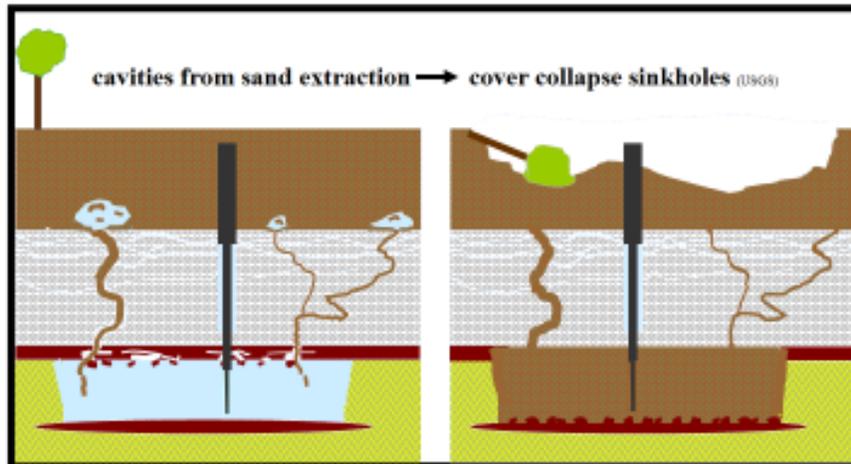
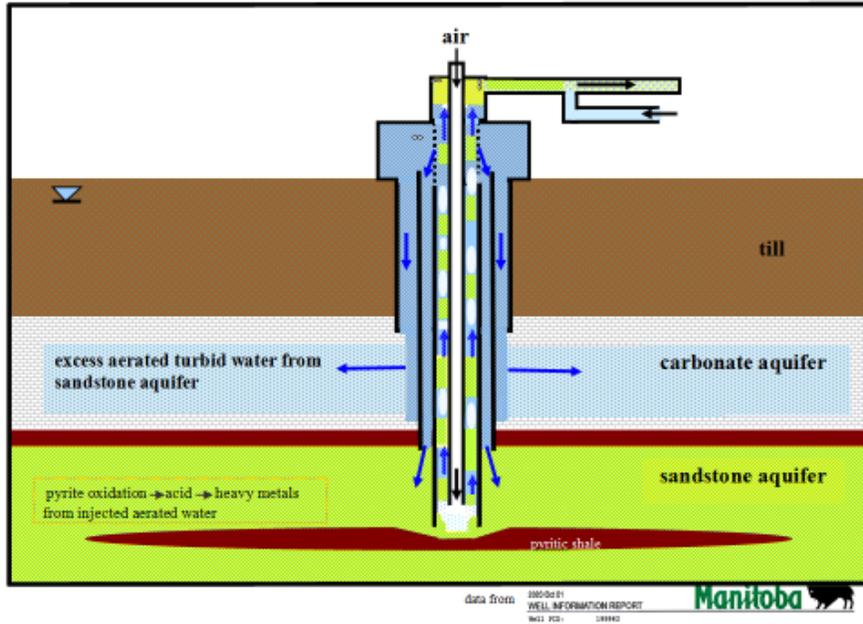


Reasonable Apprehension of Bias by the IAAC and Manitoba Regulators in Non-Designation of the CWS Vivian Sand and CN/CWS Rail Yard Projects



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March 2021

Prepared for What the Frack Manitoba



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On Behalf of What the Frack Manitoba

March 30, 2021

1 Introduction

CanWhite Sands Corp. (CWS) intends to extract 1.36 million tonnes of silica sand per year from the Winnipeg formation aquifer using air lift wells. The proposed project lifetime of the project is twenty-four years or more. CWS has mining claims over more than 80,000 hectares in southeast Manitoba. The extracted sand is to be transported by slurry lines to a processing plant near Vivian Manitoba. A return water loop will connect to the extraction site to recycle water used in the sand wash plant. Excess water withdrawn with the sand will be returned to the formation. The CWS endeavour has been divided into a Vivian Sand Processing Facility Project and a Vivian Sand Extraction Project conducted by the Manitoba Environmental Approvals Branch under the Manitoba Environment Act. The Vivian Sand Processing Facility project is currently well advanced in the provincial approval process. All public submissions have been received and a review by the provincial Technical Advisory Committee was completed last fall. After results from a hydrogeological study are received and posted on the project registry, licensing by the province will follow. The second project for the extraction of the silica sand is to begin. What the Frack Manitoba initiated a request to the Impact Assessment Agency of Canada (IAAC) for the projects to be designated. On August 18, 2020 the request for designation was posted on a registry created for the projects by the IAAC.¹ Other request for designation were from the Brokenhead Ojibway Nation, The Manitoba Métis Federation, Jon Gerrard, MLA with the Manitoba Liberal Party and Lisa Naylor, environment critic for the provincial NDP. I also presented arguments that the Vivian Sand Processing Facility was a metal mill physical activity requiring designation under the IAAC regulations.²

2 IAAC questions for CWS

The IAAC wrote two letters to CWS, August 17th and August 28th with questions for Feisal Somji, President and CEO of CWS. Due to the IAAC not posting their correspondence or discussions they had with CWS on the registry, the questions are known only through Mr. Somji's reply letter of Sept.11, 2020. Mr. Somji in his letter (IAAC project registry reference 15) reveals he had discussions with IAAC Environmental Assessment Officer, Ayesha Sohail on September 4th, 2020.¹ We feel that the non disclosure of discussion, letters and any forms communication between any or all of IAAC and CWS, CN, and Manitoba provincial authorities constitutes reasonable apprehension of bias.

Four questions from the IAAC found in Mr. Somji's reply letter of Sept.11, 2020 are particularly relevant;

1. *"The proposed area of the railway yard (loop) component of the Project;"*(Aug, 17)
2. *"A list of all regulatory approvals (federal, provincial, municipal, other) and any federal financial assistance that would be required for the Projects and the associated components or activities"*(Aug. 17)
3. *"For all federal licences, permits, authorizations, approvals, and/or financial assistance that may be provided for the Projects, describe any anticipated adverse direct or incidental effects (including changes to health, social and economic conditions) that may occur as a result"* (Aug. 17)
4. *"If the Projects are anticipated to result in permanent changes or cumulative effects, how you intend to manage those impacts;"* (Aug.28)

Mr. Somji's answer to the IAAC question about the proposed area of rail yard component of project is,

"The rail loop is proposed to be 7.4 hectares. The centre of the loop is planned to remain as is, with tree coverage and foliage, therefore the area inside the loop was not accounted for in calculations. For information purposes, when the inner area of the loop is added, the area is 47.1 hectares, which includes the spur line to the CN Rail. It should be noted that this spur line is under ownership care and control of CN and was not included in the Processing Facility EAP. For further details on the loop design please refer to the letter, 'Updated Rail Loop Design Information' filed with the Manitoba Conservation and Climate Environmental, Approvals Branch on September 10th 2020."

In the letter of Sept.10, 2020 by Marlene Gifford, AECOM deliberately manipulates the design of the rail loop so that the area of the yard would be less than the 50 hectares specified in the IAAC regulations for a physical activity requiring project designation.² We shall demonstrate that the area of the rail yard must be over 50 hectares.

