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January 9, 2023

Our Reference
Project No. 60663147

Eshetu Beshada
Senior Environmental Engineer
Manitoba Environment, Climate and Parks
Environmental Approvals Branch
1007 Century Street
Winnipeg MB R3H 0W4

RE: Selkirk Solar Glass Manufacturing Facility Project (File # 6137.00)– Environment Act Proposal Responses to Public Review Comments

Dear Mr. Beshada,

On behalf of Canadian Premium Sand Inc. (CPS), enclosed are responses to public review comments regarding the Environment Act Proposal (EAP) application for the Selkirk Solar Glass Manufacturing Project (the 'Project') that were posted in the Public Registry for this Project on December 20, 2022.

Yours sincerely,

Marlene Gifford
Biologist, Environmental Assessor
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cc: Alasdair Knox (CPS)
Glenn Leroux (CPS)
Siobhan Burland Ross (MB Environmental Approvals Branch)

Attachment: Responses to public review comments re: the EAP

Responses to Public Review Comments

ENVIRONMENTAL COMPONENT	PUBLIC COMMUNICATIONS	KEY ISSUE / QUESTION RAISED	RESPONSE	PROPOSED MITIGATION SUMMARY
AQUATIC ENVIRONMENT				
Surface Water	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022; Nov. 28, 2022; Email: Tanzi Bell Nov. 28, 2022	**SW1** General – concern regarding water quality.	**<u>Surface Water</u>** Project construction and operation activities are not expected to directly affect surface water (i.e., no existing waterbody will be removed/filled to accommodate the Project) (EAP Section 6.5.1). The Project will have an Erosion and Sediment Control Plan in place during all Project phases. Additionally, a Drainage Study will be conducted to manage post-development Project Site surface water runoff (as needed) so that the pre-Project development flow to the existing ditching system is not exceeded to a level that would compromise existing road infrastructure, adjacent land uses and local/regional waterbodies. **<u>CPS Effluent</u>** Regarding Project wastewater discharge, CPS' objective is to recycle and reuse process water as much as possible to minimize Project generated waste (EAP Section 2.8.1). CPS will seek an Industrial Service Agreement with the City of Selkirk, as required, for the discharge of CPS Project wastewater to the City of Selkirk municipal sewerage system. Most of the CPS Project effluent will be sewage from washrooms. The limited amount of process wastewater discharged to the City of Selkirk municipal sewerage system will be at ambient temperature. **<u>CPS Process Water from Selkirk Wastewater Treatment Facility</u>** Also refer to responses for items #1 and #2 in **Attachment A** regarding Project Process water received from the City of Selkirk Wastewater Treatment Facility.	EAP, Section 6.5.1, Surface Water EAP, Table 6-4: Surface Water
	Letter: MJ McCarron of Manitoba Eco-Network Nov. 28, 2022	**SW2** "*Water discharged from this plant needs further study to determine environmental impacts*."	See response to **SW1**.	Refer to mitigation proposed for **SW1**.
Fish and Fish Habitat	Email: Dennis LeNeveu Nov. 28, 2022	**FFH1** Concern regarding "*…the thermal discharge of the CPS glass plant cooling water from the Selkirk wastewater and sewer system into the fish bearing Red River*."	CPS will not be discharging wastewater directly into the Red River. See response to **SW1**.	Refer to mitigation proposed for **SW1**.
TERRESTRIAL ENVIRONMENT				
Wildlife	Email: Tanzi Bell Nov. 28, 2022	**Wild1** Concern regarding nighttime truck traffic impacts on wildlife	Refer to response for item #5 in **Attachment A** regarding mitigations measures to minimize wildlife collisions during nighttime operation of trucks.	**<u>Additional Mitigation Measures:</u>** Refer to mitigation measures to minimize wildlife-traffic collisions described the response for item #5 in **Attachment A**.
	Email: Dennis LeNeveu Nov. 28, 2022	**Wild2** General – concern regarding truck traffic adversely affecting wildlife migration in the area between Wanipigow and Selkirk.	The existing road and highway infrastructure and existing traffic between Wanipigow and Selkirk is currently influencing wildlife movements. Refer to response for item #5 in **Attachment A** regarding mitigations measures during nighttime operation of trucks.	**<u>Additional Mitigation Measures:</u>** Refer to mitigation measures to minimize wildlife-traffic collisions described the response for item #5 in **Attachment A**.
ATMOSPHERIC ENVIRONMENT				
Air Quality	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022	**AirQ1** General - concerns about air quality	As indicated in Section 6.3.1 'Air Quality' of the EAP, the dispersion modelling assessment (Appendix A of the EAP) predicted no exceedances of the MAAQC for particulate matter (TSP, PM10, and PM2.5) or gases from combustion (HCl, HF, NH3,	EAP, Section 6.3.1, Air Quality EAP, Table 6-4: Air Quality

