

Proposed Beiseker Incinerator – Clarifications

During the course of the public hearing, and subsequent to the hearing there have been a number of instances of inaccurate information put out on the internet and other forums relative to the project. The following information is being published on our website to provide clarification on some of these issues:

Flooding of Site

There was a concern put forward that the proposed site will flood, and that it will result in contaminated flood water then migrating to the community. This is incorrect. A number of questions have been raised regarding flood potential of the site. In responding to the question, G-M Pearson identified that a site grading plan would be required to be developed in the development permit phase of the project and would address flood risk. For further clarity:

- 1) The grade of the plant will be raised above flood levels. The five or six acres that make up the plant yard will have a berm, with top of berm elevation above flood level. Within and outside of the berm area, we anticipate the need for storm water ponds.
- 2) There is no contaminated soil inside the berm area. No waste material is stored on the ground outside of the building. The majority of waste material arriving at the facility is directly transferred from the transport trailer to the infeed hopper of the incinerator. With small trucks, material may be staged for a short period of time (i.e. half a shift) in the building to expedite driver turnaround.
- 3) The plant has water storage and back up generator to ensure incinerator can be shutdown safely in the event of disruption of power or water supply as result of flooding or other disruption.
- 4) Contingency plan will be in place to move trailers containing waste off site, and to and move ash bins off site to ensure no waste material or ash remain onsite.
- 5) Lastly, we are open to working with the Village to use a portion of the remaining property as flood control area to mitigate or prevent flooding of village lots.

Alberta Environment Process

We have identified that to get a permit to construct and operate the proposed plant from Alberta Environment and Parks (AEP), G-M Pearson has to conduct site specific models, studies, human health risk assessment and community consultation. AEP and Alberta Health will review and validate information to ensure the proposed facility is safe to be located in the community.

Flue Gas Treatment

G-M Pearson has indicated it is providing state of the art flue gas treatment and process controls for the proposed incinerator. For further clarity, the treatment includes two stages of elevated temperatures to destroy dioxins, followed by the quenching of the flue gas to prevent reformation of dioxins, and then an activated carbon treatment to capture residual elements.

G-M Pearson has indicated that there will be trace amounts of dioxins and furans emitted from the stack, but at levels that are negligible and within safe levels.

A number of questions have subsequently arisen. Below is information that is intended to provide clarity. The two points below address where we go for information, and the basis for the estimates put forward in this section. The remainder of this section deals with explaining the numbers and providing points of reference and comparisons:

- 1) In addressing questions and providing technical information, G-M Pearson relies on peer reviewed studies and equipment manufacturer information based on designs that are in service today and for which there are measured performance results. Peer review involves independent review by research scientists. It includes review of study methodology, comparing findings to other studies and in some cases replicating tests.
- 2) We have completed some estimates of exposure levels. These estimates are based on studies of areas with similar environmental conditions that exist in Beiseker, incinerator performance characteristics, and dispersion modeling from a similar project. These provide insight into the impact of operating the proposed incinerator. It is only by completing the detailed work identified as part of the AEP permit application process specific to Beiseker that definitive results can be produced. We expect the results will be similar to these initial estimates.

Most of the concerns with respect to flue gas emissions, center around dioxins and furans. The flue gas treatment technology is proven technology, with measured results verifying the effectiveness of the treatment. The flue gas treatment process is fundamental to making the incinerator safe to operate. In order to clarify this numerically, the following comparisons have been calculated:

- 1) Expected exposure rates of dioxins and furans based on a similar project profile are expected to be less than 0.2% of daily safe exposure levels.
- 2) The difference in the accumulation of dioxins and furans in the soil from operating the incinerator over a forty-year period is 0.1%. Stack emissions disperse over time. Dioxins and furans can be deposited on vegetation, soil and waterways. While vegetation is seasonal, dioxin and furans accumulate in soil and persist for long periods of time. The increase of 0.1% is in comparison to what is already present in the soil and what will otherwise accumulate from other sources that already exist in the environment today over the same period of time.
- 3) There are a number of sources of dioxins and furans that are present in the environment today. They include natural occurring sources such as forest fires. They also include human activities such as internal combustion engines, smoking, open burning (burn barrels, camp fires, wood burning stoves and fire places). To put some of this in perspective, a good comparator is to look at a single forest fire remote from Beiseker but creating haze and the smell of smoke in the area. Over a three-day period; exposure levels to dioxins and furans as a result of a forest fire would exceed the

cumulative exposure level during the entire operating life of the proposed incinerator at design emission levels and in excess of ten years if emitting at maximum regulated levels.

- 4) Dioxins are a persistent organic pollutant, that remain in the atmosphere for months if not years during which they migrate over a large area. Activities that produce dioxins in more urban/industrialized areas impact Beiseker atmospheric levels in addition to local sources such as agricultural and transportation activities. These activities are much more significant with respect to atmospheric levels and accumulation in the soil than the proposed plant.
- 5) The largest category of exposure by a factor in excess of 100 compared to dioxin and furan emissions from the proposed plant at the regulated limits is from food consumption. It is estimated that the average intake of dioxins and furans via our daily diet is about 25% of the Health Canada safe level with another 3% coming from atmospheric exposure from dioxins and furans already present. Only 0.2% is attributed to the proposed incinerator at regulated emission levels. We believe the introduction of the proposed incinerator has brought awareness of the issue of dioxins and furans to the forefront. Eliminating the construction of the incinerator will not have a meaningful impact on dioxin accumulation in the environment or on dioxin exposure for the community. Modification of diet is the most impactful measure that can be taken to reduce exposure.

Additional Information

Below is a link to a study that some may find helpful in understanding the accumulation of dioxins and furans as result of industrial activity. Among other things, it looks at the impact of pre/post implementation of controls on emissions. While the study is funded by an industry grant, it operates under an independent scientific advisory board, and retains community advisory panels. (<https://sph.umich.edu/dioxin/Jan2011results.html>)

A study was conducted of a bio-medical waste incinerator of similar size and with similar flue gas treatment process. The study also looked at impacts to the community from transportation of biomedical waste. Study abstract is available free online, payment is required to download full report. (International Journal of Environmental Health Research Vol. 20, No. 5, October 2010, 313–327). (<https://www.tandfonline.com/doi/full/10.1080/09603121003663487>)