Mr. Somji answers IAAC questions about approvals and licences in his letter to the IAAC of Sept.10, 2020 by stating,

"No federal licences, permits, authorizations, approvals or financial assistance will be required or sought for the Project"

We assert that the rail yard and rail tracks to the CWS sand load out fall under the federal Canada Transportation Act and require federal approval.⁴

Mr. Somji did not give any cumulative effects from the rail yard in his answer to the IAAC question of Aug. 28, 2020. A noise study in Appendix C of the CWS EAP was completed July 2, 2020, by AECOM the engineering firm hired by CWS.⁵ Appendix C states; *"noise emissions from the entire Project will include noise from the Processing Facility operating, railcar loading (including locomotive idling) and train pass-by."* Appendix C documents that cumulative noise effects occur from the CWS processing facility and the rail yard. The noise study for the rail yard was done by AECOM. CN, according to their engineering specifications for industrial track, must approve the design and operation of the rail yard.⁶ No approval or documentation of CN involvement in the rail yard and the noise study has been given by CWS. The noise from the CN mainline and required CN rail connection from the mainline to the rail loop, background noise and noise from sand extraction activities were not included in the noise study of Appendix C.

The IAAC designated project for the CN Logistics Hub at Milton Ontario, now completed, includes a rail yard that can serve as a precedent. Many rail yard effects are documented that would interact cumulatively with the effects of the two CWS projects including noise, vibration, silica dust exposure, drainage, property values, waste disposal, GHG emissions, and traditional land disturbance.¹¹

The IAAC CWS project analysis states;

*"The Agency is of the view that, given the information available, it is unlikely that the Facility Project and the Extraction Project would interact cumulatively in areas of federal jurisdiction, beyond the impacts attributed to each project alone."*¹

This is an incredible statement given that the noise study that includes the rail yard that would be under the jurisdiction of the federal Canada Transportation Act is explicitly referenced in the CWS reply to IAAC questions. Details of the cumulative interactions of the two projects in regard to effects similar to those

documented for the IAAC designated Milton rail yard are given below. We assert that the IAAC judgement that CWS projects and the CN rail yard would not appreciably interact is faulty and demonstrates reasonable apprehension of bias. We assert that the rail yard and the two CWS projects would interact appreciably in a cumulative manner. The cumulative effects must be evaluated by a joint project assessment of the two CWS projects and the rail yard. Until CN commits to the rail yard project and contributes to a joint assessment of cumulative effects, the CWS projects cannot proceed whether or not the IAAC designates the rail yard project.

3 Non-Disclosure by the IAAC and Inadequate Expert Consultation

The IAAC has not disclosed any of the communications it has had with the proponent, CN rail and the authorities of Manitoba provincial government regarding the three projects, the Vivian Sand Processing Facility Project, the Vivian Sand Extraction Project and the rail yard project. The IAAC requested comments from federal government ministries regarding the Vivian Sand Processing Facility Project, the Vivian Sand Extraction Project before receiving the Mr. Somji's letter of Sept. 11, 2020. Mr. Somji's letter revealed significant new project information such as; excess aerated water withdrawn with extracted sand would be returned to the formation, a CN controlled rail yard would be required, and a French drain system would be installed within the processing plant to capture run off and snowmelt from the sand stockpiles. The effluent potentially containing contamination from the sand stockpiles collected by the French drain system is to be directed to the recycling water loop to prevent any discharge.

The configuration of the rail loop is described in section 2.2.1 of the CWS EAP. The AECOM letter of Sept. 10, 2020 manipulates the design of the rail loop and connection track so that the rail yard would be less than the required 50 hectare threshold for a physical activity requiring designation under the IAAC.

Transport Canada (TC) and Environment and Climate Change Canada (ECCC) Canada who were jointly responsible for the IAAC designated Milton Logistics Hub Project were asked for their comments on the CWS projects before receipt of the Sept. 10th letter by AECOM concerning the rail yard. TC and ECCC were not asked by the IAAC to comment on the required rail yard even though the IAAC asked CWS on Aug. 17, 2020 about the area of the yard.

On September 30, 2020, T. Bell, a directly affected resident of the RM of Springfield Manitoba, sent an email to the IAAC questioning the timing of new information brought to the attention of the IAAC and if indeed the information would be made available for the decision-making process to designate the project. The IAAC replied;

“If information is received after initial comments from federal authorities are received, the Agency can request further advice from federal authorities, as needed.”

No subsequent requests to federal ministries were initiated by the IAAC.

November 27, 2020, T. Bell sent an email to the IAAC, inquiring as to when all records would be made available on the registry. The IAAC replied that all 123 “records are available for viewing.” We have been able to access only 71 records. As far as we can determine no records of the communications of the IAAC and the proponent, CN and the Manitoba authorities have been posted on the IAAC registry.

December 1, 2020, T. Bell sent an email to the Minister and the IAAC addressing many procedural issues by the IAAC and the province including rail transportation. T. Bell wrote;

“Regarding the rail spur line, I ask that you intercede and suspend the Manitoba Facility licensing process until rail approval is finalized. The entire CWS proposal hinges around rail transport and for the process to go ahead without rail approvals, is lethal.”

The IAAC and the Minister ignored the concerns of T. Bell.

On March 11, 2021, I submitted an access for information request to the IAAC for all communications between the IAAC and/or CWS, CN and Manitoba provincial government authorities pertaining to the CWS projects and the rail loop required for the CWS projects. I have yet to receive any information.

On November 9, 2020 CanWhite Sands posted a notice on the IAAC project registry of an independent environmental study for the proposed Vivian Sand Projects. The announcement states;

“CanWhite announces the retention of AECOM, the world’s premier environmental firm, to conduct an in depth hydrogeological study, including but not limited to testing and monitoring of the carbonate and sandstone aquifers and associated aquitards.”

Discussions, if any, with the IAAC and provincial authorities leading to this announcement have not been disclosed. The detailed parameters of the study have not been revealed on the IAAC project registry.

Of particular concern is geochemical testing including independent acid base accounting test for sand samples from the CWS claim area. AECOM prepared the EAP for the Canadian Premium Sand Project (CPS) for Wanipigow.⁷ CPS was planning to mine frack sand at Wanipigow from the same Winnipeg Formation to be used by CWS. AECOM did not reveal the presence of the pyritic shale aquitard overlying the sandstone at Wanipigow. It was only after the pyrite issue was raised in the review process (by me and one member of the TAC) that AECOM acknowledged and attempted to address pyritic waste from the excavated shale aquitard. AECOM did not mention the presence of pyritic shale in the aquitard overlying the Winnipeg formation aquifer in the CWS EAP. AECOM never acknowledged the presence of marcasite a form of pyrite coating the sand grains documented in the NI43-101 technical report for Wanipigow.⁸ AECOM has demonstrated proponent bias through this serious omission and cannot be trusted to conduct an independent environmental study with respect to the potential acid drainage and aquifer contamination from the CWS projects.

On Sept. 23, 2020, reference 22, I posted an argument for designation based on the Vivian Sand Processing Facility conforming to the IAAC regulations for a new metal mill physical activity. The request was ignored.

On Sept. 24, 2020, reference 26, I posted certified ALS laboratory results on samples of CWS sand taken by local volunteers from exploration sand piles near Vivian. The results showed the presence of sulphide coating the sand grains. The acid base accounting test carried out by ALS indicated a potential for acid drainage. Sulphide and in the form of marcasite, an iron sulphide mineral, was also documented coating sand grains in the certified 2014 NI43-101 report for the Wanipigow Sand Extraction Project.⁷ The NI43-101 technical report for Wanipigow included certified laboratory results from an acid base accounting test that showed acid drainage potential for the Wanipigow sand.⁸ An independent peer reviewed paper by Schieber, Riciputi, 2005, describes the diagenesis in the Ordovician era of marcasite formation over the entire extent of the Winnipeg formation.⁹ I posted this evidence on the IAAC project registry and in my submission to the provincial public review of the Vivian Sand Processing Facility Project. The presence of marcasite has been ignored by the proponent, the IAAC and the provincial regulators.