ENVIRONMENTAL COMPONENT	PUBLIC COMMUNICATIONS	KEY ISSUE / QUESTION RAISED	RESPONSE	PROPOSED MITIGATION SUMMARY
			CO, NO2 and SO2) at any location. It is concluded that the operations phase of the Project is likely to have minimal impacts on the air quality of the region, for the following reasons: • The model used in the assessment is generally considered to be conservative • Emission rates used in modelling were typically very conservative, over-estimating transportation emissions in winter months and from all sources for averaging periods greater than one hour • The effects of precipitation to reduce particulate emissions were not considered Also refer to refer to response for item #8 in **Attachment A** regarding information on the specialized chemical conversion and filter system used for air emission treatment.	
	Email: Dennis LeNeveu Nov. 28, 2022	**AirQ2** "*CPS has not specified any plans to measure Project emissions in Selkirk including NOx, SO2 and respirable silica dust, relying solely on computer modeling results to establish low public health hazard*"	The proposed flue gas filter system includes Continuous Emissions Monitoring Equipment (CEMS). This is an inlet/outlet monitoring system that includes a Stack Dilution Sample System, Stack Dilution Analyzers, Stack O2 In-Situ, Stack Flow Monitor, Stack Particulate Monitor, and a Stack NH3 Tunable Diode Laser (TDL) Analyzer. Differential Optical Absorption Spectroscopy (DOAS) is used to monitor inlet NOX and SO2 and inlet O2 in-situ.	CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.
		AirQ3 Regarding the Air Quality Impact Assessment update: "*The updated model did not explain the reason for the differences in predictions between the updated and initial model predictions*."	The differences in air quality impact assessment modeling results in the Air Quality Impact Assessment Update (AECOM, October 2022) reflect refinements and improvements to the initial Project design.	N/A
		AirQ4 "*The modeled emission airborne concentrations given in the Air Quality Report of the EAP are below acceptable limits beyond the plant boundary. However no air monitoring is specified to ensure that the public is not exposed to harmful concentrations of nitrous oxide, sulphur dioxide and respirable silica dust from plant emissions*."	CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.	CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.
		AirQ5 *"The air quality model description states that worst-case emission scenario days and meteorological conditions were used in the modeling. However the use of capping for temperature inversion is not mentioned. It is well known that temperature inversions can increase the ground level concentrations of stack emissions."*	AERMOD model was using meteorological data obtained for the solar glass manufacturing plant location. These data contain mechanical and convective mixing height (height to temperature inversion). The modelled range of mixing heights is from 10 m (in extremely cold winter days: -44ºC) to 4,000 m (hot summer days: +36ºC). Modelled stacks in the Air Quality Impact Assessment Update (AECOM, October 2022) were 46 m high and according to modelled results, the highest contribution to ground level concentrations is from ground base sources. Capping for temperature inversions did not cause significant contribution to maximum predicted concentrations.	N/A
Noise	Email: Tanzi Bell Nov. 28, 2022	**Noise1** *Table 5-1 Project Noise Sources* [in the updated Noise assessment] *provides frequency models for 1 idling locomotive and the 2 B-trains however the Freight train pass-by with 2 locomotives and 45 or 16 railcars does not provide frequency data or usage per hour although we are provided a Total decibel reading. Explain omission of frequency and usage data?*	The freight train was predicted according to U.S. Federal Transit Administration (FTA) methods which are accepted by Canadian regulators. The FTA noise prediction method for trains is based on overall reference emissions and not frequency spectrum data. The noise modelling software (CadnaA) includes an implementation of the FTA rail noise standards. As well, the software inherently applies usage for trains based on train speed, number of trains per hour, and modelled track length. In this case, usage is not entered manually. The sound levels of the idling locomotive and B-Trains were based on frequency data from previous projects and not the FTA method. Note that the B-train is not an actual train but a truck-tractor vehicle.	N/A
		Noise2 *Has adequate assessment for noise and vibration been undertaken to ensure no negative impacts?*	The Noise Impact Assessment (AECOM, November 2022) for the Project was completed by experienced technical specialists using industry accepted methods.	N/A

ENVIRONMENTAL COMPONENT	PUBLIC COMMUNICATIONS	KEY ISSUE / QUESTION RAISED	RESPONSE	PROPOSED MITIGATION SUMMARY
Climate/Greenhouse Gases (GHGs)	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022; Shawn Kettner of Manitoba Energy Justice Coalition Nov. 28, 2022; Email: Tanzi Bell Nov. 28, 2022; Email: Dennis LeNeveu Nov. 28, 2022; Letter: MJ McCarron of Manitoba Eco-Network Nov. 28, 2022; Email: Tanzi Bell Nov. 28, 2022	**GHG1** General – concern about greenhouse gases / climate change.	Refer to response for item #4 in **Attachment A** regarding GHG emissions.	**<u>Additional Mitigation Measures:</u>** As indicated in the response for item #4 in **Attachment A** regarding GHG emissions, CPS will continue to look for innovative ways to reduce GHG. For example: • Electric powered forklifts will be utilised on site • CPS is interested in the advances in electric powered trucks and locomotives • CPS will explore carbon capture technologies which may become available in the future • CPS will continue to review other forms of combustion material for our furnace, for example hydrogen has recently been introduced as an alternative to natural gas in Europe
SOCIOECONOMIC ENVIRONMENT				
Infrastructure and Services	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022; Shawn Kettner of Manitoba Energy Justice Coalition Nov. 28, 2022; Letter: MJ McCarron of Manitoba Eco-Network Nov. 28, 2022	**Infra1** General – concern regarding traffic impacts and road related infrastructure	CPS will be using approved truck transport routes for Project operations. A Traffic Impact Study is under review by Manitoba Transportation and Infrastructure (MTI).	N/A
	Email: Tanzi Bell Nov. 28, 2022	**Infra2** Concern that no traffic study has been provided for this Project.	See response to **Infra1**.	N/A
	Email: Dennis LeNeveu Nov. 28, 2022	**Infra3** "*The traffic disruption and delay of emergency vehicles from increased rail traffic on road crossings is not assessed*."	Trains are already routed through the City of Selkirk which has sufficient road infrastructure to provide multiple efficient routing options for emergency vehicles.	N/A
	Email: Tanzi Bell Nov. 28, 2022	**Infra4** General – concern regarding the impact of disposal of Facility process water on the City of Selkirk's sewer system	See response to **SW1**.	Refer to mitigation proposed for **SW1**.
Human Health and Well-being (Traffic Safety)	Email: Tanzi Bell Nov. 28, 2022; Email: Dennis LeNeveu Nov. 28, 2022; Letter: MJ McCarron of Manitoba Eco-Network Nov. 28, 2022	**Traffic1** General – concern regarding increased truck between the CPS project sites at Wanipigow and Selkirk, and related impacts to road users and communities (e.g., cottagers).	To control traffic on Walker Avenue east of the Project site, 'no turning' signage at both the transport truck access road and the employee/visitor access road indicating no turning right (east) onto Walker Avenue will be posted at the egress points of the Project site access roads. CPS will work with the City of Selkirk to ensure that adequate safety signage, as required, is provided at the Project site access intersection at Walker Avenue. The number of truck trips per hour could vary over the course of a year. For example, if operationally feasible, sand truck deliveries may be reduced on weekends during 'Cottage Season' (from May long weekend to September long weekend) as sand trucks will be travelling to and from Seymourville on the east side of Lake Winnipeg. However, this will require that additional trucks will operate during weekdays in this period to ensure that the glass plant maintains enough sand on site for operations (EAP, Section 2.10 Traffic). A Traffic Impact Study is under review by Manitoba Transportation and Infrastructure (MTI). Also refer to response for item #5 in **Attachment A** regarding mitigations measures to minimize wildlife collisions during nighttime operation of trucks, such as drivers being	EAP, Section 6.6.5 Traffic **<u>Additional Mitigation Measures:</u>** Refer to mitigation measures to minimize wildlife-traffic collisions described the response for item #5 in **Attachment A**.

