

# Grain and Feed Handling Industry Guideline

Any Grain or Feed Handling Plant or Operation does not require a permit to operate under Section 6 of *The Clean Air Act* (CAA) where air emissions contain no toxic or corrosive elements and the Operation is situated at least 500 metres from any city, town, village or hamlet, or situated on the same site for a period of less than six months. All other grain and feed handling facilities not meeting the CAA exemption above must be reviewed on a case-by-case basis as to whether a permit is required, but those facilities meeting the Operating Requirements outlined in this guideline may be granted a Ministerial waiver as per Section 7 of the CAA and will not require a Permit to Operate under *The Clean Air Act*.

This Guideline pertains primarily to facilities for the movement and processing of agricultural crops grown or processed in Saskatchewan but may not include all activities at a facility that processes grain for oil seed production, ethanol production and / or other agricultural operations that have gaseous emissions in addition to airborne particulate. Although a CAA permit may be waived, there may be other activities at a grain facility that could potentially require approval; such as Hazardous Substance and Waste Dangerous Goods Storage or Industrial Effluent discharges.

Whether an industry is or is not permitted does not affect Saskatchewan Environment's role in responding to nuisance complaints. Control Orders may be used for any contravention of *The Clean Air Act*. An industry that is the

object of complaints or does not adhere to the appropriate guidelines may be permitted, at the discretion of the environmental project officer,

even though the industry group, as a whole, is considered low risk.

## Operating Requirements - General

- All new grain elevators and terminals shall be equipped with dust collection systems employing the best available control technology to prevent air emissions from becoming an environmental or nuisance problem.
- Existing grain elevators, feed mills, facilities with grain drying capabilities or stand alone grain dryers (continuous flow type), seed cleaning plants or grain elevators with seed cleaning capabilities must be equipped with a minimum of a primary dust collection system. (cyclone or filtration)
- Alfalfa dehydrating plants, feed mills and other processing facilities which utilize hammer, attrition, burr and roller mills for the mixing, pelletizing and sizing of grain or grain products shall be equipped with a minimum of a primary dust collection system.
- Those facilities with air pollution abatement equipment shall be operated such that:
  - ~ the air pollution abatement equipment is in operation when the associated process equipment is operational;
  - ~ proper operational procedures, equipment maintenance and operator training are provided to ensure efficient performance of the equipment.
- If there are no human receptors within the isolation distances, the facility is seasonal (e.g. grain dryers, seed cleaners, or grain

processing plants) or produces **minimal air emissions**<sup>1</sup>, the above conditions **may be waived** provided the following isolation distances are met:

- ~ 0.5 kilometre from any roadway where visibility from dust may be impaired;
  - ~ 1 kilometre or more from any residence or business; and
  - ~ 2 kilometres from the boundary of any city, town, village, or hamlet.
- Gravel roads and approaches on the property of the grain facility should be maintained with appropriate cover material to prevent excessive fugitive dust emissions. If dust complaints occur, dust suppressants or road watering may be required.
  - Fugitive emissions from the loading and unloading of grain trucks and rail cars generate a large portion of nuisance complaints from the public. Winds are responsible for carrying the dust associated with loading activities to nearby receptors. Where practical (size of vehicle or rail car) or where excessive emissions are creating nuisance complaints, grain being loaded or unloaded by a grain truck, rail car, semi-trailer or other combination vehicle and trailer shall be loaded and unloaded inside the facility with doors of the receiving area closed. If the unloading area is not enclosed, or one door (or both doors) of the receiving area cannot be closed during loading or unloading, an air pollution control system should be in

operation and the exhaust should be directed to a dust collection system. The receiving area shall conform to all regulations set out by the Occupational Health and Safety Branch of the Government of Saskatchewan, Department of Labour, or Canada Labour Code, Part II, Occupational Health and Safety, and associated regulations.

- Loading facilities shall be equipped with flexible canvas chutes, filter socks, or a telescoping spout connected to an air pollution control system for loading of grain cars, trucks, and trailers.
- All practical construction and sealing practices shall be taken to limit fugitive emissions from openings in the building, windows, inspection doors, and vents. Sources left open for ventilation should be equipped with filtering devices or connected to the operation's air pollution control system.
- Problems of "blinding" may arise when warm moist air from inside an elevator contacts a cyclone or baghouse that may be located on the outside of the structure. This action may cause plugging of bags or coating of the inside of the cyclone impairing the efficiency. Proper maintenance is required to ensure dust complaints do not occur.
- Spilled grain, chaff, or other by-products of the operation should be cleaned from the premises to prevent windblown particulates from entering the buildings, vehicles, or property of others in the surrounding vicinity. "Housekeeping" schedules should be established and adhered to on a consistent basis.
- All storage bins should be equipped with filter vents or kept closed.
- All conveyors, transfer tubes,

bucket elevators, and inspection doors should be sealed wherever possible to prevent fugitive emissions.

- The owner/operator is obliged to ensure all practical measures are taken to clean all equipment, property, etc. that may have been impacted by the facility.

#### **Operating Requirements - Wastes Generated from the Industry**

- Wastes generated from the Grain and Feed Handling Industry generally consist of non-hazardous organic products such as screenings, chaff, spilled or contaminated product, grain dust captured in air pollution control equipment and seed cleaning waste.
- As this product is susceptible to decomposition, it may be difficult to manage if it becomes wet. Odours associated with spoiled grain products are particularly offensive to nearby residents if not managed properly. Vermin may also be attracted to spilled or decomposing grain.
- To protect the environment, all wastes from grain handling and processing facilities and seed cleaning and treatment must be collected and disposed of appropriately.
- Options for disposal are: disposal in a landfill, composting, reuse in processing or manufacturing other products, or use in normal farm operations.
- Wastes generated from the operation of the facility shall not be burned in an open fire for the purpose of disposal.
- Wastes contaminated with farm chemicals, fumigants, or preservatives may not be suitable for landfill disposal. It is the responsibility of the generator of the waste to properly identify, contain, and dispose of hazardous

materials.

- Wastes meeting hazardous criteria must be disposed of as a hazardous substance. For the occasional job or small operator, it is recommended that a hazardous waste disposal company be contracted to handle the waste material.

#### **DEFINITIONS**

**minimal air emissions<sup>1</sup>** means particulate or gaseous emissions that meet the requirements of *The Clean Air Regulations* and do not cause air pollution as defined in *The Clean Air Act* and below.

**air pollution** means the presence in the ambient air of any air contaminant in a concentration greater than the permissible concentration specified in a permit or prescribed in the regulations; in quantities that are likely to:

- be injurious to the health, safety, comfort or well-being of the public;
- be injurious or damaging to property or plant or animal life;
- interfere with normal business; or
- that has an offensive or obnoxious odour, regardless of its concentration

•**cyclone** means an air pollution control device used to remove medium to coarse particles of dust or dirt by forcing particulate-laden air to spin in a vortex through a tube. Particulate is forced to the outside of the tube by the inertia created by the air stream and the change of direction of the air.

**permit** means a permit issued pursuant to Sections 5, 7, 8, and 9 of *The Clean Air Act*.

**baghouse** means any fabric filtration device used to remove dirt or dust from a gas stream by passing the air through a porous fabric usually configured in cylindrical "bags".

## More info?

Contact the Saskatchewan Ministry of Environment  
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