On Oct. 5, 2020 reference 48, I posted a report of incomplete sealing of some CWS exploration wells that might lead to contamination of the regional carbonate aquifer from surface fecal matter such as occurred in Walkerton Ontario. This information was ignored.

On October 10, 2020 reference 49, I posted on the IAAC registry significant new information, the drilling records obtained from Manitoba Groundwater of CWS exploration wells. I reported in IAAC reference numbers 3, 7 and 10 about the oxidation of pyrite to form acid in the sandstone aquifer. The drill records show the extensive shale layers within the sandstone aquifer that can lead to acid formation and subsequent mobilizing heavy metals thereby contaminating the aquifer. The information in the drilling records has been ignored.

Oxidation of the sulphide can be expected to form acid and subsequent heavy metal mobilization within the sandstone aquifer and the CWS extraction and processing operations. I posted the evidence for sulphide within the sandstone aquifer and the potential for acid drainage and heavy metal mobilization on the IAAC project registry on Sep.3, 2020 before the IAAC requests for comments were sent to the federal ministries. Both Natural Resources Canada and the ECCC included comments on pyrite and the potential for acid drainage and heavy metal leaching. The final analysis report in the IAAC called for more studies on pyrite related issues including acid base accounting and other geochemical tests but follow up was left to provincial authorities. The results of a CWS hydrogeology study have not yet been released. There is no indication that extensive independent sand core sampling geochemical analysis has been done as would be required to carry out the recommendations of the IAAC analysis report.

It seems the IAAC did not send to federal government technical experts further questions regarding the new information of aerated water returned to the aquifer, the French drain system, the designation of the rail yard, the CWS well drilling records, and the ALS laboratory results.

We assert that the failure of the IAAC to disclose communications with the proponent, CN, and Manitoba provincial authorities, the failure to ask TC and the ECCC about requirement for assessment of the rail yard and its potential cumulative interactions with the CWS projects, the failure to send questions to federal government department experts regarding extensive new information posted on the IAAC registry constitutes reasonable apprehension of bias.

4 New Metal Mill and Adequate Technical Review

On November 16, 2020 the Federal Minister of the Environment and Climate Change presented their ruling that the CWS projects were not designated for federal review on the grounds that;

“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:...”

After the IAAC ruled that the CWS projects do not require designation, I sent a letter on November 17, 2020 to the Minister requesting *“a written rationale of the decision on the Vivian Sand Facility Project with respect to the Impact Assessment Act Regulations (SOR/2019-285) for a new Metal Mill.”*

I wrote in my submissions to the IAAC registry of September 23 and 25, 2020 and in my letter to the Minister;

“I have submitted evidence to the IAAC that the Vivian Sand Facility Project is a new metal mill with an ore input capacity of more than 5000 t/day. The Vivian Sand Metal Mill processes tailings and produces a silica sand concentrate to be used for extraction of the metalloid silicon. The only remaining factor for designation is to determine if silicon is a metal in terms of the federal regulations on metal mining and milling.”

I included a precedent whereby in the correspondence the Canada Border Agency refers to the import of silicon metal from China.

The response of David McGovern, the minister’s designate states,
“Metal” is not defined in the Regulations. For the purposes of interpretation, the Agency considers “metals” as those chemical elements that are characterized as such in the periodic table of elements. As per the periodic table, silicon is a metalloid and not a metal. Further, the Agency considered that the purpose of the Vivian Sand Processing Facility Project is not to produce silicon, but to produce silica sand, which is not a metal and must be further processed to create silicon. Any further processing is outside the scope of the Vivian Sand Processing Facility Project.”

The intention of the regulation is to protect the environment primarily from acid drainage often associated with sulphide ore bodies containing desirable metals. Extensive documentation submitted to the provincial public review and the IAAC review of the Vivian Sand Facility demonstrates the presence of sulphide associated with the sand in the Winnipeg formation. The detriment to the environment is the same whether or not silicon is considered to be a metal or a metalloid or the use for the sand.

If the Agency disputes the proponent’s statement that the sand is to be used for solar panels and electronics that require the extraction of silicon metal, does this not mean that the Agency believes the proponent is issuing false statements? We concur with the Agency that the proponent’s statements are not credible. We believe the sand is intended for fracking that will contribute to the climate change crisis. Mr. Somji’s letter to the IAAC of Sept.11, 2020, refuting the many well documented claims concerning the detriment of the project submitted to the IAAC project registry, was not supported by evidence or references of any kind. If the Agency disputes a major assertion of the proponent about the use of the silica sand, surely all the unsupported statements of the proponent are in question. I entered on Sept.25, 2020, reference 32, in the IAAC project registry a rebuttal to the claims in Mr. Somji’s Sept.11th letter. Each statement in my rebuttal was supported by credible evidence. My rebuttal was ignored.

The final statement by D. McGovern that *“further processing is outside the scope of the Vivian Sand Facility Project”* is irrelevant. Further processing of an ore in a metal mill to produce a metal is not a requirement for or in the definitions in the regulations for a metal mill.

The project should be designated so that the evidence regarding potential detriment of the project can be examined by the expertise embodied in federal departments. The provincial technical experts (TAC) have already reviewed the project. The TAC review occurred before the public review documents were released to the provincial registry for the project. The only technical information available to the TAC was in the CWS EAP prepared by AECOM. AECOM did not mention in the CWS EAP the presence of pyrite in the sandstone formation including the pyritic shale aquitard overlying the sandstone. AECOM knew of this issue from their involvement in the CPS Wanipigow Sand Extraction Project.⁷ AECOM has demonstrated professional negligence by not revealing the presence of pyrite and marcasite for the CWS EAP.

The pyrite issue and the public review were not available to the TAC. The TAC review was siloed. Each department commented only on their narrow jurisdiction.

On Nov. 4, 2020, S. Kohler Director of the Manitoba Environment Approvals Branch (EAB) wrote a letter on the project registry concerning Manitoba Clean Environment Commission hearings stating,

“I have decided to not recommend to the Minister of Conservation and Climate that a hearing be held. The potential environmental effects and potential mitigation strategies are well understood; therefore, a hearing would not add any new information in that regard. Comprehensive further technical review will be applied to the Vivian Sand Processing Facility Project.”

This contradicts statements from federal ministries previously posted in IAAC registry for the Vivian projects about lack of information and followed by Nov.16, 2020 statement by the ECC in the final analysis report;

“ECCC has advised that the water quality assessment for the Processing Facility Project has limited information on erosion and sediment control, site water/runoff management, and acid rock drainage potential.”

Without CEC hearings and considering the TAC has already completed its review without significant information regarding pyrite and other issues raised in the public review and in the IAAC analysis, the Vivian Sand Facility Project will not receive adequate technical review.

We assert there is reasonable apprehension of bias by the IAAC in favour of the proponent and against the intent of the regulations in determining silicon is not a metal and in not designating the project. We assert that there has not been a comprehensive technical review of the project that includes all issues such as cumulative effects, pyritic waste streams and aquifer contamination. We assert the Manitoba Director of the EAB showed reasonable apprehension of bias in not convening CEC hearings.

We shall document the extensive cumulative effects from interactions between the two CWS projects and the rail yard. We shall demonstrate that the rail yard is physical activity and must be designated. The failure to consider the interacting cumulative effects mandate a single joint IAAC assessment of the two CWS projects and the rail yard that will ensure comprehensive technical review of all issues.

5 Designation of the CN Rail Yard

The CWS EAP states,

“Discussions are in progress with Canadian National Railway (CN) for CN to develop two rail spurs (approximately 190 m in length each on the CN Rail RoW) that will connect the existing CN rail line infrastructure to the proposed rail loop track to allow for the direct loading of silica sand product Dry Plant for transportation to markets by railway. The CN Rail RoW activities and structures will be under the care and control of CN Rail; therefore, the proposed rail spurs are not within the scope of this Environment Act Proposal.”