ENVIRONMENTAL COMPONENT	PUBLIC COMMUNICATIONS	KEY ISSUE / QUESTION RAISED	RESPONSE	PROPOSED MITIGATION SUMMARY
			mandated to adhere to the posted speed limits and review defensive driving measures.	
	Email: Tanzi Bell Nov. 28, 2022	**Traffic2** Request for a traffic study that includes the truck traffic route from the CPS Wanipigow Sand Extraction Project site to the CPS Solar Glass Manufacturing Facility Project site.	See response to **Infra1**.	N/A
Human Health and Well-being (Human Health)	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022	**HH1** General – concern about impacts on human health.	Impacts on human health have been assessed in the EAP in Section 6.6.4 'Human Health'. As indicated in Section 6.6.4, the following mitigation measures will be applied to avoid or minimize potential adverse effects on human health: • Measures to avoid or minimize adverse effects on air quality (EAP, Section 6.3.1) and effects on climate (EAP, Section 6.3.2 and response to GHG1) will be applied. • Measures to control noise will be applied (EAP, Section 6.3.3). • All CPS employees will abide by the standards, procedures and training required under *The Workplace Safety and Health Act* as well as CPS's internal Health and Safety Program and Emergency Response Plan. • Employee Orientation and Safety training will be mandated for all new hires in addition to required yearly safety reviews for existing staff. • In accordance with Part 12 of Hearing Conservation and Noise Control Regulation, an initial noise exposure assessment will be undertaken prior to commissioning of the facility, and appropriate measures implemented (such as hearing protection), depending on the results of the assessment. During operation and closure, a reassessment will be done if any alterations, renovations or repairs of the workplace are undertaken. • Applicable PPE will be provided to employees. Where required, visitor orientation and PPE will be provided when visitors enter employee only areas. Through the implementation of the measures referenced above, impacts to human health are assessed as negligible. CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.	EAP, Section 6.6.4, Human Health EAP, Table 6-4: Human Health CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.
	Email: Dennis LeNeveu Nov. 28, 2022	**HH2** "*The EAP states that required Workplace Health and Safety regulations will be met for worker protection. However no personnel or area monitoring of silica dust within the plant boundary is specified in the EAP. Without measurement, required safety protection measures such as type of required respiratory protection* and protective clothing cannot be determined."	See response to **HH1**.	Refer to mitigation proposed for **HH1**.
OTHER				
Project Description	Email: Tanzi Bell Nov. 28, 2022	**PD1** Concern regarding disposal of "hot process water". "*CPS/AECOM does not assess the impacts the Facility's hot effluent will have on the Selkirk sewer system and eventual release to our environment*." Question regarding assessment (testing) of Facility wastewater effluent quality and "*Who will carry out the*	Please review the response to SW1 above. CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.	CPS will develop and comply with any other mitigation or monitoring plans that are included as requirements within an Environment Act Licence for the Project.

ENVIRONMENTAL COMPONENT	PUBLIC COMMUNICATIONS	KEY ISSUE / QUESTION RAISED	RESPONSE	PROPOSED MITIGATION SUMMARY
		assessment and its costs?" "*What is the chemical analysis of the hot process water?*"		
		PD2 Question regarding if CPS has received approval has been granted regarding the statement in page 14 of the EAP: *Additional signage indicating no left turn from Walker Avenue onto the Project site access roads will be posted pending discussion with, and approval by, the City of Selkirk.*	CPS will work with the City of Selkirk to ensure that adequate safety signage, as required, is provided at the Project site access intersection at Walker Avenue.	N/A
		PD3 Questions regarding the rail component of the Project: *- Has CPR committed to develop the railway spur, please provide?* *- Has Canadian Transportation Agency approved the construction of the railway?* *- When are community consultations scheduled for the railway operations?* *- Increase in rail traffic was not accounted for in the traffic study. Why not, please provide reasons?*	As indicated in Section 1.6.2 'Other Project Regulatory Approvals' in the EAP, CPS is currently in discussions with Canadian Pacific Railway (CPR) to coordinate development of the railway spurs/siding within the railway Right-of-Way intersecting with the existing CPR-owned railway line and proposed rail spur at the Project site. Approvals for the connection to the CPR railway line will be obtained as required. A Project Information Session was held in Selkirk on October 19, 2022, which included information on Project components, including the proposed rail spur. The Traffic Impact Study is reviewed by Manitoba Transportation and Infrastructure for the use of provincial highways. Therefore, the scope of the Traffic Impact Study concerns road traffic. Rail traffic abides by rail regulations that are set by Transport Canada and the Canadian Transportation Agency. Transport Canada develops and implements policies and regulations, and administers the *Railway Safety Act.*	N/A
		PD4 *According to CPS's 2021 National Instrument 43-101 preliminary test showed "the sand can be used to manufacture standard glass products such as flat glass, coloured container glass, and insulating fibres." It was "theoretically possible" for the sand to be used for patterned solar glass but further testing on the bulk raw sand is needed to determine if the sand can indeed meet these standards through processing.* *- Has the "further testing" referenced in the NI 43-101 been completed?* *- Provide supportive evidence to show CPS sand can be used in "solar panel production" at the proposed Facility*	Refer to response for item #7 in **Attachment A** regarding laboratory testing and results of CPS' Wanipigow silica sand which meets the quality criteria to manufacture the solar panel glass.	N/A
	Email: Dennis LeNeveu Nov. 28, 2022	**PD5** Concern that: "*CPS has no demonstrated experience in glass manufacturing and has no identified partner or major shareholder with such experience*."	CPS has engaged several experts in the field of glass manufacturing and glass production plant construction. Refer to CPS press release of September 19, 2022.	N/A
		PD6 Concern that: "*The sources of the required limestone, dolomite and feldspar glass making constituents with required very low iron and other impurity content have not been identified*." "*The production scale resource for the limestone, dolomite and aragonite of sufficient purity for solar glass manufacturing has not been identified by CPS*."	Through CPS' engagement of experts in the field of glass manufacturing and glass production (see response for **PD5**), CPS has identified sources of raw materials other than the sand that will meet quality requirements for solar glass production as indicated in the response for item #6 in **Attachment A**.	N/A

