Laurel Menzel
7006 Lake Kathlyn Rd
Smithers, BC
V0J 2N2

December 7, 2021

Dear Board of Directors for the Bulkley Nechako Regional District:

I write to you today to confirm some of my plans for operating a crematorium in Smithers, BC.

- I will be installing new equipment that not only meets, but surpasses the federal and provincial environmental regulations. Stack testing with the proposed building dimensions in a hypothetical worst-case scenario, in which there are unfavourable weather conditions and other factors such as an increased number of cremations, are evidence of this fact and are provided below. We are fortunate in Smithers to have Ministry of Environment professionals located here to ensure compliance with the Environmental Management Act.
- I will be subject to the rigorous licencing process administered by Consumer Protection BC and will not be "grandfathered in" by purchasing an older establishment with older equipment. There is both an inspection of the operations and a technical inspection that requires all the equipment and utilities to be permitted and signed off on by the associated professionals before a crematorium can be licenced. An outline of these inspections is available online and from Consumer Protection BC.
- The process water from the aquamation will be disposed of in absolute compliance with federal, provincial and municipal regulations and with the expressed permission of the Regional District of Bulkley Nechako.
- I am a trained and certified Crematory Operator, who will also undertake equipment-specific training and will take every precaution to ensure the safe and peaceful operation of a crematorium. I understand how undesirable outcomes, such as black smoke, occur (temperature issues and poor equipment maintenance) and have taken training and sourced the best equipment available to reduce any instance of this. I encourage you to view this video, taken last week, by a Crematory Operator in Kamloops operating equipment by the same manufacturer, installed in early 2021. https://www.rdbn.bc.ca/application/files/2616/3856/8523/Pine_Grove_Stack-540p30.mov
- There is no additional storage in a separate building planned or required. The entire operation will be contained within the one building that has been proposed.

This project has been planned with an eye towards serving the community where I live by enhancing the local offerings and providing an option for residents.

Thank you for your consideration of my true plan and intention,

Laurel Menzel

PYROX

December 6th, 2021

NORTH COAST CREMATION SERVICES
7006 Lake Kathlyn Rd
Smithers, BC V0J 2N2

To the attention of Ms. Laurel Menzel;

SUBJECT: AIR DISPERSION MODEL TO SET HEIGHT OF STACK AND SETBACK
Pyrox File # P214005

Dear Mrs. Menzel,

Thank you for considering Pyrox industry-leading cremation equipment. The Retort Pyrox X1000 has been designed for human cremation only. The unit is gas fired, equipped with a primary burner rated 750 000 BTU and a secondary burner rated at 1.5 MBTU, discharging into the air at a nominal volumetric flow rate of 1.52 actual cubic meters per second through a stack, having an exit diameter of 50.8 cm. Maximum load capacity of the unit is 500 lbs and is rated 150-175 lbs/hr. All Pyrox units are entirely manufactured in Canada using CSA compliant components. Furthermore, our units are designed in accordance with the recommendations of the Canadian Council of the Ministry of the Environment (MOE) and meet all Canadian norms.

In Alberta and British Columbia, there isn't regulations regarding the height of stack above the roof and a minimum setback between the stack the property lines. However, Pyrox's engineer can calculate and document the proper setback and height of stack. Pyrox use a screening air dispersion model for the U.S. EPA, SCREEN3. The SCREEN3 model can be used to estimate worst-case ground level concentrations for a single source as well as concentrations in the cavity zone, and concentrations due to inversion break-up and shoreline fumigation.

In most Canadian provinces, total particles are regulated at points of impingement (POI) for an 24-hour averages. The POI criteria is 120µg/m3. Some provinces such as Québec, an initial concentration of total particles of 90µg/m3 is added to the highest

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projected concentrations of contaminants given by the air dispersion model. The Canadian limit is 80% of the POI criteria 120µg/m3, thus 96µg/m3.

As the new cremation equipment are very performant, the expected 24-average concentration of total particles would be very low. Here is the air dispersion modelling based on the proposed site on Powell Street.

Conditions:

Building dimension of 30ft x 40ft

Building height of 22ft

Stack height 30ft from ground (8ft above roof)

Stack inside dimension of 0.508m

Max emission rate of 0.02734 g/s

Stack exit velocity fo 4.6m/s

Emission Summary Table:

Distance to POI	**Maximum Concentration**	**C_{daily} = C_{MAX-H} x 0,24**	**24h - Concentration**	**Initial Conc.**	**Total POI Conc.**	**% of Criteria 120 µg/m³**
m	µg/m³		µg/m³	µg/m³	µg/m³	%
20	*0.00*	*0.24*	*0.00*	*90.00*	*90.00*	*75.0%*
30	*0.00*	*0.24*	*0.00*	*90.00*	*90.00*	*75.0%*
40	*22.48*	*0.24*	*5.40*	*90.00*	*95.40*	*79.5%*
50	*23.95*	*0.24*	*5.75*	*90.00*	*95.75*	*79.8%*
60	*23.79*	*0.24*	*5.71*	*90.00*	*95.71*	*79.8%*
70	*22.72*	*0.24*	*5.45*	*90.00*	*95.45*	*79.5%*
80	*21.69*	*0.24*	*5.21*	*90.00*	*95.21*	*79.3%*
90	*17.45*	*0.24*	*4.19*	*90.00*	*94.19*	*78.5%*
100	*14.20*	*0.24*	*3.41*	*90.00*	*93.41*	*77.8%*
200	*11.68*	*0.24*	*2.80*	*90.00*	*92.80*	*77.3%*
300	*8.09*	*0.24*	*1.94*	*90.00*	*91.94*	*76.6%*
400	*6.05*	*0.24*	*1.45*	*90.00*	*91.45*	*76.2%*
500	*4.79*	*0.24*	*1.15*	*90.00*	*91.15*	*76.0%*
600	*3.94*	*0.24*	*0.95*	*90.00*	*90.95*	*75.8%*
700	*3.38*	*0.24*	*0.81*	*90.00*	*90.81*	*75.7%*
800	*2.96*	*0.24*	*0.71*	*90.00*	*90.71*	*75.6%*
900	*2.58*	*0.24*	*0.62*	*90.00*	*90.62*	*75.5%*
1000	*2.28*	*0.24*	*0.55*	*90.00*	*90.55*	*75.5%*

Conclusion:

All the results are below 80% of the total particles even with the initial concentration of 90µg/m3 added to the total.

Note that in Ontario, the initial concentration of 90µg/m3 is not added to results. In this situation, results would have been between 0.0027% to 0.016% of the 120µg/m3 criteria.

Those results are specific to the site on Powell Street with the given conditions.

We remain available for any additional information, you may need. Thank you for considering Canadian designed and built Pyrox retorts.

Respectfully,

Sébastien Litalien, P.Eng.
General Manager
Pyrox Industries Inc.