The CWS EAP further states,

“CanWhite is currently in discussions with CN Rail to coordinate development of the railway spurs within the CN Rail RoW intersecting with the existing CN rail line and proposed rail loop at the Project site. CN Rail will have the responsibility for any permitting that may be associated with the rail spurs.”

CWS does not acknowledge that CN must be involved in and approve the design, permitting, and operation of the rail yard. CWS implies that CN is responsible only for the section of rail connecting the rail loop to the CN mainline.

Marlene Gifford in AECOM letter of Sept.10, 2020 wrote,

“Since submission of the EAP, more detailed drawings for CN Rail’s review and approval for the rail loop have been completed. The more detailed rail loop design figures identified as ‘Rail Concept Option 4’ are attached as Figure 1 and Figure 2 for your reference and is the rail loop represented in the Noise Impact Assessment in the EAP”

AECOM acknowledges the need for CN approval even though there is no documentation that such approval was ever received. The CN engineering standards for industrial track¹⁰ states,

“Once the conceptual work has been completed with the assistance of CN Business Development/Real Estate, the Industry is to obtain the services of an Engineering Consultant or Rail Contractor to develop a detailed design for their facility. The development at this stage will ensure the rail portion of the project integrates with the remainder of the project and will provide sufficient details to allow CN Design and Construction to evaluate the design for compliance to CN Engineering Track Standards.”

It is not clear at this stage who will own the rail loop. CN owns a seven hectare portion at the north end of the proposed rail yard. The CN owned seven hectares would be required for the connection of the rail loop to the mainline. Marlene Gifford’s letter of Sept.10, 2020 states,

“‘Rail Concept Option 4’ also includes two short inner tracks that serve as service/maintenance track for CN Rail use only.”

These inner tracks are within the rail loop. This would indicate that CN intends to use the loop for activities outside the requirements of the CWS project consistent with a rail yard that they would own.

The CWS EAP states;

“No federal permit or approval is required for any aspect of the Project. CN Rail will have the responsibility for any permitting that may be associated with the rail spurs.”

All Railways including branches, extensions, sidings, rolling stock or other things connected with the railway fall under the Canada Transportation Act. The operation of a railway requires a certificate of fitness as specified under the Act.⁴ Therefore the rail loop and the portion of rail through the CWS load out in the processing facility fall under the federal jurisdiction of the Canada Transportation Act and require approval in the form of a certificate of fitness. It would appear, contrary to the assertion in the CWS EAP, that a federal permit in the form of a certificate of fitness must be obtained for all parts of the rail required for the CWS facility not only the CN rail spur to connect the rail loop with the CN mainline.

Figures 1a, 1b and 1c show the rail loops from the AECOM CWS EAP, the AECOM Appendix C noise study, and the AECOM letter of Sept.10, 2020.



Figure 1. Rail Loop

Figure 1a. CWS EAP rail loop

Figure 1b. Appendix C rail loop

Figure 1c. 10/09/20 letter rail loop

The loop becomes progressively smaller from figure 1a to 1b to 1c. The loop of figure 1c from the Sept. 10th letter is designed specifically to avoid the 50 hectare threshold for IAAC designation. The loop figure 21c is narrower than the loop for noise study of Appendix C and does not extend into the CWS processing facility. Figures 1b and 1c clearly show that the AECOM assertion that the revised design in the AECOM letter of Sept. 10, 2020 (figure 1c) is the same as used for the noise study (figure 1b) is incorrect.

The revised design for the AECOM letter of Sept. 10, 2020 does not include a rail connection required to reach the sand load outs of the CWS processing facility. The width of the loop that passes through the load outs in figure 1b has a maximum width of 640 m while the width of the rail loop shown in the AECOM letter of figure 1c is 477 meters. The rectangle around the rail loop with the smallest width of figure 1b has an area of about 65 hectares. The area of the rail yard could not be likely diminished more than as shown in figure 1c without violating the requirement to hold a sand unit train of about 1.3 km as described in the CWS EAP and without violating the CN design requirements such as the minimum radius of curvature, the length of turnouts, and distance between curves. In addition, yard space must be retained outside the loop footprint for drainage and set back requirements and other CN facilities. The yard required for any conceivable rail connection to the load outs would increase the total yard area to over 50 hectares.

Figure 2 shows the private property that must be acquired for the rail loop and the seven hectares owned by CN that would be used for the rail loop connection to the mainline. The private property with tax roll numbers 543400.000, 545300.00 and 545400.00 must be acquired. CN purchased the property with tax roll number 543350.000 in 2016 likely for the potential rail yard. The total amount of private property that must be acquired without subdivision is 95 hectares. The total amount of property required for the rail yard including the currently CN owned land would be 102 hectares. It is inconceivable that a subdivision of the land to be acquired for the rail loop could be manipulated to be less than 50 hectares.

It would not be possible to construct a rail yard for a rail yard to service the CWS facility that is less than 50 hectares without a manipulation of the interpretation of the statement in physical activities regulation²,

“The entry for new railway yard now has a threshold based on total area (50 hectares or more) rather than on the length of track.”

For instance, the IAAC could interpret the total area of the rail yard as not including the interior that Mr. Somji claims in his letter of Sept. 11 2020 would be left in a natural state. Such a biased interpretation of “total area” of the rail yard would be analogous to the interpretation of “metal” used specifically by the IAAC to avoid designation of the CWS processing facility but consistent with demonstrated IAAC proponent bias.

The engineer drawings submitted by AECOM did not contain an official engineer stamp. Marlene Gifford indicates that more detailed drawings of the rail loop will be sent to CN for review and approval. There is no subsequent indication that the required CN review and approval was ever obtained. AECOM has no authority to present a design for the CN rail loop and rail yard size. Until a CN approved rail yard area is obtained the 47.1 hectare yard area given by AECOM is invalid. AECOM cannot assert the area of the rail yard is less than the 50 hectares requiring designation. We assert that the area of the proposed rail yard must be over 50 hectares and the rail yard must be designated whoever owns the yard.



Figure 2. Existing property roll numbers 54500.000, 545300.000, 543400.00 and 543350.000 needed for the Vivian rail yard totalling 102 hectares (<https://www.arcgis.com/home/webmap/print.html>)

6 Cumulative Effects

The Canada cumulative assessment effects practitioner's guide ¹² defines cumulative effects as;

“Cumulative effects are changes to the environment that are caused by an action in combination with other past, present and future human actions.”

The guide states;

“CEAs are typically expected to assess effects over a larger (i.e., "regional") area that may cross jurisdictional boundaries.”

The Canada Impact Assessment Act ¹³ states;

“22 (1) The impact assessment of a designated project, whether it is conducted by the Agency or a review panel, must take into account the following factors:

(ii) any cumulative effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out; and

(iii) the result of any interaction between those effects”

The Impact Assessment Act under the definitions section requires effects from the designated projects in combination with other physical activities must be taken into account. It includes other incidental physical activities. Incidental activities include activities with effects that are directly linked.