ENVIRONMENTAL COMPONENT	PUBLIC COMMUNICATIONS	KEY ISSUE / QUESTION RAISED	RESPONSE	PROPOSED MITIGATION SUMMARY
		PD7 "*The furnace manufacturer has a vested interest in reporting acceptable emission values. CPS does not specify the emission control equipment to be used and by how much the emission would be reduced by such equipment. Emission control equipment would require maintenance and be subject to uncertain performance*."	Refer to response for item #8 in **Attachment A** regarding information on the specialized chemical conversion and filter system used for air emission treatment.	N/A
Project Funding	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022; Shawn Kettner of Manitoba Energy Justice Coalition Nov. 28, 2022; Email: Dennis LeNeveu Nov. 28, 2022; Letter: MJ McCarron of Manitoba Eco-Network Nov. 28, 2022	**PF1** Information request regarding Project funding including, as per the Manitoba Information Bulletin – Environment Act Proposal Report Guidelines: "*any government agency or program (federal, provincial or otherwise) from which a grant or loan of capital funds have been requested*"	Currently the project is privately funded. However, CPS is pursuing avenues for support from the Province of Manitoba and through existing programs from the Federal Government.	N/A
Cumulative Effects	Letter: Heather Fast and Glen Koroluk of the Manitoba Eco-Network Nov. 28, 2022; Shawn Kettner of Manitoba Energy Justice Coalition Nov. 28, 2022; Letter: MJ McCarron of Manitoba Eco-Network Nov. 28, 2022	**CE1** General – concern regarding potential for cumulative environmental effects of the proposed Project with other developments.	A cumulative impact assessment is not an information requirement for the Environment Act Proposal as per the Province of Manitoba's Information Bulletin – Environment Act Proposal Report Guidelines.	N/A

Notes:

- N/A = not applicable
- For 'Key Issue / Question Raised' column, wording in italics is direct wording from the comments submitted. Where wording is not italicized, the comment / question has been summarized for clarity.
- Where there are numerous comments, questions or concerns raised regarding the same issue, a summary is provided preceded by 'General – '.
- Questions and comments pertaining to the CPS Wanipigow Sand Extraction Project (Environment Act Licence #3285) are out of scope for the responses to public comments and questions regarding review of the CPS Solar Glass Manufacturing Facility Environment Act Proposal.
- The CPS Solar Glass Manufacturing Facility EAP and related files submitted to the Manitoba Environmental Approvals Branch are accessible at: https://www.gov.mb.ca/sd/eal/registries/6137/index.html

References:

AECOM Canada Ltd. (AECOM). 2022. Air Quality Assessment Report (Updated). Solar Glass Manufacturing Facility in Selkirk, Manitoba. Report to Canadian Premium Sand Inc. October 2022. Accessible at: https://www.gov.mb.ca/sd/eal/registries/6137/index.html

AECOM Canada Ltd. (AECOM). 2022. Selkirk Solar Glass Manufacturing Facility. Noise Impact Assessment (Updated). Report to Canadian Premium Sand Inc. November 2022. Accessible at: https://www.gov.mb.ca/sd/eal/registries/6137/index.html

Jacobson, S.L., L.L. Bliss-Ketchum, C.E. de Rivera and W.P. Smith. 2016. A behavior-based framework for assessing barrier effects to wildlife from vehicle traffic volume. Ecosphere. Vol. 7, Issue 4. Accessed at: https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1345

Attachments:

Attachment A: Letter to Manitoba Environment, Climate and Parks. December 13, 2022. RE: Selkirk Solar Glass Manufacturing Facility Project (File # 6137.00)– Environment Act Proposal Technical Advisory Committee Review Responses

AECOM

Attachment A

Responses to Technical Advisory Committee (TAC) filed December 13, 2022

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December 13, 2022

Our Reference
Project No. 60663147

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RE: Selkirk Solar Glass Manufacturing Facility Project (File # 6137.00)– Environment Act Proposal Additional Information Request Responses

Dear Mr. Beshada,

On behalf of Canadian Premium Sand Inc. (CPS), enclosed are responses to the additional information requests received from you on December 2, 2022, regarding the Environment Act Proposal (EAP) application for the Selkirk Solar Glass Manufacturing Project (the 'Project').

If you have any questions regarding the proposed Project, please contact me at your earliest convenience.

Yours sincerely,

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cc: Alasdair Knox (CPS)
Glenn Leroux (CPS)
Siobhan Burland Ross (MB Environmental Approvals Branch)

Attachment: Responses to additional information requests re: the EAP

AECOM

December 13, 1022

SELKIRK GLASS MANUFACTURING FACILITY ENVIRONMENT ACT PROPOSAL (EAP): File # 6137.00
RESPONSES TO ADDITIONAL INFORMATION REQUESTS RECEIVED FROM THE MANITOBA ENVIRONMENTAL APPROVALS BRANCH (EAB) ON DECEMBER 2, 2022

1. **City of Selkirk Wastewater Treatment Plant effluent is proposed to be used as process water for the proposed facility. Discuss any potential impacts to staff and operations should effluent quality parameters exceed the Industrial Service Agreement and/or the requirements of Environment Licence 3273 issued to the City of Selkirk. The City of Selkirk is required to submit a notice of alteration to their licence for consideration and approval**

   Since becoming fully operational, the City of Selkirk Wastewater Treatment Plant has not exceeded its effluent output quality parameters.

   It is anticipated that there will be no impact to staff and little to no impact on operations should effluent quality parameters exceed the Industrial Service Agreement and/or the requirements of Environment Act Licence 3273 (EAL 3273) issued to the City of Selkirk. Please refer to the answers to Question 2 below for mitigation and contingency measures.

   CPS has been working closely with the City of Selkirk regarding the use of the wastewater stream and the City of Selkirk is aware that a Notice of Alteration (NOA) to their EAL 3273 will be required.

