

Air Quality Study Highlights

An air quality assessment was conducted for the proposed Shantz Station Pit to determine the potential impacts to air quality that could be experienced in the surrounding area due to emissions from the pit's operations.

Air quality modelling was conducted at 34 receptor locations, including 33 private residences and St. John's-Kilmarnock School. One receptor location is owned and occupied by the farmer leasing the land for the proposed pit and therefore was not considered a sensitive receptor.

The main airborne contaminant anticipated from the pit operation is dust, including silica – a component of the dust. Products of combustion from the operation of machinery were also included in the assessment. The provincial Environmental Protection Act considers a “contaminant” to be pretty much anything resulting from human activities that may cause an adverse effect.

To develop a model of the potential air quality at the receptor sites, the consultants relied on five years of regional meteorological data (wind direction, wind speed and other parameters), information about the terrain of the site (such as elevations) and data about the existing background air quality from the Ministry of Environment, Conservation and Parks. They used worst-case site elevation data, weather conditions, background air quality data and operating conditions to develop worst-case air quality scenarios that would be anticipated as a result of the pit operations.

The receptor that could be most affected by the pit operation is a home at 1472 Village View Road. This home is also owned by the farmer leasing the lands for the pit operation. At this location, in an unmitigated situation, it was predicted that dust with aerodynamic diameters of 10 micrometres and below, and 44 micrometres and below, would be slightly over

provincial and federal guidelines on average for one day every five years. The same situation would occur with silica. The smallest size fraction of dust, 2.5 micrometres and below, was predicted to be below the federal guidelines. Emissions from the operation of machinery (tailpipe exhaust) would also be well below the guidelines.

The provincial Aggregate Resources Act requires that gravel pits manage and mitigate fugitive dust on site. For the proposed Shantz Station Pit, the consultants recommend:

- Water or other dust suppressants be applied to internal haul routes and processing areas, when required.
- Stripping, excavation and loading areas be monitored when dry weather is expected, when those activities occur within 200 metres of a residence or when winds are expected to blow towards the residence. If visible dust occurs under these conditions, operations should be reduced or extra mitigation measures undertaken.
- A row of coniferous trees be planted along the berm to be constructed near the home at 1472 Village View Road.
- A Best Management Practices Plan be developed to ensure control measures are in place to keep emissions at or below government guidelines.

Implementing these recommendations will ensure any air quality impacts from the pit are well within provincial guidelines.



A simplified version of the map in the Air Quality Assessment Report showing receptor locations.