The Milton Logistical Hub designated Project provides precedents that cumulative environmental effects interacting activities that must be considered. For instance, the Canadian Environmental Assessment Agency to the Canadian National Railway Company re: Conformity Review - Follow-up to Additional Information Requirements for the Milton Project (Reference Documents #71 and #72) states

“Additional Information Requirement #25 required CN to provide a comprehensive list of all the projects and activities considered in the cumulative effects assessment, and a rationale for why each project or activity was considered or excluded. “Additional Information Requirement #25 required CN to provide a comprehensive list of all the projects and activities considered in the cumulative effects assessment, and a rationale for why each project or activity was considered or excluded;

Some cumulative activities considered are illustrated by these statements in reference documents 71 and 72;

“Provide an assessment of the cumulative air quality effects of the Project in combination with air quality effects from certain and reasonably foreseeable future physical activities, including any predicted increase in truck traffic associated with the Project and future residential developments;

Quality of discharged water: Provide predicted discharge concentrations during the construction and operations phase of the Project for all contaminants of concern (sediment/turbidity, temperature, dissolved oxygen, ammonia, heavy metals, hydrocarbons, and salinity);

Heavy metals have been documented to exist in railway runoff. Vo, et al. (2015) and Burkhardt et al. (2008), indicate that the primary sources of metals in railway runoff from non-electrified rail include abrasion

processes from braking, wheel/track friction and turning. Iron is the predominant metal related to these processes;

Salinity concerns arise from the use of road salt for road based traction control during the cold season; and

CN to provide additional information in relation to baseline ambient noise levels, including information regarding potential seasonal variations”

The Decision Statement issued under Section 54 of the Canadian Environmental Assessment Act, 2012 to Canadian National Railway Company for the Milton Project states;

“The Proponent shall design, in consultation with Conservation Halton, and maintain, throughout operation, drainage features around Designated Project components, including culverts beneath the mainline, to maintain baseline drainage and inflows and outflows to and from any pre-existing wetland that are retained within the Designated Project Development Area following construction”

The report of the Review Panel, Canadian National Railway Company Milton Logistics Hub Project states;

“CN stated that it would remove 3.7 hectares of low-quality wetland habitat, and replace it by creating 7.1 hectares of new wetland habitat, with native vegetation”

The interacting effects that must be considered cumulatively from the Vivian sand processing and extraction projects and the rail yard include, noise, vibration, lighting and glare, drainage, discharged water, land disturbance from track and yard construction, air quality, waste streams, GHG emissions, silica dust exposure, and property values.

6.1 Noise

The CN mainline railway is a physical activity under the IAAC physical activities regulations.² The noise, from the CN mainline will interact with the physical activities of the rail yard. The noise study in Appendix C of the CWS EAP included only the noise from the CWS processing plant and the rail loop and was not approved by CN. Noise from the required CN connection track to the rail loop, from the CN mainline, extraction project noise and background noise was not included. Extraction project noise would include noise from the movement of slurry lines and from well drilling and sand extraction. Noise from the compressor used for air injection is of particular concern. Initially extraction would be close to the processing facility and rail yard such that the cumulative effect of all noise sources including from extraction may be appreciable and must be accounted for.

The Final Decision Statement for the Milton Project stated,

“Noise

4.6 The Proponent shall manage noise throughout all phases of the Designated Project so that the Designated Project causes the acoustic environment at any receptor location identified by the Proponent on figure 3 of the document entitled Technical Data Report Noise Effects Assessment (Appendix E.10) (Canadian Impact Assessment Registry Reference Number 80100, Document Number 57) to change by less than one to five decibels, as set out in the U.S. Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual, and the level of highly annoyed to change by no more than 6.5%, as set out in Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment: NOISE, from baseline conditions documented by the Proponent in the document entitled Technical Data

Report Noise Effects Assessment (Appendix E.10) (Canadian Impact Assessment Registry Reference Number 80100, Document Number 57). In doing so, the Proponent shall:

4.6.1 construct, prior to operation, and maintain, throughout operation, noise barriers and/or vegetated berms within the Designated Project Development Area. The Proponent shall determine the locations and heights of the noise barriers and/or vegetated berms prior to construction and shall provide that information to the Agency prior to construction, including a rationale demonstrating how the location and height of each noise barrier and/or vegetated berm will cause change(s) to the acoustic environment to meet the thresholds for change referred to in condition 4.6;

4.6.2 install a temporary sound barrier around the temporary portable concrete plant for the duration of any paving activity conducted during construction;

4.6.3 install a temporary sound barrier around the construction site for the Lower Base Line grade separation;

4.6.4 use noise-dampening technologies on construction vehicles and equipment and maintain the technologies in good working order;

4.6.5 require employees and contractors associated with the Designated Project to abide by best practices for noise reduction during activities occurring within the Designated Project Development Area, including during loading and unloading activities, and encourage employees and contractors associated with the Designated Project to abide by best practices for noise reduction during activities occurring outside the Designated Project Development Area, including when travelling between the Designated Project Development Area and the 400-series highway network. The Proponent shall provide these best practices to the Agency prior to implementing them; and

4.6.6 enclose generators used during construction and manage their overall sound power levels in a manner that reduces noise”

The CWS noise study in CWS Appendix C does not conform to the requirement that “highly annoying noise” change by any more than 6.5%. The Milton project lists many noise mitigation measures required to meet this standard such as berms, noise barriers and equipment noise shields.

The noise study of CWS Appendix C is incomplete and invalid. A joint project noise study is required that includes background noise, construction noise, the CN mainline, CN connection line to the rail loop, operation of the slurry lines and the processing plant. Noise reduction measures must be specified to meet the noise requirements of the Milton study. Both CWS and CN must participate in a comprehensive noise study that determines cumulative noise impact from all projects and mitigation measures under a joint project assessment framework determined by the IAAC.

6.2 Lighting and Glare

The report of the Review Panel, Canadian National Railway Company Milton Logistics Hub Project states,

“The Proponent shall manage, during all phases of the Designated Project, lighting within the Designated Project Development Area such that light trespass and glare from the Designated Project meet or surpass: 4.2.1 E2 rural guidelines for light trespass and glare as set out in the International Commission on Illumination’s Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations

(2nd Edition); or 4.2.2 E3 suburban guidelines for light trespass and glare as set out in the International Commission on Illumination's Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations (2nd Edition) if baseline light trespass and glare measured pursuant to condition 4.1 exceeds E2 rural guidelines for light trespass and glare as set out in the Guide."

The CWS EAP recognizes light pollution from the projects could occur. The only mitigating measure found in the CWS EAP is;

"Fully shielded directional lighting fixtures will be used to focus light specifically to work areas, parking lot and the Processing Facility to minimize the dispersal of light to the surrounding Project Site."

There is no attempt in the CWS EAP to estimate the level of light trespass and glare with respect to the guidelines referenced in the Milton Logistical Hub Project. The cumulative effects of light from and trains in the rail yard, the lights from drilling rigs and night-time operation of slurry lines, lights from the processing plant and light from extraction activities must be evaluated and mitigated in a joint assessment of all the projects.

6.3 Vibration

Appendix C of the CWS EAP states; *"Based on the planned equipment use and activities, the Project is not expected to be a source of significant vibration. Therefore, a vibration assessment is not required."* This conclusion has not been approved by CN and does not include vibration from the CN mainline or from the operation of the slurry lines as required for assessment of cumulative effects. There is no assessment that the vibration level increase by more than 6.5% as set out in Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment as used in the Milton Logistical HUB Project:

In the Milton project CN claimed that no significant vibration effects were anticipated however Health Canada recommended

"If there is a complaint, compare low frequency noise monitoring results to ANSI 2005. Consider relocating idling trains to a location with fewer receptors and/or to where receptors are further away."

In the Final Decision statement for the Milton Project the Minister required that vibration monitoring be done during construction to protect cultural heritage resources.