2. **Discuss mitigation or contingency measures in the event the exceedances discussed above occur.**

   The following mitigation or contingency measures will be put in place for effluent quality parameters that exceed the Industrial Service Agreement and/or the requirements of EAL 3273 issued to the City of Selkirk:

   a. Monitoring – CPS will receive effluent quality data from the City of Selkirk and monitor the quality of the water received as an early warning of a potential exceedance
   b. Treatment – CPS will treat the water received from the City of Selkirk prior to utilising it within the glass manufacturing process. The capacity of this treatment facility will enable CPS to treat effluent with quality parameters that exceed those stipulated in Environment Licence 3273
   c. Blending – If it is anticipated that the effluent quality parameters will exceed the capabilities of the CPS treatment system, CPS will add potable water to produce a blend that meets CPS requirements
   d. Alternate Supply:
      i. CPS will have the ability to shut off the water supply from the City of Selkirk if the water quality exceeds the capabilities of the CPS treatment and blending
      ii. The CPS facility will be able to continue operating in the short-term utilising water from on-site storage
      iii. In the longer term, CPS will reduce production in order to reduce water requirements and utilise potable water

3. **Table 18 of the report identifies the 1-hour and 24-hour maximum acceptable level concentrations exceedance of the MAAQC for the NO2-TCM. Provide a discussion why the exceedance is expected and how you propose to mitigate it.**

   Table 18 of the report includes two calculational forms of NO_2 – Total Conversion Method (TCM) and Ozone Limited Method (OLM). The TCM form, in which all emissions are converted to NO_2 instantly, is presented for completeness only. It is theoretical and overly conservative and is not typically compared to regulatory standards.

   The OLM recognizes that chemistry in the air is limited by the ozone concentration which varies by location and season and by atmospheric mixing. OLM NO_2 is the more accurate value compared to regulatory standards. In Table 18, OLM NO_2 at all averaging periods is much less than MAAQC standards. As such, CPS is not planning further NOx mitigation.

4. **The GHG emissions are estimated to be about 399,000 tonnes/ year. This would make CPS the second largest GHG emitter in Manitoba. Describe any plans to reduce the GHG emissions from the facility.**

   CPS notes the 399,000 t/year of emissions is an outdated value. The most recent estimate was presented in a filing dated November 7, 2022 which provides a total emission of 228,280 TCO2e/yr (please refer to Table 133 in Section A6.7 of the Air Quality Assessment Report issued on November 7, 2022).

   The reduction follows a detailed review of technology and engineering of the furnaces as well as the decision to utilise electric powered tempering ovens rather than gas fired ovens that were originally considered.

   To provide further context, the bulk of the GHG is emitted from burning natural gas for the glass melting process. CPS has instructed the furnace supplier to allow for the possible future provision of electric heating nodes in the furnace. These nodes may be used in the future to reduce the amount of gas consumption, however, it may not be possible to obtain the amount of power required from Manitoba Hydro.

   CPS will continue to look for innovative ways to reduce GHG. For example:
   - electric powered forklifts will be utilised on site
   - CPS is interested in the advances in electric powered trucks and locomotives
   - CPS will explore carbon capture technologies which may become available in the future
   - CPS will continue to review other forms of combustion material for our furnace, for example hydrogen has recently been introduced as an alternative to natural gas in Europe

5. **Describe any potential wildlife accidents and any mitigation measure during night-time operation of the trucks transporting sands.**

   Sand delivery drivers contracted by CPS will be mandated to adhere to the posted speed limits and required to review wildlife collision avoidance and defensive driving measures such as those described by the Traffic Injury Research Foundation (TIRF) and the Wildlife Collision Prevention Program in British Columbia. In addition, CPS will continue to look for ways to enhance the safety of drivers such as in-vehicle wildlife detection systems that detect heat generated by animals to warn drivers of their presence.

   Please note the following websites:
   Traffic Injury Research Foundation (TIRFP):
   https://wildliferoadsharing.tirf.ca/about/about-us/#
   Wildlife Collision Prevention Program:
   https://www.wildlifecollisions.ca/prevention/safety-tips.htm

6. **Indicate the source or suppliers of the raw materials other than the sand.**

   CPS will source raw materials from private suppliers based on multiple parameters including quality, cost and location. These suppliers may change over time. At this time, it is anticipated that:

   - Soda ash will be sourced from the US
   - Aragonite (Limestone substitute) will be sourced from the US
   - Feldspar will be sourced from Europe
   - Dolomite will be sourced from Europe
   - Saltcake will be sourced from Canada
   - Sodium antimonate will be sourced from Canada

7. Provide the laboratory result that indicated the sand mined from Wanipigow sand mine meets the quality criteria to manufacture the solar panel glass.

The sand mined from the Wanipigow sand mine meets the quality criteria to manufacture glass for solar panels. In particular, the sand must have a very high silica content and a very low iron content.

In October 2021, CPS commissioned a 3rd party (Apex Geoscience Ltd) to prepare a "National Instrument 43-101 Technical Report". This 170 page report is a public document which provides details on the testing carried out to provide an 'inferred resource' estimate on CPS' Wanipigow silica sand glass mine.

Section 13 (pages 96-117) of the report provide details of the laboratory testing and results which indicate that the sand mined from the Wanipigow sand mine meets the quality criteria to manufacture the solar panel glass.

The full NI 43-101 document can be found by following the link below:
https://www.sedar.com/search/search_form_pc_en.htm

Then inserting the following information:

Company Name:	Canadian Premium Sand
Document Type:	Technical Report NI 43-101
Date of Filing:	2021

