

Don Ans



March 22, 2023

Chairman and Commissioners  
Clean Environment Commission  
305-155 Carlton St.  
Winnipeg, Manitoba, R3C 3H8

Re: Sio Silica Sand Extraction Project

Dear Chairman and Commissioners:

I am writing to express my clear and unequivocal opposition to the proposed Silica Sand Extraction Project near Vivian in the RM of Springfield. I ask that the proposed Silica Sand Extraction Project not be granted a license under the Environment Act.

My objections are as follows:

**1. The aquifers and the aquitard separating them should be given special consideration in the Environmental Review.**

I believe that drinking water aquifers for Springfield Municipality and a large portion of Southeastern Manitoba are so important that they should be given special consideration in an environmental review. The water is an irreplaceable drinking water source for many thousands of people and animals in Southeastern Manitoba. Damage to our drinking water source should be considered unacceptable. There is no alternative source.

**2. The proposed project poses unacceptable risk of damage to the aquifers used for drinking water in Southeastern Manitoba.**

Deterioration of the aquifers, especially through contamination and intermixing of the aquifers, is not an acceptable failure effect for this project. The project design does not provide actions to eliminate the possibility of these failures or reduce the failure effects to an acceptable level.

The most significant failure mode is collapse of the aquitard due to the mining process, allowing intermixing of the aquifers. The failure is hidden, especially if the failure occurs after mining of the hole is complete. The control to prevent aquitard failure proposed by

the proponent is “soft”, proposing process controls only, which rely on non-comprehensive testing of the aquitard thickness which cannot completely address variability of the aquitard composition. This is evidenced by the failure of the aquitard at one test hole as discussed at the hearings, with the probability of failure linearly increasing based upon the number of holes drilled. The mining process as proposed cannot prevent these failures. The proponent provided no means to mitigate these failures or to restore the barrier between the aquifers after failure.

Contamination of the aquifers, whether from process chemicals (especially acrylamide), waste streams (chitosan), released heavy metals, oxygenation, acidification, or increased turbidity, were again demonstrated at the hearings. Contamination is also not an acceptable failure effect for drinking water sources. From review of the proponent documents and personal observations at the hearings, the proponent did not demonstrate redesign of the mining or extraction processes to eliminate these failures or reduce the risk to an acceptable level for the affected aquifers for many of the potential contaminants. Several of the provided design documents were merely proposals, providing no assurance of the actual process to be implemented.

It should be noted that monitoring does not mitigate the probability of failures, but instead provides an alert that the failure has occurred. At this point failures due to mixing of the aquifers is irreversible, as the aquitard cannot be restored. The impact of failures due to contamination can be reduced in magnitude by stopping the mining altogether or mining process design changes to eliminate the contaminant. The extent of contamination is dependent upon the rate of contaminant introduction, the period between samples, and observability of the contamination at the sample locations. Aquifer contamination may also be irreversible. Monitoring is not an acceptable primary control for contamination.

I did not observe that Sio Silica performed and documented a formal, separate risk evaluation process for the project, which clearly documented all of the project risks (failure modes), their consequences, and documented actions taken to prevent each risk or mitigate the consequences to an acceptable level. For projects with significant, irreversible failure modes I believe this is a necessity. Failure modes that break laws or regulations, such as the those preventing mixing of the aquifers or drinking water contamination, cannot be acceptable in the project design.

**3. The project proposal and the scope of the Environmental Assessment process did not consider the effects of the entire project.**

The environmental impacts of the project are understated by the limitation of the project proposal and environmental assessment to the first four years of mining activity. This is not acceptable in my opinion, given the very significant potential failure effects of this project.

To maintain the faith of myself as a Manitoba citizen and constituent of the affected municipality the risks of the project in its entirety should be evaluated. Ongoing, long term risks should be included in the evaluation.

The project should not be granted an interim license or license for the four-year period.

**4. Lack of trust that Sio Silica will care for our resource.**

As presented at the hearings, the proponent has not properly capped test bore holes or covered mined silica sand piles. Sio Silica “split” the project, in my opinion to reduce the potential environmental impacts of the project. Based upon hearing presentations, Sio Silica has not demonstrated that the project operations or finances are sufficient for long term operation of the company, especially with the potential risks of the project. Sio Silica also did not demonstrate that the project would not deteriorate our water supply.

I therefore do not trust Sio Silica to care for our resource.

In summation, I believe our drinking water source is irreplaceable. Irreversible aquifer damage cannot be avoided with this project, and this is not acceptable. I believe the project proposal and environmental review was insufficient in scope, and I do not trust Sio Silica to care for our irreplaceable resource. I ask that the proposed Silica Sand Extraction Project not be granted a license under the Environment Act.

This letter represents my personal opinions and does not constitute professional advice or establish any professional-client relationship.

Sincerely,

A handwritten signature in black ink, appearing to read 'Don Ans', with a long horizontal stroke extending to the right.

Don Ans