A unique sensitivity to vibration occurs with the Vivian projects. During advanced exploration CWS extracted large sand piles within the proposed yard interior. The sand piles are shown in figure 1c. Cavities were left in the sandstone beneath the shale layer after sand extraction in CWS advanced exploration. In February 16, 2021, I provided in a report to the office of the Federal Minister of the Environment and of Climate Change documentation on the potential contamination of carbonate and sandstone aquifers, excessive drawdown of the sandstone aquifer and risk of subsidence. In my report of February 16, 2021, I identified a cover collapsed subsidence risk associated with the cavities in the sand stone aquifer. The shale aquitard separating the carbonate and sandstone aquifers would be expected to slake into cavity. The till or aggregate overlying the carbonate aquifer would pipe through fractures and cracks in the limestone to fill the cavity in the sandstone beneath. Cover collapse sinkholes can result.¹⁴ The rock mechanics calculations I performed for this scenario were reviewed by Dr. Ingraffea of Cornell University and determined to be justified given the data available. The vibration from the rail activity and the weight of the large sand unit trains can be expected to aggravate the piping of the overlying till and aggregate through the limestone into

the cavities in the sandstone. The cumulative effects for subsidence must be assessed with a thorough rock mechanics and vibration study.

Any cultural heritage resources or traditional aboriginal environments that need protection from vibration must be identified similar to such studies done for the Milton Logistical Hub.¹¹

A comprehensive vibration and rock mechanics study should be carried out by CWS and CN under a joint project assessment.

6.4 Drainage, Waste, and Land Disturbance

Mr. Somji's letter of Sept. 11, 2020 states;

“At the facility the sand is deposited wet into a Work In Process (WIP) pile on an engineered surface which contains the equivalent of French Drains allowing full containment of any water discharge. The water, rain and snow melt are captured and recycled for WIP pile wetting and continuous water loop”

On Jan. 22, 2021 a notice of minor project alteration notification was posted on the provincial Vivian sand Processing Plant project registry describing enclosures for sand processing, a building to enclose the sand reject pile and the French drain style system described in Mr. Somji's letter of Sept. 11, 2020. No design of the French drain system was given.

The French drain system could interact with drainage for the rail loop and rail line to the processing facility load outs. Water and contaminants such as heavy metals from the French drain system could be captured by the rail track drainage and discharged to the environment. Alternatively, water containing salt and iron contaminants from the rail track drainage could be captured by the French drain and diverted to the continuous recycle water loop.

On Feb. 23, 2021, I wrote a letter to the office of the federal Minister of the Environment and Climate Change and the Manitoba Minister of Conservation and Climate describing that diversion of contaminated water from the French drain system to the recycle water loop was not sustainable.^{20,21}

Dissolved contaminants in the recycle loop would concentrate to an unacceptable level with out some form of removal such as by reverse osmosis. The clarifier tank in the wash plant would remove only suspended contaminants. Dissolved polyacrylamide flocculent from the clarifier tank and the extremely toxic monomer acrylamide from the breakdown of polyacrylamide²² along with heavy metals mobilized from oxidation of pyrite and other contaminants would accumulate in the loop water. CWS plans to store the recycled water in an on-site tank over winter. Reusing wash water for twenty-four years or more without removal of dissolved contaminants is absurd. This conclusion is supported by the ECCC statement in the IAAC final analysis report;

“At some point, recycled water will be laden with TSS and/or other contaminants and may require management but no management options have been described.”

The waste stream from reverse osmosis or some other dissolved contaminant removal would require disposal. The diversions of water from the rail drainage to the French drain would exacerbate this problem. CWS has not acknowledged or provided for disposal of other waste streams. In my letter of Feb. 23, 2021, I documented waste streams including contaminants removed from loop water, waste from cleaning of vessels and pipes, drill waste, sand rejects, and mud cakes from the clarifier tank. The requirement for disposal of

mud cakes was finally acknowledged by CWS in the summary of a CWS online public meeting posted on the provincial project registry, Dec.29, 2020. The other waste streams have not been acknowledged.

The parameters for the public meeting mandated by the EAB were posted on the project registry on Oct.15, 2020, included the requirement that responses by CWS be provided to public questions and concerns pertaining to both CWS projects. Prior to the online meeting of Dec. 15, 2021 I emailed sixteen questions as per the instructions provided by CWS. I gave references for all technical information within the questions. I received an acknowledgement of the questions from CWS in the form of an electronic Xmas card but no link to the online meeting. My questions were never answered. A subsequent request to the EAB to post on the project registry all written questions sent in by the public plus written answers from CWS was ignored. We feel that this constitutes abuse of process by the provincial EAB.

On March 26, 2020 the Deputy Minister of Manitoba Conservation and Climate wrote to Don Sullivan of What the Frack Manitoba who had submitted a copy of my letter to the Minister;

“The Branch may request addition information from CanWhite Sands to augment the existing information that has been provided. For clarification there is no effluent waste disposal facility proposed for the development and wastewater effluent will not be discharged to the BrokenHead River.”

The Deputy Minister did not acknowledge waste streams requiring disposal despite the evidence supplied in my letter and by the ECCC in the IAAC analysis document. The EAB also refused to post my letter of Feb. 23, 2021 concerning the French drain system until a reply was received from CWS. However, the EAB has not yet required additional information from CWS regarding the French drain. We feel this demonstrates reasonable apprehension of bias by the Deputy Minister and the EAB.

The CN may be involved in the transportation of the waste streams to a disposal destination and be ultimately responsible for spillage of hazardous waste or diversion to an inadequate disposal facility.

Spillage and leaks from the CWS slurry lines might enter the drainage system for the rail yard. The cumulative effect of this leakage must be addressed.

Wetlands occur on the land required for the rail yard as shown in figure 1 and figure 2. Drainage and filling of the wetlands would be required for the rail tracks and operational or storage activities of the rail loop. As in the Milton Logistical Hub Project, CN and CWS would be required to create new wetland to compensate for the loss of wetland within the area of the joint projects. Consultation with aboriginal groups would be required for creation of wetlands on traditional lands.

The Manitoba Mines and Mineral Act 15 states;

“Prohibition: 78. No person, before a lease is issued in respect of a claim, shall ship, send, take or carry away ore, mineral, mineral bearing substance or mineral product or permit it to be shipped, sent or carried away, from the claim, except for the purpose of assaying, sampling or metallurgical testing;”

CWS currently holds mineral claims and no leases. According to CWS statements at the virtual Dec.15, 2020 meeting extracted research sand was encapsulated and buried on site. According to extensive documentation submitted to the IAAC and to the Manitoba provincial approvals process the extracted sand would be acid generating waste. The land disturbance associated with levelling and filling of wetlands for the construction of the rail yard and the rail yard drainage could interact with the buried acid generating sand on site leading to discharge of mobilized heavy metals to the carbonate aquifer or to the fish bearing waters of the

Brokenhead River. The fate of contaminants in the buried sand is of particular concern considering the rail yard area is zone for aggregate removal. Aggregate is known to be permeable and would provide a direct pathway for leaching of contaminants to the under lying carbonate aquifer.

The Manitoba Mines and minerals Act requires that the holder of a claim must not commence advanced exploration work before filing with the Director of Mines a mine closure plan. By removing “*a bulk sample of at least 500 tonnes of material for testing,*” CWS, according to the Act, was performing advanced exploration. CWS has not filed a mine closure plan despite letters from What the Frack Manitoba to the provincial Minister of Conservation and Climate and the Winnipeg Free Press requesting the Act be enforced. A complaint from What the Frack Manitoba is currently before the Manitoba ombudsman concerning the failure to enforce the Act.

The Manitoba Mine Closure Regulation 67/99 General Closure Plan Guidelines specifies regulations that must be followed concerning the disposal of acid material and effluents.¹⁶

A complaint by ten local residents of Springfield was filed on Feb.5, 2021 with the Director of Manitoba Groundwater in accordance with section 67(1) of the Manitoba Groundwater and Well Water Act;

“Any person who reasonably believes that a violation of this Act has occurred, or may occur, may report the circumstances leading to that belief to the director or a well drilling officer.”