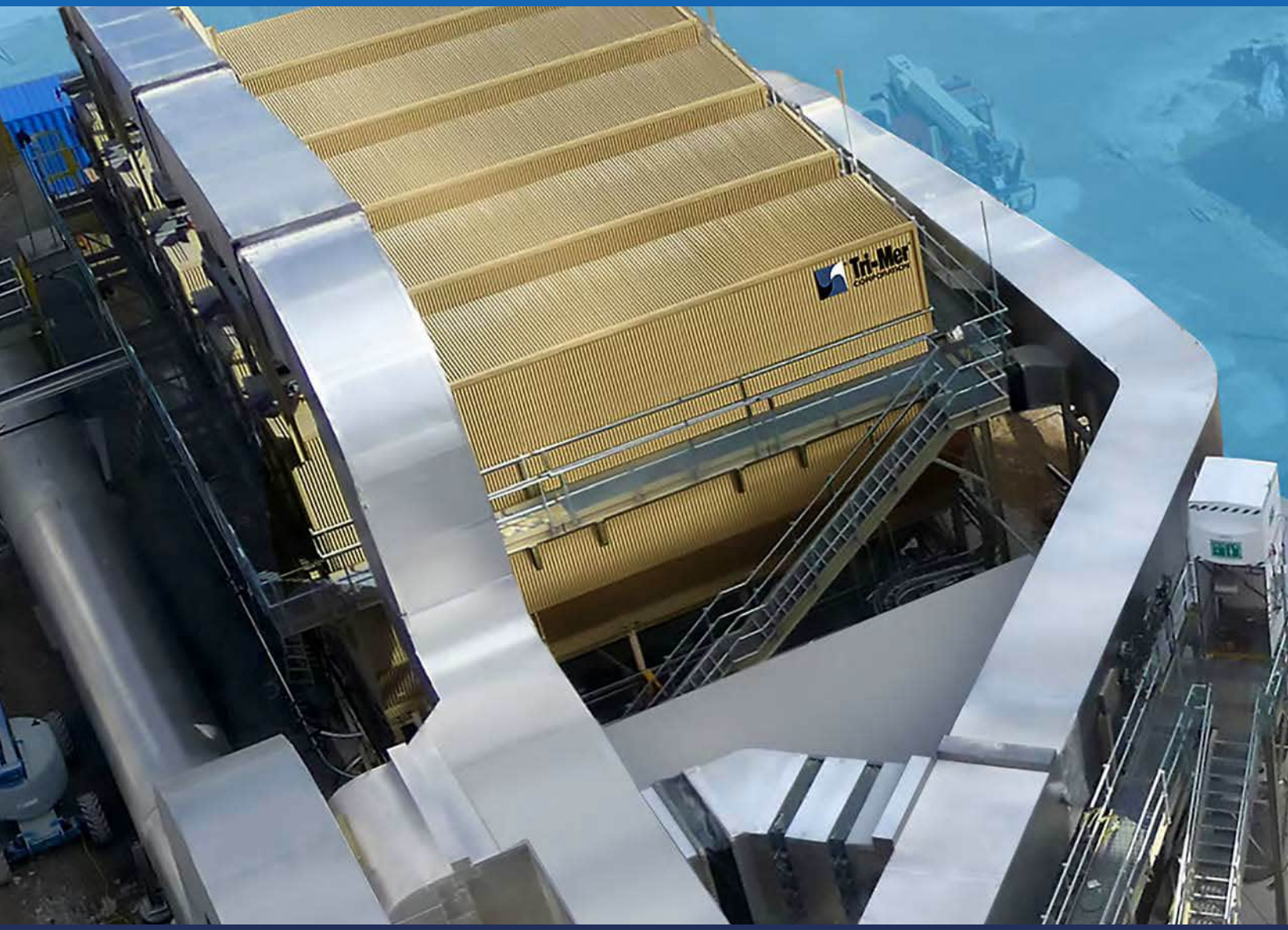
8. Provide detailed information on the specialized chemical conversion and filter system used for air emission treatment. Provide specification and emission control efficiency.

The chemical conversion system to be used on the glass manufacturing facility will be a state-of-the-art Catalytic Filter system (likely supplied by Tri-Mer). This system is designed specifically for removing particulate (PM), SO2, HCl, mercury and heavy metals. Simultaneously, the ceramic catalyst filters destroy NOx, cement organic HAPs, and dioxins.

Please refer to the attached literature for the emission control efficiencies.
Please also find attached a schematic drawing of the intended process flow for the CPS Selkirk Solar Glass Manufacturing Facility.

UltraCat

Catalytic Filter Systems



Particulate • NOx • SOx • HCl • VOC • O-HAP • Hg • D/F • CO

Tri-Mer® CORPORATION

Tri-Mer has installed more Catalytic Ceramic Filter Systems than all other suppliers combined, ***worldwide.***

Tri-Mer Corporation is the World's Largest Supplier of Ceramic Catalyst Filter Systems

All-in-One Solution

Tri-Mer UltraCat Catalytic Filter Systems are state-of-the art for removing particulate (PM), SO_2, HCl, mercury and heavy metals. Simultaneously, the ceramic catalyst filters destroy NOx, cement organic HAPs, and dioxins. Systems can be configured for any combination of the pollutants.

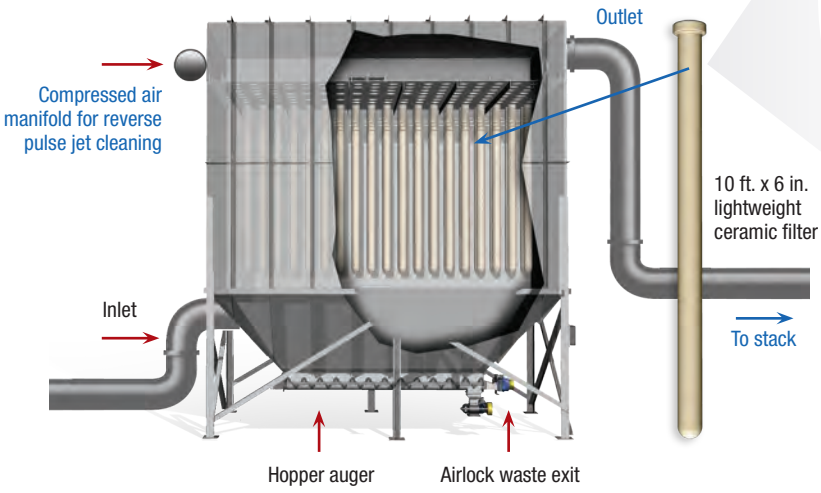
The system is completely dry, with no water consumption. Disposal of the dry collected waste is straightforward. Large gas flow volumes can be accommodated.

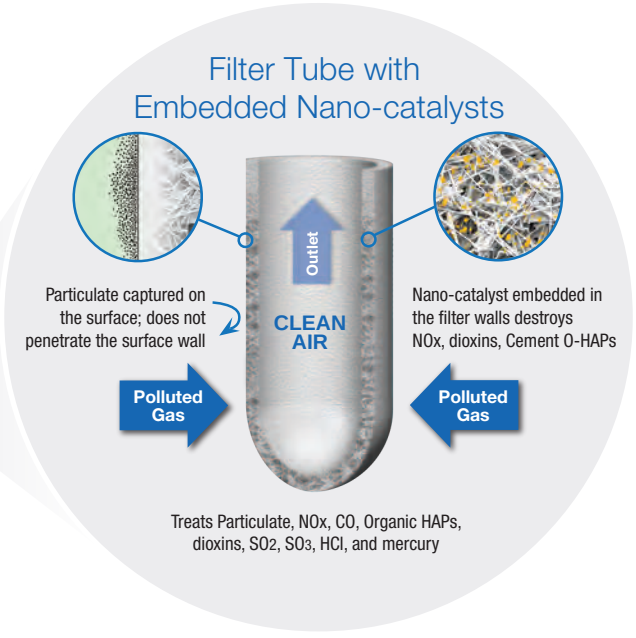
PM • SOx • NOx • VOC • Dioxins • HCL • Hg • CO

Boiler MACT • CISWI MACT • Lime MACT 2
HWC MACT • Cement NESHAP • Title V Compliance
CARB Diesel Regs • EPA Glass Regs • EPA Ceramics Regs

System Architecture

Ceramic filter tube wall is 3/4" thick with catalyst embedded throughout the wall. Filters are self-supporting without filter cages, and have a service life of 5 to 10 years.





