposed Project, a summary of public concerns and the CEC's advice and recommendations regarding environmental impacts and health effects as well as potential licensing conditions.”*

The section 35 indigenous consultation would provide information relevant to the advice and recommendations for licensing conditions and environmental and health impacts that the CEC is mandated to give. It is therefore essential that the separate section 35 indigenous consultation be completed before the CEC hearings commence.

We have established that indigenous consultation under section 35 of the constitution **will be carried out** by the province under Manitoba Natural Resources and Northern Development. We have established that in order for the CEC commission to fulfil its mandate, the separate indigenous consultation must be carried out before the CEC hearings. Furthermore the licensing of the Vivian Sand Extraction Project cannot occur before completion of the indigenous consultation therefore there is no reason to hold the CEC hearings before the indigenous consultation is complete. We therefore assert that the CEC hearings must be delayed until completion of the indigenous consultations.

The Minister determined that there is limited information available to assess the Vivian Sand Extraction Project. In my and Don Sullivan letters to the CEC of July 18 and 27, 2022, missing information that must be submitted by Sio Silica to properly assess the projects is provided.

On June 10, 2022 Sio Silica issued a notice of alteration for delay submission of the remediation and closure plan for the Vivian Sand Processing Facility stating;

*“Sio Silica has not completed detailed engineering design work for the Facility due to the uncertainty of timing in the permitting process for the Extraction portion of the project.”*

This statement establishes the essential interdependence between the extraction and processing projects and the necessity of completing detailed engineering design work for determination of remediation, closure and by extension, all other aspects of the assessment of the projects. The statement by Sio Silica confirms the necessity of the completion of the detailed engineering design work itemized in our letter of July 18, 2022 to the CEC and the necessity of including assessment of the processing facility in the CEC hearings.

The missing information outlined in our letters of July 18 and 27, 2022 to the CEC, including a detailed three dimensional geotechnical stability analysis of the latest Sio Silica well cluster design using industry standard software, must be submitted by Sio Silica for the indigenous consultations in advance of the CEC hearings.

We request that the CEC notify all participants and concerned parties that the hearings will be delayed until completion of the section 35 indigenous consultation.

Sincerely,

Participant: D. M. LeNeveu

Participant: Don Sullivan on behalf of What the Frack Manitoba