The violations of the Manitoba Groundwater and Well Water Act¹⁷ from the CWS advanced exploration activities documented in the complaint include,

- contaminating and adversely affecting the quality of groundwater in the area of a well or test hole,
- allowing the interconnection or mixing of groundwater between the Winnipeg Formation and any overlying aquifer,
- failure to adequately emplace annular sealing at the time of well construction,
- failure to affix a well identification tag,
- failure to properly secure well covers,
- failure to issue separate well construction and sealing reports within the required time period, and
- failure to protect the sandstone aquifer of the Winnipeg formation from unsustainable draw.

Many of the violations reported in the complaint likely occur during the CWS production processes. We have yet to hear from Manitoba Groundwater on the disposition of the complaint.

Since 2017 CWS has received 16 temporary authorizations from the Manitoba Drainage and Water Rights Licensing Branch to withdraw water at rates of between 350 to 1500 US gallons per minute for testing from CWS boreholes and wells over almost the entire CWS claim area. We have obtained all records of the temporary authorizations forms by means of a FIPPA request. The temporary authorizations do not conform to the regulations required under the Water Rights Act. The regulations require that water works for the diversion of water must be licensed or registered. No provision exists in the regulations for temporary authorizations. The minimum registration information must include an aerial photograph, a legal description of the parcel of land, a detailed plan that includes design specifications of all works and water control works, and a written approval form from the landowner.

The authorization permits did not include any information about permission from the landowners and incomplete aerial photographs of the locations of water diversion. Only township, range and section numbers

were given for the location of the boreholes and wells. Some authorizations gave only the RM with no legal description of the location of the wells or boreholes. No GPS or UTM coordinates were given in any authorizations for individual wells or boreholes. The precise number of wells and boreholes were not given nor any information on the well tags, well permits or borehole licenses acquired. Expected withdrawal rates and the total amount of water to be withdrawn were given only for some authorizations. For instance, drilling records obtained from Manitoba Groundwater the CWS Centre Line Road site at SW19-10-8E report nine CWS wells completed in 2018 and 2019. UTM locations are given for all wells in the Manitoba Groundwater well records but none in the temporary authorizations.

A temporary authorization on Aug.4, 2017 was given to withdraw and divert ground water for the SW19-10-8E site from an unspecified number of proposed boreholes. On Aug. 16 2019 a temporary authorization was given for five new boreholes at SW19-10-8E. The rate was given at between 2.271 and 2.650 cubic meters per minute with the total volume not exceeding 23,000 cubic meters. The fate of this large amount of diverted water was not indicated. No aerial photographs or individual well coordinates were given in the Centre Line Road temporary authorization. Large piles of extracted sand were visible at the site. Excess water would have been withdrawn with the sand.

The requests for authorization for diversion of water and the authorization permits issued by Manitoba Drainage and Water Rights Licensing Branch did not state where the water withdrawn by boreholes and wells would be diverted. We know from Mr. Somji's letter to the IAAC of Sept.11 2020, that some of the water would be diverted back to formation. We know from the CWS drilling reports that the CWS air lift sand extraction wells are constructed to allow water withdrawn from the sandstone aquifer to be diverted to the carbonate aquifer in violation of the regulations of the Manitoba Groundwater and Well Water Act. We know from Google Earth images that some water was spilled onto the ground.

The distinction between wells and boreholes is important. Well records are kept by Manitoba Groundwater and are publically available. Boreholes licences are kept by Manitoba Mines. Borehole records are confidential for three years. We have been unable to determine how the distinction between a well and borehole is determined. We have been unable to obtain any CWS borehole records from the Mines Branch.

In 2008 the Manitoba Ombudsman wrote a report on the inadequate record keeping and procedures of Manitoba Water Stewardship and the Drainage and Water Rights Licensing Branch.¹⁸ This inadequacy persists in the issuance of the temporary authorizations to CWS.

A complaint in the provincial project registry describes discolouration of domestic well water at the time CWS was extracting sand using air lift wells at the Centre line Road site. The domestic well was about two kilometres from the Centre Line Road site. The well water decolourization is consistent with excess water being diverted from the sandstone aquifer to the carbonate aquifer during CWS sand extraction operations. Changes in well water quality for the wells complaints reported to Manitoba Groundwater on February 5, 2021 are consistent with CWS diversion of sandstone aquifer water into the carbonate aquifer.

We feel the Manitoba Drainage and Water Rights Licensing Branch has exhibited reasonable apprehension of bias in issuing authorizations without following the regulations and not ensuring that environmental harm by CWS water diversions was being prevented

Mr. Somj's Sept.11, 2020 letter to the IAAC to answer an IAAC question about regulatory approvals states;

“Authorization under The Water Rights Act to withdraw and divert groundwater for 2 domestic wells located on the facility site for fire suppression, sinks, toilets etc.”

Mr. Somji does not mention approvals required to divert water into the slurry lines with some discharge into the sand stockpiles at the processing facility and collection of runoff from the stockpiles in a French Drain water diversion system. Mr. Somji did not include the excess water from sand extraction that would be diverted into the formation in the required authorizations under the Water Rights Act.

The only option for returning aerated excess water to the formation other than diversion to the carbonate aquifer which is not permitted is returning water to the sandstone aquifer. Aerated water returned to the sandstone would react with pyrite generating acid that would mobilize heavy metals likely contaminating the aquifer. During the CWS production operations it is clear the Manitoba Drainage and Water Rights Licensing Branch will fail to provide proper oversight to ensure that environmental harm such as mixing of aquifer waters and aquifer contamination does not occur.

According to the rates of water withdrawn by CWS extraction wells documented in the temporary authorizations and supported by literature values¹⁹ for sand to water ratios for air lift wells, the total excess water associated with extraction of 1.36 million tonnes of sand per year is 0.4 to 1.8 million cubic meters of water per year. This was documented in my February 16, 2021 report. If all this water is returned to the carbonate aquifer, in addition to violating regulations prohibiting mixing of aquifer water, it would constitute an unsustainable draw on the sandstone reservoir.^{20,21} If the aerated excess water were returned to the sandstone aquifer it would constitute an enormous oxidation potential for conversion of pyrite sources within the aquifer to acid. Subsequent heavy metal mobilization would contaminate the aquifer.

In the IAAC analysis document for the two CWS projects, both the ECCC and natural resources Canada support the potential for acid generation from pyrite within the sandstone aquifer within extracted sand in the sand stockpiles and slurry loop. Professor Ingrassia of Carleton University in a review of my February 16, 2021 report on potential for aquifer contamination and land subsidence fully supports the hypotheses for contamination and subsidence. Similar to requests I made to the IAAC and to the province for samples of sand throughout the CWS claim area to be analyzed for heavy metal content and acid base accounting, Natural Resources Canada states;

“Samples should be analyzed for acid base accounting, trace metal content, and metal leaching potential through short-term leach tests, and potentially mineralogy testing by QEMSCAN for modal mineralogy and textural analysis of sulphide minerals.”

There has been no requirement imposed upon CWS by provincial authorities to carry out such tests.

We feel that the refusal of provincial authorities to acknowledge the presence of CWS waste streams and to neglect to mandate geochemical testing for acid and heavy metal generation contradicts the assertion of the federal minister in rejecting the designation of the two CWS projects, that;

“Any potential adverse effects within federal jurisdiction, and related concerns, are expected to be appropriately managed by legislative mechanisms, such as ... the provincial regulatory processes under Manitoba's The Environment Act.”