Catalyst is inside the filter walls, protected from PM blinding and poisoning.

Particulate Control

Tri-Mer's UltraCat Filter System removes particulate from gas sources above 300°F, including PM10, PM2.5, and submicron. Typical outlet levels are less than 0.001 grains / dscf (2.0 mg/Nm3) regardless of inlet loading. Heavier loadings require more frequent pulse-jet cleaning of the filters but outlet levels remain the same.

NOx Control

UltraCat Catalytic filter tubes have nanobits of SCR catalyst embedded in the filter walls. Operating range is 350°F to 950°F. The large reactive surface area of the micronized catalyst produces high NOx removal at temperatures lower than standard SCR. Good results start at 350°F and improve to 95% removal at 450°F and above.

The unique structure of the filters captures process particulate on its outer surface, keeping it away from the nano-catalyst inside the filter walls. This prevents PM blinding and poisoning of the catalyst, and greatly extends the catalyst life compared to standard SCR.

Cement O-HAPs, Dioxin, VOCs

The VOCs designated as organic HAPs in cement regulations are destroyed by the embedded catalyst. Good removal on the primary Cement O-HAPs occurs at temperatures over 400°F, with excellent results on all Cement O-HAPs approaching 500°F. Other VOCs are also selectively destroyed. Dioxins are eliminated by the filters, typically with 95% efficiency or higher.

SO_2, SO_3, HCl, HF Removal Using Dry Sorbent Injection

Systems have an option for dry sorbent injection of calcium or sodium-based sorbents (hydrated lime, sodium bicarbonate and trona) to remove SO_2, SO_3, HCl and HF.

Powdered sorbents are injected upstream of the filters and the reaction by-products captured as particulate at the filters. The SO_2 removal reaction occurs within the duct leading to the filters and at the sorbent cake that accumulates on the surface of the filters. The chemical reaction of the sorbent with the acid gas creates a solid particle that is captured on the filters, along with the unreacted sorbent and the process particulate.

With dry sorbent injection, SO_2 removal is typically 90-95%, with removal efficiencies as high as 97%. HCl removal is typically 95%, and often as high as 99%. The temperature range for effective removal is 300°F to 1600°F.

Mercury Control

The system removes mercury using injection of dry sorbents. Powder activated carbon and other sorbents, some pre-blended with the acid gas sorbents, are selected on a case-by-case basis. Mercury control is a key feature.

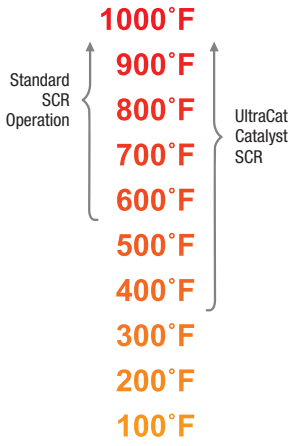
CO Removal

Tri-Mer systems can be configured to remove Carbon Monoxide, simultanously with other pollutants, at temperatures of 450°F and above.

A Revolution in NOx Control

- Very high removal efficiency, greater than 90%
- Greater than 90% removal at 400°F.
- Extended catalyst life because the micronized catalyst is embedded within the body of the filter and protected from blinding and poisoning.

The combination of these factors has revolutionized NOx removal, especially for applications that have temperature limitations and/or require the simultaneous removal of other pollutants.



At even lower temperatures, 350°F, the UCF system will remove NOx at approximately 70% efficiency. In addition to NOx, catalytic filters will remove PM, Cement O-HAPs and dioxins, and can be configured to remove CO, SO_2, HCl, and HF. Regulatory authorities have recognized the Tri-Mer UCF system to be a major advance in NOx and multi-pollutant control technology.

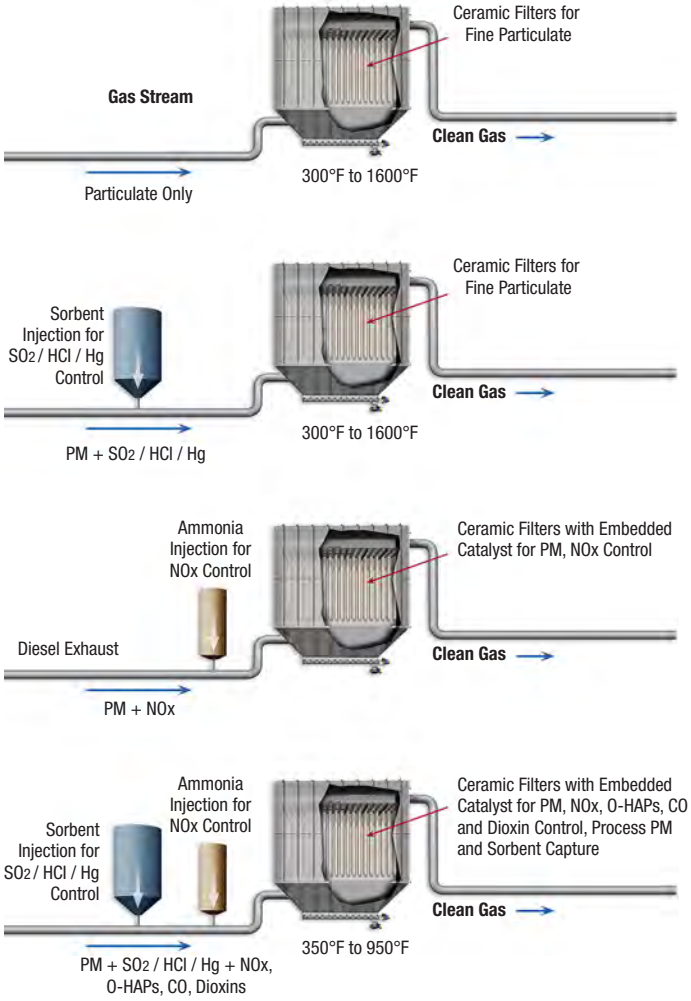
UltraCat Catalytic Filter and Power Generation Systems

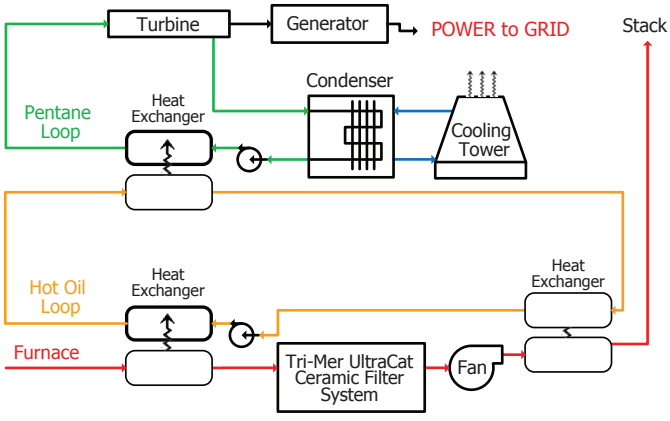
Tri-Mer UltraCat filter systems are ideal for maximizing the energy that can be extracted from furnace exhaust for use in an Organic Rankine Cycle (ORC) power generation loop. The heat is transferred to a hot oil intermediate loop, and then to an ORC loop (see figure below right).

Conventional technologies such as ESP and SCR have narrow hot operating ranges, and sizable heat loss across their combination. In contrast, the UCF is equally effective for pollutant removal over a very wide temperature range, including cooler temperatures (see NOx figure above), with a very low heat loss. The high tie-in temperature at the upstream heat exchanger, combined with a much lower exit temperature to the UCF system creates a greater ΔT. This increases thermodynamic efficiency. After the UCF cleans the gas, a second downstream stage of heat removal is incorporated.

The UCF flexibility allows continued control of emissions in the event the power generation loop goes offline for maintenance, making the UCF system the ideal pollution control technology to pair with heat recovery.

Several Versions of One Highly Effective System





The Tri-Mer System presents the optimal combination for pollution control performance and electrical power generation.

Tri-Mer® CORPORATION

Technology Leader
air pollution control

Process Flow Diagram

Henry F. Teichmann, Inc.

Selkirk Manitoba, CA

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Air Flow, induced draft

Air Flow, forced draft

Liquid Flow, pumped

Solid Flow, pneumatic

Solid Flow, mechanical

Solid Flow, dense phase pneumatic

Compressed Air

Automated Louver
Closed

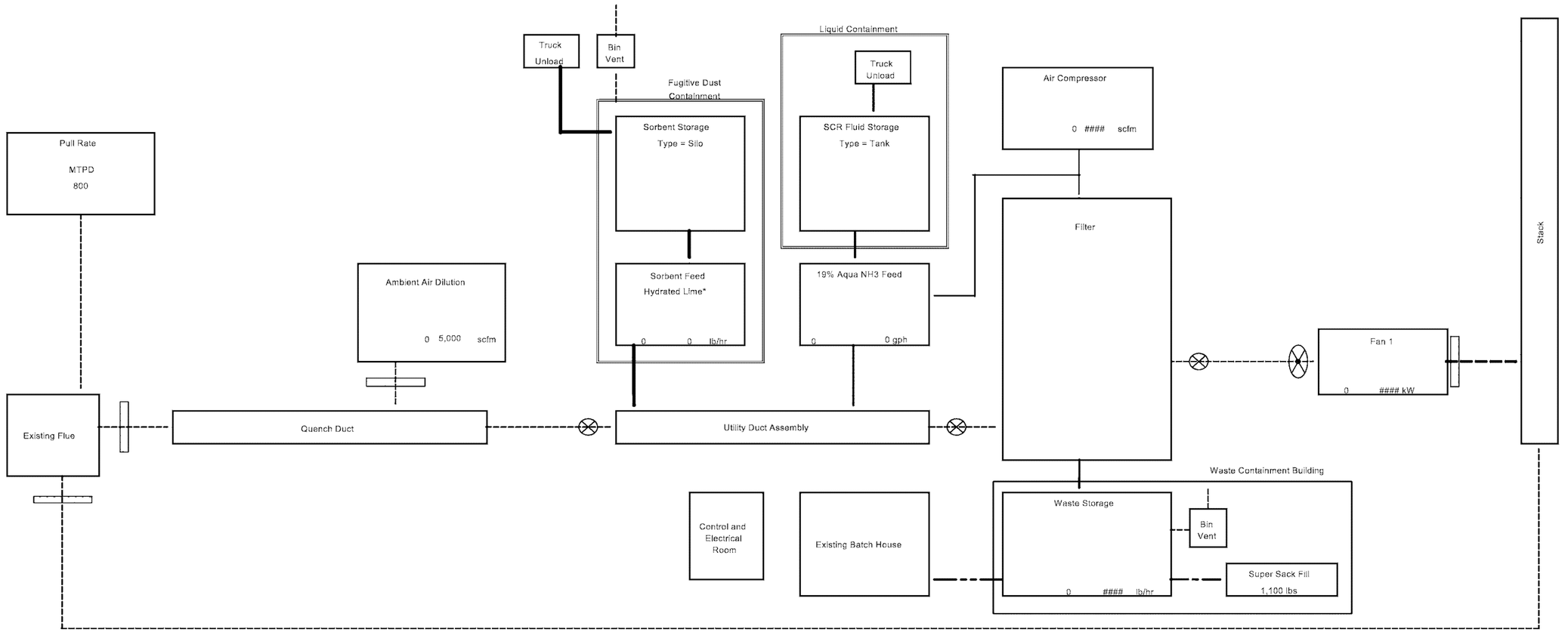
Multi-Blade Damper
Closed

Blank with Slide

Automated Louver
Open

Multi-Blade Damper
Open

Butter Fly Damper
Open



P18.500 Rev. D Ver.3

June 2, 2022