A joint assessment mandated by the IAAC for the two CWS projects and the rail yard would be required to address the violations of the Manitoba Mines and Minerals Act, the Groundwater Act and Well Water Act, the Water Rights Act and to provide the required mine closure plan. A mine closure plan would have to address the potential contamination of the carbonate and sandstone aquifers, acid drainage, subsidence issues and reclamation of all the lands subject to extraction, the processing plant and the rail yard. Given the non-

compliance with Manitoba Acts and the reasonable apprehension of bias demonstrated by provincial government authorities and we feel a federal joint IAAC assessment is required.

6.5 Property Values

The summary letter for a CWS online public meeting of Dec.15, 2020 posted on the provincial project registry states;

“Many questions have been asked if there would be an impact on the property values nearby the facility. An extensive previous study of property values by the Heartland Institute in the vicinity of silica sand extraction and processing facility locations in the United States found that there were “no documented circumstances of industrial sand mining causing a community-wide reduction of property values”. Therefore, property values are very unlikely to decrease in the vicinity of the Project, noting that the Heartland Institute study included open-pit silica sand extraction and processing projects. However, the CanWhite proposed Project is a sand processing facility that does not include open-pit mining. Therefore, eliminating the heavy truck traffic, associated noise, surface impact and dust associated with open pit mining. The facility location is also surrounded by trees, and not expected to be viewed from the road or surrounding properties. In addition, with an increase of available infrastructure (i.e. natural gas) and nearby associated jobs, it is anticipated that there will be an increased demand for housing in the area resulting in increased property values.”

A similar statement was made in the CWS EAP, July 2, 2020.

No evaluation of the interaction of the CWS processing facility, rail yard and slurry lines from the sand extraction wells on the property values was made.

My report of February 16, 2021 to the office of the Federal Minister of the Environment and Climate Change and to the province documented a high risk for the formation of sinkholes from the large number of CWS extraction wells that will be drilled every year for the project duration of at least 24 years. Professor Ingraffea of Carleton University stated in his review of my Feb, 16 report

“I found no error in any of the calculations embedded in the report, and fully support the hypotheses for both contamination and subsidence tested by Mr. LeNeveu’s analyses of available data.”

The sinkholes would have serious detrimental effect on property values. The land disturbance associated with the continual movement of slurry lines for the lifetime of the project would also be expected to decrease property values.

Contamination of the aquifers and excessive drawdown of the sandstone the aquifer would be devastating to the community and destroy property values. Contamination is expected to occur for the oxidation of pyrite sources in the sandstone aquifer due to the injection of aerated excess water from the air lift wells used for sand extraction. Contamination of wells would be expected to occur from sludge produced by iron bacteria that would be promoted by the injected aerated water.²³ Evidence from the CWS well drilling reports provided by Groundwater Manitoba indicate that the excess water withdrawn from the sandstone aquifer will be returned to the carbonate aquifer thereby mixing aquifer waters which is not allowed by the Manitoba groundwater and well water regulations. This aquifer mixing would be expected to deteriorate water quality. CWS has not addressed these risks. An independent study by qualified technical experts is needed to evaluate the risk of aquifer contamination due to aerated water injection, mixing of aquifer water and excessive aquifer drawdown.

6.6 Exposure to Silica Dust

Appendix B of The CWS EAP gives an AECOM modelling study of potential exposure of nearby residents to silica dust. The study did not include the exposure of CN yard workers to dust. The study must be revised to include exposure to yard workers. The study must be reviewed and approved by CN.

6.7 GHG Emissions

The AECOM GHG emissions study of appendix B did not consider cumulative effects from emissions from construction, extraction activities, the rail yard, and all emissions from the new natural gas line to be built for the CWS dry plant. Emissions would occur from the construction of the rail yard and construction of the processing plant that must be determined. GHG emissions from extraction activities would include emissions from the slurry line pumps, drill rigs, compressors, land clearance for slurry lines, and from vacuum trucks used to empty the slurry lines for movement. The rail yard emissions would include from trains idling during loading and movement and from machinery used or rail car movement and from track de-icing and track maintenance activities. Appendix B includes emissions from the combustion of natural gas in the sand dryer but omits cumulative emissions from all residents and businesses that would hook up to the newly built natural gas line to the CWS processing facility. These ancillary new natural gas emissions must be determined as part of the cumulative effects of the projects.

7 Section 35 Consultation

Minister's Response for the Vivian Sand Processing Facility Project and Vivian Sand Extraction Project states;

“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”

To date no section 35 consultation has been scheduled by the province. The Milton Logistics Hub Project Environmental Assessment Report states;

“The Crown consults with and, where appropriate, accommodates Indigenous groups regarding the potential adverse impacts of its decisions on potential or established Aboriginal or Treaty rights. Crown consultation is integrated into the environmental assessment and regulatory processes to the extent possible and the Canadian Environmental Assessment Agency coordinates the Crown's consultation activities for the duration of the environmental assessment.”

The Brokenhead Ojibway Nation (BON) is located near the mouth of the Brokenhead River. BON is concerned about potential discharge into the Brokenhead River from CWS and rail yard drainage and waste streams.

The Métis harvest and hunt in traditional lands throughout the CWS claim area. Sand extraction activities and creation of remedial wetlands would affect Métis traditional activities.

The Métis, BON and other first nations who have traditional interests in the CWS claim area must be consulted through a section 35 process. A joint IAAC assessment should address and mitigate any potential affects on traditional lands.

Should a joint assessment be designated for the rail yard and the CWS projects the IAAC would be required to coordinate the section 35 consultation.

8 Conclusion

There has been reasonable apprehension of bias in favour of the proponent in the Vivian CWS and rail yard projects by the IAAC and Manitoba provincial government authorities. The rail yard required for sand loading for the CWS processing plant is greater than the 50 hectare threshold for an IAAC physical activity. The rail yard project must be designated. The cumulative interacting effects of the CWS sand processing facility, the CWS sand extraction and the rail yard mandate that all must be designated under one joint IAAC designated project. The noise, vibration, light, property value and GHG studies completed for the Vivian Sand Processing Facility Project did not include cumulative effects and are invalid. The provincial Vivian Sand Processing Facility Project must be terminated and recommenced under the one joint IAAC designated project that includes the processing facility, sand extraction, and the rail yard.

The reasonable apprehension of bias indicates regulatory capture by the proponent in both provincial and federal environmental assessment processes. The collusion of the province with the proponent is blatant and reprehensible. The province does not enforce its own Acts and regulations. It ignores and stonewalls public comment that uncovers this behaviour. It conducts a public review process that gives the appearance of due diligence but is designed for approval of all projects. Legitimate issues are ignored or handled through imposition of ineffective licence conditions with little or no enforcement.

It is reasonable to assume that the proponent bias exhibited by the IAAC in the Vivian sand projects to circumvent designation would occur in all designation requests to the IAAC. The IAAC is failing in its mandate to protect the environment of Canada. It is colluding with proponents to avoid environmental assessment and suppressing disclosure of the collusion. How can the environment be protected if assessments are deliberately avoided? The Agency should be renamed to the Impact Avoidance Agency. A more serious failure of the Agency could not be imagined.

At stake in the projects of this report is the drinking water of a large portion of southeast Manitoba. Water is life. Think of the devastating effects to health, property and businesses if the wells are dried up and contaminated.

A complete resign of the provincial assessment process and the Impact Assessment Agency is required. At the root of the problem is industry led environmental assessment. The professional companies that prepare the environmental impacts are paid to avoid expense to the proponent, and to act in the proponent's best interests. Bias is exhibited primarily by omission. Any detrimental environmental effects that would be prohibitively expensive to mitigate or cannot be avoided are simply omitted. The regulators are captured by the promise of wealth and jobs and, in some cases, ideologies favouring unbridled free enterprise. We need assessments that are done by arms length expert agencies that are funded by the proponent.

9 References

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